



BOOK REVIEW

Review of Huisman, J. M. 2019. **Marine Plants of Australia**, revised edition. UWA Publishing, Crawley, WA. ISBN: 978-1-76080-033-8 xviii + 435 pp. \$AU 49.99. Available from: https://uwap.uwa.edu.au/products/marine-plants-of-australia?_pos=1&_sid=4acf1a033&_ss=r

In the year 2000, John Huisman produced *Marine Plants of Australia*, arguably the first scientifically rigorous “coffee-table” book devoted to a broad region’s seaweed flora. “Scientific” owing to the accuracy and detail of its descriptions, “coffee-table” because of its large format and wealth of beautiful drawings along with underwater photographs of species taken in their natural habitats. Its emphasis, despite the all-embracing title, concentrated on the wealth of temperate Western-Australian species, although several were also common across the greater extent of the whole of southern Australia. With just one print run by the University of Western Australia Press, supplies of this gem were quickly snapped up and soon exhausted.

For the following two decades, while he concentrated on purely technical morpho- and molecular-taxonomic research, John continued to amass superb underwater photos from around the continent, always with the goal in mind of one day expanding and revising the coverage of his first edition. John also called on some talented friends (Graham Edgar, Mike Guiry, and Mike van Keulen) to provide images that he was unable to take himself, although <50 of this book’s close to 750 photographs were not taken by John. This labor of love was well worth the wait, for we now have the 2019 “Revised Edition.” It is now a privilege to extol the outcomes of his generation-long endeavors.

Some years ago, a renowned algal physiologist wrote a book review in which he claimed that some of his “best friends still press [algae],” the operative although unaccented word being “*still*.” While no one doubted that his statement was true, the implication seemed to be that although it might be a harmless enough diversion (exercise in “stamp collecting?”), such activity did not really qualify as doing much science in this day and age (it was 1972) of quantitative measurement, physio-chemical analyses, and the generation of testable hypotheses.

And yet, the pressing of algae that John is a practitioner of to this day is surely the soul and handmaiden of many useful and productive scientific activities, including taxonomy and the vouchering of ecological, biochemical, physiological, and

agronomic published research. I would not be the first to modestly point out to people who collect and press flowering plants, for example, that in most cases a careful press of an intricately patterned macroalga actually improves its appearance and its utility as a guide to the naming of things, whereas a fresh flower is manifestly superior to one that has been dried and pressed. When we see flowers illustrated in catalogues, guidebooks, and scientific publications, they are most frequently shown (apart from old type material) in the living state and/or growing in natural habitats. Such is the model for John Huisman’s books.

Although there have been works with beautiful color illustrations of seaweed specimens since the days of Turner (1808, 1809, 1811, 1819) and Harvey (1858–1863), all depicting plants as the artists imagined they would look if fresh, the fact is that most marine-algal illustrations over the past two centuries have been black-and-white pictures of dried herbarium specimens. There have, of course, been some fine exceptions to this generalization thanks to scuba-diving phycologists such as the Littler and Littler team (2000, 2003), Edgar (2012), Nelson (2013), and Huisman himself (Huisman et al. 2007), who is now responsible for a product that conforms to what so many pure mathematicians apparently say about the highlights of their careers: results achieved that transcend even scientific rigor and excellence to enter the elevated realms of aesthetics and fine art.

The way John treats the over 600 species can be illustrated in just one example, picked from where the book randomly opened when I started writing. It is *Ptilophora prolifera* (p. 36), a bizarre Western Australian-endemic of complex contours and consistently bonded surface layers of sponge. The centerpiece is a photo of a plant growing in its natural habitat and rendered in its living color. Following a summary of its generic features (and along with type-locality and distribution information and references to “Further Reading”), John reproduces the color plate made by Australia’s premier 19th-century phycologist, the Irishman William H. Harvey (1862, plate 204), and then provides his own drawing of the microscopic details of critical vegetative features. John provides these hand-drawn illustrations for many of the species in the book, which might prompt the question “How does he manage to make certain the cells look so realistically rounded, shaded and highlighted? Surely this must be the outcome of some sort of Photoshop program that automatically generates these impressive results.” And not just vegetative features; in many cases are highlighted very complicated critical reproductive

