

ASPIDOSIPHON (PARASPIDOSIPHON) HAVELOCKENSIS, A NEW
SIPUNCULA FROM THE ANDAMANS, INDIA

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ABSTRACT

In this paper *Aspidosiphon (Paraspidosiphon) havelockensis* — a new species belonging to the family Aspidosiphonidae (Sipuncula) collected from Havelock and Neil Islands, South Andamans, India, is described.

INTRODUCTION

During the course of the studies on Sipuncula of the Indian coast an examination of the material collected from the Andamans revealed the presence of a new species belonging to the genus *Aspidosiphon* Diesing. Stephen, 1964 created a new genus *Paraspidosiphon* to include species of *Aspidosiphon* with longitudinal musculature of the body wall grouped into bands. Cutler, 1973 proposed reduction of the genus *Paraspidosiphon* to subgeneric status as the nature of the longitudinal muscle of the body wall is not clear-cut. Some true aspidosiphonids show a tendency for the longitudinal muscle layer to separate into more or less distinct units. In accordance with Cutler's view, the species is described here under the subgenus *Paraspidosiphon* Stephen, 1964.

Aspidosiphon (Paraspidosiphon) havelockensis sp. n.

Material examined : 1 ex., Eastern side of Neil Island, South Andaman, "from dead coral rock", Coll. B. P. Haldar, 30. ix. 1972 ; 3 exs., Havelock Island, South Andaman, "from dead coral rock", Coll. B. P. Haldar, 5. x. 1972.

Description : Length of the trunk 18.5-31 mm and maximum width 6.5-10 mm at rear end. Introvert slender, cylindrical and about one-third to half as long as trunk and 2-3.25 mm width at base.

Trunk yellowish/creamy-white in colour with extremities usually being darker. Introvert pale white with thinner wall than that of body. Body wall thin and translucent through which longitudinal muscle bands clearly visible. Surface of trunk, except in anterior most end, nearly smooth to unaided eye, but closer examination shows numerous skin papillae, each of which bears a small opening at its centre surrounded by irregular shaped platelets. Papillae found at the level of nephridiopores (fig. 1A) and posterior and of trunk are large ; platelets yellow and sometimes overlapped. Papillae (fig. 1-B) on middle region of trunk are smallest, with nearly transparent platelets arranged loosely. Anterior most end of trunk except for anal shield and anus, marked by some elevated areas (fig. 2F, ea) each made up of 2-4 closely placed yellow papillae (fig. 1C). Sometimes platelets are also overlapped.

