

DACTYLOGYRIDS (MONOGENEA, PLATYHELMINTHES) FROM THE ESOPHAGUS OF THE DEEP-SEE FISH *HOPLICHTHYS CITRINUS* (SCORPAENIFORMES: HOPLICHTHYIDAE)

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INTRODUCTION: The large majority of monogeneans are branchial or cutaneous ectoparasites and relatively few of them are known to parasitise internal organs. Among those of the Dactylogyridae, seven genera (see below) have been proposed to accommodate species collected from the digestive systems of freshwater and marine fishes.

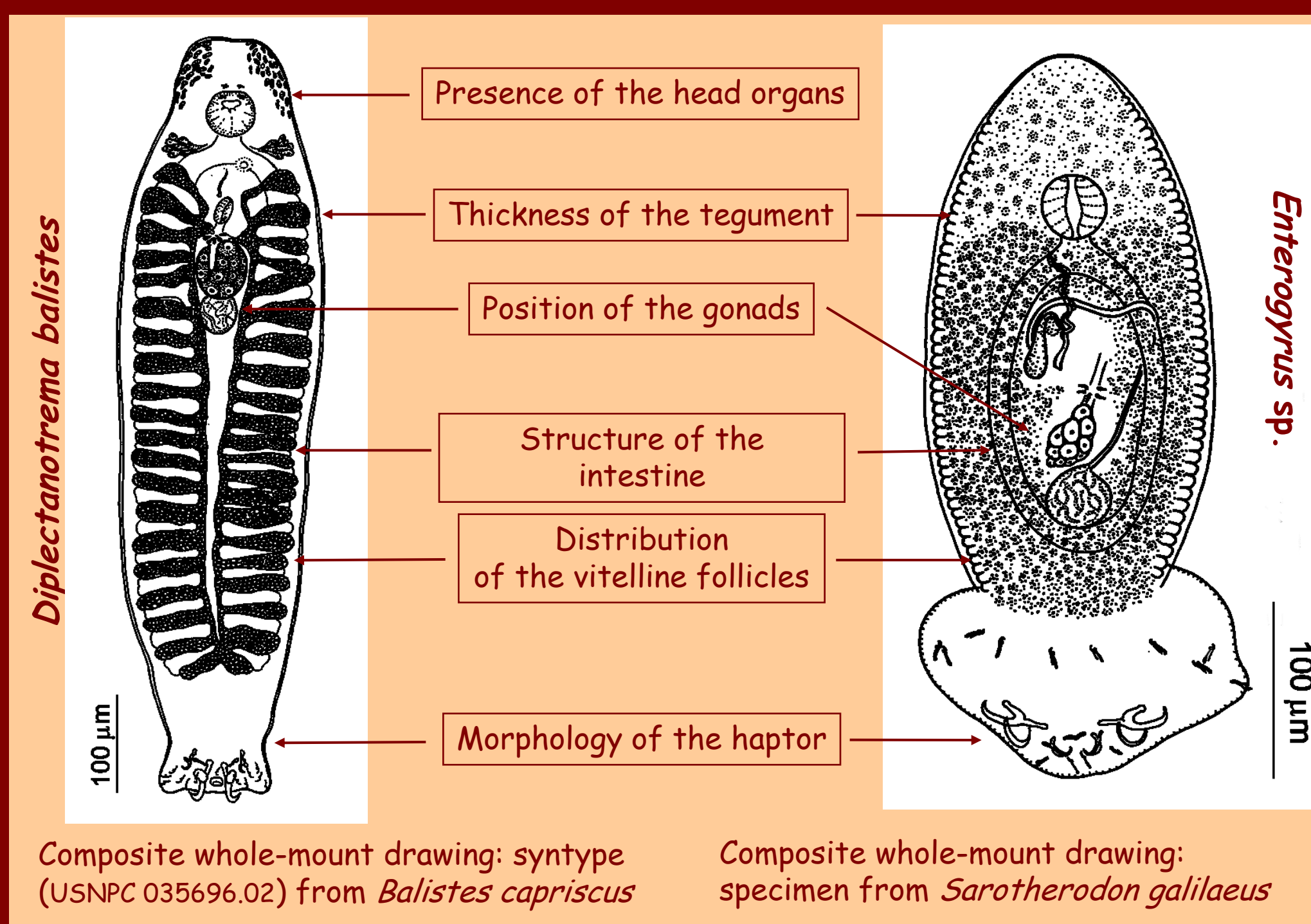
Endoparasitic dactylogyrids from the fish digestive system

