

**A REVISION OF THE GENUS *OZIOTELPHUSA* MÜLLER, 1887
(CRUSTACEA: DECAPODA: PARATHELPHUSIDAE),
WITH DESCRIPTIONS OF EIGHT NEW SPECIES**

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ABSTRACT. – The taxonomy of *Oziotelphusa* Müller, 1887, a genus of rice-field crabs restricted to the lowlands of Sri Lanka and southern peninsular India, is revised. Fifteen species are now recognized, including six new species from Sri Lanka and two new species from the southern Indian state of Kerala. *Oziotelphusa wagrakarowensis* (Rathbun, 1904), previously synonymised under *Spiralothelphusa senex* (Fabricius, 1798), is regarded as a valid species. An illustrated key to the *Oziotelphusa* species is provided.

KEY WORDS. – Freshwater crabs, Parathelphusidae, *Oziotelphusa*, new species, Sri Lanka, southern India.

INTRODUCTION

The freshwater crab genus *Oziotelphusa* Müller, 1887, is restricted to Sri Lanka [*O. hippocastanum* (Müller, 1887) (type species), *O. ceylonensis* (Fernando, 1960), *O. minneriyansis* (Bott, 1970), *O. stricta* Ng & Tay, 2001] and southern India [*O. aurantia* (Herbst, 1799), *O. bouvieri* (Rathbun, 1904)] (see Ng & Tay, 2001).

Almost all lowland freshwater-swamp habitats in southern India and Sri Lanka have been converted to rice fields, and known species of *Oziotelphusa* usually occupy such disturbed open country habitats. These species have survived despite heavy agrochemical application, but it is possible that many of them may become (or already are) threatened as chemical usage regimes change. A starting point for conservation planning, however, is a clearer understanding of their taxonomy, especially since the true diversity within this widely distributed group of freshwater crabs is not fully appreciated.

A revision of *Oziotelphusa* has long been handicapped by the absence of an adequate series of well-preserved material. The type specimens of several nominal species are poorly preserved and/or lack important male gonopod characters: this is particularly important as *Oziotelphusa* have few reliable external characters useful for interspecific diagnosis. In this study, large numbers of fresh specimens in addition to all the

available type material of the genus from Sri Lanka and India have been examined. Exploration of likely habitats (lowland marshes and rice-fields) in Sri Lanka, and the Indian states of Kerala, Tamil Nadu and (southern) Karnataka showed that the genus is indeed more speciose than previously suspected. A total of 15 *Oziotelphusa* species are recognised in the present study, including five species from India (two new to science) and ten species from Sri Lanka (six new to science). This brings the total number of freshwater crab species known from Sri Lanka to 51, all of them endemic to the island. A key to the species of *Oziotelphusa* is provided.

This study is part of a decade-long collaborative programme between the National University of Singapore and the Wildlife Heritage Trust of Sri Lanka (see Ng, 1994, 1995a, b; Bahir, 1998, 1999; Ng & Tay, 2001; Bahir & Ng, 2005, present volume) which aims to document the Sri Lankan carcinofauna and develop strategies for its conservation. Sri Lanka is an important element of the Western Ghats–Sri Lanka Global Biodiversity Hotspot (Myers et. al., 2000), and it is known that many species of freshwater crabs are threatened, or critically endangered (Bahir et. al., 2005) (present volume). Parathelphusid crabs in the region show point endemism for many species, both in Sri Lanka and southern India. With this in mind, the National Science Foundation of Sri Lanka has already commissioned an island-wide survey of Sri Lanka's carcinofauna.

MATERIALS AND METHODS

Methods of measurements and anatomical terminology follow Ng (1988, 1995b) and Ng & Tay (2001). Specimen size refers carapace width and length respectively, in millimetres. The abbreviations G1 and G2 refer to the male first and second gonopods (=pleopods), respectively. The specimens referred to in this paper, all from Sri Lanka and southern India, are deposited in the National Museum of Sri Lanka, Colombo (NMSL); The Natural History Museum, London, UK (NHM); Naturhistorisches Museum Basel, Switzerland (NHMB); National Museum of Natural History, Smithsonian Institution, Washington D. C., USA (formerly United States National Museum (USNM)); the Wildlife Heritage Trust of Sri Lanka, Colombo (WHT); Zoologisk Museum, Copenhagen, Denmark (ZMUC); Zoological Survey of India, Calcutta, India (ZSI); Muséum national d'Histoire naturelle, Paris, France (MNHN); Humboldt-Universität zu Berlin, Museum für Naturkunde, Berlin, Germany (ZMB); and the Zoological Reference Collection of the Raffles Museum of Biodiversity Research, National University of Singapore (ZRC). Altitudes are given in metres above mean sea level. All colour photographs except Fig. 2 are of preserved specimens. A voucher set of Sri Lankan specimens is also deposited in the Department of Wildlife Conservation, Colombo (DWC). Other abbreviations used: juv. = juvenile; alt. = altitude; coll. = collected.

TAXONOMY

FAMILY PARATHELPHUSIDAE

Oziotelphusa Müller, 1887

Thelphusa (*Oziotelphusa*) Müller, 1887: 482.

Potamon - De Man, 1898: 436 (part); Rathbun, 1904: 289 (part) (not *Potamon* Savigny, 1816).

Paratelphusa - Alcock, 1910: 97 (part); J. Roux, 1915: 377 (part); Fernando, 1960: 213 (part) (not *Paratelphusa* H. Milne Edwards, 1853).

Oziotelphusa - Bott, 1969: 364; 1970a: 631; 1970c: 100.

Oziothelphusa - Ng & Tay, 2001: 123.

Type species. – *Thelphusa* (*Oziotelphusa*) *hippocastanum* Müller, 1887, by monotypy (type locality Trincomalee (08°35'N, 81°13' E, alt. 2 m), northeast Sri Lanka).

Diagnosis. – Carapace dorsal surface convex to extremely convex both fore and aft; epigastric cristae anterior of postorbital cristae; postorbital cristae distinct; epibranchial region gently to distinctly inflated, without oblique striae; single oblique striation on branchial region originates as cristae of anterolateral border, curves into branchial region, the strongest striae on lateral border; epistomal median lobe with sharp acute median tooth; frontal median triangle distinct, weakly to strongly fused with distinct lateral borders. Suture between anterior thoracic sternites 2 and 3 visible as a groove; male abdomen robust, almost T-shaped to distinctly triangular. G1 not longitudinally twisted; terminal segment robust, entirely bent or curved laterally

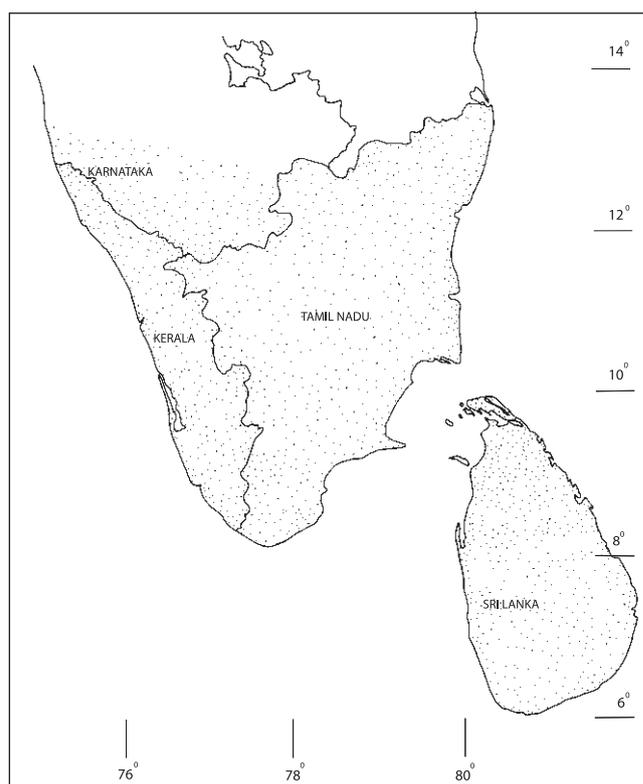


Fig. 1. The present distribution of *Oziotelphusa*: Sri Lanka, Tamil Nadu, Kerala and southern Karnataka, India.

outwards or only at the tip. G2 with long distal segment ca. 0.4–0.5 times length of basal segment.

Remarks. – *Oziotelphusa* most closely resembles the sympatric genus, *Spiralothelphusa* Bott, 1968, but can be distinguished by the absence of longitudinal twisting in the G1 (vs. G1 terminal segment and distal portion of subterminal segment distinctly longitudinally twisted clockwise to varying degrees) (e.g., Figs. 3E, F, 10A, B, 12B, C, 16A, 18D, 23C, 27A; cf. Ng & Tay, 2001: Figs. 23G, I, J, K, 24A–F, H–K, 27A, B, 31A, B, 32G, I).

In terms of external morphology alone, however, *Oziotelphusa* and *Spiralothelphusa* species are almost impossible to distinguish, with both genera sharing similar carapace physiognomy (convex carapace dorsal surface, with smooth epibranchial regions) and other common external characters, e.g., the presence of an acute median tooth on the epistomal median lobe and generally triangular-shaped male abdomen (Ng & Tay, 2001). The problem with relying solely on differences in gonopodal structures to separate the two genera, however, is that the G1s of some *Spiralothelphusa* species (e.g., *S. fernandoi*, *S. hydrodroma*, *S. senex*), while still discernibly twisted longitudinally, are noticeably less strongly twisted (compared to other *Spiralothelphusa* species, e.g., *S. wuellerstorfi*, *S. parvula*) (see Ng & Tay, 2001: Figs. 24, 27, 29, 31, 32); and bear remarkable resemblance to the G1s of *Oziotelphusa* species (see Ng & Tay, 2001). It is, therefore, not inconceivable that species of *Spiralothelphusa* with even less or barely any longitudinal twist in the G1 may

yet be discovered; and that such species will prove difficult to reliably assign to either *Oziotelphusa* or *Spiralothelphusa*. Should such intermediate forms be discovered in future, the definitions of both genera would certainly have to be reviewed. However, until clear intermediate forms are described, this study only recognises two genera.

The G1 and carapace physiognomy of *Oziotelphusa* are significantly different from the other parathelphusid genera (*Ceylonthelphusa* Bott, 1969; *Perbrinckia* Bott, 1969; *Cliniothelphusa* Ng & Tay, 2001; *Pastilla* Ng & Tay, 2001; and *Mahatha* Ng & Tay, 2001) from Sri Lanka and southern India (see Ng & Tay, 2001). The only non-*Oziotelphusa* species having a superficially similar G1 physiognomy is *Perbrinckia gabadagei* Bahir & Ng, 2005 (see Figs. 3E–H; cf. Bahir & Ng, 2005, present volume: Fig. 31H, I) but their carapace characters are significantly different: epigastric and postorbital cristae sharp and distinct in *Oziotelphusa* (vs. cristae blunt in *Perbrinckia gabadagei*); branchial region smooth (vs. branchial region with distinct oblique striae); epistomal median lobe with acute median tooth (vs. without acute median tooth); suture between anterior thoracic sternites 2 and 3 visible as a groove (vs. suture between anterior thoracic sternites 2 and 3 not discernible).

***Oziotelphusa hippocastanum* (Müller, 1887)**
(Figs. 2–6)

Thelphusa (*Oziotelphusa*) *hippocastanum* Müller, 1887: 482; Pl.5 Fig. 7; Bott, 1969: 364.

Potamon hippocastanum - De Man, 1898: 436.

Potamon (*Potamon*) *hippocastanum* - Rathbun, 1904: 292.

Paratelphusa (*Oziotelphusa*) *hydrodromus* - Alcock, 1910: 97 (not *Cancer hydrodromus* Herbst, 1794).

Parathelphusa hippocastanum - J. Roux, 1915: 377; Fernando, 1960: 213; 1961: 56, 58, Pl. 1D; 1970: 1, 2, Fig. 3.

Oziotelphusa senex senex - Bott, 1970a: 632 (part); 1970b: 337; 1970c: 100 (part) (not *Cancer senex* Fabricius, 1798).

Oziotelphusa hippocastanum - Ng & Tay, 2001: 125–126, Figs. 11, 12.

Material examined. - Lectotype - male (31.9 by 23.1 mm) (NHMB 45a) Trincomalee, Sri Lanka, 08°35'N, 81°13' E, alt. 2 m, coll. P. & F. Sarasin, 1887. Designation by Bott (1970c).

Paralectotype - male (28.7 by 21.2 mm) (NHMB 45a), same collection data as lectotype.

Others - male (37.3 by 26.9 mm) (WHT 10387), male (30.3 by 22.5 mm) (WHT 10381), male (40.0 by 27.8 mm) (WHT 10382), female (45.1 by 32.8 mm) (WHT 10377), male (43.1 by 30.4 mm) (WHT 10378), female (48.6 by 36.2 mm) (WHT 10384), male (42.3 by 30.2 mm) (WHT 10379), male (42.9 by 29.4 mm) (WHT 10380), female (38.1 by 27.8 mm) (WHT 10385), male (39.4 by 27.4 mm) (WHT 10386), male (34.9 by 24.9 mm) (WHT 10389), male (34.2 by 24.2 mm) (WHT 10390), Nochchiyagama near Anuradhapura, 08°16'N, 80°13'E, alt. 70 m, coll. M. M. Bahir, C. Gans & C. Yahalmulla, 18 Nov.2000; male (40.0 by 28.8 mm) (WHT 10858), male (38.4 by 28.1 mm) (WHT 10859), male (30.9 by 22.4 mm) (WHT 10860), female (51.0 by 38.1 mm) (WHT 10861), Nawadamkulam, near Mundel, 07° 50'N, 79° 50' E, alt. 6 m, coll. M. M. Bahir, S. U. Kankanam-Gamage, 29 Jan.2003; male (34.8 by 24.5



Fig. 2. Living colouration of *Oziotelphusa hippocastanum*. A, male (34.8 by 24.5 mm) (WHT 10901); B, female (45.1 by 32.8 mm) (WHT 10377); C, male (30.3 by 22.5 mm) (WHT 10381); D, male (42.9 by 29.4 mm) (WHT 10380); E, female (51.0 by 38.1 mm) (WHT 10861).

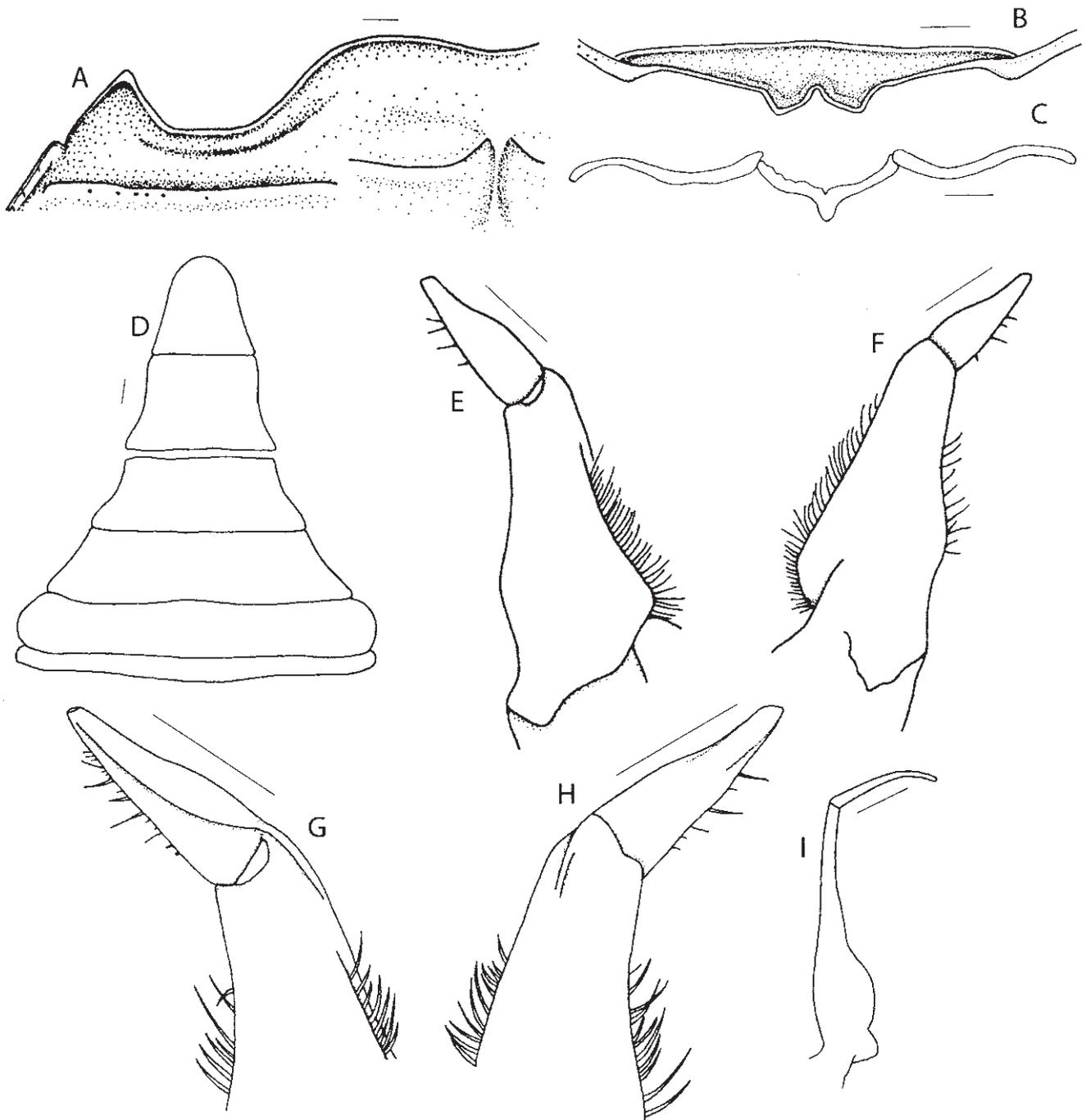


Fig. 3. *Oziotelphusa hippocastanum*. A, B, D–I: lectotype male (31.9 by 23.1 mm) (NHMB 45a); C: male (37.3 by 26.9 mm) (WHT 10387). A, left side of anterior dorsal surface of carapace; B, frontal median triangle; C, epistomal median lobe; D, abdomen; E, dorsal view of left G1; F, ventral view of left G1; G, dorsal view of terminal segment of left G1; H, ventral view of terminal segment of left G1; I, left G2. Scale bar = 1 mm.

mm) (WHT 10901), male (32.0 by 23.1 mm) (WHT 10902), female (36.1 by 25.8 mm) (WHT 10903), Panama near Kumana National Park, 07°50'N, 79°50'E, alt. 6 m, coll. M. Meegaskumbura & M. M. Bahir, 6 Dec. 2003; female (42.4 by 30.1 mm) (ZRC 1984.7960), Karanavai, Jaffna, 28 Nov. 1956.

Diagnosis. – Carapace dorsal surface highly convex (Fig. 6); epistomal median lobe with distinct sharp tooth (Fig. 3C); frontal margin distinctly curved inwards towards midline (Fig. 3A), almost bilobed in dorsal view; epibranchial tooth very small, distinctly elevated above postorbital cristae, almost level with supra-orbital margin (Fig. 3A); postorbital region deeply concave, very short

(Figs. 3A, 5A, B, D–H, 6); postorbital crista sharp, almost straight, not sloping, smooth, entire (Fig. 3A); branchial region highly inflated; frontal median triangle as broad as frontal margin, dorsal margin not fused with lateral margins (Fig. 3B). Suture between anterior thoracic sternites 2 and 3 visible as a deep groove reaching lateral margins; suture between sternites 3 and 4 distinct as narrow, deep groove not reaching lateral borders; male abdomen robust, almost triangular, lateral margins gently concave; sixth abdominal segment trapezoid, wider than long (Fig. 3D). G1 terminal segment robust, cylindrical, almost straight, distinctly narrowed distally, tip blunt, entirely bent, directed laterally outwards, ca. 0.5 times length of subterminal segment;

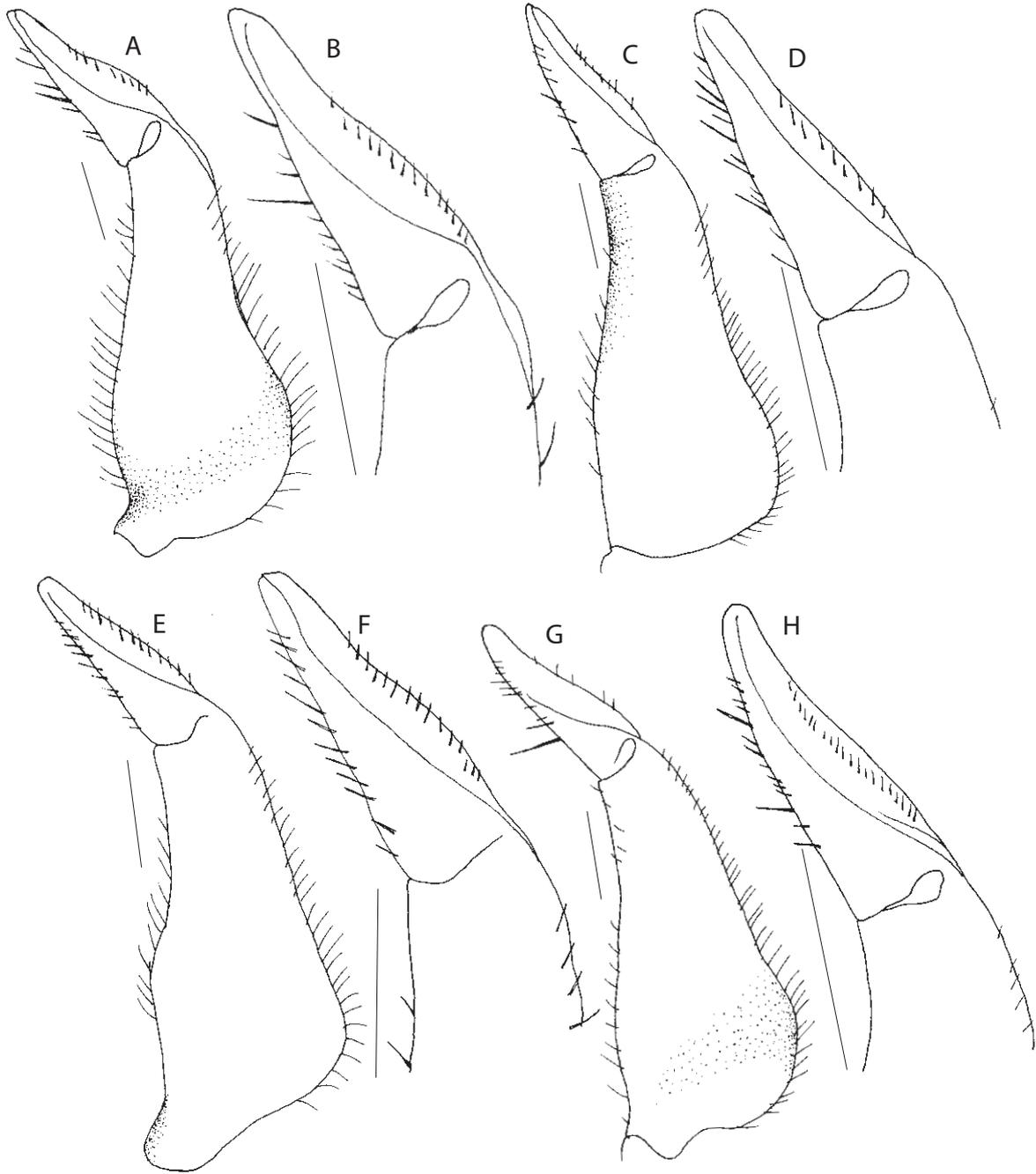


Fig. 4. *Oziotelphusa hippocastanum*. A, B: male (32 by 23.1 mm) (WHT 10902); C, D: male (30.3 by 24.5 mm) (WHT 10381); E, F: male (37.4 by 26.9 mm) (WHT 10382); G, H: male (30.9 by 22.4 mm) (WHT 10860), dorsal view of G1. Scale bar = 1 mm.

subterminal segment broad (Figs. 3E–H, 4). G2 distal segment long ca. 0.4 times basal segment (Fig. 3I).

Live coloration. – Reddish-orange to chestnut dorsal carapace has scattered yellow markings (Fig. 2). There is considerable variation in the extent and intensity of the yellow markings in the species throughout various populations and age groups.

Distribution. – The recent national survey of the freshwater crabs of Sri Lanka showed the presence of this species in four localities well removed from the type locality, Trincomalee: i)

Nochchiyagama near Wilpattu National Park in North Central Sri Lanka; ii) near Mundel, northwest Sri Lanka; iii) Panama, near Kumana National Park, southeast Sri Lanka; and iv) Jaffna, Northern Sri Lanka. The present distribution data suggests that *O. hippocastanum* is restricted to the eastern, north-western, north-central and northern lowland dry zone of Sri Lanka, including the Kumana and Wilpattu National Parks, where its habitat is protected. The species is endemic to Sri Lanka.

Ecology. – This semi-terrestrial species lives in deep burrows in sandy soil adjacent to rice-fields. *Oziotelphusa hippocastanum* is sympatric in parts of its range with *O.*



Fig. 5. *Oziotelphusa hippocastanum*. A–C: male (40.0 by 27.8 mm) (WHT 10382); D, E: male (32.0 by 23.1 mm) (WHT 10902); F, G: male (30.3 by 24.5 mm) (WHT 10381); H: male (38.4 by 28.0 mm) (WHT 10859). A, D, F, H, dorsal view; B, E, G, frontal view; C, ventral view.

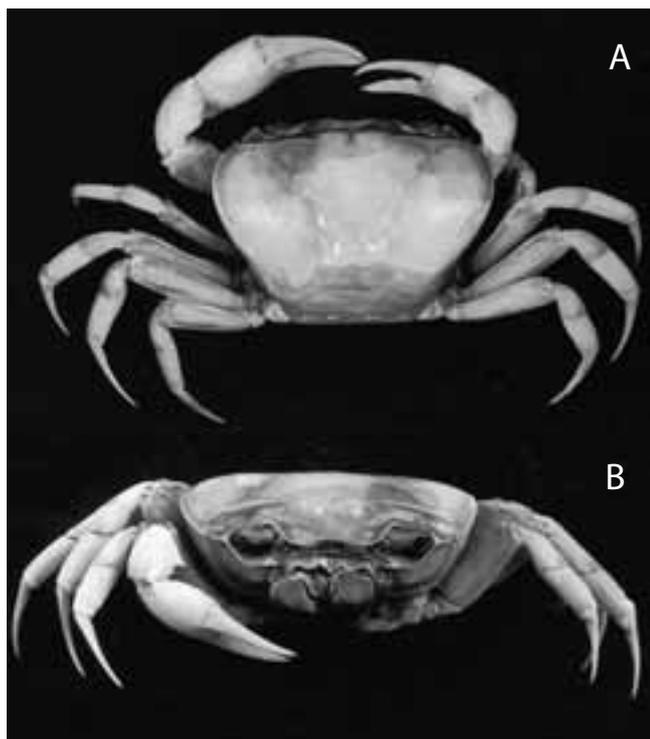


Fig. 6. *Oziotelphusa hippocastanum*, lectotype male (31.9 by 23.1 mm) (NHMB 45a). A, dorsal view; B, frontal view.

ceylonensis (Fernando, 1960), *O. minneriyaensis* (Bott, 1970) and *Spiralothelphusa fernandoi* Ng, 1994, in rice-fields and adjacent areas. Near Mundel and Nochchiyagama, *O. hippocastanum* is sympatric with *O. ceylonensis* and at Panama it is sympatric with *S. fernandoi*.

