Transfer of *Kurtkrammeria eileencoxiae* to the genus *Gomphonema* (Bacillariophyta, *Gomphonemataceae*)

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Kurtkrammeria eileencoxiae Bahls (2017: 31, figs 193-200) was based on populations from two ponds in western Montana, USA and introduced without benefit of scanning electron microscopy (SEM) images. However, SEM images of specimens from the original gathering were obtained recently (Figs 1-14). These images, particularly Figs 4 and 6, show a well-developed apical pore field (APF) at only one end of each valve, a feature that is characteristic of *Gomphonema* Ehrenberg (1832: 87), *nom. et typ. cons*. (T: *Gomphonema acuminatum* Ehrenberg) species. In species of *Kurtkrammeria* with APFs, they are always at both apices. The new SEM images show another, previously overlooked feature that also excludes this entity from *Kurtkrammeria* but is compatible with *Gomphonema*: the striae are radiate at the apices. In species of *Kurtkrammeria*, striae are convergent at the apices, not radiate or parallel.

Thus, in accordance with Articles 6.10, 7.3, 41 and 49 of the ICN (Melbourne Code, McNeill *et al*. 2012), we propose to transfer this species to the genus *Gomphonema*:

Gomphonema eileencoxiae* (Bahls) Bahls, C.E.Wetzel & Ector, *comb. nov. (Figs 1-14)
Basionym: *Kurtkrammeria eileencoxiae* Bahls *Diatoms from western North America 1. Some new and notable biraphid species*, p. 31, figs 193-200, 2017.

Kurtkrammeria Bahls (2015: 170) is distinguished from *Encyonopsis* Krammer (1997: 156) by having slit-like or crescent-shaped areolae aligned lengthwise along the apical axis (not rounded or elongated along the transapical axis), striae that are convergent (not radiate or parallel) at the apices, and internal proximal raphe ends that are hooked strongly towards the dorsal side of the valve (not weakly bent or confluent). The apically-elongate areolae and strongly hooked internal proximal raphe ends also occur in *Gomphonema* species, along with APFs (almost always at one pole only) and stigmata, but none of these features have been reported in *Encyonopsis.*

Gomphonema eileencoxiae most closely resembles what Tobias & Gaiser (2006: 395, figs 51-58) describe as morphotypes nos. 1 and 2 of *Gomphonema intricatum* var. *vibrio* Ehrenberg *sensu* Fricke (1902: pl. 235: figs 4-14) from south Florida, USA. However, the Montana specimens are more isopolar and more cymbelloid (transapically asymmetric) than the Florida specimens or the Fricke specimens throughout their entire size range.

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Bahls, L.L. (2015). *Kurtkrammeria*, a new genus of freshwater diatoms (Bacillariophyta, *Cymbellaceae*) separated from *Encyonopsis*. *Nova Hedwigia* 101(1/2): 165-190, 116 figs, 2 tables.

Bahls, L.L. (2017). *Diatoms from western North America 1. Some new and notable biraphid species*. pp. [1]-52, 288 figs. Helena, Montana: edited and published by the author.