Diplectanotrema Johnston & Tiegs, 1922
Pseudempleurosoma Yamaguti, 1965
Paradiplectanotrema Gerasev, Gayevskaya & Kovaleva, 1987
Pseudodiplectanotrema Gerasev, Gayevskaya & Kovaleva, 1987
Metadiplectanotrema Gerasev, Gayevskaya & Kovaleva, 1987
Neodiplectanotrema Gerasev, Gayevskaya & Kovaleva, 1987

Pharynx and esophagus of marine fishes

Enterogyrus Paperna, 1963

Stomach of freshwater fishes



CONCLUSIONS and FURTHER WORK:

- Species of *Diplectanotrema*, *Pseudempleurosoma* and *Paradiplectanotrema* share the same composition of the haptor hard structures and general features of internal anatomy, which signifies the close relationship between the 3 genera and raises the question of synonymy.
- Our examination revealed some errors in the original diagnosis of the above genera but a „mass” concerning the presence and position of the vagina remains unidentified.
- Live specimens and histological sections of a newly collected specimens of the diplectanotrema-like dactylogyrids can provide helpful insights into the position of the vagina and the structure of the intestine.

In the original description of *Diplectanotrema balistes*, Johnston and Tiegs (1922) stated that the haptor possesses only 1 pair of simple bars. Nevertheless, our examination of its type specimens revealed that the haptor actually contains 1 dorsal and 2 ventral bars. Also the accessory piece of the copulatory organ is absent in the original drawings.

Acknowledgments:

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Hoplichthys citrinus Gilbert, 1905



Distribution, ecology, habitat:

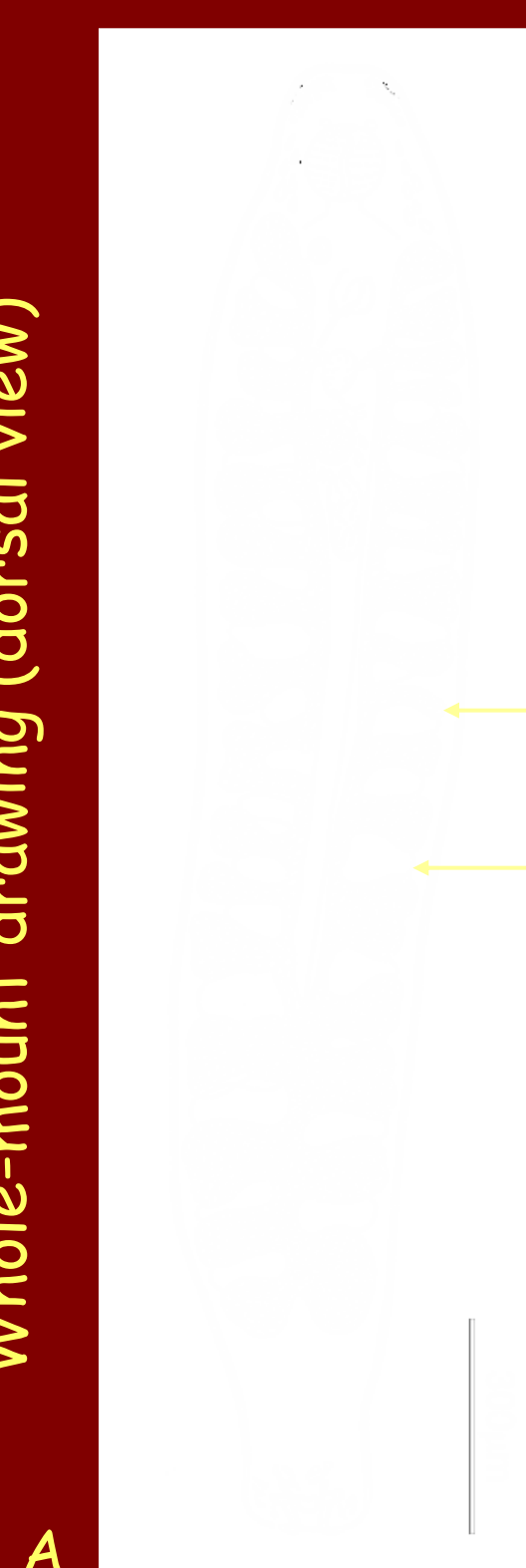
Benthic on soft-bottom habitats of the outer continental shelves and upper continental slopes (c. 100-435m) of the tropical west-central Pacific.



