

**Three new genera and four new species of aleocharine staphylinids
with unusually long mandibles from Australia
(Coleoptera: Staphylinidae: Aleocharinae: Homalotini)**

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Abstract

This paper describes three distinctive, closely related, new genera and four species of Homalotini (Aleocharinae: Staphylinidae) characterized by extremely long slender, curved mandibles, very long slender and whip-like setae variously placed on the labrum, clypeus, or mentum; and similarities in the mouthparts, aedeagi and spermathecae. These new taxa are *Eumecognathus* new genus, type species *E. tasmaniensis* new species (type locality: SW Tasmania, Lower Gordon River); *Siagotanyx* new genus, type species *S. rufa* new species (type locality: Tasmania, Lake St. Claire National Park) and *Drepanomastax* new genus, type species *D. splendida* new species (type locality: Australian National Territory, Mt. Ainslie). Also described is *D. nitida* new species (type

locality: Tasmania, Liffey Forest Reserve). The systematic placement of the group within the aleocharine tribe Homalotini, and the logic for recognizing three genera among the available specimens are discussed. A key and illustrations of habitus and structural features are given for separation of the genera and species.

Key words: Staphylinidae, Aleocharinae, Homalotini, new genera, new species, *Eumecognathus*, *Siagotanyx*, *Drepanomastax*, Australia

Introduction

Few aleocharine taxa are characterized by unusually long, slender and curved mandibles; such are known, for example, in the Nearctic genus *Gnathusa* (tribe Oxypodini) (Seevers 1978, Newton *et al.* 2001). However, no aleocharines with such mandibles were previously known from Australia. While sorting the aleocharines in the Australian National Insect Collection, I came across a number of specimens, representing several species, of aleocharines with remarkably long, slender, curved mandibles. In addition to the unusual mandibles, these species also exhibited a number of other unusual features and could not be referred to any genus known to me. Later additional specimens of these unusual aleocharines were discovered in the collection of the Field Museum of Natural History in Chicago.

The purpose of this paper is to describe these species and appropriate new genera to contain them, and to discuss their classification.

Depositories

ANIC — Australian National Insect Collection, CSIRO, Canberra, Australia (Tom Weir).

FMNH — Field Museum of Natural History, Chicago, Illinois, U. S. A. (A.F. Newton).

KSEM — Division of Entomology, KU Natural History Museum and Biodiversity Research Center, University of Kansas, Lawrence, Kansas, U. S. A. (J.S. Ashe).

Eumecognathus Ashe, new genus

(Figs. 1, 4–13)

Type species. *Eumecognathus tasmaniensis* Ashe, here designated.

Diagnosis. This genus can be easily recognized by the combination of: 4-4-5 tarsal segmentation; the extremely long mandibles with greatly reduced prostheca, and a semicircular lobate internal base (Fig. 6); the transverse labrum with greatly reduced setation, but one pair of antero-lateral setae extremely long and whip-like (Fig. 4); the distinctive

labium (Fig. 8), with elongate, entire ligula, 2 discal setae, punctures of discal setae very close, and narrow medial pseudopore field without pseudopores; relatively short antenna with antennomeres 4–10 transverse (Fig. 9); and transverse head and pronotum (Fig. 1).

Description. Body generalized, slender, more-or-less parallel-sided, moderately flattened (Fig. 1). Length 2.2–2.4 mm. Head, pronotum and elytra uniformly covered with fine punctures, short, yellowish setae, and reticulate microsculpture, surfaces appearing slightly asperate, abdomen obsolete reticulate, surface glossy. Head transverse, 1.3 times as wide as long (width measured immediately behind eyes), antennal fossae distant from anterior margin by greater than width of fossa; eyes moderate in size, length less than length of temples behind eyes; temples behind eyes broadly rounded to base of head; neck absent; infraorbital carina present, moderately well developed; Antenna (Fig. 9) moderately short; known species with article 4 subquadrate, 5–10 transverse, 11 about as long as 9–10 together.

Labrum (Fig. 4) transverse, separated from anterior margin of mentum by broad membranous area; setation reduced except one pair of antero-lateral setae very long and whip-like, oriented posteriorly in preserved specimens. Epipharynx as in Fig. 5. Mandibles (Fig. 6) with very long, curved and slender apices, right and left similar except right with very slight lobe in position of medial tooth; prostheca greatly reduced with few small teeth basally and ciliate margin apically. Maxilla as in Fig. 7; galea slightly longer than lacinia in repose; apex of galea with membranous lobe, lobe densely covered with rows of short subspinose setae; anterior 1/5 of inner face of galea with row of long setae; lacinia with inner face of long spines and spinose setae; maxillary palpi 4-articled, article 3 slender, broadest near apex, about 1.3 times as long as article 2, article 2 relatively short, subequal in length to width of apex of article 3. Labium as in Fig. 8; ligula entire, rounded at apex, slender, about 2/3 length of labial palpus 1; 2 discal setae present, bases close, separated by about width of setal pore; medial pseudopore field narrow, without pseudopores; lateral pseudopore fields each with setose pore, 2 real pores, and about 6–7 pseudopores. Labial palpi 3-articled, first article almost as long as next 2 together, article 2 about 2/5 length of 1, article 3 about 1.4 times length of 2, with 2 leaf-like sensory appendages apically.

Pronotum transverse, 1.5–1.6 times as wide as long in known species; uniformly covered with short, yellowish microsetae, without conspicuous macrosetae; microsetae directed posteriorly in midline and postero-laterad laterally of midline; microsculpture moderately prominent, reticulate. Hypomera narrowly visible in lateral aspect. Elytra about 1.2 times as long as pronotum; postero-lateral margins sinuate. Meso- and metasternum as in Fig. 9; mesosternum carinate medially in basal half, carina fading on base of mesosternal process; mesocoxal cavities fully margined behind; mesosternal process long, slender, pointed apically, extended beyond middle of mesocoxal cavities; metasternal process short, broadly rounded, not attaining mesosternal process, isthmus long; known species with mesosternal process : isthmus : metasternal process in ratio of 6:2:1.4. Tarsal segmentation 4-4-5.

Abdomen parallel-sided, rounded apically. Known species with terga III–IV with moderate, V with slight and VI with inconspicuous basal transverse depressions. Setation moderate with fine yellowish short microsetae, integument of known species with obsolete microsetae, surface glossy.

Secondary sexual features: none obvious except males with anterior half of sternum VII with broad band of densely arranged micropores, and with sternum VIII very slightly produced as a triangular lobe.

Etymology. The genus name is a combination of the Greek adjective “eumekes” meaning “of good length” and the Greek noun “gnathos” (feminine) meaning “jaw” (Brown 1956). It refers to the long, slender mandibles that characterize this genus. Gender: feminine.

***Eumecognathus tasmaniensis* Ashe, new species**

(Figs. 1, 3–12)

Type material. Holotype: male, with labels as follows: “SW Tasmania, Lower Gordon R., 42.43S 145.45E, 42.43S 145.50E, Howard, Hill” [42°43’S 145°45’E, 42°43’S 145°50’E], “N.E.C. Survey, 2L 550, Feb. 1977, moss”, “HOLOTYPE: *Eumecognathus tasmaniensis* Ashe, design. J.S. Ashe, 2001” (ANIC).

