

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



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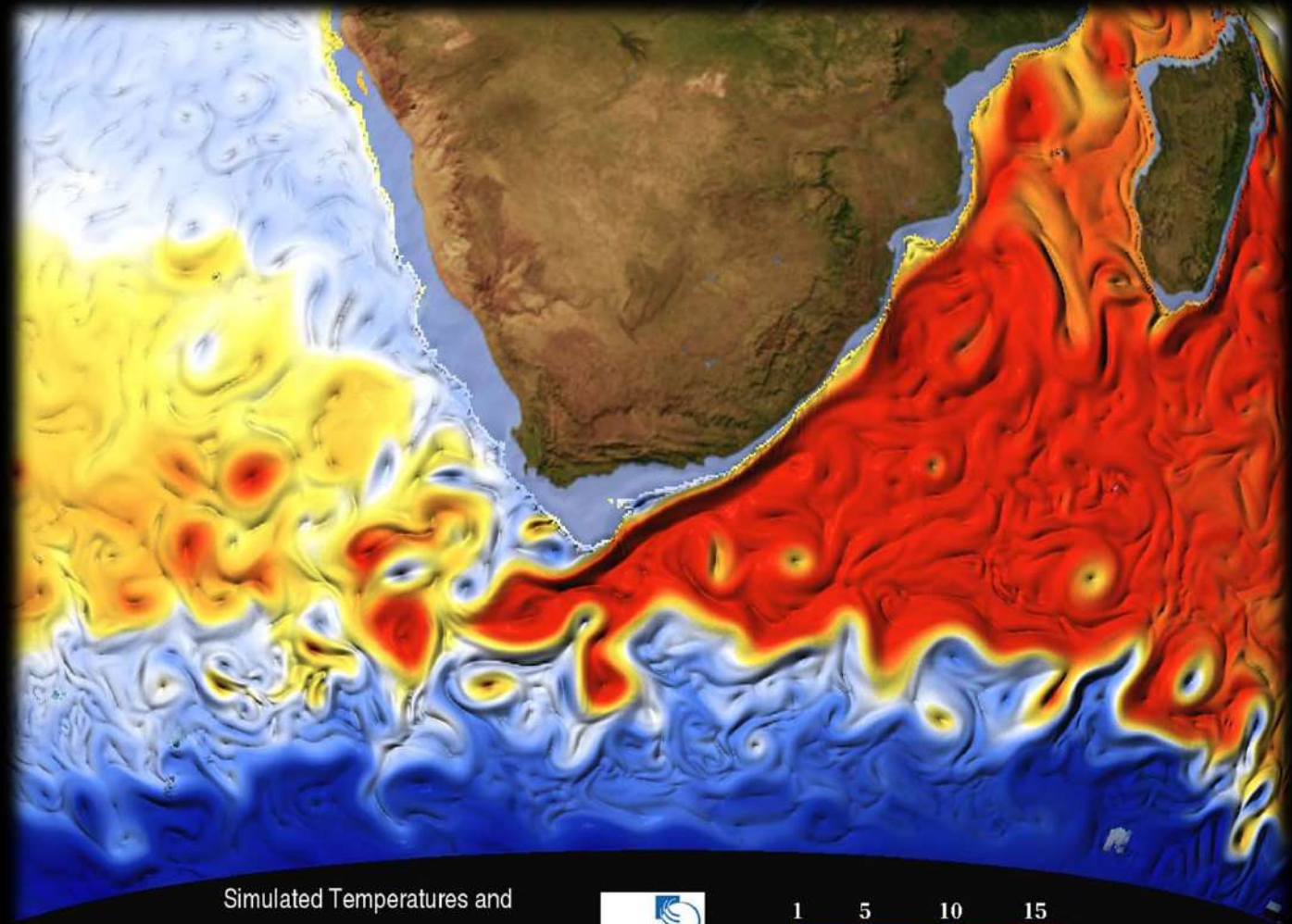
Charles L. Griffiths (University of Cape Town)



# 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)

- $\pm 4540$  echinoderm specimen bottles (1-50 specimens per bottle)
- $\pm 1135$  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