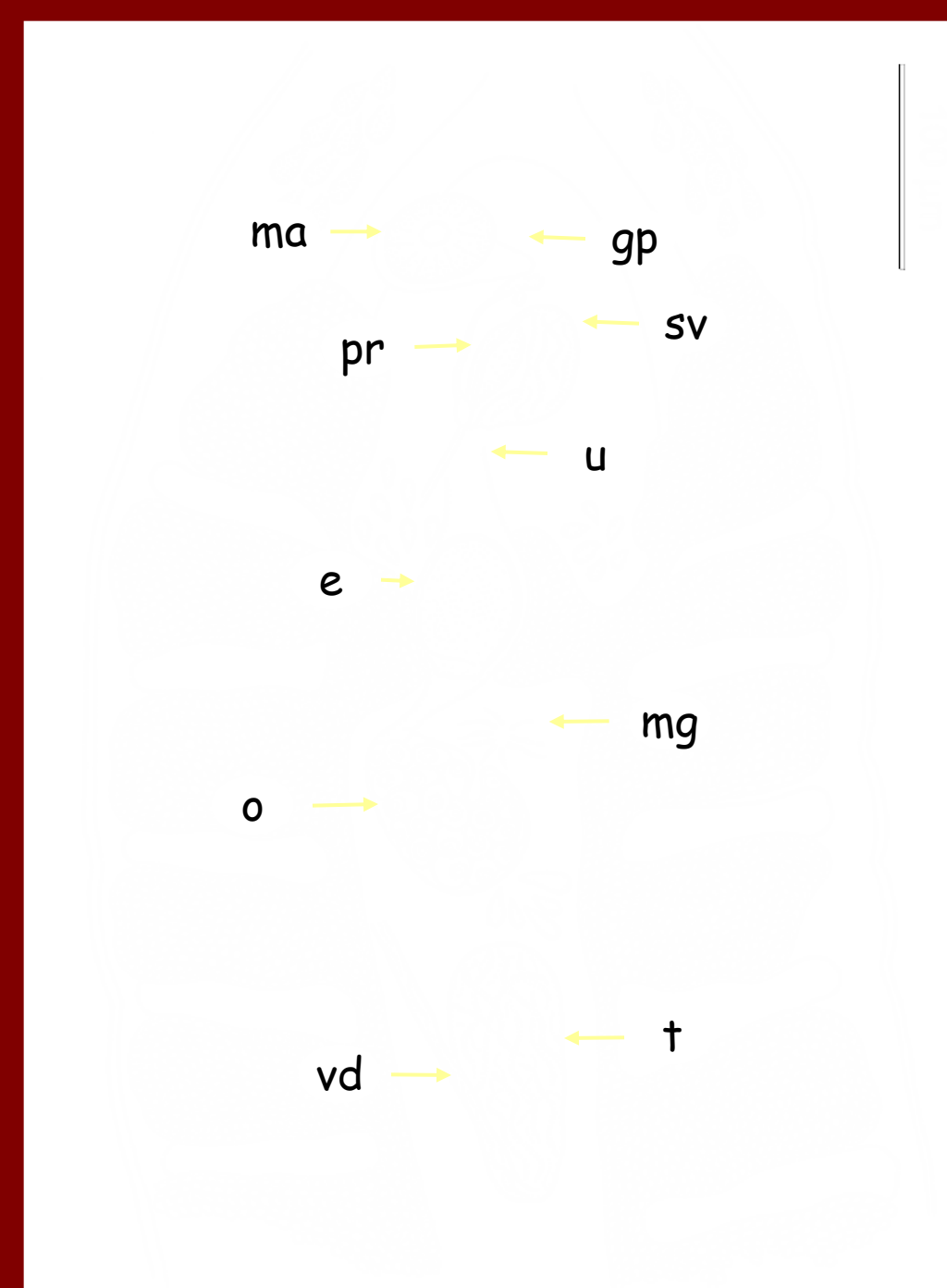
RESULTS: During recent surveys of helminth parasites of marine fishes off New Caledonia, South Pacific, 20 specimens of conspecific monogeneans were recovered from the esophagus of the deep-sea fish *Hoplichthys citrinus* (Hoplichthyidae) collected in the region of the Chesterfield Islands (Coral Sea, about halfway between New Caledonia and Australia). The specimens found were preliminary assigned to *Paradiplectanotrema lepidopi* based on the morphology of the sclerotised structures (see on the right). However, re-examination of the type specimens of *Diplectanotrema balistes*, *Pseudempleurosoma carangis*, and vouchers of *Paradiplectanotrema lepidopi* showed that the type species of these genera share many more common features than it was believed earlier, and therefore it is likely that all these genera are synonyms.