Etymology. – This species is probably named for the large, shiny and brown nuts of the horse-chestnut, *Aesculus hippocastanum*; with ‘hippos’ being Greek for ‘horse’ and ‘castanea’ being Latin word for chestnut tree. The word ‘castaneus’ also refers to the colour of chestnuts.

Remarks. – For a discussion of the type designation, see Ng & Tay (2001: 123).

The lectotype has been compared with the male specimens of *O. hippocastanum* of similar size from all known populations. Carapace morphology in all these populations is similar except for slight differences in the Nochchiyagama population (Fig. 5). The gonopod physiognomy of specimens obtained from Nochchiyagama also shows slight differences in the outer and inner margins of the G1 subterminal segments and the shape of the terminal segments, especially the degree of curvature (Figs. 4A, B vs. 3E, F).

The gonopod characters of the Panama populations are almost identical to those of the lectotype. Both Panama and Trincomalee (the type locality) are in eastern Sri Lanka, separated by a linear distance of approximately 210 km.

Specimens obtained from Mundel, northwest Sri Lanka, resemble the lectotype except for slight differences in the shape of the G1 terminal segment, and the shape of the outer

and inner margins of G1 subterminal segment, especially the manner in which this is bent (Figs. 3E, F vs. 4G, H); this population is separated from the type locality by an aerial distance of about 170 km. For now, all these populations are retained within the single species, *O. hippocastanum*.

***Oziotelphusa aurantia* (Herbst, 1799)**
(Figs. 7–11)

Cancer aurantius Herbst, 1799: 59, Pl. 48 Fig. 5.

Telphusa indica Latreille, 1825: 563.

Thelphusa indica - H. Milne Edwards, 1837: 13.

Thelphusa leschenaudii H. Milne Edwards, 1837: 13.

Thelphusa leschenaultia - H. Milne Edwards, 1853: 211.

Oziotelphusa senex senex - Bott, 1970a: 632 (part), Pl. 1 Fig. 3; 1970c: 100 (part); Sakai, 1999: 37 (part), Pl. 20A Fig. B (not *Cancer senex* Fabricius, 1798).

Oziotelphusa aurantius - Ng & Tay, 2001: 124, Figs. 19, 20.

Material examined. – Lectotype - male (63.5 by 43.0 mm) (ZMB 2119), East India. [simultaneous neotype of *Telphusa indica* Latreille, 1825, and *Thelphusa leschenaudii* H. Milne Edwards, 1837, by present designation]

Others - male [paralectotype of *Spiralothelphusa senex* (Fabricius, 1798)] (46.3 by 32.5 mm) (ZMUC 115–3; possibly from Tranquebar (see Ng & Tay, 2001), male (50.3 by 36.9 mm) (ZRC 2003.0245), male (29.6 by 36.0 mm) (WHT 10759), male (51.4 by 37.5 mm) (WHT 10760), female (51.0 by 36.8 mm) (WHT 10762), female (45.0 by 33.5 mm) (WHT 10763), female (47.2 by 35.8 mm) (WHT 10761), rice-fields opposite the Madras Crocodile Bank Trust, Mamallapuram, Tamil Nadu, India.

Diagnosis. – Carapace dorsal surface very highly convex (Figs. 7A, 8, 11A, B); epistomal median lobe with acute median tooth (Fig. 9B); frontal margin very gently concave in dorsal view; epibranchial tooth small, distinctly elevated from postorbital cristae, almost level with supra-orbital margin (Figs. 7A, 8, 11A); postorbital region deeply concave, very short (Figs. 7A, 8, 11A); postorbital cristae sharp, curved, smooth, entire (Figs. 7A, 8, 11A); branchial region highly inflated (Figs. 7A, 8, 11A, B); frontal median triangle as broad as frontal margin, dorsal margin not fused with lateral margins. Suture between anterior thoracic sternites 2–3 visible as a deep, narrow groove faintly reaching lateral margins; suture between sternites 3–4 distinct as a moderately broad, deep groove faintly reaching lateral borders; male abdomen robust, almost triangular, lateral margins gently concave, sixth abdominal segment trapezoidal, wider than long (Fig. 9A). G1 terminal segment long, cylindrical, gently tapered distally, entirely bent and directed laterally outwards, ca. 0.5 times length of subterminal segment, subterminal segment broad with slightly concave inner margin and outer margin deeply notched basally (Figs. 7B, 9C–E, 10). G2 distal segment long, ca. 0.4 times basal segment (Fig. 9F).

Distribution. – Tamil Nadu, India (present study). Types from Tranquebar, south-eastern India (see Ng & Tay, 2001).

Ecology. – This species commonly lives in rice-field embankments. The crabs were also observed in burrows at the margins of waterholes.

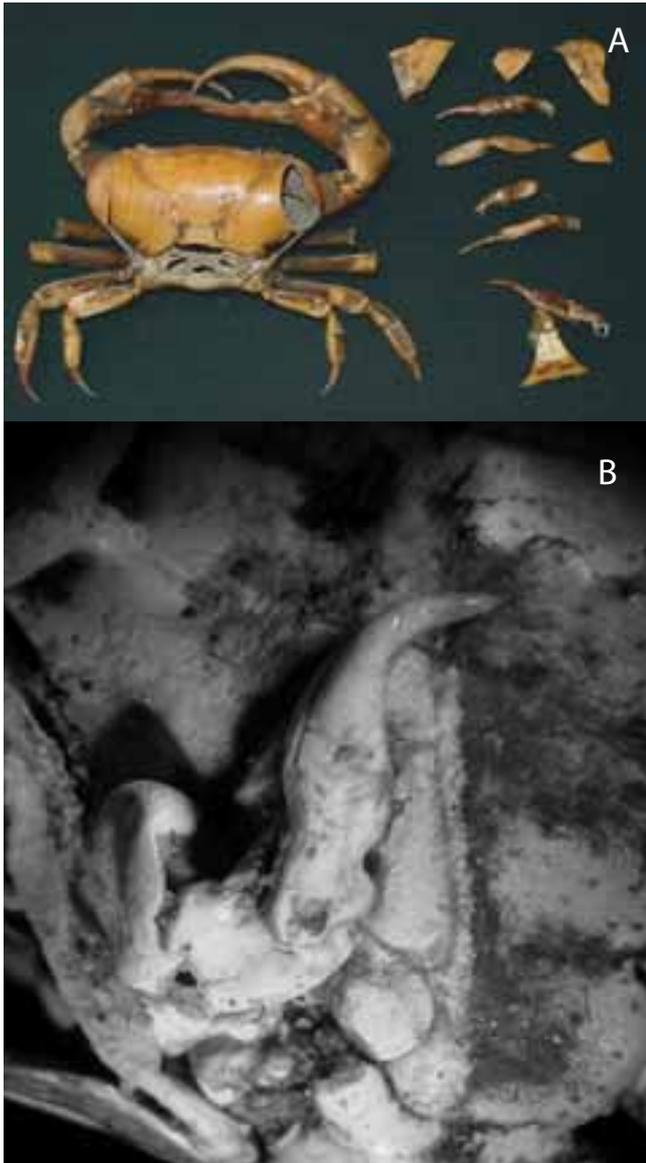


Fig. 7. *Oziotelphusa aurantia*, lectotype male (63.5 by 43.0 mm) (ZMB 2119). A, dorsal view, including abdomen, detached appendages and carapace fragments; B, ventral view of left G1.

Etymology. – Probably for its colour, in neo-Latin, ‘aurantium’ means orange. Many of the Indian *Oziotelphusa* species are orange in colour.

Remarks. – *Cancer aurantius* Herbst, 1799 [type locality: East India] was synonymised by Rathbun (1904) under *Potamon (Potamon) senex* (Fabricius, 1798)[= *Cancer senex* Fabricius, 1798]. Rathbun (1904) based her action on the similar external morphology of these species, notably the distinctly inflated carapace. Bott (1970a, c) accepted Rathbun’s action and continued to regard *C. aurantius* as a junior synonym of *Potamon (Potamon) senex*, which he transferred to *Oziotelphusa*, while at the same time designating a male lectotype for *Cancer senex* from among three dried type specimens (two male and one female) deposited in the ZMUC. The three type specimens of *C. senex* were subsequently rehydrated and re-examined by Ng & Tay (2001), who found

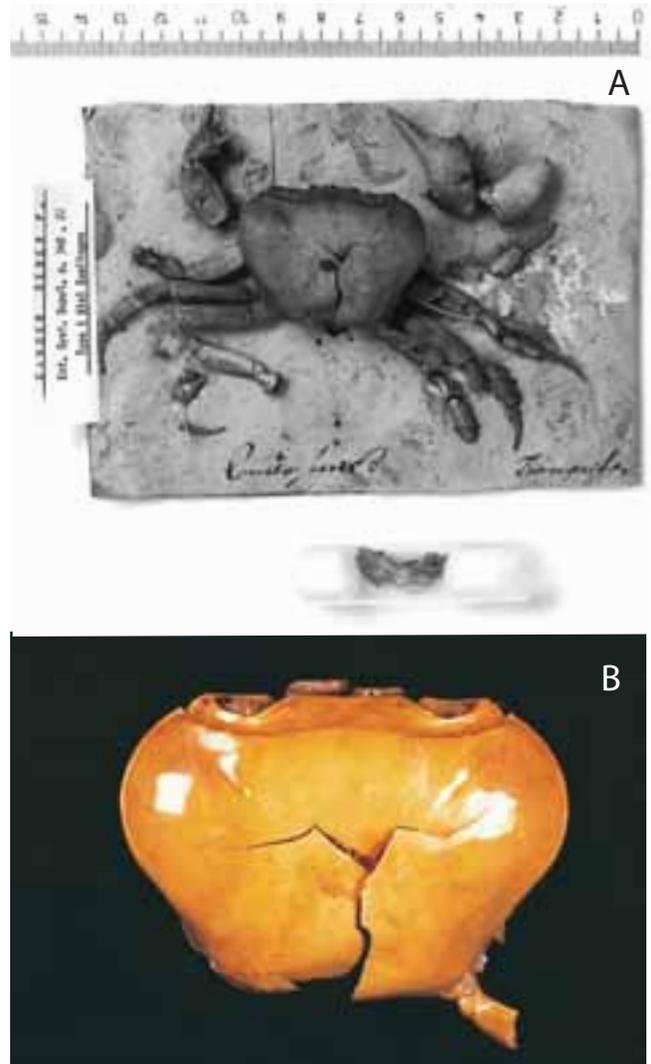


Fig. 8. *Oziotelphusa aurantia*, male (46.3 by 32.5 mm) (ZMUC 115–3)[paralectotype of *Cancer senex* Fabricius, 1798]. A, original mounted specimen with the original label; B, rehydrated carapace. (Reproduced with permission, from Ng & Tay, 2001).

that only the male paralectotype (ZMUC 115–3) was an actual *Oziotelphusa* species, possessing a distinctly inflated carapace and non-twisted G1 with a terminal segment bent laterally outwards. The remaining two specimens (male lectotype ZMUC 115–1 and female paralectotype ZMUC 115–2), which possessed generally flatter carapaces and, in the case of the male lectotype, distinctly longitudinally twisted G1s, are actually clearly referable to the genus *Spiralothelphusa* Bott, 1968 (Ng & Tay, 2001). Consequently, Ng & Tay (2001) re-assigned the species *O. senex* and its male lectotype ZMUC 115–1 and female paralectotype ZMUC 115–2 to the genus *Spiralothelphusa*. Therefore the next available name for what Bott and Rathbun called “*O. senex*” (including the male paralectotype specimen ZMUC 115–3) is *Cancer aurantius* Herbst, 1799, which is therefore recognized as a valid species and removed from the synonymy of *Spiralothelphusa senex*.

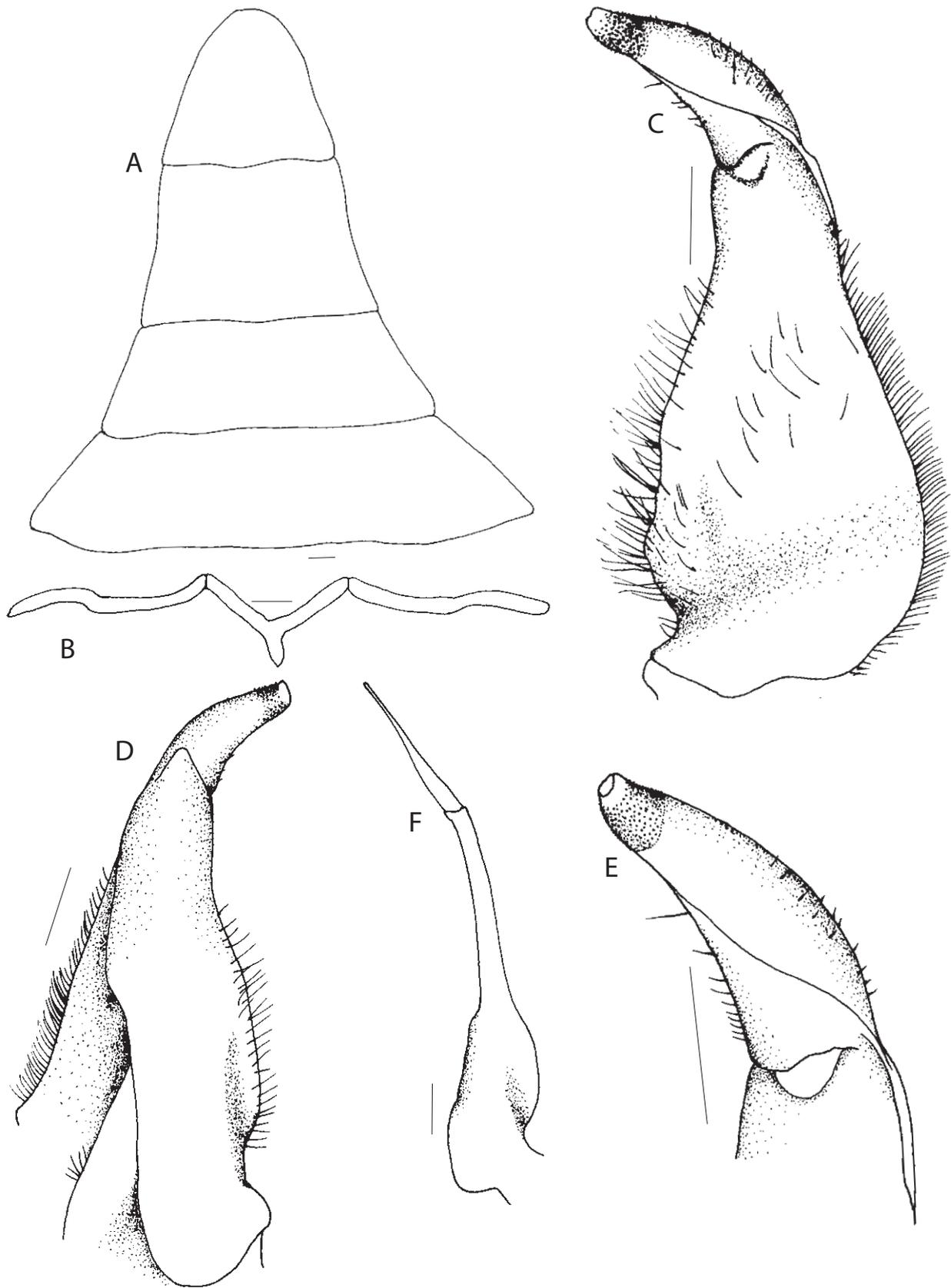


Fig. 9. *Oziotelphusa aurantia*, male (50.3 by 36.9 mm) (ZRC 2003.0245). A, abdomen; B, epistomal median lobe; C, dorsal view of left G1; D, ventral view of left G1; E, dorsal view of terminal segment of left G1; F, left G2. Scale bar = 1 mm.

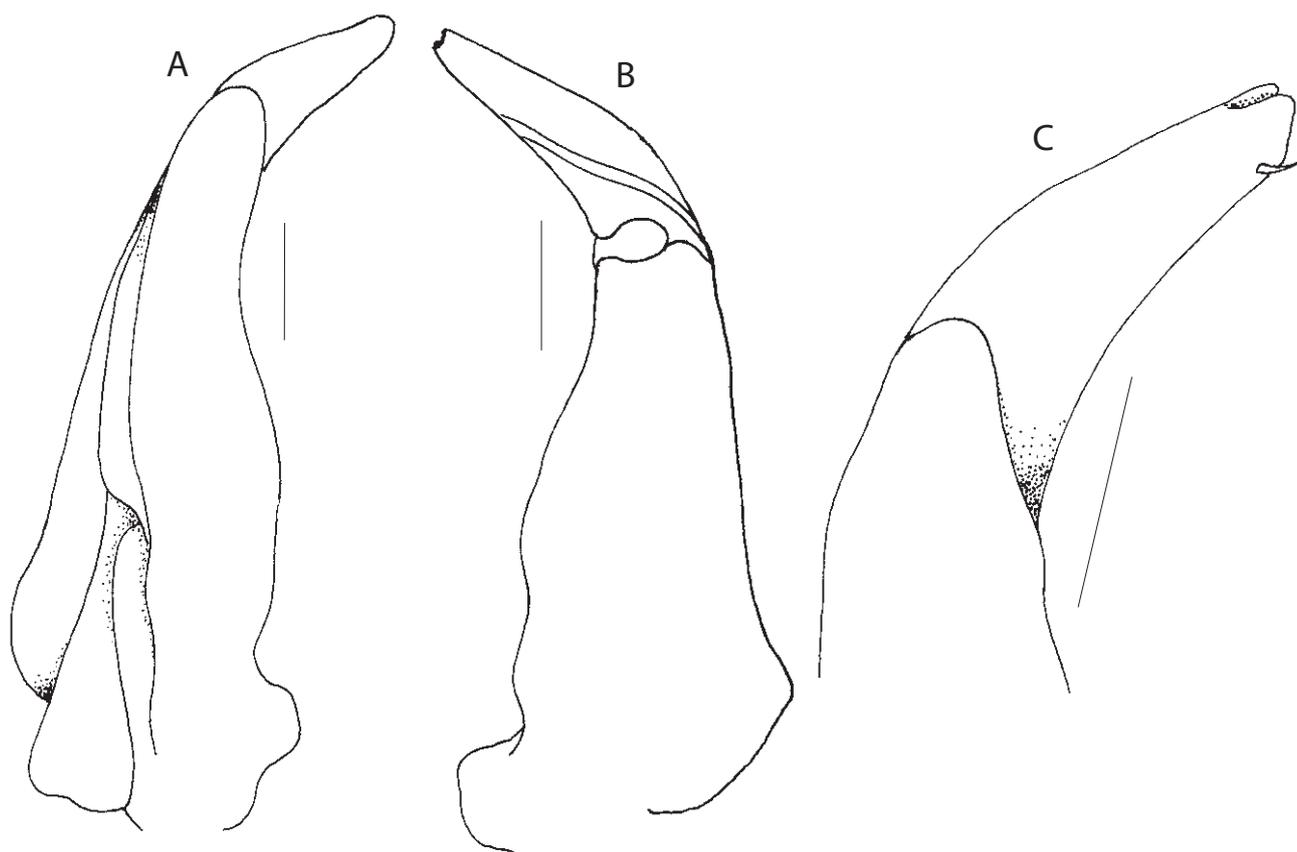


Fig. 10. *Oziotelphusa aurantia*, male (46.3 by 32.5 mm) (ZMUC 115–3)[paralectotype of *Cancer senex* Fabricus, 1798]. A, ventral view of left G1; B, dorsal view of left G1; C, ventral view of terminal segment of left G1. Scale bar = 1 mm. (Reproduced with permission, from Ng & Tay, 2001).

Two other species were synonymised under *Potamon* (*Potamon*) *senex* by Rathbun (1904), viz., *Telphusa indica* Latreille, 1825, and *Thelphusa leschenaudii* H. Milne Edwards, 1837, similarly due to the distinctly inflated carapaces of these taxa. Although the G1 structure of these two species is not known, their distinctly inflated carapace physiognomies clearly distinguishes them from *Spiralothelphusa senex* (which has a generally flatter carapace); and, like *Cancer aurantius*, they should also be removed from its synonymy. Interestingly, when H. Milne Edwards (1837) named *Thelphusa leschenaudii*, from “Habite les environs de Pondichéry” after the collector, Leschenault “Thelphuse de Leschenault”, he based his description on the same type specimens which Latreille (1825) had earlier described *Telphusa indica* Latreille, 1825, from, which he said came from “Pondichéry” and were obtained by “M: Leschenault de Latour”! This was confirmed by Rathbun (1904: 291) who examined the male and female type specimens of *T. indica* and listed these as “... types de *Telphusa indica* Latreille (non Milne Edwards), et types de *Thelphusa Leschenaudii* Milne Edwards”. How this situation came about is unclear, but the fact is that *Thelphusa leschenaudii* H. Milne Edwards, 1837, is a junior objective synonym of *Telphusa indica* Latreille, 1825.

The similar carapace physiognomy (especially the distinctly inflated carapace) and overlapping type localities of *Telphusa indica* (= *Th. leschenaudii*) and *O. aurantia* [i.e.,

“Pondichéry” (east India) and “East India”, respectively] are very strong indications that they are conspecific, and that Rathbun (1904) was correct to place these species together in a synonymy. As such, the action of Rathbun is followed here in that *Telphusa indica* Latreille, 1825, and *Thelphusa leschenaudii* H. Milne Edwards, 1837, are regarded as junior synonyms of *Oziotelphusa aurantia*. Although Rathbun (1904) commented that she had the types of *Telphusa indica* (also the types of *Th. Leschenaudii*, see earlier) on hand, the male and female types could not be located in separate searches for them in 2002 and 2004 (D. Guinot, R. Cleve and P. Castro through P. K. L. Ng, pers. comm.) and are believed lost. Neotypes are therefore needed to stabilize the taxonomy of these species in order to prevent further confusion and instability. The lectotype of *Cancer aurantius* Herbst, 1799 [male (63.5 by 43.0 mm) (ZMB 2119); type locality: East India] is hereby designated as the simultaneous neotype for *Telphusa indica* Latreille, 1825, and *Thelphusa leschenaudii* H. Milne Edwards, 1837, making both species junior objective synonyms of *Oziotelphusa aurantia*.

The lectotype of *O. aurantia* is a dried specimen deposited in the ZMB (63.5 by 43.0 mm) (ZMB 2119)[It should be referred to as the lectotype since there was no clear indication in the original description that this was the only specimen available to Herbst (Ng & Tay, 2001)]. Based on the external morphology, especially the strongly convex dorsal carapace, Ng & Tay (2001) believed the lectotype and ZMUC 115–3 specimens to



Fig. 11. *Oziotelphusa aurantia*, male (50.3 by 36.9 mm) (ZRC 2003.0245). A, dorsal view; B, frontal view, C, ventral view.

be conspecific. They also suggested that Rathbun (1904) may have been referring to the latter specimen (i.e., *O. aurantia*) when she highlighted the distinctly inflated carapace as a distinguishing feature of “*Potamon (Potamon) senex*”. For the present study, Dr Oliver Coleman (ZMB) kindly photographed the lectotype of *O. aurantia*, including the taxonomically important G1 (Fig. 7), allowing us to make more detailed comparisons between the ZMUC 115–3 specimen and this lectotype. All our present observations indicate that the lectotype and ZMUC 115–3 specimens are conspecific, as they have a similar G1 and carapace features. Some differences observed in the general carapace shape between the two specimens are probably size-related, as the lectotype is considerably larger than the ZMUC 115–3 specimen (Ng & Tay, 2001; present study).

The present study includes additional non-type material from near Madras, Tamil Nadu. These are also referred to *O. aurantia*, as they have similar external and G1 morphology to the lectotype and ZMUC 115–3 specimen; in particular, the

diagnostic G1 characters for the species, i.e., long, cylindrical G1 terminal segment that is entirely bent and directed laterally outwards; and broad subterminal segment with a slightly concave inner margin and an outer margin with a deep notch at the base (Figs. 7B, 9C, D, 10A, B).

Oziotelphusa aurantia most closely resembles *O. kerala*, new species, another southern Indian species. *Oziotelphusa aurantia* can nevertheless be distinguished from *O. kerala* by the following external and G1 characters: male abdomen relatively broader, and sixth abdominal segment with gently concave outer margins (vs. male abdomen T-shaped and sixth abdominal segment with distinctly concave outer margins) (Figs. 9A vs. 39A); suture between anterior thoracic sternites 2 and 3, and 3 and 4 distinctly deeper (vs. suture between anterior thoracic sternites 2 and 3, and 3 and 4 shallow); G1 terminal segment comparatively stout (vs. comparatively slender) (Figs. 7B, 9C–E, 10 vs. 39B–D); G1 tip not directed upwards in dorsal and ventral views (vs. G1 tip turned upwards) (Figs. 7B, 9C–E, 10 vs. 39B–D); inner margin of G1 distinctly concave in dorsal and ventral views (vs. the inner margin of G1 distinctly convex) (Figs. 7B, 9C, D, 10 vs. 39B, C); and base of outer margin of G1 notched (vs. without notch, but gently concave) (Figs. 7B, 9C, D, 10 vs. 39B, C).

Oziotelphusa aurantia is also superficially similar to *O. biloba* in carapace and gonopod physiognomy, but can nevertheless be distinguished by abdomen and epistomal characters (see **Remarks** under *O. biloba*). The G1 physiognomy of *O. aurantia* also resembles that of *O. bouvieri*, from which it can, however, be readily distinguished (see **Remarks** under *O. bouvieri*).

Oziotelphusa wagrakarowensis (Rathbun, 1904)

(Figs. 12–15)

Potamon (Potamon) wagrakarowensis Rathbun, 1904: 292, Pl. 12 Fig. 4.

Paratelpusa (Oziotelphusa) hydrodromus - Alcock, 1910: 97, Fig. 60 (part) (not *Cancer hydrodromus* Herbst, 1794).

Oziothelphusa senex senex - Bott, 1970c: 100, Pl. 18 Figs. 15–17, Pl. 29 Fig. 70 (part) (not *Cancer senex* Fabricius, 1798).

Material examined. – Lectotype - male (36.8 by 26.9 mm) (carapace damaged) (MNHN–B5327), Bellary area, Wagrakarwour, Mysore.

Paralectotype - male (27.1 by 20.0 mm) (carapace damaged), same collection data as lectotype.

Others - male (26.3 by 19.6 mm) (WHT 10918), Tributary of Cauveri River at Hunsur 50 km from Mysore on Madakeri-Mysore Rd., Mysore, Karnataka, India.

