



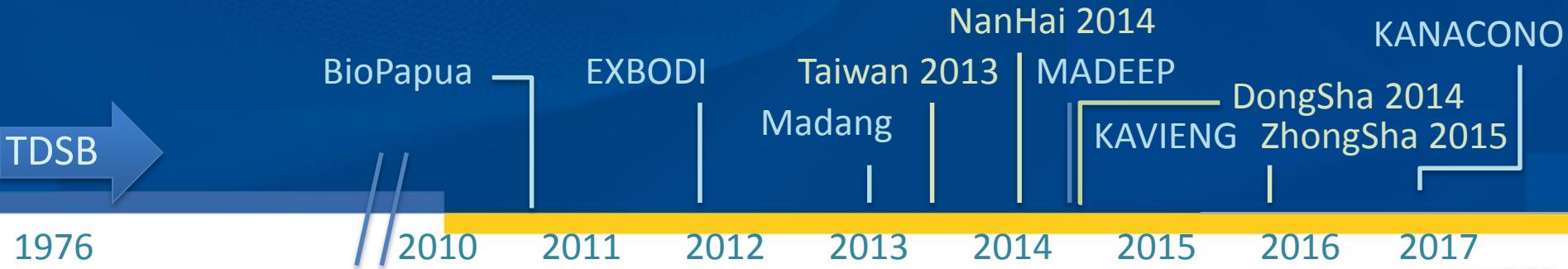
科 種 部 Ministry of Science and Technology