Anal shield (fig. 2F, as) thick, oval, light-

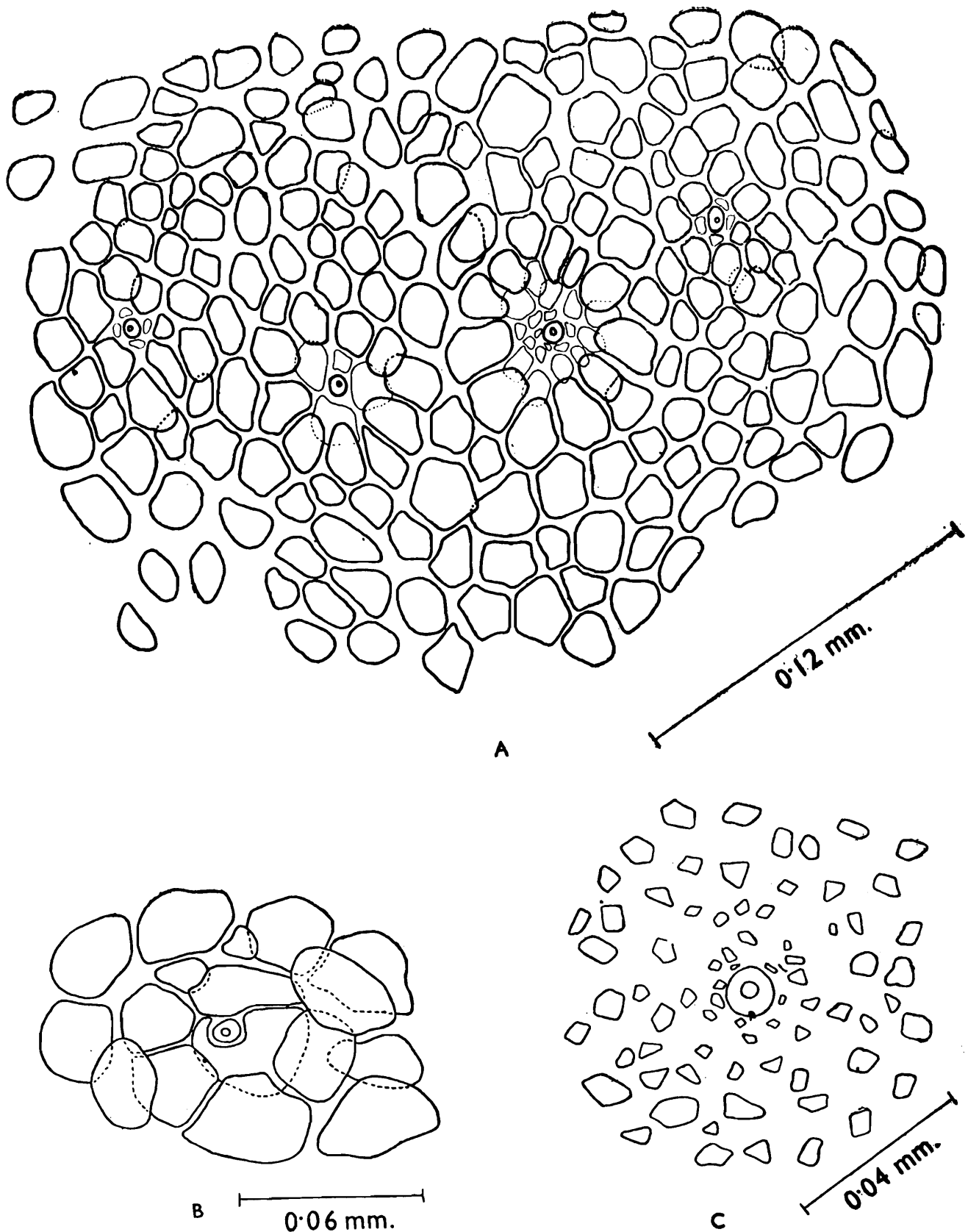


Fig. 1 A. A portion of the skin from anterior most end of the trunk above nephridiopore and adjacent to annal shield showing skin papillae, B. A skin papilla from the caudal shield. C. A skin papilla from the middle region of the trunk.

brown to dark-brown, granulated and without any furrows. No calcareous substance attached to shield. Caudal shield round in surface view and yellow coloured; without any radial and concentric furrows. Careful examination

reveals caudal shield made up of closely placed yellow papillae (fig. 1A)

Tip of introvert bears 8-10 short tentacles forming a semicircular crown. Posterior to

