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A revision of Nearctic species of the genera *Adota* Casey, 1910 and *Psammostiba* Yosii & Sawada, 1976 (Coleoptera: Staphylinidae: Aleocharinae)

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Table of contents

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Abstract

Holarctic genera *Psammostiba* Yosii & Sawada, 1976 (new to North America) and *Adota* Casey, 1910 are redescribed. *Halostiba* Yosii & Sawada, 1976 is placed in synonymy with *Adota* Casey, 1910. Keys to Nearctic species of *Adota* and *Psammostiba* are provided. *Adota colpophila* Gusarov, **sp. n.** from Mexico and *Psammostiba kenaii* Gusarov, **sp. n.** from Alaska, British Columbia and California are described. *Atheta setositarsis* Casey, 1910, *At. subintima* Casey, 1910, *At. scortea* Casey, 1911, *At. scolopacina* Casey, 1911 and *At. insons* Casey, 1911 are placed in synonymy with *Adota maritima* (Mannerheim, 1843). Three Palaearctic species, *Atheta ushio* (Sawada, 1971), *At. magnipennis* Bernhauer, 1943 and *At. madida* Bernhauer, 1907 are transferred to *Adota*. Lectotypes are designated for *Atheta massettensis* Casey, 1910, *At. subintima* Casey, 1910, *At. scortea* Casey, 1911, *At. scolopacina* Casey, 1911 and *At. insons* Casey, 1911. *Atheta finita* Moore & Legner, 1975 (replacement name for *At. definita* Casey, 1911), *At. pavidula* Casey, 1911 and *At. irrita* Casey, 1911 described by Casey in *Atheta* (*Adota*) do not belong to *Adota*. *Psammostiba* Yosii & Sawada, 1976 is raised to generic rank and *Adota comparabilis* (Mäklin *in* Mannerheim, 1853) is transferred to *Psammostiba*.

Key words: Coleoptera, Staphylinidae, Aleocharinae, *Adota*, *Psammostiba*, Nearctic, Palaearctic, taxonomy, nomenclature, new species, synonymy, identification key

Introduction

Casey (1910) described subgenera *Adota* and *Panalota* of the genus *Atheta* Thomson, 1858. He placed three species in the first subgenus and one species in the second subgenus, and subsequently (Casey 1911) added a few more species. Although originally Casey (1910) included in *Atheta* (*Adota*) only coastal species in his 1911 paper he also included in this subgenus three newly described continental species.

Fenyes (1918, 1920) raised *Adota* and *Panalota* to generic rank, based on the absence of infraorbital carina. He noted that some species included by him in *Adota* do have the carina and probably belong to the subgenus *Hypatheta* Fenyes, 1920 of the genus *Atheta*, but he did not mention the names of these species.

Brundin (1943) discussed systematic position and diagnostic characters of the subgenus *Panalota*. He redescribed and transferred to *Atheta* (*Panalota*) three species from the Northern Pacific coasts: *Atheta maritima* (Mannerheim, 1843), *At. hilleri* (Weise, 1877) and *At. vacillator* Cameron, 1933. Additionally, Brundin (1943) described two new species of *Atheta* (*Panalota*): *At. kamtschatica* Brundin, 1943 and *At. jessoensis* Brundin, 1943.

Yosii and Sawada (1976) described subgenera *Halostiba* and *Psammostiba* of the genus *Atheta* to accommodate some seashore species from the Far East. Yosii and Sawada (1976) were aware of Casey's and Brundin's (1943) works, but because the type species of *Panalota* Casey, 1910 was unknown to them, they proposed a new subgeneric name, *Psammostiba*, for *At. hilleri*, *At. kamtschatica* and *At. jessoensis*.

Lohse and Smetana (1985) examined the types of *Homalota maritima* Mannerheim, 1843 and *H. comparabilis* Mäklin *in* Mannerheim, 1853, placed both species in the genus *Adota*, and synonymized *Panalota* with *Adota*.

In this paper I raise *Psammostiba* to generic rank, redescribe *Adota* and *Psammostiba*, and the Nearctic species included in these genera. I also describe one new species of *Adota* and one new species of *Psammostiba*.

I follow the terminology accepted in taxonomy of Aleocharinae (Sawada 1970, 1972; Newton *et al.* 2000). A discussion of the terms applied to the parts of the internal sac of the aedeagus can be found in Gusarov (2002). To avoid the controversy on what side of the aedeagus should be called ventral (Gusarov 2002), I refer to the side of aedeagus bearing the basal orifice as parameral. The spermathecal gland is shown on the drawings solely to illustrate the gland position in relation to other parts of spermatheca.

The Fourth edition of the International Code of Zoological Nomenclature (ICZN 1999) requires (Article 74.7.3) a lectotype designation to "contain an express statement of the taxonomic purpose of the designation". The purpose of lectotype designations in this paper is to assure correct and consistent application of the names in the future. There is no reason to repeat this statement for each lectotype designation. All specimens designated as lectotypes were supplied with the red lectotype labels.

Depositories

AMNH – American Museum of Natural History, New York (Dr. L.H. Herman)
BMNH – The Natural History Museum, London (Mr. M. Brendell)
CASC – California Academy of Sciences, San Francisco (Dr. D.H. Kavanaugh)
CNCI – Canadian National Collection, Ottawa (Mr. A. Davies)
KSEM – Snow Entomological Collection, University of Kansas, Lawrence (Dr. J.S. Ashe)
MCZ – Museum of Comparative Zoology, Harvard University (Dr. Ph.D. Perkins)
MZHF – Finnish Museum of Natural History, University of Helsinki (Dr. H. Silfverberg, Dr. J. Muona)
NMNH – National Museum of Natural History, Washington, DC (Dr. T.L. Erwin)
SPSU – Department of Entomology, St. Petersburg State University, St. Petersburg, Russia (Dr. V.I. Gusarov)
UCR – University of California, Riverside (Dr. D. Yanega)

Adota Casey, 1910

(Figs. 1-52)

Atheta (*Adota* Casey, 1910): 67 (type species: *Atheta massettensis* Casey, 1910, by original designation).

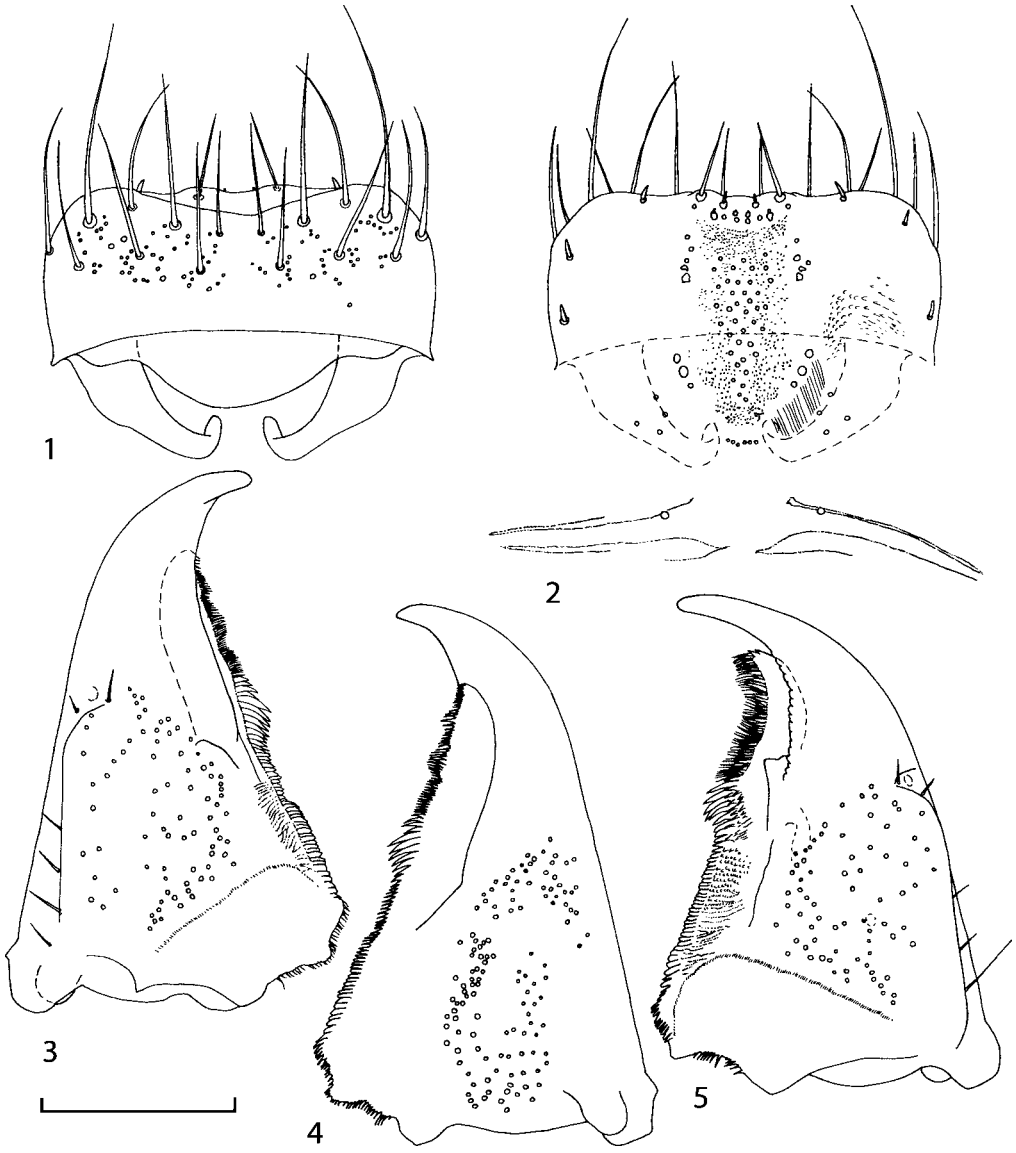
Atheta (*Panalota* Casey, 1910): 71 (type species: *Atheta setositarsis* Casey, 1910, by original designation).
Adota: Fenyes, 1918: 19 (as valid genus in subtribe Athetina Casey, 1910 of tribe Myrmedoniini Thomson, 1867).
Panalota: Fenyes, 1918: 19 (as valid genus in subtribe Athetina Casey, 1910 of tribe Myrmedoniini Thomson, 1867).
Adota: Fenyes, 1920: 175 (as valid genus).
Panalota: Fenyes, 1920: 243 (as valid genus).
Atheta (*Adota*): Bernhauer & Scheerpeltz, 1926: 659 (as valid subgenus).
Atheta (*Panalota*): Bernhauer & Scheerpeltz, 1926: 611 (as valid subgenus).
Atheta (*Panalota*): Brundin, 1943: 19 (as valid subgenus).
Atheta (*Halostiba* Yosii & Sawada, 1976): 86 (type species: *Ischnopoda ushio* Sawada, 1971, by original designation), **syn. nov.**
Atheta (*Adota*): Moore & Legner, 1975: 347 (as valid subgenus).
Atheta (*Panalota*): Moore & Legner, 1975: 351 (as valid subgenus).
Adota: Seevers, 1978: 113 (as synonym of *Xenota* Mulsant & Rey, 1874).
Panalota: Seevers, 1978: 123 (as valid genus).
Adota: Lohse & Smetana, 1985: 282 (as valid genus).
Panalota: Lohse & Smetana, 1985: 282 (as synonym of *Adota*).
Adota: Ashe *in* Newton, Thayer, Ashe & Chandler, 2000: 368 (as valid genus in subtribe Athetina of tribe Athetini).
Panalota: Ashe *in* Newton, Thayer, Ashe & Chandler, 2000: 368 (as synonym of *Adota*).

Diagnosis. *Adota* can be distinguished from other athetine genera by the combination of the following characters: body parallel-sided, flat, and with dense isodiametric microsculpture; anterior margin of labrum concave; antennal article 2 slightly longer than article 3, articles 8-10 slightly transverse (Figs. 17-18); ligula short, with broad base and split apically (Fig. 10); labial palpus with setae α, β, γ and δ present (Fig. 10); pronotum subquadrate or slightly transverse, 1.1-1.4 times as wide as long, with microsetae directed anteriorly along the midline; in lateral portions of the disc microsetae directed laterally (Type I, Benick & Lohse 1974) (Fig. 14); pronotal macrosetae short; pronotal hypomera fully visible in lateral view; medial macroseta of mesotibia weak and inconspicuous, as long as tibial width; tarsal formula 4-5-5; metatarsal segment 1 as long as segment 2; tarsal segments ventrally with long setae; one long empodial seta; abdominal terga 3-6 with transverse basal impression; medial lamellae of internal sac absent; copulatory piece with pointed apex (Fig. 27); proximal portion of spermatheca with one coil (Figs. 29-30, 51).

Adota can be distinguished from *Atheta* by isodiametric microsculpture of the entire body, by the concave anterior margin of the labrum; by basal impression on the tergum 6, and by lacking the medial lamellae of internal sac.

Adota differs from *Psammostiba* in having antennal article 2 longer than article 3; and tarsi with single empodial seta and equally long claws (Figs. 16; 66).

Description. Length 2.2-3.2 mm, pronotal width 0.43-0.61 mm. Body parallel-sided and flat. Body color brown to black, elytra dark brown to reddish brown, antennae black to brown, legs brown to yellowish brown. Entire body with strong and dense isodiametric microsculpture.



FIGURES 1-5. Mouthparts of *Adota maritima* (Mannerheim) (male from Homer, Alaska). 1 – labrum; 2 – epipharynx; 3 – left mandible, dorsal view; 4 – left mandible, ventral view; 5 – right mandible, dorsal view. Scale bar 0.1 mm.

