

A NEW POLYCHAETE OF THE FAMILY PILARGIDAE FROM
PALK BAY, SOUTH INDIA*

By K. RANGARAJAN

Central Marine Fisheries Research Institute, Mandapam Camp

THE family Pilargidae consists of the following seven genera : *Ancistrotyllis* McIntosh, *Cabira* Webster, *Loandalia* Monroe, *Otopsis* Ditlevsen, *Pilargis* St. Joseph, *Talehsapia* Fauvel and *Ancistargis* Jones. However, Hartman (1947) has suggested that the genus *Cabira*, which is represented by only one species, might best be dropped from literature. Kitamori (1960) has described *Pilargis matsunagaensis* (= *Ancistargis matsunagaensis*), a new species from Matsunaga Bay, Hiroshima Prefecture, which combines the characters of both the genera *Ancistrotyllis* and *Pilargis*. It has a pair of antennae in the prostomium and the epithelial papillae are scattered over most of the body. In addition, it has an acicular hook in notopodia, a character typical of the genus *Ancistrotyllis*. As pointed out by Jones (1961) *P. matsunagaensis* should belong to the genus *Ancistargis*. At present this genus is represented by two species, *papillosus* and *matsunagaensis*.

During the study of the bottom fauna of Palk Bay, South India, two incomplete specimens of *Ancistargis* were collected from a depth of 10 meters on July 12, 1961. Subsequently another incomplete specimen was taken on August 22, 1962 from the same locality at a depth of 7 meters. The three specimens which form the basis of the present account, differ markedly from *Ancistargis papillosus* and *Ancistargis matsunagaensis* and are designated here as *Ancistargis brevicirris* sp. nov.

Genus *Ancistargis*

Ancistargis brevicirris sp. nov.

Material : The two specimens collected on July 12, 1961 measure 5.8 mm. in length and 0.75 mm. in breadth including parapodia for 43 setigers and 6.8 mm. by 0.6 mm. for 39 setigers respectively. The single specimen which was collected on August 22, 1962 measures 4.9 mm. by 0.5 mm. for 27 setigers. In all the specimens the pygidia are missing.

Description : The body up to 21st setiger is dorso-ventrally compressed and slightly rigid. Posteriorly the segments are flaccid and more or less globular. From the 9th setiger onwards the dorsal and ventral surfaces of the animal are ornamented with a large number of dark chromatophores.

The prostomium is bilobed and connected by a smooth thin membrane on the dorsal side. A pair of antennae, in the form of minute, conical buds are inserted on the lateral margins of the prostomium (Fig. 1). Palpi are short, flattened and arise

* Published with the kind permission of the Director, Central Marine Fisheries Research Institute, Mandapam Camp.

from the antero-lateral margin of prostomium. A short, conical palpostyle is situated at the ventro-lateral aspect of the palpi on either side. When the proboscis is retracted, the palpi are close together and overhang the oral aperture so that the palpostyles are on the ventral side of the palpi (Fig. 2) and not seen in the dorsal view of the animal. The palpi are pushed outwards and forwards when the proboscis is everted as a result of which the palpostyles project in an antero-lateral direction (Fig. 3). The dorsal surface of the palpi, the prostomium and the peristomium are covered with minute papillae which are almost square in shape (Fig. 4). Two or three similar papillae are also noticed near the base of prostomial antennae and palpostyles. The head region is devoid of papillae.

The proboscis, which is everted in two individuals, is globular, thin and the surface is covered with numerous, short, conical, soft papillae (Fig. 5).

Eyes are absent in the animal.

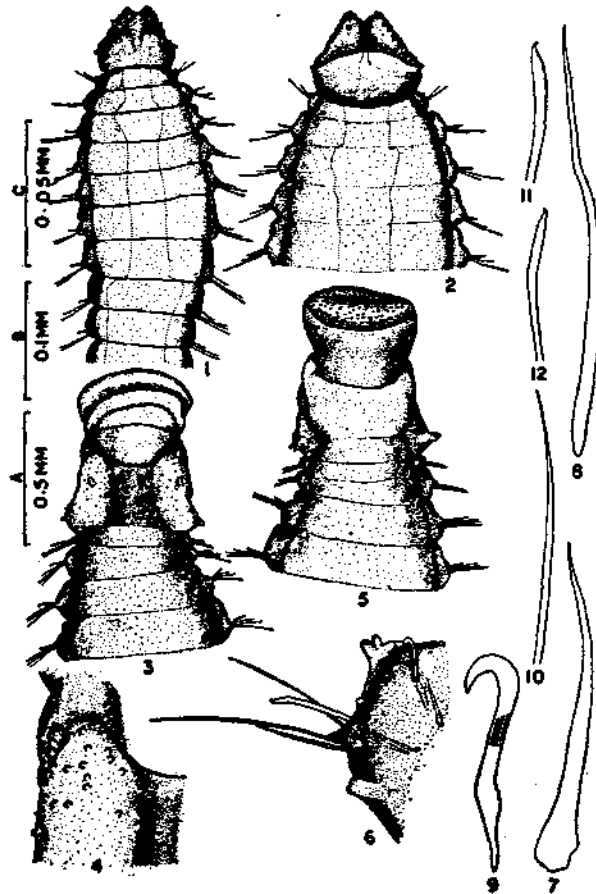
Anteriorly the peristomium is fused with the prostomium and carries on each side a pair of short, conical tentacular cirri situated on the ventro-lateral corner. Posteriorly it is demarcated from the first setigerous segment, which is smaller than the succeeding one.