Paradiplectanotrema lepidopi
Gerasev, Gayevskaya & Kovaleva, 1987
from *Hoplichthys citrinus*

Whole-mount drawing (dorsal view)

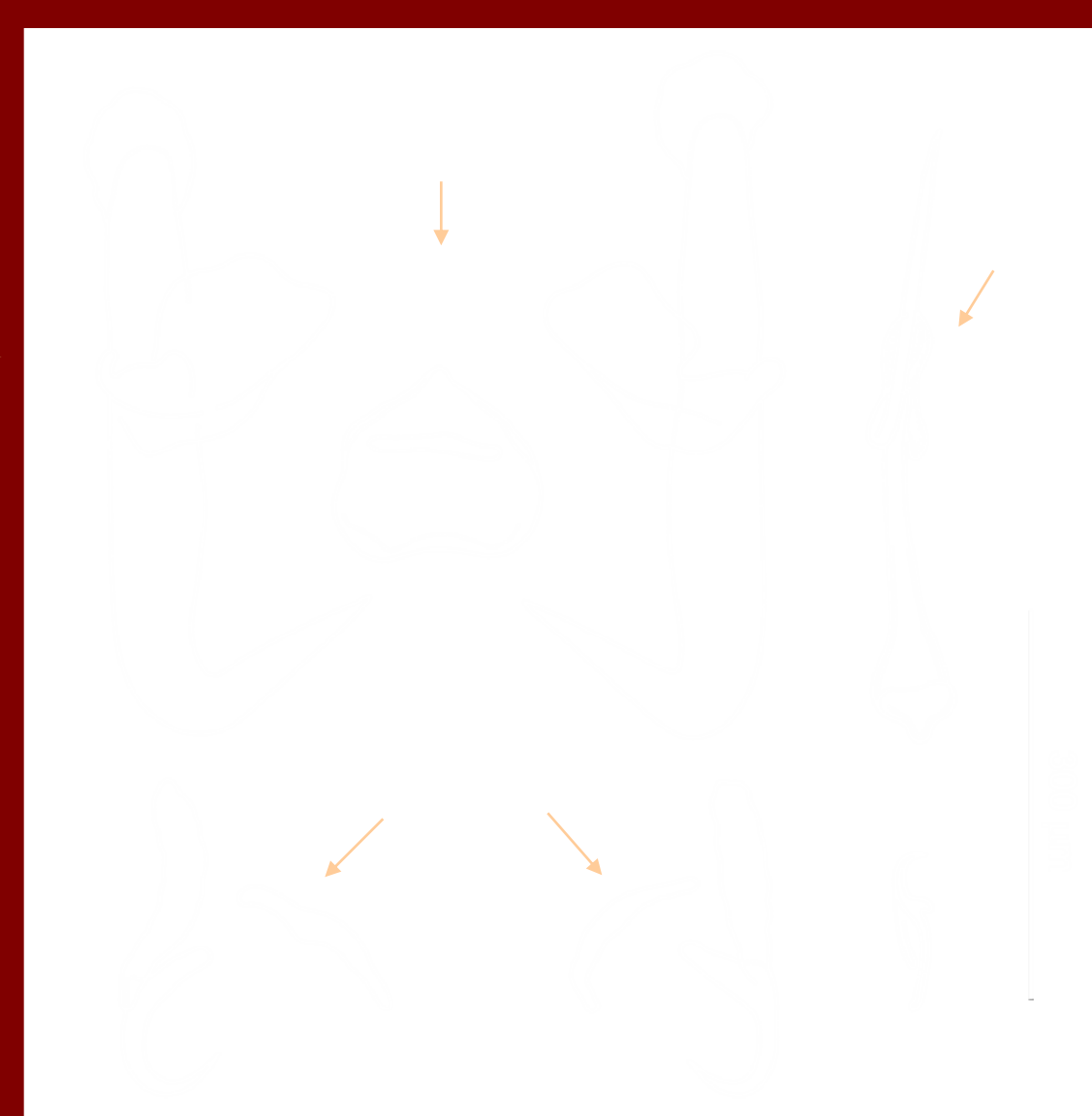


VAGINA NOT OBSERVED!