Head as long as wide; eyes large, temple length to eye length ratio 0.8-1.2; infraorbital carina very short, ends in posterior portion of temples, by far not reaching posterior margin of eye. Antennal article 2 slightly longer than article 3, articles 8-10 slightly transverse, terminal article without coeloconic sensilla, as long as articles 9 and 10 combined (Figs. 17-18). Labrum (Fig. 1) transverse, with concave anterior margin. Adoral surface of

labrum (epipharynx) as in Fig. 2. Mandibles (Figs. 3-5) broad, right mandible with a small medial tooth; dorsal molar area with velvety patch consisting of very small denticles (invisible at 400x). Maxilla (Figs. 6-9) with galea projecting slightly beyond apex of lacinia; apical lobe of galea covered with numerous fine and short setae; internal margin of galea with long subapical setae (Figs. 6-7); apical 1/3 of lacinia with row of closely spaced spines, middle portion produced medially and covered with numerous setae (Figs. 6, 8-9). Labium as in Figs. 10-12; ligula short, with broad base and split apically; medial area of prementum with 2 pores and with 8-23 pseudopores, lateral areas each with two asetose pores, single setose pore and 7-12 pseudopores (Fig. 10). Hypopharyngeal lobes as in Fig. 11. Labial palpus with setae α, β, γ and δ present (Fig. 10). Mentum (Fig. 12) with concave anterior margin.

Pronotum (Fig. 14) slightly transverse or subquadrate, with microsetae directed anteriorly in midline; in lateral portions of disc microsetae directed laterally (Type I, Benick & Lohse 1974); macrosetae short; hypomera fully visible in lateral view. Meso- and metasternum as in Fig. 13, mesosternal process narrow, extending about 3/5 length of mesocoxal cavities, metasternal process short, mesosternum and mesosternal process not carinate medially; relative lengths of mesosternal process: isthmus: metasternal process in ratio of about 3:1:1; mesocoxal cavities margined posteriorly; mesocoxae narrowly separated. Medial macroseta of mesotibia inconspicuous, shorter than tibial width. Tarsal segmentation 4-5-5, metatarsal segment 1 as long as segment 2. Tarsal segments ventrally with long setae. One empodial seta, as long as claws (Fig. 15). Claws of equal length (Fig. 16). Posterior margin of elytra straight. Wings fully developed.

Abdominal terga 3-6 with moderate basal impressions (impression on tergum 6 weaker). Tergum 7 as long as tergum 6. Punctation on terga 6-7 only slightly sparser than on terga 3-5. Tergum 7 with wide white palisade fringe.

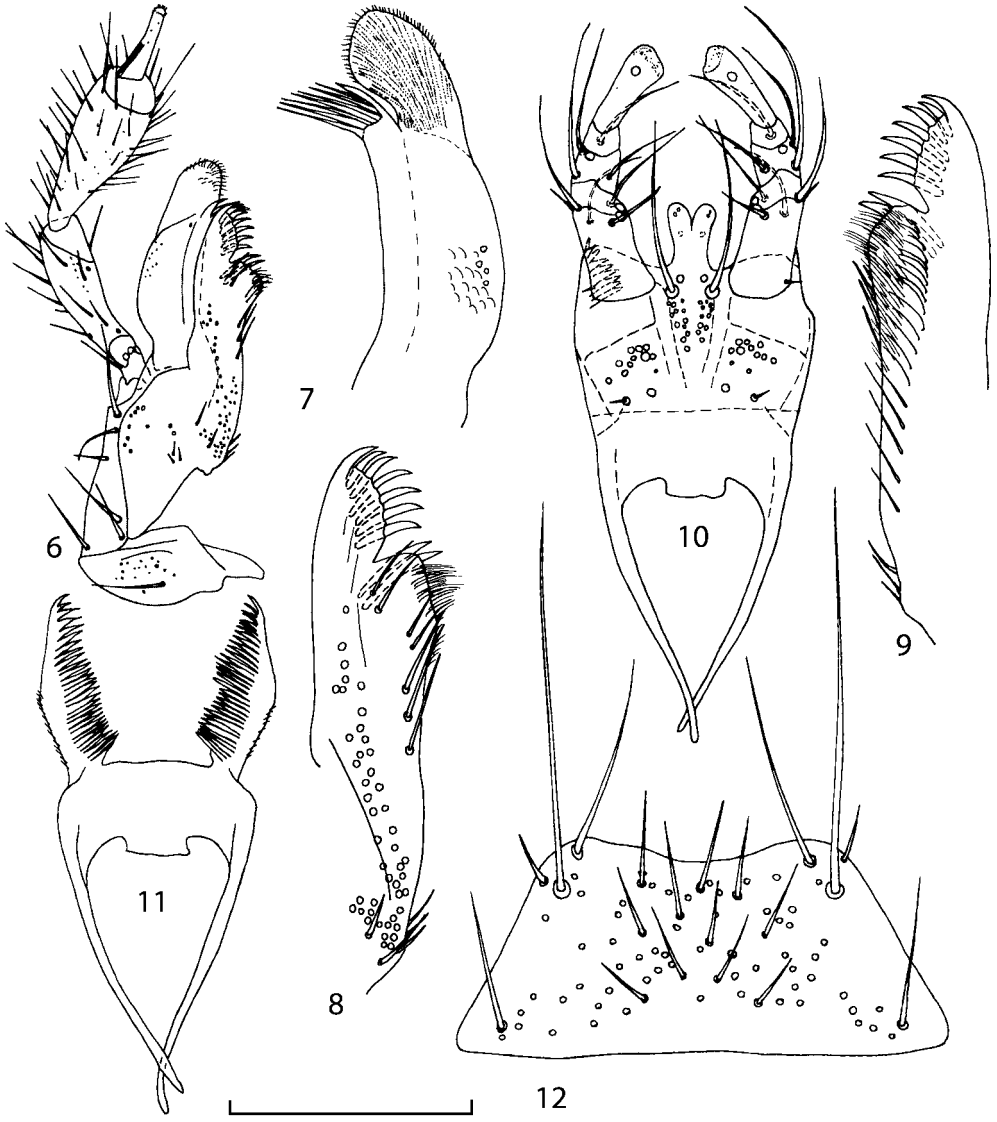
Aedeagus with broad apical process (Figs. 23-24, 46-47); medial lamellae of internal sac absent; copulatory piece with pointed apex (Fig. 27); proximal portion of spermatheca with single coil (Figs. 29-30, 51).

Type species. *Atheta massettensis* Casey, 1910, by original designation.

Discussion. *Atheta massettensis* Casey, 1910 (the type species of *Adota*) and *At. setositarsis* Casey, 1910 (the type species of *Panalota*) are conspecific (see below), and therefore the synonymy of *Adota* and *Panalota* established by Lohse and Smetana (1985) is confirmed. Both names had been published simultaneously (Casey 1910), but Lohse and Smetana (1985), being the first revisers, established the name *Adota* as valid.

Originally (Casey, 1910), both *Adota* and *Panalota* were introduced as subgenera of *Atheta*. Fenyes (1918, 1920) was the first to raise the rank of both names to generic level because of the absence of infraorbital carina (the carina is indeed very short). Pending revision of the genus *Atheta* I prefer to keep *Adota* as a separate genus, based on the concave anterior margin of the labrum, dense isodiametric microsculpture of the entire body, relatively dense punctation of abdominal terga 6-7, the presence of the basal impressions

on abdominal terga 3-6, and the absence of median lamellae of internal sac. The dense microsculpture and punctation is probably an adaptation to seashore habitats, as it is displayed by other aleocharines that occur in similar situations (*e. g.*, *Pontomalota* Casey, 1885, *Tarphiota* Casey, 1894, *Oreuryalea* Assing & Maruyama, 2002).



FIGURES 6-12. Mouthparts of *Adota maritima* (Mannerheim) (male from Homer, Alaska). 6 – right maxilla, ventral view; 7 – right galea, dorsal view; 8 – right lacinia, ventral view; 9 – right lacinia, dorsal view; 10 – prementum; 11 – hypopharynx; 12 – mentum. Scale bar 0.1 mm (7-12), 0.2 mm (6).

According to the detailed description and illustrations (Sawada 1971), *Ischnopoda ushio*, the type species of the subgenus *Halostiba*, is similar to *Adota maritima* in all details of mouthparts, tarsi, dense microsculpture, and in general shape of the aedeagus and spermatheca. Based on this similarity I synonymize *Halostiba* with *Adota*. *Adota ushio* is a littoral species.

Three species described by Casey (1911) in *Atheta* (*Adota*) do not possess the diagnostic characters of *Adota* and, in my opinion, do not belong to that genus. These three species are placed in *Atheta* pending a revision of the genus: *Atheta finita* Moore & Legner, 1975 (replacement name for *Atheta definita* Casey, 1911, nec 1910), *At. pavidula* Casey, 1911 and *At. irrita* Casey, 1911.

Atheta finita, known to me by females only, was described (as *Atheta definita* Casey, 1911) from Santa Rosa and from near Napa Junction, California (two syntypes in Casey collection). I examined an additional female from the Waterton National Park, Alberta (CNCI). Although the specimens of *Ad. finita* have densely punctated abdominal terga 6-7, they differ from *Adota* by small and thin L-shaped spermatheca and concave posterior margin of female tergum 8. *Atheta finita* is clearly not restricted to seashore.

Atheta irrita was described from Nevada (Casey, 1911) and is not a littoral species.

Atheta pavidula was described from Booneville, California (Casey, 1911), about 30 km from the coast, and it is not a seashore species.

Key to Nearctic species of *Adota*

1 Body matte. Posterior margin of male tergum 8 with three or four blunt projections (Figs. 19, 31). Median lobe of aedeagus with blunt apex (Figs. 23-24, 35-36). Spermatheca: Figs. 29-30, 40-41. Known from the Pacific coast of North America, from Alaska to California (Fig. 52) 2

– Body glossy despite isodiametric microsculpture. Posterior margin of male tergum 8 straight (Fig. 42). Median lobe of aedeagus with pointed apex (Figs. 46-47). Spermatheca: Fig. 51. Body length 2.4-2.6 mm. Known from the Gulf of California (Fig. 52) ..... 3. *Ad. colpophila* Gusarov, **sp. n.**

2 Apex of median lobe almost as wide as basal part of median lobe (Figs. 23-24). Posterior margin of male tergum 8 slightly emarginate medially (Fig. 19). Spermatheca larger (Figs. 29-30). Body length 2.5-3.2 mm ..... 1. *Ad. maritima* (Mannerheim)

– Apex of median lobe narrower than basal part of median lobe (Figs. 35-36). Posterior margin of male tergum 8 convex medially (Fig. 31). Spermatheca smaller (Figs. 40-41). Body length 2.2-2.8 mm ..... 2. *Ad. gnypetoides* (Casey)

1. *Adota maritima* (Mannerheim, 1843)

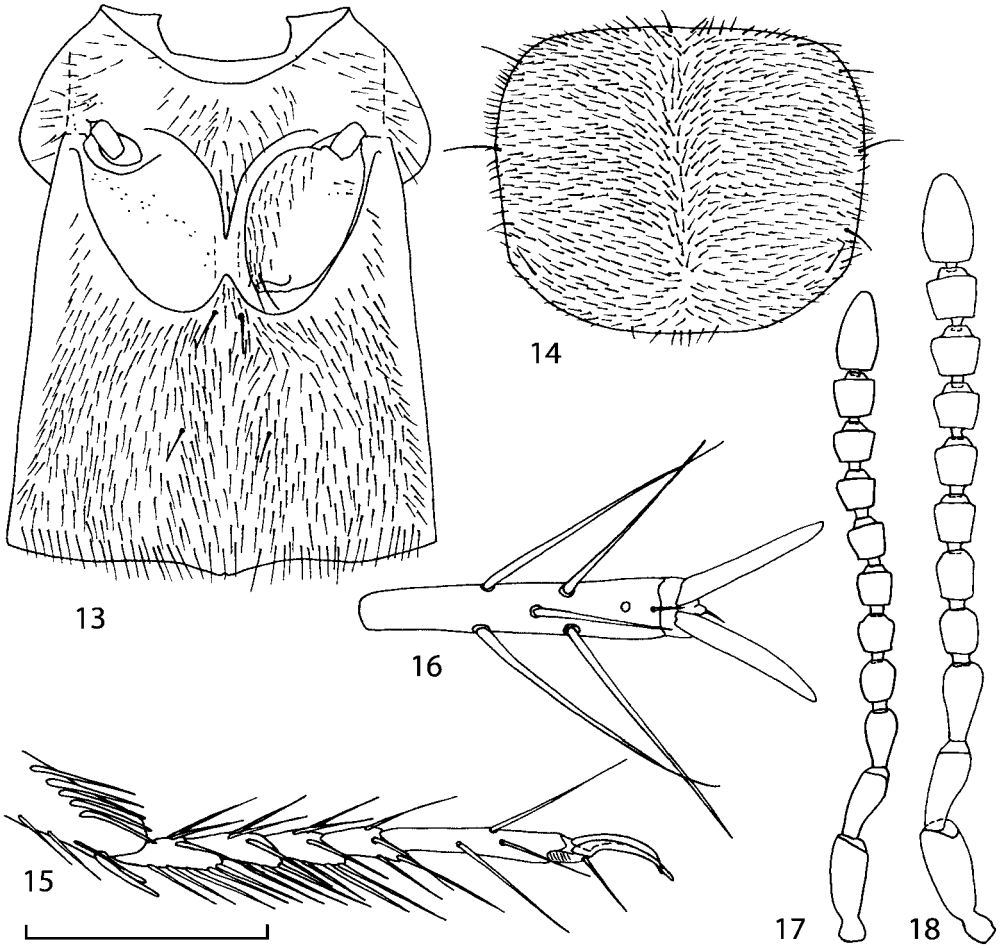
(Figs. 1-16, 18-30)

