SHORT COMMUNICATIONS

A NEW SPECIES OF THE GENUS CHAUHANELLUS
BYCHOWSKY ET NAGIBINA, 1969 (MONOGENEA)
FROM THE GILLS OF A SEA FISH TACHYSURUS
DUSSUMIERI (VAL.) FROM ANDHRA PRADESH, INDIA

J. VENKATANARSAIAH and T. KULKARNI

Department of Zoology, Osmania University, Hyderabad, Andhra Pradesh, India

Abstract. Chauhanellus chauhani sp. n., collected from the gills of a sea cat-fish, Tachysurus duessumieri (Valenciennes) from the Bay of Bengal, off the coast of Kakinada, Andhra Pradesh, India is described and illustrated. It differs from the related species of the genus — C. oculatus, C. flexuosus, C. australis, C. vogliriae, and C. pelucutatus — in the shape and articulation of accessory piece with cirrus and in having a crescentic postero-medial process on its dorsal bar. It has five transverse hard structures on the ventral surface of peduncular region, by which it differs from C. oculatus and C. australis the latter have 10–11 and 3 such hard structures, respectively.

MATERIALS AND METHODS

The parasites were collected in May 1987 from the gills of a marine cat-fish, Tachysurus duessumieri (Valenciennes) from the Bay of Bengal, of the coast of Kakinada, Andhra Pradesh, India. The infection is heavy and almost all the fishes examined are invariably found infested with the parasites. Fresh hosts are procured from the landing station at Kakinada. The gills removed from the fishes are rinsed in petri dishes containing normal physiological saline solution. The parasites are isolated with micropipettes; they are flattened and kept overnight in 4% formalin. They are later thoroughly washed in distilled water, stained in alun-carmin, dehydrated in ascending grades of alcohol and finally mounted in DPX. For clear visibility of hard parts, a few parasites are fixed in hot glycerol-alcohol and mounted in glycerin jelly. Chromatoprobe 21st method is also employed. The measurements of parasites are made according to the procedure of Gusev (1978). All measurements are expressed in millimetres. The range of measurements and measurements of holotype (in parentheses) are given. The illustrations are prepared with the aid of a camera lucida.

Chauhanellus chauhani sp. n.

Host: Tachysurus duessumieri (Valenciennes)
Localisation: Gills.
Type locality: The Bay of Bengal, off the coast of Kakinada, Andhra Pradesh.
Type specimens: Holotype and 18 paratypes deposited in the collections of the Departmental Museum, Department of Zoology, Osmania University, Hyderabad, India; two paratypes in the collections of the Institute of Parasitology, Czechoslovak Academy of Sciences, České Budějovice, No. coll. M-335.

The new species is named as Chauhanellus chauhani in honour of Prof. B. S. Chauhan for his invaluable contribution in the field of monogenean trematodes.

Description (based on twenty parasites studied): The body is elongated, elliptical measuring 0.601–0.683 (0.682) in length and 0.109–0.151 (0.132) in width attained in gonadal region. The cephalic end gradually tapers; it possesses three pairs of head organs and two pairs of eye spots. There is a cluster of prominent glands on either posterolateral sides of the pharynx. The opisthaptor, 0.106–0.168 (0.168) in length and 0.163–0.196 (0.188) in width is well set off from the body by a narrow peduncle. The peduncle is marked by the possession of five transverse hard structures on its
ventral surface, they measure 0.045–0.094 (0.085–0.093) × 0.004–0.007 (0.005 to 0.007). Its armature consists of two pairs of unequal and dissimilar (dorsal and ventral) anchors, two transverse connecting bars and seven pairs of marginal hooks. The anchors are marked by the presence of wings. The dorsal anchors have a wide base which is divisible into an elongate inner root and a wide outer root. The base con-

Fig. 1. Chaetocellus choenani sp. n.: A — holotype (dorsal view); B — copulatory apparatus (cirrus and accessory piece); C — dorsal anchors and bar; D — ventral anchors and bar; E — peduncular hard parts; F — marginal hooks.

268
sisting of a strong hook-like process on its inner surface, narrows into a curved shaft and tapering point. Each anchor measures 0.071—0.078 (0.075) in length and 0.020 to 0.026 (0.024) in width at the base, the point measures 0.018—0.025 (0.018) in length. The dorsal bar connecting dorsal anchors is a wide — V with tapering ends. The posteromedian region of the bar is marked by the presence of a crescentic process. It measures 0.075—0.090 (0.089) in length and 0.005—0.015 (0.007) in width. The stout ventral anchors are divisible into an outer root and inner root (the latter has a bilobed knob-like process), a wide base, a strongly curved shaft and a tapering point. They measure 0.040—0.054 (0.041) in length and 0.027—0.032 (0.031) in width at the base, the point measures 0.024—0.031 (0.031) in length. The straight ventral bar is a stout shaft, it measures 0.077—0.087 (0.084) in length and 0.008—0.014 (0.013) in width in the middle. Marginal hooks, 0.012—0.020 (0.014—0.010) in length consist of a handle, pivot of handle and sickle-shaped point. The point bears a heel and tendon ligament at its base. The anteriorly placed subterminal mouth leads into a spherical pharynx. The pharynx, 0.027—0.047 (0.039) in diameter opens into a short oesophagus, which later bifurcates into intestinal caeca. The non-confluent caeca end a little behind testis.

The tandem gonads are located in posterior half of the body. The testis is larger than ovary and measures 0.084—0.110 (0.084) × 0.040—0.062 (0.054). From the anterior margin of the testis arises a narrow vas deferens which forms a loop around left intestinal caecum and finally terminates at the base of copulatory apparatus. A club-shaped prostatic reservoir opens at the base of cirrus. The copulatory apparatus consists of a tubular cirrus and an accessory piece. The cirrus has a dilated base; it measures 0.054—0.066 (0.057) in length and 0.002—0.007 (0.005) in width. The accessory piece which articulates cirrus in the middle region is sickle-shaped with a distal filamentous structure, the latter always overlying the terminal part of cirrus. The accessory piece measures 0.023—0.047 (0.028) in length and 0.003—0.007 (0.007) in width in the middle. The oval shaped ovary is pretesticular and measures 0.054 to 0.081 (0.061) × 0.027—0.013 (0.042). The oviduct widens into a uterus which finally opens into genital atrium behind bifurcation of caeca. The vagina is dextral and its tube obliquely joins the oviduct. The vitellaria are follicular, extending laterally from pharynx to the base of the peduncle. Eggs are not observed.

DISCUSSION

The parasite described herein comes closer to C. oculatus Bychowsky et Nagibina, 1969, C. flexuosus Bychowsky et Nagibina, 1969, C. australis (Young, 1967) Bychowsky et Nagibina, 1969, C. nagibinæ Paperna, 1977 and C. pedunculatus Paperna, 1977 in the shape of anchors and bars but it differs from them in the shape and articulation of accessory piece with cirrus. In having five transverse hard structures on the ventral surface of peduncular region, the new parasite, C. chaubani further differs from C. oculatus and C. australis which have 10—11 and 3 such structures respectively. In addition, C. chaubani sp. n., differs from all the previously described species of the genus in having a crescentic posteromedian process on its dorsal bar.
REFERENCES


TRIPATHI Y. K., 1959: Monogenetic trematodes from fishes of India. Ind. J. Helminth. 9: 1–149 (Year 1957.)


Received 10 November 1988

J. V., Department of Zoology, Osmania University, Hyderabad 500007, Andhra Pradesh, India