



## New species and new records of thelotremoid Graphidaceae (Ascomycota: Ostropales) from Thailand

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### Abstract

Six new species of thelotremoid Graphidaceae are described from Thailand. *Leucodecton confusum* Papong, Mangold & Lücking has a densely corticate thallus and small, lepadinoid ascomata with double margin producing small, hyaline, submuriform ascospores. *Ocellularia cerebriformis* Papong, Lücking & Lumbsch is characterized by a brain-like, folded thallus surface, in combination with small, (sub-)muriform ascospores and protocetraric acid chemistry. *Ocellularia kohphangangensis* Papong, Mangold & Lücking features an unusual combination of small, brown, submuriform ascospores and the cinchonarum unknown chemistry. *Ocellularia pseudopapillata* Papong, Mangold & Lücking differs from *O. papillata* in the uneven-verrucose thallus, the thin, indistinctly fissured proper margin of the ascomata, and the carbonized columella. *Ocellularia salazinica* Papong, Mangold & Lücking is characterized by the presence of salazinic acid (a rare substance in Graphidaceae), in combination with ascomata resembling those of *Rhabdodiscus*, and comparatively large, muriform ascospores. A further species of *Ocellularia*, *O. subdolichotata* Papong, Mangold & Lumbsch, has a smooth, white thallus, prominent, columellate and carbonized ascomata, large, transversely septate ascospores (smaller than in *O. dolichotata*), and lacks secondary substances. The following 11 species are new records for Thailand: *Chapsa discoides* (Stirt.) Lücking, *Glaucotrema glaucophaenum* (Kremp.) Rivas Plata & Lumbsch, *Leucodecton anamalaiense* (Patw. & C. R. Kulk.) Rivas Plata & Lücking, *Ocellularia fumosa* (Ach.) Müll. Arg., *O. granulifera* (Kremp.) Müll. Arg., *O. violacea* Räsänen, *O. viridipallens* Müll. Arg., *Rhabdodiscus subcavatus* (Nyl.) Rivas Plata & Lumbsch, *Stegobolus berkeleyanus* Mont., *Thelotrema defossum* (Müll. Arg.) Mangold, and *T. subadjectum* Mangold.