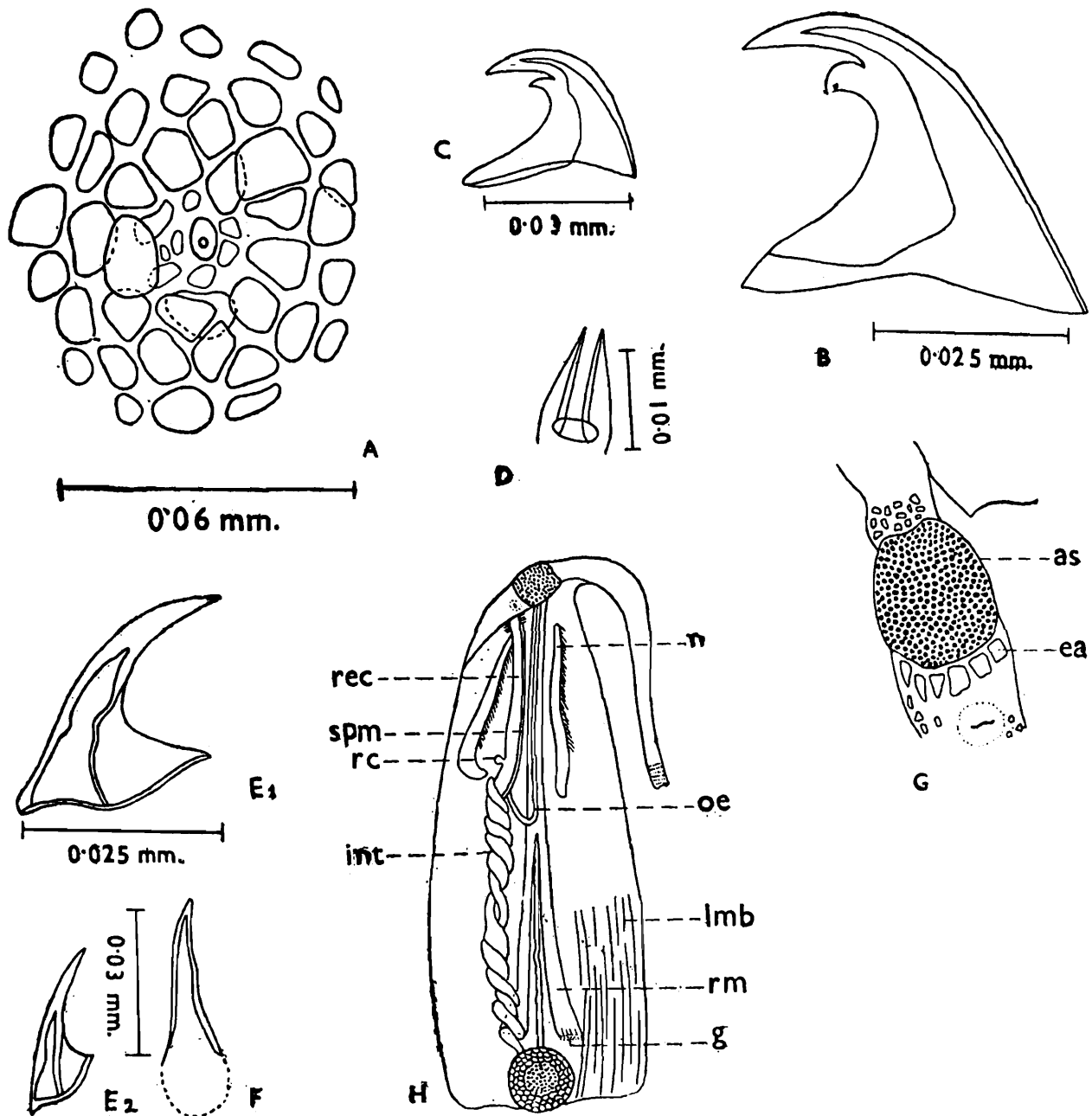


Fig. 2 A. A skin papilla at the level of nephridipore B & C. Hooks from the introvert— from anterior hook row & C.—from posterior hook row. D. A small perforated skin papilla. E & F Spines from posterior region of the introvert: E₁ and E₂ side view and F—front view. G. Anal shield and its adjacent area. as, anal shield; ea, elevated area. H. Specimen dissected to show the internal organs $\times 3\frac{1}{2}$ g, gonad; int, intestinal convolution; lmb, longitudinal muscle band; n, nephridium; oe, oesophagus; rc, rectal caecum; rec, rectum; rm, retractor muscle; spm, spindle muscle.

tentacular crown, introvert carries 20-45 rows of double pointed hooks. Except for one or two anterior transparent rows, hooks are yellowish. Each of these hooks has a broad base, expanded transparent streak and strongly bent pointed apex (fig. 2B & C). Posterior to hook rows, rest of introvert covered with spines more or less regularly arranged (fig. 2D). Between every two rows of hooks and spines occur minute tubular papillae (fig. 2E, F).

Internally, the longitudinal muscle layer of body wall divided into 17-26 separate bands (fig. 2G, 1mb), of which a few anastomose; bands equally strong all over the trunk. Two retractor muscles (fig. 2G rm) arise very close to caudal shield from bands 2-6 (3-7) and greater part of their length fused into single retractor unit. Oesophagus (fig. 2G, oe) long and narrow; runs dorsal to retractor unit upto point of their fusion, later upwards before coiling. Intestinal convolution (fig. 2H, int) consists of 14-23 spirals reaching almost to tip of caudal shield. Spindle muscle (fig. 2H, spm) attached anteriorly and posteriorly, firmly anchoring intestinal coil. Fixing muscle absent. Long rectum (fig. 2H, rec) has a caecum (fig. 2H, rc) and a pair of broad wing muscles. Thin yellow nephridia (fig. 2H, n) one-third to half as long as trunk; their posterior third to fourth free from body wall; nephridiopores situated between third and fourth muscle bands posterior to anal opening. Gonads (fig. 2H, g) lie at the base of retractor muscles. Body cavity full of eggs measuring 0.12×0.1 mm.

Type-specimens : Holotype : vide "material" above Z.S.I. Regd. No. An 799/1 in National Zoological Collections, Zoological Survey of India, Calcutta.

Paratypes : 3 exs., vide "material" above also in Z.S.I., Calcutta. Reg. No. An 800/1 and An 801/1.

Type-locality : Havelock Island, South Andaman, India.

Distribution : Havelock and Neil Islands, South Andaman, India.

Comparison : Until now only two species viz. *Aspidosiphon* (*Aspidosiphon homomyarius* Johnson (type-locality—Okha, Gujarat) and *Aspidosiphon* (*Paraspidosiphon*) *exostomus* Johnson (type-locality—Port Blair, S. Andaman) were described from India. Four more species of the subgenus *Paraspidosiphon* are known from the Andaman Islands viz. *A. (P.) formosanus* Sato, *A. (P.) makoensis* Sato, *A. (P.) klunzingeri* Sel. & de Man and *A. (P.) steenstrupii* Diesing (Haldar, 1975 & 1976).

The present species can be differentiated from *A. (P.) formosanus* by the presence of rectal caecum; from *A. (P.) makoensis* by the nephridia not completely fastened to the body wall; from *A. (P.) exostomus* and *A. (P.) steenstrupii* by the origin of retractor muscles very close to the caudal shield and from *A. (P.) klunzingeri* by the presence of double pointed introvert hooks. Considering the above variations, the present material has been assigned to a new species. Part of the key to the species of the subgenus *Paraspidosiphon* given by Stephen and Edmonds (1972) is also modified to accommodate the new species.

1. Rectal caecum present 2
 Ractal caecum absent
 — *A. (P.) formosanus* Sato.
2. Caudal shield partially furrows 3
 — Caudal shield without furrows
 *A. (P.) havelockensis* n. sp.
3. Introvert hook with a thin, clear, wavy line
 along its mid-line
 *A. (P.) ambonensis* Augener.
 — Introvert hook with much expanded, clear
 area *A. (P.) speculatur* Selenka.

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