

## A new species of *Anomomorpha* (*Graphidaceae*) from India

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**Abstract:** *Anomomorpha elegans*, a new species characterized by lirelline ascocarps, dark reddish brown, pruinose disc, bowl shaped exciple composed of elongate hyphae, hymenium interspersed with crystals, muriform ascospores and salazinic acid in the thallus, is described from India.

**Key words:** lichenized ascomycetes, taxonomy

### Introduction

During our revision of the family *Graphidaceae* in India, we have recorded a large number of species in this family and we have described several new species in the genera *Acanthothecis*, *Diorygma*, *Fissurina*, *Graphis*, *Hemithecium*, *Pallidogramme* and *Platythecium* (Makhija & Adawadkar 2003, 2005a, Adawadkar & Makhija 2004, 2006, 2007; 2005b, 2007; Makhija *et al.* 2005, 2007; Sharma & Makhija 2009). In this paper, we describe a new species of the little studied genus *Anomomorpha*.

The lichen genus *Anomomorpha* Nyl. is a genus in the *Graphidaceae* recently resurrected by Staiger (2002). It is characterized by non-carbonized, poorly developed, bowl-shaped exciple consisting of elongate hyphae with thick walls which turn I+ orange to orange-brown, a weakly pruinose disc, interspersed hymenium, very small ascospores < 20 µm in length and by containing norstictic acid and neotricon.

So far only five species are known worldwide, namely *Anomomorpha aggregans* (Nyl.) Staiger, *A. sordida* Staiger, *A. subtorquens* (Nyl.) Staiger, *A. turbulenta* (Nyl.) Hue in Staiger (2002) and *A. roseola*, recently described by Archer & Elix (2007) from Australia.

Only one species, *A. subtorquens* (Nyl.) Staiger, is known from India (Staiger 2002). A further new species is described here as *Anomomorpha elegans*.

### Materials and Methods

Sections of thalli and ascomata were mounted in water, 10% KOH (K), Lugol's solution (I) and lactophenol cotton-blue (LPCB). All measurements were made on material mounted in water. Secondary products were identified by thin-layer chromatography following standardized methods (Culberson & Kristinsson 1970; Culberson 1972; White & James 1985) using the solvent systems benzene-dioxane-acetic acid (180:45:5) and toluene-ethyl acetate-formic acid (139:83:8). The specimens were examined under UV light (365 nm). The specimens are deposited in the Ajrekar Mycological Herbarium (AMH).

### The Species

#### *Anomomorpha elegans* B. O. Sharma, Makhija & Khadilkar sp. nov.

*Anomomorpha elegans* distinctus inter omnibus *Anomomorphae* specibus ob presentia acidi salazinic.

Typus: India, Karnataka, Sirsi-Jog falls, 26.02.1977, A. V. Prabhu & M.B. Nagarkar, 77.201 (AMH—holotypus).

(Fig.1)

*Thallus* corticolous, crustose, epiphloeodal, brownish grey, warty, thick, cracked, with a thin pseudocortex.

