

Oricymba sagarensis (Gandhi) comb. nov., an endemic diatom from the western Ghats, India

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Abstract

© 2018 Magnolia Press. Light and scanning electron microscope observations of *Cymbella sagarensis* Gandhi are presented. Morphological peculiarities of this species show that it belongs to the genus *Oricymba* Jüttner, Krammer, Cox, Van de Vijver & Tuji. Based on our observations, the new taxonomic combination, *Oricymba sagarensis* (Gandhi) C.Radhakrishnan, Kociolek & B.Karthick, comb. nov. is proposed. Morphological comparison of this species with other known members of *Oricymba* is given. A second taxon described by Gandhi, *C. sagarensis* f. *gracilis* Gandhi, is suggested to be a synonym of the nominate forma. Distribution of this species and other *Oricymba* taxa is discussed.

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Keywords

Biogeography, Diatoms, India, Morphology, *Oricymba*, Taxonomy, Western ghats

References

- [1] Foged, N. (1976) Freshwater diatoms in Sri Lanka (Ceylon). *Bibliotheca Phycologica* 23: 1–112.
- [2] Foged, N. (1971) Freshwater diatoms in Thailand. *Nova Hedwigia* 22: 267–369.
- [3] Hustedt, F. (1927) Bacillariales aus dem Aokikosee in Japan. *Archiv für Hydrobiologie* 18: 155–172.
- [4] Hustedt, F. (1937) Systematische und ökologische Untersuchungen über die Diatomeen-Flora von Java, Bali und Sumatra nach dem Material der Deutschen Limnologischen Sunda-Expedition "Tropische Binnengewässer, Band VII". *Archiv für Hydrobiologie, Supplement* 15: 131–177.
- [5] Gandhi, H.P. (1959) Fresh-water diatoms from Sagar in the Mysore State. *Journal of the Indian Botanical Society* 38: 305–331.
- [6] Gandhi, H.P. (1962) Some Fresh-Water Diatoms from Lonavla Hill-Station in the Bombay-State (Maharashtra). *Hydrobiologia* 20: 128– 154. <https://doi.org/10.1007/BF00046312>
- [7] Jüttner, I., Krammer, K., Van de Vijver, B., Tuji, A., Simkhada, B., Gurung, S. & Cox, E.J. (2010) *Oricymba* (Cymbellales, Bacillariophyceae), a new cymbelloid genus and three new species from the Nepalese Himalaya. *Phycologia* 49: 407–423. <https://doi.org/10.2216/09-77.1>
- [8] Karthick, B. & Kociolek, J. P. (2012) Reconsideration of the *Gomphonema* (Bacillariophyceae) species from Kolhapur, Northern Western Ghats, India: Taxonomy, typification and biogeography of the species reported by HP Gandhi. *Phycological Research* 60 (3): 179– 198. <https://doi.org/10.1111/j.1440-1835.2012.00649.x>
- [9] Karthick, B., Hamilton, P.B. & Kociolek, J.P. (2012) Taxonomy and biogeography of some *Surirella* Turpin (Bacillariophyceae) taxa from Peninsular India. *Nova Hedwigia* 141: 81–116.
- [10] Karthick, B., Hamilton, P.B. & Kociolek, J.P. (2013) An illustrated guide to common diatoms of Peninsular India. Gubbi Labs.

