SRI LANKA STARFISH

A Guide to Common Species

Illustrated with photographs, coloured drawings, and anatomical line drawings

by

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Part 3

LIST OF SPECIES

PART 3

Exported ornamental species

Choriaster granulatus Lütken, 1869

OREASTERIDAE

Arjan Rajasuriya, 1994
Under water photograph

Sandstone reef at 25 m
off the Bar Reef, Kalpitiya

No specimen has been examined. The identification has been made by comparing the photograph with published images. Said to have a diameter up to 300 mm, with an upper surface covered by skin (George & George, 1979).

- This species is not reported from the “Ceylon Area” in Clark & Rowe, 1971

Culcita schmideliana (Bruzelius, 1805)

OREASTERIDAE

Pin cushion star

Photographs taken just under the surface. The spines are red, whereas at depth they appear black as seen in the photographs below.

Pigeon Islands, Nilaveli

Large animals up to 200 mm diameter, sub-hemispherical in shape with flat undersides. The arms are vestigial. Found on sandy rocky habitats.

Colombo, Pitagala, 24 m
10.4.2003

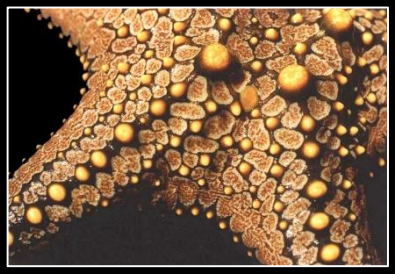
Little Basses Lighthouse,
10 m, 25.4.2003

Kattankudy
23.6.2005

- *Culcita schmideliana* is reported from the "Ceylon Area" in Clark & Rowe, 1971. Herdman & Herdman, 1904 remark about the presence of the red spines "on the well-marked lobed areas".

Pentaceraster affinis (Müller & Troschel, 1842)

OREASTERIDAE



R = 80 mm; r = 35 mm; br = 35 mm

Specimen obtained from exporter's tanks. Said to have been collected from sandy bottom in the Kalpitiya area.

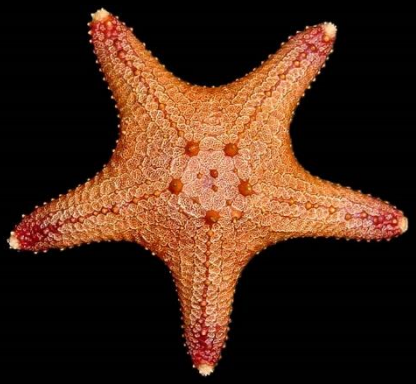
Although at first thought to be *P. mammillatus*, the name was later corrected to *affinis*—which is pink in colour, the former being green. This animal makes a stunning display in aquariums under 'Gro Lux' illumination as seen in the image below.

P. affinis has well-developed carinal spines, those of *mammillatus* being small - see page 7. A coloured drawing of *P. affinis* including details of the armament is included in the introduction.

- *Pentaceraster affinis* is reported from the "Ceylon Area" in Clark & Rowe, 1971.

Pentaceraster gracilis (Lütken, 1871)

OREASTERIDAE



14.12.2004: Beached at Beruwela, probably fishing trash, only found on the one occasion.

R = 130 mm; r = 55 mm; br = 40 mm

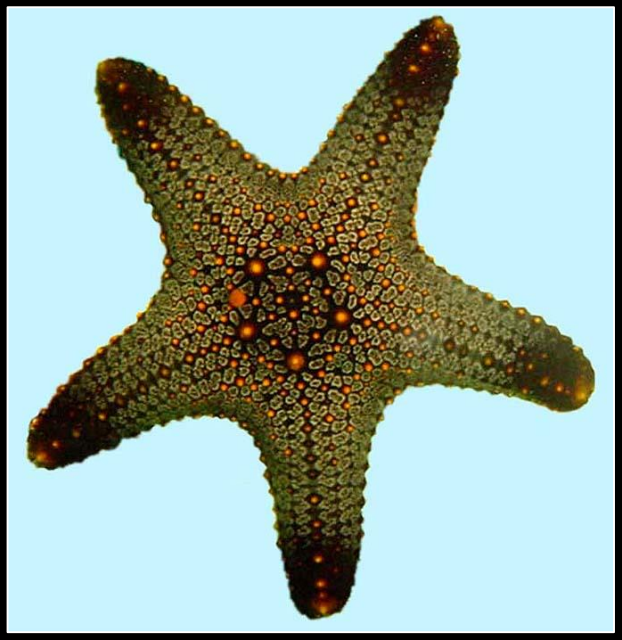
The identification was made with reference to the key in Clark & Rowe. The distribution is given as Southern India and eastwards. Note the conical spines, the main marginal plates bearing spines, and arching apart at the interradius (bottom right-hand image above). The nature of the adambulacral spines also agrees.