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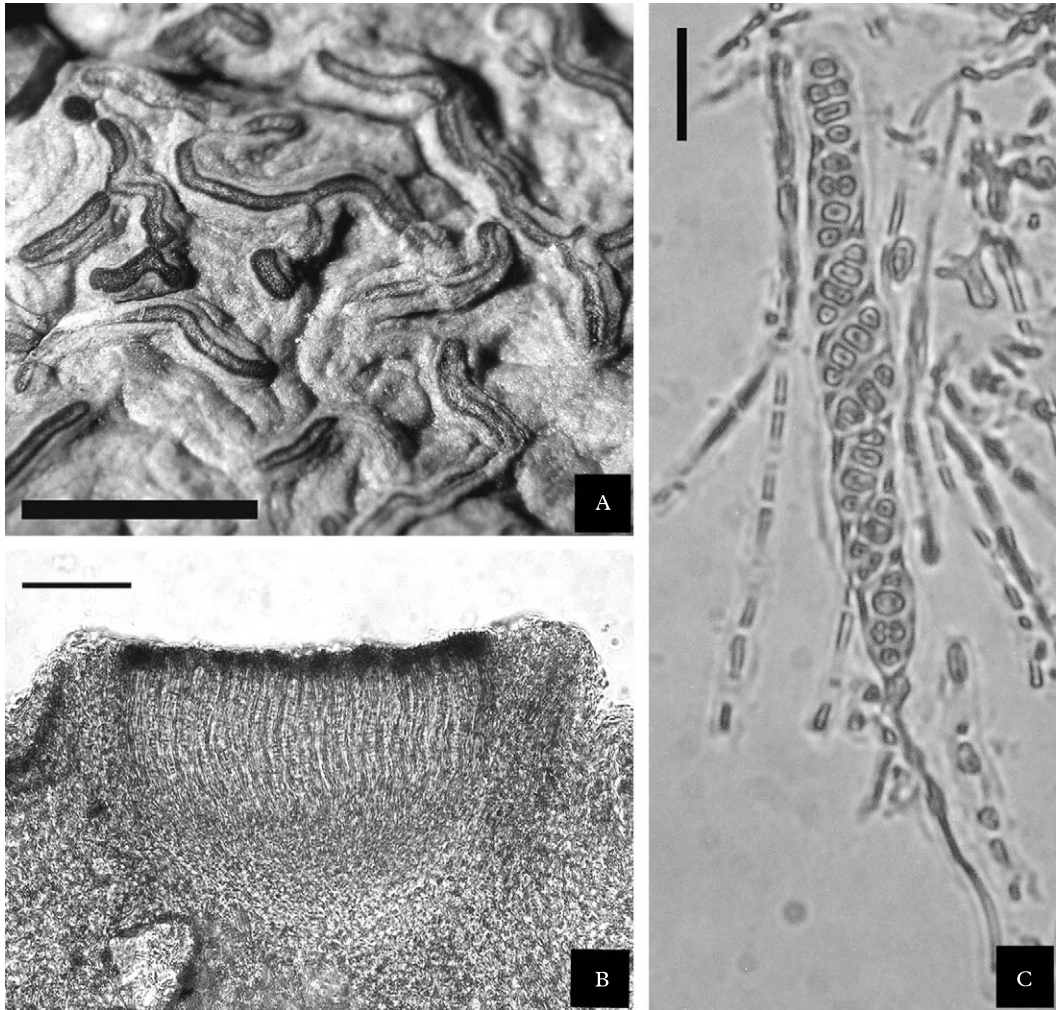


FIG. 1. *Anomomorpha elegans* (77.201—holotype, AMH). A, habitus; B, vertical section of the ascocarp; C, ascospores. Scales: A= 100 µm; B = 50 µm; C = 10 µm.

*Ascocarps* lirelline, creamish, semi-emergent, simple to branched, curved, 0.5–4 mm long, ends round, thalline margin slightly raised. *Disc* broad, 0.2–0.7 mm wide, dark reddish brown, covered with a white pruina. *Exciple* divergent, non-carbonized, laterally poorly developed, bowl-shaped with elongate hyphae, I+ orange brown, distinctly yellow at the base. *Epithecium* distinct, brown, 12–17.5 µm thick. *Hymenium* hyaline, moderately to heavily interspersed with colourless crystals, I+ blue violet, 75–150 µm high. *Paraphyses* simple. *Asci* 8-spored. *Asco-*

*spores* hyaline, muriform with 3 transverse and 0–1 longitudinal septa per segment, 8–12 × 5–7 µm, I+ blue violet.

*Chemistry.* K+ yellow orange, KC–, C–, P+ orange, salazinic acid present. UV–.

*Remarks.* *Anomomorpha elegans* is distinct from all other species of this genus in having salazinic acid in its thallus.

Although the presence of norstictic acid and neotricone has been reported as a generic character of the genus *Anomomorpha*

(Staiger 2002), our new species does not contain norstictic acid and neotricone, but all other morphological characters of the new species agree very well with the generic characters of *Anomomorpha*, especially the heavily inspersed hymenium and exciple composed of elongate cells of hyphae with thick walls.

*Anomomorpha aggregans* (Nyl.) Staiger and *A. roseola* A. W. Archer & Elix are somewhat similar in having submuriform ascospores exceeding 10 µm. Both these species, however, not only differ with respect to the appearance of the general morphology of the thallus and ascomata, but also differ in their chemistry. *Anomomorpha aggregans* has norstictic and connorstictic acids and *A. roseola* has neotricone, virensic, norperistictic, norstictic, salazinic and protocetraric acids.

*Anomomorpha elegans* has been collected from the moist deciduous forest of Sirsi in the western Ghats of south India at an average elevation of 590 m.

*Additional specimens examined. India:* Karnataka: Sirsi-Jog falls, Devimane Ghat, 1977, A. V. Prabhu & M. B. Nagarkar, 77.202, 77.203, 77.204 (AMH).

We are grateful to the Department of Science and Technology (DST), and Ministry of Environment and Forest (MoE & F), Government of India, New Delhi, for financial support.

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*Accepted for publication 22 September 2009*