Paratypes: 17; same data as holotype (1 FMNH); same data as holotype, except 42°48.5’S 145°51’E, 42°48.5’S 145°54’E, 5R 400, Mar. 1977 (1 FMNH); same data as holotype except, 42°36’S 145°42’E, 42°35’S 145°43’E, N.E.C. Survey, 11 A 300, Jan. 1976 (1 FMNH); same data as holotype except, 42°43’S 145°45’E, 42°43’S 145°50’E, N.E.C. Survey, 2L 5656, Jan. 1977 (1 FMNH); same as previous except, 42°38’S 145°44’E, 42°37.5’S 145°46’E, N.E.C. Survey, 13L 1400 (1 FMNH); same data as holotype except, 42°42’S 145°53’E, 42°41’S 145°53’E, N.E.C. Survey, 4. 2200, Feb. 1977 (1 FMNH); same data as holotype except, 42°56’S 145°50’E, 42°54’S 145°54’E, N.E.C. Survey, 12R 2800, Feb. 1977 (3 FMNH); same data as holotype except, 42°43’S 145°45’E, 42°43’S 145°50’E, N.E.C. Survey, 2R 1143, Feb. 1978 (4 FMNH); same data as holotype except, 42°56’S 145°50’E, 42°54’S 145°54’E, N.E.C. Survey, 2L 700, Feb. 1977 (1 FMNH); Tasmania, 89 km SE Smithton, 28-II-1977, FMHD#77-182, *Nothophagus cunninghami* litter at base of *Nothophagus cunninghami* tree, J. Kethley (1, FMNH); Tasmania, Cradle Mtn. Nat. Pk., Waldheim For., 3500 ft., 3-II-1977, FMHD#77-109, litter of unburned *Nothophagus gunnie*, J. Kethley (1 FMNH); Tasmania, E of Tooms Lake nr. Angler’s Ck., 600m, 14-IV-1977, FMHD#77-204, wet moss, sclerophyll forest, L. Hill (1 FMNH).

Description. Length 2.2–2.4 mm. Body (Fig. 1) light brown throughout, abdominal tergum VI clouded with darker reddish brown; legs and antennae light yellowish brown. Head at base slightly narrower than pronotum at apex; base of pronotum subequal in width to base of elytra. Head, pronotum and elytra uniformly covered with fine punctures, short,

yellowish setae, and reticulate microsculpture, surfaces appearing slightly asperate, abdomen obsoletely reticulate, surface glossy. Antenna (Fig. 9) short, reaching to base of pronotum when extended posteriorly, article 4 subquadrate, articles 5–10 transverse, each slightly wider than previous article; article 5 about 1.4 times as wide as long, article 6 about 1.8 times as wide as long, article 10 about 2.1 times as wide as long, article 11 subequal in length to articles 9 and 10 together. Pronotum distinctly transverse, about 1.6 times as wide as long. Abdominal terga III–IV with moderate transverse basal depressions, V with shallow and VI with very shallow transverse basal depressions; depressions subglabrous with a few scattered large punctures anteriorly and scattered microsetae posteriorly. Hind tarsus with article 1 about 0.8 times length of articles 2 and 3 together; articles 2 and 3 subequal in length; article 4 very slightly shorter than article 3; article 5 subequal in length to articles 1 and 2 together.

Secondary sexual characteristics: none apparent, except males with anterior half of sternum VII with broad band of densely arranged micropores, and with sternum VIII very slightly produced as a triangular lobe.

Spermatheca: As in Fig. 11.

Aedeagus: Parameres as in Fig. 12. Medial lobe as in Fig. 13.

Distribution. Known only from Tasmania in Australia.

Natural History and Habits. Most specimens are collected from moss or leaf litter.

Discussion. This is currently the only species known in this genus.

Siagotanyx Ashe, new genus

(Figs. 2, 14–24)

Type Species. *Siagotanyx rufa* Ashe, here designated.

Diagnosis. This genus can be easily recognized by the combination of: 4-4-5 tarsal segmentation; the extremely long mandibles with reduced prosthema, without modification to the internal base or molar area (Fig. 16); the transverse labrum with anterior margin emarginate medially, greatly reduced setation, but with one pair of antero-lateral setae extremely long and whip-like (Fig. 14); the distinctive labium (Fig. 18), with ligula deeply divided to near base into 2 narrow, widely separated, pointed lobes, 2 discal setae, bases of discal setae widely separated, and wide but poorly defined medial pseudopore field with numerous pseudopores; and relatively short antenna with antennomeres 4 subquadrate and 5–10 transverse (Fig. 20).

Description. Body generalized, slender, more-or-less parallel-sided, moderately flattened. Length 2.3–2.5 mm (known species). Head and prothorax very finely and uniformly covered with fine punctures and short, yellowish microsetae; elytra with moderate-sized punctures and uniformly distributed yellowish microsetae; abdominal terga and sterna with longer and more prominent microsetae, uniformly distributed. Body without

obvious microsculpture, glossy. Head subquadrate; eyes large, length in dorsal aspect about 0.7 times length of temples behind eye; temples broadly rounded behind eyes to base of head; neck absent; infraorbital carina present, complete, moderately well developed; antennal fossae very near lateral margins of clypeus, separated by lateral margins by less than 1/5 width of fossa. Antenna (Fig. 20) moderately short; known species with article 4 subquadrate, 5–10 transverse, 11 slightly shorter than 9 and 10 together.

Labrum (Fig. 14) transverse, separated from anterior margin of mentum by broad membranous area; anterior margin emarginate medially; setation reduced except one pair of antero-lateral setae very long and whip-like, oriented posteriorly in preserved specimens. Epipharynx as in Fig. 15. Mandibles (Fig. 16) with very long, curved and slender apices; right and left similar except right with very slight lobe in position of medial tooth; prosthema reduced with a few small teeth basally and a ciliate margin apically; internal base or molar area not modified into lobe. Maxilla (Fig. 17) similar to *Eumecognathus* except lacinia broader and spines and spinose setae of the inner face of lacinia more densely arranged; maxillary palpi 4-articled, similar to that of *Eumecognathus*. Labium as in Fig. 18; ligula deeply divided to near base into 2 narrow, widely separated, pointed lobes, about 1/2 length of labial palpus 1; 2 discal setae, bases of discal setae widely separated; medial pseudopore field wide but poorly defined, without numerous pseudopores; lateral pseudopore fields each with setose pore, real pores, and about 13–16 pseudopores. Labial palpi 3-articled, first article subequal in length to next 2 together, article 2 and article 1 subequal in length, article 3 with 2 leaf-like sensory appendages apically. Mentum as in Fig. 18.

Pronotum transverse, 1.5 times as wide as long in known species; uniformly covered with short, yellowish microsetae, microsetae posteriorly directed in midline and posterolaterally to laterally directed on each side of midline, without conspicuous macrosetae; integument with very slight, weak microsculpture, surface glossy. Hypomera narrowly visible in lateral aspect. Elytra about 1.2 times longer than prothorax; postero-lateral margins sinuate. Meso- and metasternum as in Fig. 21; mesosternum faintly carinate medially at base; mesocoxal cavities fully margined behind; mesosternal process long, slender, pointed apically, extended beyond middle of mesocoxal cavities; metasternal process short, acutely rounded apically, not attaining mesosternal process, isthmus moderately long; known species with mesosternal process : isthmus : metasternal process in ratio of 1.7:0.7:0.9. Tarsal segmentation 4-4-5.

