

Lost in the Museum: a neglected collection of shallow-water South African echinoderms



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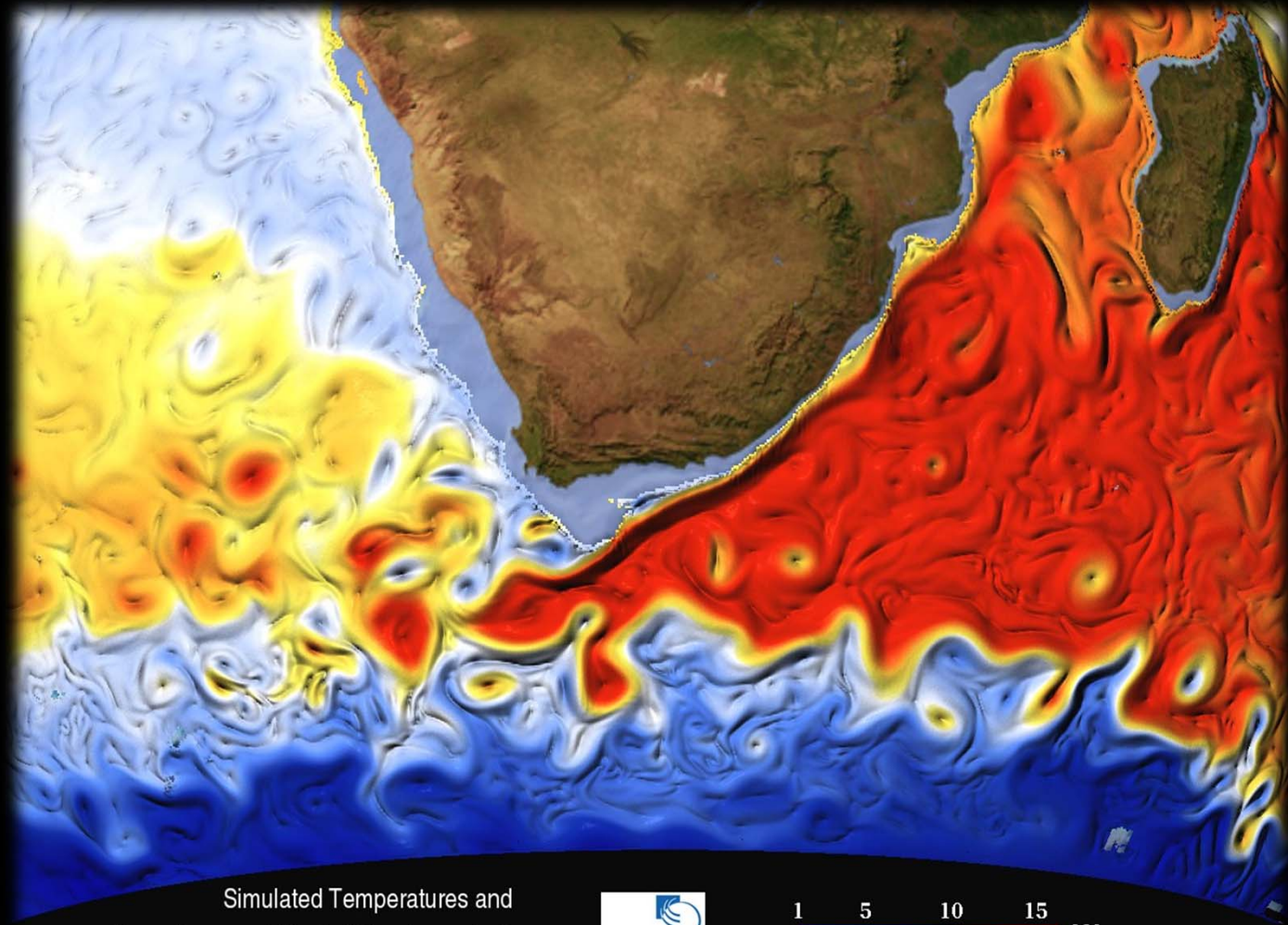
Charles L. Griffiths (University of Cape Town)



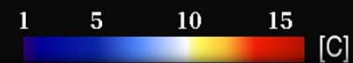
Where in the world?