Two rows of large spines in twos with a pair of small spines tucked in a corner between the larger ones. The small furrow spines below are in a fan of seven.

- *Pentaceraster gracilis* is not reported from the "Ceylon Area" in Clark & Rowe, 1971.

Pentaceraster mammillatus (Audouin, 1826)

OREASTERIDAE



24.10.2003

Colombo Hotel display aquarium.

Collection details unknown.

R = 80 mm; r = 34 mm (estimated)

This striking animal was photographed inside a display aquarium illuminated by a 'Gro Lux' lamp. The colour in natural light is unknown. There are large numbers of images of starfish of this colour on the Internet.

The identification was made with reference to the key in Clark & Rowe and the colour. The distribution of *P. mammillatus* is given as Southern India and eastwards. In this species the carinal spines (those along the mid-line of the arm) are hardly larger than those on the two sides. In *P. affinis* they are much larger.

- *Pentaceraster mammillatus* is not reported from the "Ceylon Area" in Clark & Rowe, 1971. Herdman (1904) reports *Pentaceras mamillatus* M & T (*Pentaceros* being a synonymised name.)

Pentaceraster regulus (Müller & Troschel, 1842)

OREASTERIDAE

R = 50 mm; r = 24 mm; br = 23 mm (left)

R = 43 mm; r = 22 mm; br = 21 mm (right)

6.4.2003

Two small starfish obtained from an ornamental fish exporter's tank. Said to be collected in Mannar. Numbers of them were present, mostly in these two light grey and black patterns. They appear to be juveniles. Spines in the form of rounded knobs are present in the larger animal: the five main knobs being well developed, orange in colour.

The first attempt at using the Clark & Rowe key came down to *Pentaceraster regulus.* Verification later suggested that this might be *P. affinis*. As these are not mature specimens, they are referred to *regulus*.

- *Pentaceraster regulus* is not reported from the "Ceylon Area" in Clark & Rowe, 1971. Sastry, 1991 reports them from Lakshadweep, India (WoRMS Note).

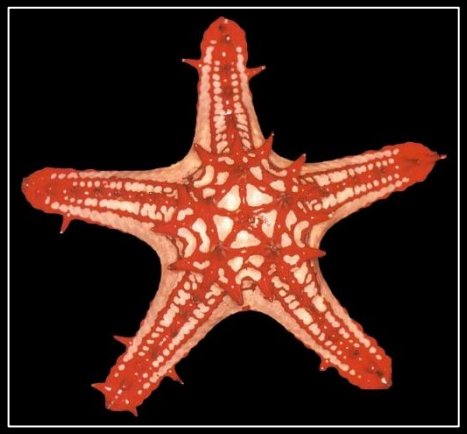
Pentaceraster sp.

OREASTERIDAE

Two unidentified *Pentaceraster* photographed on the seabed in the shallows at Jaffna, Mandaitivu. These two had apparently been snagged on a bottom-set net used for blue swimming crabs and thrown overboard as the catch was being extracted from it.

Protoreaster lincki (Blainville, 1830)

OREASTERIDAE



R = 105 mm; r = 38 mm; br = 35 mm

Under water at Kalpitiya, Bar reef. This species is gregarious.

5.4.1998:
Sand bottom at Negombo, 'Fossil Reef' site, 14 - 15 m. Some on rocks.

These were also seen off Mount Lavinia, seaward of Bellangala, 10 m, feeding on filamentous cyano-bacteria.

Photographed in air after fixing in formalin/seawater.

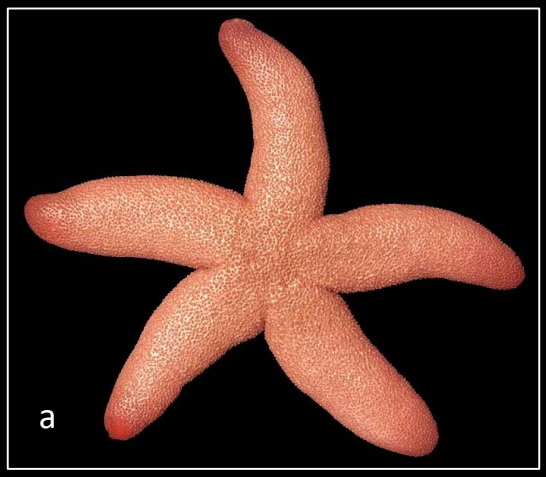
Readily identifiable in and out of its habitat as there are no other species with this combination of grey/red colour pattern, and the large, prominent spines, well seen in the top right-hand image.