Abdomen parallel-sided, rounded apically. Known species with terga III–IV with moderate, V with slight and VI with inconspicuous transverse basal impressions; uniformly covered with moderately long microsetae. Surface without microsculpture, glossy.

Secondary sexual features: None obvious except males with anterior half of sternum VII with densely arranged micropores, and males with sternum VIII very slightly produced as a triangular lobe.

Etymology. The genus name is derived from the Greek noun “Siagon” (feminine)

meaning “jaw” and the Greek verb “tanyo” meaning “stretch out” (Brown 1956). It refers to the long, slender mandibles that characterize this genus. Gender: feminine.

***Siagotanyx rufa* Ashe, new species**

(Figs 2, 14–24)

Type material. Holotype: male, with labels as follows: “AUSTL: Tas., Lk. St. Claire Nat. Pk. Nr. Echo Point, 11-II-1977”, “FMHD#77-130, *Eucalyptus delegatensis* litter at base of tree, J. Kethley”, “HOLOTYPE: *Siagotanyx rufa* Ashe, design. J.S. Ashe, 2005” (ANIC).

Paratypes: 2; same data as holotype (1 female FMNH, 1 female KSEM).

Description. Length 2.3–2.5 mm. Body light reddish brown, meso- and metathorax and abdomen darker brown, apical edges of abdominal segments slightly lighter and apical half of segment VII and segments VIII–X reddish brown. Head slightly broader than apex of pronotum; base of pronotum distinctly narrower than base of elytra. Antenna short (Fig. 20), reaching slightly beyond base of pronotum when extended posteriorly, article 4 subquadrate, articles 5–10 transverse, each slightly wider than previous article; article 5 about 1.8 times as wide as long, article 6 about 1.9 times as wide as long, article 10 about 2.7 times as wide as long, article 11 slightly shorter than articles 9 and 10 together. Head and prothorax very finely and uniformly covered with fine punctures and short, yellowish microsetae; surfaces with very slight, weak microsculpture, surfaces glossy. Pronotum transverse, about 1.5 times as wide as long. Elytra with punctures larger than those on pronotum, moderate sized, average distance between punctures subequal to width of punctures. Abdominal terga and sterna with longer and more prominent microsetae, uniformly distributed. Abdominal terga III–VI with moderate transverse depression, V with shallow and VI with inconspicuous transverse depressions; depressions with numerous, uniformly distributed setigerous pores in transverse depressions fewer and more dispersed on tergum VI; tergum III with microsetae near apico-lateral margin curved medially. Hind tarsus with article 1 about 1.1 times length of articles 2 and 3 together; article 2 about 1.4 times length of article 3; articles 3 and 4 subequal in length; article 5 about 0.8 times length of article 1.

Secondary sexual characteristics: None apparent except males with anterior half of sternum VII with densely arranged micropores, and with sternum VIII very slightly produced as a broad triangular lobe.

Spermatheca: As in Fig. 22.

Aedeagus: Parameres as in Fig. 23. Medial lobe as in Fig. 24.

Distribution. Known only from Lake St. Claire National Park in Tasmania, Australia.

Natural history and habits. All specimens were collected from *Eucalyptus delegatensis* litter at base of tree.

Discussion. This is currently the only species known in this genus.

***Drepanomastax* Ashe, new genus**

(Figs. 3, 25–37)

Type Species. *Drepanomastax splendida* Ashe, here designated.

Diagnosis. This genus can be easily recognized by the combination of: 4-4-5 tarsal segmentation; the extremely long mandibles with greatly reduced prosthaca, and internal edge of molar area slightly to greatly enlarged as triangular blade-like structures (Fig. 27); the transverse, rounded labrum with greatly reduced setation, without extremely long and whip-like setae (Fig. 25); presence of pair of very elongate whip-like setae on the apical margin of the clypeus; the distinctive labium (Fig. 29), with elongate, bifid ligula, incised at apex to near middle into 2 elongate apically rounded or pointed lobes; 1 discal setae, and narrow medial pseudopore field with only a few pseudopores near base; elongate antenna (Fig. 31) with antennomeres 4–8 or 4–10 very elongate to elongate; head subquadrate to slightly transverse, broadest across eyes, sides broadly convergent from eyes to base when viewed in dorsal aspect; and, the very glossy integuments with inconspicuous punctation and widely dispersed setae on the head and pronotum.

Description. Body (Fig. 3) generalized, slender, more-or-less parallel-sided, moderately flattened. Length 3.2–3.6 mm (known species). Vestiture fine and inconspicuous in most, consisting of widely dispersed, very fine, yellowish microsetae, punctures on head and pronotum minute to extremely minute and inconspicuous, larger on elytra and in transverse basal impressions of abdominal terga; without conspicuous microsculpture, body very glossy. Head slightly transverse, 1.1 times as wide as long (width measurement taken immediately behind eyes), head broadest across eyes, sides convergent from eyes to base when viewed in dorsal aspect; eyes moderate sized, length in dorsal aspect about 0.6 times length of temples behind eye; temples broadly convergent behind eyes to base of head in dorsal aspect; neck absent; infraorbital carina present, complete, moderately well developed; antennal fossae very near antero-lateral margins of clypeus, separated by lateral margins by less than 1/5 width of fossa. Clypeus very broad, with elongate whip-like seta on each side of midline. Antenna (Fig. 31) relatively long; known species with article 4 very elongate, 5–8 or 5–9 very elongate to elongate, 10 elongate to slightly transverse, 11 about as long as 9–10 together.

Labrum (Fig. 25) transverse, broadly curved apically, separated from anterior margin of mentum by broad membranous area; setation reduced, without pair of long whip-like setae. Anterior margin of clypeus with very elongate, whip-like seta on each side of midline. Epipharynx as in Fig. 26. Mandibles (Fig. 27) with very long, curved and slender apices; right and left similar except right with very slight lobe in position of medial tooth; prosthaca greatly reduced to a small papillate structure; molar region of internal base of mandible slightly to greatly enlarged into triangularly pointed blades. Maxilla (Fig. 28) similar to *Eumecognathus* except galea subequal in length to lacinia in repose, and membranous apical lobe of galea more narrow, also inner face of lacinia with spines and spi-

nose setae more densely arranged; maxillary palpi 4-articled, similar to that of *Eumecognathus* except article 3 broader and more robust, broadest before apex; article 4 very short, length less than width of article 3 at apex. Labium as in Fig. 29; ligula bifid, incised at apex to near middle into 2 elongate apically rounded lobes, slender, about 2/3 length of labial palpus 1; 1 discal seta present medially; medial pseudopore field narrow, with a few pseudopores near base; lateral pseudopore fields each with setose pore, 2 real pores, and about 18–20 pseudopores. Labial palpi 3-articled, first article long, subequal in length to next 2 together, article 2 and 3 subequal in length, without 2 leaf-like sensory appendages apically. Mentum as in Fig. 30.

Pronotum transverse to subquadrate, up to 1.4 times as wide as long in known species; microsetation very sparse, short; widely dispersed, without conspicuous macrosetae; microsetae directed posteriorly in midline, posteriorly to postero-laterally in anterior half and laterally in posterior half on each side of midline; integument of known species without microsculpture, surface glossy. Hypomera broadly visible in lateral aspect. Elytra 1.2 times length of prothorax; postero-lateral margins sinuate. Meso- and metasternum as in Fig. 32; mesosternum carinate medially at base, carina fading before reaching mesosternal process; mesocoxal cavities fully margined behind; mesosternal process long, slender, pointed apically, extended beyond middle of mesocoxal cavities; metasternal process moderately long, broadly rounded, not attaining mesosternal process, isthmus short; known species with mesosternal process : isthmus : metasternal process in ratio of 4:1:2. Tarsal segmentation 4-4-5.