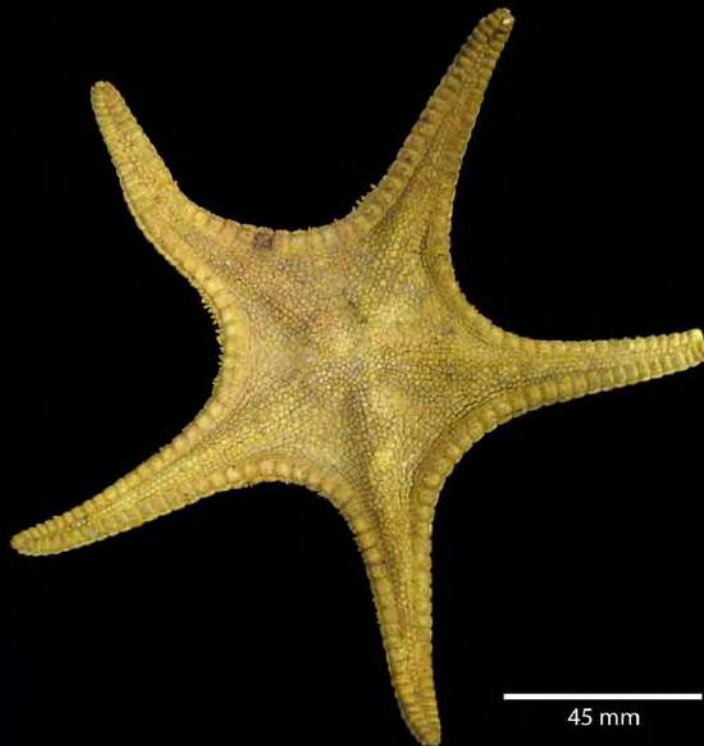
*Holotype*

**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



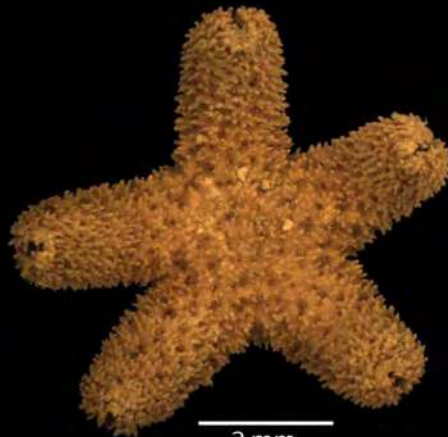
20 mm

*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*

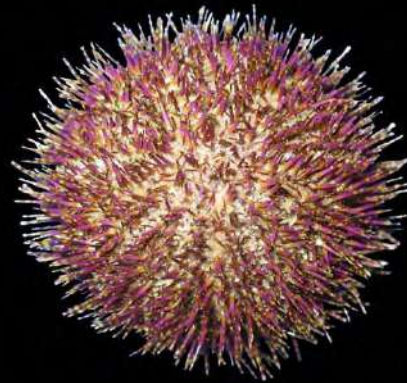
Leske, 1778



10 mm

*Clypeaster eurychorius*

H.L. Clark, 1924



20 mm

*Salmacis bicolor*

Agassiz & Desor, 1846

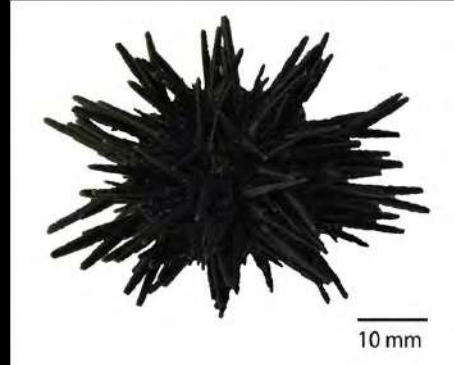


5 mm

*Parechinus angulosus*

(Leske, 1778)

# Durban Natural Science Museum



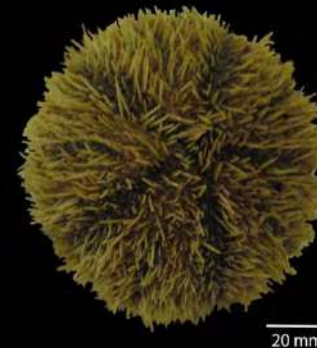
*Stomopneustes variolaris*  
(Lamarck, 1816)



*Echinostrephus molaris*  
(Blainville, 1825)



*Plocoidaris verticillata*  
(Lamarck, 1816)



*Tripneustes gratilla*  
(Linnaeus, 1758)