AGENCE NATIONALE DE LA RECHERCHE
ANR

* *Institute of Oceanography, National Taiwan University*

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

Wei-Jen CHEN & Sarah SAMADI*



NanHai Marine Biodiversity Exploration 2014



NANHAI >2014

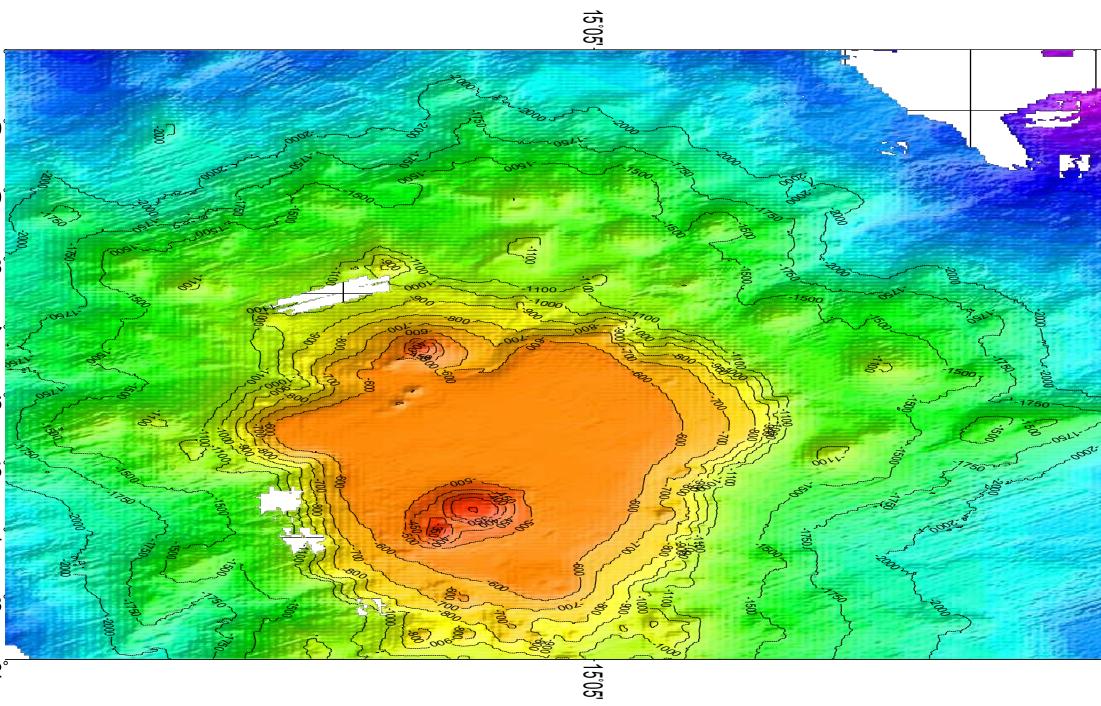
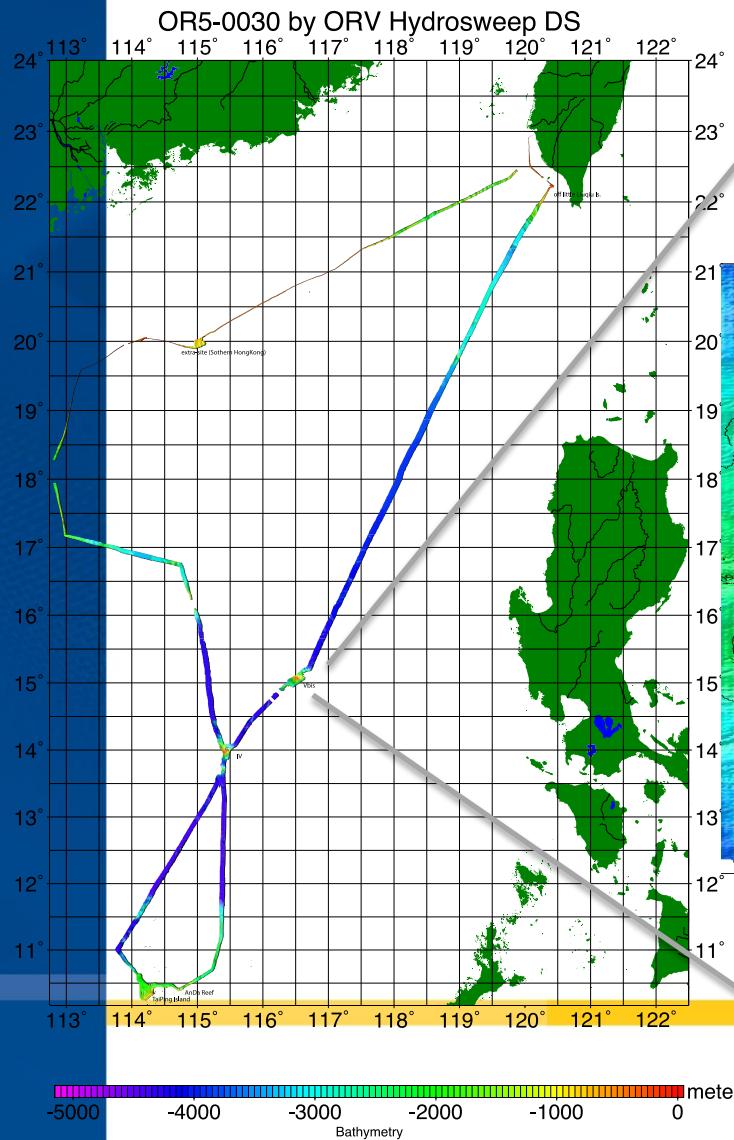
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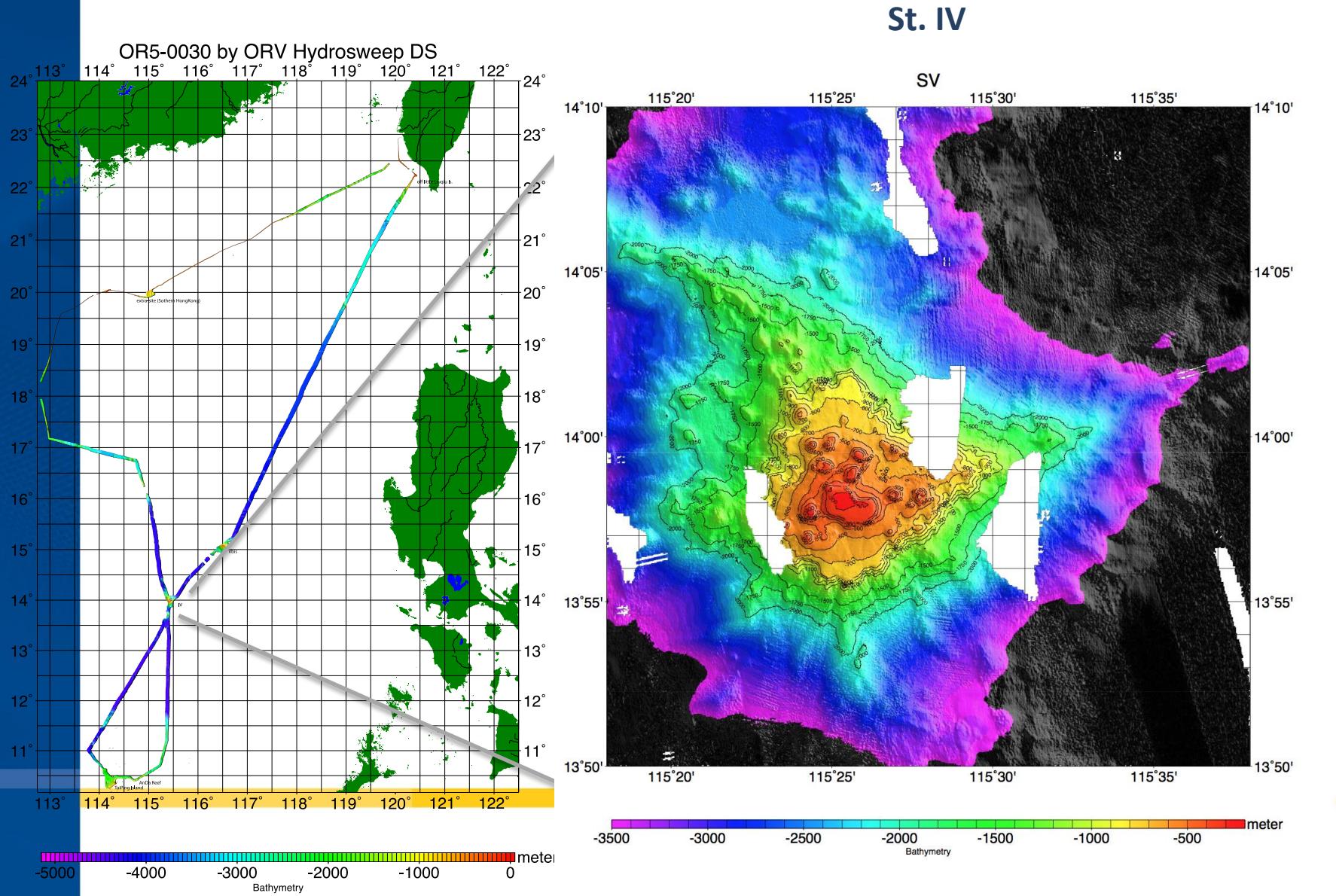
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NanHai Marine Biodiversity Exploration 2014

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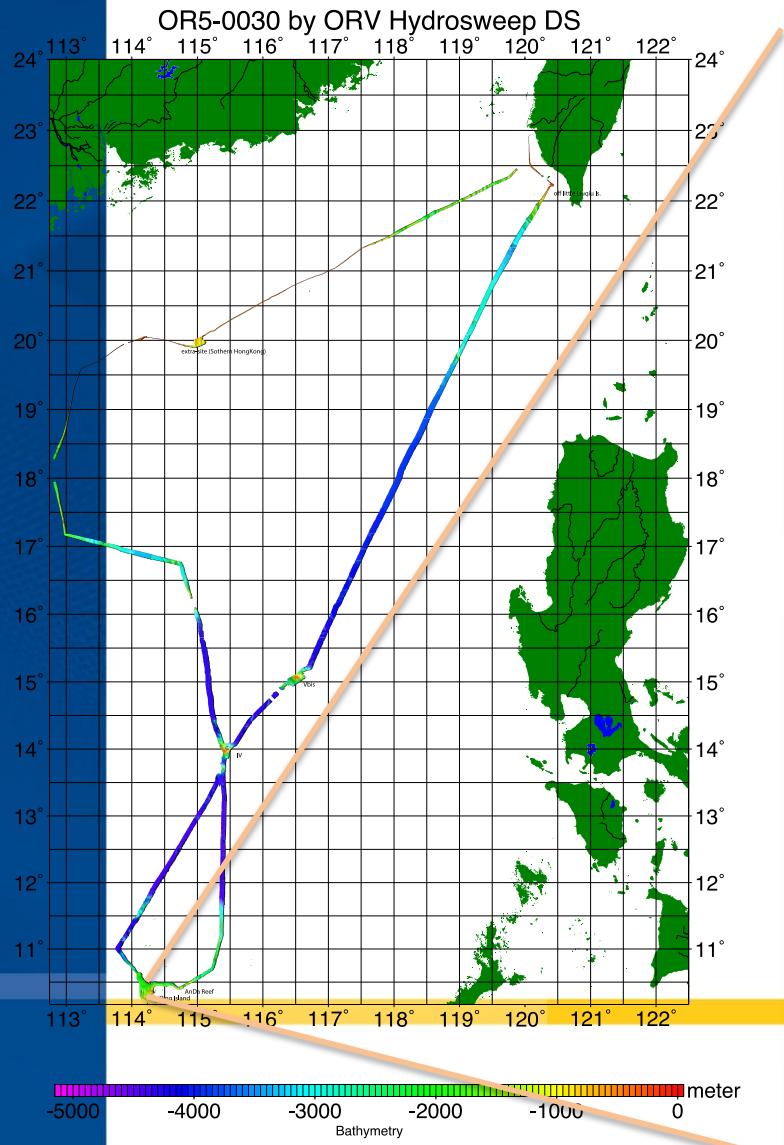
Nan-Hai Marine Biodiversity Exploration 2014



