**(1461–1463) Proposals to reject the names *Pyrenotrichum*, *Chlorocyphella* and *Cyrta* (lichenised Fungi Imperfecti: form-class *Coelomycetes*)**

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(1461) ***Pyrenotrichum*** Montagne, Ann. Sci. Nat. Bot., sér. 2, 20–376. 1843 [*Fungi*], *nom. rej. prop.*
Type: *P. splitgerberi* Mont.

(1462) ***Chlorocyphella*** Speggazini, An. Mus. Nac. Buenos Aires 19: 279. 1909 [*Fungi*], *nom. rej. prop.*
Type: *C. subtropica* Speg.

(1463) ***Cyrta*** Batista & H. Maia, Publ. Inst. Micol. Univ. Recife 322: 14. 1961 [*Fungi*] *nom. rej. prop.*
Type: *C. licaniae* Bat. & H. Maia.

In 1843, Montagne (Ann. Sci. Nat. Bot., sér. 2, 20: 376–377. 1843) described *Pyrenotrichum splitgerberi* gen. et sp. n. as a parasitic fungus on a sterile lichen thallus. The same morphological structure was also described later and independently as *Chlorocyphella subtropica* gen. et sp. n. by Speggazini (An. Mus. Nac. Buenos Aires 19: 279. 1909) and as *Cyrta licaniae* gen. et sp. n. by Batista & Maia (Publ. Inst. Micol. Univ. Recife 322: 14. 1961).

Müller Argoviensis (Flora 64: 111–112. 1881) expressed the idea that the structures described by Montagne represented conidiomata of the lichen on which they grew and coined the term "campylidia" for them. Although sometimes found on thalli also producing ascocarps, "campylidia" are often the only structures found on lichen thalli. Except for Malme (Svensk Bot. Tidskr. 29: 302–305. 1935), mycologists did not accept until recently the conidiomata hypothesis. Santesson (Symb. Bot. Ups. 12: 40–41. 1952) elaborated a detailed concept of parasymbiotic *Pyrenotrichum* species growing on different lichen genera, but postponed formal description and discussion to another publication that has never been published. The concept of parasymbiotism in *Pyrenotrichum* was nevertheless accepted by Hawksworth (Bull. Brit. Mus. Nat. Hist. Bot., ser. 9, 1: 59. 1981).

Sérusiaux (Lichenologist 18: 1–35. 1986) and Vězda (Folia Geobot. Phytotax., Praha, 21: 199–219. 1986) almost simultaneously restudied the structures recognised as *Pyrenotrichum* and demonstrated that they represent genuine conidiomata of the lichens which carry them, and both argued that the term

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campylidia was appropriate. Morphology and anatomy of the campylidia were used by Vězda (l.c.), together with apothecial characters, to establish new genera (incl. *Calopadia* Vězda) for species previously assigned to *Catillaria* s. lat., *Bacidia* s. lat. and *Lopadium* s. lat.

As indicated by Santesson (l.c.), campylidia are highly apomorphic at the generic level. Unfortunately from the nomenclatural point of view, an exception concerns the type of campylidia represented by *Pyrenotrichum splitgerberi*, *Chlorocyphella subtropica* and *Cyrta licaniae*. Indeed, they all belong to a type characteristic of two lichen genera, viz. *Calopadia* Vězda (Folia Geobot. Phytotax., Praha, 21: 208. 1986) and *Tapellaria* Müll. Arg. (Lichenes Epiphylli Novi: 11. 1890), which are otherwise easily recognised by apothecial features. When carefully examined anatomically, the campylidia of *Calopadia* and *Tapellaria* can be distinguished (Vězda, Folia Geobot. Phytotax., Praha, 21: 205. 1986; Lücking, Phyton 39: 155. 1999) but the published descriptions and the accessible type collections do not provide the essential details.

As recently demonstrated (Lücking & al., Lichenologist 30: 139–140. 1998), the type material of *Cyrta licaniae* carries apothecia and is conspecific with *Calopadia subcoerulescens* (Zahlbr.) Vězda. Since *Calopadia* is much more common and widespread than *Tapellaria,* it is very likely that both *Pyrenotrichum* and *Chlorocyphella* also belong to the former genus.

However, a definite conclusion might be impossible even when type collections are re-examined, since molecular methods are likely to be useless on such old material. Kalb & Vězda (Folia Geobot. Phytotax., Praha 22: 309–310. 1987) were aware that *Pyrenotrichum* and *Chlorocyphella* most probably represent an anamorphic form of *Calopadia* but nevertheless keep on using the latter as the generic name. This option has been followed by subsequent workers (e. g., Lücking, Nova Hedwigia Beih. 104. 1992; Aptroot & al., Bibl. Lichenol. 64. 1997; Lücking, Trop. Bryol. 15: 57. 1998, Phyton 39: 131–165. 1999, Willdenowia 29: 318. 1999; Cáceres & Lücking, Nova Hedwigia 70: 222. 2000).

The nomenclatural situation can thus be described as follows: the generic name *Cyrta* is an earlier name for *Calopadia*, and both *Pyrenotrichum* and *Chlorocyphella*, which also antedate it, most probably refer to it as well; *Pyrenotrichum* could alternatively be a threat to *Tapellaria*, but we consider this situation unlikely. Whatever the conclusion of a detailed examination of the type collections of *Pyrenotrichum splitgerberi* and *Chlorocyphella subtropica*, we wish to avoid any nomenclatural changes for the two genera involved (*Calopadia* and *Tapellaria*). Both are widely distributed in tropical and subtropical areas, with about 25 species described, and current studies keep yielding new taxa which are about to be described. We therefore propose the rejection of the generic names *Pyrenotrichum* Mont., *Chlorocyphella* Speg. and *Cyrta* Bat. & H. Maia, based on types expressing only anamorphic characters.

We also wish to point out the problems which arise from the establishment of new lichen genera based only on anamorphic characters. Because lichen taxonomy is mainly based on ascocarp structures, especially in crustose species, genera based solely on anamorphic characters are easily overlooked. Well-known examples include the pycnidial stage of *Phyllobathelium* (Müll. Arg.) Müll. Arg. which was described earlier as *Opercularia* Stirt. (Santesson in Symbol. Bot. Ups. 12: 287–288.

1952; Lücking & al. in Lichenologist 30: 156–157. 1998), and *Bacidina* Vězda whose pycnidial stages were previously described as *Lichingoldia* D. Hawksw. & Poelt and *Woessia* D. Hawksw. & Poelt (Ekman, Taxon 45: 687–688. 1996; van den Boom & al., Lejeunia 158: 36–39. 1998). We therefore strongly recommend that when formally describing new crustose species known only by anamorphic features they be placed in an already accepted genus, rather than establishing a new one. This should prevent the introduction of superfluous names, and the taxonomic reassessment, when needed, would be less likely to cause nomenclatural confusion.