Homalota maritima Mannerheim, 1843: 224.
Atheta (*Adota*) *massettensis* Casey, 1910: 68.
Atheta (*Adota*) *subintima* Casey, 1910: 68, **syn. nov.**
Atheta (*Panalota*) *setositarsis* Casey, 1910: 71, **syn. nov.**
Atheta (*Adota*) *scortea* Casey, 1911: 124, **syn. nov.**
Atheta (*Adota*) *scolopacina* Casey, 1911: 124, **syn. nov.**
Atheta (*Adota*) *insons* Casey, 1911: 125, **syn. nov.**
Adota massettensis: Fenyes, 1920: 176 (misspelled as *masettensis*; as valid species).
Adota subintima: Fenyes, 1920: 176 (as valid species).
Adota scortea: Fenyes, 1920: 176 (as valid species).
Adota scolopacina: Fenyes, 1920: 176 (as valid species).
Adota insons: Fenyes, 1920: 176 (as valid species).
Atheta (*Metaxya*) *maritima*: Fenyes, 1920: 199.
Panalota setositarsis: Fenyes, 1920: 243 (as valid species).
Atheta (*Panalota*) *maritima*: Bernhauer & Scheerpeltz, 1926: 611 (as valid species).
Atheta (*Panalota*) *setositarsis*: Bernhauer & Scheerpeltz, 1926: 611 (as possible synonym of *At. maritima*).
Atheta (*Adota*) *insons*: Bernhauer & Scheerpeltz, 1926: 659 (as valid species).
Atheta (*Adota*) *massettensis*: Bernhauer & Scheerpeltz, 1926: 659 (misspelled as *masettensis*; as valid species).
Atheta (*Adota*) *scolopacina*: Bernhauer & Scheerpeltz, 1926: 659 (as valid species).
Atheta (*Adota*) *scortea*: Bernhauer & Scheerpeltz, 1926: 659 (as valid species).
Atheta (*Adota*) *subintima*: Bernhauer & Scheerpeltz, 1926: 659 (as valid species).
Atheta (*Panalota*) *maritima*: Brundin, 1943: 24.
Atheta (*Brundinia*) *maritima*: Moore & Legner, 1975: 366 (as valid species).
Atheta (*Adota*) *massettensis*: Moore & Legner, 1975: 366 (as valid species).
Atheta (*Adota*) *subintima*: Moore & Legner, 1975: 366 (as synonym of *Atheta massettensis*).
Atheta (*Adota*) *insons*: Moore & Legner, 1975: 364 (as valid species).
Atheta (*Panalota*) *setositarsis*: Moore & Legner, 1975: 366 (as valid species).
Atheta (*Adota*) *scolopacina*: Moore & Legner, 1975: 373 (as valid species).
Atheta (*Adota*) *scortea*: Moore & Legner, 1975: 373 (as valid species).
Panalota maritima: Seevers, 1978: 265 (as valid species).
Panalota setositarsis: Seevers, 1978: 265 (as valid species).
Xenota massettensis: Seevers, 1978: 270 (as valid species).
Xenota subintima: Seevers, 1978: 271 (as valid species).
Xenota scortea: Seevers, 1978: 271 (as valid species).
Xenota scolopacina: Seevers, 1978: 271 (as valid species).
Xenota insons: Seevers, 1978: 270 (as valid species).
Adota maritima: Lohse & Smetana, 1985: 282 (as valid species).
Adota massettensis: Lohse & Smetana, 1985: 282 (misspelled as *massetensis*; as synonym of *Adota maritima*).
Adota setositarsis: Lohse & Smetana, 1985: 282 (as valid species).

Type material. Lectotype of *Homalota maritima* (designated by Lohse and Smetana (1985)), ♀, **UNITED STATES: Alaska:** Sitka (MZHF).

Lectotype of *Atheta massettensis* (here designated): ♂, "Q.[ueen] C.[harlotte] I.[slands] [Massett (J.H.Keen)]", "*Adota massettensis* Csy.", "TYPE USNM 39364" (red label), "CASEY bequest 1925" (NMNH). Paralectotypes: 4♀♀, "Q.[ueen] C.[harlotte] I.[slands] [Massett (J.H.Keen)]", "*massettensis* PARATYPE USNM 39364" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta subintima* (here designated): ♂, "Metlakatla, B.[ritish] Col.[umbia] (Keen)", "*subintima* Csy.", "TYPE USNM 39365" (red label), "CASEY bequest 1925" (NMNH). Paralectotypes: 14 specimens, "Metlakatla, B.[ritish] Col.[umbia] (Keen)", "*subintima* PARATYPE USNM 39365" (red label), "CASEY bequest 1925" (NMNH).



FIGURES 13-18. Details of *Adota maritima* (Mannerheim) (males (13, 15-16, 18) and female (14) from Homer, Alaska) and *Ad. gnypetoides* Casey (17; male from Bodega Head, California). 13 – meso- and metathorax, ventral view; 14 – pronotum; 15 – right metatarsus; 16 – metatarsal segment 5 and metapretarsus, dorsal view; 17-18 – right antenna. Scale bar 0.1 mm (16), 0.2 mm (15), 0.4 mm (13-14, 17-18).

Holotype of *Atheta setositarsis*: ♂, "Cal.[ifornia, San Francisco]", "*Panalota setositarsis* Csy.", "TYPE USNM 39358" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta scortea* (here designated): ♂, "Cal.[ifornia, Berkeley, Alameda Co.]", "*scortea* Csy.", "TYPE USNM 39367" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta scolopacina* (here designated): ♂, "Cal.[ifornia, Berkeley, Alameda Co.]", "*scolopacina* Csy.", "TYPE USNM 39369" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta insons* (here designated): ♂, "Cal.[ifornia, San Diego]", "*insons* Csy.", "TYPE USNM 39370" (red label), "CASEY bequest 1925" (NMNH).

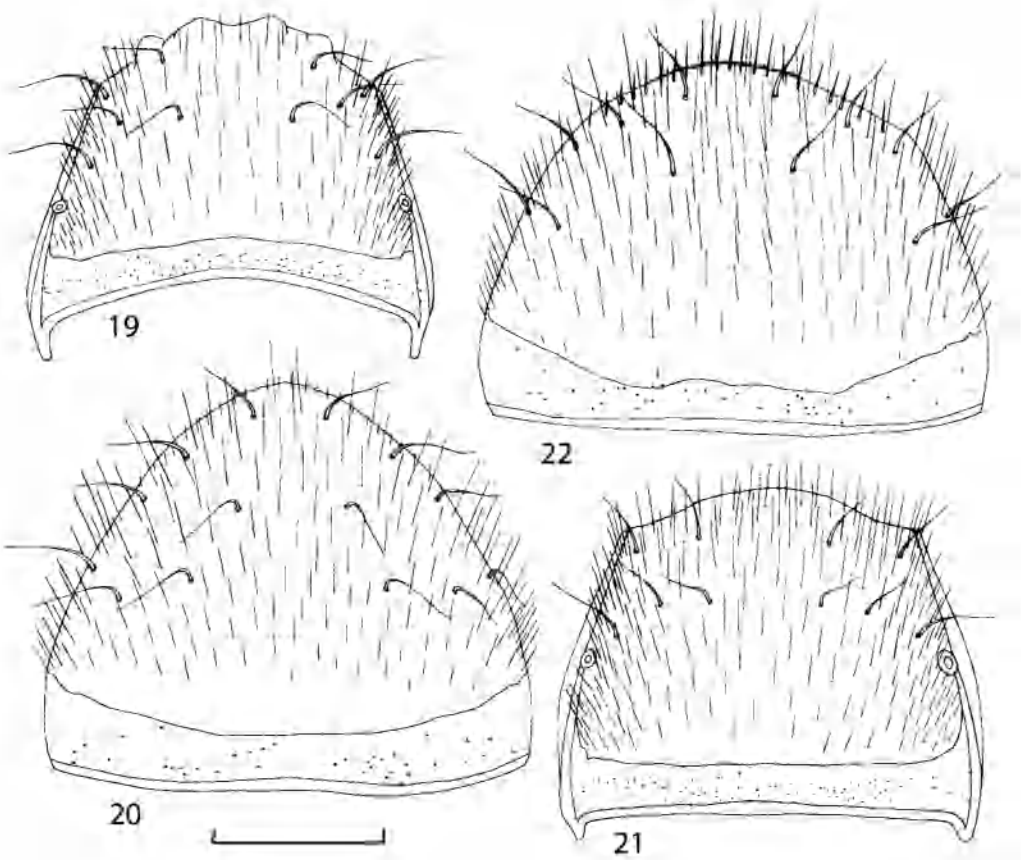
Additional material. **UNITED STATES: Alaska:** ♂, Kodiak (MZHF); Kenai Peninsula Co.: 8 specimens, Homer, S shore of Homer spit, 59°36.33'N 151°25.71'W, sandy seashore, in seaweed (V.I.Gusarov), 22.vii.1998 (AMNH, SPSU); Haines Co.: ♀, Haines, sifting algae on beach (Campbell & Smetana), 3.vii.1968 (CNCI); **California:** Marin Co.: ♀, Stinson State Beach, under seaweed on sand beach (K.J.Ahn & J.S.Ashe), 14.v.1991 (KSEM); Los Angeles Co.: 5♀♀, Santa Catalina Isl., Descanso Beach, under seaweed on rocks with numerous Diptera larvae (K.J.Ahn), 31.v.1991 (KSEM); 2 specimens, Sonoma Co.: 34.5 km SWW Santa Rosa, Bodega Head, University of California Marine Laboratory, 38°19.013'N 123°04.254'W ±10m, seashore, in seaweed (V.I.Gusarov), 4.vi.2002 (KSEM); Santa Cruz Co.: ♀, 10.5 km NW Davenport, nr. Hwy. 1, nr. Greyhound Rock, 37°04.821'N 122°16.062'W ±6m, seashore, in seaweed (V.I.Gusarov), 19.vi.2002 (SPSU); Mendocino Co.: 2♀♀, Needle Rock, on beach (D.Giuliani), 6.x.1974 (UCR); San Francisco Co.: ♂, 2♀♀, without locality label (MCZ); **CANADA: British Columbia:** 2♂♂, 2♀♀, Miracle Beach, 17 mi. S Campbell River (J.M. & B.A.Campbell), 22.vii.1975 (CNCI); ♂, ♀, Massett (BMNH).

Diagnosis. *Adota maritima* is very similar to *Ad. gnypetoides*, but differs in having larger body size, longer antennal segments (Figs. 18; 17), wider apex of median lobe (Figs. 23-24; 35-36), posterior margin of male tergum 8 emarginate medially (Fig. 19) and larger spermatheca (Figs. 29-30; 40-41).

Adota maritima differs from *Ad. colpophila* by having matte body, posterior margin of male tergum 8 with four blunt projections (Fig. 19), median lobe with blunt apex (Figs. 23-24; 46-47) and the distinct shape of spermatheca (Figs. 29-30).

Description. Length 2.5-3.2 mm. Body black with dark brown legs and light brown tarsi.

Head surface matte, with strong and dense isodiametric microsculpture, with fine punctation, distance between punctures equals 1-2 times their diameter. Frons with sparser punctation, in both sexes with longitudinal impression. Temple length to eye length ratio 1.0-1.2. Antennal article 2 is 1.1 times as long as article 3, articles 4-5 slightly elongate (length to width ratio 1.2-1.3), articles 6-7 as long as wide, articles 8-10 slightly transverse (length to width ratio 0.8) (Fig. 18).



FIGURES 19-22. Abdominal segment 8 of *Adota maritima* (Mannerheim) (males (19-20) and female (21-22) from Homer, Alaska). 19 – male tergum 8; 20 – male sternum 8; 21 – female tergum 8; 22 – female sternum 8. Scale bar 0.2 mm.

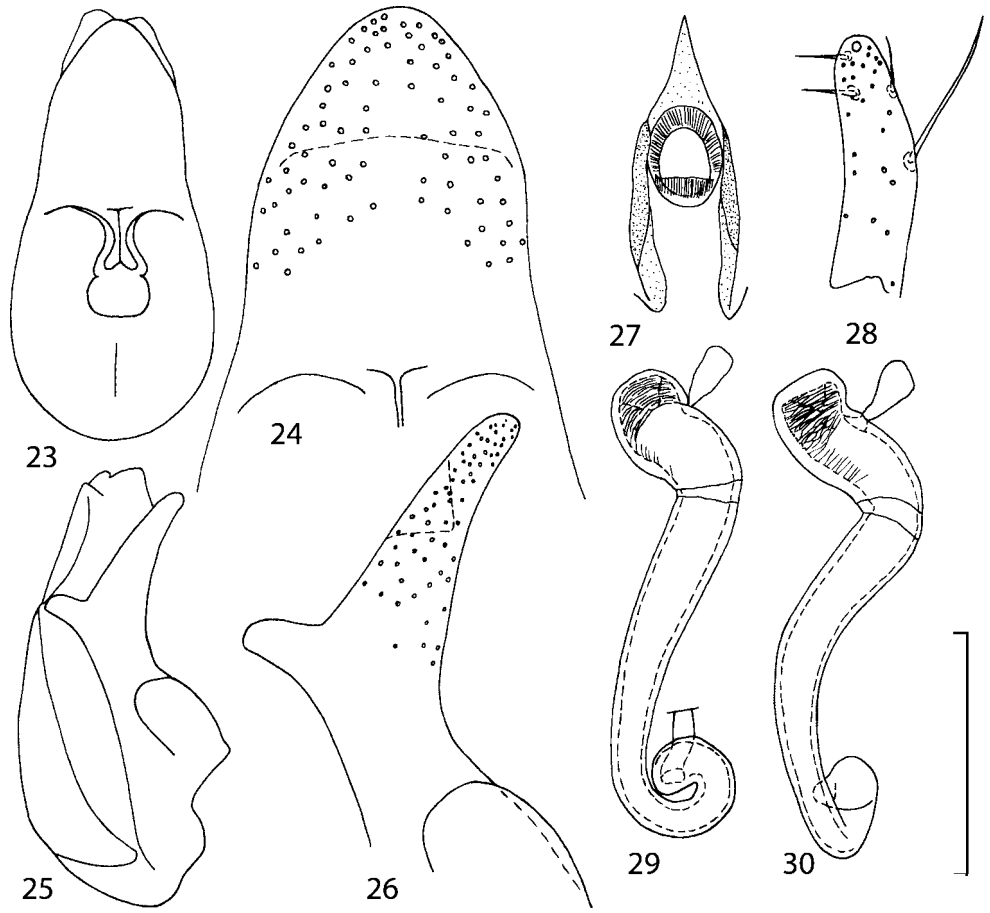
Pronotum subquadrate or slightly transverse, 1.1 times as wide as head, width 0.47-0.61 mm, length 0.41-0.51 mm, width to length ratio 1.2; matte, with strong and dense isodiametric microsculpture; punctation finer than on head, poorly visible on matte background. Elytra much wider (0.63-0.89 mm) and longer (0.57-0.79 mm; measured from humeral angle) than pronotum (elytral length to pronotal length ratio 1.5), 1.1 times wider than long, surface matte, with strong and dense isodiametric microsculpture; punctation poorly visible.