Nan-Hai Marine Biodiversity Exploration 2014



NanHai Marine Biodiversity Exploration 2014



Tai-Ping Island



Objectives of the project

1. to reduce the taxonomic impediment in the knowledge of deep-sea biodiversity.

Advanced and obtained results about taxonomy

2. to show that exploration biases toward flagship environments strongly distort our understandings of causes of the pattern of diversity in the deep-sea
3. to search the origin of gradients of marine biodiversity



Advances and obtained results

~ 125 papers published and
115 new species described by
using or comparing the
materials collected from the
TDBS before 2010

Data from Sophie Bary



1976

2010

2011

2012

2013

2014

2015

2016

2017



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Article

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ZOOTAXA
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Advances and obtained results

<http://dx.doi.org/10.11646/zootaxa.3626.1.8>

<http://zoobank.org/urn:lsid:zoobank.org:pub:DCAE2E1F-1946-4061-9B3C-DC17B0487F1C>

Revision of batfishes (Lophiiformes: Ogcocephalidae) of New Zealand and adjacent waters, with description of two new species of the genus *Malhopsis*

HSUAN-CHING HO¹, CLIVE D. ROBE



FIGURE 1. *Malhopsis asperata* sp. nov., holotype, NMNZ P. 017180, 46.4 mm SL. A. drawing of dorsal view, illustrated by E. Mackay. A-C.

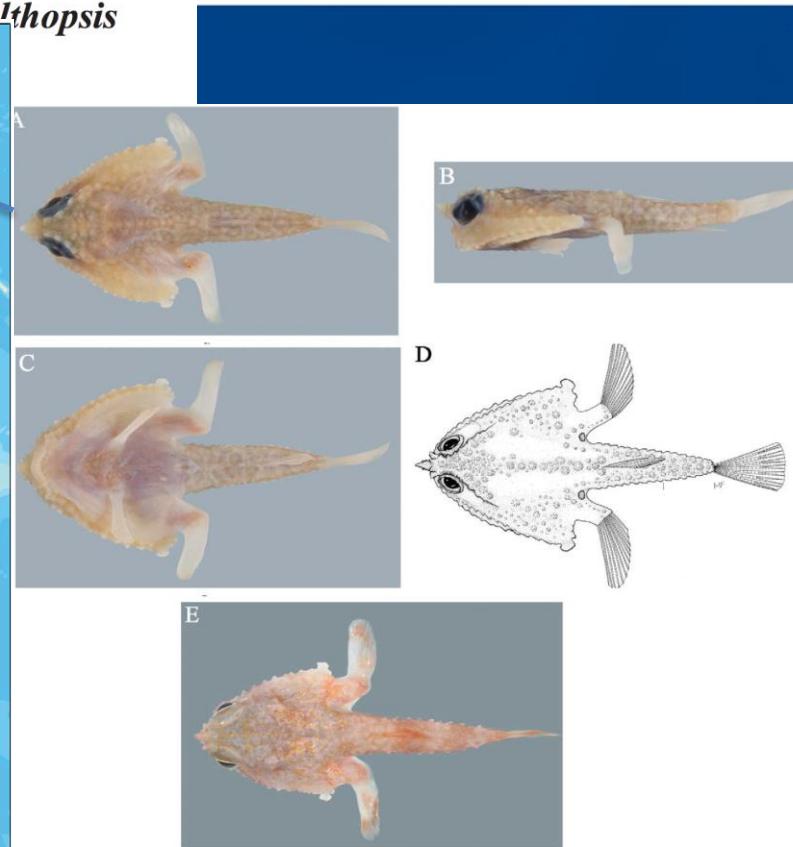
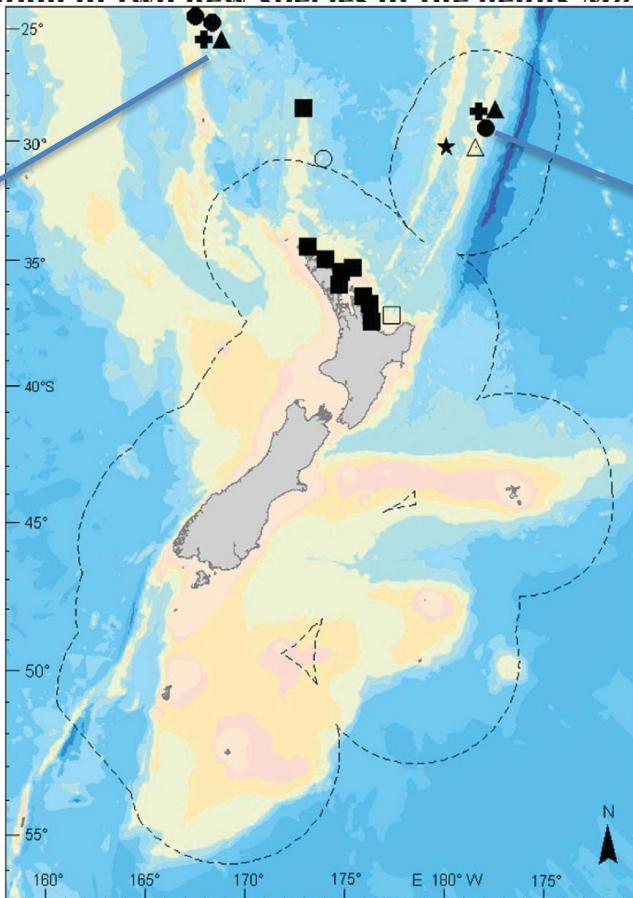


