



**Proposal to transfer some taxa under *Phycocalidia* Santiañez & M.J.Wynne to *Pyropia* J.Agardh (*Bangiaceae*, *Rhodophyta*)**

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Zuccarello & al. (2022) recently proposed the synonymy of several newly segregated genera from *Pyropia* J.Agardh (1899): *Neoporphyra* J.Brodie & L.-E.Yang, *Neopyropia* J.Brodie & L.-E.Yang, *Phycocalidia* Santiañez & M.J.Wynne ( $\equiv$  *Calidia* L.-E. Yang & J.Brodie, *nom. illeg.*), *Porphyrella* G.M.Smith & Hollenberg *emend.* J.Brodie & L.-E.Yang, and *Uedaea* J.Brodie & L.-E.Yang (Yang & al. 2020, Santiañez & Wynne 2020), including them in a single genus that is recovered in a well-supported clade. However, following the establishment of *Phycocalidia* (as *Calidia*), new taxa have been described: *Phycocalidia pseudolobata* (L.-E.Yang, J.Brodie & Q.-Q.Lu) Santiañez & M.J.Wynne (as *Calidia pseudolobata* L.-E.Yang, J.Brodie & Q.-Q.Lu) (Santiañez & Wynne 2020, Yang & al. 2020) and *Phycocalidia sukshma* M.G.Kavale & M.A.Kazi in Kavale & al. (2021), and several taxonomic proposals have already been made, including the transfer of some taxa previously classified under *Porphyra*: *Porphyra kanyakumariensis* V.Krishnamurthy & M.Baluswami (1984) and *Porphyra marcosii* Cordero (1976) to *Phycocalidia* (Santiañez & Wynne 2020, Kavale & al. 2021). Considering the proposal of Zuccarello & al. (2022) to synonymize *Phycocalidia* with *Pyropia*, we here propose the transfer of the following taxa to the genus *Pyropia*:

***Pyropia pseudolobata*** (L.-E.Yang, J.Brodie & Q.-Q.Lu) Santiañez & M.J.Wynne, *comb. nov.*

Basionym: *Calidia pseudolobata* L.-E.Yang, J.Brodie & Q.-Q.Lu in Yang & al. *Journal of Phycology* 56(3): 865, figs 2–4, 2020.

Homotypic synonym: *Phycocalidia pseudolobata* (L.-E.Yang, J.Brodie & Q.-Q.Lu) Santiañez & M.J.Wynne, *Notulae Algarum* 140: 1, 2020.

***Pyropia kanyakumariensis*** (V.Krishnamurthy & M.Baluswami) Santiañez & M.J.Wynne, *comb. nov.*

Basionym: *Porphyra kanyakumariensis* V.Krishnamurthy & M.Baluswami, *Seaweed Research and Utilisation* 7: 35, figs 1–13, 1984.

Homotypic synonym: *Phycocalidia kanyakumariensis* (V.Krishnamurthy & M.Baluswami) M.G.Kavale & M.A.Kazi in Kavale & al., *European Journal of Phycology* 56(3): 341, figs 11–18, 2021.

Note: *Porphyra kanyakumariensis* was transferred to the genus *Phycocalidia* by Kavale & Kazi in Kavale & al. (2021) based on morphology and anatomy, and molecular phylogenetic position (using COI-5P sequence data) of specimens collected from Tamil Nadu (type locality) and Kerala, India.

***Pyropia sukshma*** (M.G.Kavale & M.A.Kazi) Santiañez & M.J.Wynne, *comb. nov.*

Basionym: *Phycocalidia sukshma* M.G.Kavale & M.A.Kazi in Kavale & al., *European Journal of Phycology* 56(3): 339, 341, figs 3–10, 2021.

Additionally, we propose that *Porphyra marcosii* Cordero (1976) be treated as a synonym of *Pyropia vietnamensis* (Tak.Tanaka & Pham-Hoang Hô) J.E.Sutherland & Monotilla in Sutherland & al. (2011) based on the authority of Santiañez (2020):



*Pyropia vietnamensis* (Tak.Tanaka & Pham-Hoang Hô) J.E.Sutherland & Monotilla  
Homotypic synonyms: *Calidia vietnamensis* (Tak.Tanaka & Pham-Hoang Hô) L.-E.Yang & J.Brodie in Yang & al., *Journal of Phycology* 56(3): 866, 2020, *nom. illeg.*; *Phycocalidia vietnamensis* (Tak.Tanaka & Pham-Hoang Hô) Santiañez & M.J.Wynne, *Notulae Algarum* 140: 2, 2020.  
Heterotypic synonym: *Porphyra marcosii* Cordero, *Acta Manilana* [University of Santo Tomas Research Center], *Series A* 15(24): 15, figs A–H, pl. 1, 1976.

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- Agardh, J.G. (1899). *Analecta algologica, Continuatio V. Lunds Universitets Års-Skrift, Andra Afdelningen, Kongl. Fysiogr. Sällsk. Lund Handl.* 35: 1–160.
- Cordero, P.A. Jr. (1976). Phycological observations – II: *Porphyra marcosii*, a new species from the Philippines. *Acta Manilana* [University of Santo Tomas Research Center], *Series A* 15 (24): 14–24., figs A–H, 1 pl.
- Kavale, M.G., Kazi, M.A. & Brodie, J. (2021). *Phycocalidia* species (Bangiales, Rhodophyta), from the West coast of India. *European Journal of Phycology* 56(3): 337–347.
- Krishnamurthy, V. & Baluswami, M. (1984). The species of *Porphyra* from the Indian region. *Seaweed Research and Utilisation* 7: 31–37, 27 figs.
- Santiañez, W.J.E. (2020). Notes on the taxonomy of the Philippine endemic *Porphyra marcosii* Cordero (Bangiaceae, Rhodophyta). *Notulae Algarum* 163: 1–4, no figs, 1 table.
- Santiañez, W. J. E. & Wynne, M. J. (2020). Proposal of *Phycocalidia* Santiañez & M.J.Wynne *nom. nov.* to replace *Calidia* L.-E. Yang & J. Brodie *nom. illeg.* (Bangiales, Rhodophyta). *Notulae Algarum* 140: 1–3.
- Sutherland, J.E., Lindstrom, S.C., Nelson, W.A., Brodie, J., Lynch, M.D.J., Hwang, M.S., Choi, H.-G., Miyata, M., Kikuchi, N., Oliveira, M.C., Farr, T., Neefus, C., Mols-Mortensen, A. Milstein, D. & Müller, K.M. (2011). A new look at an ancient order: generic revision of the Bangiales (Rhodophyta). *Journal of Phycology* 47(5): 1131–1151.
- Yang, L.-E., Deng, Y.-Y., Xu, G.-P., Russell, S., Lu, Q.-Q. & Brodie, J. (2020). Redefining *Pyropia* (Bangiales, Rhodophyta): four new genera, resurrection of *Porphyrella* and description of *Calidia pseudolobata* sp. nov. from China. *Journal of Phycology* 56(3): 862–879.
- Zuccarello, G.C., Wen, X., & Kim, G.H. (2022) Splitting blades: why genera need to be more carefully defined; the case for *Pyropia* (Bangiales, Rhodophyta). *Algae* 37(3): 205–211.