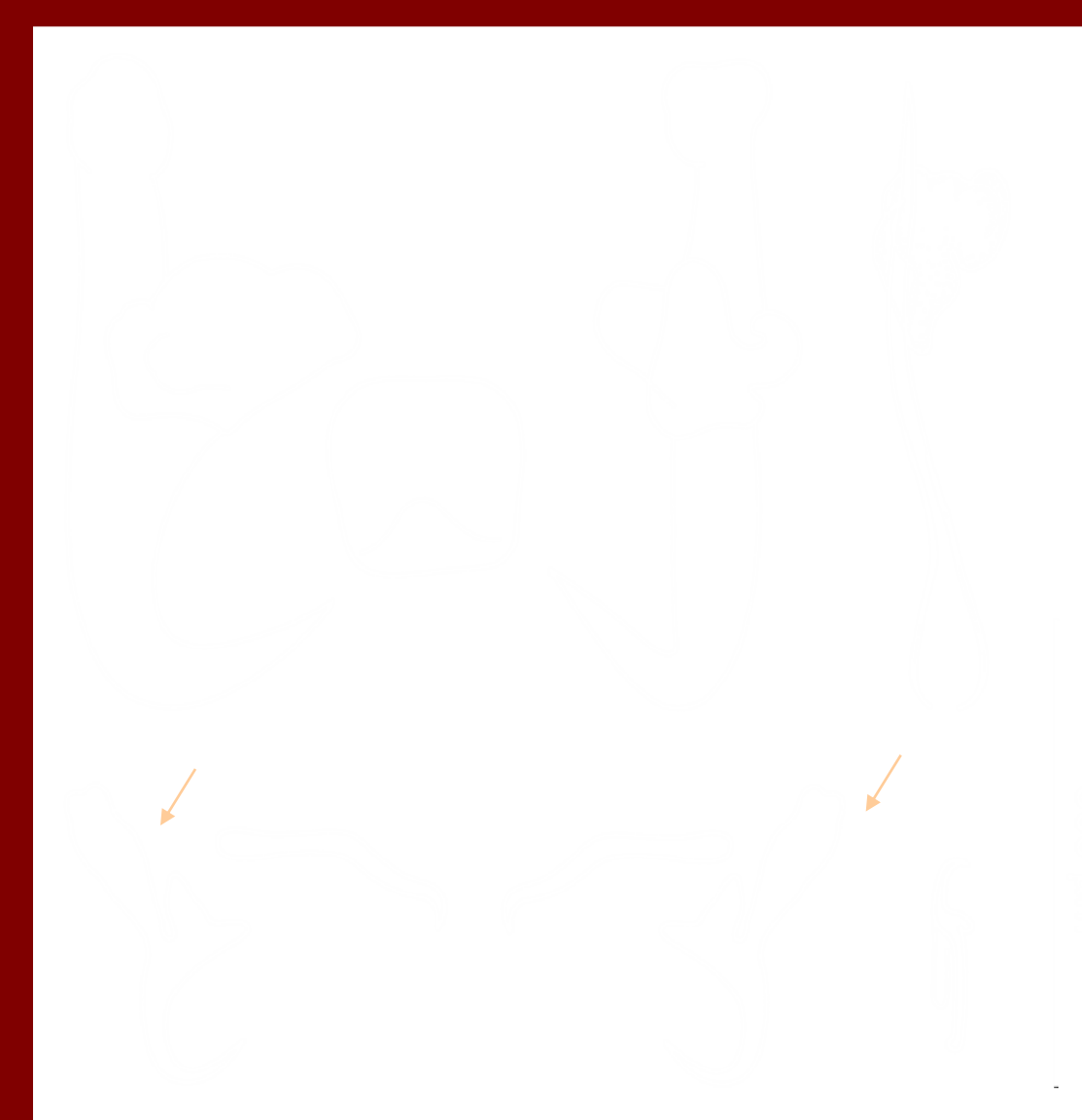


Enlargement of reproductive organs

A: id - intestinal diverticulum; vf - vitelline follicles. **B:** † - testis; vd - vas deferens; sv - seminal vesicle; pr - prostatic reservoir
o - ovary; mg - Mehlis glands; e - egg; u - uterus; ma - muscular aperture; gp - genital porus



Diplectanotrema balistes (MacCallum, 1915): syntype (USNPC 035696.02) from *Balistes caprisicus* (Tetraodontiformes: Balistidae)



Pseudempleurosoma carangis Yamaguti, 1965: holotype (USNPC 063505.00) from *Caranx lugubris* (Perciformes: Carangidae)

Host: *Hoplichthys citrinus* (5 deeply frozen specimens).