Abdominal terga matte, with strong and dense isodiametric microsculpture; with fine punctation, distance between punctures equals 2-3 times their diameter on terga 3-5 and 3-5 times on terga 6-7. Apical margin of tergum 7 with white palisade fringe.

Posterior margin of male tergum 8 with four blunt projections, emarginate medially (Fig. 19).

Aedeagus as in Figs. 23-28, median lobe with wide apex (Figs. 23-24).

Spermatheca as in Figs. 29-30.



FIGURES 23-30. Genitalia of *Adota maritima* (Mannerheim) (males (23-28) and female (29-30) from Homer, Alaska). 23 – median lobe, parameral view; 24 – apex of median lobe, parameral view; 25 – median lobe, lateral view; 26 – apex of median lobe, lateral view; 27 – copulatory piece, parameral view; 28 – apex of left paramere; 29-30 – spermatheca. Scale bar 0.1 mm (24, 26-28), 0.2 mm (23, 25, 29-30).

Discussion. The types of *Homalota maritima*, *Atheta massettensis*, *At. subintima*, *At. setositarsis*, *At. scortea*, *At. scolopacina* and *At. insons* fall within the range of variability of *Adota maritima* and have similar shape of genitalia and male abdominal tergum 8. The holotype of *Atheta insons* is smaller (pronotal width 0.47 mm) than most specimens of *Adota maritima*. However, it differs from *Adota gnypetoides* by the wide apex of median lobe and the shape of posterior margin of the male tergum 8, and I interpret it as a small specimen of *Ad. maritima*. Examined specimens of *Ad. maritima* from southern California are smaller than the specimens from British Columbia and Alaska and approach in size examined specimens of *Ad. gnypetoides*. Additional collecting is needed to study the variability of *Ad. maritima*.

Distribution. Known from the Pacific coast of North America, from Alaska to California (Fig. 52).

Natural History. *Adota maritima* is a littoral species, common in decomposing seaweed on a beach.

2. *Adota gnypetoides* (Casey, 1910)

(Figs. 17, 31-41)

Atheta (*Adota*) *gnypetoides* Casey, 1910: 69.
Adota gnypetoides: Fenyes, 1920: 176 (as valid species).
Atheta (*Adota*) *gnypetoides*: Bernhauer & Scheerpeltz, 1926: 659 (as valid species).
Atheta (*Adota*) *gnypetoides*: Moore & Legner, 1975: 362 (as valid species).
Xenota gnypetoides: Seevers, 1978: 270 (as valid species).

Type material. Holotype of *Atheta gnypetoides*: ♀, "Redondo, Cal.[ifornia] 4/7/94 [7.iv.1894 (Fall)]", "*gnypetoides* Csy.", "TYPE USNM 39366" (red label), "CASEY bequest 1925" (NMNH).

Additional material. **UNITED STATES: Alaska:** Kenai Peninsula Co.: 5 specimens, Homer, S shore of Homer spit, 59°36.33'N 151°25.71'W, sandy seashore, in seaweed (V.I.Gusarov), 22.vii.1998 (AMNH, SPSU); **California:** San Mateo Co.: ♂, ♀, Montara Beach, under seaweed on sand beach (K.J.Ahn & J.S.Ashe), 16.v.1991 (KSEM); Monterey Co.: 2♂♂, 2♀♀, Pacific Grove, under seaweed (K.J.Ahn), 4.vi.1991 (KSEM); ♂, ♀, Hopkins Marine Station, West Beach (J.B.Evans), 19.v.1968 (KSEM); 10 specimens, Sonoma Co.: 34.5 km SWW Santa Rosa, Bodega Head, University of California Marine Laboratory, 38°19.013'N 123°04.254'W ±10m, seashore, in seaweed (V.I.Gusarov), 4.vi.2002 (KSEM); Santa Cruz Co.: 2♂♂, 10.5 km NW Davenport, nr. Hwy. 1, nr. Greyhound Rock, 37°04.821'N 122°16.062'W ±6m, seashore, in seaweed (V.I.Gusarov), 19.vi.2002 (SPSU).

Diagnosis. *Adota gnypetoides* is very similar to *Ad. maritima*, but differs in having smaller body size, shorter antennal segments (Figs. 17; 18), narrower apex of median lobe (Figs. 35-36; 23-24), posterior margin of male tergum 8 convex medially (Fig. 31) and smaller spermatheca (Figs. 40-41; 29-30).

Adota gnypetoides differs from *Ad. colpophila* by having matte body, posterior margin of male tergum 8 with three blunt projections (Fig. 31), median lobe with blunt apex (Figs. 35-36; 46-47) and the distinct shape of spermatheca (Figs. 40-41).

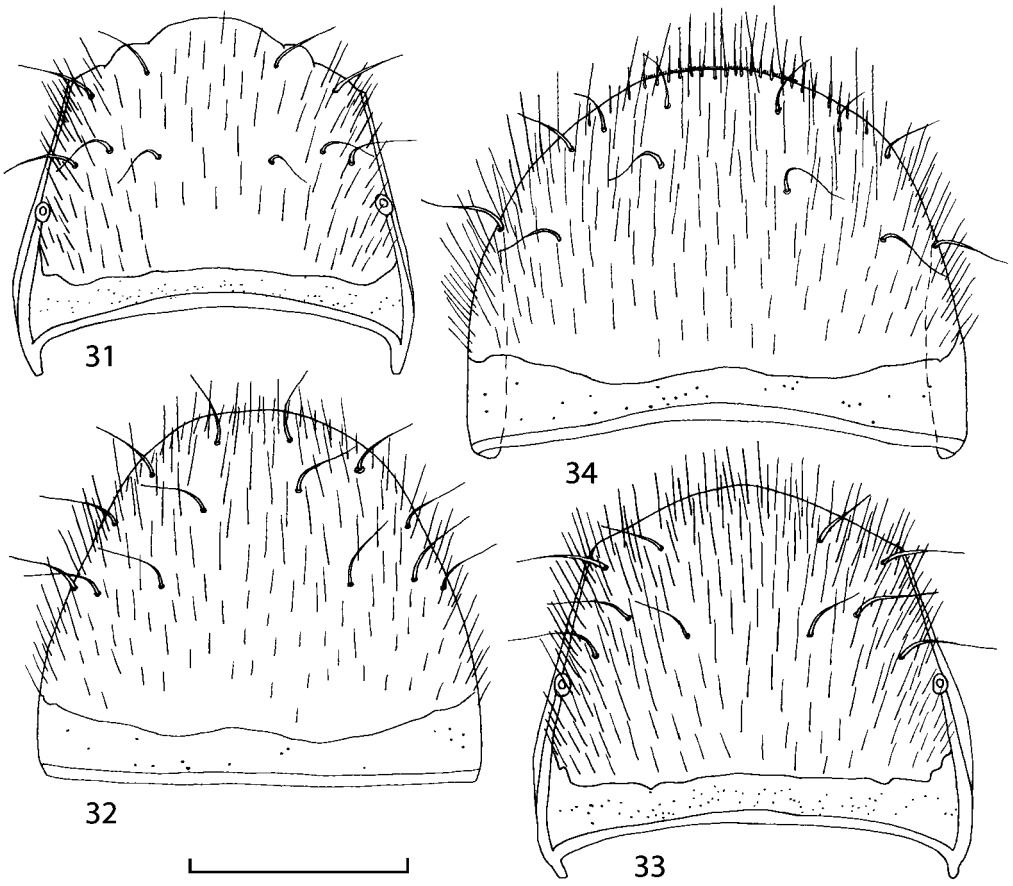
Description. Length 2.2-2.8 mm. Body black with dark brown legs and light brown tarsi.

Head surface matte, with strong and dense isodiametric microsculpture, with fine punctation, distance between punctures equals their diameter. Frons with sparser punctation, in both sexes with weak impression. Temple length to eye length ratio 0.8-1.0. Antennal article 2 is 1.2 times as long as article 3, articles 4 slightly elongate (length to

width ratio 1.1), articles 5 as long as wide, articles 6-10 slightly transverse (length to width ratio 0.7-0.9) (Fig. 17).

Pronotum slightly transverse, 1.1 times as wide as head, width 0.43-0.50 mm, length 0.33-0.44 mm, width to length ratio 1.1-1.4; matte, with strong and dense isodiametric microsculpture; punctation finer than on head, poorly visible on matte background, distance between punctures equal to ½-1 times their diameter. Elytra much wider (0.54-0.71 mm) and longer (0.54-0.70 mm; measured from humeral angle) than pronotum (elytral length to pronotal length ratio 1.6), as wide as long, surface matte, with strong and dense isodiametric microsculpture; punctation as on pronotum.

Abdominal terga matte, with strong and dense isodiametric microsculpture; with fine punctation, distance between punctures equals 1-2 times their diameter on terga 3-5 and 2-4 times on terga 6-7. Apical margin of tergum 7 with white palisade fringe.



FIGURES 31-34. Abdominal segment 8 of *Adota gnypetoides* Casey (male (31-32) and female (33-34) from Bodega Head, California). 31 – male tergum 8; 32 – male sternum 8; 33 – female tergum 8; 34 – female sternum 8. Scale bar 0.2 mm.

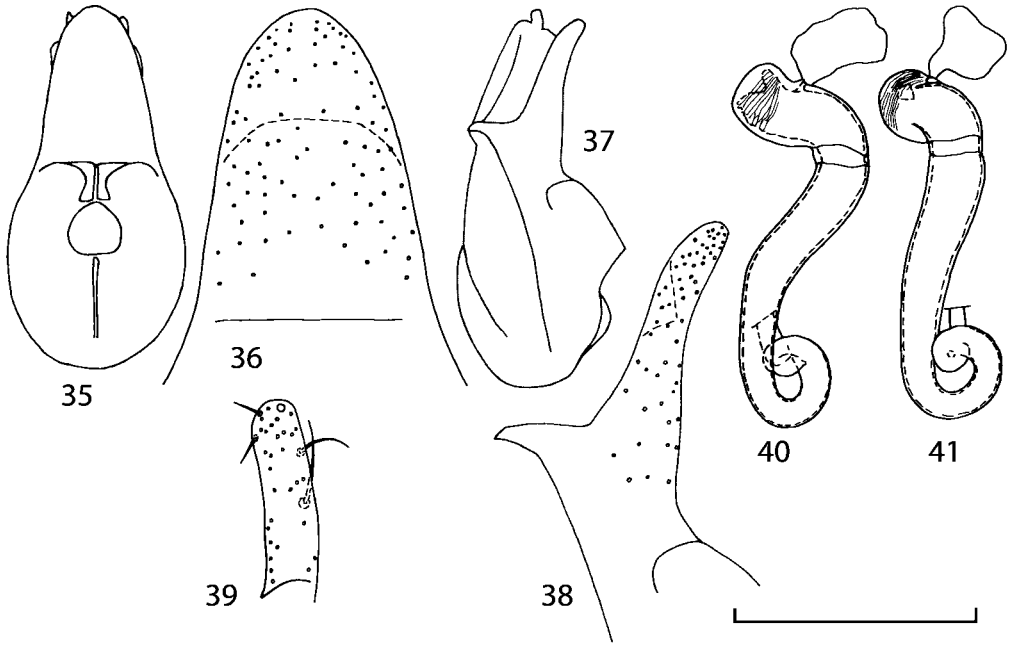
Posterior margin of male tergum 8 with two blunt lateral projections and wide semicircular medial projection (Fig. 31).

Aedeagus as in Figs. 35-39, apex of median lobe narrower than basal part (Figs. 35-36).

Spermatheca as in Figs. 40-41.

Distribution. Known from the Pacific coast of North America, from Alaska to California (Fig. 52).

Natural History. *Adota gnypetoides* is a littoral species, common in decomposing seaweed on a beach.



FIGURES 35-41. Genitalia of *Adota gnypetoides* Casey (male (35-39) and female (40-41) from Bodega Head, California). 35 – median lobe, parameral view; 36 – apex of median lobe, parameral view; 37 – median lobe, lateral view; 38 – apex of median lobe, lateral view; 39 – apex of left paramere; 40-41 – spermatheca. Scale bar 0.1 mm (36, 38-39), 0.2 mm (35, 37, 40-41).