Diagnosis. – Dorsal surface of carapace highly convex fore and aft (Figs. 14A, B, 15A, B); anterior lateral carapace low in frontal view (Figs. 14B, 15B); epistomal median lobe with distinct, sharp, pointed tooth; frontal margin bilobed in dorsal view; epibranchial tooth moderate in size, sharp, sitting very slightly above postorbital cristae, not level with supraorbital margin (Figs. 14A, 15A); postorbital region concave (Fig. 14A); postorbital cristae sharp, almost

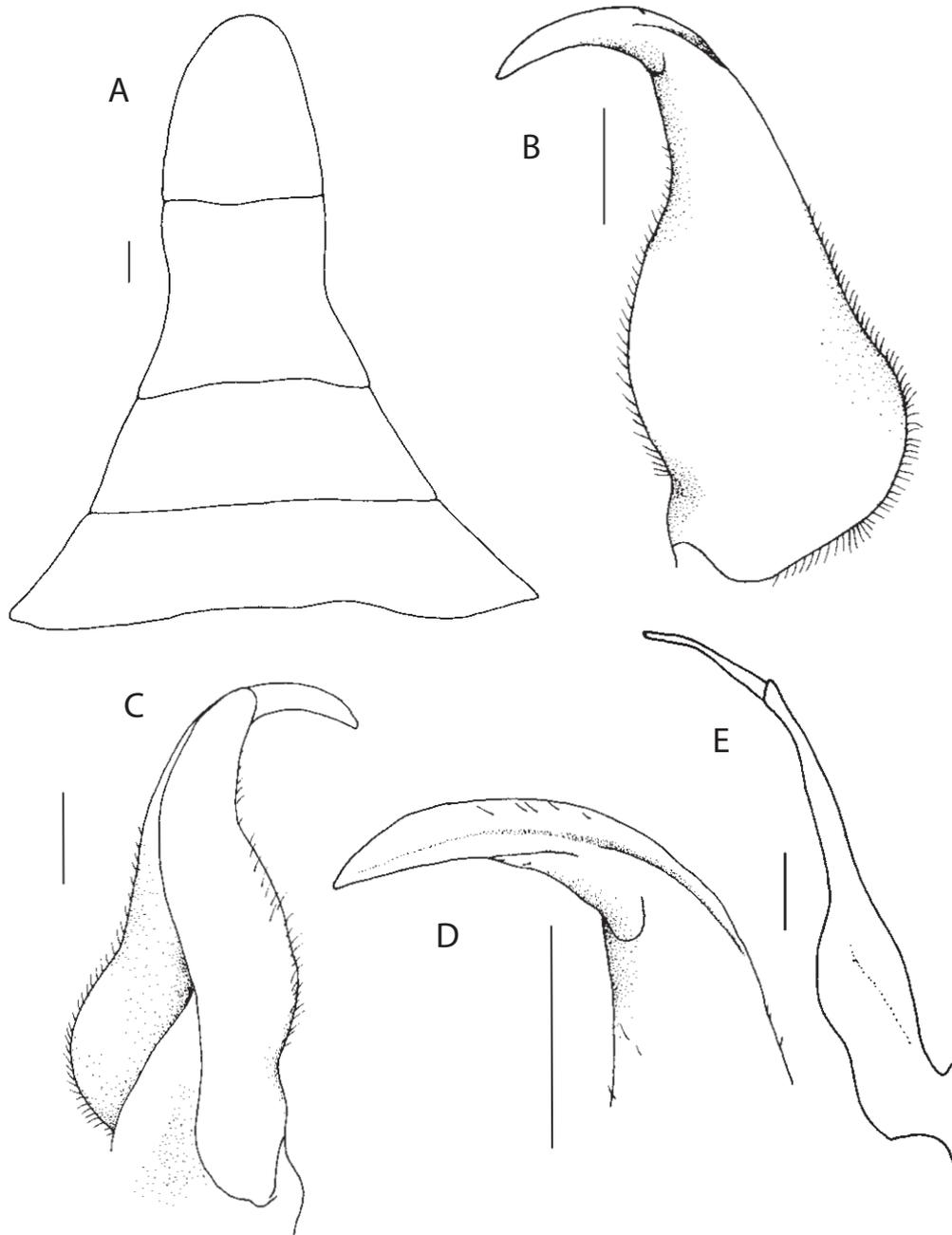


Fig. 12. *Ozietelphusa wagrakarowensis*, lectotype male (36.8 by 26.9 mm) (MNHN-B5327). A, abdomen; B, dorsal view of left G1; C, ventral view of left G1; D, dorsal view of terminal segment of left G1; E, left G2. Scale bar = 1 mm.

straight to curved (Figs. 14A, 15A); branchial region gently inflated (Figs. 14A, 15A); frontal median triangle complete, dorsal margin fused with lateral margins. Suture between thoracic sternites 2 and 3 indistinct; suture between thoracic sternites 2 and 3 visible as a groove medially, not reaching lateral borders (Figs. 13A, 14C); male abdomen triangular, with concave lateral borders; segment six trapezoidal, wider than long, slightly longer than telson, with distinctly concave lateral borders, which form an hourglass shape (Figs. 12A, 13B). G1 terminal segment not broad, ca. 3 times subterminal segment (Figs. 12B–D, 13C–F); basal two-thirds of subterminal segment distinctly stouter (Figs. 12B, C, 13C, D). G2 with short distal segment ca. 0.2–0.3 times length of basal segment (Figs. 12E, 13G).

Distribution. – Known only from the type locality, Hunsur, 50 km from Mysore on the Madakeri–Mysore road, Karnataka, India. This represents the northernmost extension of the range of the genus.

Ecology. – The topotype was obtained from the bank of a shallow (<30 cm) slow-flowing, rocky stream.

Etymology. – Named for its type locality, Wagrakarwour, in Karnataka State.

Remarks. – Alcock (1910) synonymised *Ozietelphusa wagrakarowensis* under *Paratelphusa (Ozietelphusa) hydrodromus* (Herbst, 1794), stating that most of his material

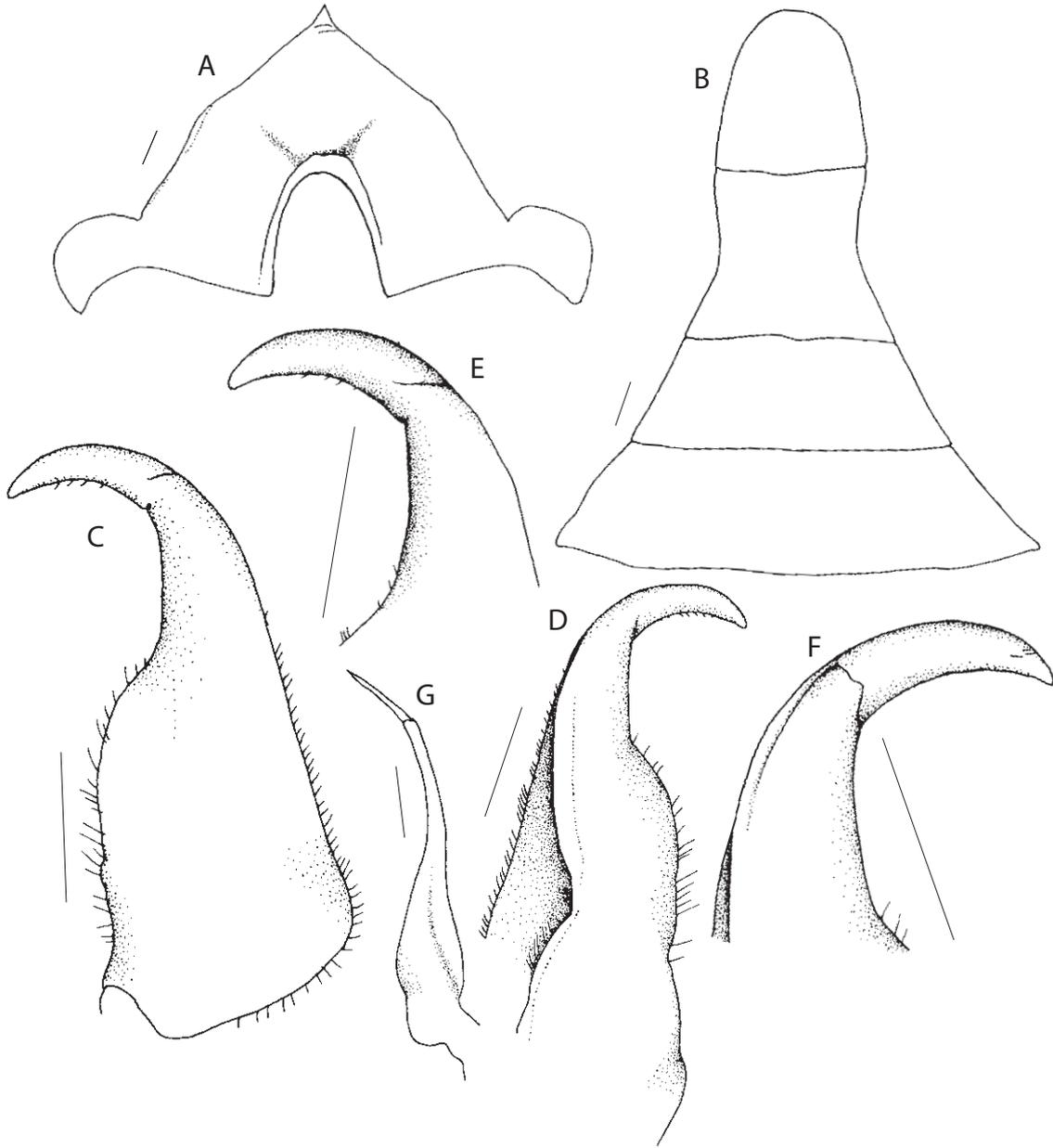


Fig. 13. *Oziotelphusa wagrakarowensis*, topotype male (26.3 by 19.6 mm) (WHT 10918). A, anterior thoracic sternum; B, abdomen; C, dorsal view of left G1; D, ventral view of left G1; E, dorsal view of terminal segment of left G1; F, ventral view of terminal segment of left G1; G, left G2. Scale bar = 1 mm.

possessed “the post-orbital tubercle said to be characteristic of “*Potamon*” *wagrakarowensis*”. However, following the establishment of a new genus, *Spiralothelphusa*, for *Cancer hydrodromus* by Bott (1968), Rathbun’s species was subsequently transferred to the synonymy of *Oziotelphusa senex senex* (see Bott, 1970c). Bott (1970c) based his action on his examination of a single female type specimen of *O. wagrakarowensis* from MNHN, which he mistakenly referred to as the holotype, possibly because Rathbun had provided measurements for only a single female in her account. This, however, is incorrect as Rathbun (1904) had clearly listed in her description of the species, “Localité Typique”. – Wagra-Karow, à côté de Bellari, ville de L’Inde anglaise un peu au nord du Maïssour; M. Chaper; 3 males, 7 females”, without

designating any particular specimen as holotype. As such, all the specimens examined by Rathbun, including the female that she provided measurements of and that Bott regarded as the “holotype” are actually syntypes. As such, since Bott’s (1970c) reference to a female holotype is invalid, it is necessary to stabilise the taxonomy of this species by designating a primary type for the species, preferably a male specimen that possesses the taxonomically important G1s. The larger of the two syntype males specimens examined in the present study (36.8 by 26.9 mm) (MNHN-B5327) is hereby designated as the lectotype for *Oziotelphusa wagrakarowensis*.

Re-examination of the two male type specimens (MNHN-B5327) of *O. wagrakarowensis* in the present study found

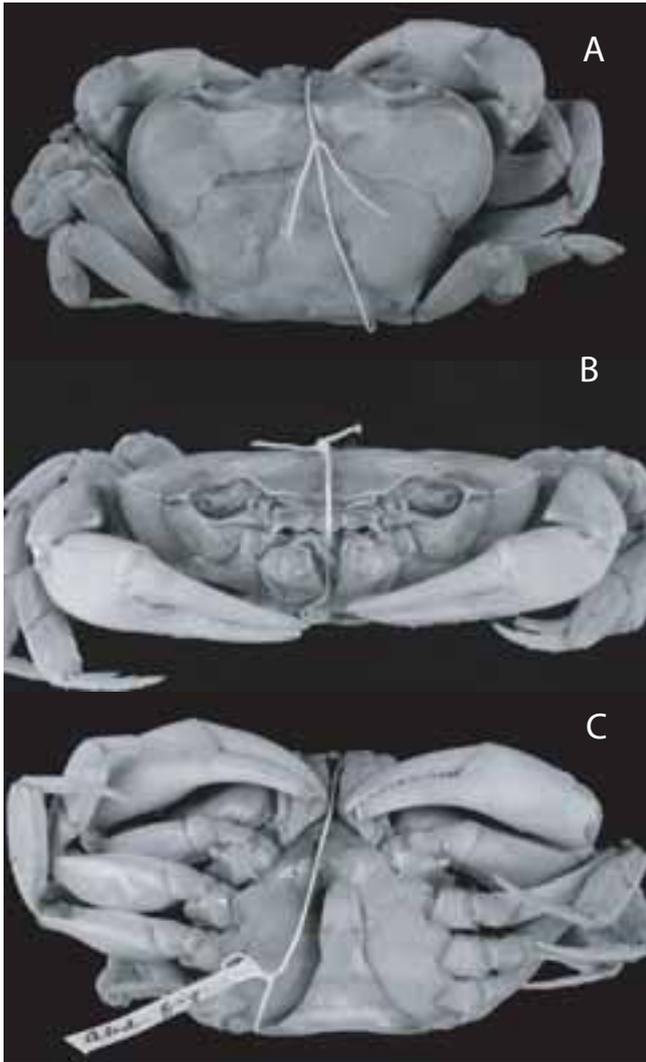


Fig. 14. *Oziotelphusa wagrakarowensis*, lectotype male (36.8 by 26.9 mm) (MNHN-B5327). A, dorsal view; B, frontal view; C, ventral view.

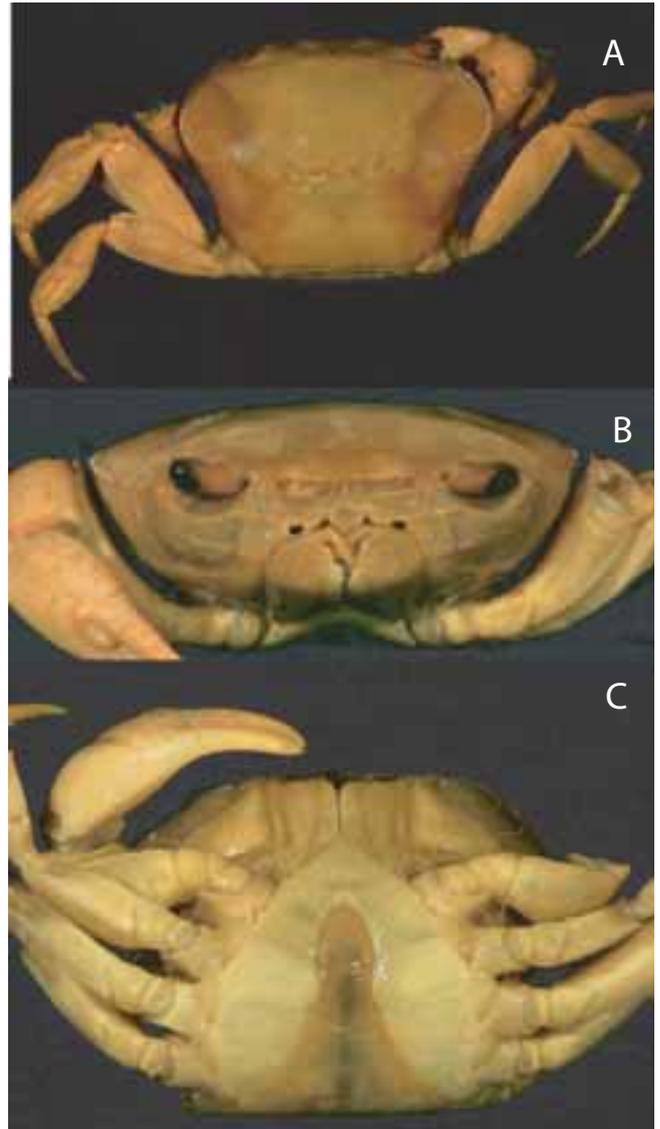


Fig. 15. *Oziotelphusa wagrakarowensis*, topotype male (26.3 by 19.6 mm) (WHT 10918). A, dorsal view; B, frontal view; C, ventral view.

that its external and G1 characters are unique within the genus. It is, therefore, a distinct species of *Oziotelphusa*, not conspecific with *O. aurantia*, which Bott's (1970c) concept of *O. senex senex* was referring to when he synonymised *O. wagrakarowensis* (see also **Remarks** for *O. aurantia*). A non-type specimen examined in the present study from the vicinity of the type locality is also referable to *O. wagrakarowensis*.

Oziotelphusa wagrakarowensis can be differentiated from all its known congeners by its hook-like G1 terminal segment and broad, box-shaped basal two-thirds of G1 subterminal segment; and relatively narrower abdomen, with distinctly concave outer margins of the sixth segment. Although these characters are not found in any other *Oziotelphusa* species, they are not regarded these as substantial enough to warrant the establishment of a separate genus for the species.

***Oziotelphusa bouvieri* (Rathbun, 1904)**

(Figs. 16, 17)

- Potamon (Potamon) bouvieri* Rathbun, 1904: 293, Pl. 12 Fig. 5.
Paratelphusa (Oziotelphusa) bouvieri - Alcock, 1910: 100, Pl. 13 Fig. 61.
Paratelphusa bouvieri - Fernando, 1960: 217, Fig. 19; 1961: 55.
Oziotelphusa senex senex - Bott, 1970a: 632 (part); 1970c: 100 (part) (not *Cancer senex* Fabricius, 1798).
Oziotelphusa bouvieri - Ng & Tay, 2001: 123, 124, Figs. 21, 22.

Material examined. – Lectotype - male (51.5 mm by 37.0 mm) (MNHN – BP253), along the Coromandel coast, close to Tranquebar.

Paralectotype - male (47 by 33 mm), female (31.9 by 23.4 mm) (MNHN-B5067), Dec.1860.

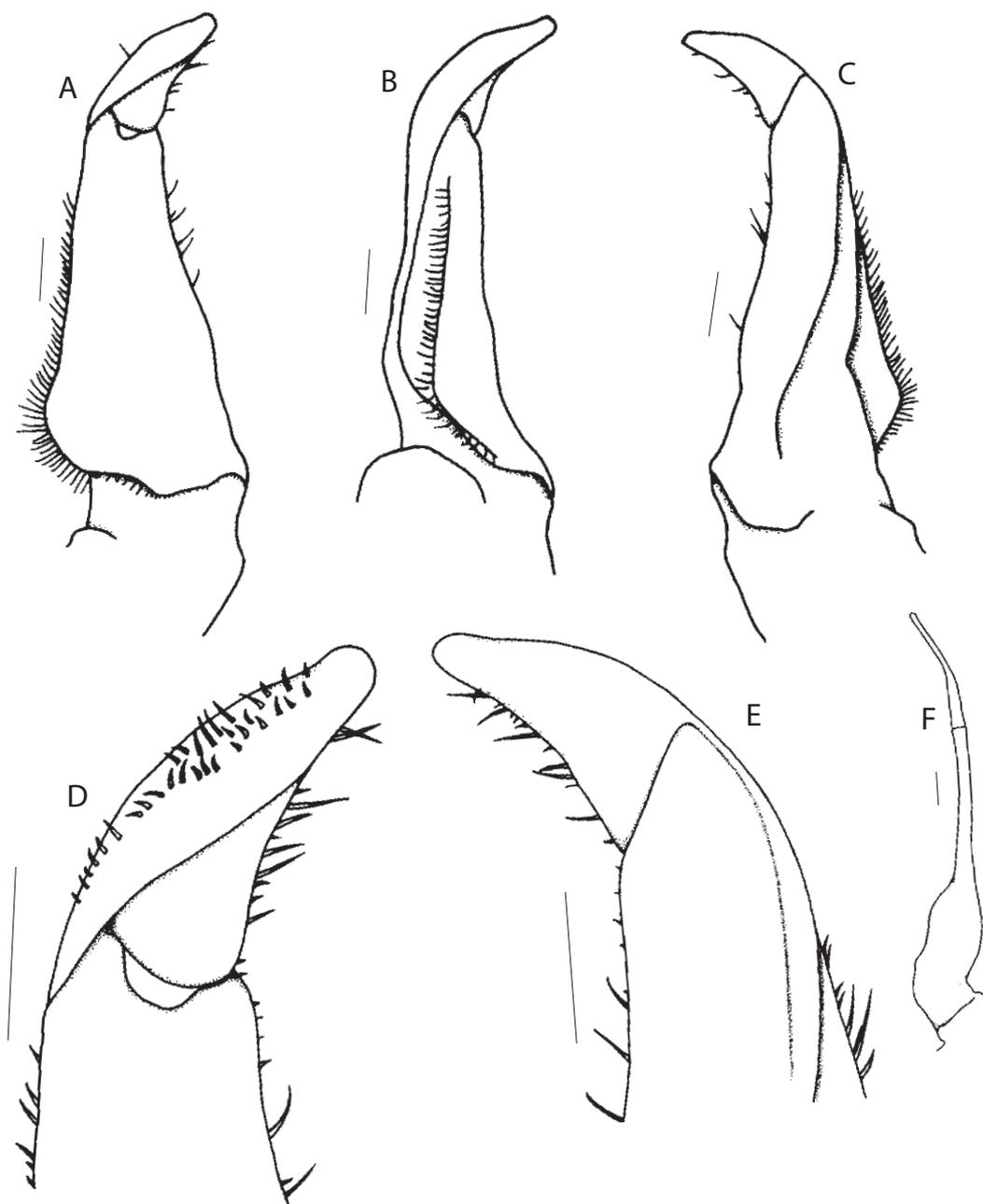


Fig. 16. *Oziotelphusa bouvieri*, lectotype male (51.5 by 37.0 mm) (MNHN-BP 253). A, dorsal view of right G1; B, lateral view of right G1; C, ventral view of right G1; D, dorsal view of terminal segment of right G1; E, ventral view of terminal segment of right G1; F, right G2. Scale bar = 1 mm. (Reproduced with permission, from Ng & Tay, 2001).

Diagnosis. – Carapace dorsal surface convex (Fig. 17A); epistomal median lobe with distinct sharp tooth; frontal margin gently curved inwards towards midline; epibranchial tooth small, basally broad, sharp, very slightly elevated from postorbital cristae, not level with supra-orbital margin; postorbital region concave, of moderate length; postorbital cristae sharp, almost straight (Fig. 17A). Branchial region inflated (Figs. 17A, B); frontal median triangle almost as broad as frontal margin, dorsal margin not fused with lateral margins. Suture between anterior thoracic sternites 2 and 3 visible as a distinct groove not reaching lateral margins; suture between sternites 3 and 4 distinct as a broad, moderately deep groove not reaching lateral borders (Fig. 17C); male abdomen robust, almost triangular, lateral borders concave; sixth abdominal segment trapezoidal, broader than long (Fig. 17C). G1 terminal segment horn-like, bent, directed laterally

outwards, long, ca. 0.4 times length of moderately slender subterminal segment (Figs. 16A–E). G2 distal segment long, ca. 0.4 times basal segment (Fig. 16F).

Distribution. – The species is known only from the types, probably collected from the Coramandal coast, South Eastern India. The species is considered to be endemic to its type locality.

Ecology. – Not known: probably a rice-field crab.

Etymology. – The species is named after E. L. Bouvier.

Remarks. – The carapace and G1 structure of *O. bouvieri* most closely resemble those of *O. aurantia*, which is also

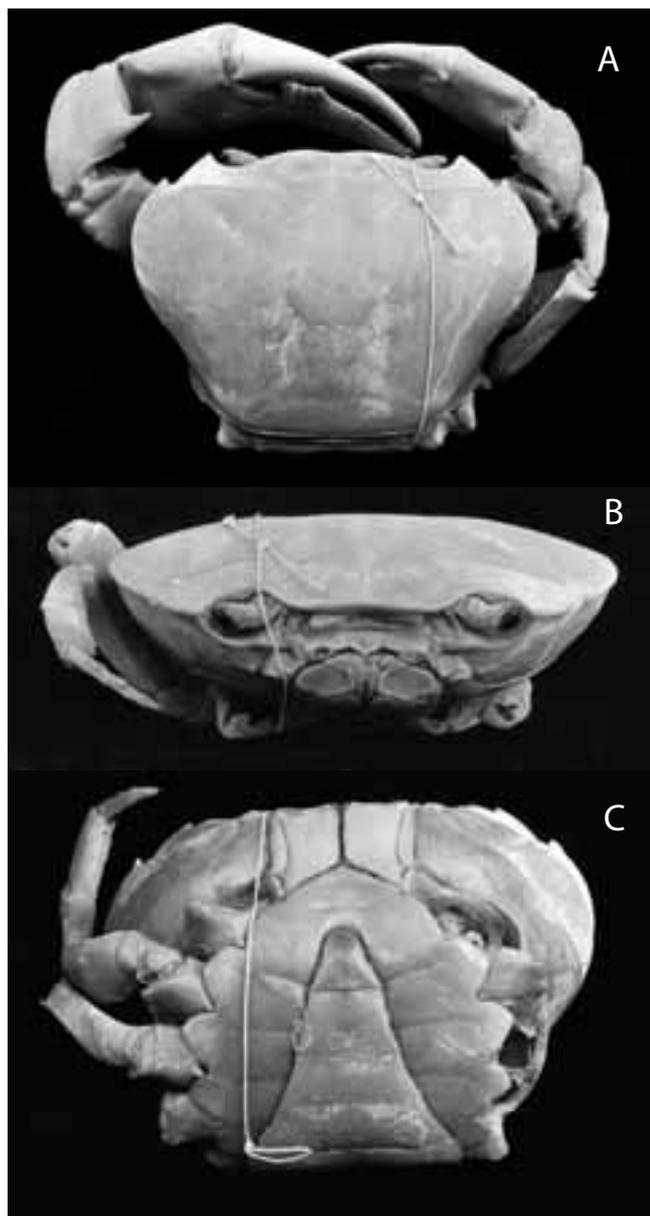


Fig. 17. *Oziotelphusa bouvieri*, lectotype male (51.5 by 37.0 mm) (MNHN-BP 253). A, dorsal view; B, frontal view; C, ventral view. (Reproduced with permission, from Ng & Tay, 2001).

from south-eastern India (Tamil Nadu). G1 differences, however, reliably separate the two species. In *O. bouvieri*, the G1 terminal segment is stouter (vs. comparatively not stout in *O. aurantia*) (Figs. 16A–E vs. 7B, 9C, 10B); the outer margin of G1 subterminal segment is very gently convex medially and gently concave at the base (vs. subterminal segment outer margin strongly convex medially and strongly notched at the base) (Figs. 16A vs. 9C).

***Oziotelphusa ceylonensis* (Fernando, 1960)**
(Figs. 18–22)

Potamon (*Potamon*) *hydrodromus* - Rathbun, 1904: 287 (not *Cancer hydrodromus*, Herbst, 1794).

Paratelphusa ceylonensis Fernando, 1960: 215, Figs. 12d, 13g, h.
Oziotelphusa senex senex - Bott, 1970a: 632, Pl. 1 Figs. 2, 3, Pl. 2 Fig. 5, Pl. 5 Fig. 12; 1970c: 100, Pl. 18 Figs. 15–17, Pl. 29 Fig. 70 (not *Cancer senex* Fabricius, 1798).

Oziotelphusa ceylonensis Ng & Tay, 2001: 127, 128, Figs. 13, 14.

Material examined. – Holotype - male (48.4 by 35.9 mm) (NHM 1956.9.6.8), Sellakanda near Puttlam, Kurunegala District, Sri Lanka, 07°46'N, 79°50'E, alt. 4 m, coll. C. de. S. Kulasiri, date unknown.

