

**MAPPATES PLATAXUS, GEN. ET SP. NOV., A COPEPOD
PARASITIC ON THE FISH, PLATAX TEIRA (FORSK.)**

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INTRODUCTION

The author, while examining a catch of *Platax teira* (Forsk.), landed at Sassoon Docks, Bombay, in November 1953, collected nineteen females of parasitic copepods, attached to the gill-filaments of the fish-host. This lot, on examination, was found to contain four females of *Anuretes branchialis* Rangnekar (1953). The remaining fifteen, mostly females with egg-strings, though undoubtedly belonging to the subfamily Caliginae, could not be assigned to any genera of parasitic copepods known so far. A new genus, *Mappates* (mappa-napkin, alluding to the median lobe overlapping the free thoracic and genital segments) is therefore proposed to accommodate these specimens. The type-specimens are deposited in the Zoological Survey of India, Calcutta.

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SYSTEMATIC ACCOUNT

Family CALIGIDÆ

Subfamily CALIGINÆ

Mappates, gen. nov.

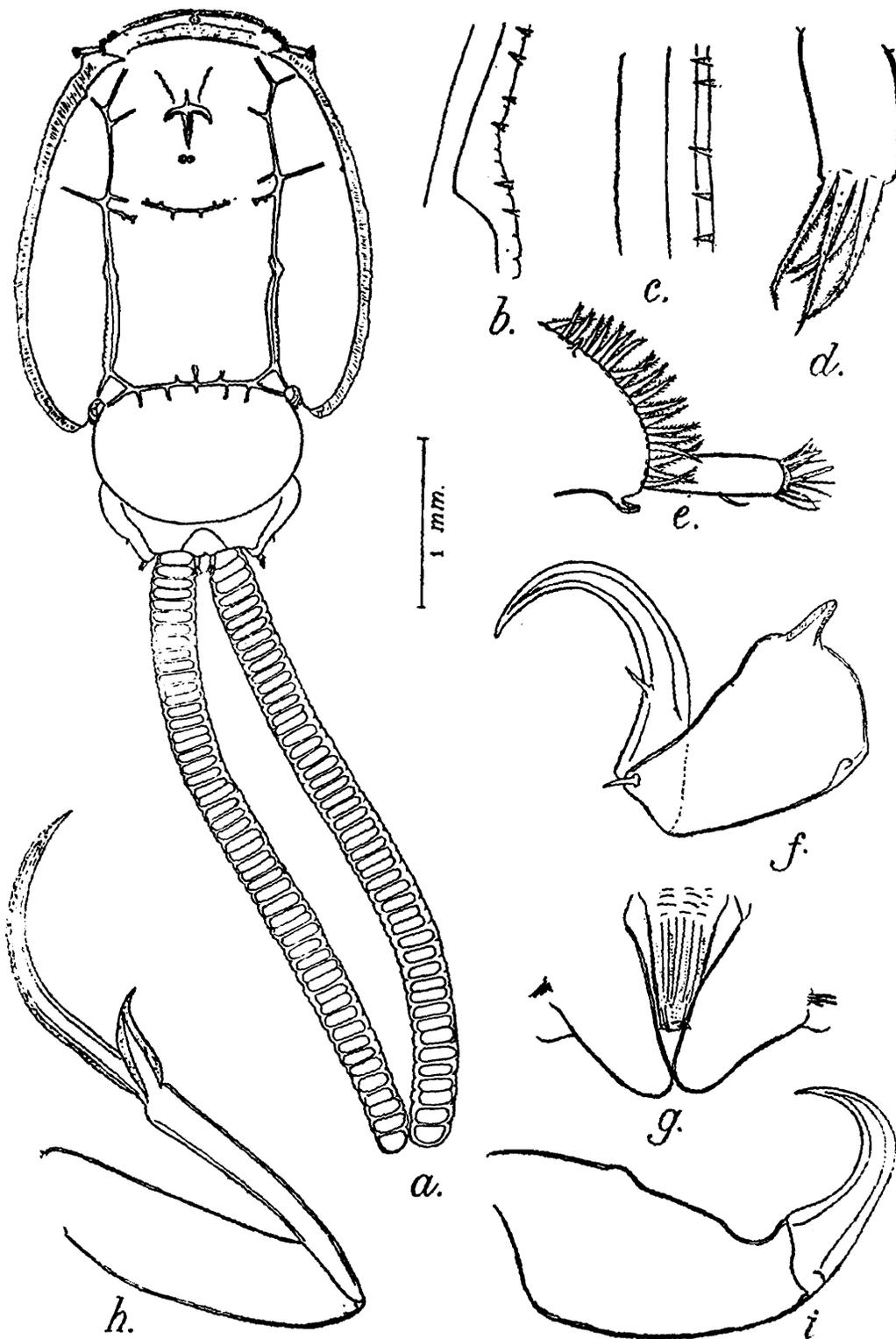
Diagnosis.—Carapace including the median lobe, slightly shorter than the entire body. Lateral lobes, median lobe and ribs lined by seta-like spinous processes along margins. Median lobe produced considerably backwards to overlap the entire fourth thoracic segment, greater portion of the genital segment and a part of the abdomen. Apron of the third segment covering the entire fourth thoracic segment and a part of the genital segment from beneath. Fourth thoracic segment short, free, with legs completely or partially concealed. Genital segment produced backwards under, and on either side of, the abdomen to bear fifth and sixth legs. Abdomen apparently two-jointed, fused dorsally with the genital segment. Egg-strings longer than body. Lunules, first maxillæ and furca absent. First, second and third legs biramous, endopod of first leg very rudimentary. Other appendages of usual caligus type.