Abdomen parallel-sided, rounded apically. Known species with abdominal terga III–IV with deep, V with moderate and VI with shallow basal transverse impressions; impressions with large, irregular punctures, without microsetae. Microsetae sparsely distributed. Integument without microsculpture, surface glossy.

Secondary sexual features: None obvious except males with anterior half of sternum VII with densely arranged micropores.

Etymology. The genus name is a combination of the Greek noun “drepane” (feminine) meaning “sickle” or “scimitar” and the Greek noun “mastax” (feminine) meaning “jaws” or “mouth” (Brown 1956). It refers to the long sickle-shaped mandibles that characterize this genus. Gender: feminine.

***Drepanomastax splendida* Ashe, new species**

(Figs. 3, 25–34)

Type material. Holotype: male, with labels as follows: “ACT, Mt. Ainslie, W. Face, 760 m, 27 Nov 1969, C. G. Brooks, Dry Sclerophyll”, “HOLOTYPE: *Drepanomastax splendida* Ashe, design. J.S. Ashe, 2001” (ANIC).

Paratypes: 1, same data as holotype except, 800 m, 25-XI-1969 (ANIC) (dissected, on microscope slide).

Description. Length 3.2–3.4 mm. Body (Fig. 3) reddish brown, abdomen darker brown, apical edges of abdominal sterna slightly lighter and apical half of segment VII and segments VII–X reddish brown; legs and antennae reddish brown. Head at base narrower than apex of elytra, but head across eyes subequal to width of apex of elytra; pronotum at base distinctly narrower than elytra at base. Antenna (Fig. 31) long, all articles elongate, article 4 about 2.3 times as long as greatest width, article 5 about 1.7 times as long as greatest width, article 10 about 1.1 times as long as greatest width, article 11 subequal in length to articles 9 and 10 combined. Head and prothorax with very fine and widely dispersed, short, yellowish microsetae, punctures extremely minute, not visible with dissecting optics at 50 X magnification; surfaces without microsculpture, very glossy. Pronotum transverse, 1.4 times as wide as long. Elytra with moderate sized punctures, average distance between punctures subequal to width of punctures; surface without microsculpture, very glossy. Abdominal terga and sterna with widely dispersed microsetae in apical half, basally without microsetae on segments II–V; surface without microsculpture, very glossy. Abdominal terga III–IV with deep transverse depression, V with moderate and VI with shallow transverse depressions; depressions with large, irregular punctures, without microsetae. Hind tarsus with article 1 about 1.3 times length of articles 2 and 3 together; articles 2 and 3 subequal in length; article 4 very slightly shorter than article 3; article 5 about 0.8 times length of article 1.

Secondary sexual characteristics: Males with basal half of abdominal tergum VII with numerous, densely arranged micropores. Females not known.

Spermatheca: Not known.

Aedeagus: Paramere as in Fig. 33; median lobe as in Fig. 34.

Distribution. Only known from the Mt. Ainslie region of the Australian Capitol Territory.

Natural history and habits. Not known.

Drepanomastax nitida Ashe, new species

(Figs. 35–37)

Type material. Holotype: male, with labels as follows: “AUSTL.: TAS.: Liffey Forest Res., near picnic area, 560 m, 41°42’S 146°46’E, 31.I.1993”, “pyr. fogging large old *Euc.* logs, A. Newton Jr., M. Thayer, 918, FIELD MUS. NAT. HIST.”, “*Euc. obliqua* forest w/ rainforest understory”, “HOLOTYPE: *Drepanomastax nitida* Ashe, design. J.S. Ashe, 2005” (ANIC).

Paratypes: 10; same data as holotype (3 FMNH, 1 KSEM); TAS.: Cradle Mt.-L. St. Clair n. p., W side L. St. Claire, ca. 3 km for Cynthia Bay, 780 m, 42°06’S 146°10’E, 1-I-1993, *Nothophagus cunninghami* rainforest with *Antherosperma*, few tree ferns, FMHD # 93-19, berl. leaf & log litter, A. Newton, Jr., M. Thayer, 905 (4 FMNH, 2 KSEM)

Description. Similar to *D. nitida* with the following differences. Length 3.2–3.6 mm.

Body reddish brown throughout, abdomen similar in color to anterior part of body, terga VI-VII clouded with darker black in some. Head at base narrower than apex of elytra, but head across eyes slightly wider than width of apex of elytra; pronotum at base distinctly narrower than elytra at base. Antenna long, articles 1–8 very elongate, article 9 subquadrate and article 10 very slightly transverse, article 4 about 2.5 times as long as greatest width, article 5 about 2.1 times as long as greatest width, article 10 about 0.9 times as long as greatest width, article 11 subequal in length to articles 9 and 10 combined. Head and prothorax with fine and widely dispersed, short, yellowish microsetae, punctures minute, barely visible with dissecting optics at 50 X magnification; surfaces without microsculpture, very glossy. Pronotum subquadrate. Elytra with moderate sized punctures, average distance between punctures subequal to width of punctures; surface without microsculpture, very glossy. Abdominal terga and sterna with widely dispersed microsetae distributed from transverse depression to apex; surface without microsculpture, very glossy. Abdominal terga III–IV with deep transverse depressions, V with moderate and VI with shallow transverse depressions; depressions with large, irregular, shallow punctures.

Secondary sexual characteristics: Males with basal half of abdominal tergum VII with numerous, densely arranged micropores.

Spermatheca: As in Fig. 35.

Aedeagus: Paramere as in Fig. 36; median lobe as in Fig. 37.

Distribution. Only known from southern Tasmania.

Natural History and Habits. Known from “pyrethrum fogging of *Eucalyptus* logs” and leaf litter in a *Nothophagus cunninghami* rainforest with *Antherosperma*.

Key for Identification of the Described Species of *Drepanomastax*

1. Pronotum transverse, about 1.4 times as wide as long (Fig. 3). Antennal article 10 slightly elongate, about 1.1 times longer than wide (Fig. 31). Median lobe of aedeagus as in Fig. 34. Known from the Australian Capitol Territory *Drepanomastax splendida*
- Pronotum subquadrate. Antennal article 10 slightly transverse, about 0.9 times as long as greatest width. Aedeagus with median lobe as in Fig. 36. Known from Tasmania .
 *Drepanomastax nitida*

