Capacity Building Trip to the Royal Museum for Central Africa

Belgian Global Taxonomic Initiative

Scientific Report

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by

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INTRODUCTION

Funding to attend training and capacity building in Belgium was successfully obtained through the Belgian National Focal Point to the Global Taxonomy Initiative (GTI). The training was to be held in Tervuren, Belgium at the Royal Museum for Central Africa. In addition, an echinoderm expert from the UK, Frank Rowe, was invited to give focussed training on ophiuroid identification.

OBJECTIVES

The objectives of the visit was to i) attempt to resolve the 'epizoica' issue using SEM methods; ii) finalise and submit the paper on the *Ophiocoma* species of South Africa; iii) identify echinoderm material recently found in Durban Natural Science Museum (DNSM); and iv) to resolve a number of identification issues experienced with South African Museum material.

RESULTS

The first couple of days was dedicated to resolving the mystery of the small ophiuroid which was found on a number of adult *Ophiocoma brevipes* found at Sodwana Bay and in the collection at the Paris Natural History Museum. The smaller individuals were affectionately known as the 'epizoica' (Figure 1). The possible outcomes of this mysterious little ophiuroid was that it could a) be a new species, b) a different species to the adult on which it was living on or c) a juvenile of *O. brevipes*; all of which had never been documented.

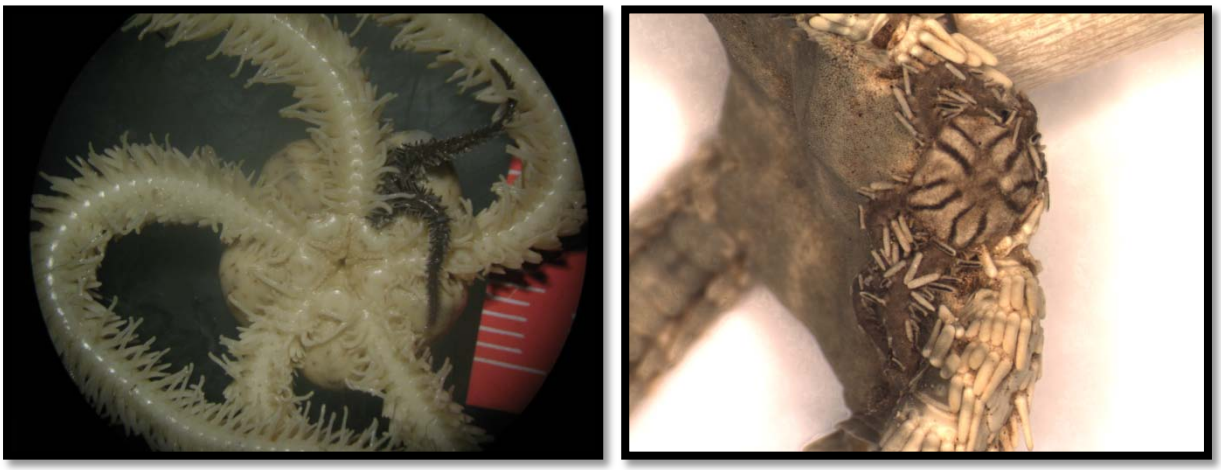

Figure 1. Adult *Ophiocoma brevipes* with a smaller ophiuroid attached.

A number of authors have used dental plates features as a characteristic to confirm the identity of a species (Devaney 1970; Benavides-Serrato *et al*. 2008). Dental plates (Figure 2) of a number of specimens including the 'epizoica', an adult *O. brevipes*, a small adult *O. brevipes,* adult *O. erinaceus* and a juvenile *O. erinaceus* were mounted in order to undertake Scanning Electron Microscope

(SEM) images. The morphological features of the different dental plates were compared and it was found that the 'epizoica' was in fact a juvenile *O. brevipes*.