structures that are so essential to the taxonomy of red algae, such as the egg and early embryo structures of *Gloiotrachus* (p. 13), cystocarps of *Acrosymphyton taylorii* (p. 64) and *Seirospora orientalis* (p. 164), or the tetrasporangia of *Dudresnaya capricornica* (p. 78), *Anotrichium tenue* (p. 178) and *Spirocladia baroensis* (p. 241), to mention just a few. The answer is “No, all these subtleties are achieved by hand through a process called ‘stippling.’” This is an arcane, artistically and physically demanding technique, making one wonder “How many dots of the RotOring Rapidograph pens did it take to produce these wonderful illustrations?” (It is a number beyond counting). John is a master of this art, producing originals suitable for framing.

As in the First Edition, the new book has chapters on Cyanobacteria (as before also called “The Blue-Green Algae”) and the seagrasses in addition to the red, brown, and green algae, thus covering the full range of macrophyte types. As expected, the largest section is devoted to the reds, and it is here that genera which may be unfamiliar to most of us are treated with photos supplied that show what their species actually look like, these new taxa being largely the result of recent alpha-taxonomic molecular studies. Examples include *Macrocarpus* (p. 20), *Titanophycus* (p. 22), *Aphanta* (p. 38), *Orthogonocladia* (p. 39), *Rhizolamellia* (p. 63), *Austrokallymenia* (p. 86), *Spongophloea* (p. 123), *Cryptocallis* (p. 126), *Incendia* (p. 133), *Perbella* (p. 148, a particularly spectacular habit photo), *Campylosaccion* (p. 152), and *Halopeltis* (p. 156). Even for practiced red-algal taxonomists, it will take some time to absorb all these changes and additions, and John’s book will be a huge help in mastering them. And speaking of particularly spectacular photos, those of *Gibsmithia indopacifica* (p. 79) and *Martensia denticulata* (p. 195) are among many that should not be missed.

Although the genera of brown algae in the book will be familiar to most people, possibly with the exception of *Pseudochnoospora* (p. 263), *Lucasia* (p. 289), *Sargassopsis* (p. 308), and possibly *Sirophysis* (p. 313), the color illustrations of these frequently large and impressive species of browns are uniformly excellent. And although their genera are usually well known, the green algae are particularly photogenic, especially species of *Apjohnia* (p. 340), *Boergesenia* (p. 341), many *Caulerpa*, *Codium*, and *Halimeda* species, and particularly *Pedobesia* (p. 362), to name just a few.

As before, but in expanded form, introductory material covers the “History of Marine Botany in Australia” as it developed from the 19th Century and the even earlier beginnings of European marine-plant studies. Particular homage is paid to William Harvey, the first European seaweed specialist to actually set foot on Australian shores, and to Prof. Bryan Womersley, the recently deceased “doyen” of Australian phycology whose six volumes of “*The Marine Benthic Flora of Southern Australia*” (Womersley 1984, 1987, 1994,

1996, 1998, 2003) are the authoritative works on its seaweeds, although they are meant more for use by specialists than by lay people. Ending the book are an excellent glossary and references to both classical and contemporary taxonomic works.

John has asked me to point out a few minor errors that evaded careful proofreading of the text: ‘*Pterocladia*’ (p. 40) should of course be *Pterocladia*, *Hydropuntia* ‘*urvillea*’ (p. 111) should be *urvillei*, *Codium* ‘*duthiae*’ (p. 358) should be *duthieae*, and *Acetabularia* ‘*calyculus*’ (p. 383), despite its widespread use until recently, should be *caliculus* as in the original description. These are certainly miniscule aberrations in a book of this length and scope.

John’s is indeed a “coffee-table” book, in the sense that the term is often applied to artistic presentations of architectural and interior design, geographical splendors, portraiture, painting, sculpture, etc. By this, it is meant that such works are not limited to just regional interest but are meant to be appreciated universally. It is a big claim to make, but I do not hesitate to make it for the revised editions of *Marine Plants of Australia*.

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