Discussion

The four species described here are clearly closely related. They share similar features of the long, slender, curved mandibles; very similar galea and lacinia of maxilla, similar labra, with reduced macrosetae; tendency of various setae of the labrum, clypeus or mentum to become very elongate and whip-like (though the individual setae that are so modi-

fied vary among the genera and species); similar labial palpi; similar meso- and metasternal processes; the 4-4-5 tarsal segmentation, with similarly constructed tarsi; the presence of a broad band of densely arranged pores in the basal half of sternum VII of males; and similar spermathecae with a very elongate and complexly coiled neck. Because of these similarities, I debated long about how many genera they should be assigned to. Combining them all into a single genus, requires combining taxa with very different features of the labia and mandibles, features that are usually fairly uniform within a genus. *Eumecognathus* has an entire ligula (Fig. 8), 2 very close medial setae, a narrow medial pseudopore field without pseudopores, and mandibles with a rounded lobe on the internal base (Fig. 6). Both *Siagotanyx* and *Drepanomastax* have a ligula divided into two pointed lobes (Figs. 18, 29), but other features vary among them: *Siagotanyx* has the ligula deeply divided to base into well-separated lobes (Fig. 18), 2 distantly separated discal setae, a broad medial pseudopore field with numerous pseudopores, and mandibles that are shorter and lack any modification to the internal base (Fig. 16); *Drepanomastax* has the ligula divided only about half way to the base into 2 apically rounded lobes (Fig. 29), only a single discal seta, narrow medial pseudopore field with few pseudopores, and extremely elongate mandibles with moderate sized to very large triangular blades on the internal base and very greatly reduced prosthecae (Fig. 27). In addition, *Eumecognathus* and *Siagotanyx* have a pair of anterolateral setae of the labrum enlarged and whip-like (Figs. 4, 14) while this seta is not elongated in *Drepanomastax* (Fig. 25). In contrast, *Drepanomastax* has a seta on each side of the midline on the anterior margin of the clypeus and one on the mentum elongated and whip-like (Fig. 30), features not found in *Siagotanyx* or *Eumecognathus*.

Treating these as a two genera, based on ligula structure helps little. Under this division, *Eumecognathus*, with entire ligula, would be treated as one genus, and *Siagotanyx* and *Drepanomastax*, with divided ligulae, would be combined into a second genus. However, *Siagotanyx* and *Drepanomastax* differ significantly in details of the structure of the ligula as well as other features of the labium and mandibles (see above), and *Siagotanyx* and *Eumecognathus* share some features that *Siagotanyx* does not share with *Drepanomastax* (see above).

I finally decided that the most justifiable approach was to treat these as representatives of 3 closely related genera. By carefully explaining the information on which my choice is made, I have tried to provide the basis for evaluating the generic status of these species as additional species are discovered.

By virtue of the 4-4-5 tarsal segmentation, these taxa can tentatively be assigned to the tribe Homalotini (previously cited as the Bolitocharini of authors). They also share with some other homalotines the internal tube-like flagellum of the internal sac of the median lobe. However, they are very unlike other known homalotines in the structure of the mandibles (very elongate, slender curved apices, greatly reduced prostheca, lack of spinose denticles in ventral molar region), and the presence of elongate, slender whip-like setae on

the labrum, clypeus or mentum. They do not fit into any described homalotine subtribe. I suspect that a new subtribe will be needed to accommodate these genera, but I am reluctant to propose such a subtribe until a phylogenetic analysis has elucidated probable monophyletic groups within the Homalotini.

Key for identification of the known Australian genera of Homalotini with unusually long slender mandibles

The members of this group are easily recognized by the combination of 4-4-5 tarsal segmentation, and the very long slender mandibles that cross in the front of the head and whose apices extend virtually to, or beyond, lateral margins of the head. Unfortunately, the features which reliably distinguish the genera are only easily seen by examination of dissected specimens with compound optics.

- 1. Ligula elongate and entire at apex (Fig. 8) *Eumecognathus*
- Ligula divided into 2 pointed lobes (Figs. 18, 29) 2
- 2. Ligula divided to near base into 2 widely separated pointed lobes (Fig. 18); prementum with 2 discal setae, bases of discal setae widely separated; medial pseudopore field of prementum wide with numerous pseudopores; pair of antero-lateral setae of the labrum greatly elongated and whip-like (Fig. 14); clypeal setae not elongated and whip-like; base on mandibles not modified (Fig. 16) *Siagotanyx*
- Ligula divided to near midpoint into 2 narrowly separated pointed lobes (Fig. 29); prementum with 1 discal seta; medial pseudopore field of prementum narrow with few pseudopores (Fig. 29); antero-lateral setae of the labrum not greatly elongated or whip-like (Fig. 25); clypeal seta on each side of midline greatly elongated and whip-like; base of mandibles slightly to greatly modified into triangular blade-like projections (Fig. 27) *Drepanomastax*

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FIGURE 1. *Eumecognathus tasmaniensis* Ashe, habitus dorsal, length, 2.3 mm.



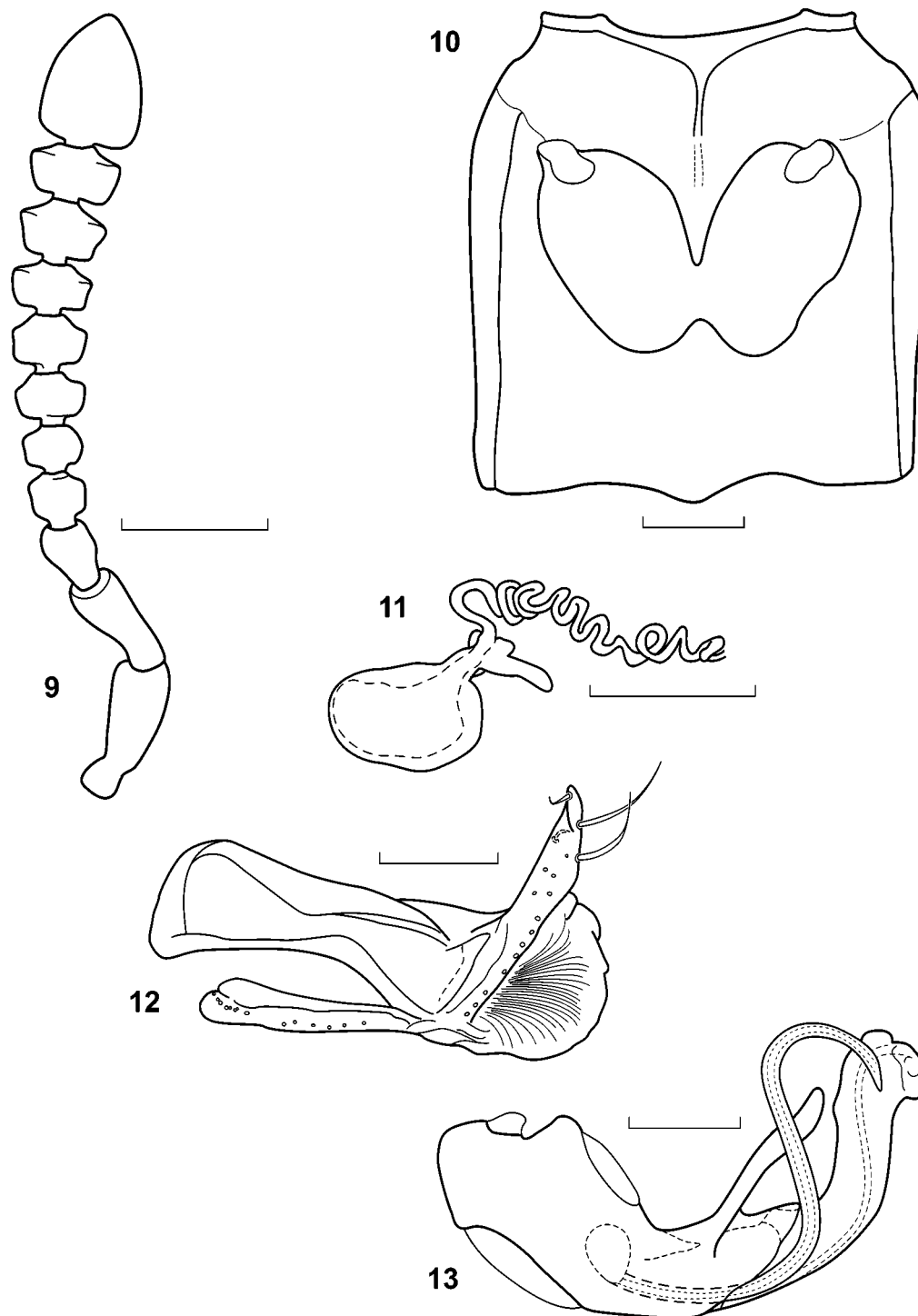
FIGURE 2. *Siagotanyx rufa* Ashe, habitus dorsal, length, 2.4 mm.