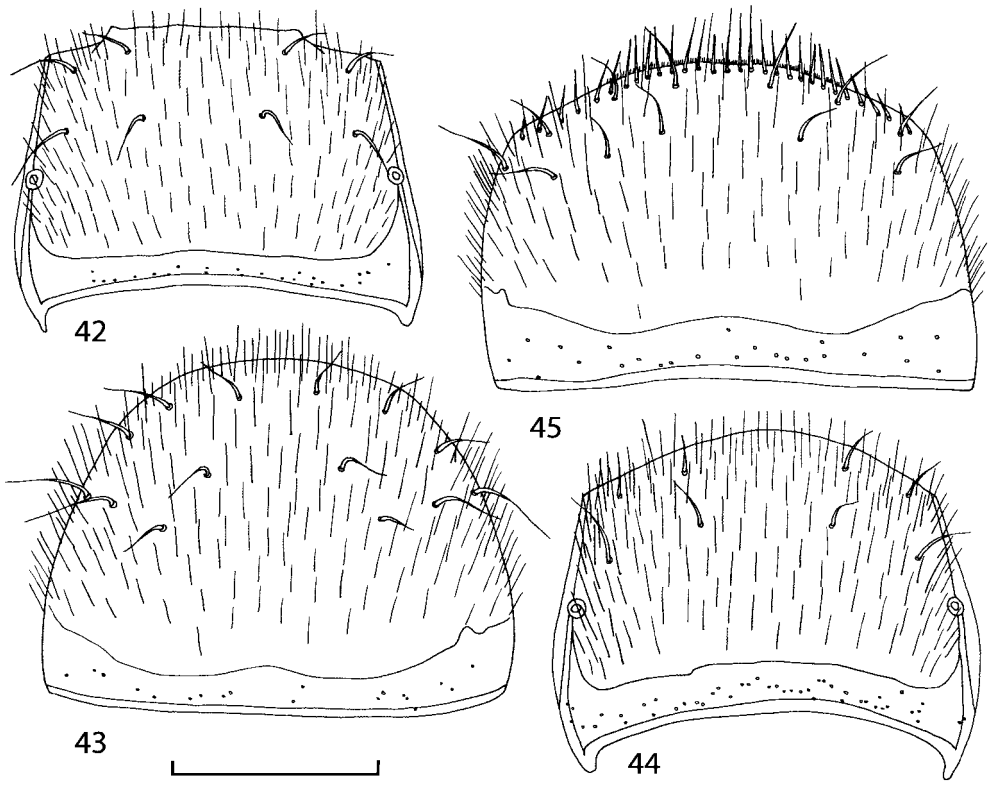
3. *Adota colpophila* Gusarov, sp. n.
(Figs. 42-51)

Type material. Holotype: ♂, MEXICO: Sonora: Punta Cirio, 29°53'N 112°40'W, wrack on sandy beach (V.Roth & W.Brown), 20.iii.1974 (UCR).

Paratypes: MEXICO: Sonora: 69 specimens, sama data as the holotype (UCR, KSEM, SPSU); 57 specimens, Punta Chueca, 29°00'N 112°05'W, light trap on beach (V.Roth), 18.i.1974 (UCR, KSEM, SPSU).

Diagnosis. *Adota colpophila* differs from *Ad. maritima* and *Ad. gnypetoides* in having glossy body, despite isodiametric microsculpture; posterior margin of male tergum 8 straight (Fig. 42); median lobe with pointed apex (Figs. 46-47; 23-24, 35-36) and the distinct shape of spermatheca (Fig. 51).

Description. Length 2.4-2.6 mm. Body black, elytra dark brown to reddish brown, antennae black to brown, legs brown to yellowish brown.



FIGURES 42-45. Abdominal segment 8 of *Adota colpophila* Gusarov, **sp. n.** (male (42-43) and female (44-45) paratypes from Punta Chueca, Mexico). 42 – male tergum 8; 43 – male sternum 8; 44 – female tergum 8; 45 – female sternum 8. Scale bar 0.2 mm.

Head surface glossy, with weak and dense isodiametric microsculpture, with fine punctation, distance between punctures equals their diameter. Frons with sparser punctation, in both sexes with weak impression. Temples as long as eyes. Antennal article 2 longer than article 3, articles 4-6 slightly elongate, article 7 as long as wide, articles 8-10 slightly transverse.

Pronotum slightly transverse, 1.1 times as wide as head, width 0.44-0.50 mm, length 0.37-0.43 mm, width to length ratio 1.1-1.3; glossy, with weak and dense isodiametric microsculpture; punctation poorly visible and finer than on head, distance between punc-

tures equal to ½-1 times their diameter. Elytra much wider (0.61-0.66 mm) and longer (0.56-0.61 mm; measured from humeral angle) than pronotum (elytral length to pronotal length ratio 1.5), 1.1 times as wide as long, surface glossy, with weak and dense isodiametric microsculpture; punctation as on pronotum.

Abdominal terga glossy, with weak isodiametric microsculpture; with fine punctation, distance between punctures equals 1-3 times their diameter on terga 3-5 and 2-5 times on terga 6-7. Apical margin of tergum 7 with white palisade fringe.

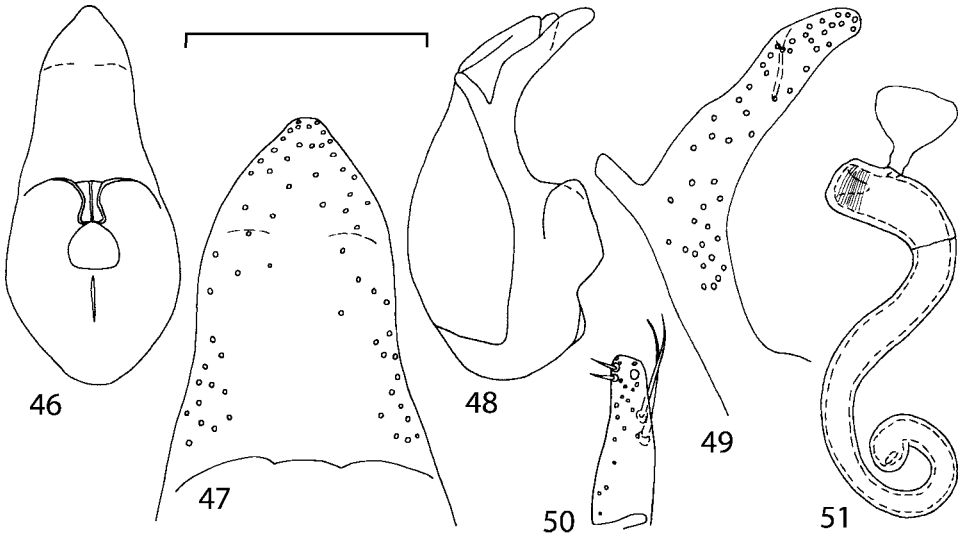
Posterior margin of male tergum 8 with straight posterior margin (Fig. 42).

Aedeagus as in Figs. 46-50, median lobe with pointed apex (Figs. 46-47).

Spermatheca as in Fig. 51.

Distribution. Known from the Gulf of California (Fig. 52).

Natural History. *Adota colpophila* is a littoral species, inhabiting decomposing seaweed on a beach.



FIGURES 46-51. Genitalia of *Adota colpophila* Gusarov, **sp. n.** (male (46-50) and female (51) paratypes from Punta Chueca, Mexico). 46 – median lobe, parameral view; 47 – apex of median lobe, parameral view; 48 – median lobe, lateral view; 49 – apex of median lobe, lateral view; 50 – apex of left paramere; 51 – spermatheca. Scale bar 0.1 mm (47, 49-50), 0.2 mm (46, 48, 51).

Palaearctic species of *Adota*

In this paper I synonymize *Atheta* (*Halostiba*) with *Adota* (see above) and transfer to *Adota* the Palaearctic species formerly included in *Halostiba*.

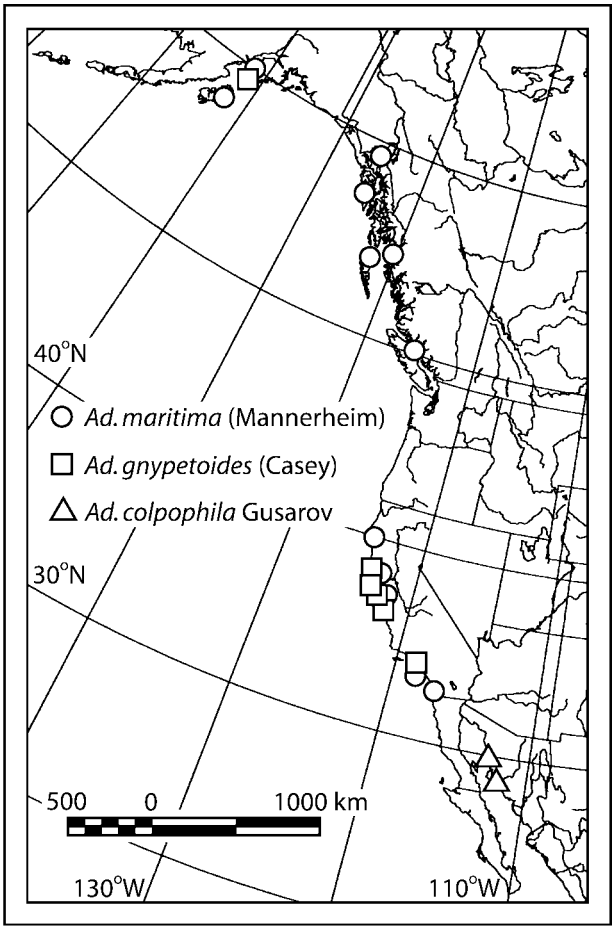


FIGURE 52. Geographical distribution of Nearctic species of *Adota*.

***Adota ushio* (Sawada, 1971), comb. nov.**
(Fig. 6 in Sawada 1971)

Ischnopoda (*Philhygra*) *ushio* Sawada, 1971: 304.
Atheta (*Halostiba*) *ushio*: Yosii & Sawada, 1976: 86.

Diagnosis. *Adota ushio* can be recognized by the distinct shape of the male tergum 8, aedeagus and spermatheca (Figs. 6, H, K-N: Sawada 1971).

Adota ushio can be distinguished from the Nearctic species of *Adota* by straight and crenulate posterior margin of the male tergum 8 and different shape of the aedeagus and spermatheca.

Distribution. *Adota ushio* is known from Japan (Honshu and Kyushu).

***Adota magnipennis* (Bernhauer, 1943), comb. nov.**
(Figs. 36, F-R in Yosii & Sawada 1976)

Atheta (*Anopleta*) *magnipennis* Bernhauer, 1943: 184.
Atheta (*Anopleta*) *magnipennis*: G.Benick, 1970: 94.
Atheta (*Halostiba*) *magnipennis*: Yosii & Sawada, 1976: 88.
Atheta (*Halostiba*) *magnipennis*: Sawada, 1977: 173.

Diagnosis. *Adota magnipennis* can be recognized by the distinct shape of male tergum 8 (Fig. 36, K: Yosii & Sawada 1976), the presence of few bifurcate microsetae at the apex of male sternum 8 (Fig.36, M) and by the distinct shape of the aedeagus and spermatheca (Figs. 36, N-R).

Adota magnipennis can be distinguished from the Nearctic species of *Adota* by the concave and slightly crenulate posterior margin of the male tergum 8 and different shape of the aedeagus and spermatheca.

Distribution. *Adota magnipennis* is known from Japan (Honshu and Kyushu).

***Adota madida* (Bernhauer, 1907), comb. nov.**
(Fig. 8 in Sawada 1977)

Atheta (*Halobrecta*) *madida* Bernhauer, 1907: 400.
Atheta (*Halostiba*) *madida*: Sawada, 1977: 190.

Diagnosis. *Adota madida* can be recognized by the distinct shape of male tergum 8 (Fig. 8, K: Sawada 1977), the presence of bifurcate microsetae at the apex of male sternum 8 (Fig. 8, G) and by the distinct shape of the aedeagus and spermatheca (Figs. 8, H-L).

Adota madida can be distinguished from the Nearctic species of *Adota* by slightly concave and almost smooth posterior margin of the male tergum 8 and different shape of the aedeagus and spermatheca.

Distribution. *Adota madida* is known from Japan (Honshu and Kyushu).

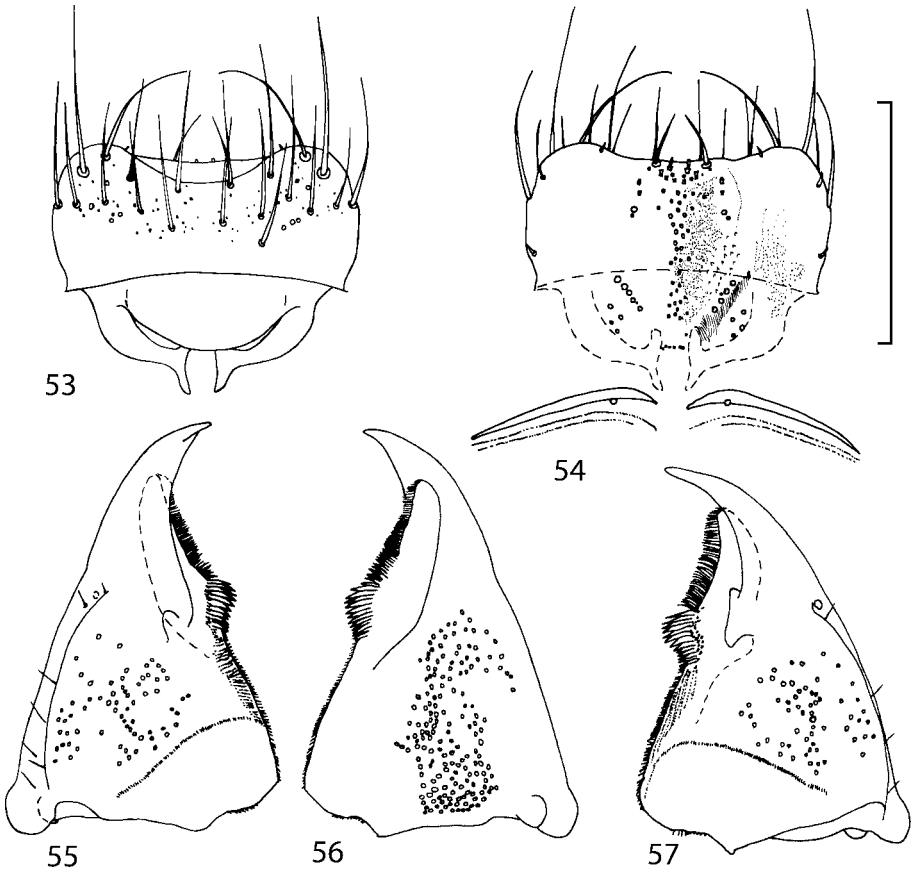
***Psammostiba* Yosii & Sawada, 1976, stat. nov.**
(Figs. 53-88)

Atheta (*Panalota*): Brundin, 1943: 19, *ex parte*.
Atheta (*Psammostiba* Yosii & Sawada, 1976): 82 (type species: *Homalota hilleri* Weise, 1877, by original designation).