FIGURE 4. *Malhopsis parva* sp. nov., holotype, NMNZ P.017180, 46.4 mm SL. A. dorsal view. B. lateral view. C. ventral view. D. drawing of dorsal view, illustrated by M. Freebone. E. CSIRO 6031-01, paratype, 51.2 mm, fresh, photo by CSIRO.



4 major sorting and taxonomic workshops

6699 samples collected

1968 lots cataloged

9 holotype specimens

15 paratype specimens

deposited **at NTUM**



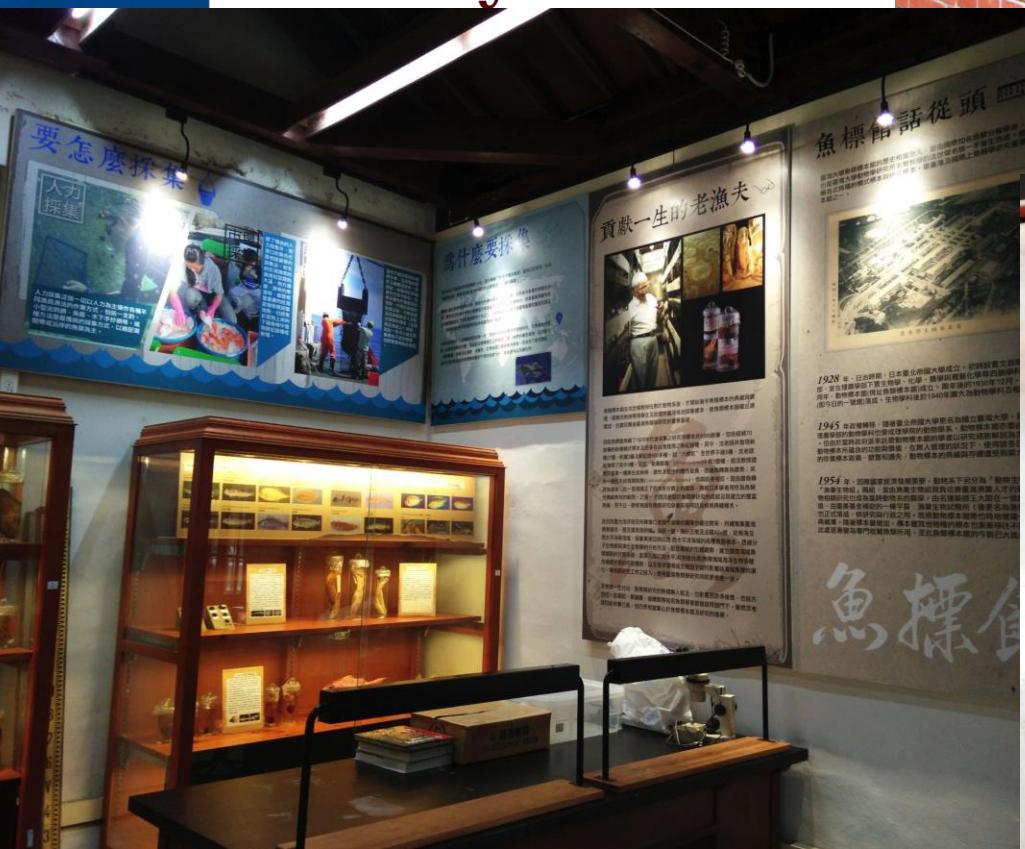
People involved
W-J Chen's lab
(e.g., J-N Chen)
H-C Ho
Ronald Fricke
Barry Russell
Will. White



NTUM



National
Taiwan
University



Advances and obtained results

Fishes (new record)

- DNA sequences and morphological variation in *Lophiodes iwamotoi* Ho, Serét & Shao, 2011 based on new material from New Caledonia . Zootaxa 3682, 594-598 (**Ho and Chen, 2013**).