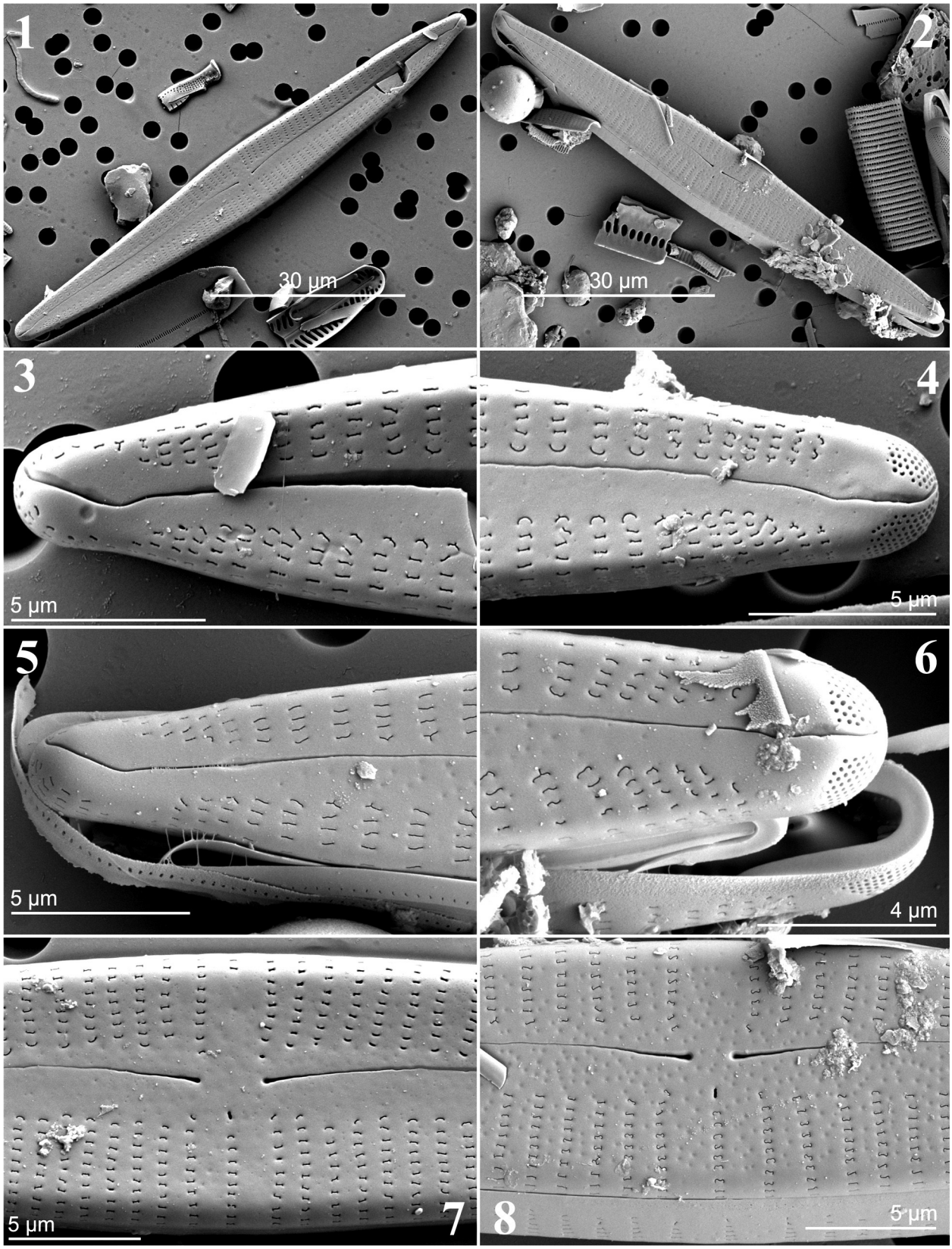
Ehrenberg, C.G. (1832). Über die Entwickelung und Lebensdauer der Infusionsthiere; nebst ferneren Beiträgen zu einer Vergleichung ihrer organischen Systeme. *Abhandlungen der Königlichen Akademie Wissenschaften zu Berlin, Physikalische Klasse* 1831: 1-154, pls I-IV.

Fricke, F. (1902). *Verzeichnis der in A. Schmidt's Atlas der Diatomaceenkunde. Tafel 1-240 (Serie I-V) adgebildeten und benannten Formen. Herausgegeben von Dr. Friedr. Fricke*. pp. 69. Leipzig: O.R. Reisland.