Diagnosis. *Psammostiba* can be distinguished from the other athetine genera by the combination of the following characters: body parallel-sided; anterior margin of labrum concave; antennal articles 5-10 slightly elongate or subquadrate (Fig. 64); ligula long and split

in apical half (Fig. 58); labial palpus with setae α, β, γ and δ present (Fig. 58); pronotum slightly transverse, 1.1 times as wide as long, with microsetae directed anteriorly along the midline; in lateral portions of the disc microsetae directed laterally (Type I, Benick & Lohse 1974) (Fig. 62); pronotal macrosetae short; pronotal hypomera fully visible in lateral view; medial macroseta of mesotibia inconspicuous and thin, as long as tibial width; tarsal formula 4-5-5; metatarsal segment 1 as long as segment 2 (Fig. 65); no empodial setae (best observed in lateral view; Fig. 65); tarsal claws of different length (best observed in dorsal view; Fig. 66), external claw longer than internal; copulatory piece without pointed apex (Figs. 67-68); proximal portion of spermatheca with one coil (Figs. 77, 87).

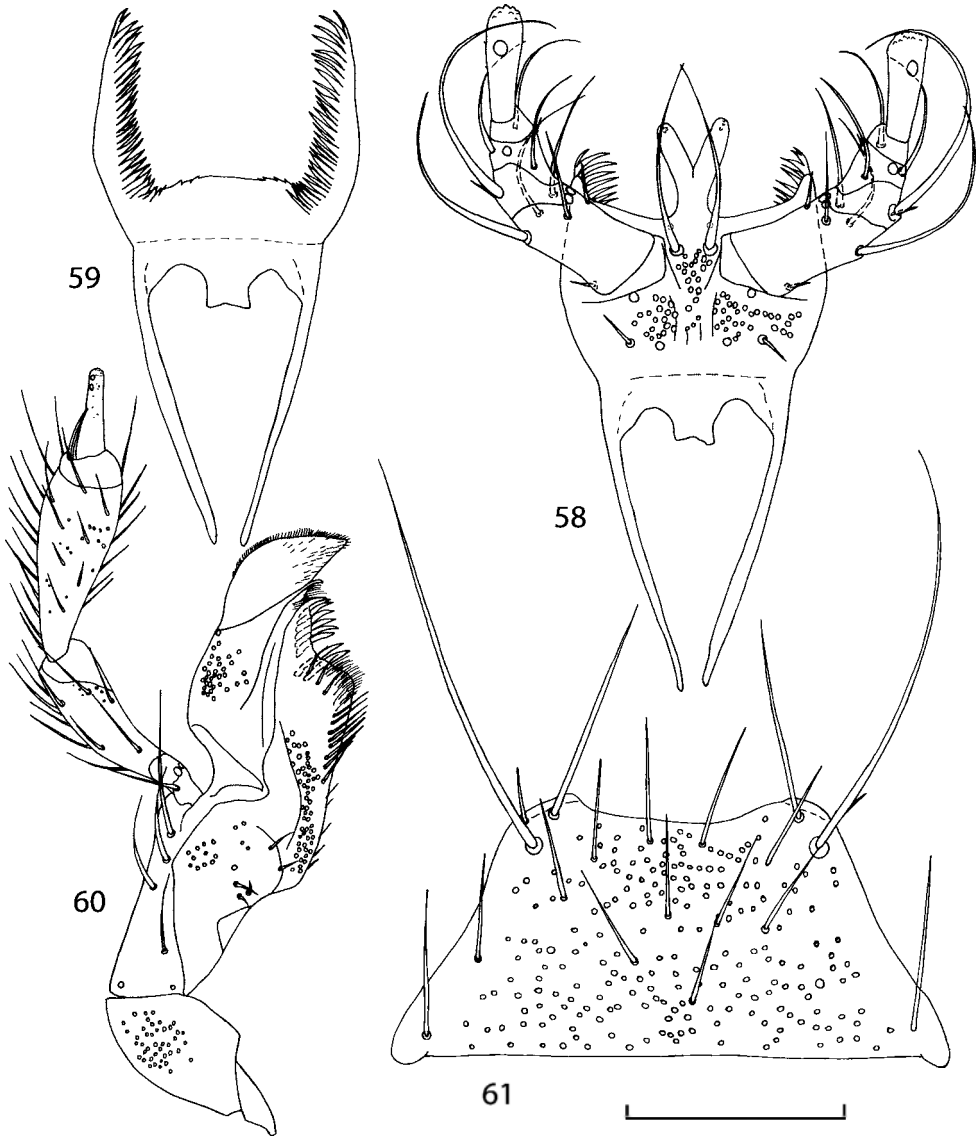
Psammostiba can be distinguished from *Atheta* by strong isodiametric microsculpture of the entire body; by the concave anterior margin of the labrum; by basal impression on the tergum 6; by lacking empodial seta and by tarsal claws of different length.



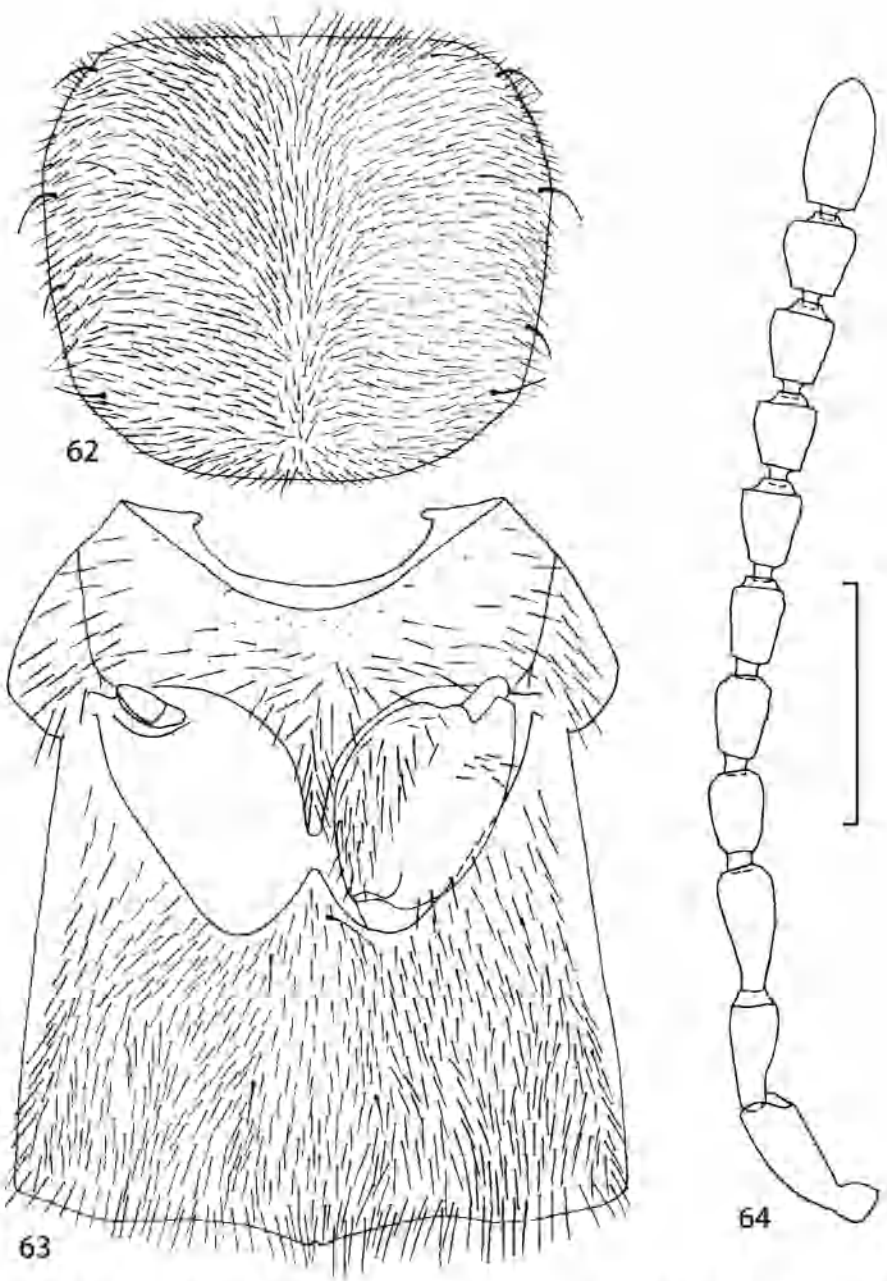
FIGURES 53-57. Mouthparts of *Psammostiba jessoensis* (Brundin) (male from Rudnaya Pristan', Russia). 53 – labrum; 54 – epipharynx; 55 – left mandible, dorsal view; 56 – left mandible, ventral view; 57 – right mandible, dorsal view. Scale bar 0.2 mm.

Psammostiba differs from *Adota* in having antennal article 3 longer than article 2 (Fig. 64); larger body; tarsal claws of different length; and in lacking the empodial seta.

Description. Length 3.0-5.0 mm, pronotal width 0.59-0.89 mm. Body black with brown legs and light brown tarsi.



FIGURES 58-61. Mouthparts of *Psammostiba jessoensis* (Brundin) (male from Rudnaya Pristan', Russia). 58 – prementum; 59 – hypopharynx; 60 – right maxilla, ventral view; 61 – mentum. Scale bar 0.1 mm (58-59, 61), 0.2 mm (60).



FIGURES 62-64. Details of *Psammostiba jessoensis* (Brundin) (62-63; female from Rudnaya Pristan', Russia) and *P. comparabilis* (Mäklin) (64; male from Homer, Alaska). 62 – pronotum; 63 – meso- and metathorax, ventral view; 64 – right antenna. Scale bar 0.4 mm.

Head 1.1 times as wide as long; eyes large, temple length to eye length ratio 0.9-1.1; infraorbital carina incomplete, reaching middle of eye or very short. Antennal article 3 slightly longer than article 2, articles 4-10 slightly elongate or subquadrate, terminal article

without coeloconic sensilla, shorter or as long as articles 9 and 10 combined (Fig. 64). Labrum (Fig. 58) transverse, with concave anterior margin. Adoral surface of labrum (epipharynx) as in Fig. 54. Mandibles (Figs. 55-57) broad, right mandible with a small medial tooth; dorsal molar area with velvety patch consisting of very small denticles (invisible at 400x). Maxilla (Fig. 60) with galea projecting slightly beyond apex of lacinia; apical lobe of galea covered with numerous fine and short setae; internal margin of galea with long subapical setae; apical 1/3 of lacinia with row of closely spaced spines, middle portion produced medially and covered with numerous setae (Fig. 60). Labium as in Figs. 58-59, 61; ligula long and split in apical half; medial area of prementum with 2 pores and with 18-30 pseudopores, lateral areas each with two asetose pores, single setose pore and 18-33 pseudopores (Fig. 58). Hypopharyngeal lobes as in Fig. 59. Labial palpus with setae α, β, γ and δ present (Fig. 58). Mentum (Fig. 61) with concave anterior margin.

Pronotum slightly transverse, 1.2 times as wide as long, with microsetae directed anteriorly in midline; in lateral portions of disc microsetae directed laterally (Type I, Benick & Lohse 1974) (Fig. 62); macrosetae short; hypomera fully visible in lateral view. Meso- and metasternum as in Fig. 63, mesosternal process narrow, extending about 4/7 length of mesocoxal cavities, metasternal process short, mesosternum and mesosternal process not carinate medially; relative lengths of mesosternal process: isthmus: metasternal process in ratio of about 4:1:2; mesocoxal cavities margined posteriorly; mesocoxae narrowly separated. Medial macroseta of mesotibia inconspicuous, shorter than tibial width. Tarsal segmentation 4-5-5, metatarsal segment 1 as long as segment 2 (Fig. 65). No empodial setae (best observed in lateral view; Fig. 65); tarsal claws of different length (best observed in dorsal view; Fig. 66), external claw longer than internal. Posterior margin of elytra straight. Wings fully developed.

Abdominal terga 3-6 with moderate basal impression. Tergum 7 as long as tergum 6. Punctation on terga 6-7 almost as dense as on terga 3-5. Tergum 7 with wide white palisade fringe.

Internal sac of aedeagus with a medial pair of partially sclerotized structures (Figs. 67-68; SS) which may be homologous to medial lamellae present in many genera of Athetini. Copulatory piece without pointed apex (Figs. 67-68); proximal portion of spermatheca with a single coil (Figs. 77, 87).

Type species. *Homalota hilleri* Weise, 1877, by original designation.

Discussion. Although originally proposed as a subgenus of *Atheta*, *Psammostiba* differs from *Atheta* in many characters (see Diagnosis) and it is considered here as a distinct genus of the tribe Athetini.

Yosii & Sawada (1976) state that in *P. hilleri* and *P. jessoensis* the "claws of all legs are variable in length and strength". In all twenty specimens of *P. jessoensis* examined by me the external claws were significantly longer than the internal ones.

