

# TROPICAL — DEEP SEA — BENTHOS



*Aujourd'hui ... et demain ?*

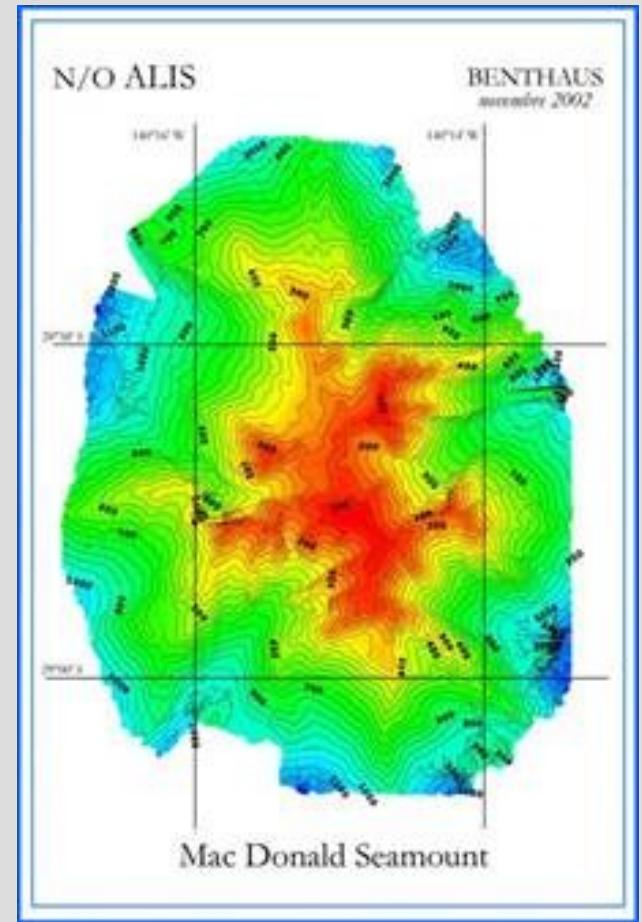
Sarah Samadi, ISYEB, MNHN

# **A quarter-century of deep-sea malacological exploration in the South and West Pacific: Where do we stand? How far to go?**

Philippe BOUCHET, Virginie HÉROS, Pierre LOZOUET & Philippe MAESTRATI

## **SECOND GENERATION CRUISES**

While these explorations were taking place in the South and West Pacific, the bathymetry of the New Caledonia EEZ was being mapped as part of the ZONECO programme (<http://www.zoneco.nc/>). Whereas in the 1970s nothing but the Kaimon-Maru seamount was mapped on the Norfolk Ridge, the new 3-D ZONECO mapping revealed



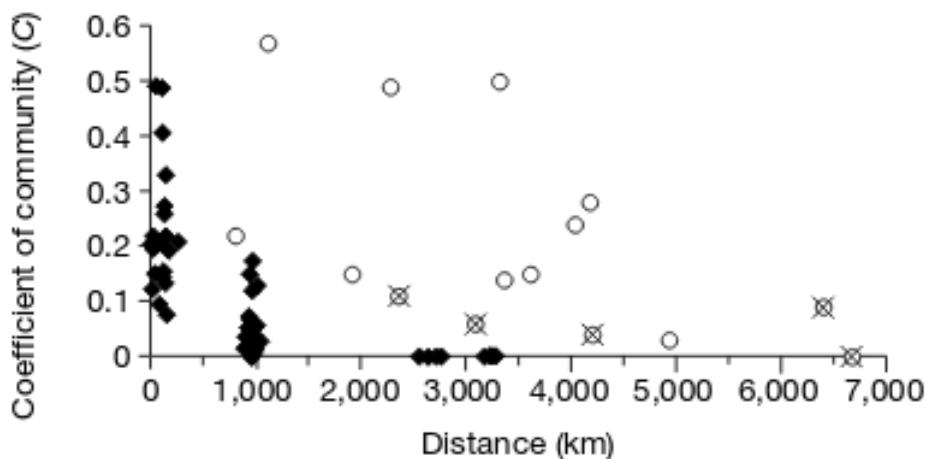
**EM 1002 Kongsberg Simrad**

# Diversity and endemism of the benthic seamount fauna in the southwest Pacific

BR de Forges, JA Koslow, GCB Poore - Nature, 2000 - nature.com

Abstract Seamounts comprise a unique deep-sea environment, characterized by substantially enhanced currents and a fauna that is dominated by suspension feeders, such as corals 1, 2, 3, 4. The potential importance of these steep-sided undersea mountains, ...

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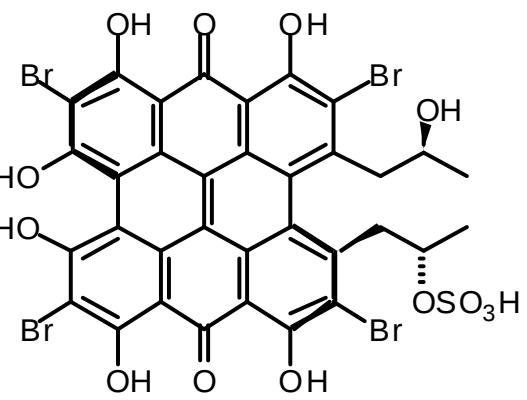
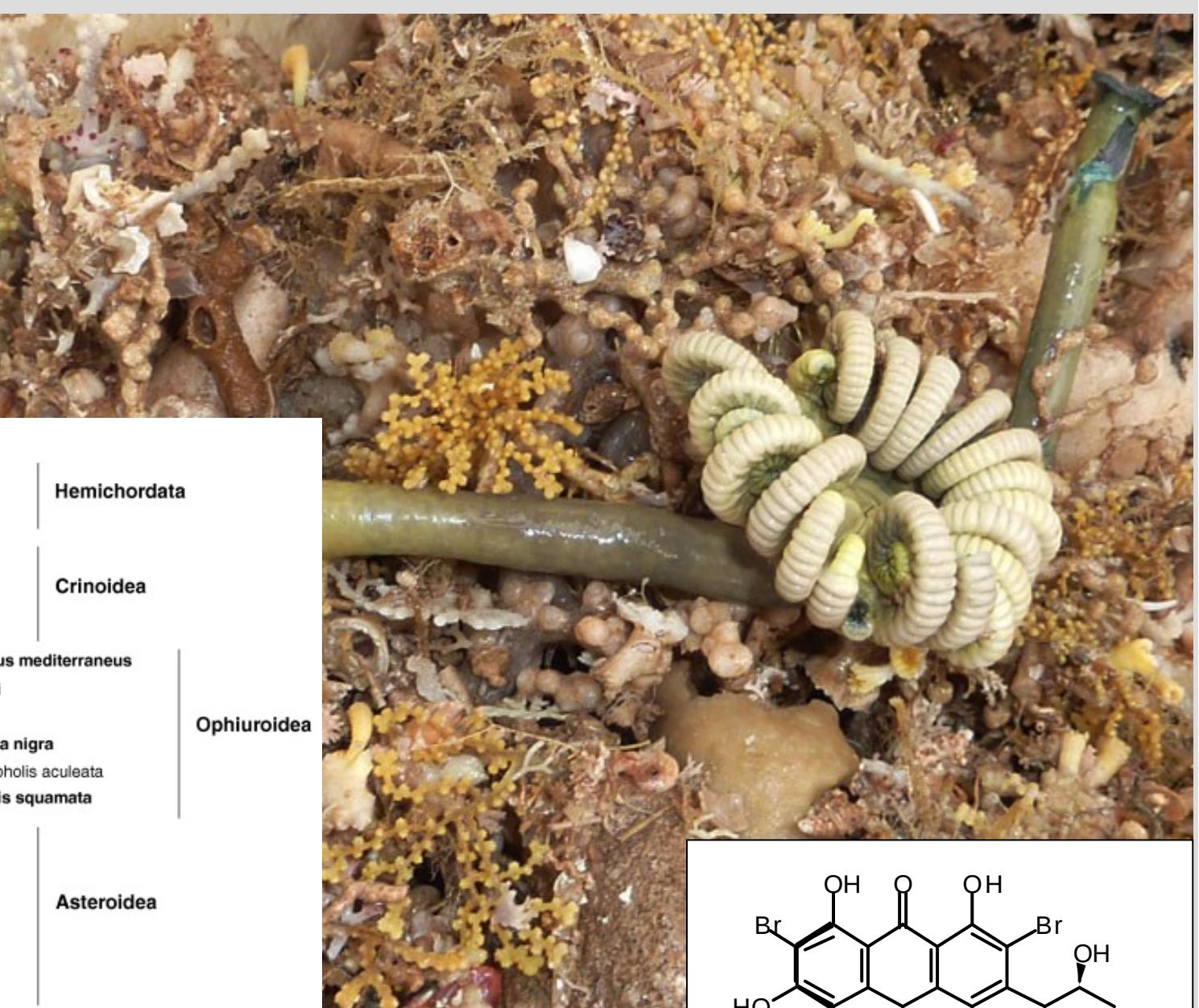


**Figure 3** The coefficient of community ( $C$ ) in relation to distance.  $C$  is shown between seamount sites (inverted solid diamonds), hydrothermal vent sites from the East Pacific Rise in the North and South Pacific and Galapagos Rift (open circles), and vent sites from disjunct ridges in the northeast Pacific at 41–49° N (crossed circles).

time. Seventeen new genera were obtained from the Norfolk Ridge samples, four from the Lord Howe Ridge and seven or eight from the Tasmanian samples. Some appear to be relicts of groups earlier believed to have disappeared in the Mesozoic<sup>19–23</sup>. These seamounts thus appear to be isolated marine systems and provide an exceptional opportunity to examine evolution and speciation in the deep sea.

