

BOOK REVIEW

Gómez-Garreta, A. (ed.). – 2000. *Flora Phycologica Iberica. Vol. 1. Fucales*. Servicio de Publicaciones. Universidad de Murcia. Murcia. 192 pp. ISBN 84-8371-208-3

This is the first volume devoted to the description of the Iberian phycological flora (Balearic Islands included), a long-term project involving phycologists from several Spanish universities which was initiated in 1987. The aims of this project are, according to the authors, “to prepare a critical flora which will define the diversity and distribution of marine and continental algae, benthic or planktonic, of the Iberian Peninsula and the Balearic Islands”. A rather impressive objective!

To our knowledge the only European algal flora that was currently available was that of the British Isles, edited by The Natural History Museum (London); the first volume appeared twenty five years ago and it has not yet been finished. A monograph on the seaweeds of Portugal was published some time ago (Ardré, 1970) but needs to be updated regarding new discoveries. The Spanish Mediterranean, and also the Mediterranean as a whole, lacks a seaweed flora, although studies dealing with different aspects of the taxonomy and ecology of algae thriving in its seabed can be numbered in hundreds. Therefore, the beginning of a new flora including not only the seaweeds but all the algae that can be found in Spain and Portugal is good news.

Authors say that no systematic order is to be followed in the appearance of the different monographs that will constitute this flora. Therefore, we are very lucky that this first monograph is devoted to the Fucales, a systematic order that includes several seaweeds of major relevance both in the Mediterranean and the Atlantic. Species of *Fucus* are, for instance, very common in the intertidal zone in western and northern Iberia, whilst *Cystoseira* species are dominant in some infralittoral and circalittoral communities in the Mediterranean. Also both genera, *Fucus* and *Cystoseira*, as well as *Sargassum*, have several taxa, which are usually difficult to delimit, because of their morphological plasticity and the presence of clines of variability, probably due to genetic isola-

tion or reduced gene flow amongst populations. In our opinion, it is a success to begin this flora with a monograph of a group of large-sized seaweeds that are very common everywhere but difficult to identify at a species level.

Up to six phycologists have contributed to this first volume under the coordination of A. Gómez-Garreta. Two research teams can be distinguished. The first one (A. Gómez-Garreta, C. Barceló, M.A. Ribera and J. Rull) belongs to the University of Barcelona and has co-authored the genera *Sargassum* and *Cystoseira*, while the other research team belongs to the Complutense University (Madrid), and has authored *Fucus* and *Himanthalia* (I.M. Pérez-Ruzafa) and *Ascophyllum*, *Pelvetia*, *Himanthalia*, *Bifurcaria* and *Halidrys* (T. Gallardo).

The text is bilingual, with Spanish and English on the same page. Descriptions begin with the characters of Order Fucales, with indications on morphology, reproduction, life cycle, and divisions at lower taxonomical levels. Keys to the families follow the description of the order. Families and genera are also treated in the same way, with keys to genera and to species level, with subspecific taxa also included if appropriate. The types of families, genera and species are indicated.

Each specific or infraspecific taxon is thoroughly described, with indications of its basionym and the more usual synonyms, locality of description, vegetative and reproductive morphology, seasonality in habit and reproductive features, and habitat. Comments on the taxonomy are made only in controversial taxa. Global distributional information is given for each taxon, with greater detail for the Iberian Peninsula and the Balearic Islands. Each description ends with a selected list of citations and bibliographic references. Each species is nicely illustrated, with at least one drawing of its habit, but usually with also some details of branches and reproductive structures. Distribution maps of each species in the area of study are given as an appendix at the end of the volume. Terminology is explained in a glossary at the back.

To make this extensive monograph on Fucales, the authors collected a lot of specimens, but they

have also consulted several personal or public herbaria from museums and universities, where they have got a large amount of information, mainly on deep-water algae. Nevertheless, I wonder why they have not taken into account the herbarium of Rodríguez Femenías, so rich in specimens of *Sargassum* and *Cystoseira* from Minorca (Balearic Islands). For instance, the authors say that the only specimens of *Sargassum hornschurchii* C. Agardh that have been collected and properly identified on the Spanish coasts are those conserved in this herbarium, but there is no description or drawing of *Sargassum hornschurchii* in the monograph. This herbarium has also several specimens of other rare and interesting species of *Cystoseira* and *Sargassum* (and other browns, reds and greens) that would merit a look in a compilation of the seaweeds of Iberia and the Balearic Islands. I expect the authors will take Rodríguez Femenías herbarium into account in other monographs to come.