Others - male (36.2 by 26.5 mm) (ZRC 1997.0823), male (46.1 by 32.9 mm) (ZRC 1997.0854); male (36.1 by 27.0 mm), female (40.0 by 30.0 mm) (juv., 17.0 by 13.4 mm) (ZRC 1997.0853), near Mundel, 07°46'N, 79°50' E, alt. 4 m, coll. M. M. Bahir, 19 Sep.1997; 9 males (41.8 by 29.5 mm, 39.7 by 28.6 mm, 41.0 by 29.9 mm, 41.4 by 29.9 mm, 39.8 by 28.1 mm, 31.8 by 23.4 mm, 30.5 by 22.7 mm, 27.0 by 19.7 mm, 16.9 by 12.7 mm, 4 females, 36.2 by 27.1 mm, 28.0 by 21.4 mm, 25.8 by 19.6 mm; 23.7 by 18.0 mm) (ZRC 1997.0895), Nangalla, 5 km from Ambepussa on Kurunegala Rd., Maha-Oya basin, 07° 16'N, 80°13'E, alt. 40 m, coll. D. Gabadage, 10 Sep.1992; 2 males (39.8 by 28.6 mm, 36.5 by 26.3 mm), female (31.8 by 23.8 mm) (ZRC 1997.0848), 4.6 km from Wategama on Matale Rd., Mahaveli river basin, 07°21'N, 80°41'E, alt. 500 m, coll. P. K. L. Ng & R. Pethiyagoda, 10 Sep.1992; 2 males (45.6 by 33.9 mm, 39.4 by 29.2 mm) (ZRC 1997.0850), Polonnaruwa at Parakramasamudra, Mahaveli river basin, 07°56'N, 81°00'E, alt. 55m, coll. D. Gabadage & S. Dharmasiri, 16 Mar.1996; 3 males (26.3 by 20.6 mm, 25.0 by 19.3 mm, 24.5 by 18.7 mm), 8 females (32.3 by 25.2 mm, 29.9 by 23.1 mm, 30.3 by 23.0 mm, 29.4 by 22.8 mm, 24.1 by 19.0 mm, 22.0 by 17.1 mm, 19.6 by 15.5 mm, 17.1 by 13.5 mm) (ZRC 1997.0851), Weliveriya, Gampaha District, 07°03'N, 80°01'E, alt. 20 m, coll. D. Gabadage, 13 Oct.1993; 2 males (46.8 by 34.2 mm, 24.6 by 18.9 mm) (WHT 10895), Nochchiyagama near Anuradhapura, 08°16'N, 80°13'E, alt. 70m, coll. S. Batuwita & C. Yahalmulla, 13 Dec.1998; 2 males (37.4 by 27.6 mm, 21.1 by 16.0 mm) (WHT 10897), male (26.9 by 19.9 mm) (ZRC 2003.0254), Peradeniya, Sri Lanka, 07° 15' N, 80° 36' E, alt. 80 m, coll. S. Batuwita & K. Maduwage, 10 Jan.2003; male (37.3 by 26.8 mm) (WHT 10896), 5 km from Peradeniya, on Galaha Rd, Sri Lanka, 07° 15' N, 80° 36' E, alt. 80 m, coll. M. Meegaskumbura & M. M. Bahir, 20 Oct.2003.

Diagnosis. – Carapace dorsal surface highly convex (Figs. 22A, B); epistomal median lobe with distinct tooth; frontal margin straight to very gently curved inwards towards the midline. Epibranchial tooth small, basally narrow, sharp, very slightly elevated from postorbital cristae, not level with supra-orbital margin; postorbital region concave, of moderate length (Figs. 18A, 22A); postorbital cristae sharp, almost straight, not sloping, usually entire (Fig. 22A); branchial region inflated; frontal median triangle almost as broad as frontal margin, dorsal margin not fused with lateral margins (Fig. 18B). Suture between thoracic sternites 2 and 3 indistinct; suture between thoracic sternites 2 and 3 visible as a groove or two depressions medially, not reaching lateral borders (Figs. 20A, 21A); male abdomen robust, almost triangular, lateral borders concave, sixth abdominal segment trapezoidal, broader than long (Figs. 18C, 20B, 21B). G1 bent just below the juncture between terminal and subterminal segment (Figs. 18D, 20C, 21C, 18C–G); terminal segment narrowly S-shaped, horn-like and entirely bent and directed laterally outwards, long, ca. 0.35–0.4 times length of moderately slender subterminal segment (Figs. 18D, 20C, 21C, 19). G2 distal segment long ca. 0.4 times basal segment (Fig. 18H).

Distribution. – *Oziotelphusa ceylonensis* is presently known from nine localities in the north-western dry zone and the

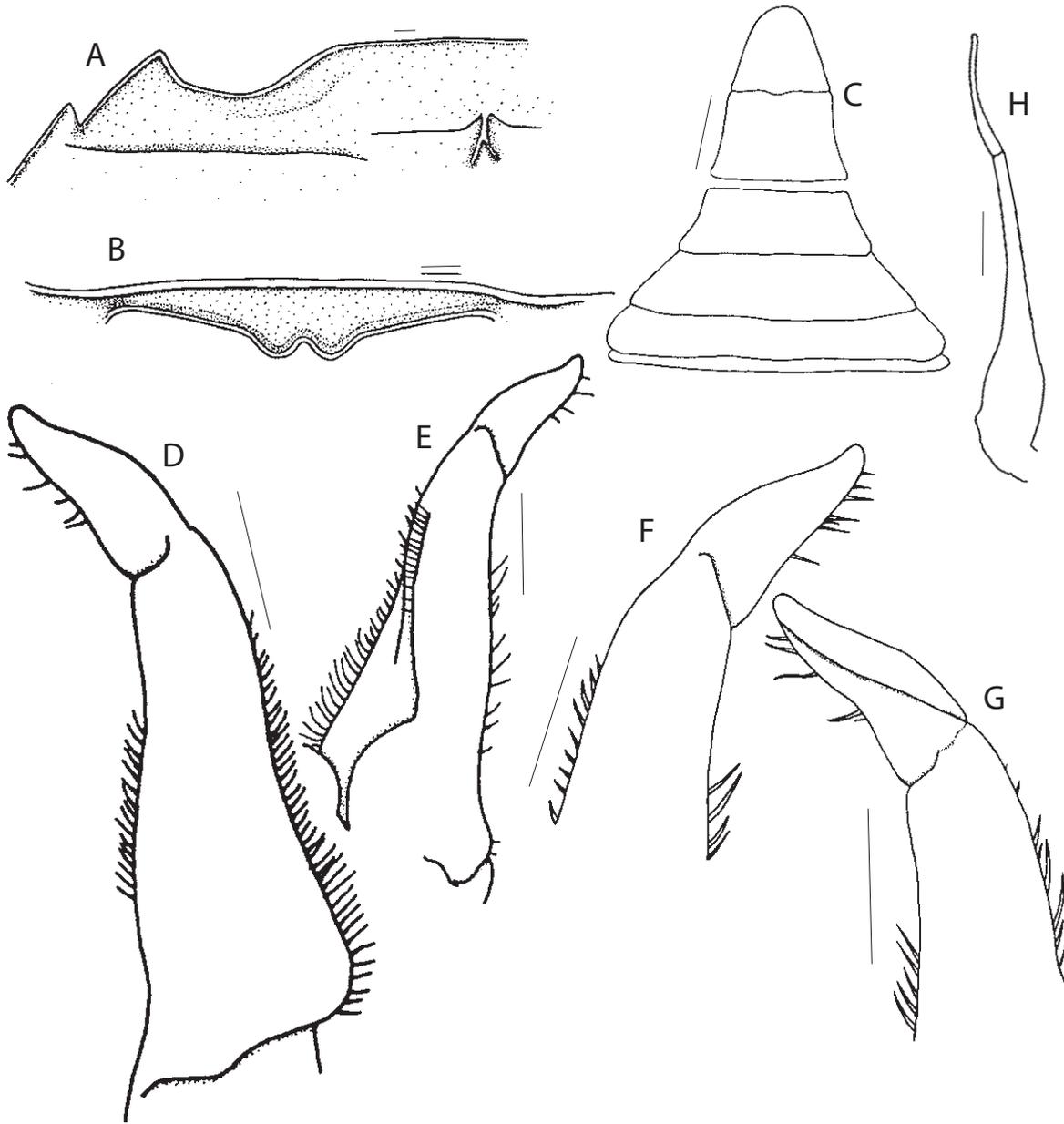


Fig. 18. *Oziotelphusa ceylonensis*, holotype male (48.4 by 35.9 mm) (NHM 1956.9.6.8). A, left side of anterior dorsal surface of carapace; B, frontal median triangle; C, abdomen; D, dorsal view of left G1; E, ventral view of left G1; F, ventral view of terminal segment of left G1; G, dorsal view of terminal segment of left G1; H, left G2. Scale bar = 1 mm. (Reproduced with permission, from Ng & Tay, 2001).

central wet zone around the Kandy hills (see **Material examined**).

Ecology. – This species commonly occurs in rice-field embankments. Crabs were also observed from burrows in the margins of streams, irrigation canals, reservoirs and rivers. The species is sympatric with *O. hippocastanum* at Nochchiyagama and Mundel, and was also observed to occur in Wilpattu National Park.

Etymology. – The species is named for the Anglicised version of Sri Lanka, Ceylon.

Remarks. – *Oziotelphusa ceylonensis* is a variable taxon that may actually represent a species complex of closely related

cryptic species. The type locality of *O. ceylonensis* mentioned by Fernando (1960) as Sellakanda near Kurunegala is apparently Sellakanda near Puttalam, in the north-western dry zone. The holotype and also specimens from eight other dry and wet zone localities have been examined. Two distinct G1 morphologies were present in the sample. One is identical to the holotype [from Mundel (dry zone), Polonnaruwa (dry zone) and Nochchiyahgama (dry zone)] and the other from the wet zone populations from around Kandy, Nangalla and Peradeniya. The latter specimens have a slightly but obviously different G1 from the dry zone populations: the base of G1 in wet-zone populations is shoe-shaped vs. broader and squarish in the dry zone (Figs. 18D, E, 19C, E, 20C vs. 19A, G, 21C). Nevertheless, as they are quite subtle, these differences are regarded as intraspecific in nature.

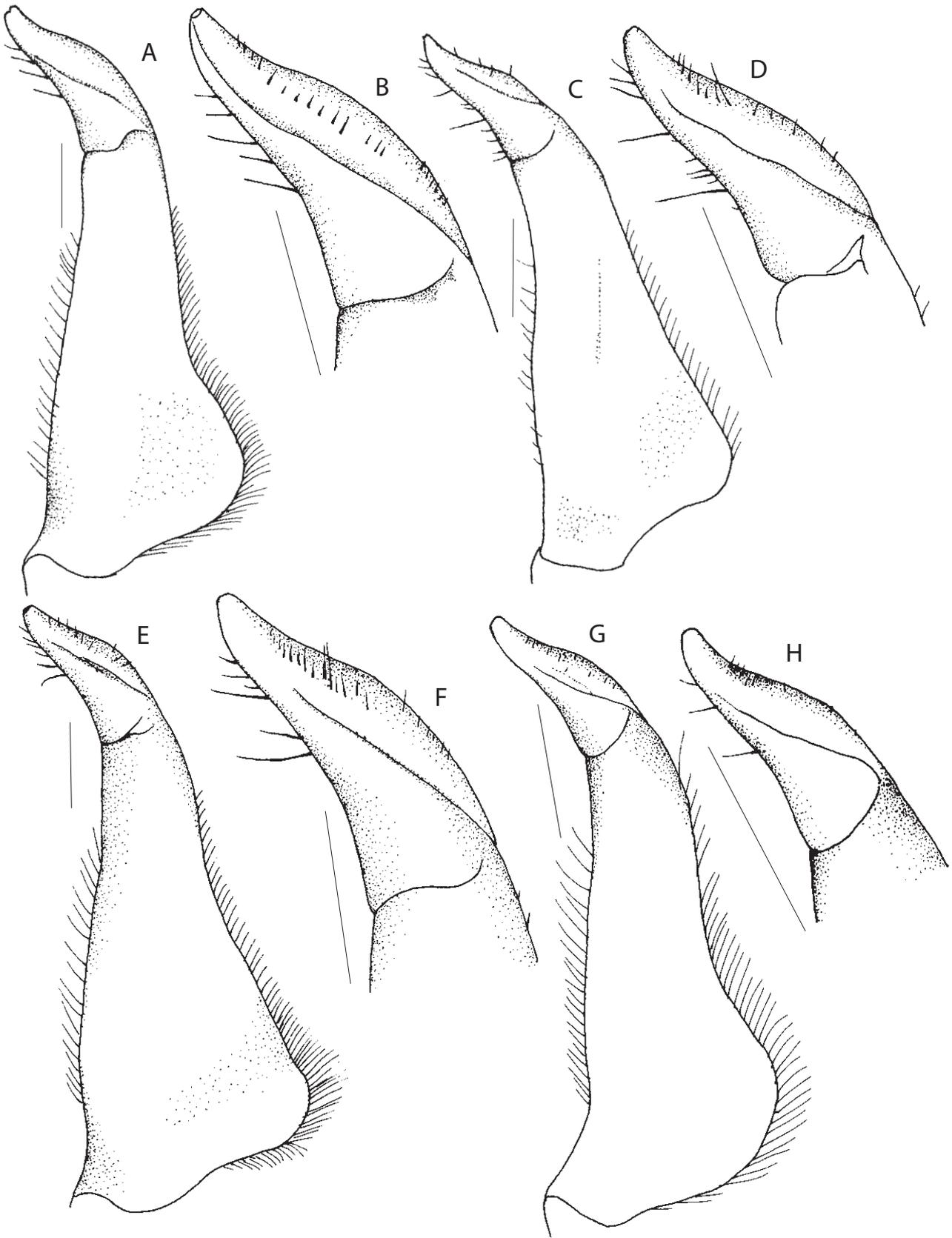


Fig. 19. *Oziotelphusa ceylonensis*. A, B: male (41.8 by 29.5 mm) (ZRC 1997.0895); C, D: male (36.2 by 26.5 mm) (ZRC 1997.0823); E, F: male (46.1 by 32.9 mm) (ZRC 1997.0854); G, H: male (26.9 by 19.9 mm) (ZRC 2003.0254). A, C, E, G, dorsal view of left G1; B, D, F, H, dorsal view of terminal segment of left G1. Scale bar = 1 mm.

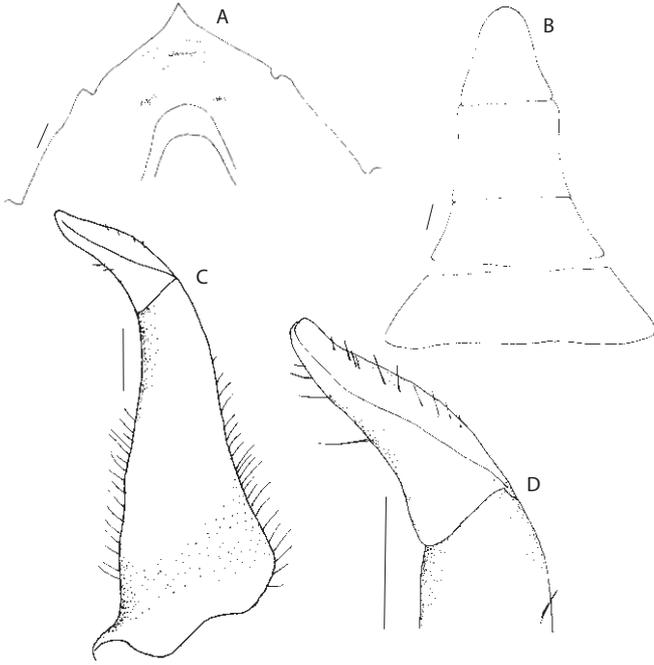


Fig. 20. *Oziotelphusa ceylonensis*, male (46.8 by 34.2 mm) (WHT 10895). A, anterior thoracic sternum; B, abdomen; C, dorsal view of left G1; D, dorsal view of terminal segment of left G1. Scale bar = 1 mm.

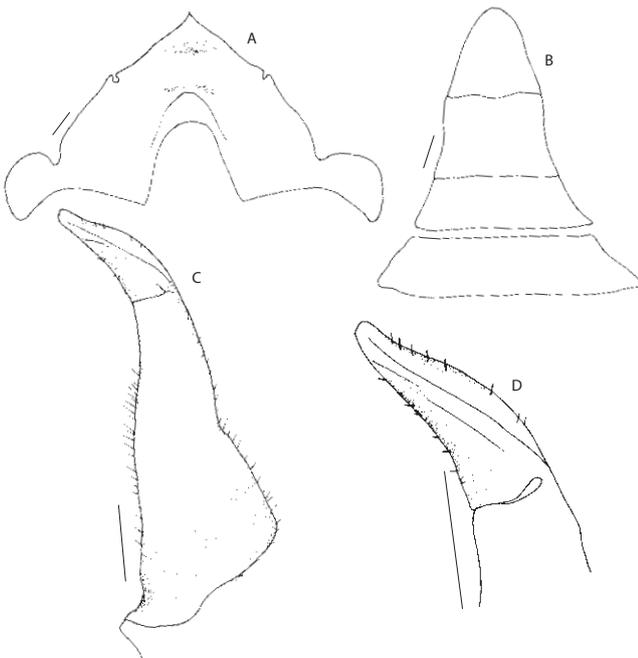


Fig. 21. *Oziotelphusa ceylonensis*, male (37.3 by 26.8 mm) (WHT 10896). A, anterior thoracic sternum; B, abdomen; C, dorsal view of left G1; D, dorsal view of terminal segment of left G1. Scale bar = 1 mm.

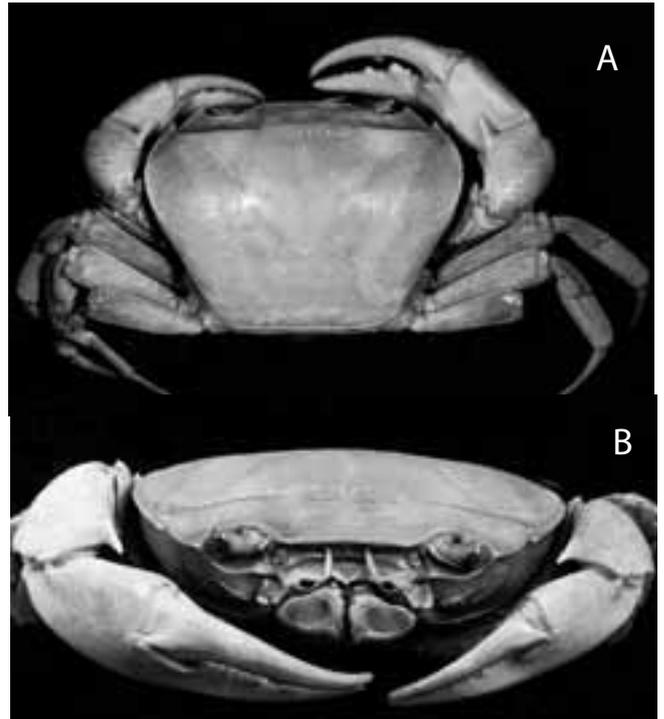


Fig. 22. *Oziotelphusa ceylonensis*, holotype male (48.4 by 35.9 mm) (NHM 1956.9.6.8). A, dorsal view; B, frontal view. (Reproduced with permission, from Ng & Tay, 2001).

***Oziotelphusa minneriyaensis* Bott, 1970**

(Figs. 23–26)

Paratelphusa bouvieri - Fernando, 1960: 217; Figs. 12e, 131, 13j (not *Potamon bouvieri* Rathbun, 1904).

Oziotelphusa senex minneriyaensis Bott, 1970a: 634, Pl. 3 Fig. 6, Pl. 6 Fig. 13; 1970c: 102, Pl. 18 Figs. 18–20, Pl. 29 Fig. 69.

Material examined. – 5 males (37.5 by 28.5 mm, 39.5 by 30.0 mm, 38.8 by 29.5 mm, 32.9 by 24.7 mm, 27.2 by 20.9 mm) (WHT 10899), male (26.8 by 20.2 mm) (ZRC 2003.0251), Minneriya, near Polonnaruwa, 08° 04' N, 80° 54' E, alt. 40m, coll. M. M. Bahir & K. Wewelwala, 4 Apr. 2003; male (30.2 by 22.7 mm), juv. Female (19.9 by 15.1 mm) (WHT 10900), Anuradhapura, 08° 19' N, 80° 24' E, alt. 80 m, coll. M. Meegaskumbura, 12 Feb. 2000.

Diagnosis. – Carapace dorsal surface highly convex (Fig. 26A); epistomal median lobe with distinct tooth; frontal margin straight to gently curved inwards towards the midline (Fig. 26A); epibranchial tooth moderate, basally narrow, sharp, very slightly elevated from postorbital cristae, not level with supra-orbital margin but level with postorbital crest (Fig. 26A); postorbital region concave, of moderate length (Fig. 26A); postorbital cristae sharp, almost straight, not sloping, usually entire (Fig. 26A); branchial region gently inflated (Figs. 26A, B); frontal median triangle almost as broad as frontal margin, dorsal margin fused or not fused with lateral margin; male abdomen robust, almost T-shaped, lateral borders distinctly concave, sixth abdominal segment squarish, broader than long, with distinctly concave outer margins (Figs. 23B, 24B, 25B, 26C). Suture between thoracic sternites 2 and 3 distinct and deep; suture between thoracic sternites 3 and 4 visible as a groove medially, not reaching lateral borders (Figs. 23A,

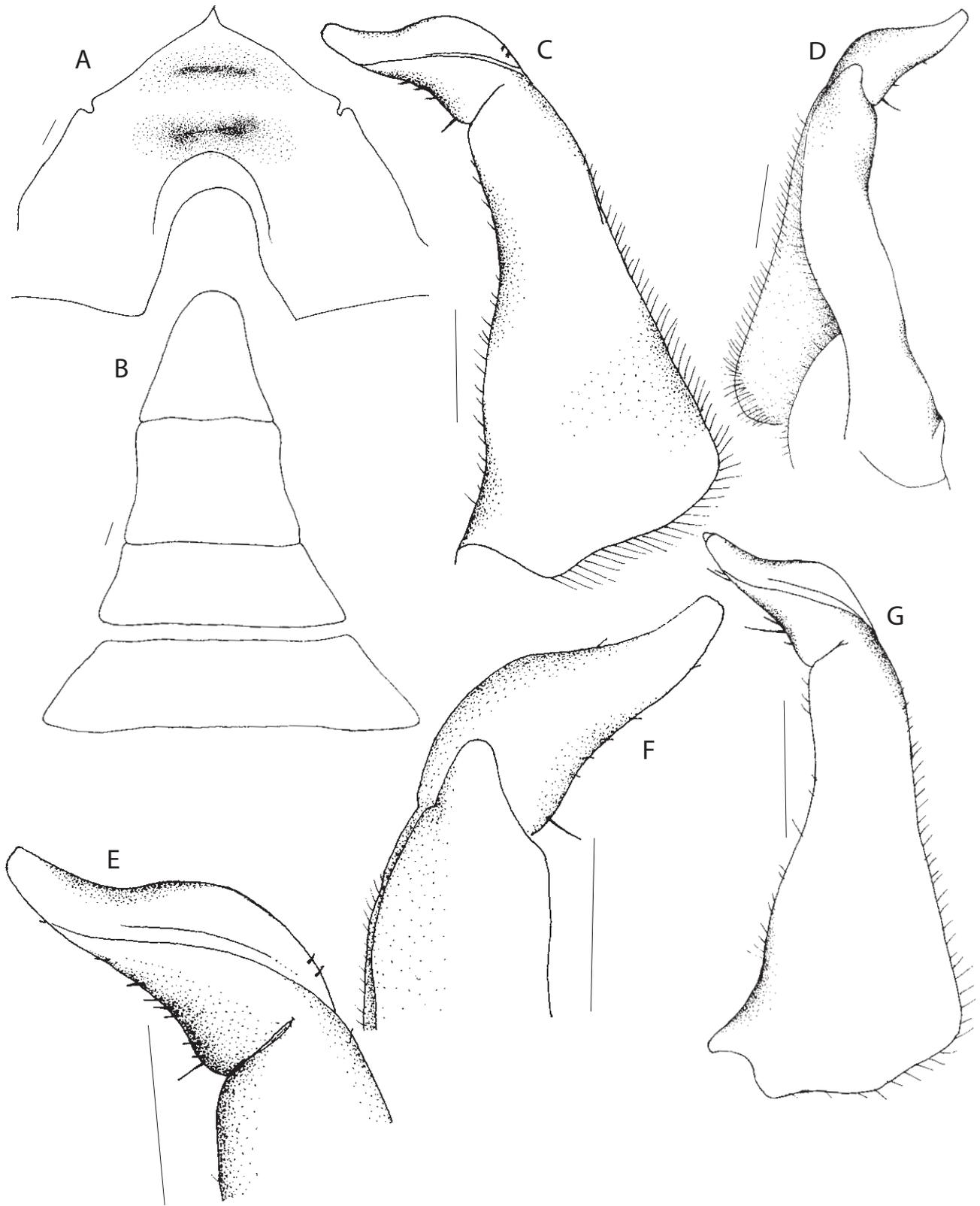


Fig. 23. *Oziotelphusa minneriyaensis*. A–F: topotype male (38.8 by 29.5 mm) (WHT 10899); G: topotype male (27.2 by 20.9 mm) (WHT 10899). A, anterior thoracic sternum; B, abdomen; C, G, dorsal view of left G1; D, ventral view of left G1; E, dorsal view of terminal segment of left G1; F, ventral view of terminal segment of left G1. Scale bar = 1 mm.