The highly localized distribution of many seamount species has profound implications for their conservation. Seamount communities are extremely vulnerable to the impacts of fishing: their limited fixed habitat, the extreme longevity of many species (of the order of 100 years and more<sup>22–24</sup>), and the apparently limited recruitment between seamounts, all compound the uncertainty of recovery from trawling, which sweeps away the benthic epifaunal community as a bycatch<sup>7</sup>. The global status of seamount benthic communities is unknown; however, the localized distribution of





**Isogymnochrome D**



Placée dans une phylogénie moléculaire multi-gènes par Boisselier et al 2010

*Neoglyphea neocaledonica* découverte et décrite en 2005

Attribuée à un nouveau genre en 2006  
*Laurentaeglyphaea neocaledonica*

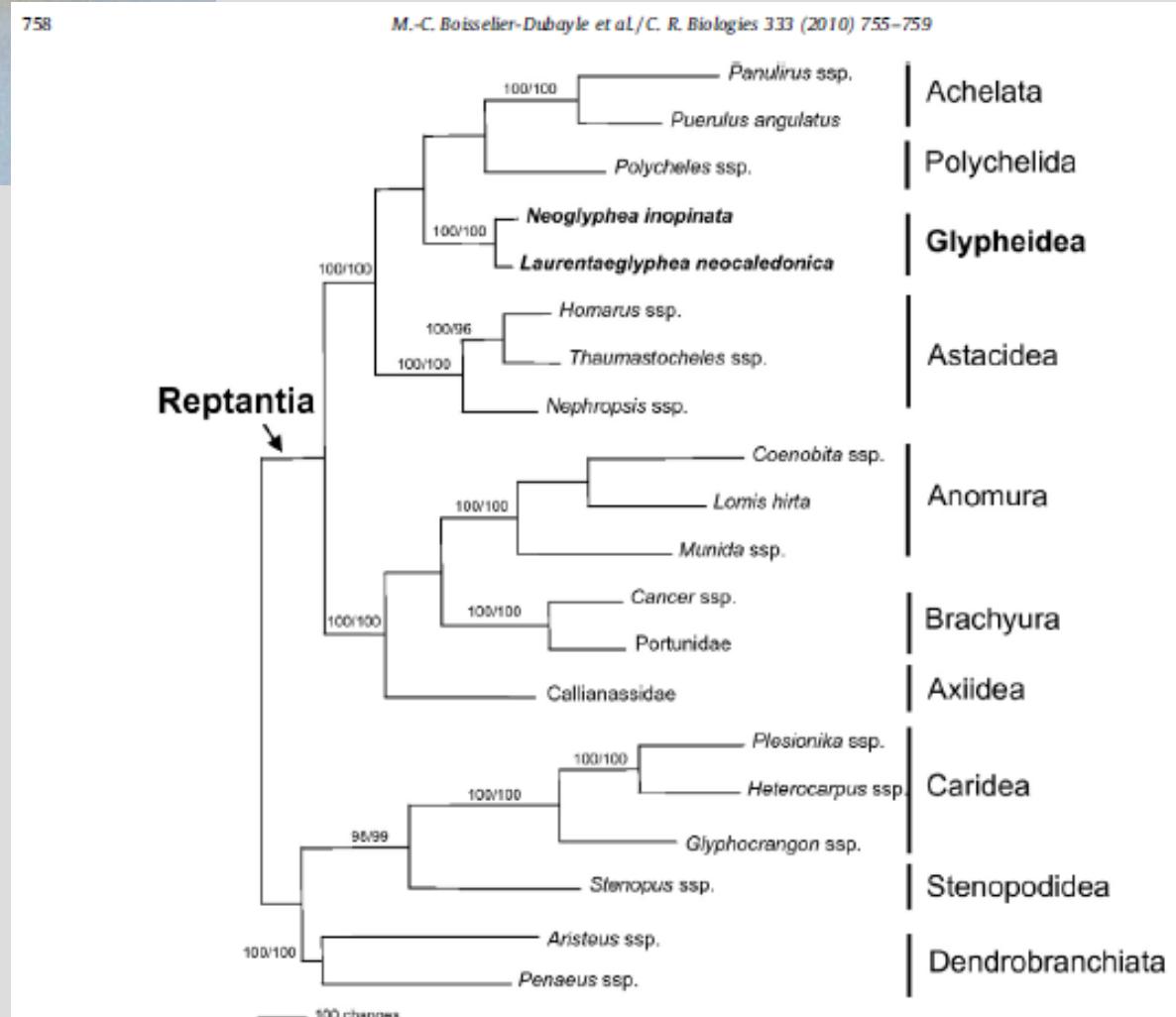
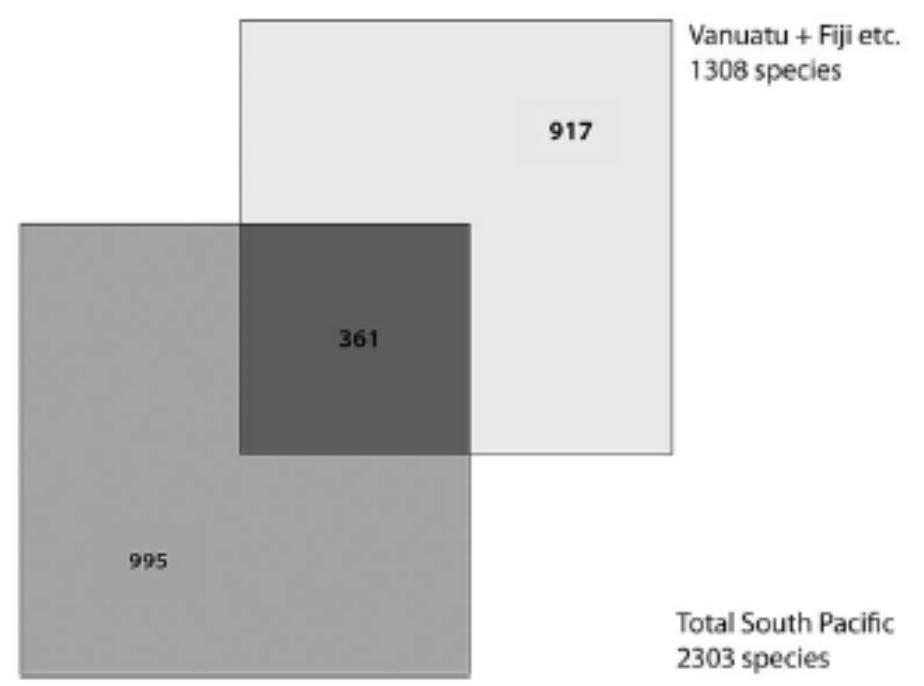


Fig. 1. Bayesian tree obtained from the combined data set (COI, 12S and 16S rRNA, 18S and 28S rRNA, H3, PEPCK and NaK; 5129 bp). Nodes with values are supported by Bayesian posterior probabilities values and ML bootstrap values above 95%.