Psammostiba seems to be restricted to the coasts of the Northern Pacific. *Psammostiba comparabilis* (Mäklin *in* Mannerheim, 1853) and *P. kenaii* Gusarov, **sp. n.** are the

only known Nearctic species of this genus. *Psammostiba* includes three additional Palaearctic species distributed in the Far East: *P. hilleri* (Weise, 1877), *P. jessoensis* (Brundin, 1943) and *P. kamtschatica* (Brundin, 1943).

Key to Nearctic species of *Psammostiba*

1 Body larger, length 4.0-4.6 mm, pronotal width 0.80-0.89 mm. Aedeagus larger (Figs. 73-76) with wider apex (Figs. 73-74). Spermatheca larger (Fig. 77)..... ..... 1. *P. comparabilis* (Mäklin)

– Body smaller, length 3.0-3.1 mm, pronotal width 0.59-0.64 mm. Aedeagus smaller (Figs. 82-86) with narrower apex (Figs. 82-83). Spermatheca smaller (Fig. 87)..... ..... 2. *P. kenaii* Gusarov, **sp. n.**

1. *Psammostiba comparabilis* (Mäklin *in* Mannerheim, 1853), comb. nov.
(Figs. 64, 66, 68-77)

Homalota comparabilis Mäklin *in* Mannerheim, 1853: 181.
Atheta (*Metaxya*) *comparabilis*: Fenyes, 1920: 199 (as valid species).
Atheta (*Metaxya*) *comparabilis*: Bernhauer & Scheerpeltz, 1926: 613 (as valid species).
Atheta (*Brundinia*) *comparabilis*: Moore & Legner, 1975: 357 (as valid species).
Philhygra comparabilis: Seevers, 1978: 266 (as valid species).
Adota comparabilis: Lohse & Smetana, 1985: 294 (as valid species).

Type material. Lectotype of *Homalota comparabilis* (designated by Lohse and Smetana (1985)), **UNITED STATES: Alaska:** Kodiak (MZHF).

Additional material. **UNITED STATES: Alaska:** Kenai Peninsula Co.: 15 specimens, Homer, S shore of Homer spit, 59°36.33'N 151°25.71'W, sandy seashore, in seaweed (V.I.Gusarov), 22.vii.1998 (AMNH, SPSU); **California:** Mendocino Co.: 2♀♀, Needle Rock, on beach (D.Giuliani), 6.x.1974 (UCR); **CANADA: British Columbia:** 2♂♂, 4♀♀, Queen Charlotte Islands, Graham Island, Toe Hill, "ex on rocks in intertidal" (J.S.Ashe), 14.vii.1988 (KSEM); ♀, Victoria (CASC).

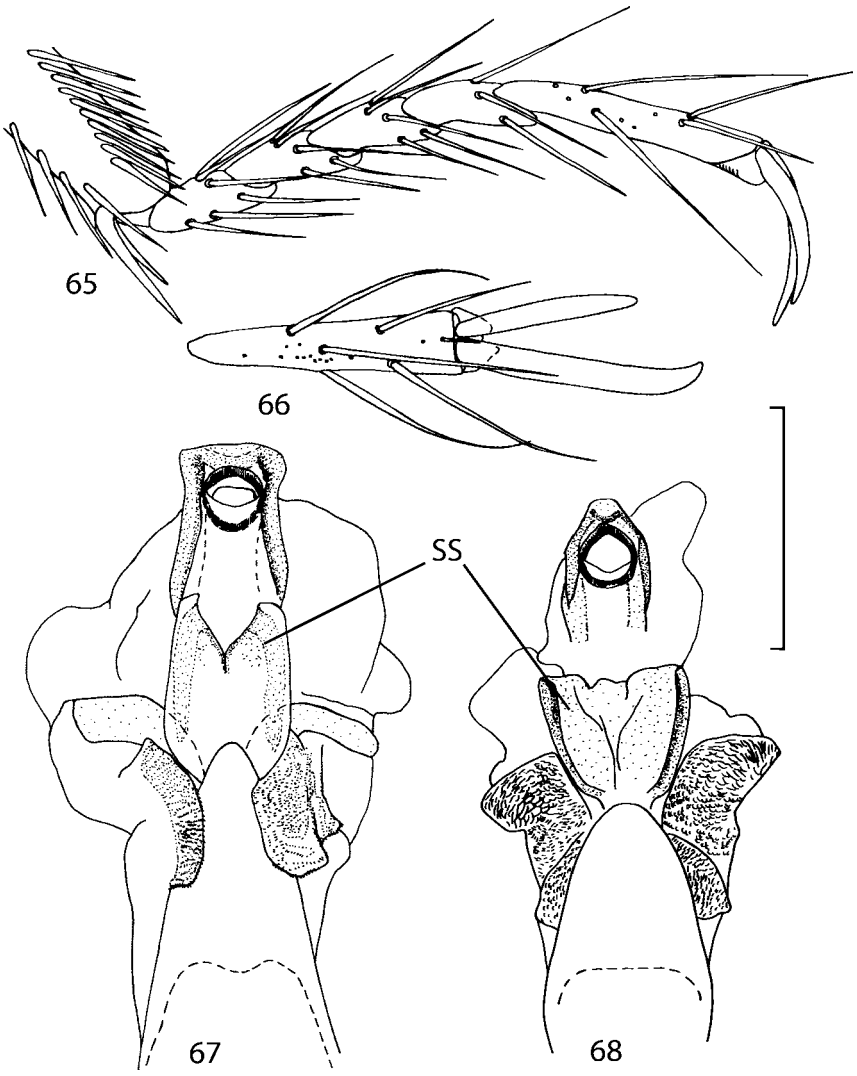
Diagnosis. *Psammostiba comparabilis* can be distinguished from *P. kenaii* by larger body, larger aedeagus with wider apex (Figs. 73-74; 82-83) and larger spermatheca (Figs. 77; 87).

Psammostiba comparabilis can be distinguished from the Palaearctic species of *Psammostiba* by the fine crenulation of the posterior margin of male tergum 8 (Fig. 69), and by the distinct shape of aedeagus (Figs. 68, 73-76) and spermatheca (Fig. 77).

Description. Length 4.0-4.6 mm. Body black with brown legs and light brown tarsi.

Head surface matte, with strong and dense isodiametric microsculpture, with fine punctation, distance between punctures equals their diameter; in both sexes with weak

medial impression. Temple length to eye length ratio 0.9-1.1. Antennal article 3 is 1.2 times as long as article 2, articles 4-10 elongate (ratios 1.5 (4-5), 1.4 (6), 1.3 (7) and 1.1 (8-10)), article 11 shorter than articles 9 and 10 combined (Fig. 54).



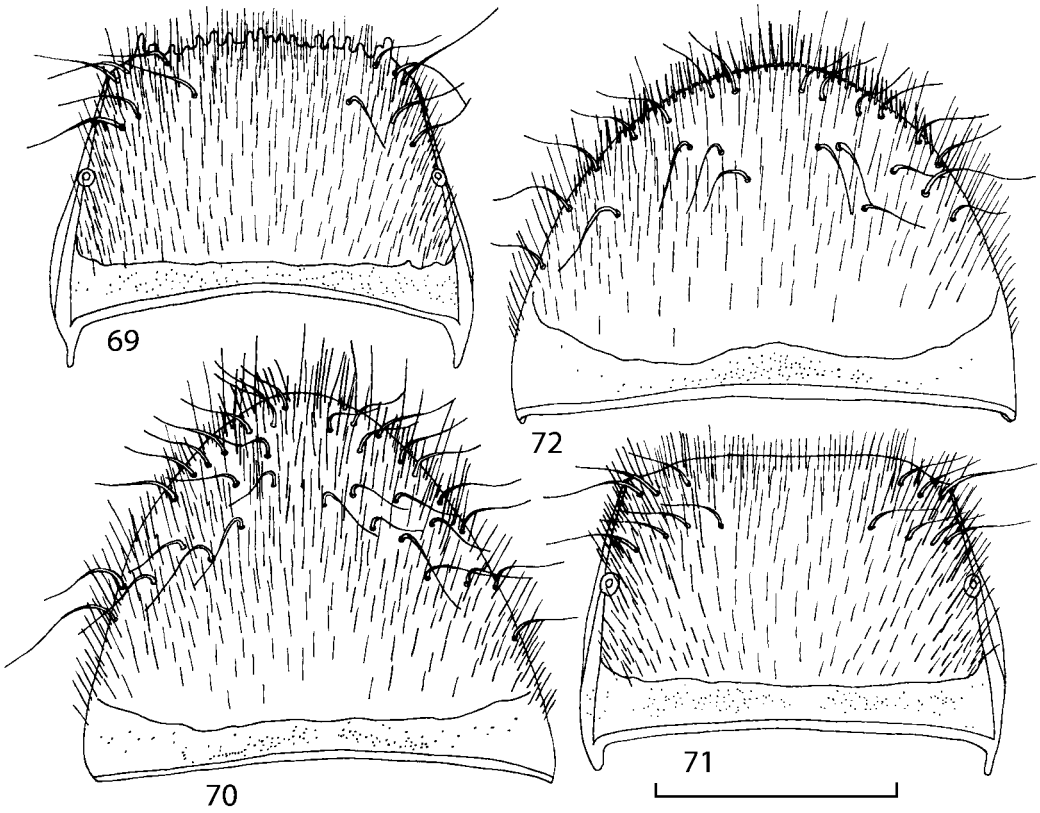
FIGURES 65-68. Details of *Psammostiba jessoensis* (Brundin) (65, 67; males from Rudnaya Pristan', Russia) and *P. comparabilis* (Mäklin) (66, 68; males from Homer, Alaska). 65 – right metatarsus; 66 – left metatarsal segment 5 and metapretarsus, dorsal view; 67-68 – everted internal sac, parameral view. SS – medial pair of sclerotized structures. Scale bar 0.2 mm.

Pronotum slightly transverse, 1.2 times as wide as head, width 0.80-0.89 mm, length 0.69-0.79 mm, width to length ratio 1.2; surface matte, with strong and dense isodiametric microsculpture; punctation finer than on head, poorly visible on matte background, dis-

tance between punctures equal to ½-1 times their diameter. Elytra much wider (1.10-1.30 mm) and longer (0.99-1.17 mm; measured from humeral angle) than pronotum (elytral length to pronotal length ratio 1.5), 1.1 times as wide as long, surface matte, with strong and dense isodiametric microsculpture; punctation as on pronotum.

Abdominal terga matte, with strong and dense isodiametric microsculpture, with fine punctation, punctation on terga 6-7 almost as dense as on terga 3-5, distance between punctures equals 1-3 times their diameter. Apical margin of tergum 7 with white palisade fringe.

Posterior margin of male tergum 8 with fine crenulation (Fig. 69). Posterior margin of male sternum 8 convex (Fig. 70).



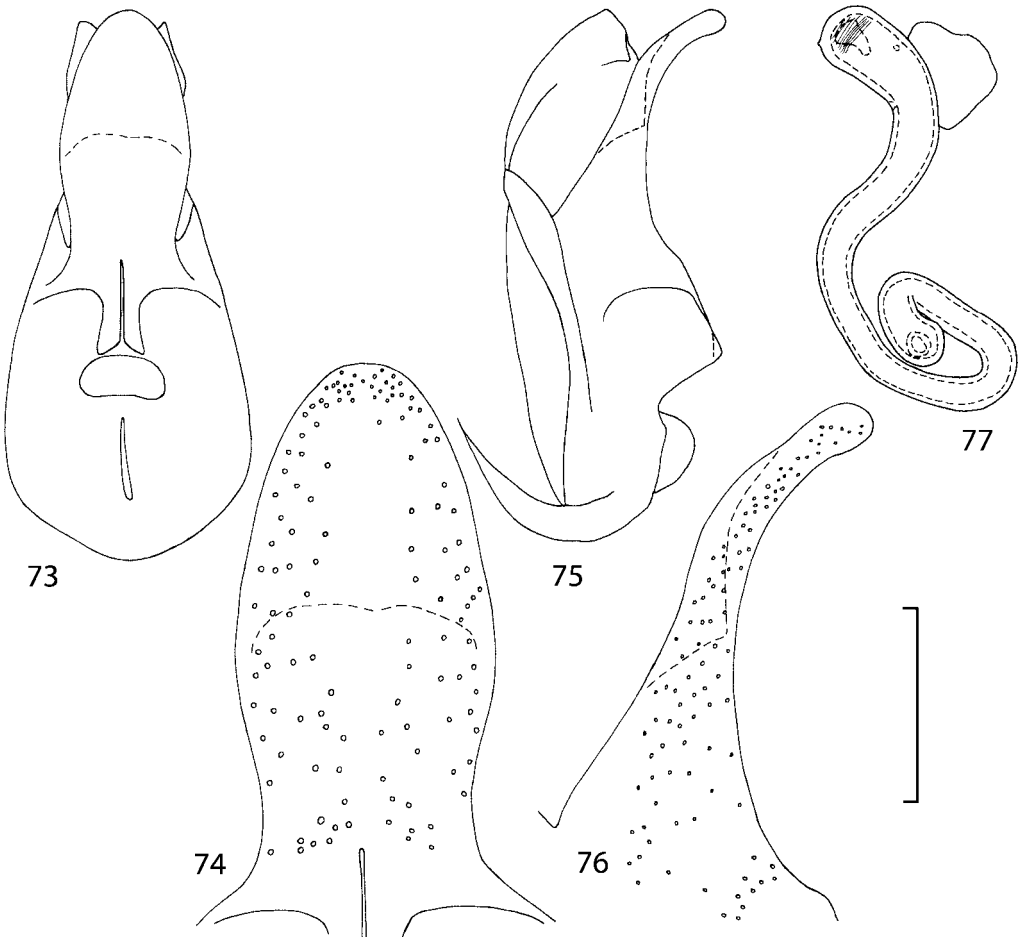
FIGURES 69-72. Abdominal segment 8 of *Psammostiba comparabilis* (Mäklin) (male (69-70) and female (71-72) from Homer, Alaska). 69 – male tergum 8; 70 – male sternum 8; 71 – female tergum 8; 72 – female sternum 8. Scale bar 0.4 mm.