Genotype.—MAPPATES PLATAXUS, sp. nov.

Mappates plataxus, sp. nov.

Female (text-fig. 1a).—*Body* 3.30 mm. long (excluding the anal setæ and egg-strings) in the midline, covered with saffranin-coloured spots when fresh, pale cream-coloured in alcohol. Eyes 0.85 mm. behind the anterior end of the carapace. Carapace, including median lobe, approximately nine-tenths of the entire body, elongate ovate in shape, measuring 2.90×1.98 mm. with a transparent membrane along its ventrolateral margins. Frontal plates well-developed, of almost uniform width throughout and each provided with a delicate frill traversed by striations. Lunules absent. Transverse rib removed far backwards as to be in line with the posterior sinuses; longitudinal ribs long, straight, each with a sinuous outer margin about a third from the base and extending well in front upto the base of the first antenna. Both the transverse and longitudinal ribs branching regularly; the latter with series of minute seta-like spinous processes (text-fig. 1b); a few sparsely scattered similar processes on the transverse rib also. Lateral lobes of the carapace with broadly rounded posterior corners, covered by series of similar spinous processes (text-fig. 1c). Median lobe more than half as broad as the carapace, produced far backwards covering up the entire fourth thoracic segment, about two-thirds of the genital segment and nearly half of the abdomen. Median lobe, like the lateral lobe, lined by spinous processes along margins. Ventrally, the apron of the third legs extending medially beneath the fourth thoracic segment, and covering a part of the genital segment also, strengthened by a rectangular frame-work of chitinous ribs supplemented by an oblique one on each side (text-fig. 2e). Posterior rib of the frame arching sharply, leaving a medial protuberance pointing backwards. Third and fourth legs not visible in dorsal view, except a small portion of the protopod of the third segment visible through the shallow posterior sinuses. Free thoracic segment wider than long. Genital segment 0.60×1.15 mm., produced backwards under and on either side of the abdomen to bear fifth and sixth legs, the former at the posterior corner, the latter in front of it (text-fig. 2f). Abdomen fused with the genital segment dorsally, apparently two-jointed, the basal joint being larger and much wider than the terminal joint carrying the anal laminae. Each lamina (text-fig. 1d) tipped with five setæ, two of which situated slightly dorsally, two ventrally and the remaining one at the outer corner. Anal papillæ distinct; anal sinus shallow. Egg-strings longer than the body, measuring 3.90-3.85 mm., each containing 51-49 eggs.