# An inordinate fondness for turrids

Philippe Bouchet<sup>a,\*</sup>, Pierre Lozouet<sup>a</sup>, Alexander Sysoev<sup>b</sup>

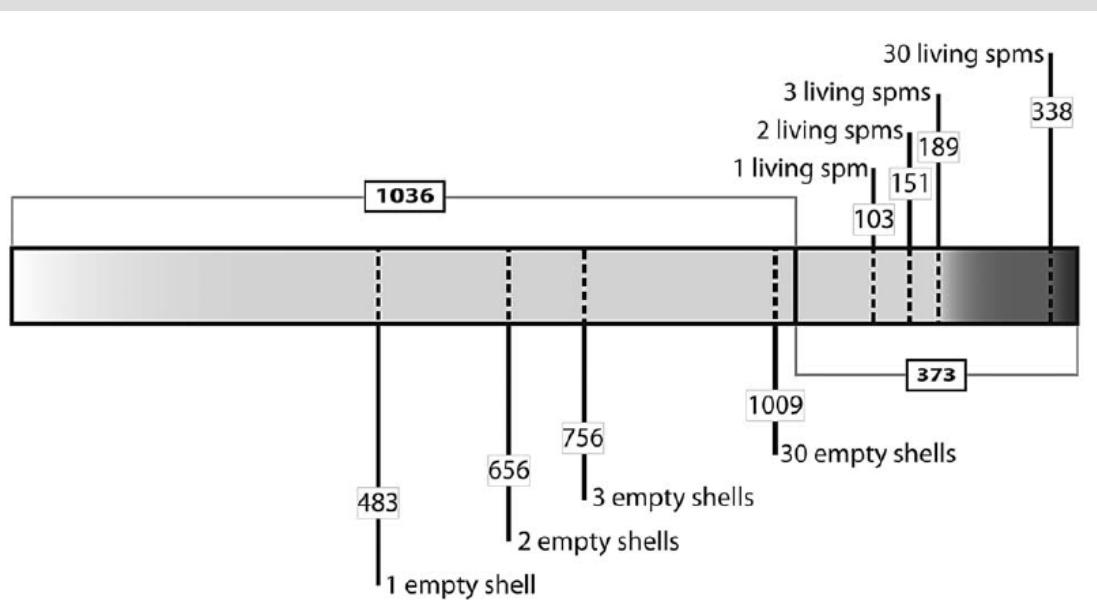
Deep-Sea Research II 56 (2009) 1724–1731



# An inordinate fondness for turrids

Philippe Bouchet<sup>a,\*</sup>, Pierre Lozouet<sup>a</sup>, Alexander Sysoev<sup>b</sup>

Deep-Sea Research II 56 (2009) 1724–1731



# Biogeography of the deep-sea galatheid squat lobsters of the Pacific Ocean e fauna

Enrique Macpherson<sup>a,\*</sup>, Bertrand Richer de Forges<sup>b</sup>, Karen Schnabel<sup>c</sup>, Sarah Samadi<sup>d</sup>,  
Marie-Catherine Boisselier<sup>d</sup>, Antoni Garcia-Rubies<sup>a</sup> Deep-Sea Research I 57 (2010) 228–238

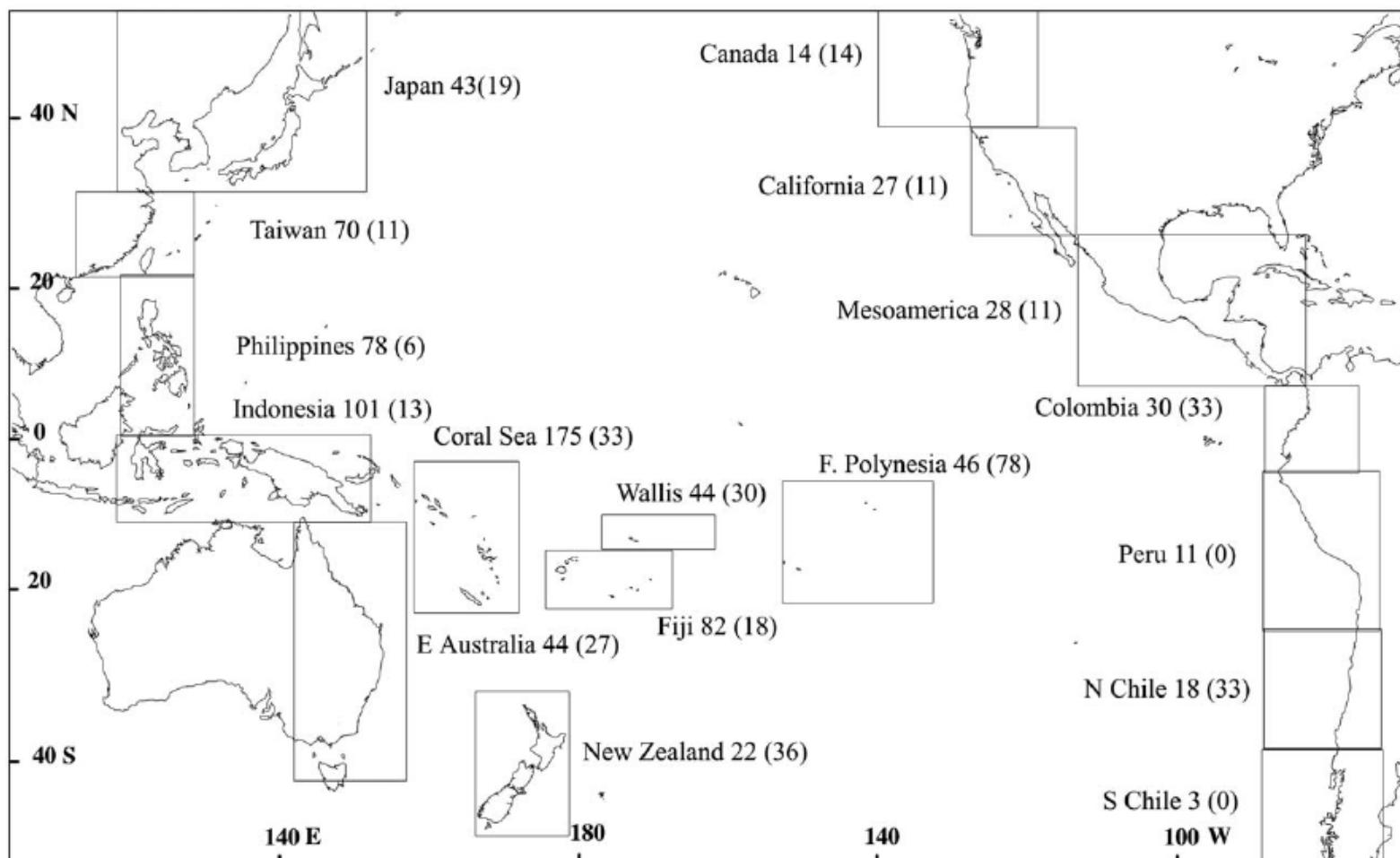
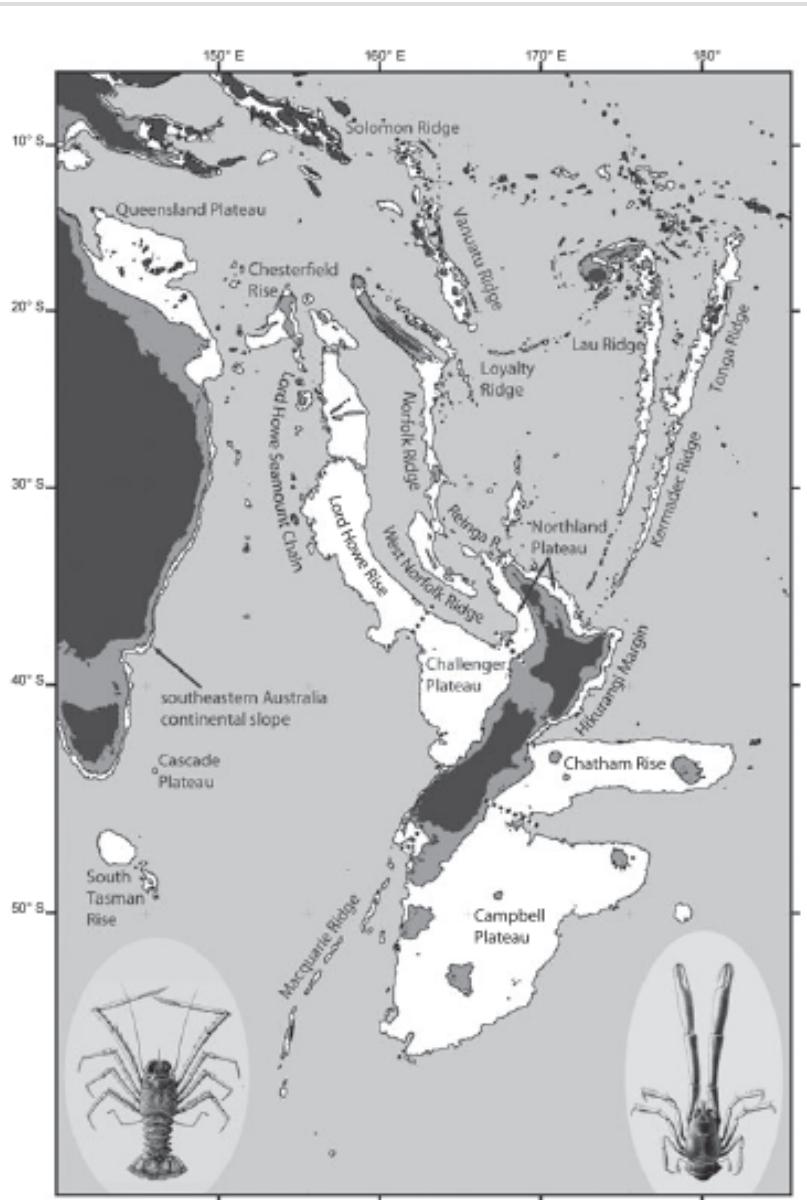


Fig. 5. Species richness of squat lobsters and percentage of endemism (in parentheses) for each biogeographical province (see Fig. 3 for province delimitations). Alaska province is not figured.