**Key words:** Diversity, south-east Asia, Thelotremataceae

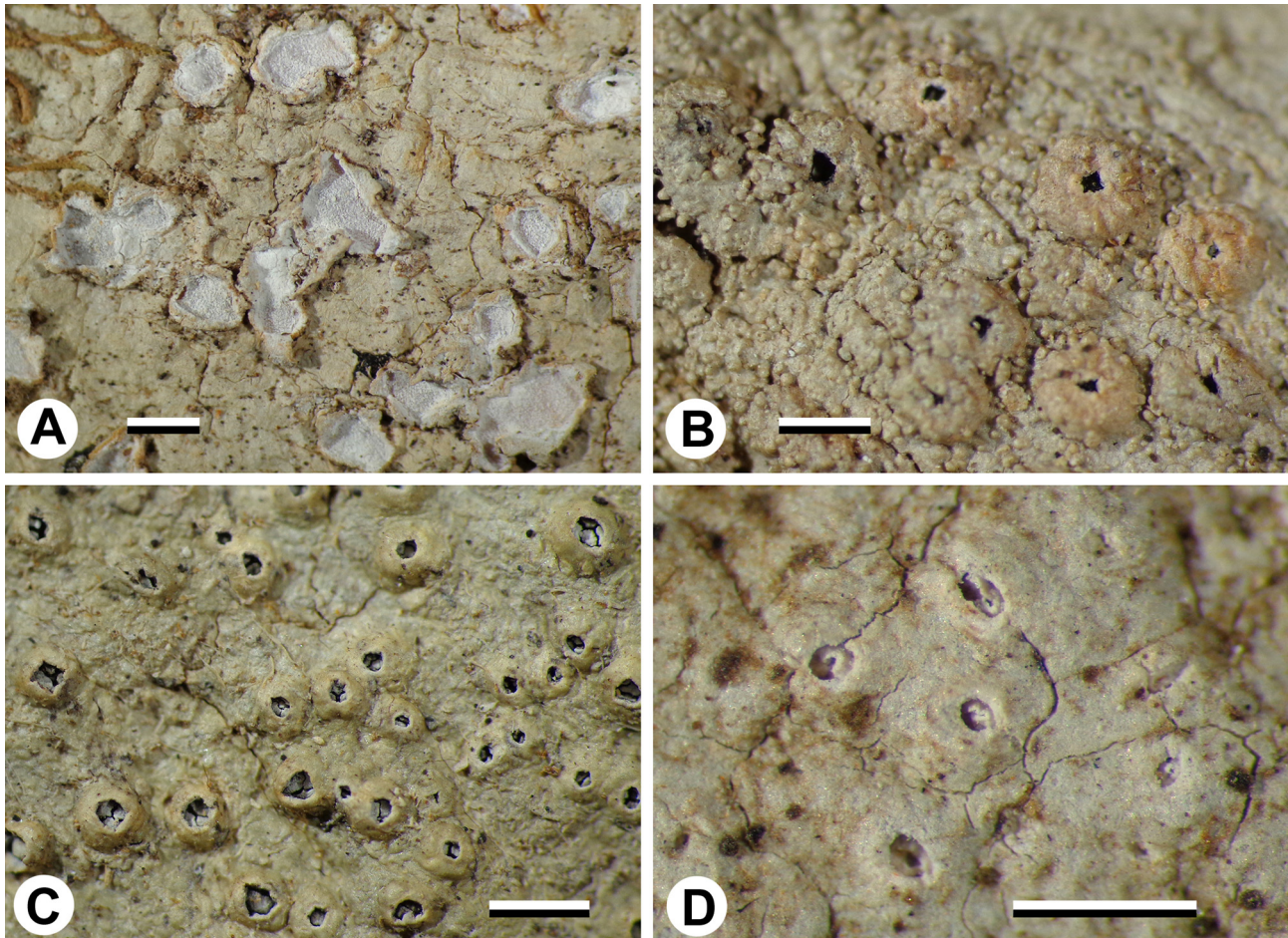
### Introduction

In its current, revised classification (Mangold *et al.* 2008a; Rivas Plata *et al.* 2012a; Rivas Plata & Lumbsch 2011), Graphidaceae constitutes the largest family of crustose tropical lichens with about 1800 accepted species. However, the diversity of the family is poorly known and many tropical regions are understudied. Hence new species are continuously being discovered, suggesting that the diversity is closer to 2000 or even more species. In general lichen diversity is high in the tropics, especially in microlichens (Aptroot 2001; Lücking *et al.* 2009; Sipman & Aptroot 2001; Sipman & Harris 1989). Recent surveys focusing on the Neotropics have unveiled a large number of new species of microlichens, while the Paleotropics are less well known. Especially tropical forests harbour high diversity of Graphidaceae (Lücking *et al.* 2008; Lücking *et al.* 2009; Rivas Plata *et al.* 2008; Rivas Plata *et al.* 2010; Weerakoon *et al.* 2012a; Weerakoon *et al.* 2012b).

Recently, the first author started a project on the diversity of thelotremoid Graphidaceae, which were previously placed in their own family Thelotremataceae (Frisch *et al.* 2006; Hale 1980; Mangold *et al.* 2009).

## Acknowledgements

This work was financially supported by grants of the Thai Research Fund and Mahasarakham University to the first author (K. Papong RSA 5580045) and the grants *Phylogeny and Taxonomy of Ostropalean Fungi, with Emphasis on the Lichen-forming Thelotremataceae* (DEB 0516116 to The Field Museum; PI H. T. Lumbsch; Co-PI R. Lücking), and *ATM – Assembling a taxonomic monograph: The lichen family Graphidaceae* (DEB-1025861 to The Field Museum; PI T. Lumbsch, CoPI R. Lücking) by the National Science Foundation.



**FIGURE 5.** A. *Chapsa patens*, thallus with ascomata (Mangold 103m). B. *Ocellularia granulifera*, thallus with ascomata (Mangold 102n-2). C. *Rhabdodiscus subcavatus*, thallus with ascomata (Mangold 103b). D. *Thelotrema subadjectum*, thallus with ascomata (Papong & Butsathron 6716). Scale = 1 mm.

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