

## Outlineoffungi.org - Note 680 *Hyphocapnodia*

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*Hyphocapnodia* Z.H. Lu & Maharachch.

*Hyphocapnodia* was introduced by [Lu et al. \(2022\)](#) as a monotypic genus (type *H. sichuanensis* Z.H. Lu, Wanas., Madrid & Maharachch.), based on morphological characteristics and phylogenetic analysis of LSU, ITS, *rpb2* and *tef1* sequence data. *Hyphocapnodia sichuanensis* was found as a saprobe on bamboo plants in Sichuan Province, China ([Lu et al. 2022](#)). Phylogenetically, this genus is closely related to *Capnodium* species ([Lu et al. 2022](#)). However, the asexual morph of *Capnodium* is coelomycetous ([Abdollahzadeh et al. 2020](#); [Wijayawardene et al. 2017](#)), whereas *Hyphocapnodia* has hyphomycetous asexual morph. [Lu et al. \(2022\)](#) noted that *Hyphocapnodia* is similar to *Phaeoisaria* (*Pleurotheciaceae*), *Dokmaia* (*Pleosporales* genera *incertae sedis*) and *Neosporidesmium* (*Dothideomycetes* genera *incertae sedis*) by its morphology, but they are phylogenetically apart (except *Neosporidesmium*, of which sequence data is unavailable). The genera *Capnokyma* (*Euantennariaceae*), *Pseudoveronaea* (*Dissoconiaceae*), *Rostriconidium* (*Torulaceae*) and *Sporidesmioides* (*Torulaceae*) resemble *Hyphocapnodia* based on their appearance on the substrate. However, these genera do not form synnematal conidiomata and the morphology of their conidia are different from *Hyphocapnodia*. Phylogenetically, *Pseudoveronaea*, *Pseudoveronaea* and *Sporidesmioides* are not closely related to *Hyphocapnodia* (sequence data of *Capnokyma* is unavailable). *Hyphocapnodia* resembles *Tandonella* in having synnematal conidiomata, erect, usually unbranched conidiophores. However, *Tandonella* has terminal, rarely lateral conidiogenous region, with denticulate conidiogenous cells, and short simple or branched chains conidia ([Sutton & Pascoe 1987](#)), while *Hyphocapnodia* has conidiogenous cells distributed mostly laterally, mainly towards the upper half of the synnemata with monoblastic and schizolytic conidial secession. Currently, there is no sequence data available for *Tandonella* to confirm that it is not congeneric with *Hyphocapnodia*. *Hyphocapnodia* resembles the sympodioconidial state of *Metacapnodium* (= *Capnocybe*), by forming effuse and hairy colonies on the natural substrate that are black as typical 'sooty moulds' with multi-septate conidia develop on synnemata. However, conidia of *Metacapnodium* develop on sympodulae which are the terminal cells of the penicillately branched ends of synnemata hyphae ([Hughes 1972](#)), while conidia of *Hyphocapnodia* develop on lateral conidiogenous cells which are distributed mostly towards the upper half of the erect synnemata. The mycelium of *Hyphocapnodia* is dark brown, immersed and superficial, while mycelium of *Metacapnodium* is dense, friable, spongy, septate hyphae deeply constricted at the septa, moniliform and anastomosing ([Hughes 1972](#); [Hyde et al. 2013](#)). *Hyphocapnodia* also resembles *Euantennaria* (*Euantennariaceae*) based on its appearance on substrate and forming synnemata. However, *Euantennaria* produces two types of asexual morphs viz. antennatula-like and hormisciomyces-like (phialophores) ([Hughes 1974](#)).

[Hawksworth & Boluda \(2020\)](#) provided sequence data of *Metacapnodium ericophilum* (Link) D. Hawksw. & S. Hughes which is the first DNA data reported for *Metacapnodium*. Phylogenetic analysis indicated that *M. ericophilum* formed within *Chaetothyriales sensu lato*. in the class *Eurotiomycetes* ([Hawksworth and Boluda 2020](#)). Later, the sequences of *M. neesii* (S. Hughes) Sugiy. & Hosoya (= *Capnobotrys neesii*, the type species of *Capnobotrys*) were provided by [Sugiyama et al. \(2020\)](#), and it also formed at the base of *Chaetothyriales* ([Hawksworth & Boluda 2020](#); [Sugiyama et al. 2020](#)). Further studies are needed to consider the placement of genera included in *Metacapnodiaceae* since the generic type of the family was found to be a member of *Chaetothyriales*. There is only one unpublished sequence for *Euantennaria* (*E. pacifica* isolate JAC16746), and it belongs to *Chaetothyriales* based on the

Blast results in GenBank. Although, we agree to retain *Hyphocapnodia* as a distinct genus for now as it formed within *Capnodiaceae* in *Dothideomycetes*, but suggest that further fresh collections and molecular data for *Hyphocapnodia* and those older genera are needed to confirm their placements and relationships.

## References

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