## ORIGINAL ARTICLE

**Squat lobster assemblages on seamounts differ from some, but not all, deep-sea habitats of comparable depth**

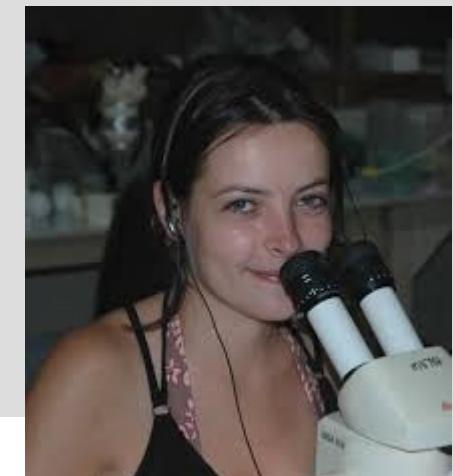
Ashley A. Rowden<sup>1</sup>, Karen E. Schnabel<sup>1</sup>, Thomas A. Schlacher<sup>2</sup>, Enrique Macpherson<sup>3</sup>, Shane T. Ahyong<sup>1</sup> & Bertrand Richer de Forges<sup>4</sup>



*Our results confirm the findings of recent studies that found no compositional differences in assemblages from seamount and slope habitats, and support the idea that dissimilarity between seamount assemblages on different ridge systems increases with geographic distance*

Sarah Samadi · Lionel Bottan · Enrique Macpherson  
Bertrand Richer De Forges · Marie-Catherine Boisselier

## Seamount endemism questioned by the geographic distribution and population genetic structure of marine invertebrates



### Hidden diversity and endemism on seamounts: focus on poorly dispersive neogastropods

MAGALIE CASTELIN<sup>1\*</sup>, JOSIE LAMBOURDIERE<sup>2</sup>, MARIE-CATHERINE BOISSELIER<sup>1,2</sup>, PIERRE LOZOUET<sup>3</sup>, ARNAUD COULOUX<sup>4</sup>, CORINNE CRUAUD<sup>4</sup> and SARAH SAMADI<sup>1,2</sup>

### Molluskan species richness and endemism on New Caledonian seamounts: Are they enhanced compared to adjacent slopes?

Magalie Castelin <sup>a,\*</sup>, Nicolas Puillandre <sup>a</sup>, Pierre Lozouet <sup>b</sup>, Alexander Sysoev <sup>c</sup>, Bertrand Richer de Forges <sup>a</sup>, Sarah Samadi <sup>a</sup>

### Speciation patterns in gastropods with long-lived larvae from deep-sea seamounts

M. CASTELIN,<sup>\*†</sup> J. LORION,<sup>†‡</sup> J. BRISSET,<sup>†§</sup> C. CRUAUD,<sup>¶</sup> P. MAESTRATI,<sup>†</sup> J. UTGE<sup>§</sup> and S. SAMADI<sup>†§</sup>

## New taxonomy and old collections: integrating DNA barcoding into the collection curation process

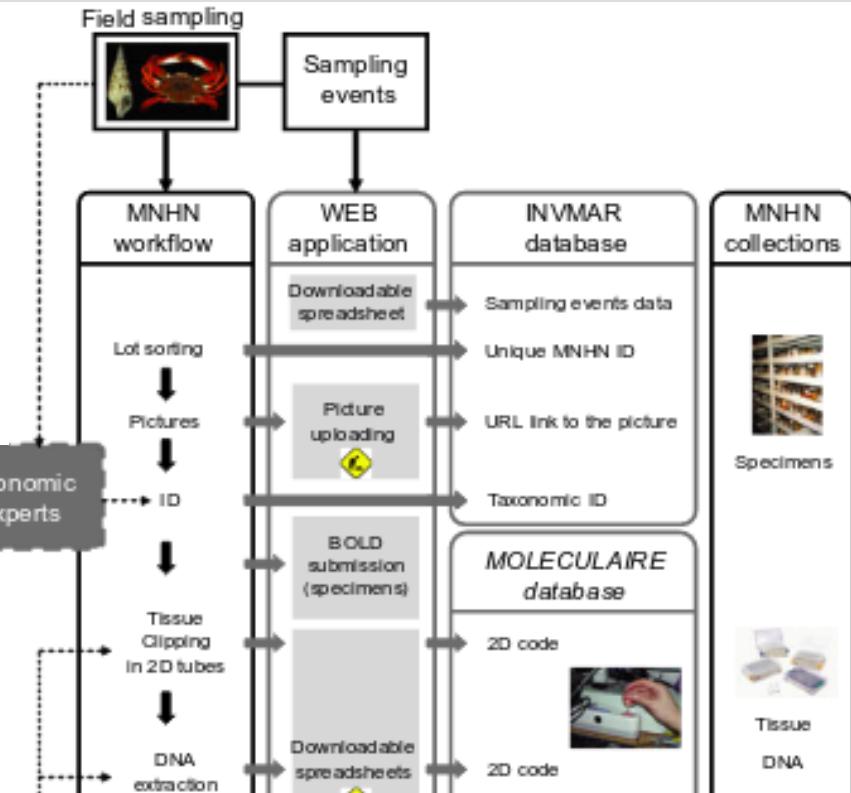
N. PUILLANDRE,<sup>\*</sup> P. BOUCHET,<sup>†</sup> M.-C. BOISSELIER-DUBAYLE,<sup>\*</sup> J. BRISSET,<sup>\*</sup> B. BUGE,<sup>‡</sup>  
M. CASTELIN,<sup>\*</sup> S. CHAGNOUX,<sup>§</sup> T. CHRISTOPHE,<sup>\*</sup> L. CORBARI,<sup>\*</sup> J. LAMBOURDIÈRE,<sup>¶</sup> P. LOZOUET,<sup>‡</sup>  
C. TERRYN,<sup>\*\*</sup> S. TILLIER,<sup>\*</sup> J. UTGE<sup>¶</sup> and S. SAMADI<sup>\*</sup>



© C. Chambard  
Spécimen décoquillé associé à son numéro d'inventaire



marine barcode of life



Integrative  
taxony

Barcode database  
(specimens, names, sequences)



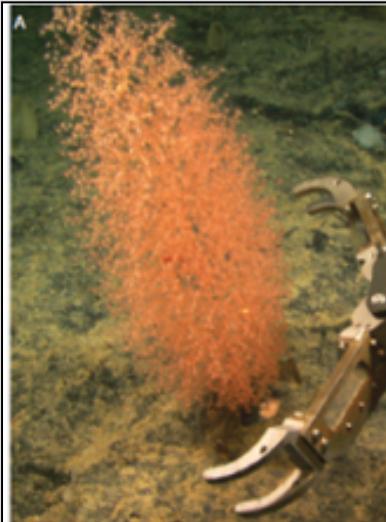
ORIGINAL ARTICLE

# Use of RAD sequencing for delimiting species

E Pante<sup>1</sup>, J Abdelkrim<sup>2,3,5</sup>, A Viricel<sup>1,5</sup>, D Gey<sup>2</sup>, SC France<sup>4</sup>, MC Boisselier<sup>2,3</sup> and S Samadi<sup>3</sup>

## An inter-ocean comparison of coral endemism on seamounts: the case of *Chrysogorgia*

Eric Pante<sup>1,2\*</sup>, Scott C. France<sup>1</sup>, Delphine Gey<sup>3</sup>, Corinne Cruaud<sup>4</sup> and Sarah Samadi<sup>3</sup>