Cephalic appendages.—*First antenna* (text-fig. 1e): terminal cylindrical joint tipped with eleven slender spines, and a similar spine on the posterior margin about a third from anterior end; basal joint with twenty one plumose setæ on the anterior margin, and a blunt claw at the posterior distal corner. *Second antenna* (text-fig. 1f): basal joint carrying a blunt claw at its proximal corner and an accessory spine at its distal corner; terminal claw reinforced by a small spine about a third from base on the concave margin. *Second maxillæ* (text-fig. 1g): conical, with broadly rounded tips pointing towards each other and

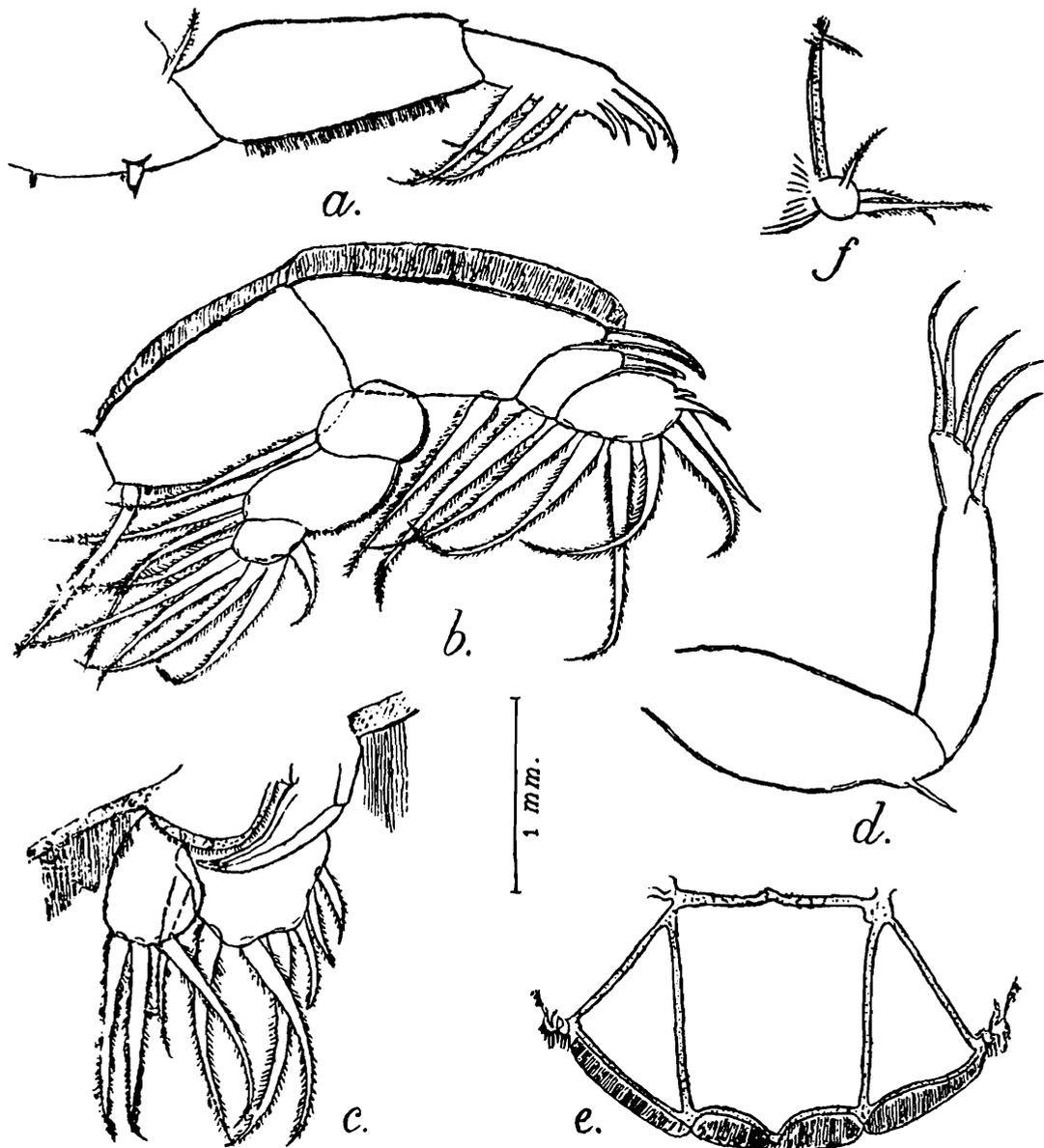


TEXT-FIG. 1.—*Mappates plataxus*, gen. et sp. nov.

a. Female, dorsal view; b-c. Portion of longitudinal rib and lateral lobe (highly magnified) showing spinous processes; d. Anal lamina; e. First antenna; f. Second antenna; g. Second maxilla and mouth cone; h. First maxillipede; i. Second maxillipede.

projecting well beyond the mouth-cone. *Mandibles* slender, each with eleven sharp teeth. *First maxillipede* (text-fig. 1h): Basal and terminal joints nearly equal, the latter with two claws of which the inner claw approximately four times the outer smaller claw; the latter claw with broad membrane all round, the former with a low frill along one side. *Second maxillipede* (text-fig. 1i): Basal joint concave on its anterior distal margin; terminal joint in the form of a claw.

