A new species of *Phyllodiaptomus* Kiefer (Copepoda, Calanoida) from South India

Y. Ranga Reddy & S. Venkateswarlu
Department of Zoology, Nagarjuna University, Nagarjunanagar 522 510, India

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**Abstract**

*Phyllodiaptomus sasikumari*, a new species of calanoid copepod is described from the material collected in several ephemeral ponds and pools in the Palghat District of Kerala State, South India.

**Introduction**

In the course of our taxonomic study of phyllodiaptomids from diverse freshwater habitats in India, we have come across a large number of specimens belonging to a hitherto undescribed species of the genus *Phyllodiaptomus* Kiefer in ten plankton samples collected from ephemeral ponds and pools in the Palghat District of Kerala State, South India. This paper gives an illustrated description of the new species under the name *Phyllodiaptomus sasikumari* n. sp., along with its relationships with other *Phyllodiaptomus* spp. This is the third species of *Phyllodiaptomus* from the Indian subcontinent, the other two valid species being *P. blanci* (Guerne & Richard, 1896) and *P. annae* (Apstein, 1907) (see Kiefer, 1936; Dussart & Defaye, 1983).

*Phyllodiaptomus sasikumari* n. sp. (Figs. 1–49)

Material examined: 75 ♀ ♂ and 75 ♂ ♂ from a turbid, reddish-brown, vegetationless, temporary, rain-fed pond, now designated the type-locality of the new species, at a hamlet called Kavalaparra, 5 km from Shornur town (10° 45' N 76° 17' E) on 20 July 1987; 20 ♀ ♂ and 20 ♂ ♂ from a man-made pond infested with algal blooms in ‘Dumb School’ premises at Ottapalem, another nearby hamlet on 21 July 1987; 30 ♀ ♀ and 30 ♂ ♂ from small clear ponds and pools with a greenish tinge in the paddy fields on 21 July 1987; all the habitats located in the Palghat District of Kerala State, South India.

The holotype, the allotype and the paratypes are depository in the British Museum (Natural History), London; their registration numbers – holotype, ♂: 1988: 1; allotype, ♀: 1988: 2; paratypes, 10 ♀ ♀: 1988: 3–12, and 10 ♂ ♂ 1988: 13–22.

**Adult female** (Figs. 1–19)

Total length exclusive of caudal setae 1.25–1.48 mm, mean 1.36 mm (n = 30). Rostral spines (Figs. 4, 5) strongly developed and acute. Body (Fig. 1) widest at posterior border of first pediger in dorsal view. Cephalosome gradually
attenuating anteriorly; anterior end broadly rounded. Fourth and fifth pedigers fused, fusion being indicated by indentation on each side. Fifth pediger with moderately-developed, asymmetrical wings; left wing narrow, more or less triangular and posterolaterally directed; right wing bilobed with outer part being better developed; each wing with 2 unequal spines, lateral spine being larger than inner spine; lateral spine of left wing generally curved anteriorly. Prosome 2.5 times as long as urosome.

Urosome of 3 somites; genital somite longer than succeeding 2 somites plus caudal rami, roughly symmetrical with subproximal region dilated and armed with 2 equal, relatively large, triangular, dorsolateral spines, lying opposite to each other; in one specimen, right genital spine shorter than left spine (Fig. 7); right posterior corner obliquely cut instead of being round. Genital field as in Fig. 6. Second urosomite smallest with 1/3 of its proximal part telescoped into genital somite. Anal somite distinctly forked behind. Caudal rami almost parallel, symmetrical, 1.5 times as long as wide, with fine hairs along both margins; setae normal except for innermost seta of each ramus showing slight bulge at base on outer side (Fig. 2); dorsal, jointed seta of left ramus longer than its counterpart of right ramus.

Antennule 25-segmented, extending up to end of lateral caudal seta; complete armature as in Figs. 9a–c.

Antenna (Fig. 10) with 2 setae and 1 group of minute spines on first endopodite-segment, and 7 terminal and 9 subterminal setae and 1 short row of spinules on second endopodite-segment.

Mandible with setal armature as in Fig. 11a, and dentition of gnathal lobe as in Fig. 11b.

Maxillula (Fig. 12): Exo- and endopodites with 6 and 8 setae; other details as illustrated.

Maxilla as depicted in Fig. 13.

Maxilliped (Fig. 14) with 4 well-developed coxal endites, carrying 1, 2, 3 and 3 setae. Other details as illustrated.

Natatory legs (Fig. 15–18) typical of subfamily Diaptominae; in leg 2, second endopodite-segment devoid of Schmeil’s organ; in leg 4, coxal seta longer than in other legs, almost reaching posterior border of second endopodite-segment of same appendage, and basis carrying 1 short, sensory seta.

Fifth legs (Figs. 19a, b). Right leg slightly stouter than left leg. Coxa with relatively large, conical, posterolaterally-directed, blunt spine. Basis much smaller than coxa; lateral sensory seta extending beyond first exopodite-segment. First exopodite-segment 1.75 times longer than wide. Second segment (end claw) armed with close-set delicate spinules on nearly straight lateral margins, as illustrated, and with short outer spine near base of third segment; in some specimens, spinules on inner margin occurring somewhat more distally (Fig. 19b). Third segment small but well defined, with 2 dissimilar spines; outer spine being bare and only about 1/4 as long as inner serrate spine; inner spine stopping short of the tip of end claw. Endopodite sturdy, 0.7 as long as inner margin of first exopodite-segment, 2-segmented, distal segment narrowing apically; apex rounded with transverse row of close-set spinules and small spine on each side; in some specimens, outer spine wanting.

Ovigerous female with 1 spherical ovisac, containing 20–30 eggs. Females bearing 1–3 spermatophores common in samples examined; spermatophore (Fig. 8) generally bent and extending beyond tips of caudal setae.

**Adult male (Figs. 20–49)**

Total length excluding caudal setae 1.11–1.29 mm, mean 1.22 mm (n = 30). Rostral spines as in Fig. 23. Body widest at posterior border of first pediger in dorsal view. Suture between fourth and fifth pedigers limited to lateral margins only (Fig. 20). Fifth pediger produced into small, rounded posteriorly-directed wings; each wing with 1 spine and 1 hair; spine of right wing relatively large and placed on small papilla.

Urosome of 5 somites, attenuating but little behind and bending to right side posteriorly. Genital somite with short spine at right distal corner. Second urosomite longest and fringed with hairs on ventral margin (Fig. 21). Fourth urosomite asymmetrical with right distal part