The dorsal and ventral cirri of the parapodia are in the form of short, conical buds and one or two minute papillae are seen near their base. The dorsal cirrus begins on the first setiger and is present in all the parapodia. Some interesting variations are noticed regarding the origin of the ventral cirrus. In two specimens the ventral cirrus first appears on the third setiger (Fig. 5) corresponding to the condition noticed in *A. papillosus*. In the third specimen, however, the ventral cirrus is clearly seen arising on the first setiger itself as a small, conical bud (Fig. 2) agreeing with the condition found in *A. matsunagaensis*. The dorsal and ventral cirri are more or less similar in size and shape throughout the length of the animal.

The parapodia are sub-biramous. The notopodia are represented by a short, conical dorsal cirrus, a notoaciculum and a single notoacicular hook (Fig. 6). The neuropodia are short and poorly developed. The anterior neuropodial lobe is short, triangular and is supported by a single embedded neuroaciculum (Fig. 7) the tip of which extends up to the extreme tip of the neuropodial lobe. The posterior neuropodial lobe is shorter and rounded than the anterior neuropodial lobe. The notoacacula of mid-region (Fig. 8) have a gentle sigmoid curve near their distal end and terminate near the base of the dorsal cirrus.

The notoacicular hooks (Fig. 9) emerge from the dorsal surface of parapodia, a little anterior to the dorsal cirrus at a point about halfway between the node and the distal curved portion. The recurved tips point posteriorly and in the posterior segments they are oriented with the plane of the curved portion of the hook nearly parallel to the frontal plane of the animal. There is a slight variation in the number of segments at which the notoacicular hooks first appear. In one specimen they first appear on the eighth setiger on both sides. In the second specimen they appear first on the seventh setiger on right side and sixth setiger on left side while in the third specimen they are first noticed on the eighth setiger on right side and seventh setiger on left side. Generally there is only one notoacicular hook in each parapodia, although occasionally another one is found embedded in the parapodia. The size of these hooks is more or less constant throughout the length of the animal.

The neurosetae are simple and few, not more than four or five in each parapodia. They are more or less similar in structure to those found in the neuropodia of *A. papillosum* and three types could be recognized amongst them. The most common



FIGS. 1—12: 1. Anterior end, dorsal view, 2. Anterior end, ventral view, 3. Anterior end, proboscis everted, dorsal view, 4. Left palp, magnified to show the palpostyle and papillae, 5. Anterior end, proboscis everted, ventral view. Note the ventral cirrus beginning on 3rd setiger, 6. Eighth setiger from left side, posterior view, 7. Neuroaciculum from twenty-seventh setiger, 8. Notoaciculum from twenty-seventh setiger, 9. Notoacicular hook from eighth setiger, 10. Slender, non-limbate capillary seta from the neuropodium of fourth setiger, 11. Neurosetae with recurved tip from the fourth setiger, 12. Neuroseta with crenulated cutting edge from the fourth setiger. FIGS. 1, 2, 3 & 5. Scale A; FIGS. 4 & 6. Scale B; FIGS. 7, 8, 9, 10, 11 & 12. Scale C.

type is the long, slender, non-limbate capillary setae (Fig. 10) which are found in all the setigers. The second type is short, slightly broad with a single row of minute teeth along the cutting edge (Fig. 11). Even under the oil immersion objective the teeth along the cutting edge could be made out only with great difficulty. The tip of this seta is recurved and the toothed area almost extends up to the recurved tip. This type of setae are present up to the thirteenth setiger only and usually there is only one seta in each parapodium. The third type of seta is more or less similar

to the second type, but is narrower and the recurved tip is not so prominent. The cutting edge of these setae are very finely crenulated (Fig. 12) and they are present in the middle region only. The neurosetae of the posterior parapodia are all slender, non-limbate capillaries.

On the dorsal surface of some of the posterior segments a faint transverse ridge extending from the base of one dorsal cirrus to the base of the other could be made out at the posterior end of the segment. These ridges are not so prominent as those found in *A. papillosus*, nor are they present on the dorsum of all segments. Vacuoles are not noticed on these ridges.

As mentioned already the dorsal surface of palpi, the prostomium and the peristomium are ornamented with minute papillae, which are almost square in shape. They are more numerous at the anterior edge of the palpi. A few papillae, similar in shape but much smaller in size than those found on the anterior region, are scattered over the dorsal and ventral surfaces of the body. These papillae are so minute that they could hardly be distinguished under the low power of the microscope. However, when the animal is oriented on the side and examined under the high power of the microscope a few papillae are seen scattered over the body. A comparison with the figures provided by Jones (1961) for *A. papillosus* and by Kitamori (1960) for *A. matsunagaensis* shows that these papillae in *A. brevicirris* are different in size and shape.