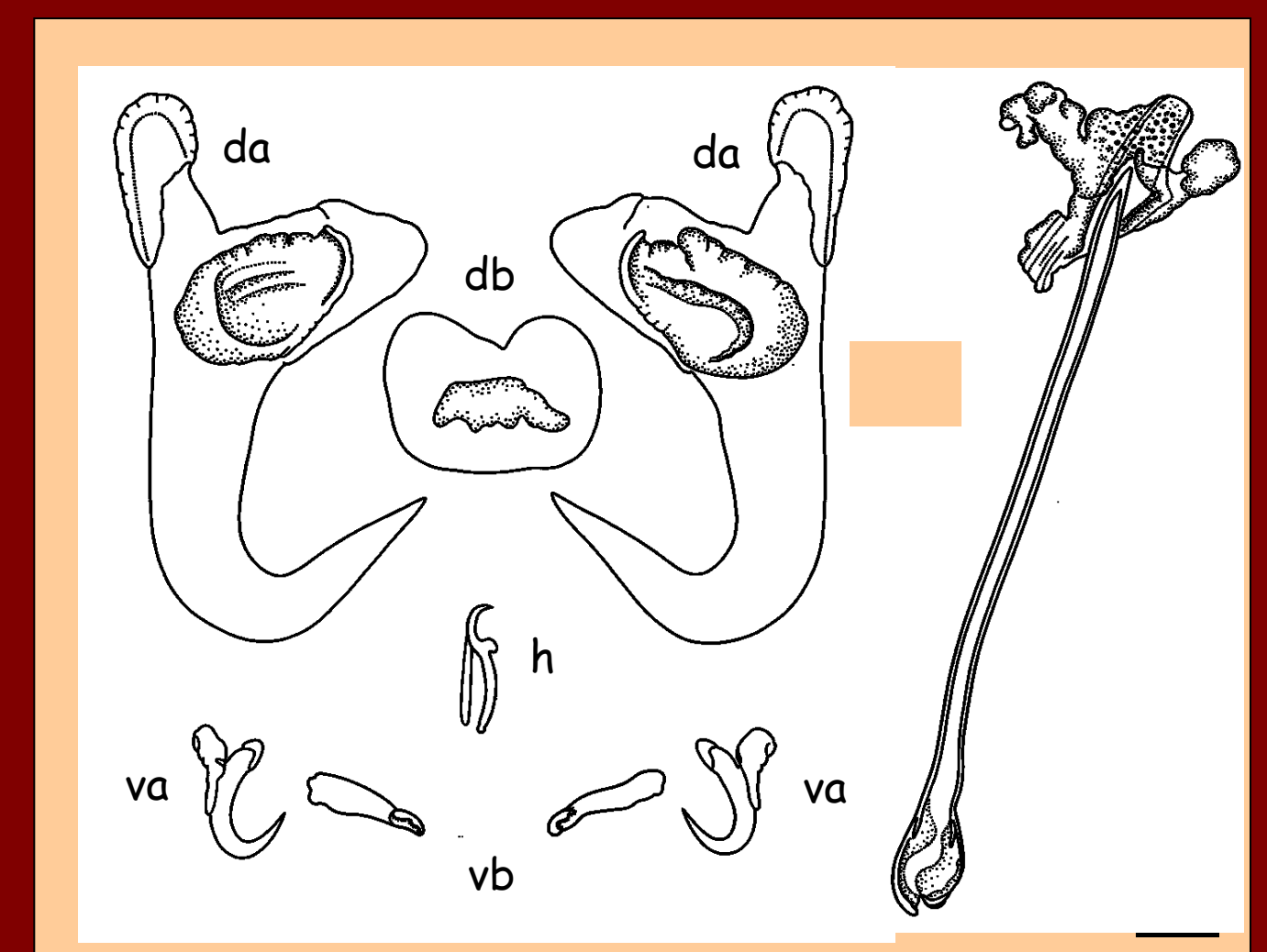
Locality: Seamount Nova (22°48'S, 159°22'E), depth 330 m, south of the Chesterfield Islands, New Caledonia.

Site: Esophagus.