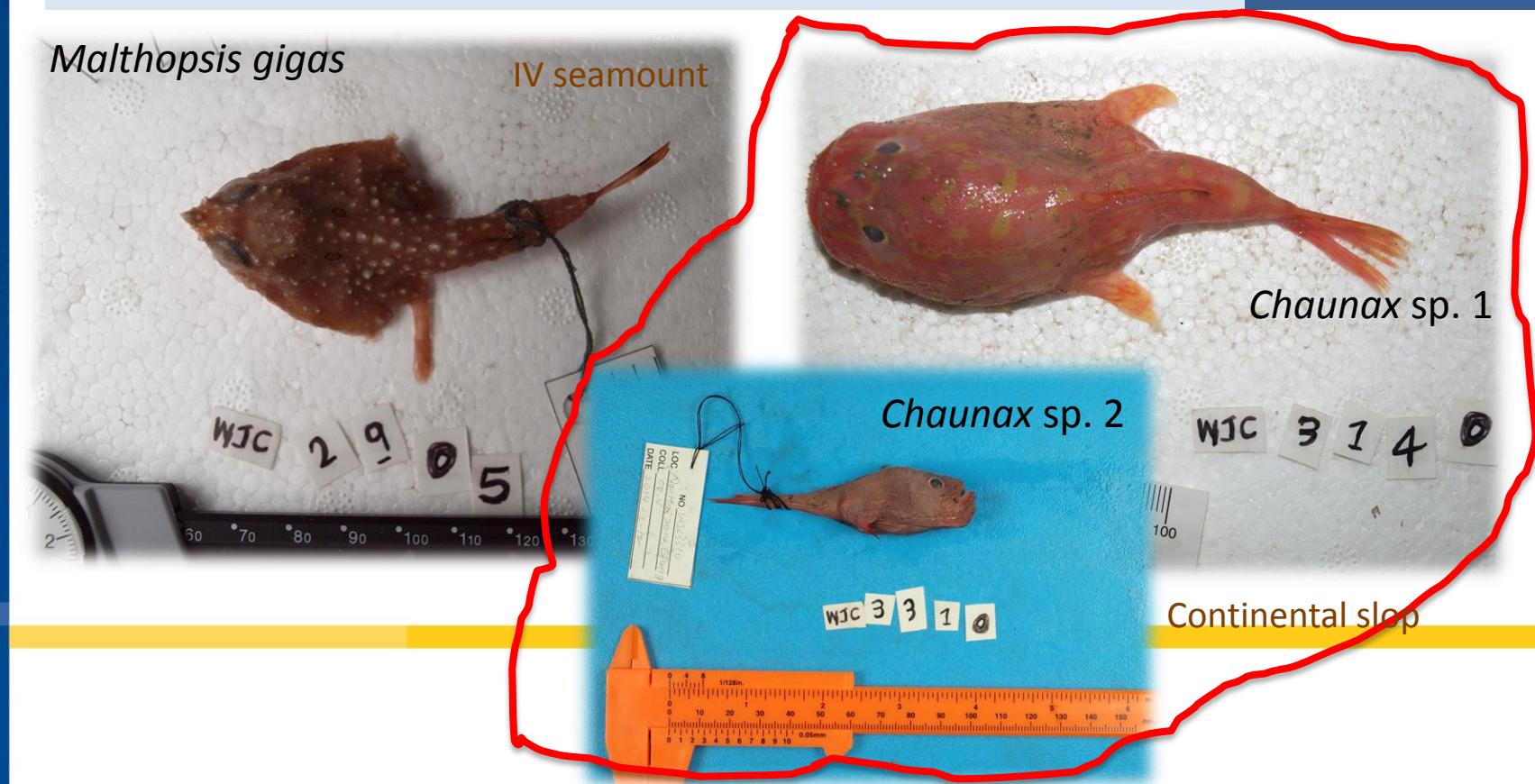


Advances and obtained results

Fishes (new record & species)

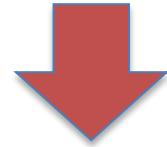
Molecular Systematics of the Lophiidae, Ogcocephalidae, and Chaunacidae (Lophiiformes) occurring in West-Pacific (Huang, Ma, Ho, Samadi, and Chen, *in prep.*)

Master thesis

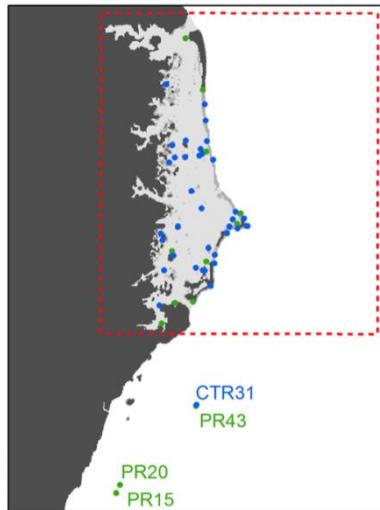
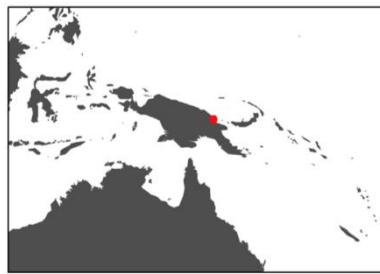


Advances and obtained results

Fishes (new record)



- Checklist of the marine and estuarine fishes of Madang District, Papua New Guinea, western Pacific Ocean, with **820 new records**. *Zootaxa* 3832, 001–247 (**Fricke, Allen, Andréfouët, Chen et al., 2014**).



Dasyatidae

Taeniura lymma (Forsskål in Niebuhr, 1775)—Ribbontail stingray (Fig. 3)



FIGURE 3. *Taeniura lymma* (Dasyatidae), Madang Lagoon, P. Laboute, 11 Dec. 2012.

Advances and obtained results

Fishes (new record)

✧ Ronald Fricke

EXBODI

Madang

Marine Biodiversity Records, page 1 of 9. © Marine Biological Association of the United Kingdom, 2015
doi:10.1017/S1755267215000445; Vol. 8; e70; 2015 Published online

Twenty-one new records of fish species (Teleostei) from Madang and Papua New Guinea (western Pacific Ocean)

RONALD FRICKE^{1,2}

Twenty-one new records of fish species (Teleostei) from the New Caledonian EEZ (south-western Pacific Ocean)

RONALD FRICKE^{1,2}, ANTOINE TEITELBAUM³ AND LAURENT WANTIEZ⁴

Advances and obtained results

Fishes (new species)

✧ Ronald Fricke

➤ Dragonets

- *Callionymus madangensis*
- *Callionymus alisae*
- *Callionymus petersi*
- *Synchiropus novaehiberniensis*
- *Centrodraco fidelis*

plus some more



➤ Clingfishes

- *Unguitrema nigrum*
- *Protagobiesox asymmetricus**



Advances and obtained results

Fishes (new species)