The pygidium is not known as all the specimens are incomplete posteriorly.

Remarks : The main characters of *A. papillosus*, *A. matsunagaensis* and *A. brevicirris* are summarized in Table 1. It will be seen that *A. brevicirris*, although resembles *A. papillosus* and *A. matsunagaensis* in many respects, yet differs from them in some important characters. The presence of numerous small conical papillae on the proboscis, absence of eye, the minute size of palpostyles, antennae, tentacular cirri, dorsal and ventral cirri, the different shape and size of the papillae over the body, much reduced size of the neuropodia, the occurrence of notopodial recurved hooks on a more posterior segment (on 3rd setiger in *A. papillosus* and *A. matsunagaensis*) and the absence of two rows of teeth along the cutting edge of the neuropodial setae with recurved tip are some of the important characters of this species. The slight variation noticed in the number of segment on which the ventral cirrus first appears is not surprising as the affinities of this genus are very close to *Ancistrosyllis* and *Pilargis* in which the ventral cirrus is present from the first setiger itself.

The syntype of *Ancistargis brevicirris* have been deposited in the museum of the Central Marine Fisheries Research Institute (C.M.F.R.I. No. 73).

ACKNOWLEDGEMENT

The author is grateful to Dr. S. Jones, Director, Central Marine Fisheries Research Institute for his encouragement in this work and to Sri P. R. S. Tampi for his constructive criticism in the preparation of this paper.

REFERENCES

- HARTMAN, OLGA. 1947. Polychaetous annelids. Pt. 8. Pilargidae. *Allan Hancock Found. Publ., Pacific Expeds.*, 10 : 483-523.
- . 1959. Catalogue of the polychaetous annelids of the world. *Allan Hancock Found. Pubs., Occas. Paper*, no. 23 : 1-628.
- JONES, M. L. 1961. Two new polychaetes of the Families Pilargidae and Capitellidae from the Gulf of Mexico. *Amer. Mus. Novitates*, No. 2049, 1-18.
- KITAMORI, R. 1960. Description of two new species of Pilargidae (Annelida : Polychaeta) from the Seto-Inland Sea. *Bull. Japanese Soc. Sci. Fish.*, 26 (11) : 1086-1090.

TABLE 1

	<i>Ancistargis papillosus</i> Jones	<i>Ancistargis matsunagaensis</i> (Kitamori) (= <i>Pilargis matsunagaensis</i> Kitamori)	<i>Ancistargis brevicirris</i> sp. nov.
Prostomium	Dorsally bilobed, two fusiform antennae near anterior edge	Small, inconspicuous, with two simple antennae	Dorsally bilobed, two short, conical antennae antero-ventrally
Proboscis	Thin globular sac, no teeth, no papillae	Proboscis contracted, presence or absence of papillae not known	Thin, globular with numerous short conical soft papillae
Peristomium	Two pairs of fusiform cirri	Two pairs of fusiform cirri, dorsal slightly larger	Two pairs of short, conical cirri
Palp	Large with filiform palpostyle at tip	Small, biarticulated, separated from each other at median portion	Short, flattened with short conical palpostyle
Eye	A pair near base of palpi on ventral side	Absent	Absent
Surface papillae	Dorsally palpi, prostomium and peristomium with fusiform papillae. Dorsum densely ornamented with papillae	Papillae fusiform, surface epithelium closely papillated	Palpi, prostomium and peristomium with short square papillae. Dorsum with few minute scattered papillae similar in shape
Dorsal cirrus	Begins on 1st setiger. Fusiform provided with papillae. Cirrophore present	Begins on 1st setiger, fusiform. Cirrophore present	Begins on 1st setiger as a small conical bud, few minute papillae near base, cirrophore absent
Ventral cirrus	Begins on 3rd setiger, fusiform, provided with papillae	Begins on 1st setiger, fusiform	Begins on 3rd setiger (on 1st setiger in one specimen), with papillae near base
Neuropodium	Well developed	Well developed	Poorly developed, very short, triangular
Transverse ridges	Present from 1-2 setiger, provided with close-set vacuoles	Ridges absent	Very faint ridge on some posterior segments, vacuoles absent
Pygidium	A pair of densely papillated anal cirri	A pair of densely papillated anal cirri	Not known
Notopodial hook	First found on 3rd setiger	First found on 3rd setiger	First found on 6-8th setiger
Neurosetae	All simple. Three types: (1) non-limbate capillary (2) short seta with two rows of large teeth along cutting edge (3) seta with cutting edge crenulated	Two kinds of simple whorled setae (1) long, slender seta with small teeth along cutting edge (2) short, distally falcated with furcated tip and large teeth along cutting edge	All simple. Three types: (1) non-limbate capillary (2) short seta with a single row of minute teeth along cutting edge (3) seta with cutting edge crenulated