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Charophyte biostratigraphy of continental deposits in a filled-karst system: A case study from the Eocene bauxite cover-sequence at Gánt (Vértes Hills, Hungary)

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The Eocene "blue hole" freshwater limestones from the bauxite cover-sequence at the Gánt karst system (Vértes Hills), Transdanubian Central Range, north-western Hungary, have yielded rich charophyte assemblages of higher taxonomic and biostratigraphic interest. The taxonomic study of this flora allows revision and emendation of the species Raskyella peckii and facilitates the definition of a new evolutionary anagenetic lineage based on three successive anagenetic varieties of this species which were formerly considered as separate species or subspecies: Raskyella peckii var. peckii (early Lutetian–early Bartonian), Raskyella peckii var. caliciformis (early Bartonian), and Raskyella peckii var. vadaszii (late Bartonian). Based on these, we propose a new local charophyte biozonation with the new Raskyella peckii Superzone (Lutetian–Bartonian), subdivided into three successive charophyte partial range zones: The 'Raskyella peckii peckii Zone' (Lutetian–lowermost Bartonian) is locally characterized by an assemblage of R. peckii peckii, Gyrogona caelata forma caelata, G. caelata forma monolifera and Nitellopsis (Tectochara) palaeohungarica. The 'Raskyella peckii caliciformis Zone' (lower Bartonian) includes the local assemblage of R. peckii var. caliciformis, G. caelata forma caelata, G. caelata forma monolifera, G. caelata forma baccata, Nitellopsis (Tectochara) palaeohungarica and Chara media. The 'Raskyella peckii vadaszii Zone' (upper Bartonian) is composed of the local assemblage of R. peckii var. vadaszii, G. caelata forma bicincta, G. caelata forma baccata, G. caelata forma fasciata, G. tuberosa, Psilochara polita, Psilochara sp., Chara media and Chara subcylindrica. Future research may show the new local biozonation as applicable to whole Europe and complementing the current European charophyte biozonation. Our results show that the sequences from Gánt previously regarded as upper mid-Eocene (upper Lutetian–lower Bartonian) appear to comprise a longer chronostratigraphic

interval, i.e. lower Lutetian till upper Bartonian, with also has implications on the understanding of the regional stratigraphy of the Transdanubian Central Range during the Eocene.