# Durban Natural Science Museum

*Asteroschema capensis* Mortensen 1925

*Holotype*



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

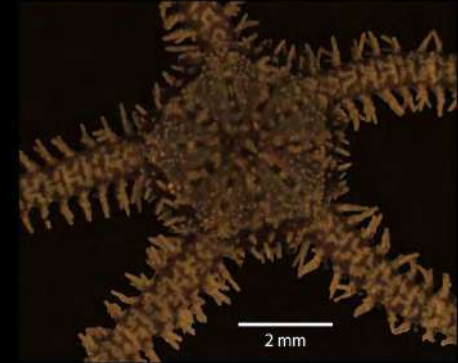


# Durban Natural Science Museum



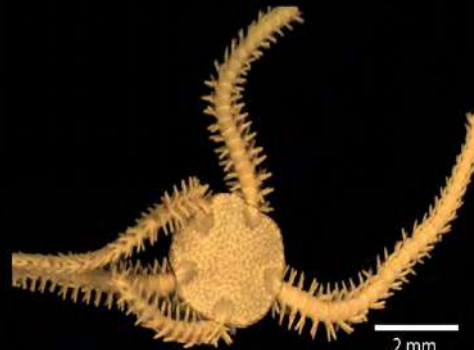
500  $\mu$ m

*Ophiomitrella hamata*  
Mortensen, 1933



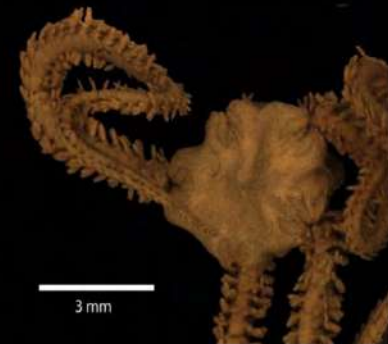
2 mm

*Ophiothela venusta*  
(de Loriol, 1900)



2 mm

*Amphioplus (Lymanella) integer*  
(Ljungman, 1867)