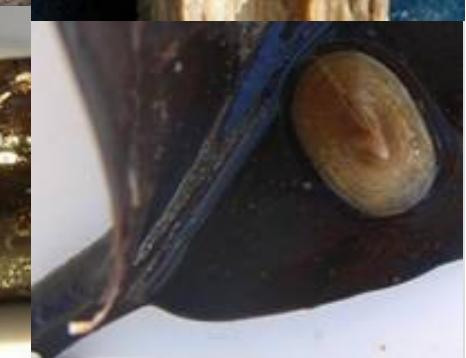


*Chrysogorgia tricalvis* et *C. abludo*



Pante et Watling, JMBA 2011







Cah. Biol. Mar. (2010) 51 : 459-466

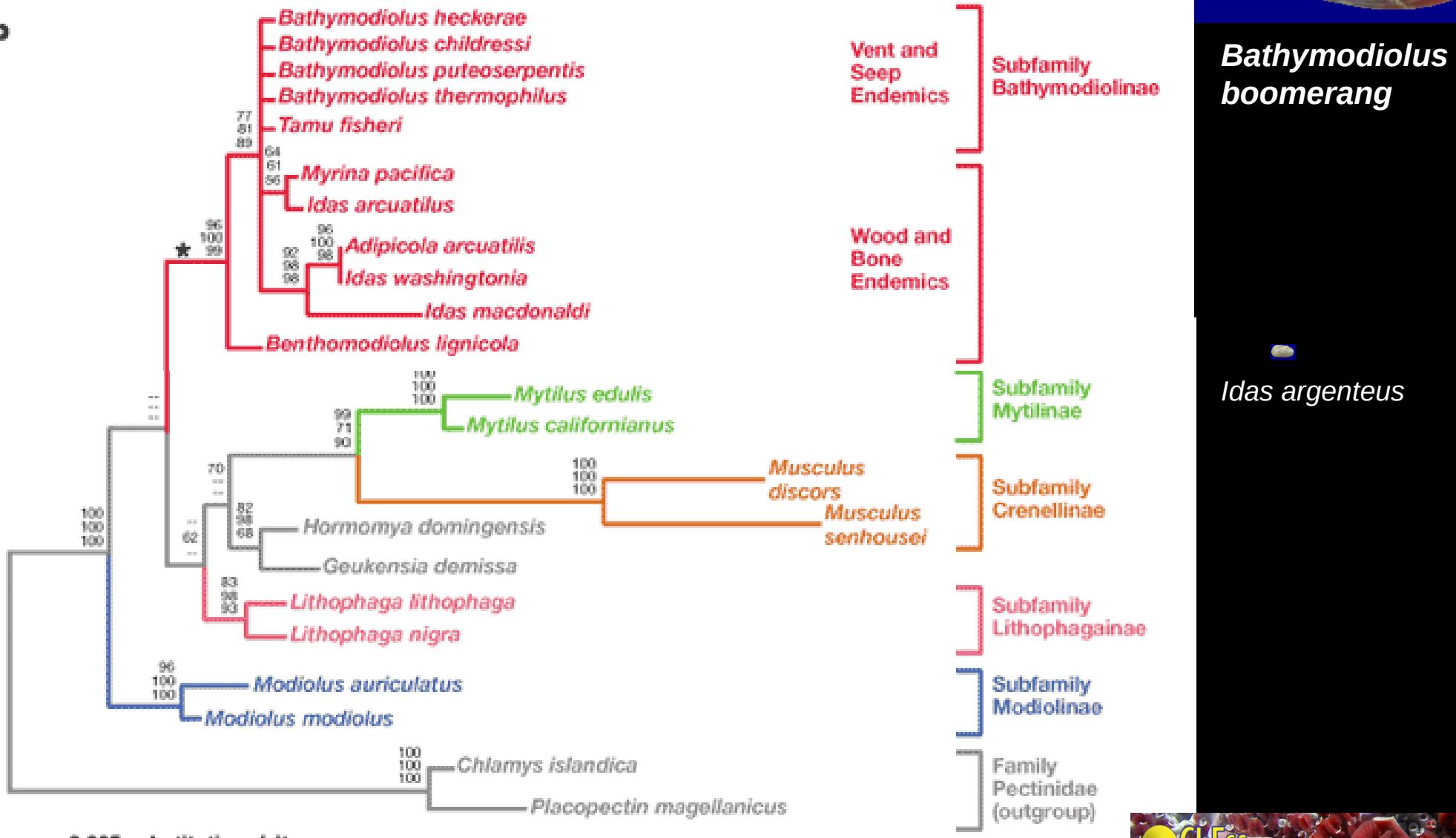


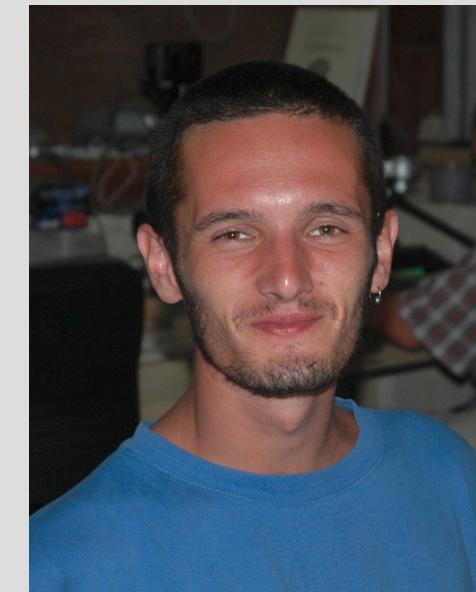
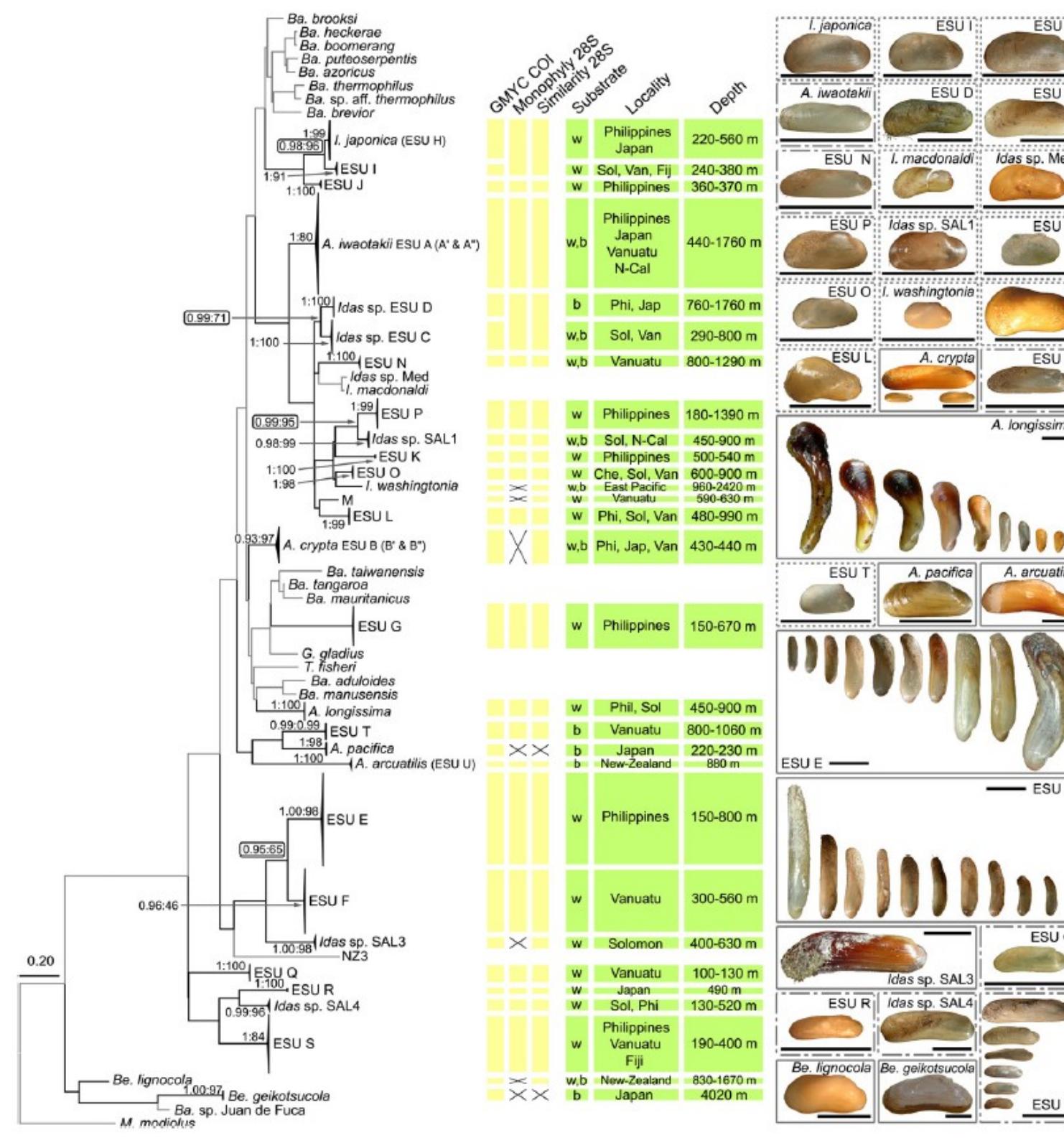
## Biodiversity of deep-sea organisms associated with sunken-wood or other organic remains sampled in the tropical Indo-Pacific