Unique biodiversity



Simulated Temperatures and
Currents around South Africa (snapshot)



Echinoderm Collections in SA

3 Collections in South Africa

Main collection

- iZiko South African Museum, Cape Town

2 Satellite collections

- Ezemvelo KZN Wildlife, Durban
- Durban Natural Science Museum, Durban

Smaller collections worldwide:

- Royal Museum for Central Africa, Tervuren (RMCA)
- Natural History Museum, London



Echinoderm Collections in SA

iZiko South African Museum (iSAM)

- ± 4540 echinoderm specimen bottles (1-50 specimens per bottle)
- ± 1135 accessioned echinoderms ($\pm 25\%$)
- $\pm 65\%$ unidentified
- Holothuroidea 'virtually' complete



Echinoderm Collections in SA

Ezemvelo KZN Wildlife collection

- 71 echinoderm specimens
- 5 Asteroids (7%)
- 6 Echinoids (8%)
- 1 Crinoid (1%)
- 59 Ophiuroids (84%)
- 84% have been identified



Echinoderm Collections in SA

Durban Natural Science Museum

- 82 echinoderm specimens
- 26 Asteroids (5 species)
- 17 Echinoids (8 species)
- 38 Ophiuroids (10 species)

Two Holotypes



Durban Natural Science Museum

Anthenoides marleyi Mortensen 1925

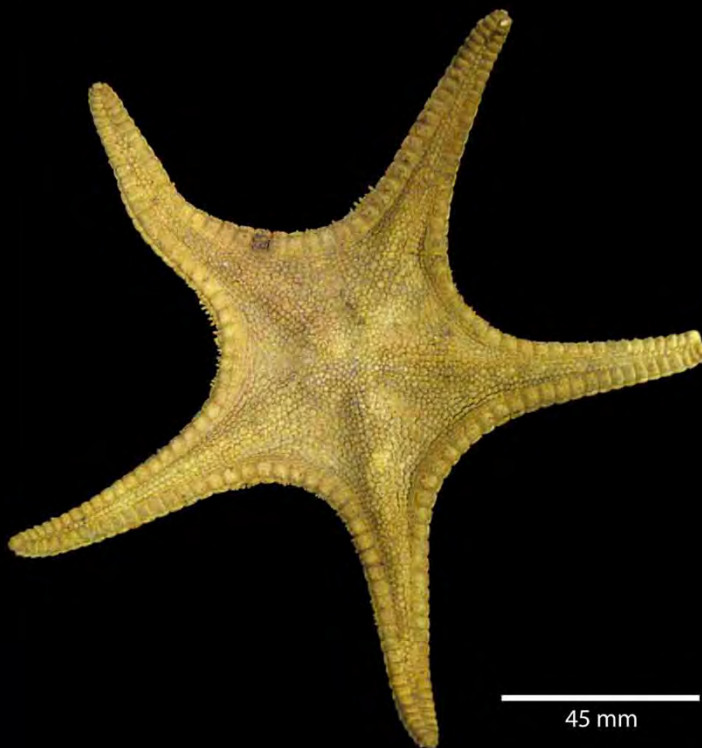
Holotype

Accession Number: DNSM ECH 28

Location: Off Umvoti River mouth

Depth: 35-40 fathoms (64-73 m)

Number of specimens: 1



45 mm



Durban Natural Science Museum



20 mm

Pteraster capensis Gray, 1847



20 mm

Astropecten inermis de Loriol, 1899



2 mm

Henricia ornata (Perrier, 1869)



20 mm

Parvulastra exigua (Lamarck, 1816)

Durban Natural Science Museum



20 mm

Echinodiscus bisperforatus

Leske, 1778



10 mm

Clypeaster eurychorius

H.L. Clark, 1924



20 mm

Salmacis bicolor

Agassiz & Desor, 1846

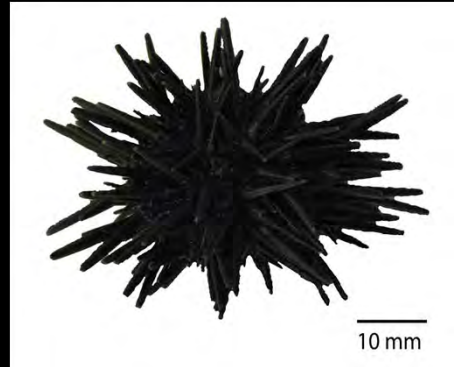


5 mm

Parechinus angulosus

(Leske, 1778)

Durban Natural Science Museum



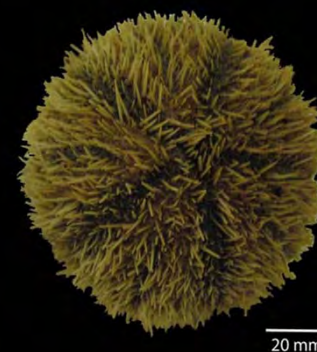
Stomopneustes variolaris
(Lamarck, 1816)



Echinostrephus molaris
(Blainville, 1825)



Plococidaris verticillata
(Lamarck, 1816)



Tripneustes gratilla
(Linnaeus, 1758)