- [11] Kociolek, J.P., Kulikovskiy, M.S., Genkal, S.I. & Kuznetsova, I.V. (2018) Morphological investigation and transfer of *Naviculadicta parasemen* Lange-Bertalot to the genus *Rexlowea* Kociolek & Thomas. *Diatom Research* 32 (4): 477-481. <https://doi.org/10.1080/0269249X.2017.1403377>
- [12] Krammer, K. (2002) *Cymbella*. *Diatoms of Europe* 3: 1-584.
- [13] Kulikovskiy, M.S., Glushchenko, A.M. & Kociolek, J.P. (2015) The diatom genus *Oricymba* in Vietnam and Laos with description of one new species and a consideration of its systematic position. *Phytotaxa* 227: 120-134. <https://doi.org/10.11646/phytotaxa.227.2.2>
- [14] Kuntze, O. (1898) *Revisio Generum Plantarum*. Part III. Leipzig. 576 pp. <https://doi.org/10.5962/bhl.title.327>
- [15] Lee, J.H., Gotoh, T. & Chung, J. (1992) Diatoms of Yungchun Dam Reservoir and its tributaries, Kyung Pook Prefecture, Korea. *Diatom* 7: 45-70. https://doi.org/10.11464/diatom1985.7.0_45
- [16] Myers, N., Mittermeier, R.A., Mittermeier, C.G., da Fonseca, G.A.B. & Kent, J. (2000) Biodiversity hotspots for conservation priorities. *Nature*. 403: 853-858. <https://doi.org/10.1038/35002501>
- [17] Nather Khan, I.S.A. (1990) Assessment of water pollution using diatom community structure and species distribution - a case study in a tropical river basin. *Internationale Revue der gesamten Hydrobiologie und Hydrographie* 75: 317-338. <https://doi.org/10.1002/iroh.19900750305>
- [18] Okuno, H. (1974) Diatomeenschalen im elektronenmikroskopischen Bild, Teil IX. In: Helmcke, J.-G., Krieger, W. & Gerloff, J. (Eds.) *Freshwater Diatoms*. J. Cramer, Vaduz., pls. 891-892.
- [19] Sarode, P.T. & Kamat, N.D. (1984) *Freshwater diatoms of Maharashtra*. Saikripa Prakashan, Aurangabad, India, 338 pp.
- [20] Taylor, J.C., Archibald, C.G.M. & Harding, W.R. (2007) *An Illustrated Guide to Some Common Diatom Species from South Africa*. Water Research Commission Report, TT 282/07. Gazina, South Africa, 210 pp.
- [21] Taylor, J.C & Cocquyt, C. (2016) Diatoms from the Congo and Zambezi Basins - Methodologies and identification of the genera. *ABC Taxa* 16: 1-364.
- [22] Tuji, A. (1995) Diatom flora of Urauchi River, Okinawa, Iriomote Island. *Diatom* 11: 89-92. https://doi.org/10.11464/diatom1985.11.0_89
- [23] Tuji, A. (2009) *Algae Aquae Dulcis Japonicae Exsiccatae*, fasc. II, nos. 21-40. National Museum of Nature and Science, Tsukuba. 32 pp.
- [24] Vongsombath, C., Pham, A.D., Nguyen, T.M.L., Kunpradid, T., Davison, S.P., Peerapornpisal, Y., Sok, K. & Meng, M. (2009) Report on the 2006 biomonitoring survey of the lower Mekong River and selected tributaries. In: MRC Technical Paper 22. Mekong River Commission, Vientiane, 124 pp.
- [25] Watanabe, T., Ohtsuka, T., Tuji, A. & Houki, A. (2005) *Picture book and ecology of the freshwater diatoms*. Uchida Rokakuho Publishing, Tokyo, 666 pp. https://doi.org/10.11464/diatom1985.3.0_33
- [26] Zhang, W., Li, Y.L., Kociolek, J.P., Zhang, R.L. & Wang, L.Q. (2015) *Oricymba tianmuensis* sp. nov., a new cymbelloid species (Bacillariophyceae) from Tianmu Mountain in Zhejiang Province, China. *Phytotaxa* 236: 257-265. <https://doi.org/10.11646/phytotaxa.236.3.6>
- [27] Zhang, W., Q.I, X., Kociolek, J.P., Wang, L.Q. & Zhang, R.L. (2016) *Oricymba xianjuensis* sp. nov., a new freshwater diatom (Bacillariophyceae) from Xianju National Park (Zhejiang Province, China). *Phytotaxa* 272: 134-140. <https://doi.org/10.11646/phytotaxa.272.2.4>
- [28] Zhang, W., Q.I, X., Kociolek, J.P., Wang, L.Q. & Zhang, R.L. (2018) *Oricymba rhynchocephala* sp. nov., a new cymbelloid diatom (Bacillariophyceae) from Xianju National Park in Zhejiang Province, China. *Phytotaxa* 340: 63-70. <https://doi.org/10.11646/phytotaxa.340.1.4>
- [29] Zyong, D.T. (1982) *Algae flora of waterbodies of Vietnam*. Dissertation of doctor of science, Tashkent, 474 pp.