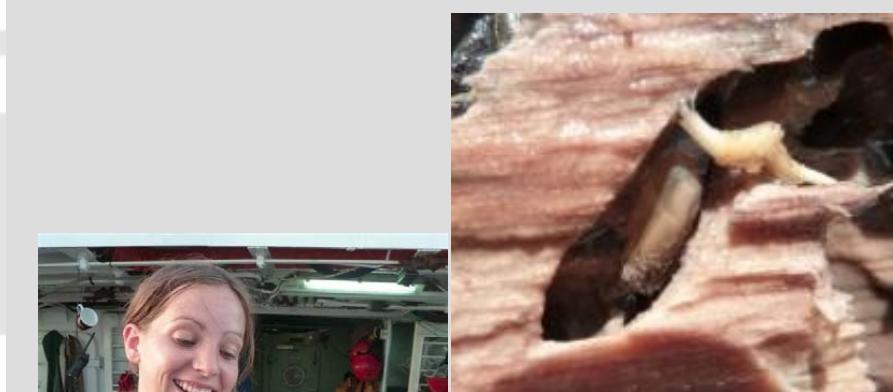
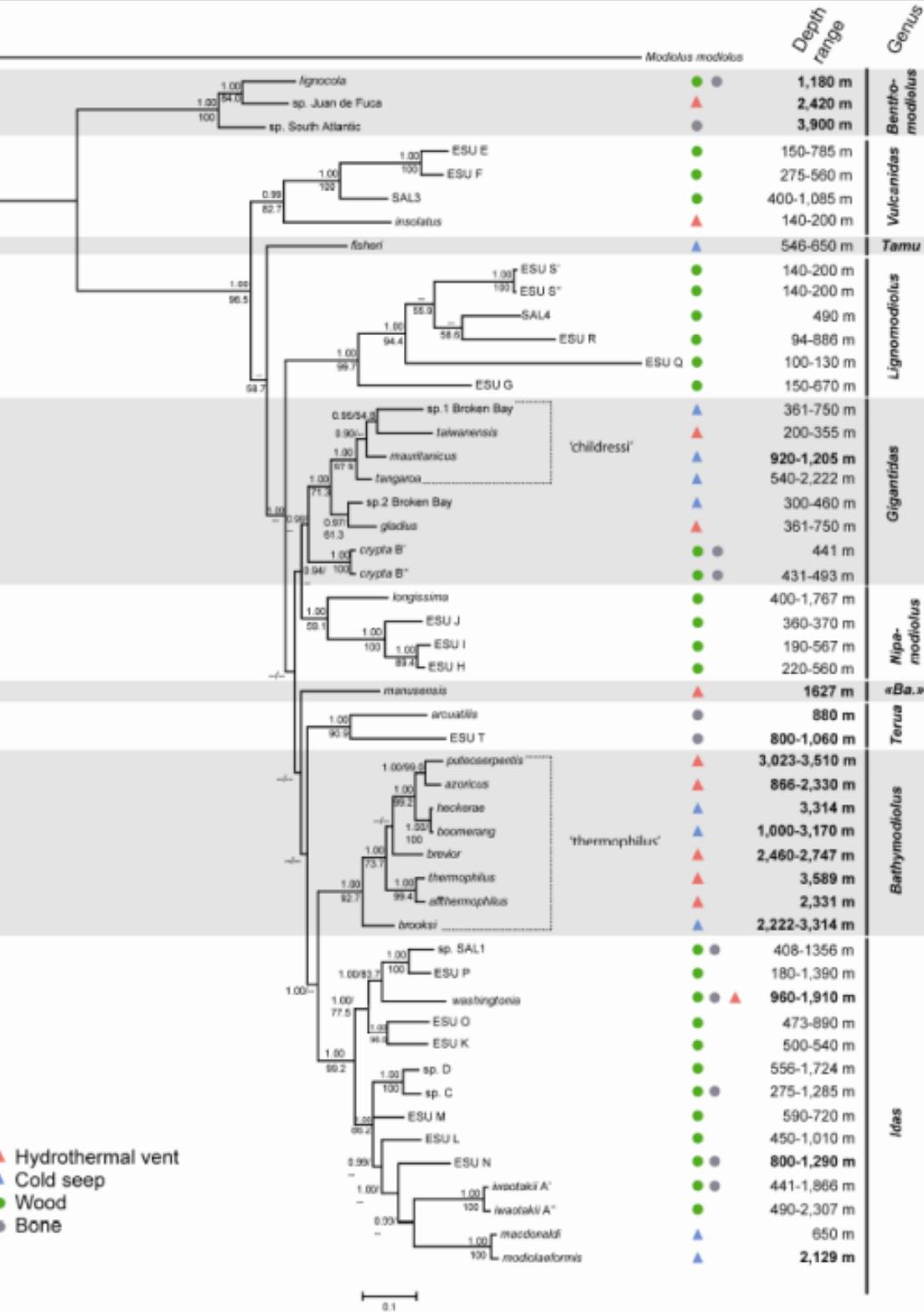
Sarah SAMADI<sup>1</sup>, Laure CORBARI<sup>1</sup>, Julien LORION<sup>1</sup>, Stéphane HOURDEZ<sup>2,3</sup>, Takuma HAGA<sup>4</sup>, Joëlle DUPONT<sup>5</sup>, Marie-Catherine BOISSELIER<sup>1</sup> and Bertrand RICHER DE FORGES<sup>1</sup>



# Do mussels take wooden steps to deep-sea vents?

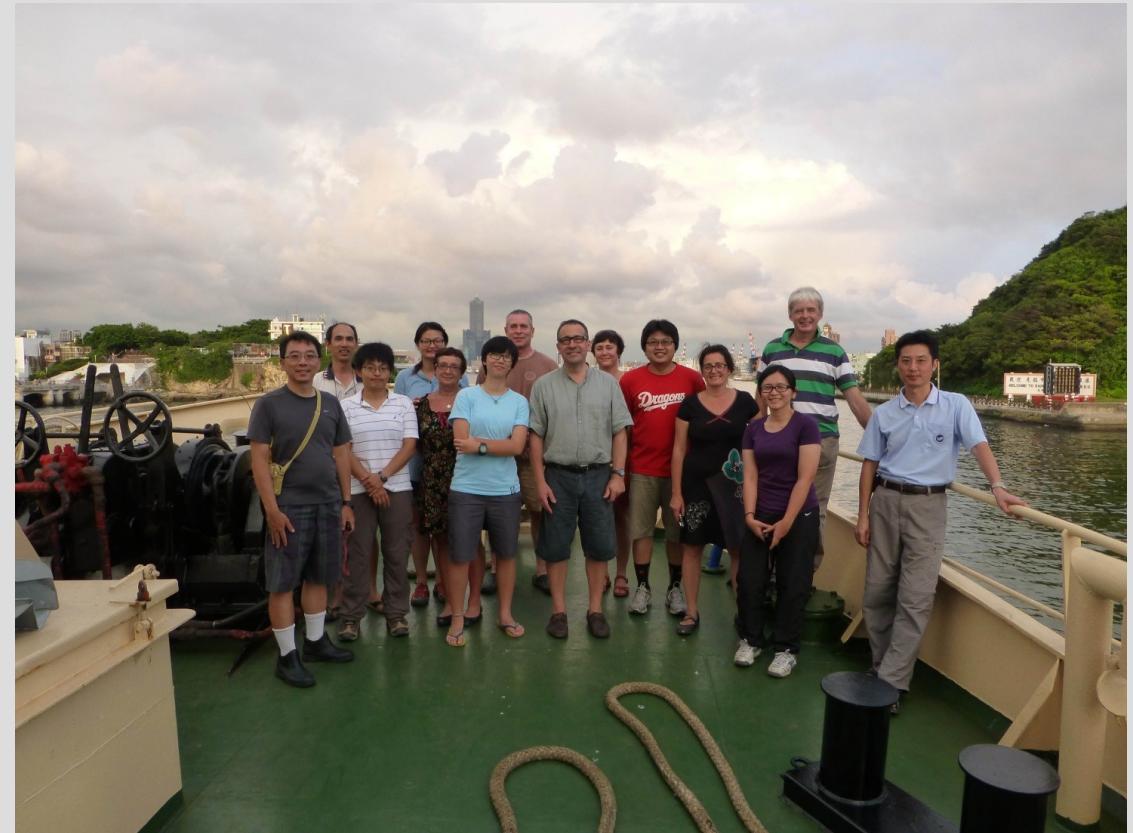
**b**





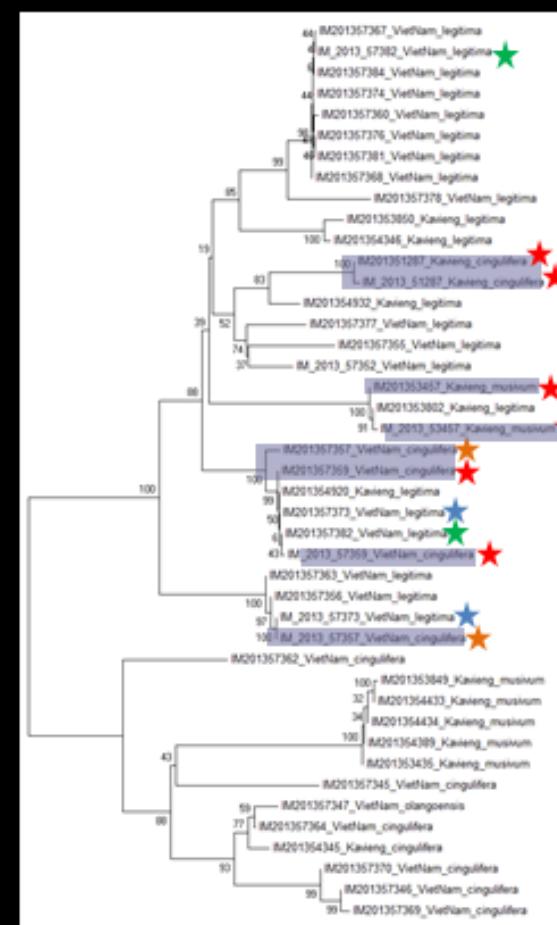
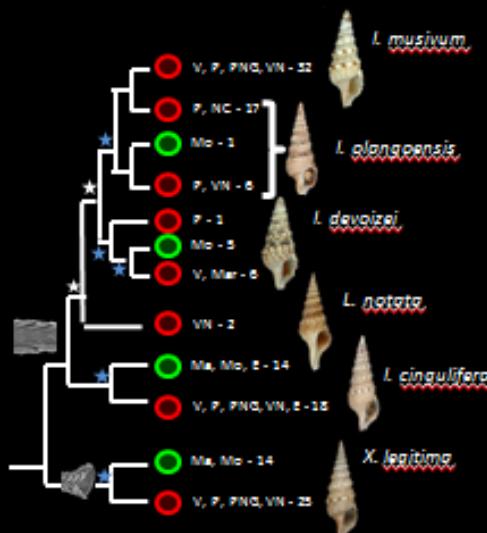
TFDeepEvo : Taiwan France  
: Marine diversity  
exploration and evolution  
of Deep-Sea Fauna

