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# Book review

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Willdenowia
Annals of the Botanic Garden and Botanical Museum Berlin-Dahlem

## Book review

**Witkowski J., Williams D. & Kociolek J. P. (ed.): Diatoms and the continuing relevance of morphology to studies on taxonomy, systematics and biogeography. Celebrating the work and impact of Patricia A. Sims on the occasion of her 80th birthday.** – Stuttgart: J. Cramer in der Gebr. Borntraeger Verlagsbuchhandlung, 2015 [Nova Hedwigia, Beiheft 144]. – ISBN 978-3-443-51066-4. – 17 × 24 cm, vi + 228 pp., 560 figures; softcover. – Price: EUR 119. – Available at https://www.schweizerbart.de

The reviewed book, also Beiheft 144 of Nova Hedwigia, comprises 13 scientific articles on diatoms. Because the focus of the book is on morphology of diatoms, almost all studies include a sound documentation, mainly by scanning electron microscopy (ten papers), light microscopy (nine papers), or transmission electron microscopy (two papers). All photographs are reproduced in good quality. Nine papers deal with marine species, six with freshwater taxa; 11 papers deal with recent species, three with fossil material. The papers altogether include two new genera (*Donskinica* Kozyr. and *Gomphosinica* Kociolek & al.), 17 new species and four new combinations.

The subtitle reveals the incentive for the publication: "Celebrating the work and impact of Patricia A. Sims on the occasion of her 80th birthday". The core of this Festschrift is a comprehensive work on Sims's oeuvre and her scientific career, mostly at the Natural History Museum, London. It is somewhat of an understatement to call this "a bibliography with annotations concerning type material". New names published by Sims and collaborators are listed, including the correct citation, statement on validity, mention of new combinations and information on nomenclatural types. David M. Williams and Grete Hasle compiled this valuable information, the latter author sadly having passed away during the preparation of the manuscript. Looking at the list of people with whom Sims worked, one understands that some of them were unable to contribute, such as Norman Ingram Hendey (1903–2004) and Robert "Bob" Ross (1912–2005), but some still living co-workers are missing in the volume. David G. Mann acknowledges Sims warmly in his contribution; others honour her by dedicating species to her: *Eolimna simsiae* Kulikovskiy & Lange-Bert., a freshwater species from Lake Baikal; *Gomphosinica simsiae* Kociolek & al., a Chinese freshwater species; and *Nitzschia simsiae* Witkowski & al. from brackish San Francisco Bay. (The other species in honour of Sims, previously published, are: *Cerataulus simsiae* Hern.-Becerril & Barón-Campis in Bot. Mar. 55: 77, fig. 37–57. 2012, a marine species; *Cylindrospira simsiae* Mitlehner in Diatom Res. 10: 323, fig. 2–5, 8–17. 1996, a species from the Palaeocene; and *Pseudoaulacodiscus simsiae* J. Witkowski & al. in Beih. Nova Hedwigia 141: 381, fig. 8–21, 40–48. 2012, a species from the Upper Cretaceous.) Some studies are presented by co-workers of Sims: R. M. Crawford, G. Hasle, D. G. Mann, N. I. Strelnikova, A. Tuji, D. M. Williams and J. Witkowski. Other contributors to the reviewed book seem to be loosely related to Sims: M. Bąk, S. A. Barón-Campis, P. Dąbek, J. M. Fenner, D. U. Hernández-Becerril, B. Karthick, G. Khursevich, J. P. Kociolek, T. F. Kozyrenko, M. Kulikovskiy, I. Kuznetsova, H. Lange-Bertalot, Q. Liu, R. Nautiyal, T. V. Ramachandra, C. Riaux-Gobin, J. Salazar-Paredes, M. A. Tiffany, Q.-X. Wang, A. Witkowski, J. Yesilyurt, and Q.-M. You. Because Sims has worked for more than 60 years on the morphology of diatoms, morphology becomes a catch-all term for all contributions under the main title "Diatoms and the continuing relevance of morphology to studies on taxonomy, systematics and biogeography". The reviewer is astonished at the title. There is no doubt that morphology is important for describing biodiversity, especially when just diatom valves are available on permanent slides or in old sediments. But why do the editors regard morphology as a "continuing" relevance? Is there a real disruption? Is it necessary to defend the relevance of morphology? There might be arguments that those biogeographic studies or phylogenetic works only using molecular signals might be highly disruptive in comparison with results of classical morphological studies. But in fact science should include all evidence available, including morphology. On the other hand, morphology gives not enough evidence to solve all open questions in taxonomy, systematics and biogeography. The reader will find just one phylogenetic tree in the reviewed book. It is a figure using solely morphological features, to show the phylogenetic position of the newly erected genus *Gomphosinica* Kociolek & al.; the printing quality of the tree is poor. The scientific value has to be proved by further molecular studies on clonal cultures.