Durban Natural Science Museum

Asteroschema capensis Mortensen 1925

Holotype



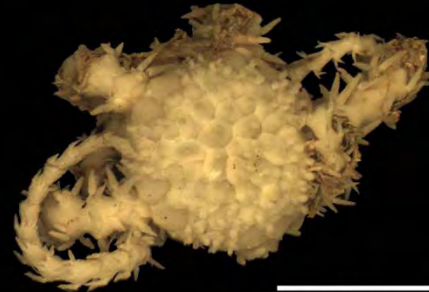
10 mm



Accession Number: DNSM ECH 28
Location: Off Umvoti River mouth
Depth: 35-40 fathoms (64-73 m)
Number of specimens: 1

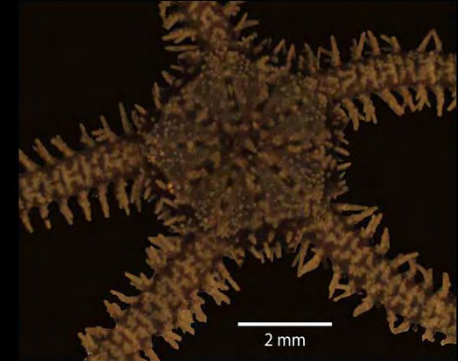


Durban Natural Science Museum



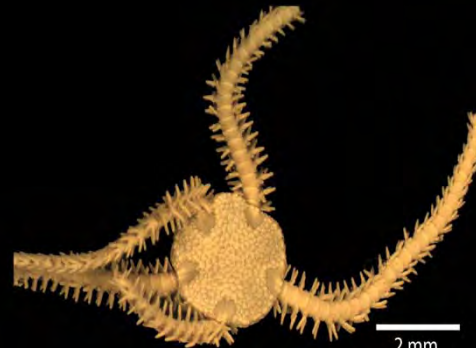
500 μm

Ophiomitrella hamata
Mortensen, 1933



2 mm

Ophiothela venusta
(de Loriol, 1900)



2 mm

Amphioplus (Lymanella) integer
(Ljungman, 1867)



3 mm

Amphiura (Amphiura) capensis
Ljungman, 1867

Durban Natural Science Museum



2 mm

Ophiactis plana Lyman, 1869



1 mm

Ophiactis carnea Ljungman, 1867



2 mm

Ophiothrix (Acanthophiothrix) proteus
Koehler, 1905

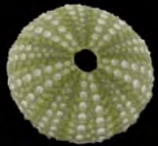


20 mm

Ophiarachnella capensis
(Bell, 1888)

Durban Natural Science Museum

- Collection probably not examined since 1920
- Additional specimens: *ad hoc*
- Specimens in reasonable condition
- Ethanol being topped up regularly
- *Hacelia superba* var. *capensis* was not found
- As a result of this study:
 - 'Missing' holotypes found
 - Echinoderms now databased within DNSM
 - Photographic record available

