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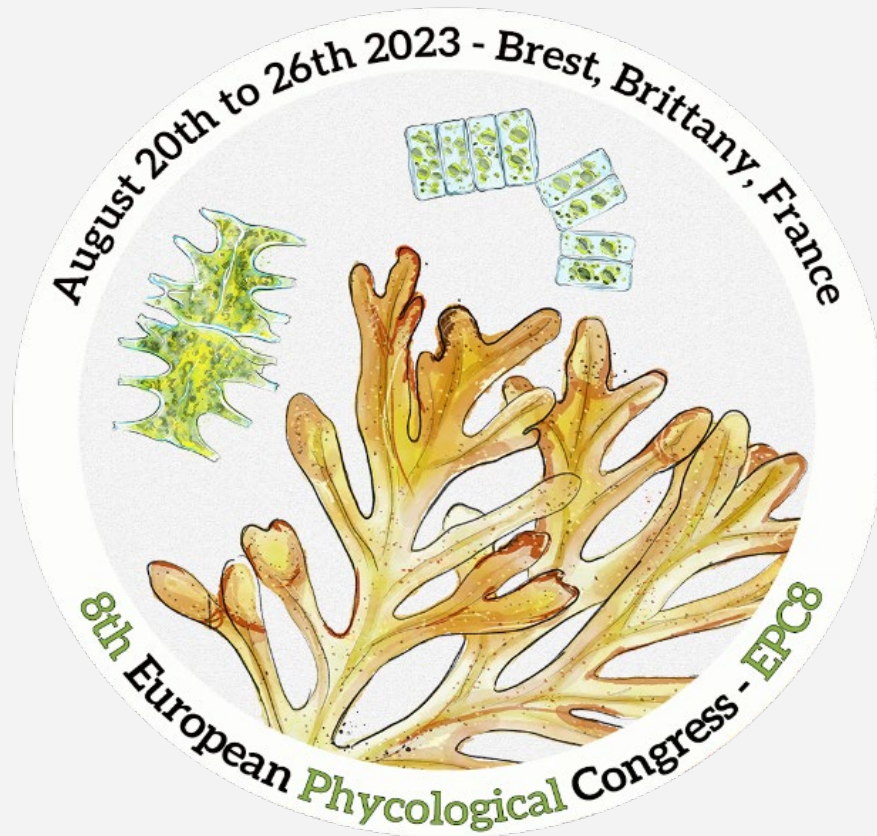
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“Scientific Opportunities for a Global Algal Revolution”

Program and Book of Abstracts

Edited by Solène Connan, Emeline Creis, Bertrand Jacquemin,
Gabriel Markov and Philippe Potin

FEPS

FEDERATION OF EUROPEAN PHYCOLOGICAL SOCIETIES



Brief Statement Organizers

When we commenced organising EPC8 we still faced the real possibility that the pandemic could throw the organisation off the rails. Nonetheless, we decided against ‘hybrid’ because four years after EPC7-Zagreb it would be great to finally meet face-to-face again. E-meetings save costs and time and produce less CO₂, but who is not tired of meeting on a computer screen?

We organised the program with 20 symposia in six overarching themes, covering all that keeps us busy. All symposia accommodate micro- and macroalgal presentations to inspire you with research adventures including those in ‘the other phycological denomination.’ Since all of you teach, reach out, and publish, we included symposia about those topics as well. Each conference day has four parallel symposia, from different themes, so as to minimise your choice-stress. Since, posters are integral to the information exchange, we put the poster sessions centre-stage and have devoted plenty of time to them.

We went out of our way to ensure gender balance and diversity. We invited symposium conveners from all over Europe and beyond, and we asked them to consider especially ‘young, rising stars’ as keynote speakers. Young scientists are our investment in the future of phycology.

Enjoy EPC8 and Brittany!

Inka Bartsch, Solène Connan, Philippe Potin & Wiebe Kooistra

***Ulva pilifera* (Ulvales, Chlorophyta) from Montenegro – application of X-ray fluorescence techniques in determining the habitat preferences**

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A green macroalgae was collected in Montenegro from four new sites (freshwater and marine: a river, a ditch, the Milet Canal, and on the rocky shore of the Adriatic Sea). A detailed morphology, autecology, and molecular studies allowed to identify the *Ulva* population as *Ulva pilifera*.