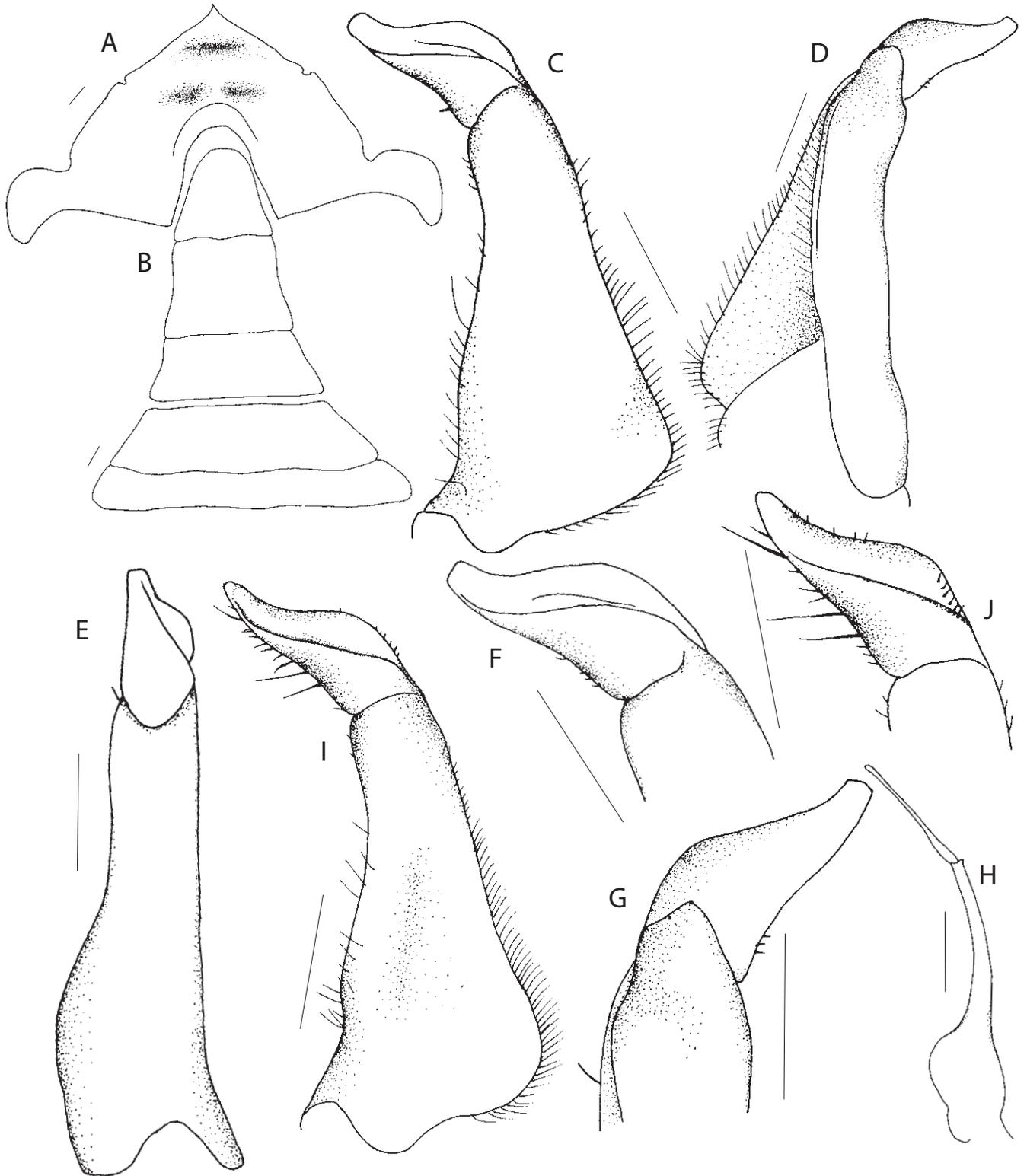


Fig. 24. *Oziotelphusa minneriyaensis*. A–H: topotype male (32.9 by 24.7 mm) (WHT 10899); I–J: topotype male (26.8 by 20.2 mm) (ZRC 2003.0251). A, anterior thoracic sternum; B, abdomen; C, I, dorsal view of left G1; D, ventral view of left G1; E, lateral view of left G1; F, J, dorsal view of terminal segment of left G1; G, ventral view of terminal segment of left G1; H, left G2. Scale bar = 1 mm.

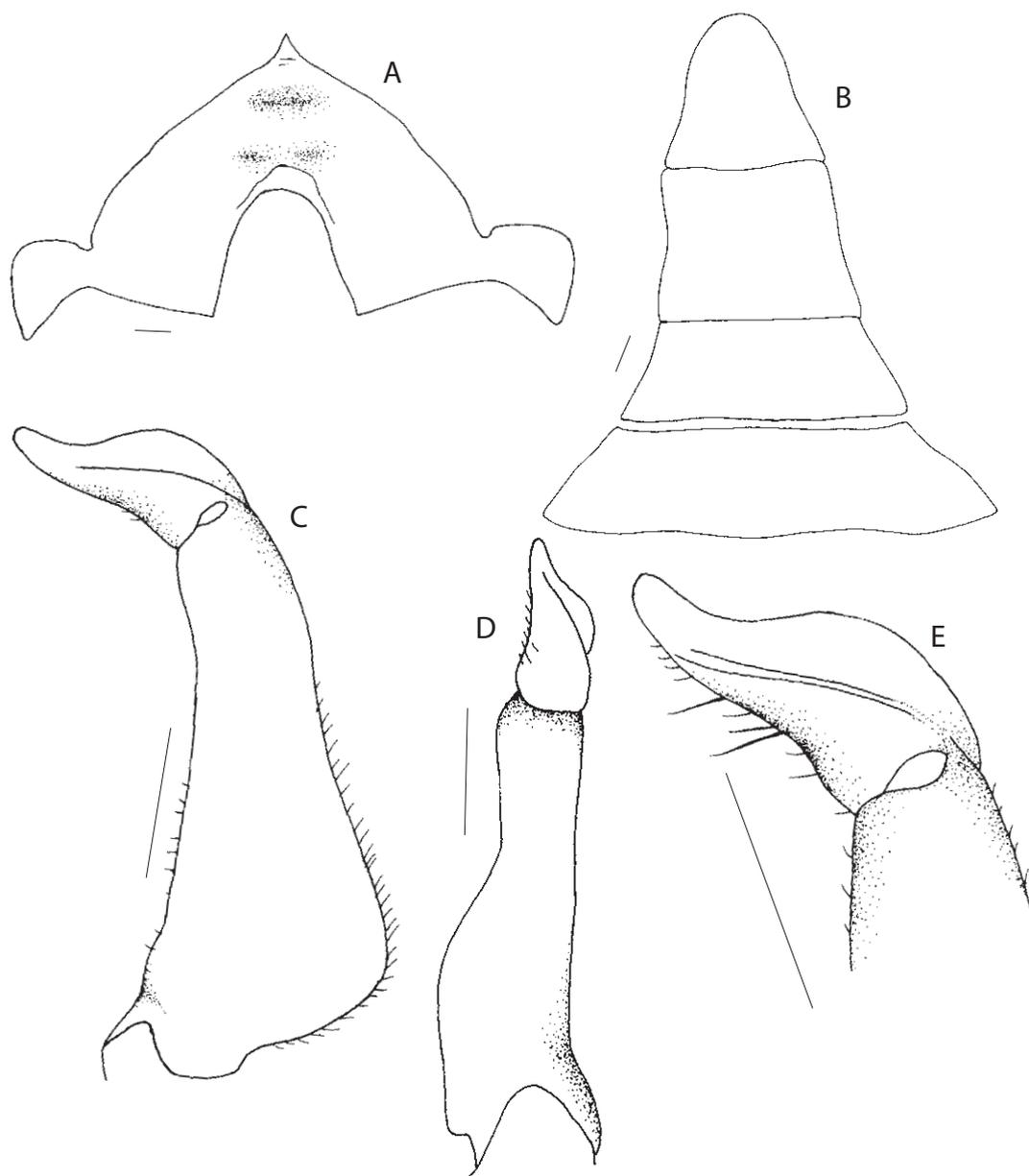


Fig. 25. *Oziotelphusa minneriyaensis*, male (30.2 by 22.7 mm) (WHT 10900). A, anterior thoracic sternum; B, abdomen; C, dorsal view of left G1; D, lateral view of left G1; E, dorsal view of terminal segment of left G1. Scale bar = 1 mm.

24A, 25A, 26C). G1 terminal segment bent, broadly S-shaped, horn-like and entirely bent and directed laterally outwards, long, ca. 0.4 times length of moderately slender subterminal segment (Figs. 23C–G, 24C–G, I, J, 25C–E); basal half of terminal segment distinctly stouter and forming a box-shaped base (Figs. 23E, F, 24F, G, 25E), G1 subterminal segment moderately stouter (Figs. 23C, 24C, 25C). G2 with long distal segment ca. 0.5 times basal segment (Fig. 24H).

Distribution. – *Oziotelphusa minneriyaensis* is known from two localities Minneriya, near Polonnaruwa, and Anuradhapura, both in north-central Sri Lanka. The species was found to occur in the Minneriya Giritala Sanctuary.

Ecology. – This species commonly lives in rice-field embankments and margins of streams and irrigation canals.

Etymology. – The species named after its type locality, Minneriya near Polonnaruwa, in north-central Sri Lanka.

Remarks. – The gonopods in specimens from the type locality are identical to those of the holotype of *O. minneriyaensis* (see Figs. 23C, D, 24C, D, 25C, D; cf. Bott, 1970c: Pl. 29 Fig. 69). *Oziotelphusa minneriyaensis* resembles *O. ritigala* and *O. intuta* in carapace and gonopod characters, from which however, it may readily be distinguished (see **Remarks** under those species). The specimens referred to *O. minneriyaensis* by Ng & Tay (2001) are here referred to two different new species, *O. intuta* and *O. ritigala*.



Fig. 26. *Oziotelphusa minneriyaensis*, topotype male (38.8 by 29.5 mm) (WHT 10899). A, dorsal view; B, frontal view; C, ventral view.

***Oziotelphusa stricta* Ng & Tay, 2001**
(Figs. 27, 28)

Oziotelphusa stricta Ng & Tay, 2001: 130, 131, Figs. 17, 18.

Material examined. – Holotype - male (33.8 by 25.5 mm) (ZRC 1997.0826), Bibile, 07°07'N, 81°13' E, alt. 40 m, coll. M. M. Bahir, 22 Sep.1997.

Paratypes - male (44.1 by 34.1 mm) (USNM), Andunoruwa near Palatupana, Ruhunu National Park, 06°22'N, 81°31'E, alt. 5 m, coll. M. M. Bahir, 2 Feb.1996; male (42.2 by 31.0 mm) (WHT 10086), Monaragala, 06°52'N, 81°21'E, alt. 150 m, coll. M. M. Bahir & S. V. Nanayakkara, 30 Apr.1998.

Others - 1 male (33.1 by 25.4 mm) (WHT 10119), male (32.2 by 24.5 mm), 2 females (32.6 by 25.0 mm, 30.0 by 23.3 mm) (WHT 10907), two females (47.8 by 35.5 mm, 35.6 by 27.5 mm) (WHT 10906), Beralihela near Tissa, 06°20'N, 81°18'E, alt. 30 m, coll. S. V. Nanayakkara & M. M. Bahir, 17 Jun.1998; male (29.2 by 22.1 mm) (WHT 10038), Puwakpitiya, Knuckles, 07°34'N, 80°44'E, alt. 450 m, coll. M. M. Bahir, 1 Sep.1997; male (35.4 by 26.5 mm) (WHT 10174), same locality as WHT 100038, coll. M. M. Bahir, 12 Sep.1997; male (43 by 31.4 mm) (WHT 10087); 1 male (35.1 by 26.2 mm) (WHT 10904); female (34.4 by 26.1 mm) (WHT 10905), Monaragala, 06°52'N, 81°21'E, alt. 150 m, coll. M. M. Bahir & S. V. Nanayakkara, 30 Apr.1998; 2 males (41.2 by 30.3 mm) (WHT 10091), male (33.2 by 24.6 mm) (WHT 10092), same collection data as WHT 10086, coll. M. M. Bahir & S. V. Nanayakkara, 1 May.1998; 2 males (36.3 by 27.3 mm) (WHT 10089), juv. female (20.5 by 16 mm) (WHT 10090), same collection data as WHT 10092; male (31.4 by 24.3 mm) (WHT 10338), male (24.5 by 19 mm) (WHT 10339), Tissa, 06°13'N, 81°18'E, alt. 20 m, coll. M. M. Bahir & J. Copsey, 30 Aug.2000; male (37.5 by 27.6 mm), female (33.9 by 25 mm) (WHT 10908), near Badulla railway station, 06°59'N, 81°03'E, alt. 600 m, coll. S. Batuwita & M. M. Bahir 11 Aug.2003; male (21 by 16 mm), female (26 by 19.5 mm) (ZRC 1997.0894), Okkampitiya, 06°45'N, 81°17'E, alt. 100 m, coll. D. Gabadage, 19 Apr.1995.

Diagnosis. – Carapace dorsal surfaces highly convex fore and aft (Figs. 28A, B); epistomal median lobe with an acute median tooth; frontal margin straight to gently curved inwards towards the midline; epibranchial tooth moderate in size, basally narrow, sharp, sitting very slightly above postorbital cristae, not level with supraorbital margin; postorbital region concave (Fig. 28A); postorbital cristae sharp, almost straight; branchial region inflated (Fig. 28A); frontal median triangle as broad as frontal margin, dorsal margin not fused or not fused with lateral margins. Suture between thoracic sternites 2 and 3 indistinct; suture between thoracic sternites 2 and 3 visible as a groove medially, not reaching lateral borders; male abdomen robust, almost triangular, lateral borders concave, the sixth abdominal segment rectangular, broader than long. G1 terminal segment robust, ca. 0.4 times length of subterminal segment, bent laterally only at the tip, subterminal segment moderately slender (Figs. 27A–D). G2 distal segment long, ca. 0.4 times length of basal segment (Fig. 27E).

Distribution. – The species is known: Bibile; Ruhunu National Park; Monaragala; Puwakpitiya, Knuckles Mountains; Tissa; and Badulla in the south and south-eastern dry zone. These localities range from about sea level up to 600 m altitude (see **Material examined**).

Ecology. – *Oziotelphusa stricta* lives in deep burrows in rice-field embankments and adjacent stream margins, and in the banks of reservoirs and rivers.

Etymology. – The word 'strictus', meaning 'straight' in Latin, describes the male G1.

Remarks. – *Oziotelphusa stricta* and *O. ceylonensis* are indistinguishable in their external morphology but their gonopod characters are significantly different (see discussion by Ng & Tay, 2001: 130–132). *Oziotelphusa dakuna* and *O. gallicola* also have similar external morphology to *O.*

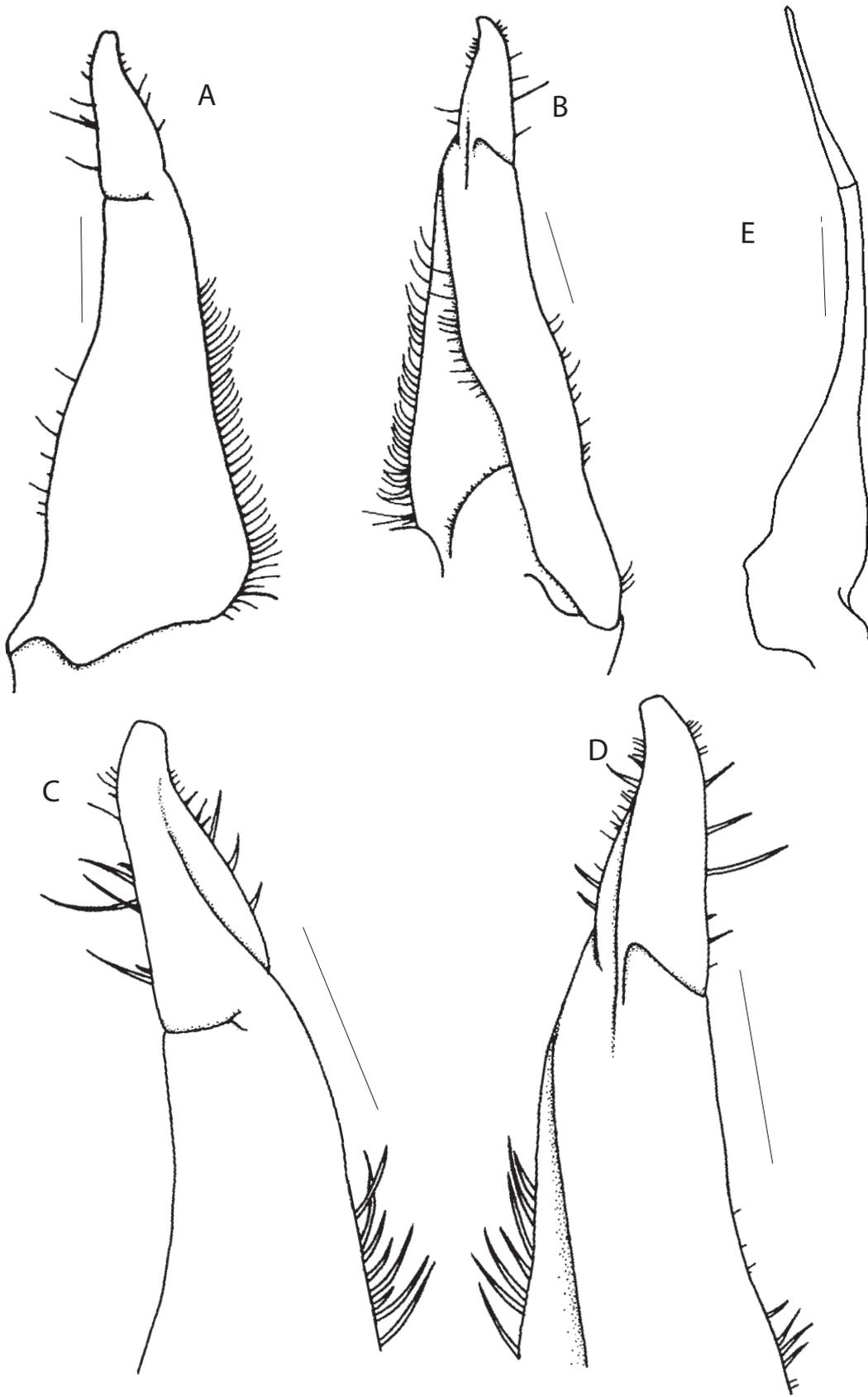


Fig. 27. *Oziotelphusa stricta*, holotype male (33.8 by 25.5 mm) (ZRC 1997.0826). A, dorsal view of left G1; B, ventral view of left G1; C, dorsal view of terminal segment of left G1; D, ventral view of terminal segment of left G1; E, left G2. Scale bar = 1 mm. (Reproduced with permission, from Ng & Tay, 2001).

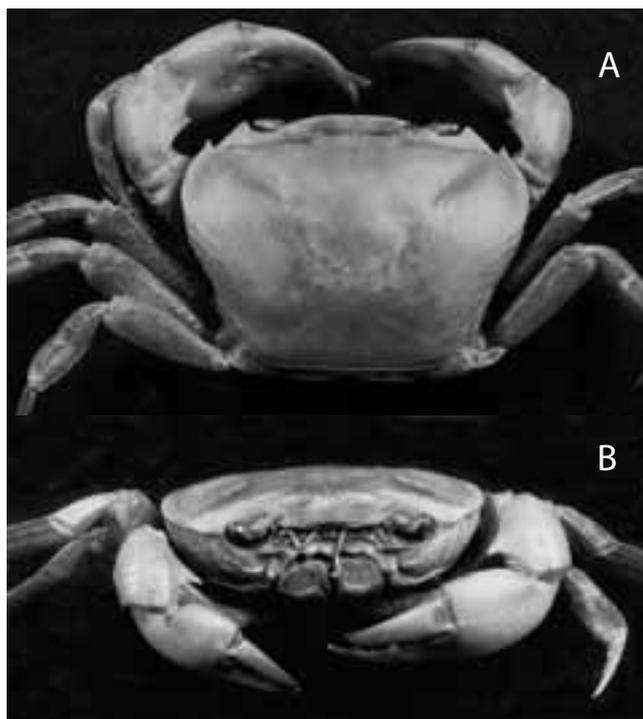


Fig. 28. *Oziotelphusa stricta*, holotype male (33.8 by 25.5 mm) (ZRC 1997.0826). A, dorsal view; B, frontal view. (Reproduced with permission, from Ng & Tay, 2001).

ceylonensis and *O. stricta*, but their distinct G1 characters separate them easily as distinct species (see **Remarks** under *O. gallicola*; see also Figs. 27A–D vs. 18D–G, 35C–G).

***Oziotelphusa biloba*, new species**

(Figs. 29–31)

Material examined. – Holotype - male (41.8 by 29.8 mm) (ZRC 2003.0246); Kodagara Village on Trissur-Chalaky road, Kerala, India, 10°21'30.7"N, 076°08'45.0"E, alt. 6 m.

Paratypes - male (38.3 by 27.4 mm) (WHT 10735), female (37.7 by 27.4 mm) (WHT 10736), female (33.7 by 24.9 mm) (WHT 10737), female (32.3 by 23.6 mm) (WHT 10733), same collection data as holotype; male (34.7 by 25.3 mm) (ZRC 2003.0247), male (38.6 by 27.6 mm) (WHT 10740), female (40.9 by 29.1 mm) (WHT 10741), male (35.5 by 25.8 mm) (WHT 10742), Koratti Village, on Chalakudy-Angamali road, Kerala, India, 10°21'30.7"N, 076°08'45.0"E, alt. 5 m.

Diagnosis. – Dorsal surface of carapace highly convex (Figs. 30A, B); epistomal median lobe notched, without a distinct, sharp, pointed tooth (Figs. 30B, J–M, 31B); frontal margin straight; epibranchial tooth moderate in size, basally narrow, not sharp, sitting very slightly above postorbital cristae, not level with supraorbital margin; postorbital region concave (Figs. 29A, D); postorbital cristae sharp, gently curved; branchial region inflated (Fig. 29A). Suture between thoracic sternites 2 and 3 distinct as a deep, short groove, not reaching lateral borders in large males (Fig. 29C); suture between thoracic sternites 3 and 4 visible as a deep groove, not reaching lateral borders (Fig. 29C); frontal margin straight in dorsal view; male abdomen of large males triangular, with concave lateral borders (Figs. 30A, 31A); segment six trapezoid, wider than long, slightly shorter

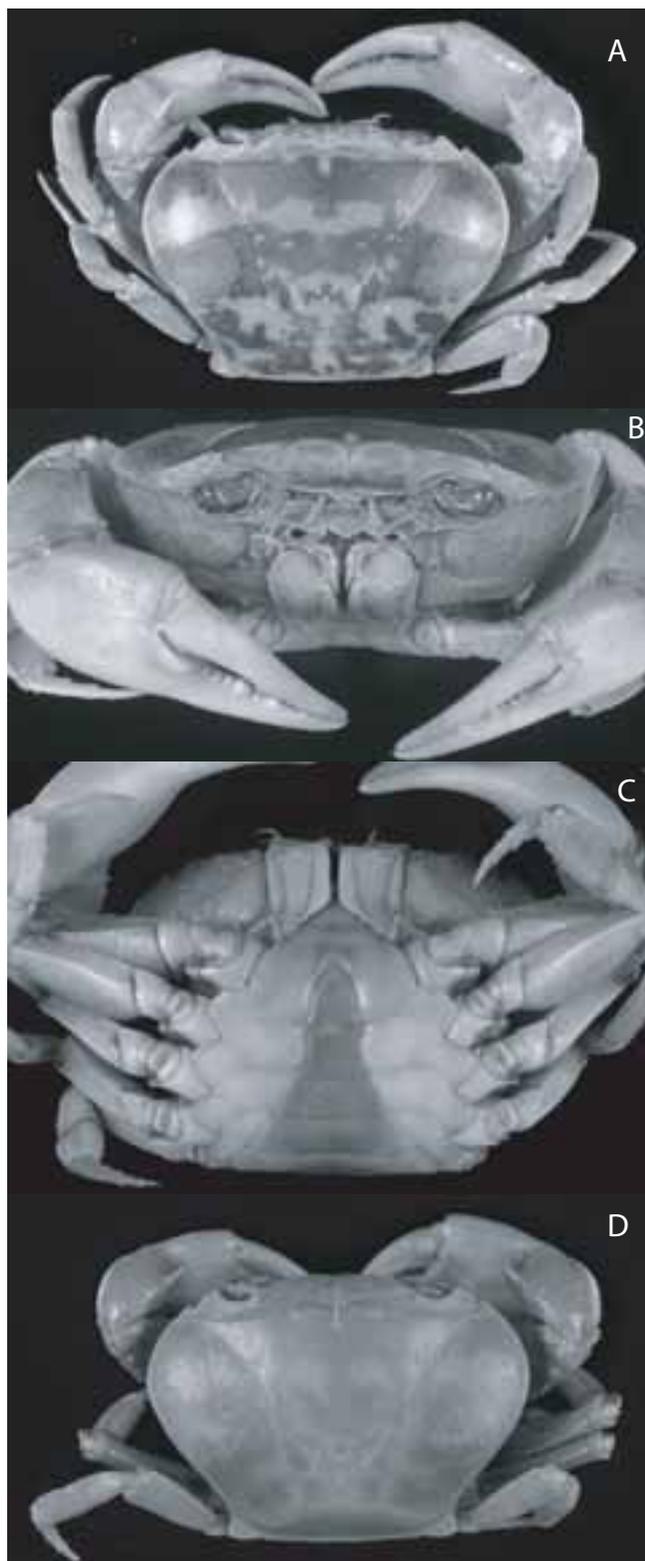


Fig. 29. *Oziotelphusa biloba*, new species. A–C: holotype male (41.9 by 29.8 mm) (ZRC 2003.0246); D: paratype male (34.7 by 25.3 mm) (ZRC 2003.0247). A, D, dorsal view; B, frontal view; C, ventral view.

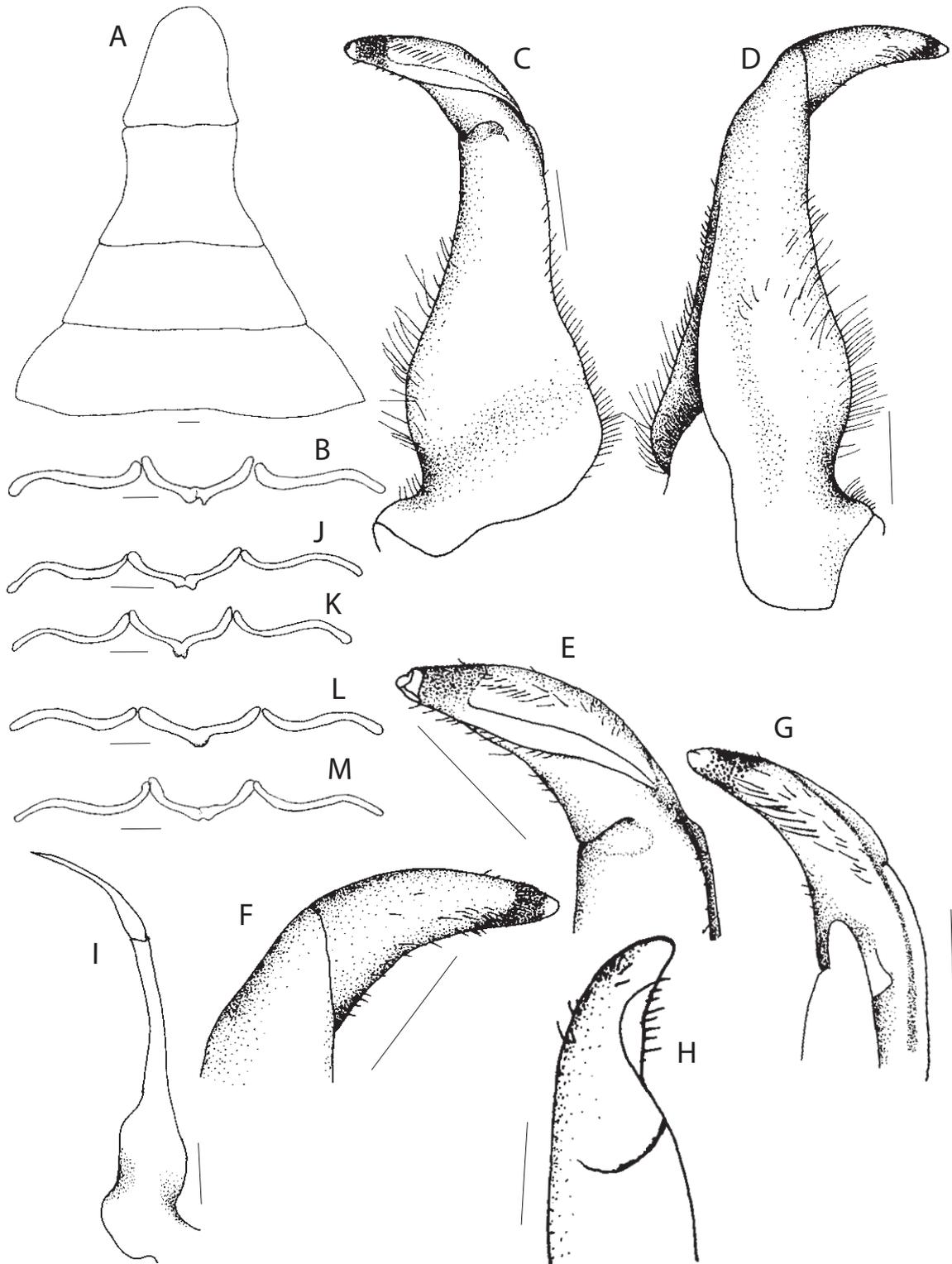


Fig. 30. *Oziotelphusa biloba*, new species. A–I: holotype male (41.9 by 29.8 mm) (ZRC 2003.0246); J: paratype female (32.3 by 23.6 mm) (WHT 10733); K: paratype male (38.3 by 27.4 mm) (WHT 10735); L: paratype female (33.7 by 24.9 mm) (WHT 10737); M: paratype female (37.7 by 27.4 mm) (WHT 10736). A, abdomen; B, epistomal median lobe; C, dorsal view of left G1; D, ventral view of left G1; E, dorsal view of terminal segment of left G1; F, ventral view of terminal segment of left G1; G, medial view of terminal segment of left G1; H, lateral view of terminal segment of left G1; I, left G2; J–M, epistomal median lobe. Scale bar = 1 mm.