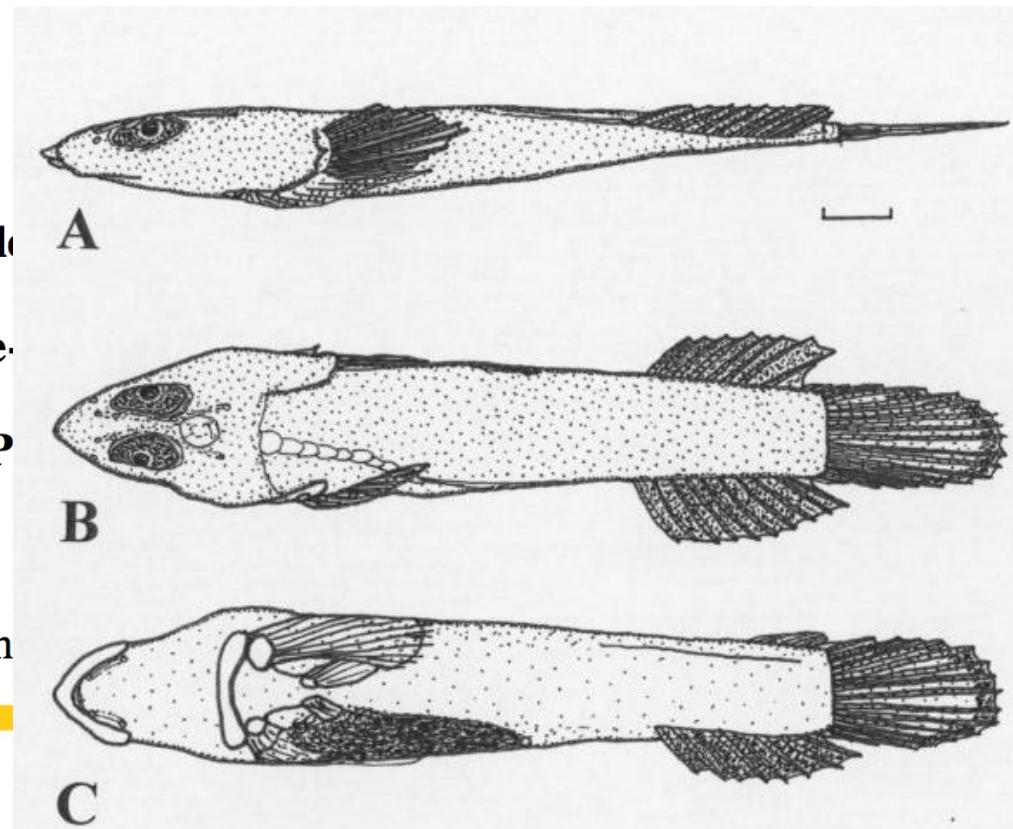
Protogobiesox asymmetricus

New case of lateral asymmetry in fishes: a new subfamily, genus and species of deep water clingfishes from Papua New Guinea, western Pacific Ocean

Nouveau cas d'asymétrie latérale
famille, genre et espèce de porte-
Nouvelle-Guinée dans l'Océan P

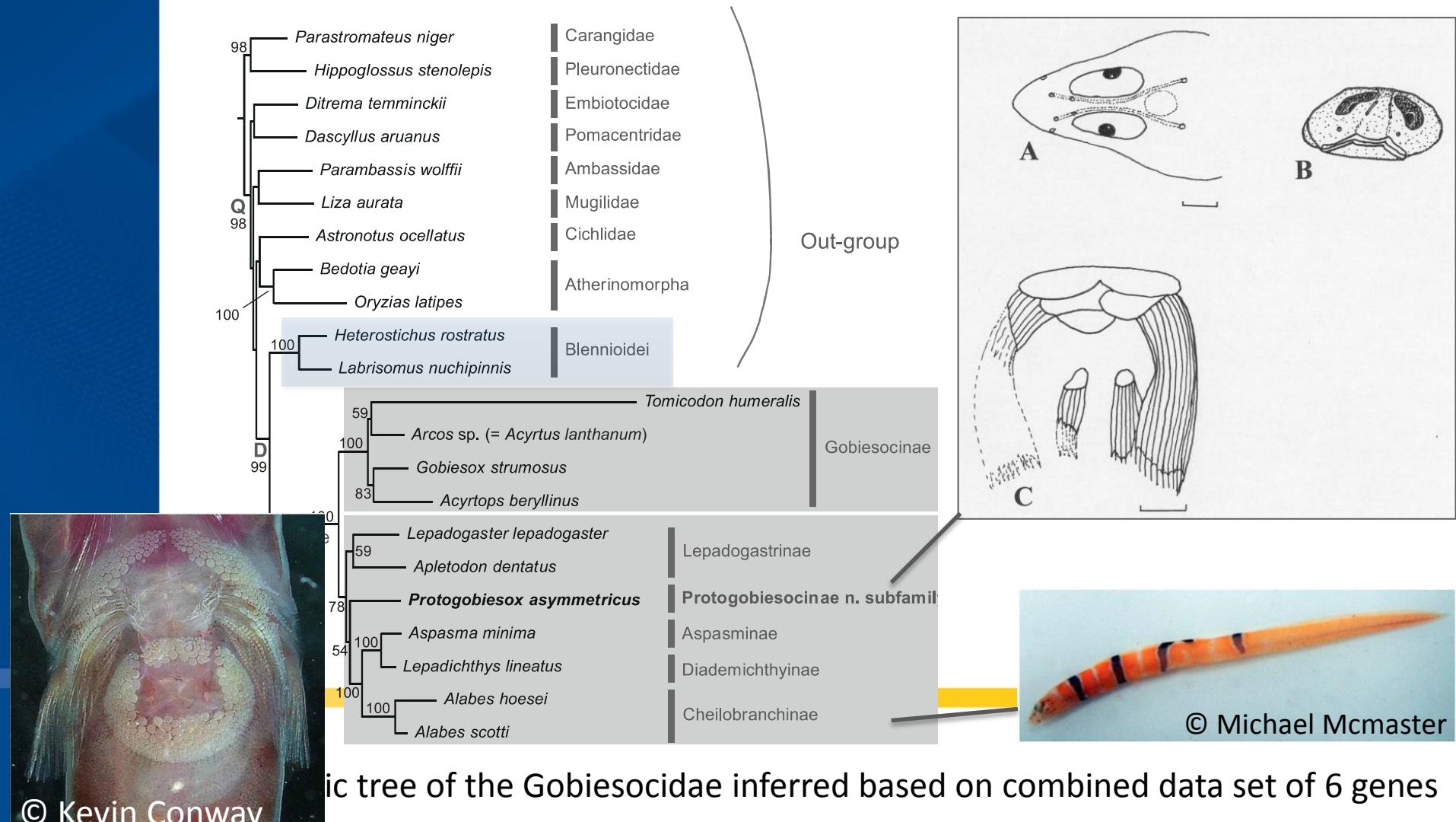
Ronald Fricke^{a,b*}, Jhen-Nien Chen

Submitted to CRBIOLOGIES



Advances and obtained results

Fishes (new species)



Advances and obtained results

Fishes (new species)