Using total reflection X-ray fluorescence (TXRF) and wavelength dispersive X-ray fluorescence (WDXRF) techniques it assessed the elemental composition of their thalli and its influence to colonise new habitats. In elemental analysis, 25 elements were determined, i.e., Al, As, Ba, Br, Ca, Cl, Cr, Cu, Fe, Hf, I, K, Mg, Mn, Na, Ni, P, Pb, Rb, S, Si, Sr, Ti, V, and Zn. The highest elemental concentrations were found for Ca = 16.3% (using WDXRF) and for Sr = 292 ppm (using TXRF) in the *Ulva* thalli. The analysis of trace elements showed that the metal content in *Ulva* thalli is correlated with the trace elements in water and sediments.

A study on the variation of nutritional profiles of seaweeds along the Senegalese coast

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Driven by the need for alternative food sources, there is a growing global interest in edible macroalgae (“seaweeds”). Rich in protein, they also provide bioactive compounds with health promoting benefits. Nutritional compounds like carotenoids, chlorophylls and fatty acids play a key role in human nutrition and are used as coloring agents in the food and related industries (e.g. pharmacy). With a coastline of about 700 km, Senegal harbors a diverse maritime life, including a huge variety of natural growing seaweeds. Despite the known natural high diversity, there have been only few attempts to study this natural resource. With the aim to provide an overview on the distribution of nutritional valuable seaweeds, the CLIMALG project conducted two field missions in 2021 (cold season) and 2022 (hot wet season), collecting seaweeds along the Senegalese coast (14° 41' 37.32" N; -17° 26' 38.62" W). From the total of 675 samples taken 69 were chosen to study the photosynthetic pigment and fatty acid composition in relation to species identity and location. Right after collection samples were frozen, lyophilized, transferred and analyzed by HPLC-MS for their photosynthetic pigments profiles and by

GC-MS to determine their fatty acid composition. The identification and quantification of 13 fatty acids (3 PUFAs, 2 MUFAs, 8 SFAs), 9 carotenoids, 3 chlorophylls and their isomers was done by using authentic reference compounds. Here we show the first results of the study reflecting the diverse metabolite profiles, which shall provide us with a better understanding on the nutritional value of Senegalese seaweeds.

***Dictyota psychedelica* sp. nov., a new prostrate member of the genus in the Caribbean Sea**

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The genus *Dictyota* (Phaeophyceae) is a common member of benthic communities, and its biogeographic affinity is mainly tropical to warm temperate. As other members of the order Dictyotales, the genus has suffered a considerable rearrangement of its taxonomy in the past fifteen years, with the description of new species based on molecular and morphological analyses and the delimitation of once-believed cosmopolitan species.

In the tropical western Atlantic there are twenty-one species of *Dictyota*; of these, thirteen are recorded for the *Seaflower* Biosphere Reserve, in the southwestern Caribbean Sea. Only two of the registered species (*Dictyota humifusa* and *D. friabilis*) have a clear prostrate habit. Due to the presence of secondary metabolites, their ability to propagate through fragmentation and the demise of coral communities, members of the genus are among the most widespread and abundant components of benthic communities in the Caribbean Sea and the *Seaflower* Biosphere Reserve is no exception.

These species have a variety of growth forms, since they may be completely erect, decumbent, prostrate with non-attached parts, or firmly adherent to the substrate. They may form dense monospecific mats or live intermixed with other species of the genus. Some species show structural color (=iridescence).

During recent surveys on marine macroalgae at several localities of the *Seaflower* Reserve, a diversity previously overlooked of members of the genus *Dictyota* has been observed. Among the species collected, an undescribed prostrate taxon with peculiar structural color was discovered, and it is hereby characterized.

Cryptic diversity in the Prasiolaceae (Prasiolales, Trebouxiophyceae, Chlorophyta)

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The Prasiolaceae is a small family of mainly aero-terrestrial green algae that is well known for the preference of its members for high-nutrient environments. Some species are found at coastal sites in and near seabird colonies, while others can be observed in nutrient-enriched urban habitats. In central Europe they commonly occur, for example, where male mammals urinate at the base of trees or behind pubs. But members can also be found in more unusual places: A recent expedition to the Arctic, for instance, revealed the presence of undescribed microscopic Prasiolaceae on biogenic hard substrate. This study clearly demonstrates that an integrated approach combining classical isolation and cultivation methods