Because morphology is the main focus of the reviewed book, collections as a place for safeguarding researched specimens are an important topic. Articles on collection items give a strong statement on the importance of physical collections. David Mann introduces Lothar Geitler's (1899–1990) cytological preparations, which have been the basis for many pioneering works on diatom life cycles. This collection is now housed at the University of Vienna

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but has been largely overlooked. The article shows detective work by a specialist who is familiar with Geitler's research topics and thus is interested to compare Geitler's results with his own research. Beside the details on Geitler's oeuvre, David Mann's article can be read as a general discussion on the value of collections as proof for published research as well as a source for further studies. In his final comments, David Mann also mentioned his own scientific collection with unpublished data and photographs. This underlines the necessity of efforts to safeguard original research data, to strengthen scientific collections and to digitize analogue data for better accessibility for the scientific community. David Williams, Jovita Yesilyourt & Akihiro Tuji present an overview on Paul Friedrich Reinsch's (1836–1914) diatom names, protologues and specimens. Without publishing any taxonomic treatment or typification, the authors document and discuss this German phycologist's published and deposited materials, which are in need of proper interpretation by current researchers.

Some small errors were not corrected during the editorial process: *Gomphonema "chubichuensis"* should be spelled *G. chubichuense* Jüttner & E. J. Cox; *G. "doonensis"* should be spelled *G. doonense* B. Karthick & al.; and *G. "juettnerii"*, named after Ingrid Jüttner, should be spelled *G. juettnerae* B. Karthick & al. – according to McNeill & al. (2012) and as stated by Index Nominum Algarum (INA 2017) and PhycoBank (PhycoBank 2017). The names of authors of the articles should have been cited in full for easier comparison with nomenclatural author standards; for instance, "Q. Liu", most likely not the same author as Q. Liu (Qiang Liu) working on orchids, could have been easily standardized according to IPNI (2017) if the given name of the author had been spelled out.

Beside some minor points, mentioned above, the editors, Jakub Witkowski, David Williams and J. Patrick Kociolek did a good job. The book holds valuable information for the next years and decades. The book is well produced, but meanwhile the concept is a bit old-fashioned in a scientific environment of open-access publications and collaborative cyber-taxonomic working via the Internet. However, to come to the point: this is a good and handsome book which is recommended to diatomists as well as to libraries.

## Addendum

A new paper, which should be added to the bibliography of Sims (Sims & Crawford 2017), has recently been published, including three novelties: *Ellerbeckia cretacea* (Jousé) P. A. Sims & R. M. Crawford in Diatom Res. 32: 2. 2017 [http://phycobank.org/100114]; *E. radialis* R. M. Crawford & P. A. Sims in Diatom Res. 32: 6, fig. 11–16. 2017 [http://phycobank.org/100116]; and *Paralia gongylodes* P. A. Sims & R. M. Crawford in Diatom Res. 32: 6, fig. 17–22. 2017 [http://phycobank.org/100117].

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