❖ William White

➤ Guitar rays



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<http://zoobank.org/urn:lsid:zoobank.org:pub:D5E99C62-D61E-4303-9D1A-BC68EEAD4E5D>

***Rhinobatos manai* sp. nov., a new species of guitarfish (Rhinopristiformes: Rhinobatidae) from New Ireland, Papua New Guinea**

WILLIAM T. WHITE^{1,2,4}, PETER R. LAST² & GAVIN J.P. NAYLOR³



Advances and obtained results

Fishes (new records & species)

❖ W-J Chen's lab

- Boarfishes
- Blackchins
- Righthead flounders



Marine Biodiversity Records

PAMELA-MOZ01

HOME

ABOUT

ARTICLES

SUBMISSION GUIDELINES

MARINE RECORD

OPEN ACCESS

First record of the coloured righthead flounder, *Poecilopsetta colorata* (Teleostei: Poecilopsettidae) from the Sakalaves seamounts in the Mozambique Channel

Advances and obtained results

Fishes (new records & species)

Taxonomy and molecular phylogeny of genus *Antigonia* in the western Pacific Ocean

Ling-Lan Hsu¹, Wei-Jen Chen²

¹ Department of Life Science, National Taiwan University

² Institute of Oceanography, National Taiwan University



Advances and obtained results

Fishes (new records & species)

➤ Boarfishes

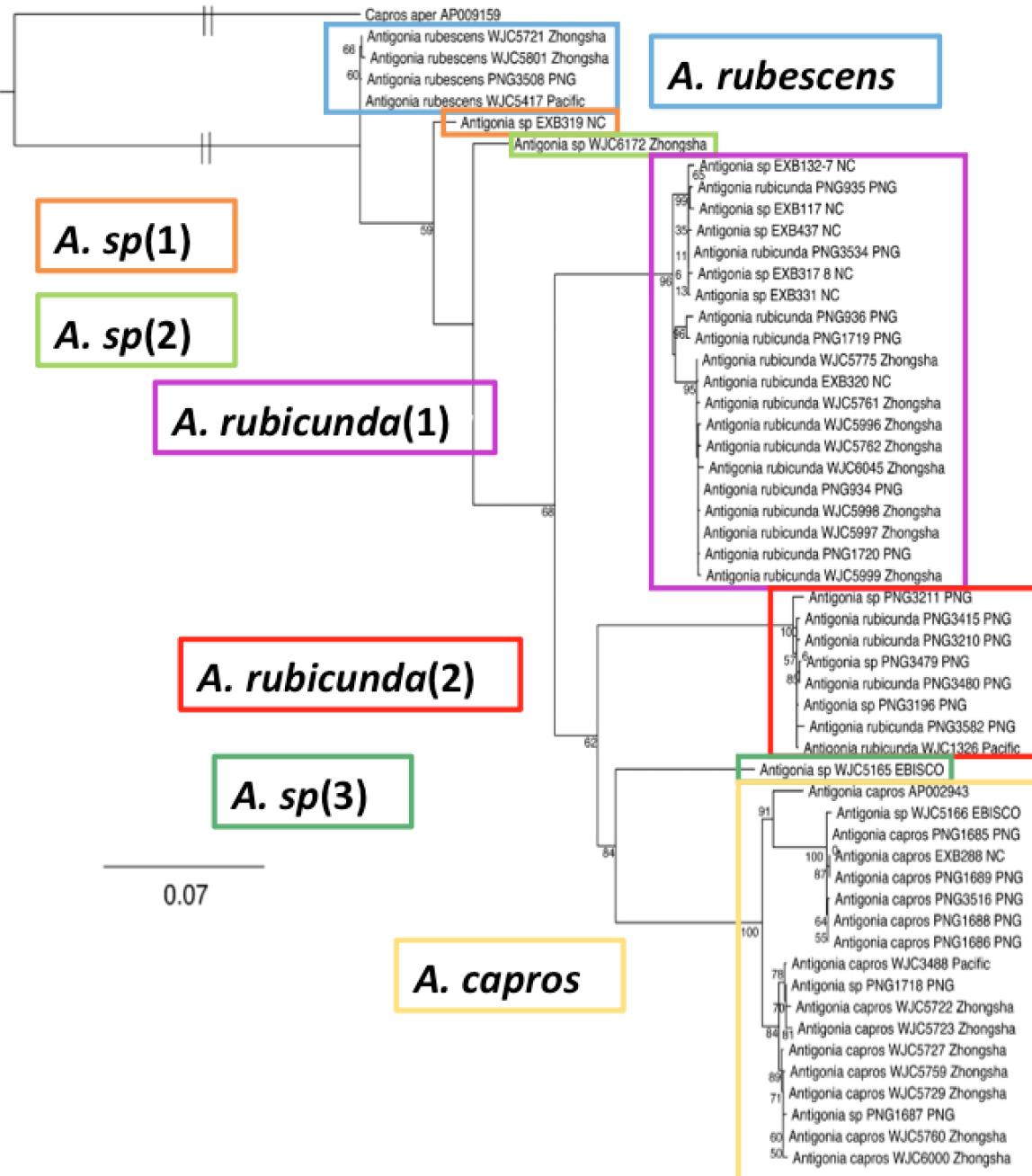
Genus *Antigonia* in western Pacific Ocean

- *Antigonia capros*
- *Antigonia rubescens*
- *Antigonia rubicunda*
- *Antigonia rhomboidea*
- *Antigonia malayana*



Preliminary Results
Based on two gene
markers (COI and cytB)

- ✓ 7 strongly supported clades are found.
- ✓ *Antigonia rubicunda* is not monophyletic.
- ✓ 3 potential new species may exist.