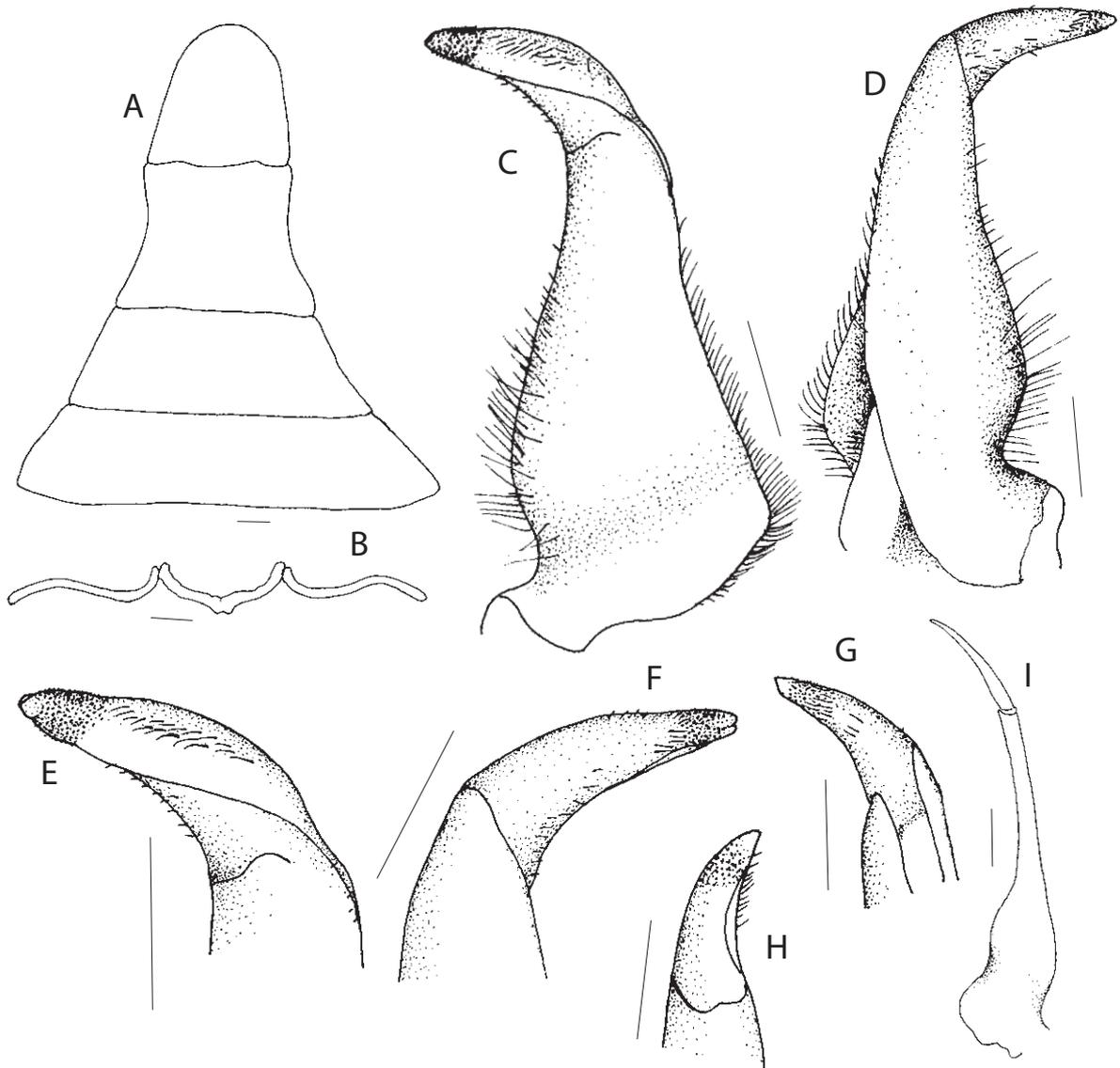


Fig. 31. *Oziotelphusa biloba*, new species, paratype male (38.1 by 27.4 mm) (ZRC 2003.0247). A, abdomen; B, epistomal median lobe; C, dorsal view of left G1; D, ventral view of left G1; E, dorsal view of terminal segment of left G1; F, ventral view of terminal segment of left G1; G, medial view of terminal segment of left G1; H, lateral view of terminal segment of left G1; I, left G2. Scale bar = 1 mm.

than telson with distinctly concave lateral borders (Figs. 30A, 31A). G1 subterminal segment stout (Figs. 30C, D, 31C, D); basal two-thirds of terminal segment distinctly stout, turned outwards, short, ca. 0.35 times length of subterminal segment (Figs. 30E–H, 31E–H). G2 with short distal segment ca. 0.3–0.4 times length of basal segment (Figs. 30I, 31I).

Distribution. – Known from two closely-spaced localities in Kerala, south western India.

Ecology. – All the crabs were from shallow to deep burrows along the muddy banks of rice-field embankments.

Etymology. – The specific epithet refers to the bilobed epistomal median tooth in this species, an external character apparently unique to this Indian species.

Remarks. – The carapace and gonopod characters of *O. biloba*, new species, resemble those of *O. aurantia* more closely than any of its other congeners. *Oziotelphusa biloba*, new species, is immediately differentiated from *O. aurantia*, however, by having distinctly concave outer margins of the sixth abdominal segment (vs. outer margins of sixth abdominal segment gently concave) (Figs. 30A, 31A vs. 9A); and in having the epistomal median lobe notched (vs. with a distinct sharp tooth) (Figs. 30B, J–M vs. 9B). The only other species of *Oziotelphusa* with an incomplete epistomal median tooth is *O. kodagoda* from southwest Sri Lanka, in which the tooth is clearly separated medially (Fig. 40C), but the carapace and G1 characters of these two species are significantly different (Figs. 29, 30, 31 vs. 40, 41).

Oziotelphusa dakuna, new species

(Figs. 32, 33)

Material examined. – Holotype - male (36.4 by 27.2 mm) (WHT 10919), Godakawela between Palledbedda and Kahawatta, Sri Lanka, 06°30'N, 80°38' E, alt. 183 m, coll. M. M. Meegaskumbura and M. M. Bahir, 7 Dec.2003.

Paratypes - male (36.2 by 27.2 mm) (WHT 10910), same collection data as holotype.

Diagnosis. – Carapace dorsal surfaces convex fore and aft, anterior lateral carapace low in frontal view (Figs. 32A, B); epistomal median lobe with sharp tooth (Fig. 33C); frontal margin straight to very gently curved inwards towards the midline; epibranchial tooth moderate in size, sharp, sitting very slightly above postorbital cristae, not level with supraorbital margin (Fig. 32A); postorbital region concave (Fig. 32A); postorbital cristae sharp, almost straight (Fig. 32A); branchial region gently inflated (Figs. 32A, B); frontal median triangle as broad as frontal margin, dorsal margin fused with lateral margins. Suture between anterior thoracic sternites 2 and 3 visible as a narrow groove (Fig. 33A); suture between sternites 3 and 4 not visible (Fig. 33A); male abdomen robust, almost triangular, its lateral borders concave (Figs. 32C, 33B); sixth abdominal segment squarish to rectangular, broader than long (Fig. 33B); cone-shaped terminal segment of G1 short (Figs. 33D, E), distinctly robust (Fig. 33D), gently bent medially laterally (Fig. 33D), ca. 0.4 times length of subterminal segment; subterminal segment distinctly stouter (Figs. 33D–H). G2 distal segment long, ca. 0.4 times length of basal segment (Fig. 33I).

Distribution. – *Oziotelphusa dakuna*, new species, is known only from the type locality, Godakawela, between Palledbedda and Kahawatta, in the southern foothills of the central highlands of Sri Lanka.

Ecology. – *Oziotelphusa dakuna*, new species, lives in deep burrows in rice-field embankments and adjacent stream margins.

Etymology. – “Dakuna” is informal Sinhala for “south”— a reference to this species being known only from a small area of the southern slopes of the central hills of Sri Lanka. Used as a noun in apposition.

Remarks. – *Oziotelphusa dakuna*, new species, resembles *O. gallicola*, new species, in carapace morphology. Although the G1 and G2 characters of *O. dakuna* and *O. gallicola* resemble one another superficially, they are not identical (see Figs. 33D–H vs. 35C–G). *Oziotelphusa dakuna*, new species, differs from *O. gallicola* in having much broader G1 terminal and subterminal segments (vs. narrow) (Figs. 33D vs. 35C); and the distal half of terminal segment being shorter (vs. comparatively slender) (Figs. 33D vs. 35C); the male abdomen being comparatively narrow (vs. abdomen broader) (Figs. 33B vs. 35B); and the suture between anterior thoracic sternites 3 and 4 being indiscernible (vs. suture between anterior thoracic sternites 3 and 4 visible as a distinct groove) (Figs. 33A vs.

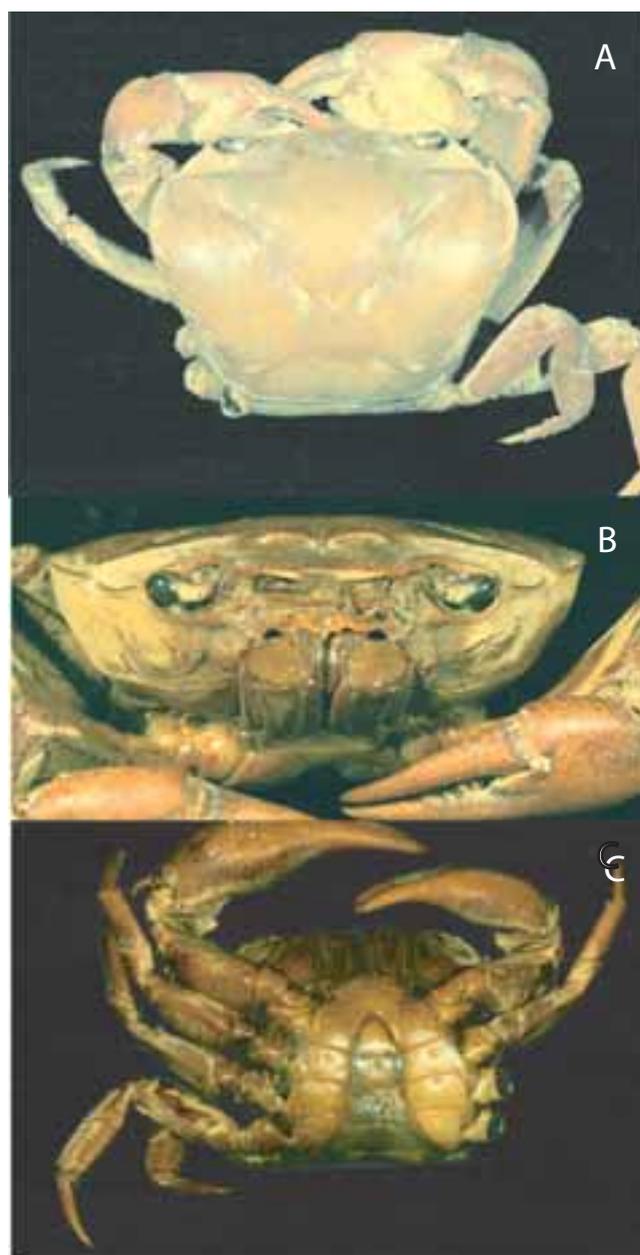


Fig. 32. *Oziotelphusa dakuna*, new species, holotype male (36.4 by 27.2 mm) (WHT 10919). A, dorsal view; B, frontal view; C, ventral view.

35A). The G1s of two specimens of *O. dakuna*, new species, were compared with those of *O. gallicola* from different populations to assess variation among populations (see Figs. 33D–H vs. 35C–G, I, J). In addition to the G1, sternal and abdominal characters, the anterior lateral carapace of *O. gallicola* appears to be more convex in frontal view (vs. comparatively lower) (Figs. 34A, B vs. 32A, B). These differences are consistent. The G1 structure of *O. dakuna*, new species, is also similar to that of *O. kodagoda*, but differs in several aspects (see **Remarks** under *O. kodagoda*).

The ranges of *O. dakuna*, new species, and *O. gallicola* are not contiguous, being separated by the Deniyaya-Rakwana mountains; they also fall within different river basins (the Walawe and Gin River basins, respectively). The distance between the type localities is about 60 km.

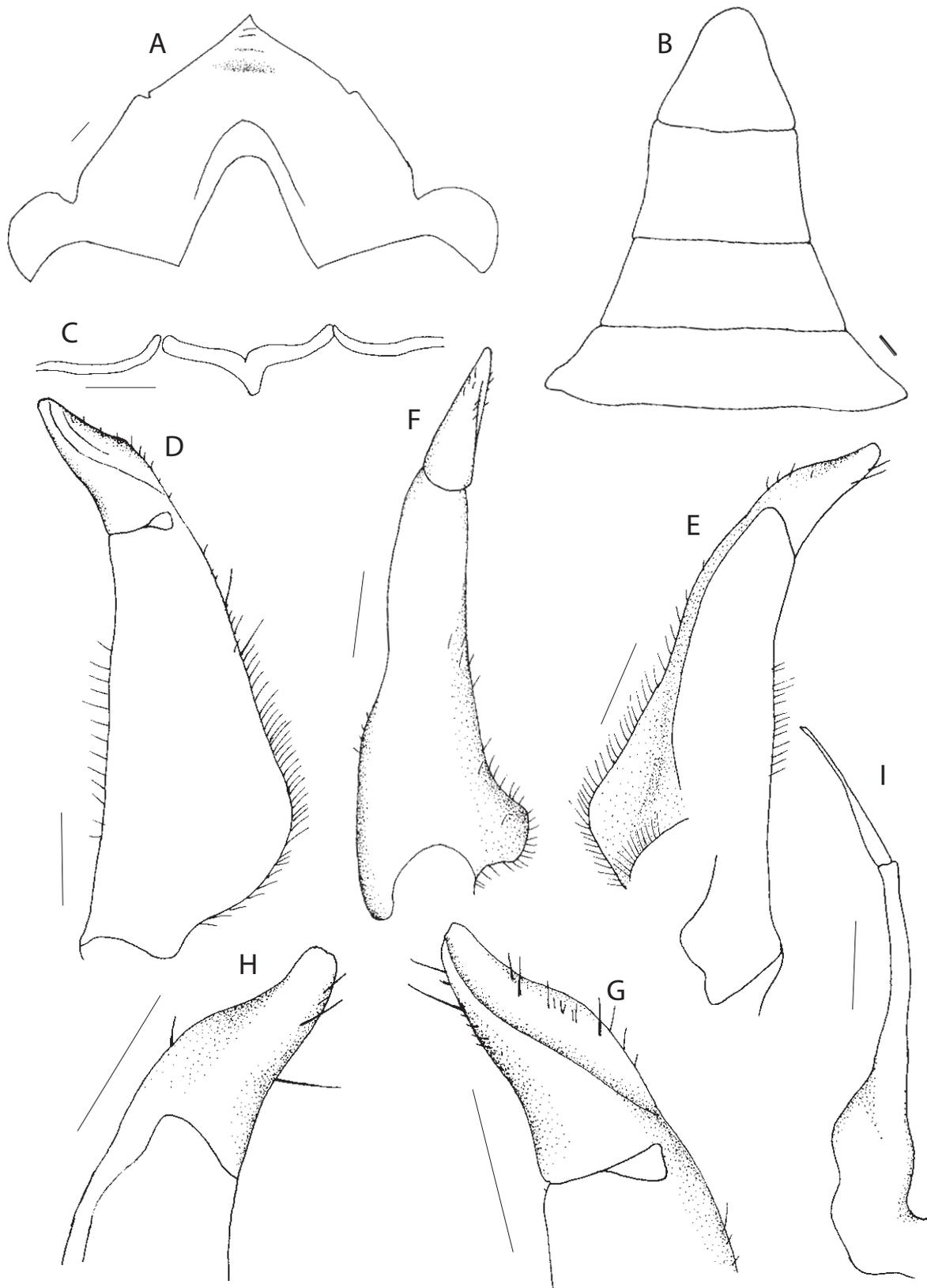


Fig. 33. *Oziotelphusa dakuna*, new species, holotype male (36.4 by 27.2 mm) (WHT 10919). A, anterior thoracic sternum; B, abdomen; C, epistomal median lobe; D, dorsal view of left G1; E, ventral view of left G1; F, lateral view of left G1; G, dorsal view of terminal segment of left G1; H, ventral view of terminal segment of left G1; I, left G2. Scale bar = 1 mm.

***Ozietelphusa gallicola*, new species**

(Figs. 34, 35)

Ozietelphusa ceylonensis - Ng & Tay, 2001: 127, 128, 190 (part)
(not *Paratelphusa ceylonensis* Fernando, 1960).

Material examined. – Holotype - male (38.6 by 29.5 mm) (ZRC 1997.0899), Navinna near Galle, 06°04'N, 80°12'E, alt. 15 m, coll. M. M. Bahir, Oct.1995.

Paratypes - male (44.4 by 32.2 mm) (WHT 10175), Kandewatta near Galle, 06°23'N, 80°12'E, alt. 2 m, coll. S. Batuwita & M. M. Bahir, 11 Oct.1998; male (31.2 by 23.6 mm) (WHT 10815), Richmondhill Galle, 06°03'N, 80°12'E, alt. 10 m, coll. P.I.R. Wickrematilleke & M. M. Bahir, 25 Nov.2002; male (30.1 by 22.7 mm) (ZRC 2003.0253), same locality as WHT 10815, coll. A. Wijesekera & M. M. Bahir, 10 Apr.1999.

Others - male (25.4 by 19.2 mm) (WHT 10270), Richmondhill Galle, 06°03'N, 80°12'E, alt. 10 m, coll. M. M. Bahir, 3 Sep.2000.

Diagnosis. – Carapace dorsal surfaces highly convex fore and aft (Figs. 34A, B); epistomal median lobe with sharp tooth; frontal margin straight to very gently curved inwards towards the midline; epibranchial tooth moderate in size, sharp, sitting very slightly above postorbital cristae, not level with supraorbital margin; postorbital region concave (Fig. 34A); postorbital cristae sharp, almost straight (Fig. 34A); branchial region inflated (Figs. 34A, B); frontal median triangle as broad as frontal margin, dorsal margin fused with lateral margins; suture between anterior thoracic sternites 2 and 3 visible as a shallow, broad groove not reaching lateral margins; suture between sternites 3 and 4 distinct as a narrow groove not reaching lateral borders (Fig. 35A); male abdomen robust, almost triangular, lateral borders concave, sixth abdominal segment squarish to rectangular, broader than long (Figs. 34C, 35B). G1 terminal segment robust bent from the juncture between terminal and subterminal segment, ca. 0.4 times length of subterminal segment, subterminal segment moderately slender, terminal segment also medially bent laterally giving it an S-shaped appearance (Fig. 35C–G). G2 distal segment long, ca. 0.4 times length of basal segment (Fig. 35H).

Distribution. – The species is known from the vicinity of Galle, in the south western wet zone of Sri Lanka.

Ecology. – *Ozietelphusa gallicola*, new species, lives in deep burrows in rice-field embankments, adjacent stream margins and the banks of canals. The species is found to be common in the roadside waterways between Galle and Kalegana in the Galle District.

Etymology. – The species-name refers to this crab being known only from the vicinity of Galle (Latin, 'cola', an inhabitant), meaning an inhabitant of Galle.

Remarks. – *Ozietelphusa gallicola*, new species, closely resembles *O. ceylonensis*, *O. dakuna* and *O. populosa* in carapace morphology. The carapace of *O. gallicola*, new species, is less convex in dorsal and in frontal views than *O. ceylonensis* (Figs. 34A, B vs. 22A, B). In addition, the G1 terminal segment of *O. gallicola* also differs from that of *O.*

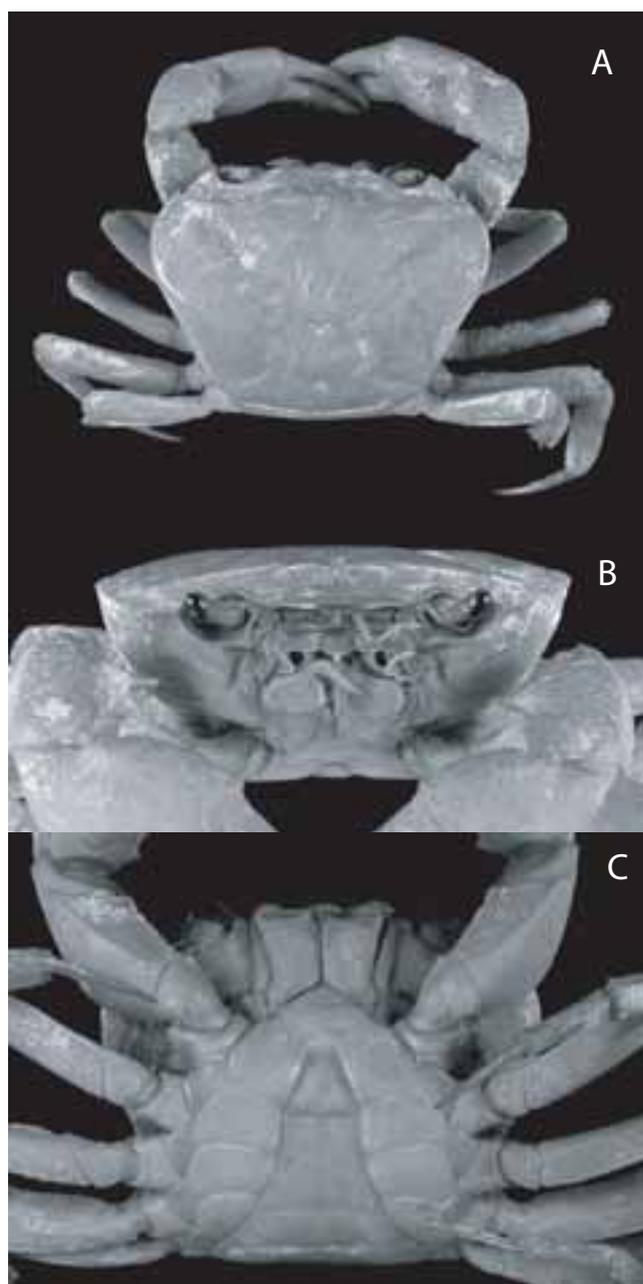


Fig. 34. *Ozietelphusa gallicola*, new species, holotype male (38.6 by 29.5 mm) (ZRC 1997.0899). A, dorsal view; B, frontal view; C, ventral view.

ceylonensis in being strongly bent medially (vs. the entire terminal segment being bent at the juncture between terminal and subterminal segments) (Figs. 34C, D vs. 18D, E).

Ozietelphusa gallicola, new species, also bears some similarity to *O. populosa*, new species, in carapace and G1 morphology, but may be distinguished from it by the anterior lateral carapace being more convex in frontal view (vs. comparatively lower) (Figs. 34A, B vs. 43A, B); G1 terminal segment being comparatively more bent (vs. terminal segment straighter) (Figs. 35C–E vs. 42C–E); the distal half of the G1 subterminal segment being broader (vs. distal part distinctly narrower) (Figs. 35C–E vs. 42C–E); and the G1 terminal segment being cone-shaped and straight (vs. more slender and gently curved) (Figs. 34E vs. 42E).

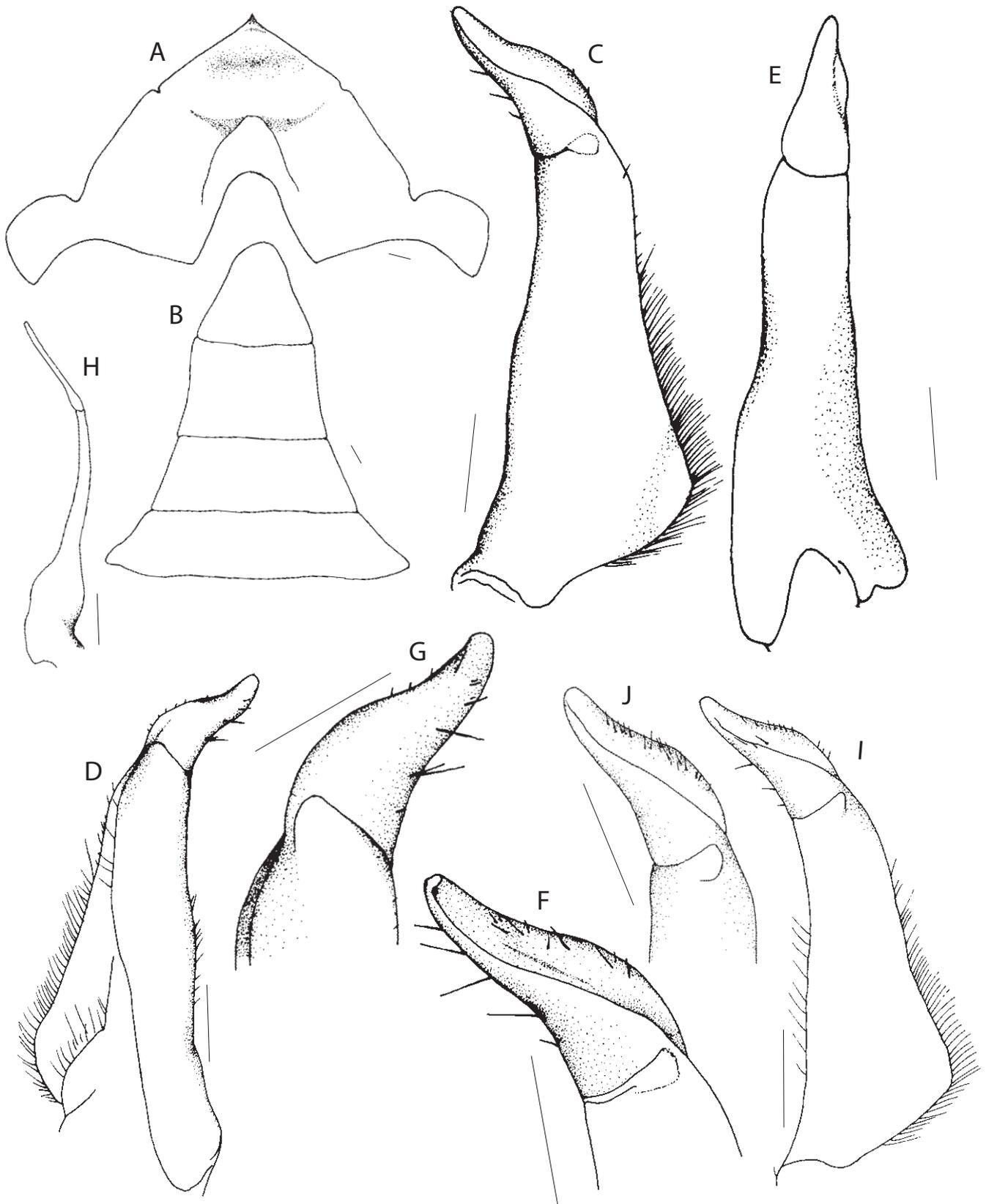


Fig. 35. *Oziotelphusa gallicola*, new species. A–H: holotype male (38.6 by 29.5 mm) (ZRC 1997.0899); I, J: paratype male (30.1 by 22.7 mm) (ZRC 2003.0253). A, anterior thoracic sternum; B, abdomen; C, I, dorsal view of left G1; D, ventral view of left G1; E, lateral view of left G1; F, J, dorsal view of terminal segment of left G1; G, ventral view of terminal segment of left G1; H, left G2. Scale bar = 1 mm.