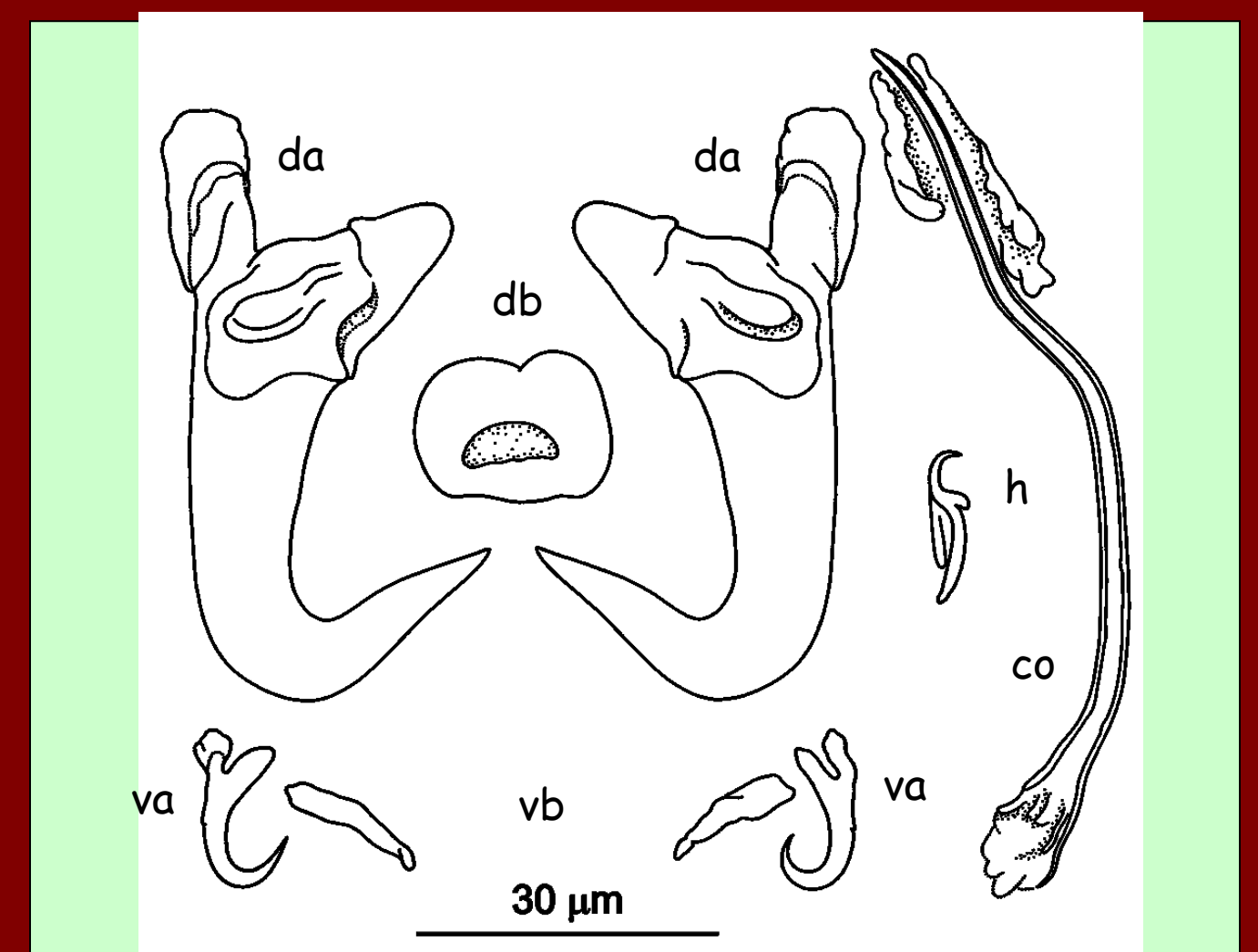
Specimens examined: 7 flattened specimens fixed with GAP; 13 unflattened specimens fixed in 70 % ethanol and stained with Schneider's carmine.



Paradiplectanotrema lepidopi from *Hoplichthys citrinus* (Nomarski DIC). : A. Haptor; B. Copulatory organ



Paradiplectanotrema lepidopi from *Hoplichthys citrinus*; southwest Pacific. Sclerotised structures: da - dorsal anchors; db - dorsal bar; va - ventral anchors; vb - ventral bar(s); h - hook; co - copulatory organ



Paradiplectanotrema lepidopi from *Lepidopus caudatus* (Perciformes: Trichiuridae); North Atlantic Ocean: vouchers (USNPC 094763.00). Sclerotised structures: da - dorsal anchors; db - dorsal bar; va - ventral anchors; vb - ventral bar(s); h - hook; co - copulatory organ

Our examination of the type materials of *Pseudempleurosoma carangis* showed that the structure originally noted as the ventral bar attached to the ventral anchor is in reality markedly elongated outer root. Therefore, we believe that the haptor has only 2 instead 4 ventral bars.