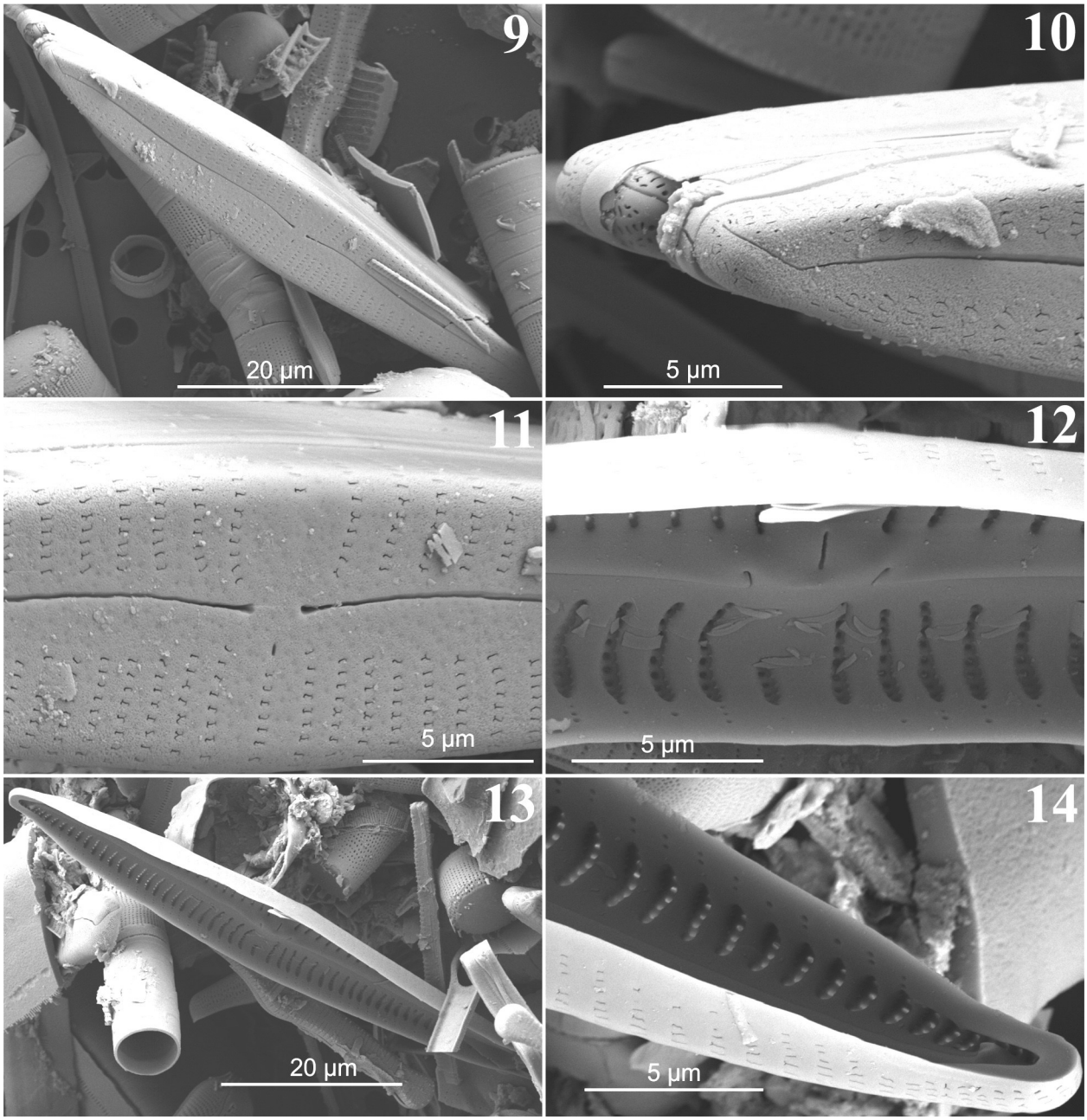
Krammer, K. (1997). Die cymbelloiden Diatomeen. Eine Monographie der weltweit bekannten Taxa. Teil 2. *Encyonema* Part., *Encyonopsis* und *Cymbellopsis*. *Bibliotheca Diatomologica* 37: 1-469.

McNeill, J., Barrie, F.R., Buck, W.R., Demoulin, V., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Prado, J., Prud'homme van Reine, W.F., Smith, G.F., Wiersema, J.H. & Turland, N.J. (2012). *International Code of Nomenclature for algae, fungi and plants (Melbourne Code)* adopted by the Eighteenth International Botanical Congress Melbourne, Australia, July 2011 Regnum Vegetabile, Vol. 154. pp. [i]-xxx, 1-208. Königstein: Koeltz Scientific Books.

Tobias, F.A.C. & Gaiser, E.E. (2006). Taxonomy and distribution of diatoms in the genus *Gomphonema* from the Florida Everglades, U.S.A. *Diatom Research* 21(2): 379-405.



Figs 1-8. SEM images of *Gomphonema eileencoxiae* from the type locality, Bloody Dick Pond, Beaverhead County, Montana, USA. Sample 459301. Fig. 1. External valve view. Fig. 2. External view of a frustule. Figs 3, 5. External valve view, detail of apical apex showing the radiate striae. Figs 4, 6. External valve view, detail of basal apex showing the apical pore field. Figs 7, 8. External valve view, detail of the centre showing the areolae structure, the proximal raphe endings and the stigma.



Figs 9-14. SEM images of *Gomphonema eileencoxiae* from the type locality, Bloody Dick Pond, Beaverhead County, Montana, USA. Sample 459401. Fig. 9. External view of two frustules. Fig. 10. Detail of apical apices of two frustules. Fig. 11. External valve, detail of the centre showing the areolae structure, the striae, the proximal raphe endings and the stigma. Fig. 12. Internal valve, detail of the centre showing the stigma and the proximal raphe endings. Fig. 13. Internal valve view. Fig. 14. Internal valve view, detail of the apical apex showing the helictoglossa and the areolae structure.