3 mm

*Amphiura (Amphiura) capensis*  
Ljungman, 1867

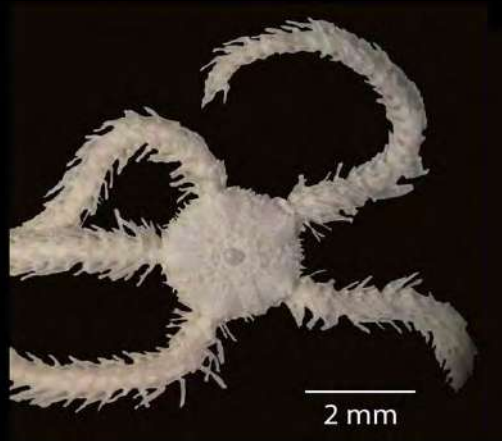
# Durban Natural Science Museum



*Ophiactis plana* Lyman, 1869



*Ophiactis carnea* Ljungman, 1867



*Ophiothrix (Acanthophiothrix) proteus*  
Koehler, 1905



*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



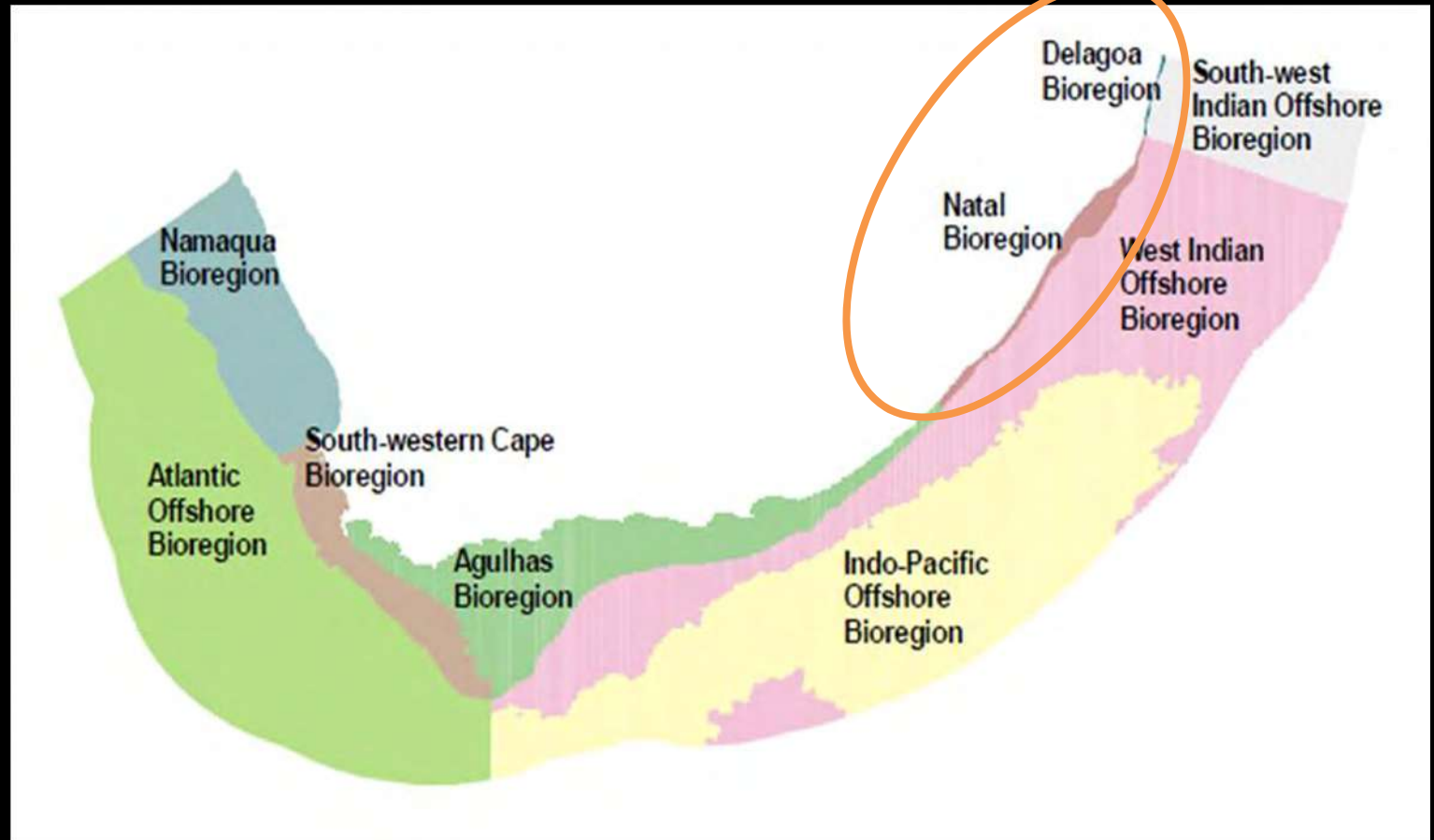
# Ophiuroids of RMCA collection

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

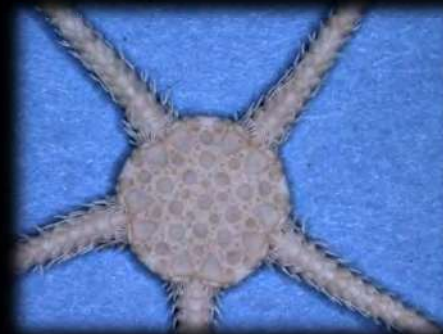
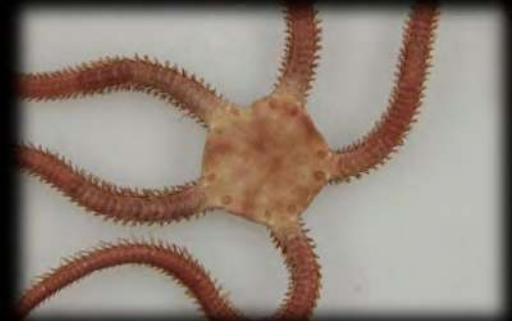
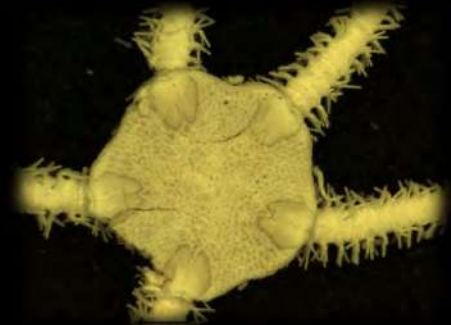




# Ophiuroids of RMCA collection



# 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



# 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)

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