***Oziotelphusa intuta*, new species**

(Figs. 36, 37)

Oziotelphusa minneriyaensis - Ng & Tay, 2001: 129, 130, 191 (part)
(not *Oziotelphusa senex minneriyaensis* Bott, 1970).

Material examined. – Holotype - male (33.6 by 25.1 mm) (ZRC 2004.0670), fast flowing stream, semi forested, gravel bottom, grass banks to water edge, Deniyalanda, ca. 10 km to Kurunegala on Kandy Rd., Sri Lanka, coll. P. K. L. Ng & R. Pethiyagoda, 10 Jun. 1992.

Paratypes - 3 males (26.2 by 20.6 mm, 26.8 by 21.0 mm, 24 by 18.8 mm) (ZRC 2004.0671), same collection data as holotype.

Others - 6 males (23.3 by 18.3 mm, 23.2 by 18.3 mm, 22.6 by 18.0 mm, 21.8 by 17.1 mm, 16.3 by 13.1 mm, 14.2 by 11.3 mm), 10 females (39.3 by 29.8 mm, 34.5 by 27 mm (right side of carapace broken), 30.1 by 23.2 mm, 27.3 by 21.5 mm, 27.5 by 21.4 mm, 27.5 by 21.4 mm, 24.8 by 19.3 mm, 19.5 by 15.5 mm, 15.6 by 12.3 mm, 11.9 by 19.7 mm), 3 juv. (15.7 by 12.6 mm, 10.9 by 8.9 mm, 8.9 by 7.4 mm) (ZRC 1997.0897), same collection data as holotype.

Diagnosis. – Carapace dorsal surface convex (Figs. 36A, B); epistomal median lobe with distinct tooth; frontal margin almost straight; epibranchial tooth of moderate size, very slightly elevated from postorbital cristae, not level with supra-orbital margin (Fig. 36A); postorbital region gently concave, of moderate length (Fig. 36A); postorbital cristae sharp, almost straight (Fig. 36A); branchial region gently inflated (Fig. 36A); frontal median triangle not as broad as frontal margin, dorsal margin fused to the lateral margins (Fig. 37C); suture between anterior thoracic sternites 2 and 3 visible as a shallow, narrow groove not reaching lateral margins (Fig. 37A); suture between sternites 3 and 4 distinct as a broad, moderately deep groove not reaching lateral borders (Fig. 37A); male abdomen T-shaped, lateral borders concave, sixth abdominal segment trapezoid (Fig. 37B). G1 terminal segment entirely bent and directed laterally outwards, making broad S-shape with distinctly broader base, long, ca. 0.4 times length of distinctly broader subterminal segment (Figs. 37D–H), gently curved inwards in lateral view (Fig. 37F). G2 with long distal segment, ca. 0.4 times length of basal segment (Fig. 37I).

Distribution. – The species is known only from the type locality, Deniyalanda, ca. 10 km from Kurunegala on the Kandy road, Sri Lanka.

Ecology. – *Oziotelphusa intuta*, new species, was found to occur within deep burrows in rice-field embankments and adjacent stream margins, and the banks of the irrigation canals.

Etymology. – The specific epithet is a feminized adjective from 'intutus' (Latin, defenceless): a reference to this species being endangered (it is known from only a single locality, not subject to any protection).



Fig. 36. *Oziotelphusa intuta*, new species, holotype male (33.6 by 25.1 mm) (ZRC 2004.0670). A, dorsal view; B, frontal view; C, ventral view.

Remarks. – *Oziotelphusa intuta*, new species, more closely resembles *O. minneriyaensis* and *O. ritigala* in carapace morphology than any other congener, but may be distinguished by its G1 characters. The G1 subterminal segment of *O. intuta* is distinctly stouter distally and basally (vs. not as stout in *O. minneriyaensis* and *O. ritigala*) (Figs. 37D, E vs. 23C, D, 44D, E); and the inner margin of the G1 terminal segment is distinctly curved inwards in lateral view (vs. straighter) (Figs. 37F vs. 23E, 25D, 46C). In addition to these G1 characters, the sutures between anterior thoracic sternites 2 and 3, and 3 and 4 are not very deep in *O. intuta* (vs. much deeper in *O. minneriyaensis*) (Figs. 37A vs. 23A). Comparison of similar-sized specimens from the type localities of both species (Figs. 37 vs. 24) confirms the noted differences are consistent between these species.

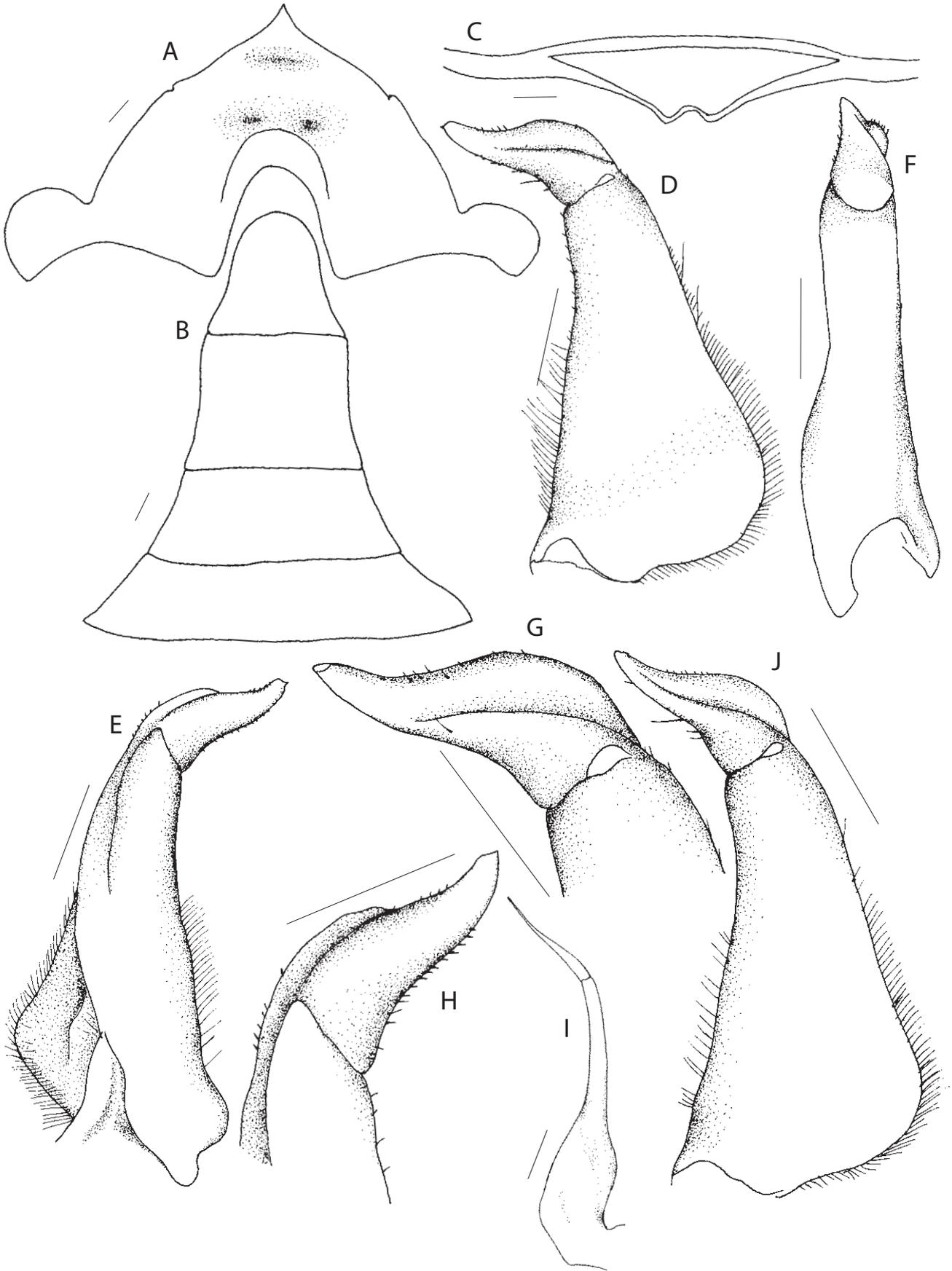


Fig. 37. *Oziotelphusa intuta*, new species. A–I: holotype male (33.6 by 25.1 mm) (ZRC 2004.0670); J: paratype male (26.2 by 20.3 mm) (ZRC 2004.0671). A, anterior thoracic sternum; B, abdomen; C, frontal median triangle; D, J, dorsal view of left G1; E, ventral view of left G1; F, lateral view of left G1; G, dorsal view of terminal segment of left G1; H, ventral view of terminal segment of left G1; I, left G2. Scale bar = 1 mm.

***Oziotelphusa kerala*, new species**

(Figs. 38, 39)

Material examined. – Holotype - male (38.3 by 27.8 mm) (ZRC 2003.0244), Kolaththupuzha-Tenmalai Road, Kerala, India, 08°54'12.7"N, 077°32'7.2"E, alt. 120 m.

Paratypes - female (39.2 by 28.4 mm) (WHT 10724), female (34.5 by 24.9 mm) (WHT 10723), same collection data as holotype.

Diagnosis. – Carapace dorsal surface highly convex (Figs. 38A, B); epistomal median lobe with distinct tooth, its tip blunt (Figs. 39F–H); frontal margin straight in dorsal view (Fig. 38A); epibranchial tooth very small, distinctly elevated from the postorbital cristae, almost level with supra-orbital margin (Fig. 38A); postorbital region deeply concave, very short (Fig. 38A); postorbital cristae sharp, curved, smooth, entire (Fig. 38A); branchial region highly inflated (Figs. 38A, B); frontal median triangle as broad as frontal margin, its dorsal margin not fused with lateral margins; suture between anterior thoracic sternites 2 and 3 visible as a shallow, narrow groove not reaching lateral margins; suture between sternites 3 and 4 visible as a shallow, narrow groove not reaching lateral borders (Fig. 38C); male abdomen T-shaped, its lateral margins concave, the sixth abdominal segment wider than long, narrowly trapezoid with distinctly concave outer margins (Figs. 38C, 39A). G1 terminal segment long, cylindrical, gently tapered distally, entirely bent and directed laterally outwards, ca. 0.5 times length of subterminal segment; subterminal segment broad with slightly convex inner margin; outer margin distally and basally concave, medially distinctly convex in dorsal and ventral aspects (Figs. 39B, C). G2 distal segment long, ca. 0.4 times basal segment (Fig. 39E).

Distribution. – *Oziotelphusa kerala* is presently known only from the Kolaththupuzha-Tenmalai Road, Kerala, south western India.

Ecology. – This species was collected from rice-field embankments; crabs were also observed in burrows in the margins of adjacent streams.

Etymology. – The species name for its type locality, Kerala State, southern India.

Remarks. – The carapace and G1 of *O. kerala*, new species, resembles that of *O. aurantia*. However, the two species are distinguished by their G1, abdominal and sternal characters (see **Remarks** under *O. aurantia*).

***Oziotelphusa kodagoda*, new species**

(Figs. 40, 41)

Material examined. – Holotype - male (36.2 by 26.5 mm) (WHT 10920), rice field embankment at Kodagoda, Imaduwa, Galle, Sri Lanka, 06°02'N, 80°23'E, alt. 45 m, coll. D. Kandamby & M.M. Bahir, 12 Sep.1998.

Paratypes - male (31.3 by 23.6 mm) (WHT 10911), male (32.3 by 24.2 mm) (WHT 10912), female (27.5 by 21.4 mm) (WHT 10913), same collection data as holotype.



Fig. 38. *Oziotelphusa kerala*, new species, holotype male (38.3 by 27.8 mm) (ZRC 2003.0244). A, dorsal view; B, frontal view; C, ventral view.

Others - male (28.8 by 21.3 mm), male (25.7 by 19 mm), male (18.6 by 14.7 mm), female (24 by 18.1 mm) (WHT 10914), same collection data as holotype.

Diagnosis. – Carapace dorsal surfaces convex fore and aft (Figs. 41A, B); anterior lateral carapace low in frontal view (Fig. 41B); epistomal median lobe notched, not making a tooth (Fig. 40C); frontal margin straight to very gently curved inwards towards the midline (Fig. 41A); epibranchial tooth moderate in size, sharp, sitting very slightly above postorbital cristae, not level with supraorbital margin (Fig. 41A); postorbital region concave; postorbital cristae sharp, almost straight (Fig. 41A); branchial region gently inflated; frontal median triangle as broad as frontal margin, dorsal margin fused with lateral margins; suture between anterior thoracic sternites 2 and 3 visible as a shallow, broad groove not reaching lateral

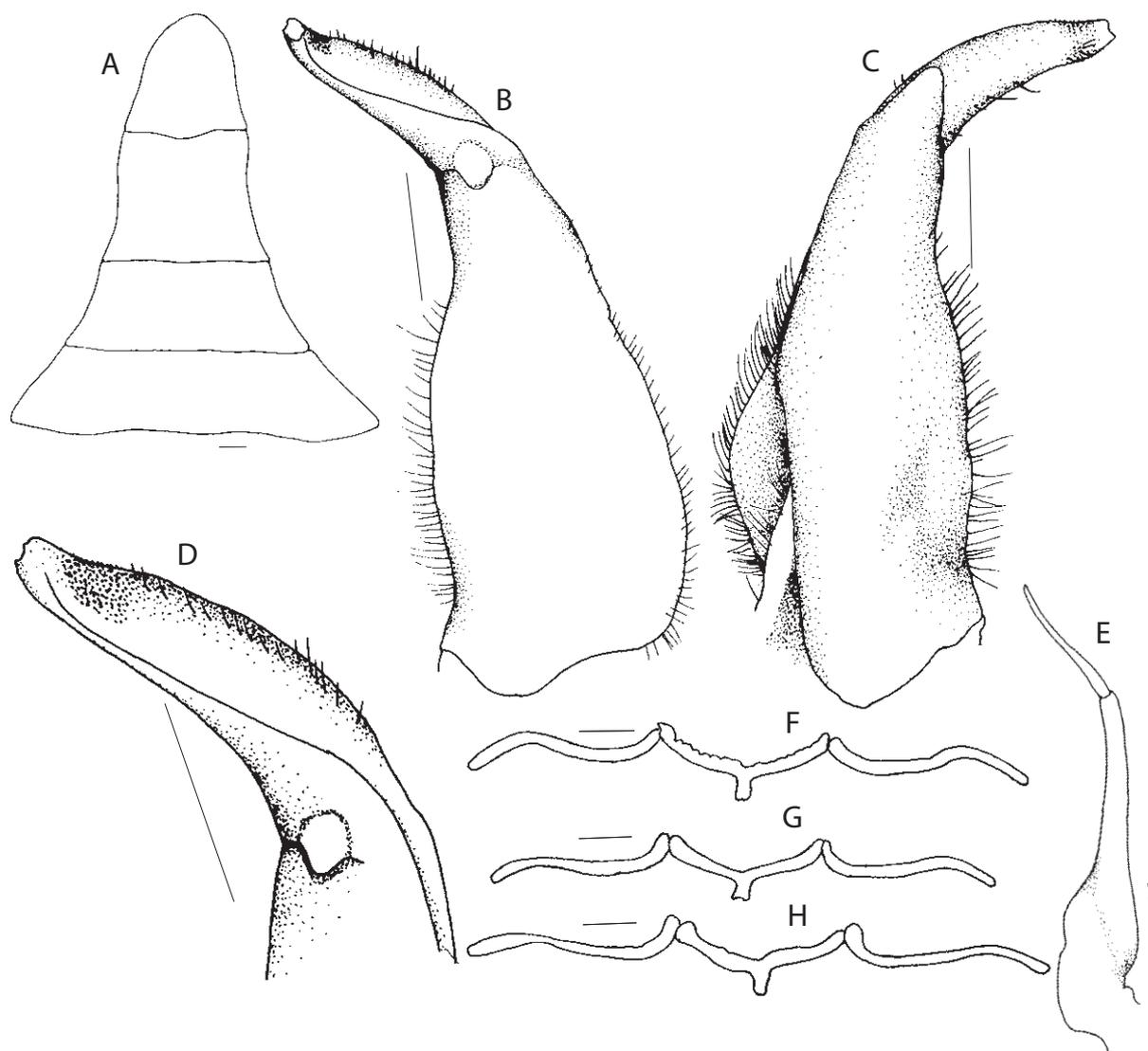


Fig. 39. *Oziotelphusa kerala*, new species. A–F: holotype male (38.3 by 27.8 mm) (ZRC 2003.0244); G: paratype female (34.5 by 24.9 mm) (WHT 10723); H: paratype female (39.2 by 28.4 mm) (WHT 10724). A, abdomen; B, dorsal view of left G1; C, ventral view of left G1; D, dorsal view of terminal segment of left G1; E, left G2; F–H, epistomal median lobe. Scale bar = 1 mm.

margins (Figs. 40A, 41C); suture between sternites 3–4 distinct as a broad, moderately deep groove not reaching lateral borders (Figs. 40A, 41C); male abdomen narrowly triangular, lateral borders gently concave, the sixth abdominal segment rectangular, broader than long (Figs. 40B, 41C). G1 robust, terminal segment short and distinctly stout, gently bent medially laterally, ca. 0.4 times length of subterminal segment, basal half of subterminal segment distinctly stouter (Figs. 40D–G). G2 distal segment long, ca. 0.5 times length of basal segment (Fig. 40H).

Distribution. – *Oziotelphusa kodagoda*, new species, was recorded only from its type locality, Kodagoda, Imaduwa in Galle District, southern Sri Lanka.

Ecology. – *Oziotelphusa kodagoda*, new species, lives in deep burrows in rice-field embankments and the banks of canals leading to rice-fields.

Etymology. – The specific epithet, “kodagoda” is a reference to its type locality. Used as a noun in apposition.

Remarks. – *Oziotelphusa kodagoda*, new species, superficially resembles *O. dakuna*, *O. gallicola* and *O. populosa* in carapace and G1 physiognomy. The species can, however, be separated by differences in the male abdomen and G1. *Oziotelphusa kodagoda*, new species, can also be distinguished from all other Sri Lankan *Oziotelphusa* species in having a medially divided epistomal median lobe (vs. a distinct tooth present in all other Sri Lankan *Oziotelphusa*) (Figs. 40C vs. 3C).

Oziotelphusa kodagoda, new species, can be differentiated from *O. dakuna*, *O. gallicola* and *O. populosa* as follows: the abdomen of *O. kodagoda* is narrower (Figs. 40B, 41C) (vs. broader in *O. dakuna*, *O. gallicola* and *O. populosa*) (Figs. 32C, 33B, 34C, 35B, 42B, 43C); and the G1 terminal segment is distinctly curved in lateral view, its inner margin medially raised (Fig. 40F) (vs. G1 terminal segment slightly but distinctly bent in lateral view, its inner margin medially not raised in *O. dakuna*, *O. gallicola* and *O. populosa*) (Figs. 33F, 35E; 42E).

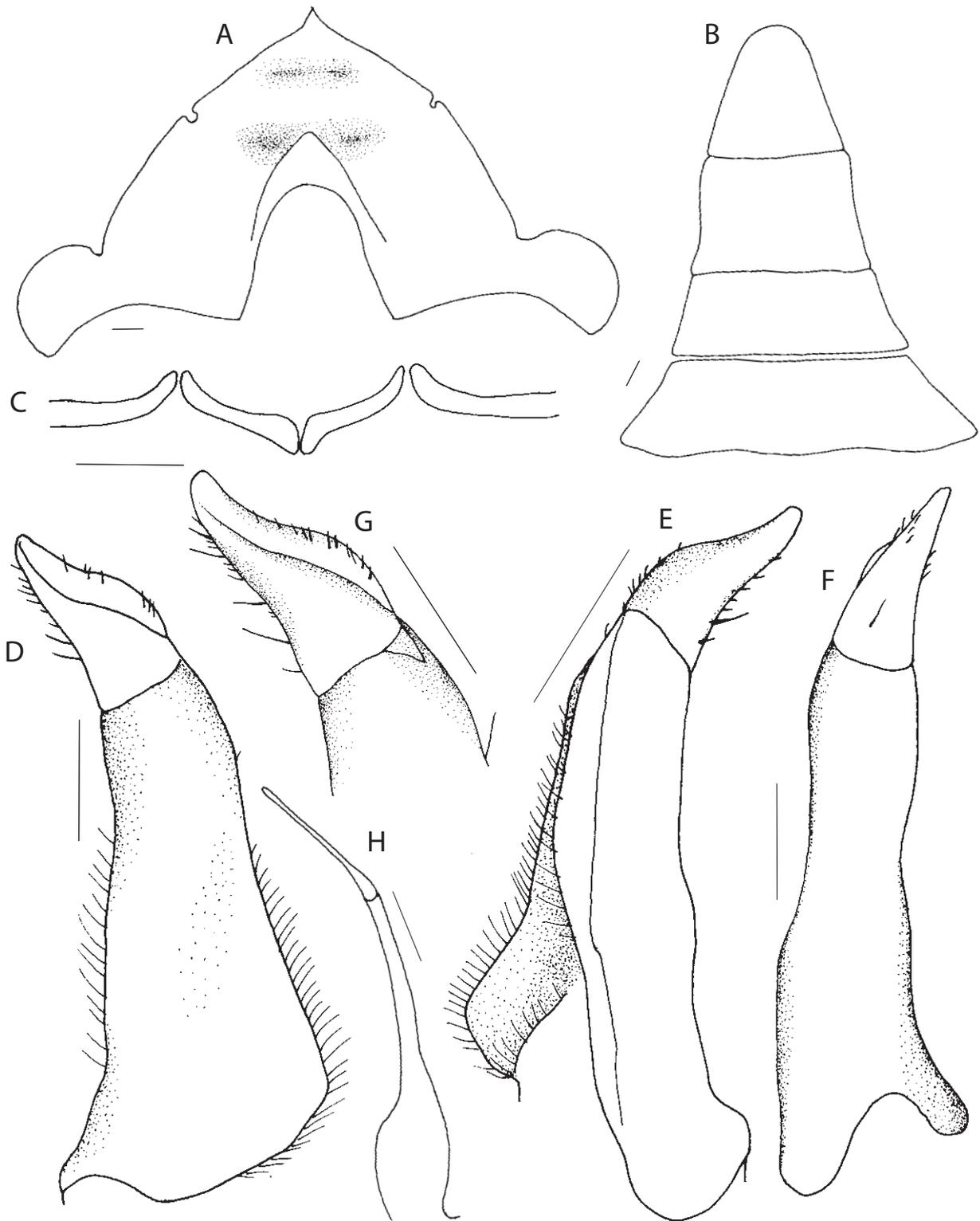


Fig. 40. *Oziotelphusa kodagoda*, new species, holotype male (36.2 by 26.5 mm) (WHT 10920). A, anterior thoracic sternum; B, abdomen; C, epistomal median lobe; D, dorsal view of left G1; E, ventral view of left G1; F, lateral view of left G1; G, dorsal view of terminal segment of left G1; H, left G2. Scale bar = 1 mm.

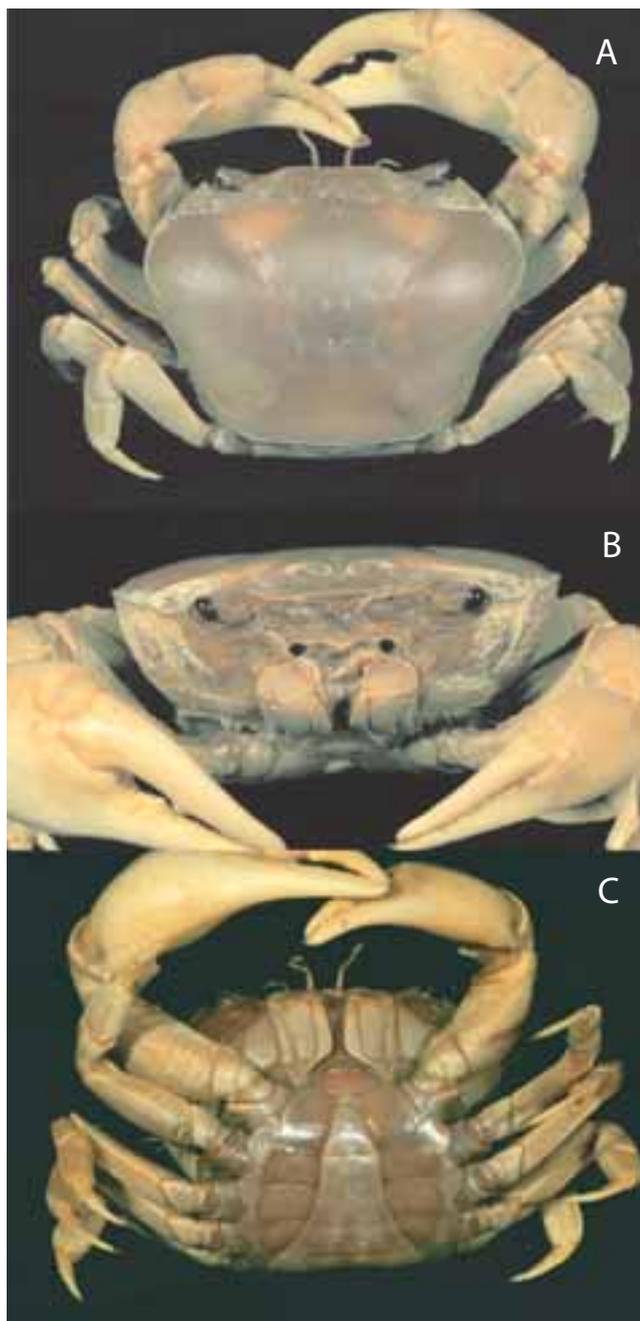


Fig. 41. *Oziotelphusa kodagoda*, new species, holotype male (36.2 by 26.5 mm) (WHT 10920). A, dorsal view; B, frontal view; C, ventral view.

