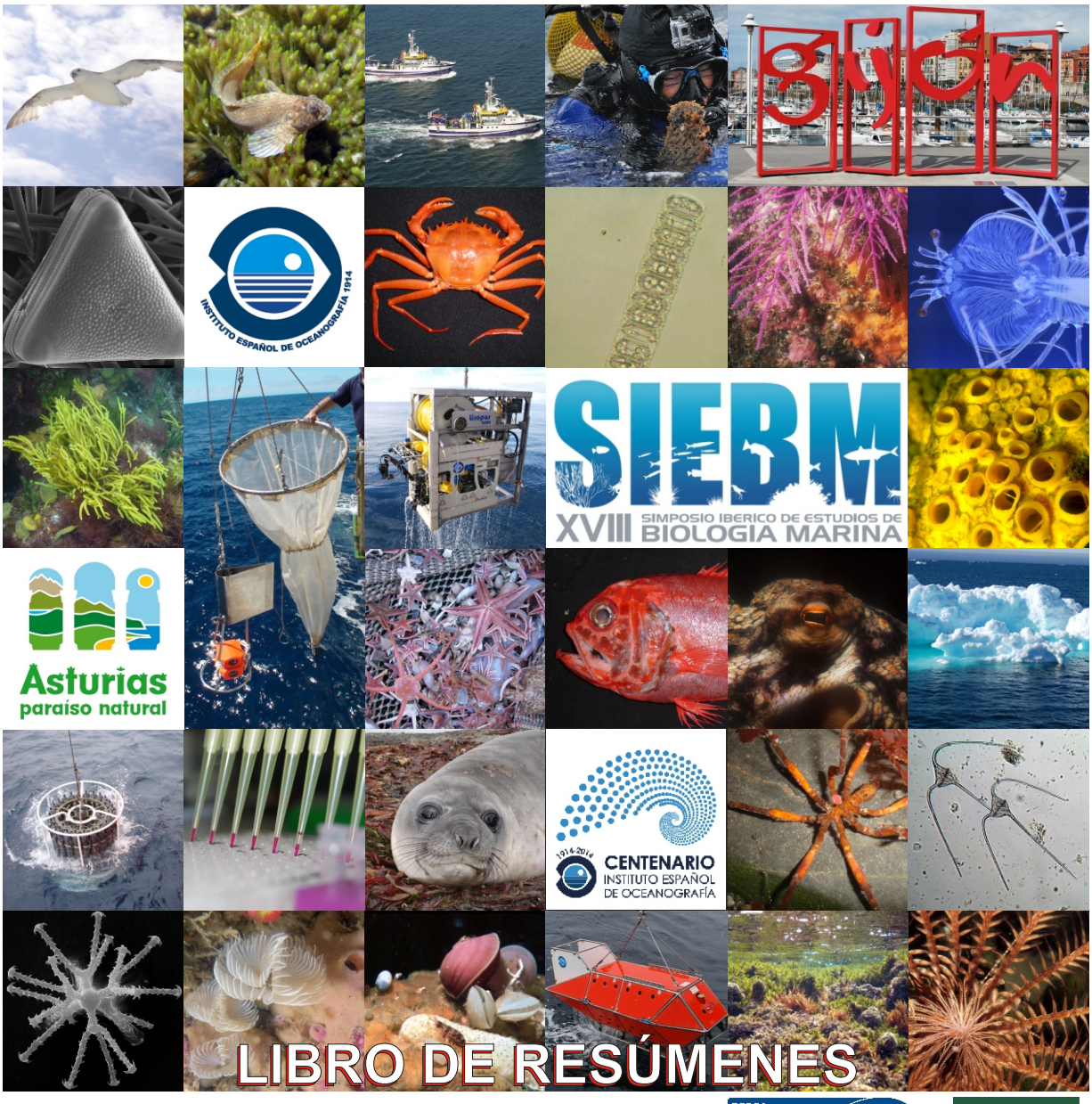

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1.16 Differences of life-history in culture explain the vertical distribution of two Mediterranean bladed Bangiales (Rhodophyta): *Pyropia elongata* and *Py. parva*

Diferencias del ciclo de vida en cultivo explican la distribución vertical de dos Bangiales laminares (Rhodophyta) del Mediterráneo: *Pyropia elongata* and *Py. Parva*

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The genus *Pyropia* (Bangiales, Rhodophyta) is represented in the NW Mediterranean by two species, *Py. elongata* (Kylin) Neefus & J.Brodie and *Py. Parva* Vergés & Sánchez. These bladed Bangiales inhabit the intertidal and the upper sublittoral level, respectively. In this survey we employ laboratory cultures to be able to predict field vertical distribution and seasonal variation of these two species. Unialgal cultures of their macroscopic and microscopic (Conchocelis) phases were obtained from specimens collected on rocky intertidal shores in Girona. Fertile thalli were selected to cultivate the spores (zygotospores and archeospores) under different environmental conditions. Experiments were performed using growth chambers with three different conditions of temperature (12, 16, 18 ºC) and irradiance (5: low, 50: medium, 100: hight µmol photons m^{-2} s^{-1}), under a neutral photoperiod regimen 12:12 (L:D) with enriched seawater medium. Our experiments clearly showed a different behaviour between the two tested species. *Py. elongata* is characterized by a wider range of tolerance, while, *Py. parva,* showed a close range of tolerance. Consequently, ratios of survival and growth were reasonably different between them *Py. elongata* had a wider range of tolerance, since it developes numerous Conchocelis, conchosporangia and blades under all the different tested conditions. Optimal conditions for its Conchocelis phase were at medium temperature and irradiance (16ºC and 65 µmol photons m^{-2} s^{-1}). These results allow us to confirm that the Conchocelis phase of *Py. elongata* is adapted to conditions of light and temperature that could be found along theinfralittoral and circalittoralin the Mediterranean sea. In addition, *Py. elongata* cultures showed that archeosporesof its macroscopic phase had a better growth and larger abundance at high temperature and irradiance (18º and 125 µmol photons m^{-2} s^{-1}). In regard to *Py. parva*, it completed its life-history, formed blades and Conchocelis under all the studied conditions. In this case, best conditions for the development of conchocelis filaments were at low values of temperature and medium irradiance, 12ºC and 50 µmol photons m^{-2} s^{-1}, which are infralittoral conditions in the studied area. However, archeospores of this species were more successful at high temperatures (18ºC and 50 µmol photons m^{-2} s^{-1}). Hence, we can conclude that *Py. elongate* is capable to survive in a wide range of environmental conditions. In addition, the fact that its microscopic phase could survive in a high depth range in the water column could explain its remarkable higher spatial distribution on the western Mediterranean shores. Conversely, *Py. parva* seems to be a more restrictive species, because its Conchocelis phase is more sensitive and it probably inhabits at greater depths, this could also explain its appearance in the field during a shorter period and in a more restricted area along NW Mediterranean shores.

Contribution to the project PORPHIBER (Ref. **CGL2008-00932/BOS).**

Keywords: Conchocelis, temperature, irradiance, *Py. elongata, Py. parva*.

Palabras clave*:* Conchocelis, temperatura, irradiancia, *Py.elongata, Py.parva.*

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