The monograph contains some controversial taxonomical issues, which were unavoidable due to the high morphological variability of some taxa regarding environmental factors and geographical clines, and the lack of genetic studies. The authors recognize *Fucus chalonii* J. Feldmann, a basque endemism, as a well-characterised species, even if differences with *Fucus cottonii* Wynne and Magne may be reduced to habitat and reproductive phenology. They have used the taxonomical rank variety instead of form for all infraspecific taxa in *Fucus*, but varieties and forms are distinguished in *Cystoseira*, even if the taxonomical and nomenclatural problems are nearly the same for both genus. More controversial are some decisions regarding the delimitation of some *Cystoseira* species. The authors do not recognise *Cystoseira caespitosa* Sauvageau as a specific entity and synonymise it with *Cystoseira brachycarpa* J. Agardh var. *balearica* (Sauvageau) Giaccone, following Cormaci *et al.* (1992), but maintain *Cystoseira mediterranea* Sauvageau, *Cystoseira tamariscifolia* (Hudson) Papenfuss, and *Cystoseira amentacea* (C. Agardh) Bory var. *stricta* Montagne as different species. In my opinion, the morphological differences amongst *C. caespitosa* and *C. brachycarpa* var. *balearica* are at least of the same importance as differences that can be found comparing the other three species. Another Mediterranean taxon, *Cystoseira compressa* (Esper) Gerloff and Nizamuddin v. *pustulata* Ercegovic is synonymised with *Cystoseira humilis*

Kützing var. *humilis*. Probably, the entity described by Ercegovic cannot be considered a variety of *C. compressa*, but it deserves at least an infraspecific recognition amongst *C. humilis*. All these questions should be correctly addressed in future studies on the genetic variability of all these clusters of related taxa. A final issue is the delimitation of the species identified as *Cystoseira jabukae* Ercegovic in this monograph, and synonymised –following Giaccone (1985)– with *Cystoseira funkii* Schiffner ex Gerloff and Nizamuddin. Verlaque *et al.* (1999) recently demonstrated that *C. jabukae* and *C. funkii* are different entities, and that all records of *C. jabukae* from Giaccone (1985) and subsequent workers that have followed Giaccone's proposal must be referred to *C. funkii*.

The controversial issues highlighted in the previous paragraph do not detract from the overall usefulness of this monograph. I have been using the valuable keys and descriptions present in this monograph to identify most of the specimens of *Sargassum* and *Cystoseira* I have collected in my endless missions around the Balearic Islands during 2001; this book will be an inseparable and valuable fellow traveller for missions to come. I strongly recommend it for marine botanists but also for marine biologists and ecologists not specialised in botany, who urgently needed a reference book to identify some of the most common and biggest seaweeds that can be easily found in the Mediterranean and Atlantic waters surrounding the Iberian Peninsula and the Balearic Islands.

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REFERENCES

- Ardré, F. – 1970. Contribution à l'étude des algues marines du Portugal. I. La flore. *Portugaliae Acta Biologicae, Sér. B*, 10: 137-555.
- Cormaci, M., G. Furnari, G. Giaccone, B. Scammacca and D. Serio. – 1992. Observations taxonomiques et biogéographiques sur quelques espèces du genre *Cystoseira* C. Agardh. *Bull. Inst. Océanogr. Monaco*, 9: 21-35.
- Giaccone, G. – 1985. Una nuova specie mediterranea del genere *Cystoseira* C. Agardh (Phaeophyta, Fucales): *C. hyblaea* G. Giaccone, con osservazione critiche su alcune entità tassonomiche poco note o imperfettamente descritte. *Bull. Accad. Gioenia Scienc. Nat. Catania*, 18(326): 429-442.
- Verlaque, M., E. Ballesteros, E. Sala and J. Garrabou. – 1999. *Cystoseira jabukae* (Cystoseiraceae, Fucoephyceae) from Corsica (Mediterranean) with notes on the previously misunderstood species *C. funkii*. *Phycologia*, 38: 77-89.