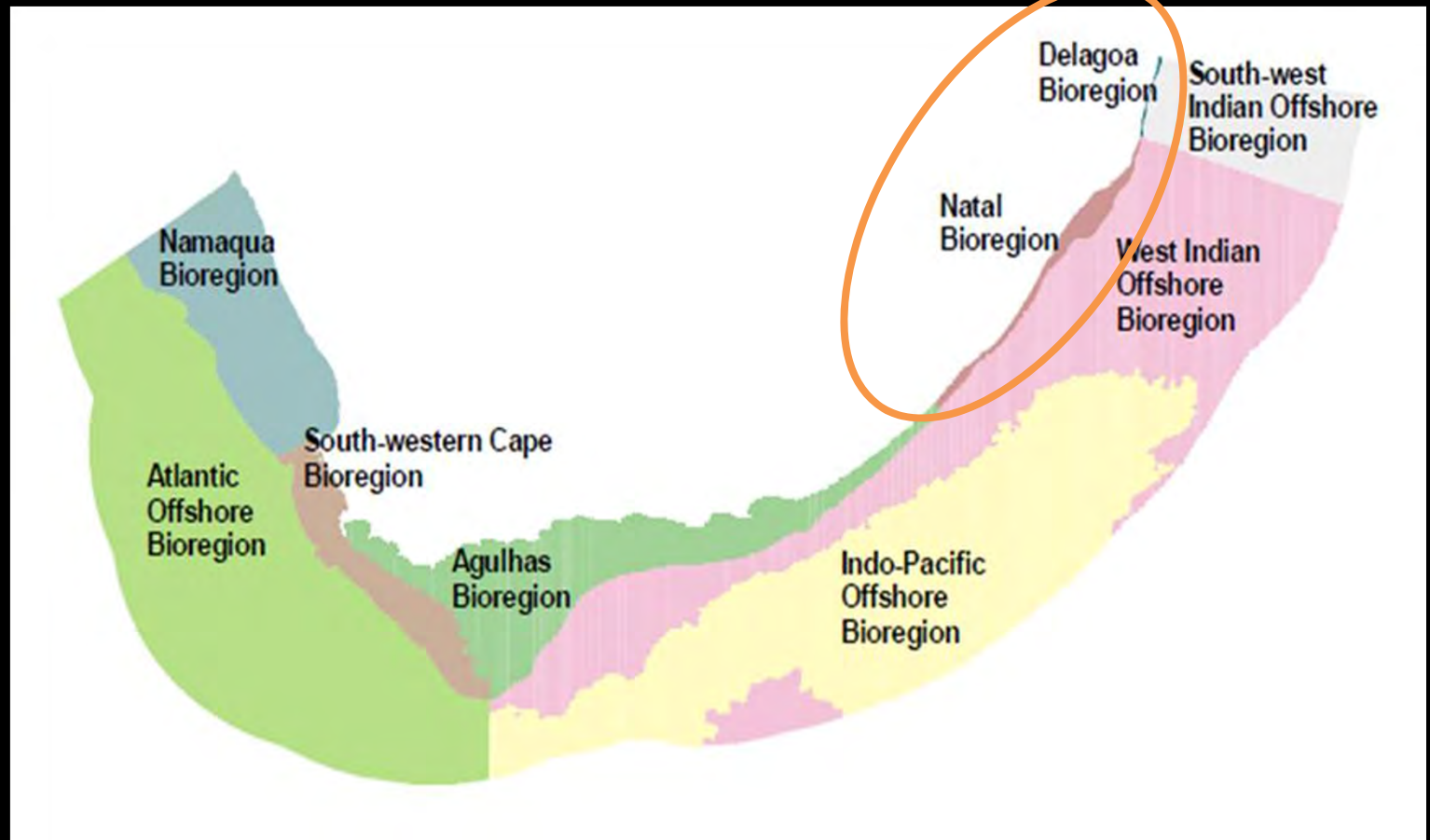


Ophiuroids of RMCA collection

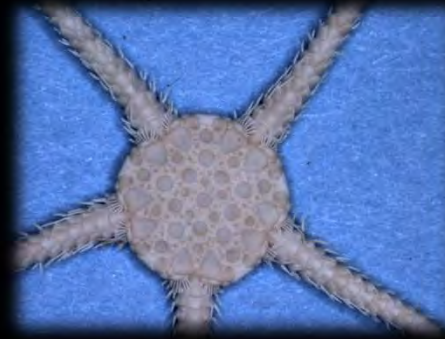
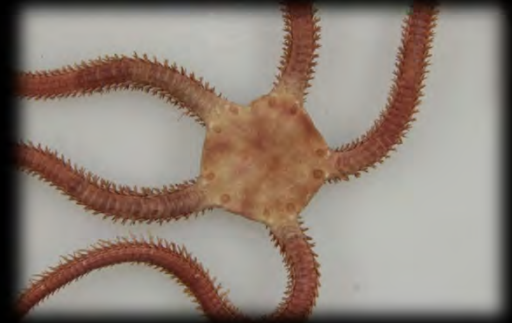
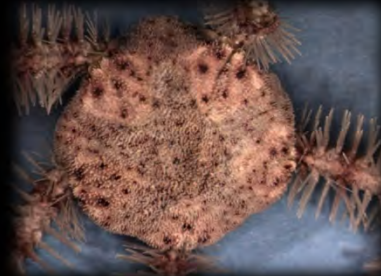
- 520+ echinoderm specimens
- 47% are ophiuroids (n=248)
- 40 species
- 9 unidentified specimens (SA)



Ophiuroids of RMCA collection



Ophiuroids of the east coast of South Africa (RMCA and iSAM collections)



Ophiuroids of RMCA collection

Ophiocomidae

- Number of species in SA from four to eight
- Extended distribution records southwards to the Eastern Cape.
- A neotype is designated for *O. scolopendrina*
- Juvenile of *O. brevipes* described



Ophiuroids of RMCA collection

Juvenile of *O. brevipes* described



Olbers and Samyn 2012 (in press). Western Indian Ocean Journal of Marine Science

Summary

Echinoderm databases in South Africa are:

- Incomplete
- Dubious
- Inaccessible online
- Source information from different class specialists:
 - Holothuroidea – Prof. Ahmed Thandar
 - Ophiuroidea – Jennifer Olbers
 - Asteroidea – Erich Koch
 - Echinoidea – Zoleka Filander



Acknowledgements

Project members:

- Dr Yves Samyn (Natural Sciences Institute, Brussels)
- Dr Frank Rowe (pro Australian Museum, Sydney)
- Dr Didier van den Spijgl (Royal Museum for Central Africa, Tervuren)
- Prof. Charles Griffiths (University of Cape Town, South Africa)
- Mark Olbers (Coerced volunteer)

Funders:

- The Belgian National Focal Point to the Global Taxonomy Initiative
- National Research Foundation - South Africa