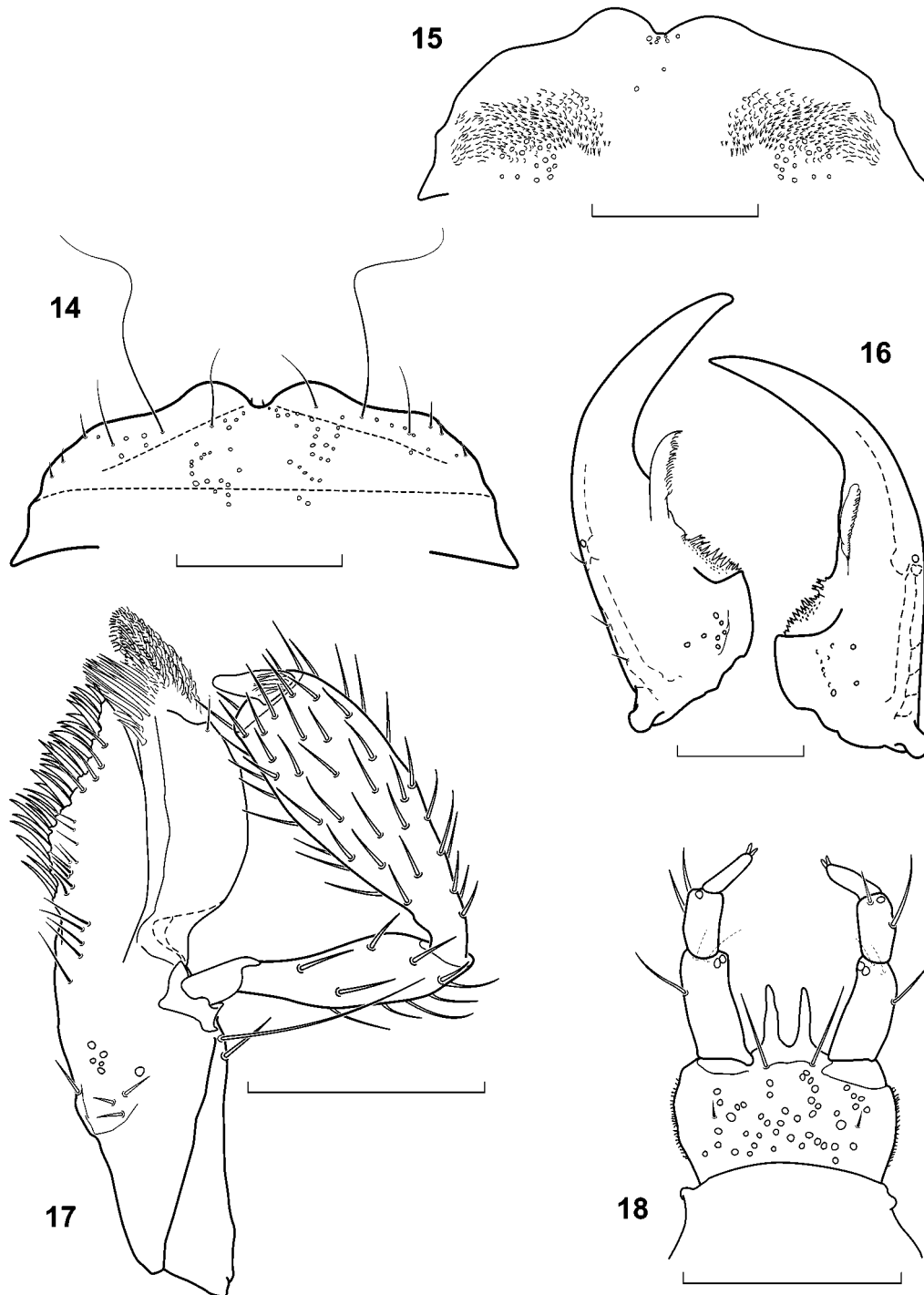
FIGURE 3. *Drepanomastax splendida* Ashe, habitus dorsal, length, 3.2 mm.



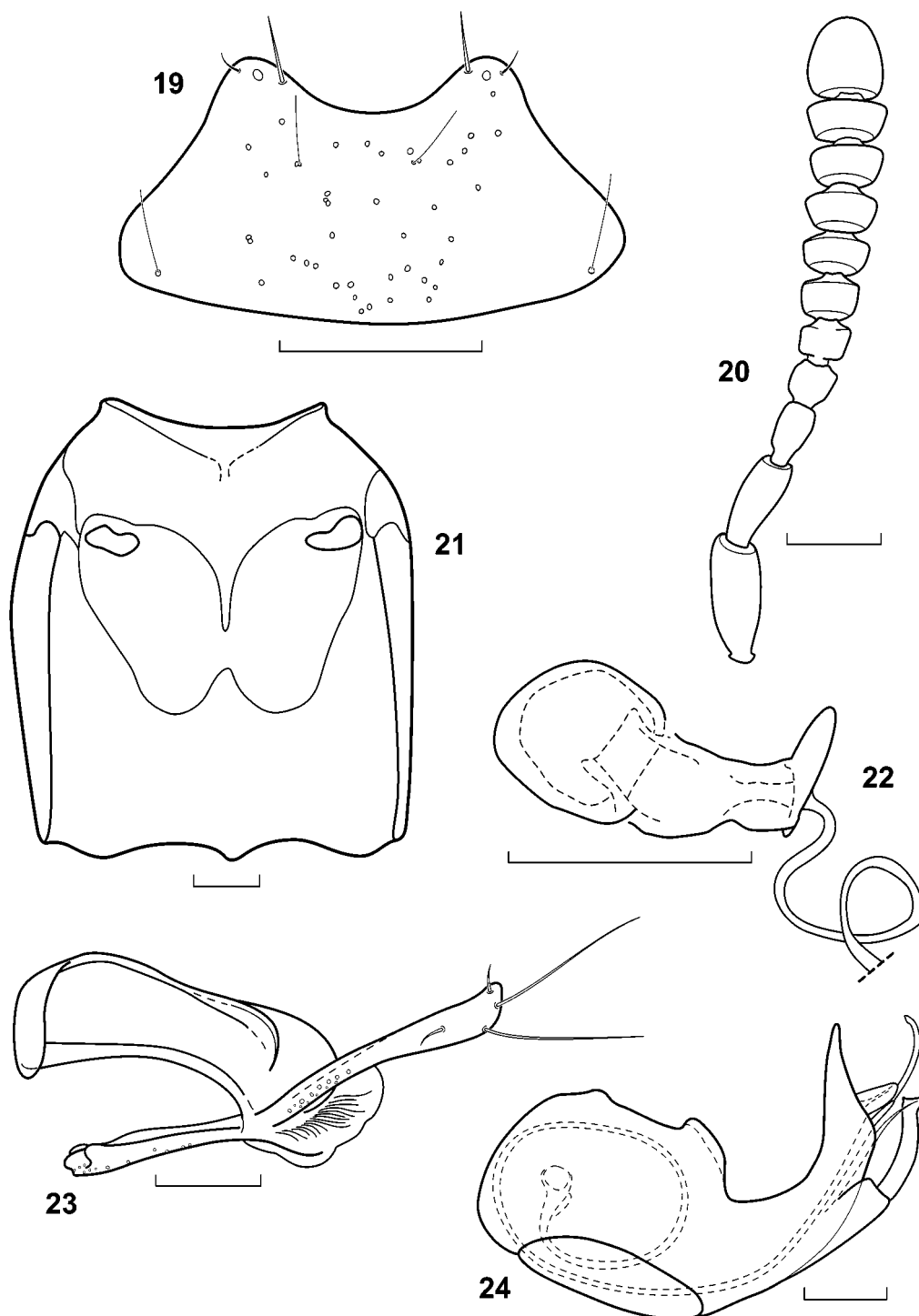
FIGURES 4-8. *Eumecognathus tasmaniensis* Ashe. 4, labrum, dorsal aspect. 5, epipharynx. 6, right and left mandibles respectively, ventral aspect. 7, left maxilla, ventral aspect. 8, labium, ventral aspect. Scale bar = 0.1 mm.