***Oziotelphusa populosa*, new species**
(Figs. 42, 43)

Oziotelphusa ceylonensis - Ng & Tay, 2001: 127 (part) (not *Paratelphusa ceylonensis* Fernando, 1960).

Material examined. – Holotype - male (41.9 by 29.6 mm) (WHT 10325), small waterway at Colombo University garden, 06°54'30''N, 79°51'30''E, alt. 5 m, coll. M.M. Bahir, 11 Nov.1999.

Paratypes - male (24.1 by 18.5 mm) (WHT 10134), male (28.5 by 22.0 mm) (WHT 10183), female (30.7 by 23.4 mm) (WHT

10184), female (29.2 by 22 mm) (WHT 10185), Maharagama, near Colombo, 06°51'N, 79°55' E, alt. 10 m, coll. M. M. Bahir, 5 Jun.1998; male (23.8 by 18 mm) (WHT 10853), Gangodawila near Colombo, 06°52'N, 79°53'E, alt. 10 m, coll. M. M. Bahir, 11 Jan.2003; male (21.5 by 16.5 mm) (WHT 10844), Madampe, Sri Lanka, 07°30' N, 79°50'E, alt. 1 m, coll., M. M. Bahir, 10 Jan.2003.

Others - 2 males (29.7 by 22.0 mm, 27.8 by 21 mm), 2 females (31.9 by 24 mm, 23.2 by 17.7 mm) (ZRC 1997.0849), Nawalamulla, Migoda, 06°51'N, 80°04'E, alt. 33 m, coll. D. Gabadage, 17 Oct.1993.

Diagnosis. – Carapace dorsal surface convex (Figs. 43A, B); frontal margin straight to very gently curved inwards towards the midline (Fig. 43A); epibranchial tooth small, basally narrow, sharp, very slightly elevated from postorbital cristae, not level with supra-orbital margin (Fig. 43A); postorbital region concave, of moderate length (Fig. 43A); postorbital cristae sharp, almost straight, not sloping, usually entire (Fig. 43A); branchial region inflated (Fig. 43A); frontal median triangle almost as broad as frontal margin, dorsal margin not fused with lateral margins. Suture between thoracic sternites 2 and 3 indistinct; suture between thoracic sternites 3 and 4 visible as a groove medially, not reaching lateral borders (Figs. 42A, 43C); male abdomen robust, almost triangular, lateral borders concave, sixth abdominal segment squarish to trapezoidal, broader than long (Figs. 42B, 43C). G1 terminal segment gently curved, horn-like, entirely bent only from the juncture between the terminal and subterminal segments and directed laterally outwards with up turned tip, long, ca. 0.4 times length of moderately slender subterminal segment (Figs. 42C–G, I, J); distal half of subterminal segment of G1 distinctly slender (Fig. 42C). G2 with long distal segment ca. 0.5 times length of basal segment (Fig. 42H).

Distribution. – The species is restricted to the western lowlands of Sri Lanka, and for the presence known only from around Colombo.

Ecology. – The type locality is a small waterway <5cm deep in the Colombo University garden. Other examples of *O. populosa*, new species, were found from rice-field embankments elsewhere in the Colombo District.

Etymology. – “Populosa” is a reference to describe the most populous type locality for a freshwater crab in the world.

Remarks. – Although *O. populosa*, new species, superficially resembles *O. ceylonensis* in carapace and G1 form, the two species are readily distinguished. The carapace of *O. populosa*, new species, is less convex in frontal and dorsal views (vs. distinctly more convex in *O. ceylonensis*) (Figs. 43A, B vs. 12). The two species may also be distinguished by their unique G1 characters (see also **Remarks** under *O. gallicola*).



Fig. 42. *Oziotelphusa populosa*, new species. A–H: holotype male (41.9 by 29.6 mm) (WHT 10325); I, J: paratype male (28.5 by 22.0 mm) (WHT 10183). A, anterior thoracic sternum; B, abdomen; C, I, dorsal view of left G1; D, ventral view of left G1; E, lateral view of left G1; F, J, dorsal view of terminal segment of left G1; G, ventral view of terminal segment of left G1; H, left G2. Scale bar = 1 mm.

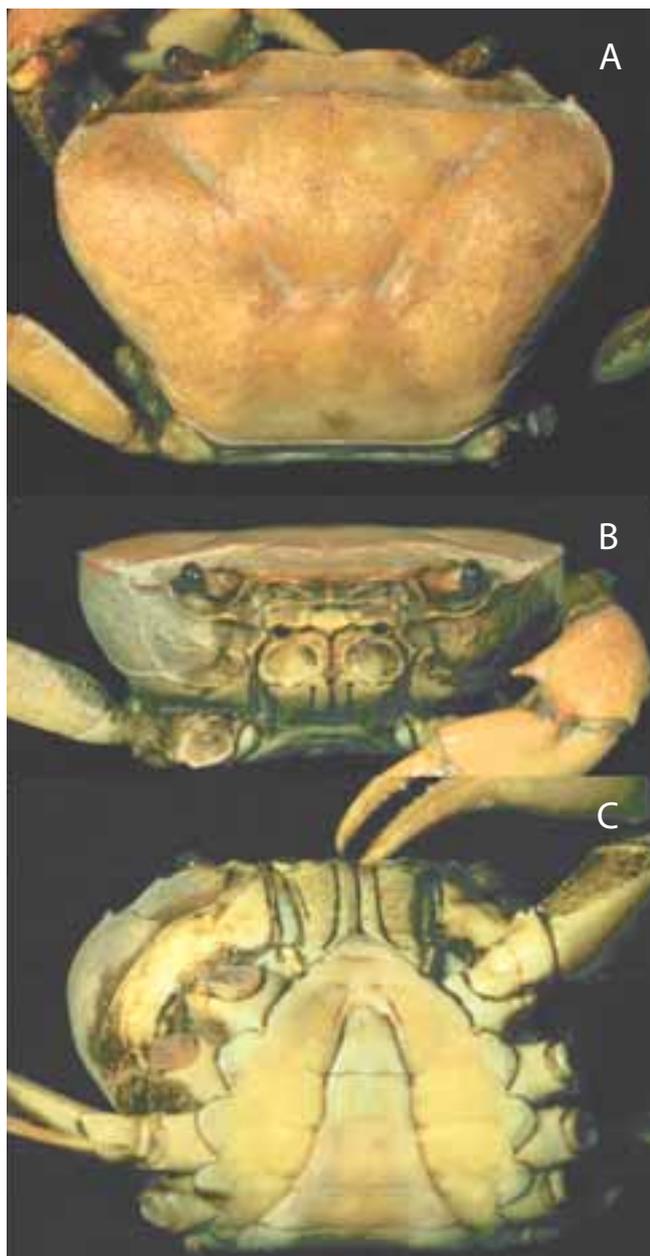


Fig. 43. *Oziotelphusa populosa*, new species, holotype male (41.9 by 29.6 mm) (WHT 10325). A, dorsal view; B, frontal view; C, ventral view.

***Oziotelphusa ritigala*, new species**

(Figs. 44–46)

Oziotelphusa minneriyaensis - Ng & Tay, 2001: 129, 130, 191, Figs. 15, 16 (part) (not *Oziotelphusa senex minneriyaensis* Bott, 1970).

Material examined. – Holotype - male (34.5 by 27 mm) (ZRC 1997.0824), Ritigala, 08°07'N, 80°40' E, alt. 200 m, coll. D. Gabadage, 12 Mar.1994.

Paratypes - male (30.2 by 23.3 mm) (ZRC 1997.0825), 2 males (29.5 by 23 mm, 25.8 by 20 mm) (ZRC 2004.0672), same collection data as holotype.

Others - 4 males (22.7 by 17.8 mm, 21.1 by 16.4 mm, 20.1 by 15mm, 17.5 by 14.3 mm), 14 females (33.5 by 26.2 mm, 28.4 by 21.8 mm, 25.5 by 19.9 mm, 22.6 by 17.5 mm, 21.9 by 17.4 mm, 23.5 by 18.5 mm, 21.1 by 16.7 mm, 19.9 by 15.5 mm, 23.3 by 18.4 mm, by 20.2 by 16 mm, 21.5 by 17.2 mm, 20.4 by 15.8 mm, 19.3 by 15.1 mm, 16.9 by 13.2 mm) (ZRC 1997.0846), same collection data as holotype; 3 males (16.5 by 13.2 mm, 15.0 by 12.1 mm, 13.2 by 10.4 mm) (ZRC 1997.0847), near Mundel, 07°46'N, 79°50' E, alt. 21 m, coll. M. M. Bahir, 19 Sep.1997.

Diagnosis. – Carapace dorsal surface convex (Fig. 45A); frontal margin almost straight (Figs. 44A, 45A); epibranchial tooth of moderate size, very slightly elevated from postorbital cristae, not level with supra-orbital margin (Fig. 44A); postorbital region gently concave, of moderate length (Figs. 44A, 45A); postorbital cristae sharp, almost straight, not sloping, entire (Fig. 44A); branchial region gently inflated (Fig. 45A); frontal median triangle not as broad as frontal margin, dorsal margin very close to the lateral margins, not fused with them (Fig. 44B); suture between anterior thoracic sternites 2 and 3 visible as a shallow, narrow groove not reaching lateral margins; suture between sternites 3 and 4 distinct as a broad, moderately deep groove not reaching lateral borders; male abdomen T-shaped, lateral borders concave, sixth abdominal segment squarish (Fig. 44C). G1 terminal segment bent from the juncture between terminal and subterminal segments, horn-like and entirely bent and directed laterally outwards, elongate S-shaped, ca. 0.4 times length of moderately slender subterminal segment (Figs. 44D–G, 46A–E, G, H). G2 distal segment long ca. 0.4 times length of subterminal segment (Figs. 44H, 46F).

Distribution. – The species is known only from Ritigala and Mundel, in the north central dry zone of Sri Lanka.

Ecology. – *Oziotelphusa ritigala*, new species, was found in deep burrows in rice-field embankments and adjacent stream margins, and in the banks of the canals and streams.

Etymology. – The species-name is a reference to its type locality, Ritigala. Used as a noun in apposition.

Remarks. – *Oziotelphusa ritigala*, new species, closely resembles *O. minneriyaensis* in carapace morphology but their G1 characters are clearly distinct. The base of the G1 terminal segment of *O. minneriyaensis* is distinctly broader, appearing box-shaped from dorsal view (Figs. 23C, 24C, 25C) (vs. base of G1 terminal segment stout, but comparatively narrower in dorsal view) (Figs. 44D, 46A); and the outer margin of the lateral basal half of the G1 subterminal segment is distinctly swollen in lateral view in *O. minneriyaensis* (Fig. 25D) (vs. only gently raised in *O. ritigala*, new species) (Fig. 46C).

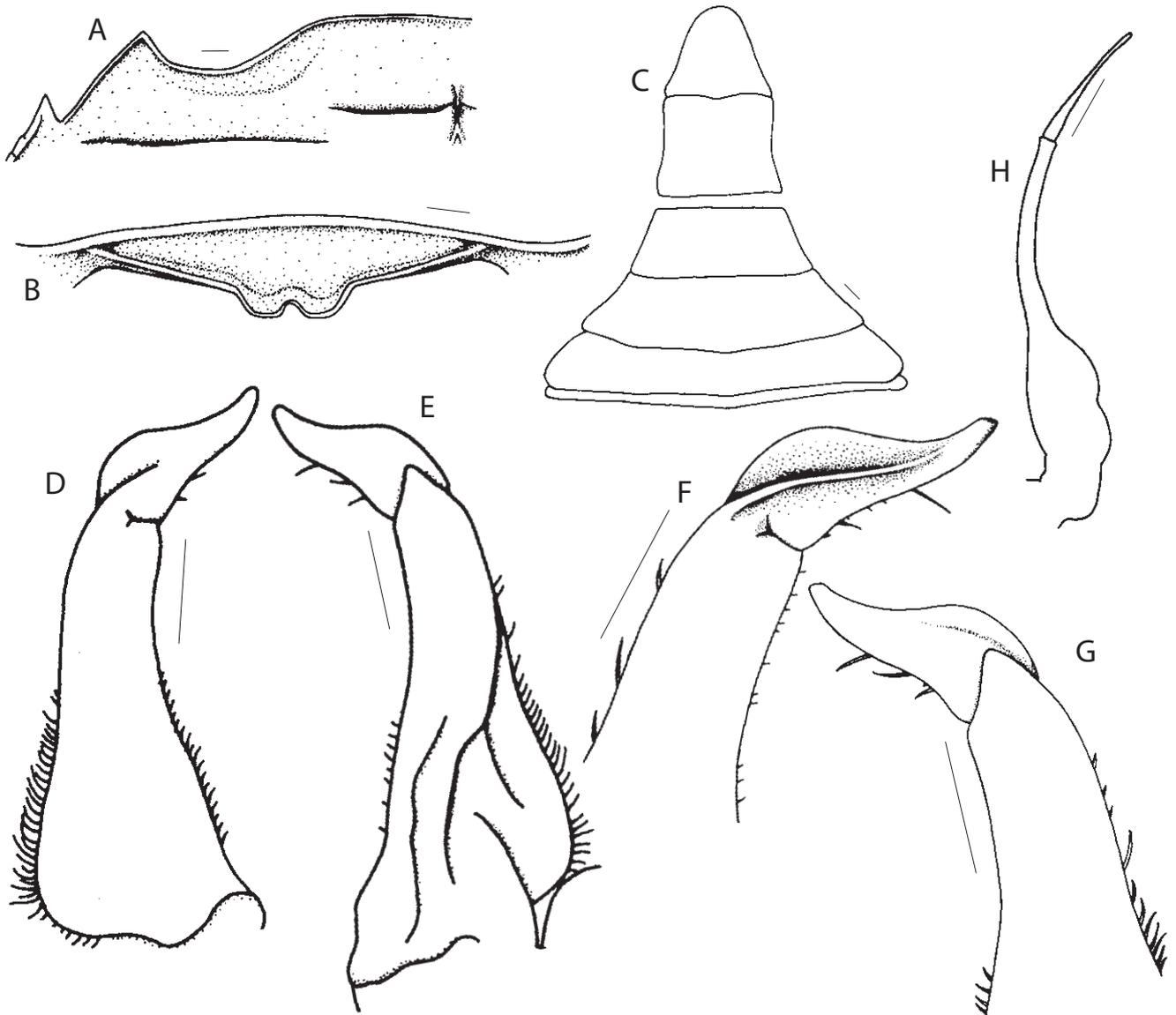


Fig. 44. *Oziotelphusa ritigala*, new species, holotype male (34.5 by 27.0 mm) (ZRC 1997.0824). A, left side of anterior dorsal surface of carapace; B, frontal median triangle; C, abdomen; D, dorsal view of right G1; E, ventral view of right G1; F, dorsal view of terminal segment of right G1; G, ventral view of terminal segment of right G1; H, right G2. Scale bar = 1 mm. (Reproduced with permission, from Ng & Tay, 2001).

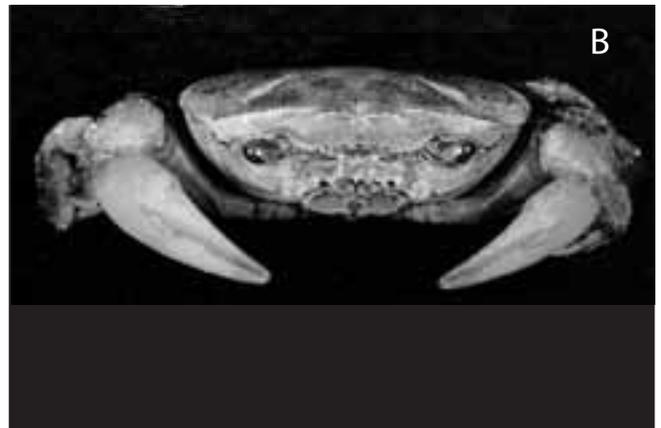


Fig. 45. *Oziotelphusa ritigala*, new species, holotype male (34.5 by 27.0 mm) (ZRC 1997.0824). A, dorsal view; B, frontal view. (Reproduced with permission, from Ng & Tay, 2001).

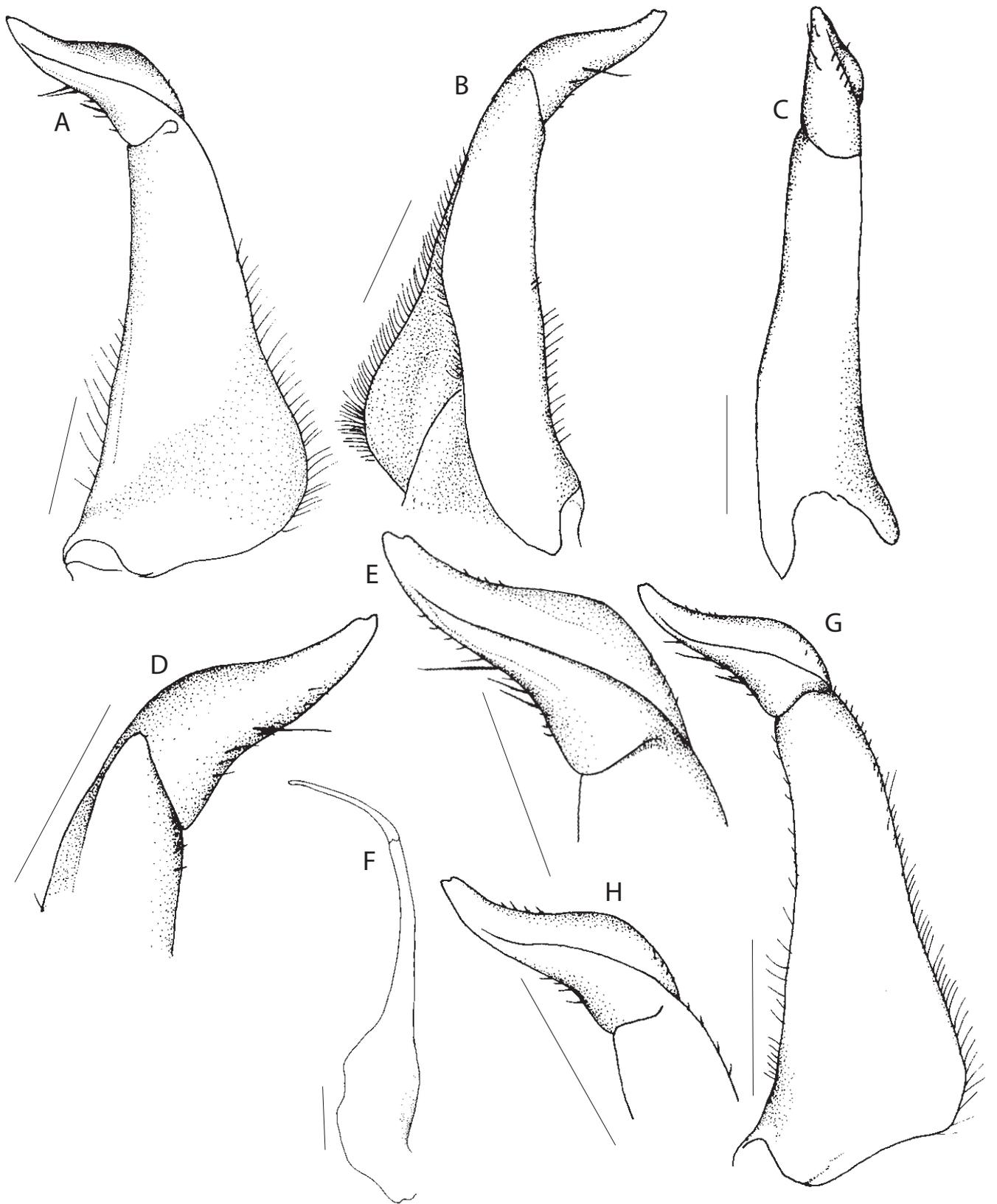


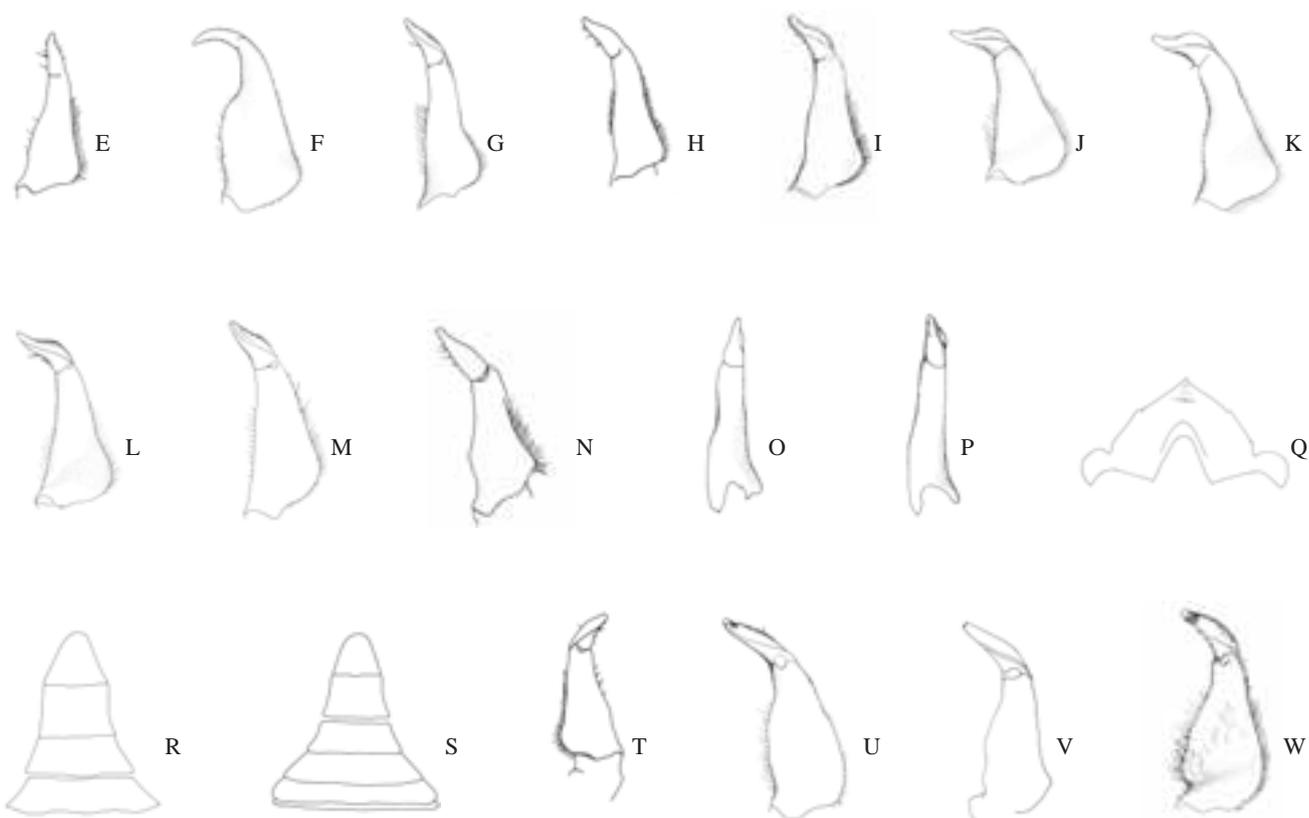
Fig. 46. *Oziotelphusa ritigala*, new species. A–F: paratype male (30.2 by 23.3 mm) (ZRC 1997.0825); G, H: paratype male (25.8 by 20.0 mm) (ZRC 2004.0672). A, G, dorsal view of left G1; B, ventral view of left G1; C, lateral view of left G1; D, ventral view of terminal segment of left G1; E, H, dorsal view of terminal segment of left G1; F, right G2. Scale bar = 1 mm.

Key to the species of *Oziotelphusa*

1. Epistomal median lobe with low, blunt median tooth (Figs. A, B) 2


 - Epistomal median lobe with distinct acute tooth (Figs. C, D) 3

2. Epistomal median tooth separated (Fig. A) *O. kodagoda*
 - Epistomal median tooth bilobed (Fig. B) *O. biloba*
3. G1 straight, only the tip of terminal segment directed upwards (Fig. E) *O. stricta*
 - G1 terminal segment bent or curved outwards (Figs. F–N, T–W) 4



4. G1 slender with distal portion of subterminal segment distinctly slender (Fig. G) *O. populosa*
 - G1 subterminal segment with distal portion relatively broad (Figs. F, H–N, T–W) 5
5. G1 terminal segment strongly curved, hook-like (Fig. F); G2 with short distal segment ca. 0.2–0.3 times length of basal segment *O. wagrakarowensis*
 - G1 terminal segment gently curved or gently sinuous or almost straight, never hook-like (Figs. H, I–N, T–W); G2 with long distal segment ca. 0.4–5.0 times length of basal segment 6
6. G1 terminal segment gently sinuous, S-shaped (Figs. H–L) 7
 - G1 terminal segment almost straight or gently curved, never S-shaped in appearance (Figs. M, N, T–W) 11
7. G1 bent outwards from below the juncture between terminal and subterminal segments (Fig. H) *O. ceylonensis*
 - G1 bent outwards at the juncture between terminal and subterminal segments (Figs. I–N) 8
8. G1 subterminal segment narrow (Figs. I, L) 9
 - G1 subterminal segment stouter (Figs. J, K) 10
9. G1 terminal segment turned outward in lateral view (Fig. O); lateral margins of male abdomen gently concave, segment six trapezoidal; carapace distinctly convex, branchial regions raised *O. gallicola*
 - G1 terminal segment straight in lateral view (Fig. P); lateral margins of male abdomen distinctly concave, segment six squarish; carapace gently convex, branchial regions flat *O. ritigala*
10. G1 subterminal segment distinctly stouter with straight outer margins (Fig. J); G1 terminal segment turned outwards in lateral view; sutures between anterior thoracic sternites 2 and 3, and 3 and 4 moderately visible *O. intuta*
 - G1 subterminal segment moderately stout with gently convex outer margins (Fig. K); sutures between anterior thoracic sternites 2 and 3, and 3 and 4 deeper *O. minneriyaensis*

11. Suture between male anterior thoracic sternites 3 and 4 not visible; G1 distal half gently curved outwards; male abdomen narrow (Figs. M, Q, R) *O. dakuna*
 - Suture between male anterior thoracic sternites 3 and 4 visible; G1 terminal segment distinctly bent outwards (Figs. N, T–W); male abdomen broader (Fig. S) 12
12. G1 terminal segment short, stout, cone-shaped, ca. 0.4 times subterminal segment (Fig. T); carapace moderately convex *O. bouvieri*
 - G1 terminal segment long, comparatively slender, ca. 0.5 times length of subterminal segment (Figs. N, U–W); carapace highly convex 13
13. G1 terminal segment distinctly narrowed distally, bottle-shaped in appearance (Fig. N) *O. hippocastanum*
 - G1 terminal segment gently tapered, but not distinctly narrowed distally, not bottle-shaped in appearance (Figs. U–W) 14
14. G1 terminal segment comparatively more slender, with tip upturned, basal half of outer margin of subterminal segment gently concave (Fig. U); sutures between anterior thoracic sternites 2 and 3, and 3 and 4 weak but visible *O. kerala*
 - G1 terminal segment comparatively broader, with tip straight, base of outer margin of subterminal segment notched (Figs. V, W); sutures between anterior thoracic sternites 2 and 3, and 3 and 4 deep *O. aurantius*

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