



Xenobalanus globicipitis (Crustacea: Cirripedia) on dusky dolphins (*Lagenorhynchus obscurus*) off Namibia: Hitch-hiker's guide to the seas



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ABSTRACT

The cirripede *Xenobalanus globicipitis* (Steenstrup, 1851) has been reported from many species of odontocete whales from all seas. We report *X. globicipitis* from five dusky dolphins caught accidentally off Namibia in September 2002. Being the first record of *X. globicipitis* from the dusky dolphin, it is also the first recorded off Namibia. Several cirripeds, that retain their typical barnacle shape and calcareous plates, are known to lodge deeply in the skin of species of baleen whales. *X. globicipitis* is firmly attached by a foot plate to the trailing margins of the pectoral fins, dorsal fin and tail fluke of their "hosts". *X. globicipitis* looks more like a leech than a barnacle. Its body is conical; a slender stalk connects the footplate with the terminal capitulum or hood with the cirri. The body, being soft and pigmented very dark brown to black, has no calcareous plates, except for 6 radiating small plates in the footplate. A total of 59 specimens were pulled forcibly from the five dolphins, 11 of them lost their footplate in the process. Body length range 10-50 mm of fixed intact specimens.

X. globicipitis does not draw nutrients from its host, but feed in barnacle fashion by straining out plankton with its cirri, their symbiosis with dolphins may therefore be termed phoresy. As dusky dolphins are excellent swimmers, the trailing margins of the fins may be wise attachment choices; their pliable bodies swing with the movements of the hosts and water flow. It is possible that the shape of the hood with its oblique shield creates turbulence and force water and plankton to flow optimally past the extended cirri. The black colour of *X. globicipitis* blends with the host's, and the pigment probably serves as a filter protecting the body from strong UV-radiation. It makes sense that several specimens occur in clusters on the fins, permitting cross fertilisation.

METHODS

Five dusky dolphins (*Lagenorhynchus obscurus*) were caught accidentally off northern Namibia in September 2002. 59 specimens of the phoront *X. globicipitis* attached on the trailing margins of the dorsal fin, flippers and fluke were obtained and fixed in formalin for further studies.



Figure 1. *X. globicipitis* attached a) to the dorsal fin (n=8) and b) to the fluke (n=11). In a) the specimens are hanging by their own weight, the six radiating calcareous plates are clearly seen. Note that the phoronts are clustered facilitating cross fertilisation between these hermaphroditic barnacles.



Figure 2. Close-up photos of a complete specimen of *X. globicipitis*; a) entire specimen lateral view; note the leech like body shape and black colour, b) frontal view of capitulum; note oblique hood with two hollow knobs, six pairs of cirri and penis, c) capitulum, lateral view; note cirri and penis.

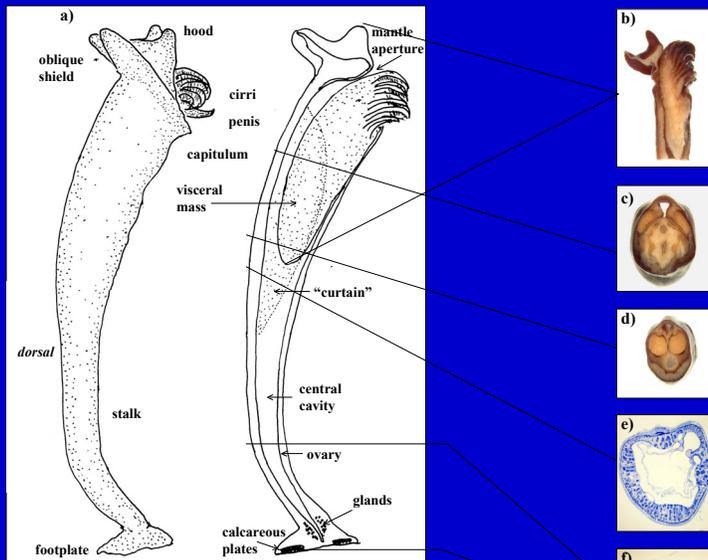


Figure 3. Schematic drawings of *X. globicipitis* a) and selected body parts and sections (b - g); b) capitulum, right body wall removed to show cirri and visceral mass, c) transverse section (TS) of body, note pair of egg masses dorsal to visceral mass note also dorsal groove, d) TS near end of visceral mass, note pair of egg masses surrounded by "curtains" e) TS of trough stalk, note dorsal groove and pair of curtains in central cavity, f) TS of posterior stalk, ovaries in lateral wall, g) view of foot plate seen from below, note the six calcareous plates.

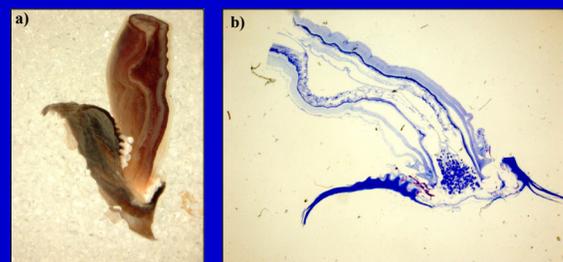


Figure 4. Posterior body of *X. globicipitis*; a) sagittal cut of stalk and footplate showing body wall, central cavity and two corrugated calcareous plates. These grip firmly the whale epidermis which were pulled off during collection, b) thin histological section of same (toluidine blue), note pigment below cuticle, central cavity and mass of gland cells at the base of the footplate. The dark blue is whale epidermis pulled off.

RESULTS AND DISCUSSION

This is the first record of *X. globicipitis* from dusky dolphins, and from Namibian waters. The cirriped looks more like a leech than a barnacle.

- The cirriped's calcareous skeleton is reduced to six radiating rays in the footplate
- X. globicipitis* is a phoront and feed in barnacle fashion by straining out plankton with its cirri.
- As dusky dolphins are very good swimmers, the trailing margins of the fins may be wise attachment choices; their pliable bodies swing with the movements of the hosts and water flow.
- It is possible that the shape of the oblique hood shield and the two knobs create turbulence and force water and plankton to flow optimally past the extended cirri.
- Being black, the colour of *X. globicipitis* blends with the host's, and the pigment probably serves as a filter protecting the body from strong light, particularly UV-radiation.
- Several specimens occurred in clusters on the dolphin fins, facilitating cross fertilisation.
- Egg masses are kept inside a pair of "curtains" which may serve as nursing chamber.
- The dorsal groove may serve a) copulation, and b) as escape channel for eggs / embryos / larvae.

