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Author(s): Kosaraju Reddiah

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THE COPEPOD FAUNA OF ASSAM (INDIA), 2.
DESCRIPTION OF *TROPODIAPTOMUS LAKHIMPURENSIS* N. SP.

BY

KOSARAJU REDDIAH

Southern Regional Station, Zoological Survey of India, Madras, India

The material for the new species, *Tropodiptomus lakhimpurensis* n. sp. described below, was obtained from the plankton samples collected by Mr. A. K. Mookerji and Mr. J. K. Sen of the Zoological Survey during their survey in the Lakhimpur district of Assam in February and March 1961. Samples in which the new species is found were collected from seven ponds and the degree of abundance of the species in each pond in the 10 minute hauls of a 1 mm mesh net is given below.

| Locality | Females | Males | Copepodids |
|--|---------|-------|------------|
| 1. Pond at Phillobari, Lakhimpur | 2 | 19 | — |
| 2. Pond between Phillobari and Dumduma | 8 | 2 | — |
| 3. Pond at Tinsukia, West of Inspection Bungalow | 4 | — | — |
| 4. Pond 1 at Kokojan, Dumduma Road | 10 | — | 18 |
| 5. Pond at 4½ miles north of Dumduma | 30 | 12 | — |
| 6. Pool near S. E. railway station, Dumduma | 25 | 47 | 9 |
| 7. Pond 2 at Kokojan, Dumduma Road | 10 | — | 16 |

A total of 35 specimens including one female holotype and a male allotype have been deposited in the collection of the Zoological Survey of India, Calcutta.

***Tropodiptomus lakhimpurensis* n. sp.**

Description of the adult female. — Total length excluding caudal setae 1.6 to 1.7 mm, width 0.2 mm, based on the measurement of 10 specimens. The body (fig. 1 a) is moderately long and wide. The prosome is more than 4 times longer than the urosome. The fifth metasomal segment is symmetrically expanded with a larger distal lobe and a smaller lateral lobe. Two small hyaline spines are set on the lateral lobe of either wing and are only slightly longer than those on the genital segment. There is no median dorsal protuberance on the fifth metasomal segment. The fifth leg arising from it reaches only a little beyond the genital segment.

The urosome (fig. 1 d) is 2-segmented. The genital segment is twice longer

than its succeeding segment, and tapers slightly distally. The genital segment has a slight swelling midway on the right side which contains a very small sensilla and also another sensilla on the left side. The genital complex occupies the mid-region dorsally to which a long spermatophore measuring 0.5 mm is attached in the mature females. The ovisac is single but lobed anteriorly, measuring 0.4 mm in length and 0.5 mm in width. The ovisac contains 20 oval or rounded eggs, each measuring 0.06 mm in diameter. The caudal ramus is a little smaller than the second urosomal segment and the inner and outer margins of it are set with 5 or 6 conspicuous spinules as shown in the figure. There are six caudal setae of the usual diaptomid type. The innermost caudal seta has a weakly sclerotised knee a short distance from the base.

The antennule (fig. 1 b) consists of 25 segments of which the first is the largest and has two thick spines distally. The arrangement of the setae and aesthetes are as shown in the figure.

The fifth leg (fig. 1 c) is symmetrical and has a sharp conical process on the distal outer margin of the basipod segment. The second basipod segment is smaller than the first. The first exopod segment is long and possesses a constriction distally at about the origin of the second exopod segment or the claw. The claw is wider proximally and curves inwards with a pointed end. There is no constriction indicating a third exopod segment but it is represented by two unequal setae. The inner seta equals half the length of the claw while the outer is extremely minute. The endopod is about $\frac{2}{3}$ the length of the first exopod segment and is tipped with two more or less equal long setae.

Description of the adult male. — Total length excluding the caudal setae 1.5 mm and width 0.2 mm, based on 10 specimens. The body (fig. 1 e) is slenderer and the cephalosome is smaller than in the female. The wings of the fifth metasomal segment are small and symmetrical without prominent lobes. The urosome (fig. 1 h) is 5-segmented of which the second urosomal segment is the longest and is slightly produced on the right side. The succeeding segments are equal in length while the fifth shows an indication of subdivision along the mid-dorsal line. The caudal ramus is as long as its preceding segment and possesses an inner row of setules. The caudal setae are similar to those of the female but have finer lateral setules than in the female. The fifth leg arising from the fifth metasomal segment reaches a little beyond the caudal ramus. The innermost caudal seta has a weakly sclerotised knee as in the female.

