



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

Wilfred John E. Santiañez, *G.T. Velasquez Phycological Herbarium and The Marine Science Institute, College of Science, University of the Philippines Diliman, Quezon City 1101, Philippines* (correspondence: wjsantianez@msi.upd.edu.ph)

Michael J. Wynne, *University of Michigan Herbarium, Ann Arbor, Michigan 48108, USA*

Zuccarello & al. (2022) recently proposed the synonymy of several newly segregated genera from *Pyropia* J.Agardh (1899): *Neoporphyr*a 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.

WJES is funded by the UP Marine Science Institute In-house Research Grant and by the
 Department of Science and Technology (DOST), Philippine Council for Agriculture, Aquatic and
 Natural Resources Research and Development (PCAARRD) of the Government of the Philippines
 through the DOST-PCAARRD Grant-In-Aid Program. We thank Drs Michael Guiry and Craig
 Schneider for their suggestions that helped improve this manuscript.

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.