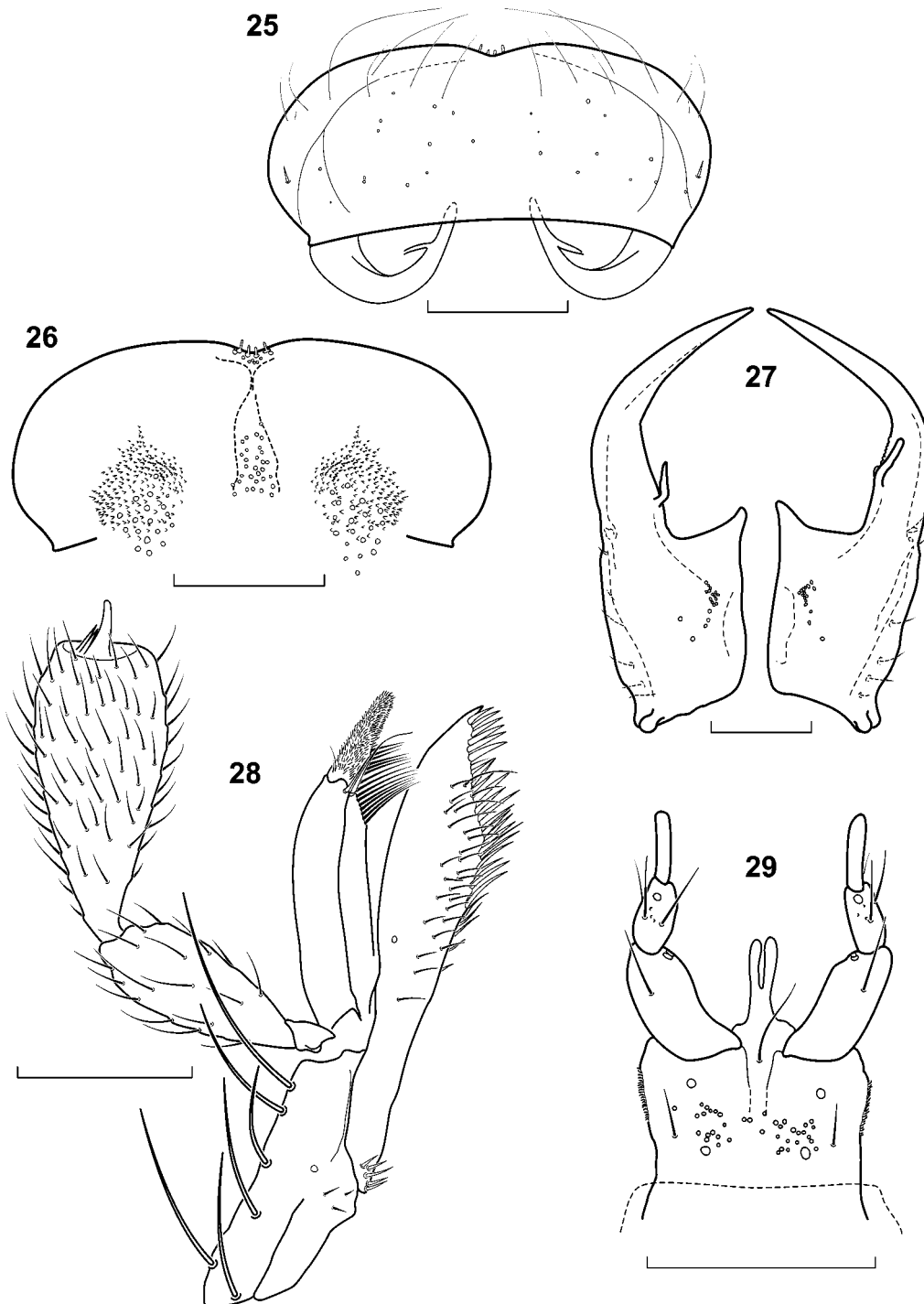
FIGURES 9–13. *Eumecognathus tasmaniensis* Ashe. 9, antenna. 10, meso- and metasternum. 11, spermatheca. 12, aedeagus, paramere. 13, aedeagus, median lobe. Scale bar = 0.1 mm.