Advances and obtained results

Fishes (new records & species)

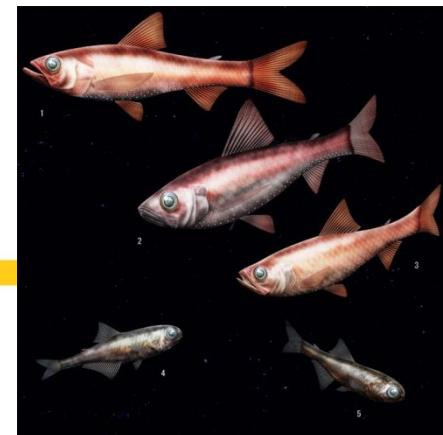
Phylogenetic relationships of Neoscopelidae, with emphasis on the genus *Neoscopelus*

A small genus with only 3 species

Amirah Hurzaid^{1,2}, Wei-Jen Chen¹

¹ Institute of Oceanography, National Taiwan University, No.1 Sec. 4 Roosevelt Rd.
Taipei 10617, Taiwan

² Biological Sciences Department, Universiti Sains Malaysia, 11800 Minden, Penang, Malaysia

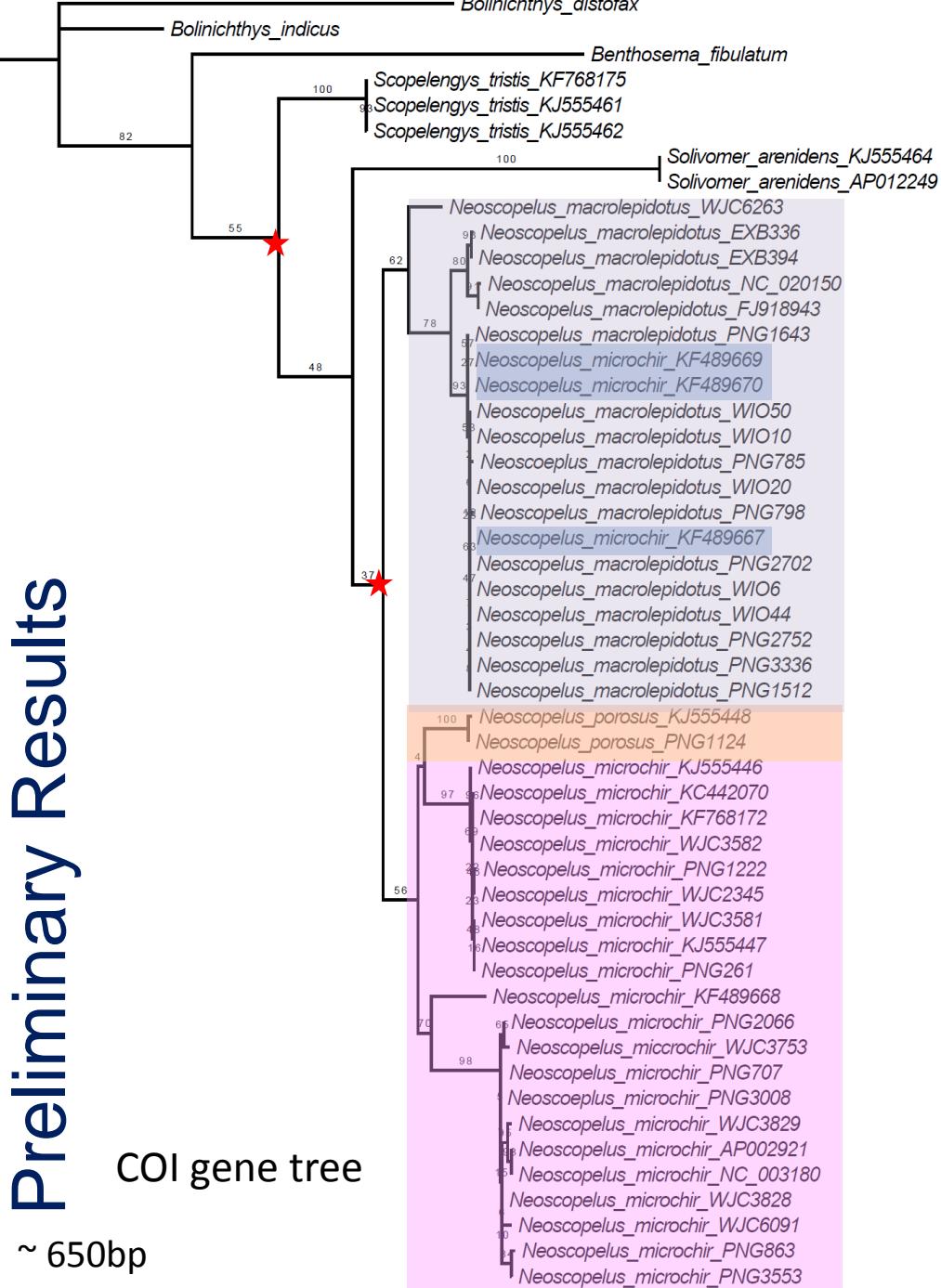


Preliminary Results

COI gene tree

~ 650bp

0.06



outgroup

Scopelengys

Solvomer

- *Scopelengys* is a basal lineage of all 3 genera
- *Solvomer* is a sister group to *Neoscopelus*
- *Neoscopelus* genus is monophyletic
- *Neoscopelus macrolepidotus* is monophyletic
- *Neoscopelus microchir* is not monophyletic

Neoscopelus

- Misidentification from the Genbank

Abbreviations:

WJC: South China Sea

PNG: Papua New Guinea

EXB: New Caledonia

WIO: Western Indian Ocean

Research work in Chen's lab

TDSB

- **Biodiversity exploration** (taxonomy, new species discovery)
- **Phylogeny** (evolutionary relationships) of marine organisms at both large and small scales
- **Evolutionary genomics** (e.g., the studies on species genome duplications)

Molecular Phylogenetics and Evolution 20 (2014) 152–161

Contents lists available at ScienceDirect

Molecular Phylogenetics and Evolution

Journal homepage: www.elsevier.com/locate/mpe



Chapter 17 Elopomorpha (Teleostei) as a New Model Fish Group for Evolutionary Biology and Comparative Genomics

Phylogeny of the Elopomorpha (Teleostei): E and mitochondrial markers

Jhen-Nien Chen^a, J. Andrés López^{b,c}, Sébastien Lavoué^a, N

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^bSchool of Fisheries and Ocean Sciences, University of Alaska, Fairbanks, AK 99775, USA

^cUniversity of Alaska Museum, Fairbanks, AK 99775, USA

^dNatural History Museum & Institute, Chiba 280-8682, Japan

Jhen-Nien Chen, Sarah Samadi and Wei-Jen Chen



Thanks for your attention & thanks
to all who have involved and are
involving the TDSB