*Sarah SAMADI, Wei-Jen CHEN*



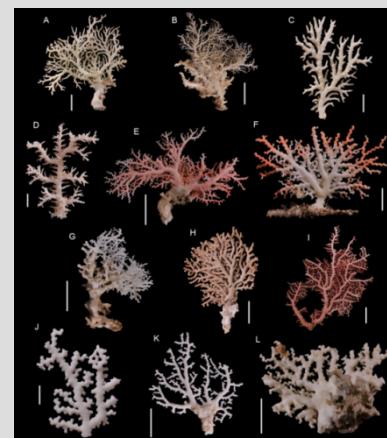
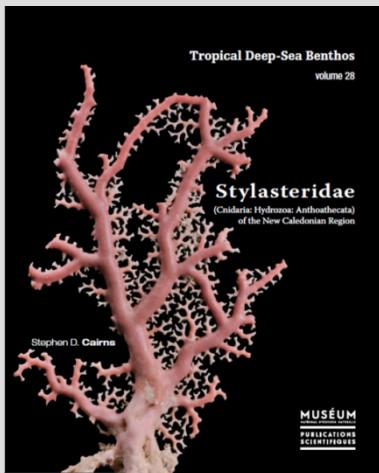
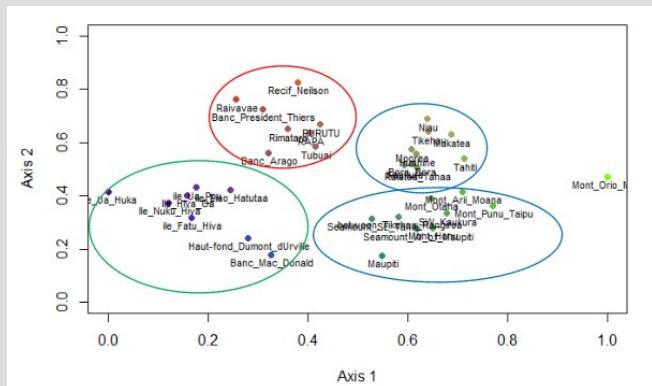
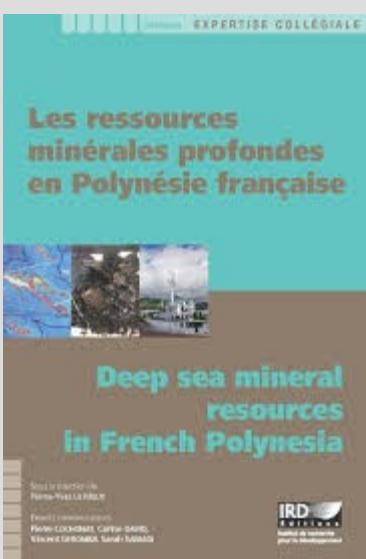
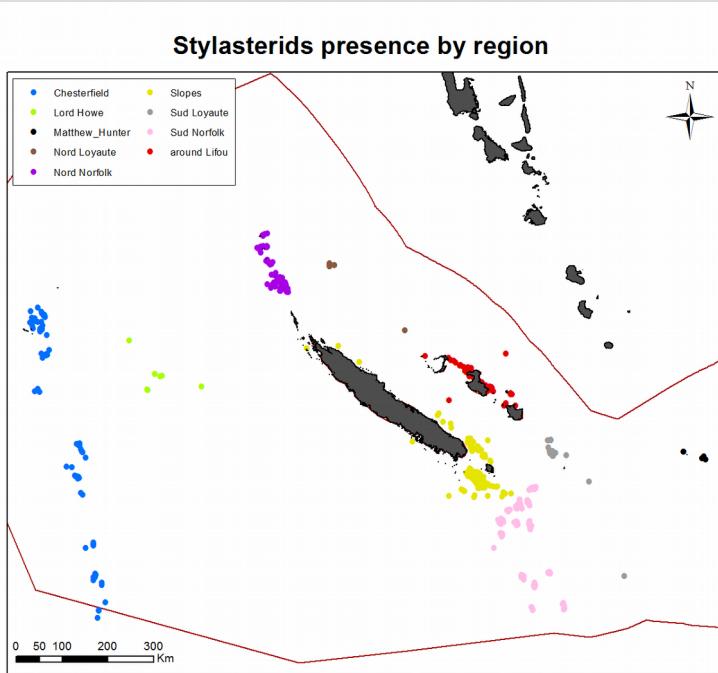
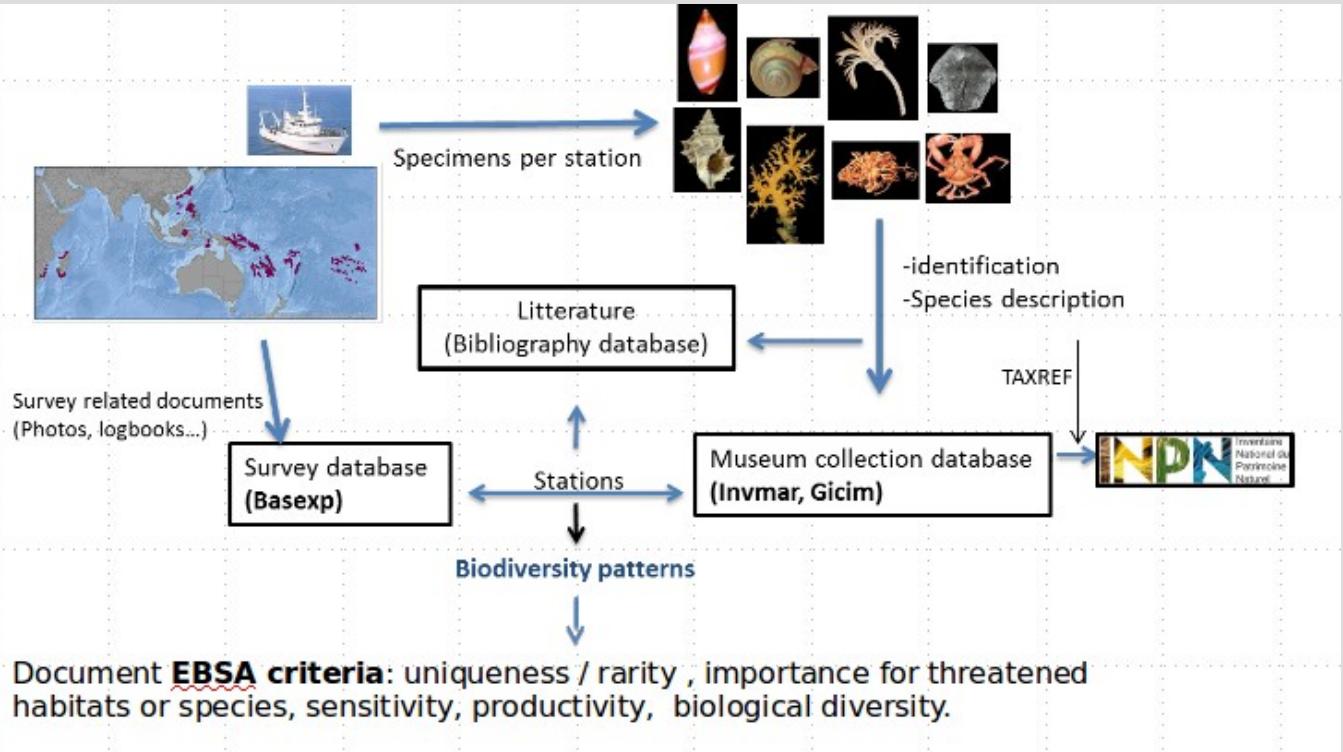