Thoracic appendages.—*First leg* (text-fig. 2a): basal joint of the exopod twice as long as the terminal; latter provided with three plumose setæ on the posterior margin, three stout apical claws of graded size and a slender spine between the second and third claws. The inner margins



TEXT-FIG. 2.—*Mappates platarus*, gen. et sp. nov.

a-d. First to fourth legs; e. Apron of the third leg showing chitinous frame-work; f. Portion of the genital segment, showing positions of the fifth and sixth legs.

of second and third claws apparently pectinate. Protopod bearing a plumose seta on the anterior distal corner and a smaller one on the posterior proximal corner, and also a rudimentary endopod ending in a tiny spine at its posterior distal corner. *Second leg* (text-fig. 2b): biramous, both exo- and endopods three-jointed, with the following arrangement of spines and setæ—exopod, 1-1, 1-1, 2-6; endopod 0-1, 0-2, 0-6; front extremities of the anterior distal margins of the basal and middle joints of the exopod slightly produced forwards to bear each a stout curved claw. *Third leg* (text-fig. 2c): basal joint of the exopod in the form of a stout curved claw lying beneath the terminal joint, latter overlapping a portion of the endopod and carrying seven plumose

setæ of unequal size ; endopod much narrower than the exopod, and with three plumose setæ. *Fourth leg* (text-fig. 2d) : basal joint with a straight spine at the posterior distal corner ; distal fused-joints carrying five spines of nearly equal length. *Fifth and sixth legs* (text-fig. 2f) in the form of single small lobe, the former with one and the latter with three setæ.

Holotype.—Female, No. C 3515/1, Zoological Survey of India, Calcutta.

Paratypes.—Females, No. C 3516/1, Zoological Survey of India, Calcutta.

Host and type locality.—Gill-filaments of *Platax teira* (Forsk.), Bombay ; November 1953. Coll. : M. Rangnekar.

Remarks.—The genus *Mappates* resembles *Pseudanuretes* Yamaguti (1936) and *Eirgos* Bere (1936) in general form, both members of the subfamily Caliginæ, but differs from them in the size of the median lobe, which in *Mappates* is considerably larger than in either of the two. In *Mappates* the median lobe extends far backwards to cover not only the fourth thoracic segment, but also greater part of the genital segment and a portion of the abdomen as well. In the other two genera, only the anterior portion of the genital segment is overlapped by the median lobe. Both in *Mappates* and *Eirgos* the genital segment is produced posteriorly to bear leg rudiments, but in *Pseudanuretes* it is rounded posteriorly. In *Mappates* the abdomen is two-jointed, in *Eirgos* it is greatly reduced, while in *Pseudanuretes* it is lacking. *Eirgos* possesses the prehensile hook, the other two lack it. In the present genus the second maxilla is a conical structure bearing a palp, in *Eirgos* it is bifurcate, while in *Pseudanuretes* only the palp is developed. Except in *Eirgos*, the furca is absent in the other two. In *Pseudanuretes* the fourth legs are greatly reduced, but in the other two they are normal.

Mappates plataxus Rangnekar and *Anuretes branchialis* Rangnekar (1953), though resembling each other in general appearance, differ in many respects. The median lobe of *M. plataxus* is much larger than that of *A. branchialis*. The genital segment of the present species differs from that of *A. branchialis* in being produced backwards. *M. plataxus*, with its two-jointed abdomen, differs from *A. branchialis* in which it is greatly reduced. The shape of the second maxilla in the two species differs greatly. *A. branchialis* possesses the furca, the present species lacks it.

Finally, in none of the species of the three genera discussed here there has been any mention of the seta-like spinous processes characteristic of the present genus *Mappates*, anywhere either in the definition of the genus or in the description of the species of each.

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