The right antennule (fig. 1 f) is curved as shown in the figure and consists of 23 segments. Segments 11, 13, and 14 show articulated spines, the spine on the 14th being the largest. Segments 15 to 17 are wider excluding the first. The terminal process on the antepenultimate segment is recurved distally, strongly projecting outwardly from the segment.

The fifth leg (fig. 1 g) is asymmetrical, the left leg being shorter, reaching up to the distal extremity of the first exopod segment of the right leg.

The right fifth leg consists of two basipod segments, three exopod segments

and one endopod segment. The first and second basipod segments and the second exopod segment are of equal lengths while the first exopod segment is the shortest. The second exopod segment tapers distally, terminating in the third exopod segment (claw), and a lateral spine situated in this segment is very close to the claw. The weak lateral spine is about $\frac{1}{3}$ the length of the claw. The claw is strong and tapers distally to a pointed end. The endopod arising from the second

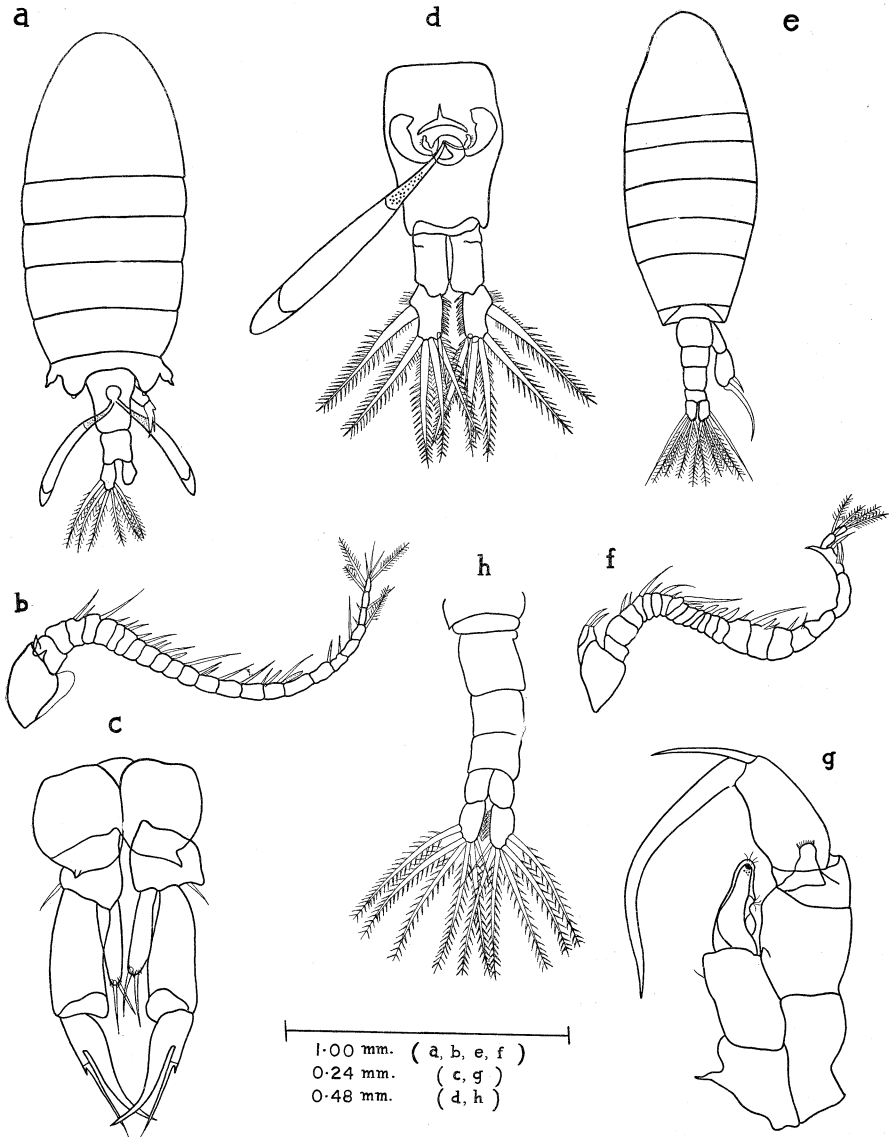


Fig. 1. *Tropodiaptomus lakhimpurensis* n. sp. a-d, adult female; e-g, adult male. a, e, dorsal view; b, antennule; c, g, fifth pair of legs; d, urosome; f, right antennule.

basipod segment is usually seen lying over the first exopod segment and it is found difficult to separate it by pressing the coverslip. The endopod is short and is nearly as long as wide at its base with a knobbed extremity fringed with a row of minute hairs or fine spinules.