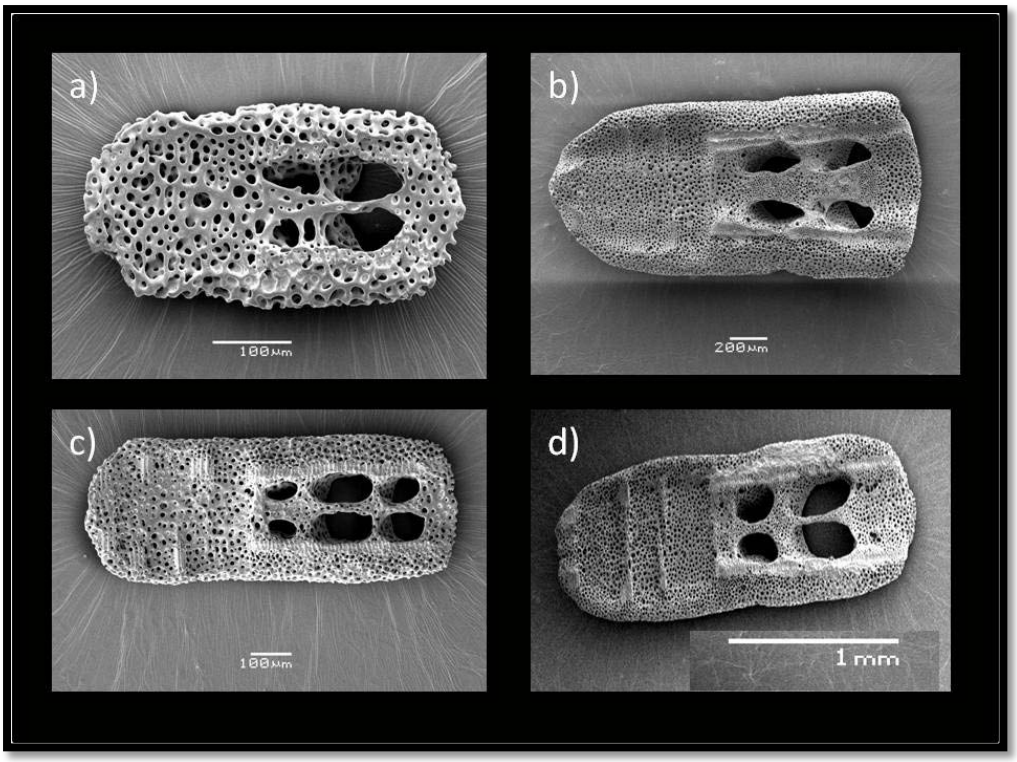

Figure 2. Dental plates of a) juvenile *O. brevipes* (epizoica), an adult *O. brevipes*, adult *O. erinaceus* and a juvenile *O. erinaceus.* SEM Images: Dr Didier VandenSpiegel, Royal Museum of Central Africa

A paper on the *Ophiocoma* species of south eastern Africa was submitted to the Western Indian Ocean Journal for Marine Science. The paper included a description of the juvenile *O. brevipes*, four new distribution records for South Africa and a neotype designation for *O. scolopendrina* (Figure 3).

Figure 3. Ventral and dorsal view of the designated neotype for *Ophiocoma scolopendrina* housed at the Paris Natural History Museum.

For the remainder of the trip, echinoderm veteran and specialist, Frank Rowe provided training on ophiuroid identification and assisted in identification of an echinoderm collection that was recently discovered at the DNSM. The DNSM collection hosted ophiuroids, asteroids and echinoids. The localities of the material ranged from Durban and Cape Town to Port Sudan. A total of 59 specimens were identified; 16 ophiuroids; 26 asteroids and 17 echinoids. This paper will be prepared during the first half of 2011.

A number of specimens were also identified from two collections in South Africa. Eight species from depths of 300m+ were identified (Figure 4) and an *Ophiactis* sp. which had a peculiar colour pattern on its arms which had not been recorded in South Africa before (Figure 5) was also identified.

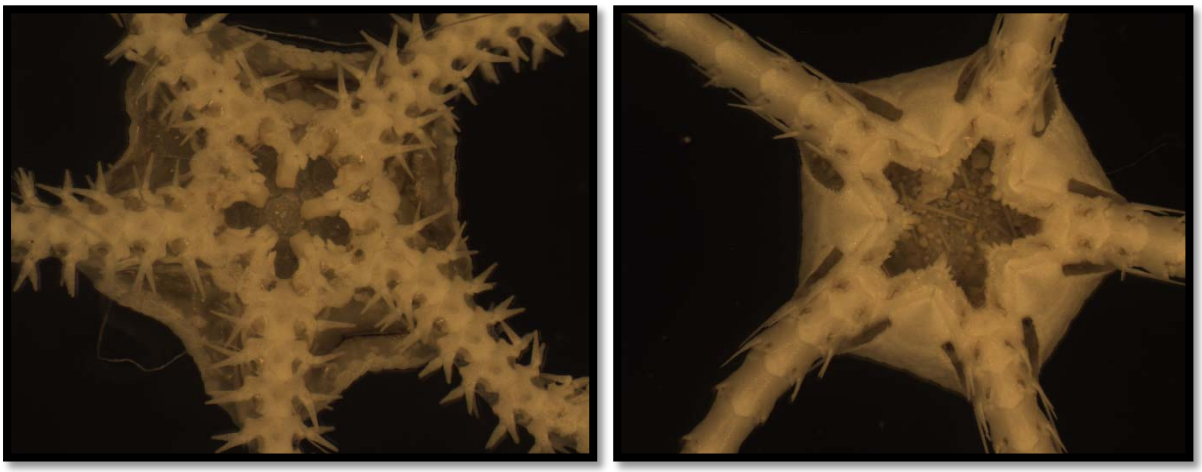

Figure 4. Ventral views of *Amphiura atlantica* (left) and *Ophiura* (O*phiura*) *trimeni* (right).

Figure 5. Dorsal and ventral view of *Ophiactis picteti,* with a distinctive marble pattern on the dorsal side of the arms.

CONCLUSION

The trip was very successful, all objectives were met and additional work was also completed. An increased understanding of the terminology and morphological characteristics of ophiuroids has added extensive value to the project.

AKNOWLEDGMENTS

Logistical organisation and support from Yves Samyn and his team at the GTI is greatly appreciated. Yves, in particular is thanked for his expertise, support and never-ending enthusiasm for this project. Didier VandenSpiegel is thanked for his support and assistance during the trip, especially for his expertise in the preparation of the dental plates for the SEM images which was paramount to the identification of 'epizoica'. Frank Rowe is sincerely thanked for his support with the countless emails, skype calls and photographs that he has been requested to assist with. The Belgian National Focal Point to the Global Taxonomy Initiative is acknowledged for providing funding for this trip.

REFERENCES

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