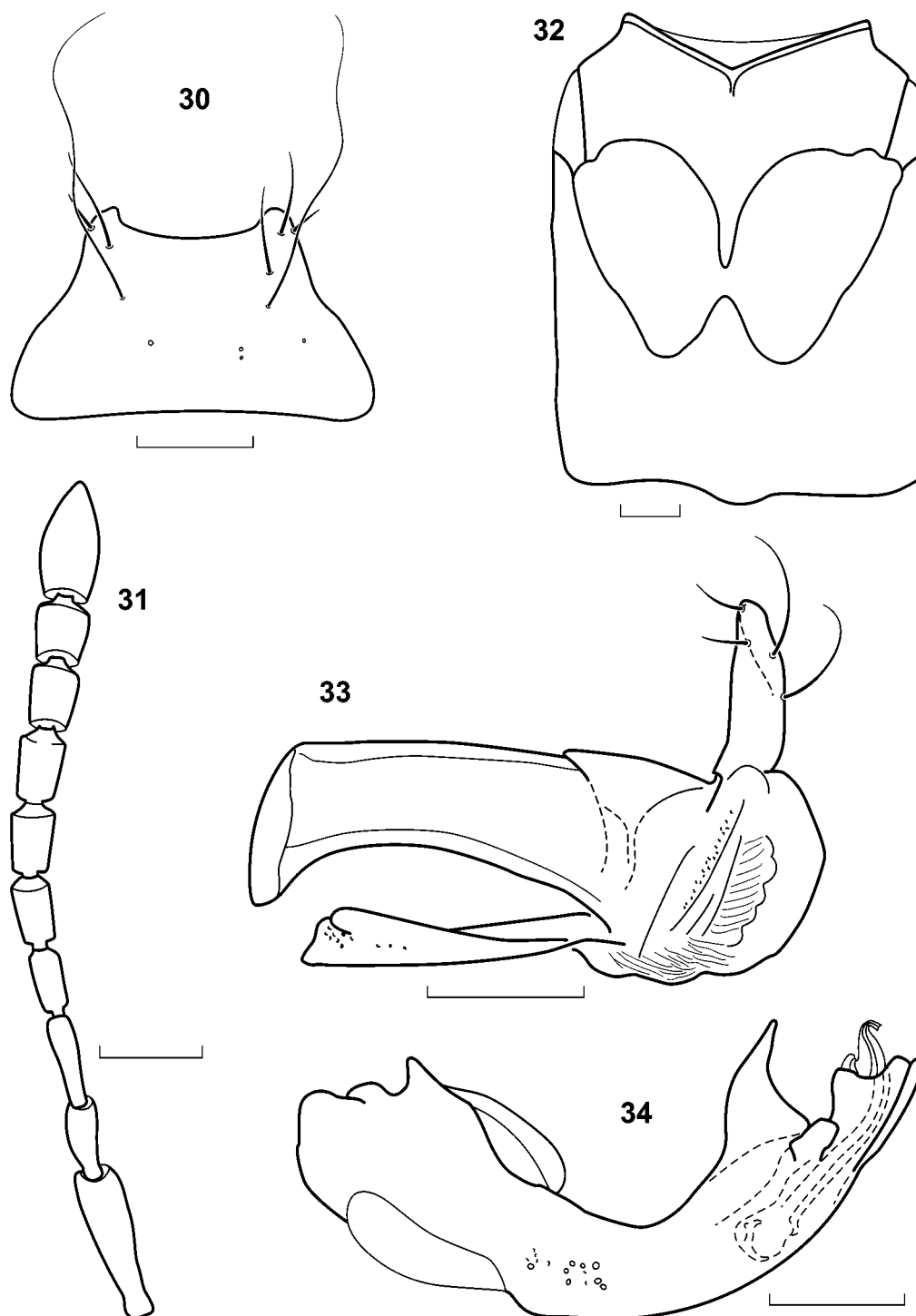
FIGURES 14–18. *Siagotanyx rufa* Ashe. 14, labrum, dorsal aspect. 15, epipharynx. 16, right and left mandibles respectively, ventral aspect. 17, right maxilla, ventral aspect. 18, labium, ventral aspect. Scale bar = 0.1 mm.



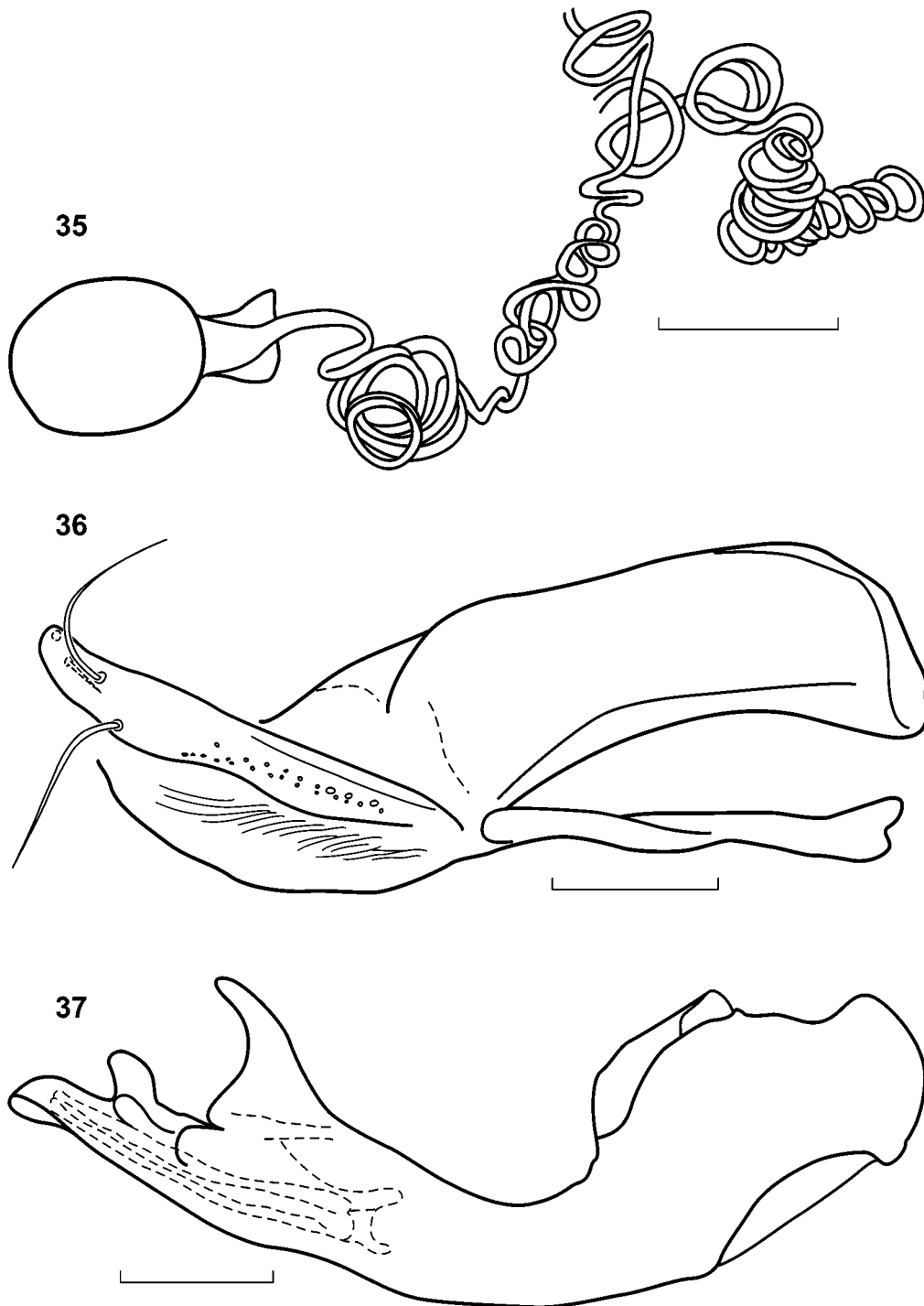
FIGURES 19–24. *Siagotanyx rufa* Ashe. 19, mentum. 20, antenna. 21, meso- and metasternum. 22, spermatheca. 23, aedeagus, paramere. 24, aedeagus, median lobe. Scale bar = 0.1 mm.



FIGURES 25–29. *Drepanomastax splendida* Ashe. 25, labrum, dorsal aspect. 26, epipharynx. 27, right and left mandibles respectively, ventral aspect. 28, left maxilla, ventral aspect. 29, labium, ventral aspect. Scale bar = 0.1 mm.



FIGURES 30–34. *Drepanomastax splendida* Ashe. 30, mentum. 31, antenna. 32, meso- and metasternum. 33, aedeagus, paramere. 34, aedeagus, median lobe. Scale bar = 0.1 mm.



FIGURES 35–37. *Drepanomastax nitida* Ashe. 35, spermatheca. 36, aedeagus, paramere. 37, aedeagus, median lobe. Scale bar = 0.1 mm.