The left fifth leg consists of two basipod segments, an exopod segment and an endopod segment. The first basipod segment is shorter than its counter-part in the right leg and possesses a thick lateral spine. The second basipod segment is as long as the first or second basipod segments of the right leg and has a minute lateral seta distally. The exopod segment is a little shorter than the second exopod segment of the right leg and tapers distally, terminating in a row of fine hairs. The endopod segment is less than half as long as the exopod segment and bears a row of fine hairs at its tip.

Remarks. — Literature on the various *Tropodiptomus* species is much scattered. Brehm (1953) wrote that at least 30 species are known in this genus. So far only seven species are known from India.

Tropodiptomus lakhimpurensis differs from *T. vicinis* Kiefer, 1930 in having a much longer genital segment, in the shape of the second exopod segment and the position of the lateral spine in the male right leg and in the ornamentation of the male left leg. *T. euchaetus* Kiefer, 1936 differs from the new species in possessing much longer setae on the endopods of the female fifth legs, in having one more lateral process to the second exopod segment of the male right fifth leg and in the three-segmented abdomen. *T. nielsenii* Brehm, 1953 differs from the new species in the size of both sexes, in having a longer left leg reaching up to the level of the second exopod segment of the male right fifth leg, in possessing a second lateral process to the second exopod segment of the male right fifth leg and the largest spine of the middle segments of the male right antennule being serrated. From *T. doriai* (Richard, 1897), the new species differs in possessing a larger spine on segment 14 of the male right antennule; from *T. mutatus* Kiefer, 1930 in the absence of striations on the claw of the male right leg and from *T. hebereri* Kiefer, it differs in the absence of a dorsal process on the fifth metasomal segment in the female. From *T. informis* Kiefer, 1936 the new species differs in the size of both sexes and proportions of the body and in possessing a larger spine on the first basipod segment of the male left leg.

The other species found mostly in various parts of Africa differ from the new species in the following characters: *T. processifer* (Kiefer, 1927) possesses a longer and pointed lateral spine on the second exopod segment of the male right leg and the endopods of the female fifth legs are shorter with shorter terminal setae. *T. cyrtomaphorus* (Kiefer, 1928) has a smaller 2-jointed endopodite. *T. femineus* Kiefer, 1930 has a smaller body with a long process on the left side of the genital segment. *T. hutchinsoni* Kiefer, 1928 has longer antennules and the endopods of the female fifth legs have very small terminal setae. *T. rutteneri* Brehm, 1930 has the process of the antepenultimate segment of the male right antennule denticulated and the endopods of the fifth legs asymmetrical in the

female. *T. episcopus* Brehm, 1930 has an extremely thin claw with serrated edge and the second exopod segment has a thick lateral protuberance. *T. lateralis* Kiefer, 1932 has a smaller endopod to the male fifth right leg and has a scale-like protuberance close to the lateral spine which arises from about the middle of the second exopod segment in the male right fifth leg. *T. banforanus* Kiefer, 1932 is small-sized and has a serrated lateral spine which arises from the middle of the second exopod segment in the male right fifth leg and the claw of it is thinner with its inner margin serrated. *T. monardi* Kiefer, 1938 has a smaller endopod on the female fifth legs and the lateral spine of the male fifth leg is smaller. *T. senegambiae* Gauthier, 1951 has the lateral spine arising from the middle of the second exopod segment in the male right leg and possesses a protuberance at the proximity of the lateral spine. The claw of this segment is serrated or striated. The female genital segment is longer. *T. laurentii* Gauthier, 1951 has a small-sized body and possesses a large process on either side of the female genital segment. It also differs in the shape of the third exopod segment in the male right leg and in the absence of setae on the endopods of the female fifth legs. *T. malianus* Humes, 1960 exhibits extreme asymmetry in the first basipod segment of the male fifth legs and the lateral spine is shorter. The endopods of the female fifth legs possess shorter setae.

RÉSUMÉ

Description de *Tropodiptomus lakhimpurensis* n. sp. provenant de plusieurs étangs situés dans le district de Lakhimpur, Assam (Inde). Comparaison avec les autres espèces du genre.

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