### XENUROTURRIS/IOTYRRIS COMPLEX: Gut content



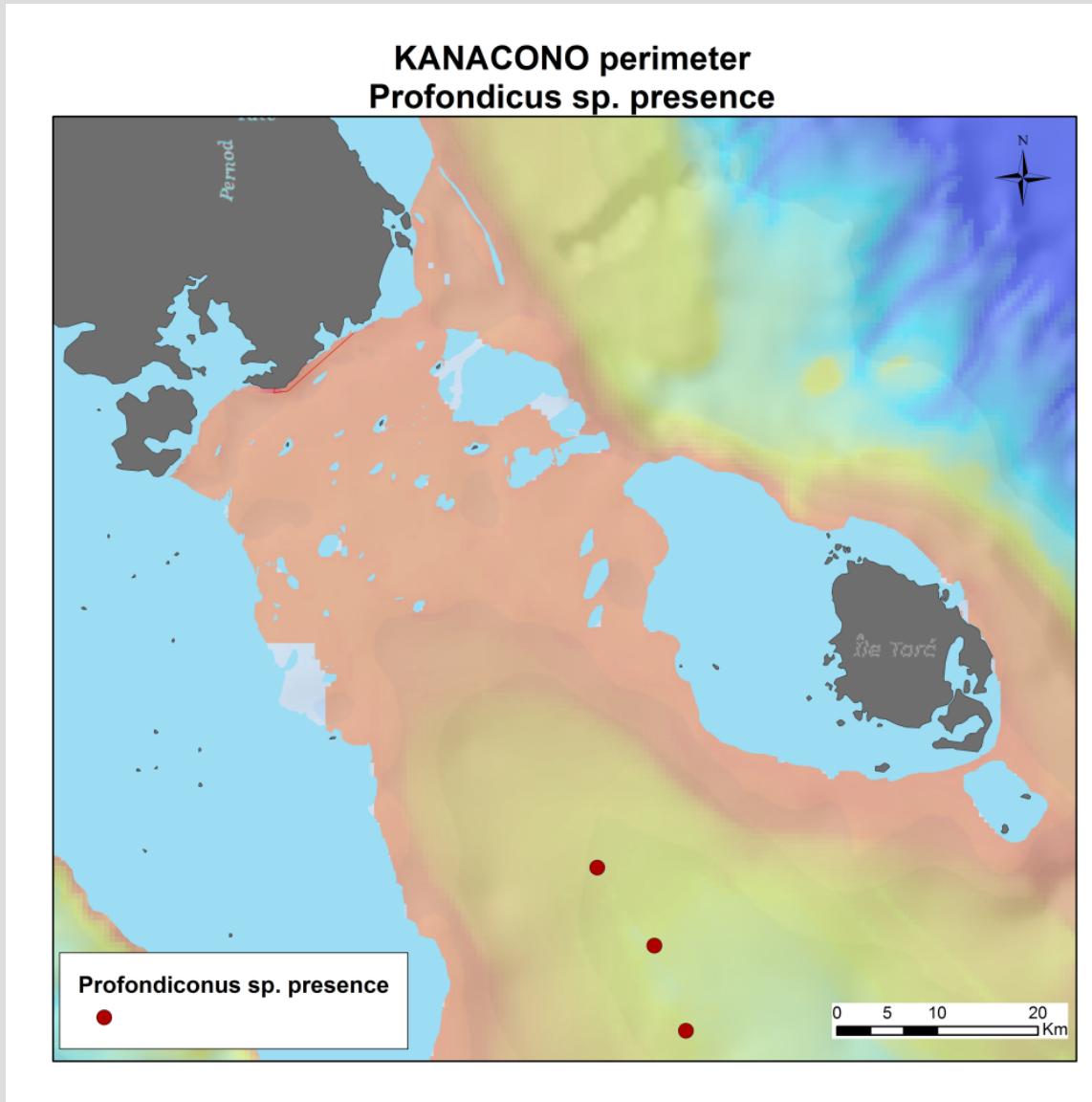
*Clymenura*

*Ophelia/  
Capitella*

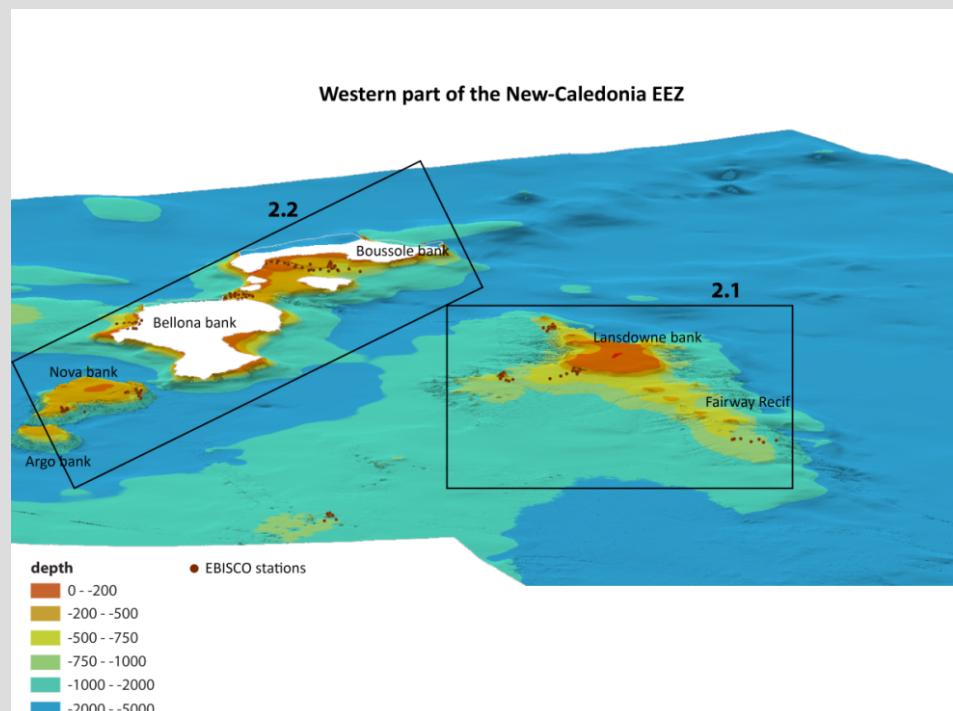
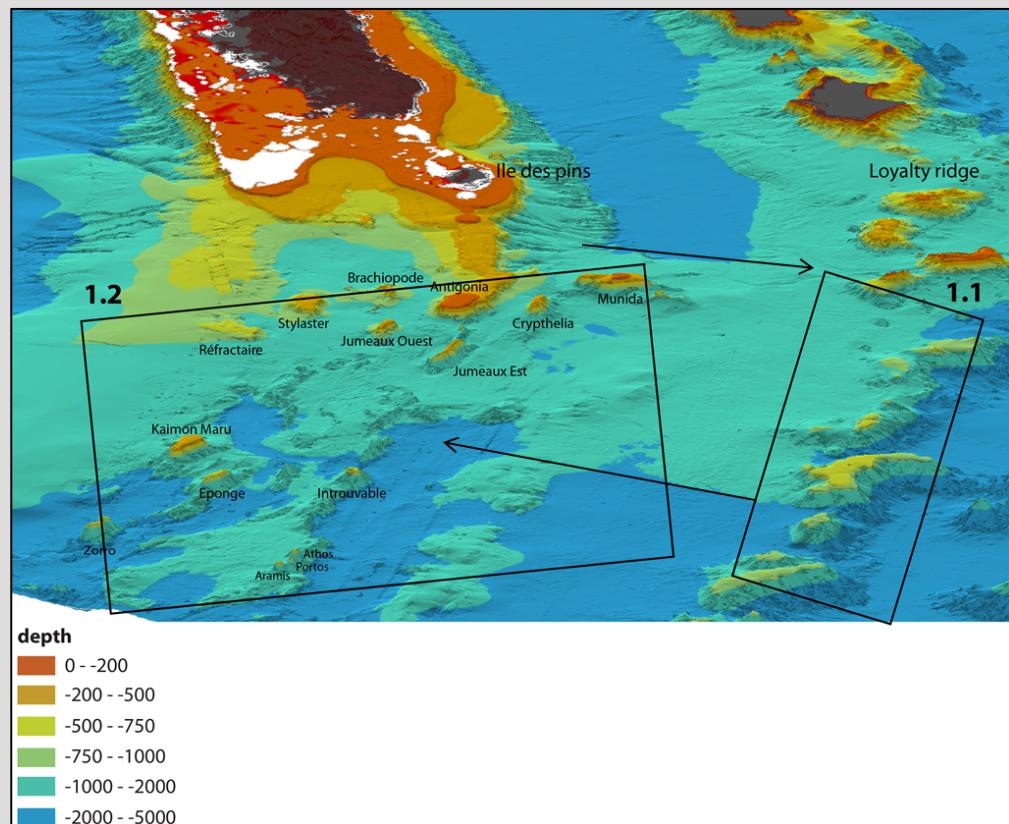




# Campagne KANACONO, Août 2016



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# TROPICAL — DEEP SEA — BENTHOS



*Merci de votre attention !*