

**Type specimens of holothuriid and stichopodid species
(Holothuroidea: Aspidochirotida) available in the
*Zoological Museum of the University of Amsterdam, the
Netherlands***



(Vial with both type and non-type specimens)

Preliminary report compiled by:

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Background

On 18 September 2005 Dr Gustav Paulay of the Florida Museum of Natural History and Dr Alex Kerr of the University of Guam were awarded a PEET program grant from the USA NSF to undertake an integrative taxonomic revision of aspidochirotid sea cucumbers, train a new generation of aspidochirotid taxonomists and liberate the generated taxonomic information and knowledge to the scientific community.

To achieve this task, the so-called Aspidochirote Working Group (AWG) - an international team of taxonomists specialised in the taxonomy of, *i.a.*, aspidochirotid sea cucumbers - was installed. This working group was conceived so that it could operate on a highly cooperative basis whereby members assumed the responsibility over one or several specific tasks. The Belgian leg of the AWG, for instance, accepted the responsibility to, *i.a.*, track down type specimens across European museums

Introduction

The visit to the Zoological Museum of the University of Amsterdam (ZMA from here onwards) was prompted because one of us (YS) was urgently requested to return specimens borrowed some years ago. A visit to the ZMA was anyway on our agenda given that this museum is home to several important collections, most notably the collection made during the famous scientific expedition of the Siboga (1899-1900)¹.

According to Jangoux (1991) the ZMA collection houses type specimens of 108 nominal species and 2 nominal varieties of holothuroids. Most of these come from Indonesian waters where they were collected by the Siboga Expedition; the Gier Expedition (1906-1909), or by the famous Dutch naturalist C.P. Sluiter who at that epoch was the curator of the Royal East Indies Society of Natural Science in Batavia.

Within the Holothuriidae and Stichopodidae, 11 species represented by 23 type specimens are listed in Jangoux (1991). We re-located these types in the ZMA collection, re-described them according to modern standards and sampled tissue from their various body parts to allow subsequent examination of the ossicle assemblage.

We left Belgium on the evening of 11 October 2009, worked the whole day thereafter in the ZMA and returned to Belgium in the evening of the same day.

Goal

The goal of our visit to the ZMUG was threefold: (1) return holothuroid material on loan with one of us (YS) to the ZMA collection; (2) return asteroid material on loan with M. Jangoux (Université Libre de Bruxelles) to the ZMA; (3) redescribe type specimens and take sample tissue of each of the recovered holothuriid and stichopodid type specimens.

Report architecture

This preliminary report provides a concise overview of the type specimens in the families Holothuriidae and Stichopodidae that we were able to track down in the ZMA collection.

In the near future this report will be complemented with a definite account that will provide re-descriptions of the recovered types together with our judgment on the taxonomic status of the species treated. All information will be made available on www.echinodermata.be.

Results (preliminary)

Aided by Jangoux's (1991) paper, the ZMA database and Dr Joke Bleeker (the responsible curator), we easily recovered the type specimens from the ZMA shelves. The table below, ordered alphabetically according to species epithet, summarises our preliminary findings.

¹ More information on the recent echinoderm type specimens can be found in Jangoux (1991).

Original species name	ZMA Collection number	Number of specimens	Type status	Preliminary remarks
<i>Holothuria demula</i> Sluiter, 1914	ZMA E.2175	1	Holotype, fixed by monotypy (ICZN art 73.1.1)	Listed as syntype in Jangoux (1991). This cannot be upheld given that Sluiter (1914: 4) clearly indicated that he had only one specimen before him.
<i>Labidodemas egestosum</i> Sluiter, 1901	ZMA E.1278/4	1	Holotype, fixed by monotypy (ICZN art 73.1.1)	This specimen is so poorly preserved that redescription and ossicle sampling could not meaningfully be done (Fig 1). The name is best considered a <i>nomen dubium</i> .
<i>Holothuria infesta</i> Sluiter, 1901	ZMA E.1169	1	Holotype	Rehydrated specimen which anatomy could not be completely assessed. Tissue was taken from dorsal and ventral body wall as well as a tentacle.
<i>Stichopus levis</i> Sluiter, 1888	ZMA E.2499; 1301	1; 1	Syntypes	Jangoux (1991) mentions only voucher ZMA E.2499; not ZMA E. 1301. It remains to be investigated if both vouchers here recovered belong to the same species (Fig. 2)
<i>Holothuria marginata</i> Sluiter, 1901	ZMA E. 1161	4	Syntypes	Jangoux (1991) mentions five syntypes; we found only four. We re-described the largest specimen (length=77 mm), but took body wall tissue from all specimens.
<i>Holothuria mitis</i> Sluiter, 1901	ZMA E.1053; 1054; 1055; 1056; 1057	2; 3; 1; 1; 1	Syntypes	ZMA E. 1053 (2 specimens) contains a yet unidentified phylloporid (Fig. 3) and a specimen that has been rehydrated and that does not allow complete re-description and/or ossicle sampling. ZMA E. 1054 holds 3 rehydrated, indescribable specimens; ZMA E. 1055 and 1057 each contain 1 indescribable rehydrated specimen; only ZMA E. 1056 holds one relatively well preserved specimen.
<i>Holothuria oxurropa</i> Sluiter, 1888	ZMA E. 2493; 2501	1; 1	Syntypes	None.
<i>Holothuria roulei</i> Koehler, 1895	ZMA E. 2990	1	Non-type	Listed as syntype in Jangoux (1991). Bleeker (pers. comm.) however confirm our presumption that Koehler did not deposit material in ZMA.
<i>Holothuria submersa</i> Sluiter, 1901	ZMA E. 1015	1	Holotype	None.
<i>Holothuria tiremis</i> Sluiter, 1901	ZMA E. 1157	2	Syntypes	Both specimens rehydrated; anatomy and ossicle assemblage could not completely be assessed.
<i>Stichopus vastus</i> Sluiter, 1887	ZMA E. 2505	1	Holotype	Calcareous ring separated from specimen.

Table 1. Recovered holothuriid and stichopodid types in the ZMA.

Figures



Fig. 1. *Labiododema egestosum* Sluiter, 1901. The extremely poor preservation, and previous dehydration, make this name a *nomen dubium*.



Fig. 2. *Stichopus levis* Sluiter, 1888. Only an analysis of the ossicle assemblage will reveal if both depicted specimens belong to the same species



Fig. 3. ZMA E. 1053. Voucher ZMA E. 1053 contains two syntypes of *Holothuria mitis* Sluiter, 1901. One of them has a calcareous ring that clearly reveals its true nature: a phylloporid species.

Conclusion

The small, but important, holothuriid and stichopodid collection of the ZMA is for the first time since 1978, when F.W.E. Rowe studied it *in partim*. Overall, our findings agree with those in Jangoux (1991). Taxonomic decisions will be presented in our final report as will be made available on www.echinodermata.be.

Acknowledgments

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References

References mentioned in this report can be located on the 'PEET website' available under the following link:
<http://www.guammarinelab.com/peetcukes/systematicslit.html>

Afterthought



A green Provo movement clearly survives in Amsterdam.

Haasrode, 13 October 2009.