**The Karubenthos Expedition**: Toward the Assessment of Macro Algal Diversity in Guadeloupe (French West Indies)

Line Le Gall¹, Meggy Grun¹, Tohei Theophilus¹, Viviana Peña², Delphine Gey³, Marine Robuchon¹, Bruno de Reviers¹ and Florence Rousseau¹

¹Institut de Systématique, Évolution, Biodiversité, ISYEVE - UMR 7205 - CNRS, MNHN, UPMC, EPHE, 57 rue Cuvier, Case postale N° 39, 75231 CEDEX 05 PARIS, France
²BIOCOST Research Group, Facultad de Ciencias, Universidad de Coruña, Campus de A Coruña, 15071, A Coruña, Spain
³UMS 2700 Service de Systématique moléculaire, Muséum National d’Histoire Naturelle, 75231 Paris cedex 05, France

The Karubenthos Expedition was coordinated by the Parc National de Guadeloupe, along with the Muséum National d’Histoire Naturelle, the Université des Antilles-Guyane, and the Université Pierre et Marie Curie. The aim of this marine expedition was to overcome the lack of knowledge on the algae and more generally on the diversity of benthic organisms. To date, the algal diversity of Guadeloupe has received only little attention with the majority of the main studies conducted before World War II (Mazé & Schramm, 1878, Hamel, 1931).

During this expedition, a comprehensive sampling was conducted by SCUBA diving and dredging around Guadeloupe during May and December 2012 (Fig. 1). Specimens of macro-algae were pressed onto herbarium sheets and subsamples were dehydrated in silica gel for molecular analyses: A library of DNA sequences was initiated for red algae (COR1), brown algae (crypt) and green algae (tufA).

1671 specimens of macro-algae were collected including 1117, 316 and 238 specimens of red, green and brown algae respectively. At present time, sequencing effort focuses on the selected genera Halimeda, Caulerpa, Udotea, Plocamium, Pedina, Lobophora, Stypopodium and Laurencia. Preliminary results on their diversity are presented here as NJ tree including molecular identification (using Genbank or Bold databases) when it was possible.

Whereas our results on Bryopsidales were mostly congruent with previous assessment of algal diversity in Guadeloupe, our molecular systematics investigation revealed novel relationships among Dictyotales and members of the Laurencia complex.

Eight new species of Lobophora have been recently delineated for the Caribbean region (Schultz et al., in press) of which six were present in Guadeloupe while only 1. karubenthos was logged so far. Similarly, Stypopodium encompassed not only one species but at least two.

Finally, the Guadeloupe flora of the Laurencia complex presented at least 23 species assigned to 5 genera. These results significantly increased the specific diversity in two recently genera Laurencia and Yuzurua.

---

**Fig. 1. Localization of lesser Antilles and map of Guadeloupe Archipelago with the 99 sampling sites in blue.**