Biodiversity

A molecular perspective of the *Laurencia Complex* (Ceramiales, Rhodophyta) in Macaronesia region

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Abstract

In the present study, we undertook an integrative approach, using molecular data to assess the diversity of the *Laurencia complex* in Macaronesian islands (Azores, Madeira and Canary Islands) where speciation events are supposedly common leading to a high endemism.

Identification of species of the *Laurencia complex* based on anatomical and morphological characters is extremely difficult due to phenotypic plasticity and overlaps in many morphological characters. As a consequence, among the 28 species reported so far from these Macaronesian archipelagos, 14 species records have been regarded as doubtful.

We used DNA barcode data (mitochondrial COI gene and partial nuclear LSU marker) as a tool for species delimitation. A third marker (rbcL gene) was also studied and phylogenetic analyses were carried out using the three independent markers as well as the combined data set, in the aim to infer the phylogenetic relationships and biogeographic affinities of members of the complex from Macaronesia.

Our results proved the usefulness of the DNA barcode markers for uncovering several putative new species of the *Laurencia complex* in Macaronesia and phylogenetic results revealed the existence of a potential new genus present in Canary Islands, which adds to the six pre-existing genera: Laurencia, Osmundea, Chondrophycus, Palisada, Yuzurua and Laurenciella.

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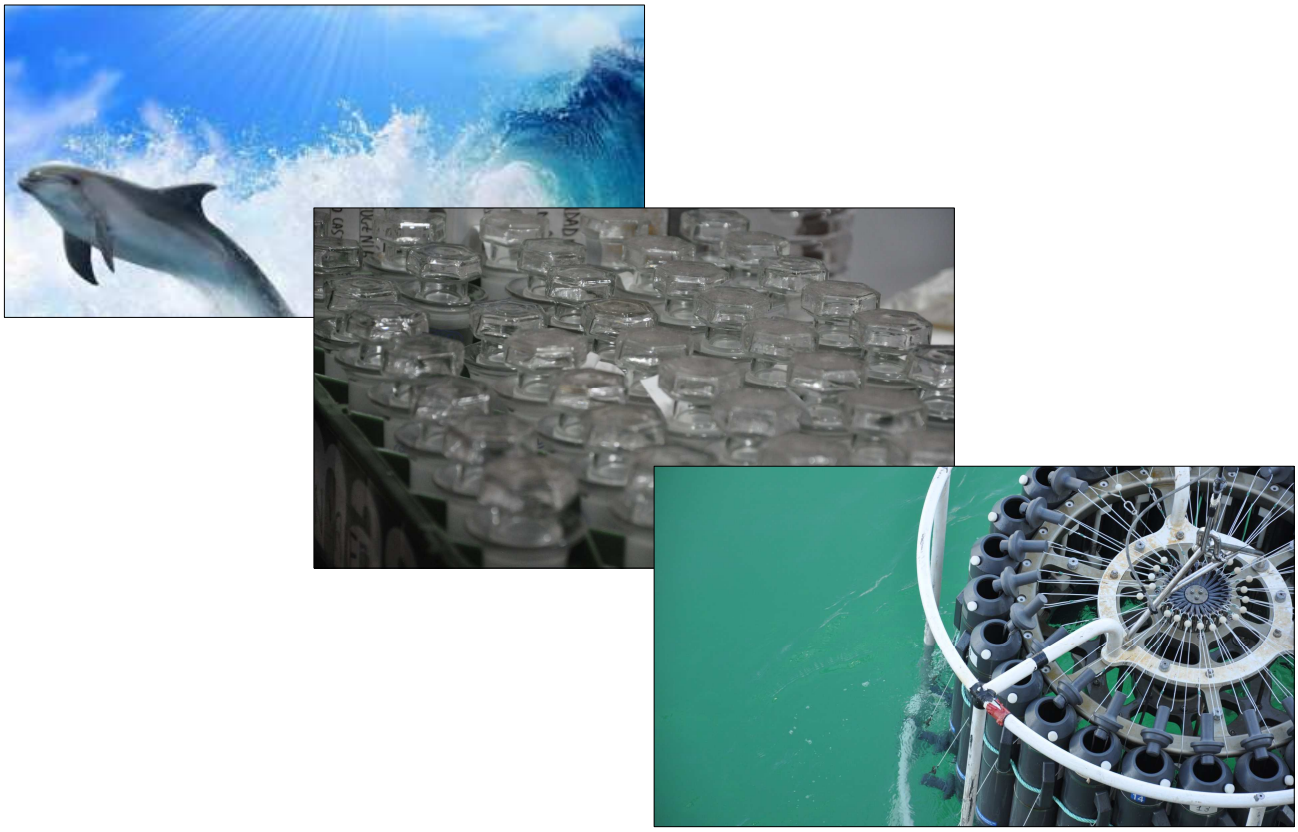

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