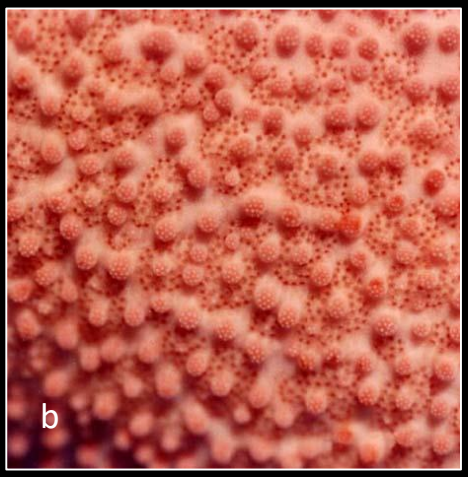
Juveniles up to 100 mm diameter are collected for export in the aquarium trade.

- *Protoreaster lincki* is reported from the "Ceylon Area" in Clark & Rowe, 1971.

Thromidia sp.

MITHRODIIDAE





R = 170 mm; r = 45 mm; br = 45 mm

The family Mithrodiidae is not reported from the "Ceylon Area" in Clark & Rowe, 1971. The key in Clark & Rowe came down to a possible family identity of Mithrodiidae. It was not possible to progress further or even confirm the family using the literature available in 2001. A renewed effort in 2020 using the Internet enabled access to more images and two papers (Engel, John and Chebonnier, 1948 and Marsh, 2009) that led to the confirmation of the family and the possible genus to which this starfish belongs. Reference to the paper by Pope & Rowe confirms the genus. *Thromidia seychellesensis* Pope & Rowe, 1977 from the Seychelles has also been collected in Sumatra, Indonesia (Marsh & Price, 1991). More skeletal data is needed to establish the species. A fuller narrative is on the next page.

Captions to (a), (b) and (c) next page

Thromidia sp. continued

MITHRODIIDAE

Captions

(a) The live animal photographed out of water. The reticular skeleton very flexible, the animal sagging under its own weight distorting the arms that appear wider. 340 mm in diameter.

(b) Close up of upper surface showing meandering pore areas between short, irregularly arranged, 0.5 to 1 mm high spines that are granule covered.

(c) Lateral view of an arm. Two rows of tube feet. Fans of needle-like furrow spines in groups of 6-8, the longest 3 mm. Aboral surface covered by short 0.5 to 1.0 mm high spines. Two rows of adambulacral spines, abruptly larger: the outer row thicker, 5 - 6 mm high, the inner row thinner and shorter. All covered with granules that are egg-shaped with pointed apices.

Provenance

A single specimen found on the Gigiripita shoal off Colombo on 18th February 2001, by SCUBA diving. The shoal lies at a depth averaging 22 - 23 m, flat, with small corals, *Porites* domes, low rocky patches, and lots of the prostrate brown alga *Dictyota bartayresiana.* Other species of starfish seen in the same habitat: many *Linckia laevigata,* one *L. guildingi*, and one *Protoreaster lincki.*

Measurements

R = 170 mm; r = 45 mm; br = 45 mm

Summary of characters

Arms stout and relatively short, five in number, with wide blunt tips. Grey in colour under water. At the surface colour light pink (aboral), darker oral surface. Body soft, uniform in texture and appearance, granular to touch, no large spines. When picked up the animal folded its arms together hiding the oral area, the tube feet remaining extended. Tube feet numerous, in two rows, large, yellowish in colour with green discs. No pedicellariae observed. Plates form an open reticulum, marginals not distinguished. One madreporite.

The animal entirely granule-covered on a backing of skin, including all the spines except the furrow spines. The granules pear-shaped with pointed apices.

Pore areas extensive, as a diffuse network of connected, meandering channels evenly spread over the aboral and oral surfaces, right down to the adambulacral spines. The pore areas circa 1 mm across, sometimes confluent but never more than 1.5 - 3 mm wide on the aboral surface. On the oral surface the pore areas are more confluent, interrupted by scattered spines that are further apart than aborally.

Both surfaces covered by spines that are shorter (0.5 - 1 mm) aborally. On the oral surface the spines are further apart, mixed short and long (up to 3 mm), the long ones more numerous towards the furrow. At the arm tip the spines are short and much thicker, almost globular, and very tightly packed.

Adambulacral spines abruptly much longer—the outer row thicker, 5 - 6 mm long, the inner row shorter and thinner. These appear to protect the incompletely retracted tube feet. The furrow spines small, needle-like, in fans of 6-8 joined by a membrane, the longest 3 mm.

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