Aedeagus as in Figs. 68, 73-76.

Spermatheca as in Fig. 77.

Distribution. Known from the Pacific coast of North America, from Alaska to California (Fig. 88).

Natural History. *Psammostiba comparabilis* is a littoral species, common in decomposing seaweed on a beach.



FIGURES 73-77. Genitalia of *Psammostiba comparabilis* (Mäklin) (male (73-76) and female (77) from Homer, Alaska). 73 – median lobe, parameral view; 74 – apex of median lobe, parameral view; 75 – median lobe, lateral view; 76 – apex of median lobe, lateral view; 77 – spermatheca. Scale bar 0.1 mm (74, 76), 0.2 mm (73, 75, 77).

2. *Psammostiba kenaii* Gusarov, sp. n.

(Figs. 78-87)

Type material. **Holotype**: ♂, **UNITED STATES**: **Alaska**: Haines Co.: Haines (Campbell & Smetana), 3.vii.1968 (CNCI).

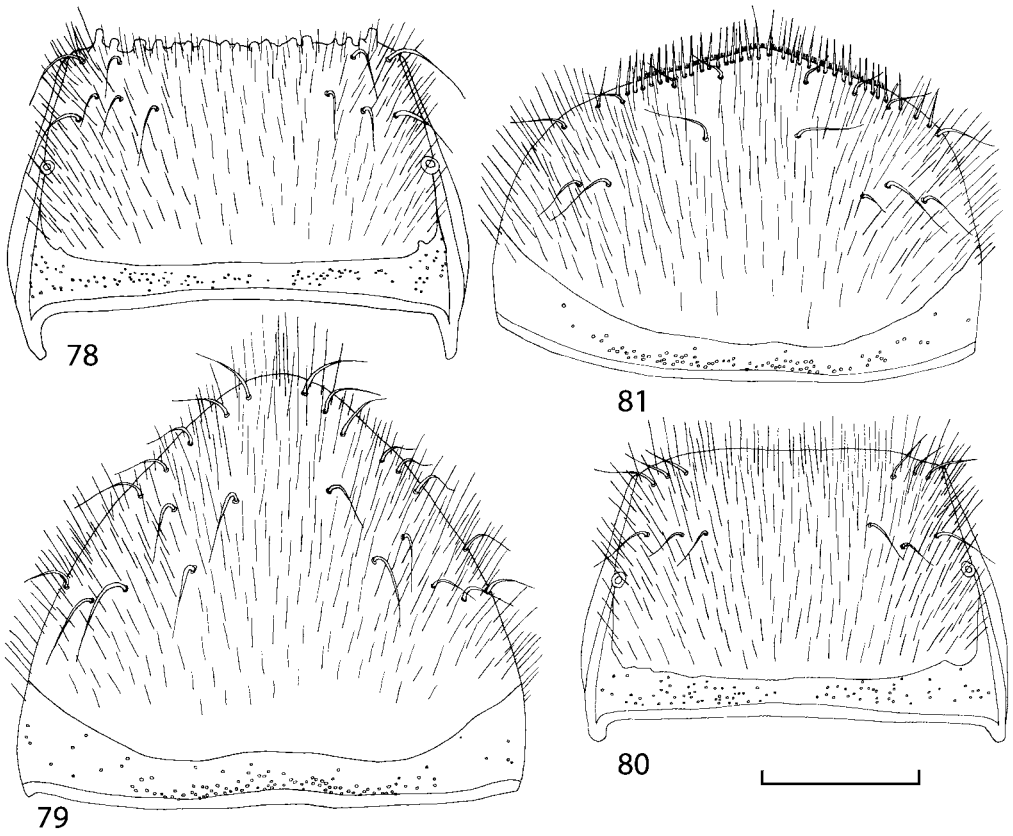
Paratypes: UNITED STATES: Alaska: Haines Co.: ♂, 4♀♀, Haines, sifting algae on beach (Campbell & Smetana), 3.vii.1968 (CNCI, SPSU); Kenai Peninsula Co.: ♂, Homer, S shore of Homer spit, 59°36.33'N 151°25.71'W, sandy seashore, in seaweed (V.I.Gusarov), 22.vii.1998 (SPSU).

Additional material. **UNITED STATES: California:** Mendocino Co.: ♀, Needle Rock, on beach (D.Giuliani), 6.x.1974 (UCR); **CANADA: British Columbia:** ♀, Victoria (CASC).

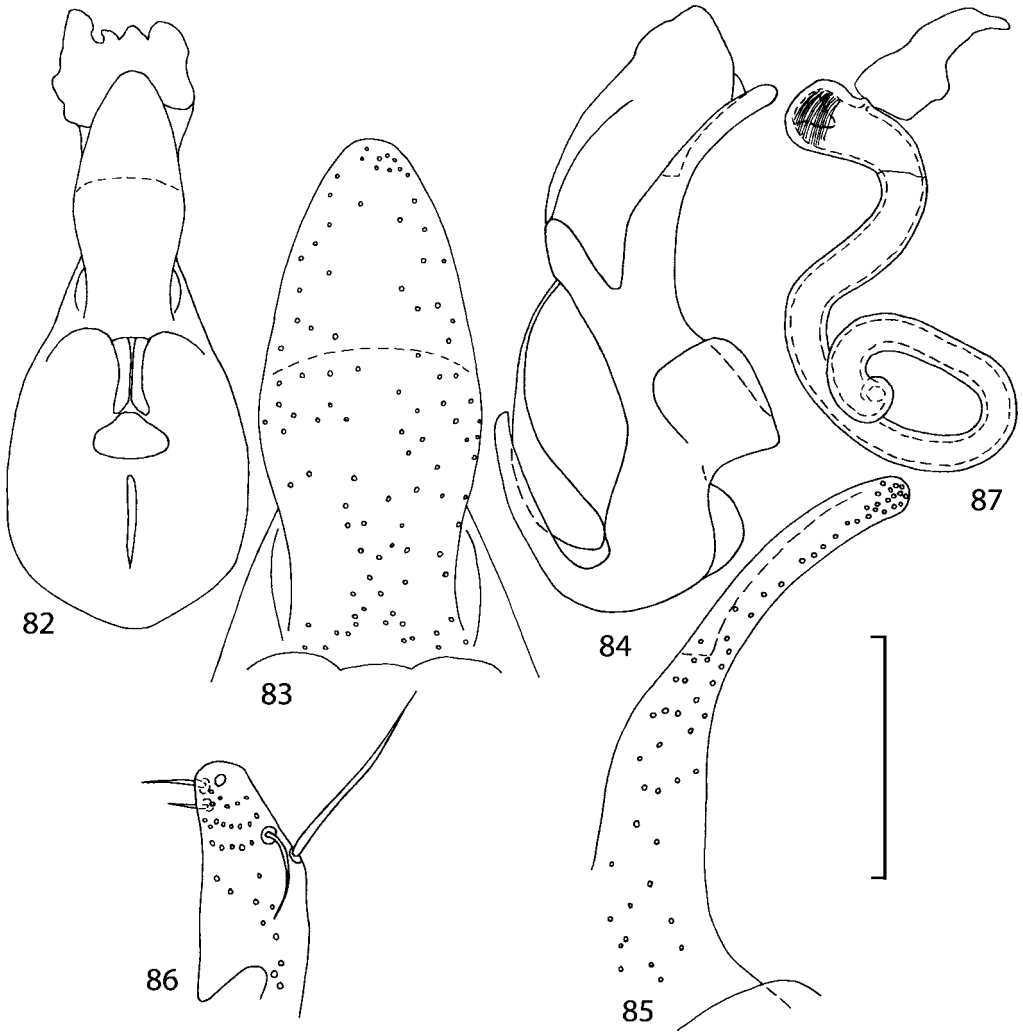
Diagnosis. *Psammostiba kenaii* can be distinguished from *P. comparabilis* by smaller body, smaller aedeagus with narrower apex (Figs. 82-83; 73-74) and smaller spermatheca (Figs. 87; 77).

Psammostiba kenaii can be distinguished from the Palaearctic species of *Psammostiba* by the fine crenulation of the posterior margin of male tergum 8 (Fig. 78), and by the distinct shape of aedeagus (Figs. 82-86) and spermatheca (Fig. 87).

Description. Length 3.0-3.1 mm. Body black, elytra dark brown to black, legs brown, tarsi yellowish brown.



FIGURES 78-81. Abdominal segment 8 of *Psammostiba kenaii* Gusarov, **sp. n.** (holotype, male (78-79), and paratype, female (80-81), from Haines, Alaska). 78 – male tergum 8; 79 – male sternum 8; 80 – female tergum 8; 81 – female sternum 8. Scale bar 0.2 mm.



FIGURES 82-87. Genitalia of *Psammostiba kenaii* Gusarov, **sp. n.** (holotype, male (82-86), and paratype, female (87), from Haines, Alaska). 82 – median lobe, parameral view; 83 – apex of median lobe, parameral view; 84 – median lobe, lateral view; 85 – apex of median lobe, lateral view; 86 – apex of left paramere; 87 – spermatheca. Scale bar 0.1 mm (83, 85-86), 0.2 mm (82, 84, 87).

Head surface matte, with strong and dense isodiametric microsculpture, with fine and poorly visible punctation, distance between punctures equals their diameter; in both sexes with weak medial impression. Temple length to eye length ratio 0.9-1.0. Antennal article 3 longer than article 2, articles 4-7 elongate, 8-10 elongate or subquadrate, article 11 shorter than articles 9 and 10 combined.

Pronotum slightly transverse, 1.2 times as wide as head, width 0.59-0.64 mm, length 0.47-0.53 mm, width to length ratio 1.2; surface matte, with strong and dense isodiametric microsculpture; punctation finer than on head, poorly visible on matte background, dis-

tance between punctures equal to ½-1 times their diameter. Elytra much wider (0.76-0.86 mm) and longer (0.70-0.76 mm; measured from humeral angle) than pronotum (elytral length to pronotal length ratio 1.5), 1.1 times as wide as long, surface matte, with strong and dense isodiametric microsculpture; punctation as on pronotum.

Abdominal terga matte, with strong and dense isodiametric microsculpture, with fine punctation, punctation on terga 6-7 almost as dense as on terga 3-5, distance between punctures equals 1-3 times their diameter. Apical margin of tergum 7 with white palisade fringe.

Posterior margin of male tergum 8 with fine crenulation (Fig. 78). Posterior margin of male sternum 8 convex (Fig. 79).

Aedeagus as in Figs. 82-86.

Spermatheca as in Fig. 87.

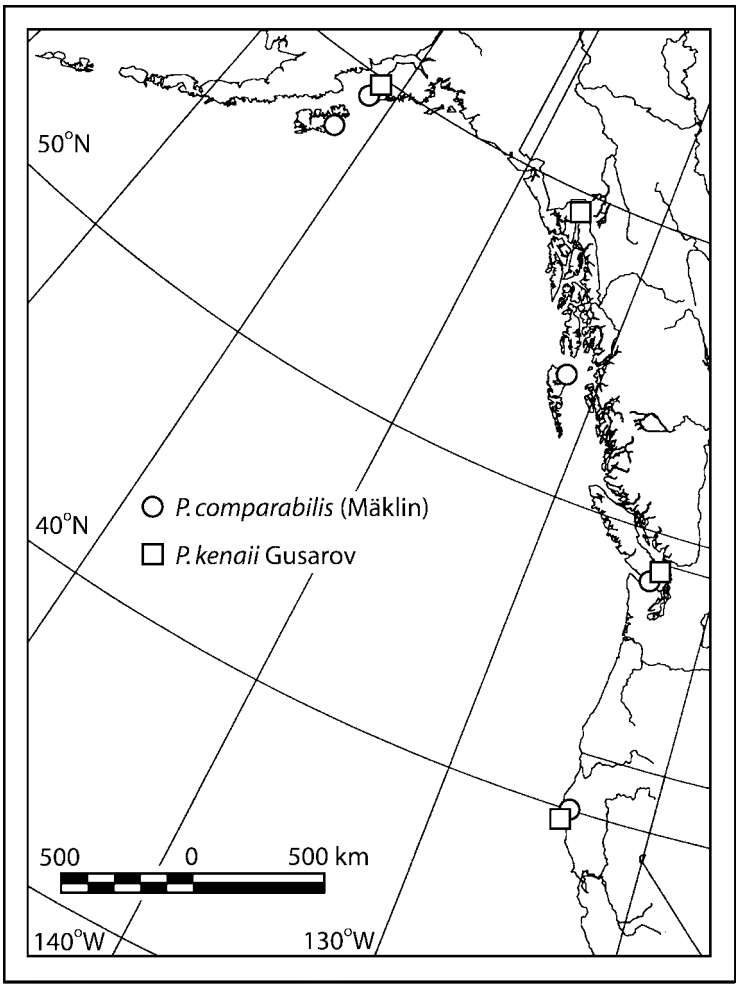


FIGURE 88. Geographical distribution of Nearctic species of *Psammostiba*. Records of *P. kenaii* Gusarov, **sp. n.** from British Columbia and California are based on female specimens only.

Distribution. Known from the Pacific coast of Alaska (Fig. 88). Records from British Columbia and California are based on female specimens and need to be reconfirmed when male specimens become available.

Natural History. *Psammostiba kenaii* is a littoral species, inhabiting decomposing seaweed on a beach.

Palaearctic species of *Psammostiba*

Since in this paper *Psammostiba* is raised to generic rank it seems appropriate to list the new generic combinations of the Palaearctic species formerly included in *Atheta* (*Psammostiba*).

Psammostiba hilleri (Weise, 1877), comb. nov.

(Fig. 5 in Sawada 1971; Figs. 18-19, 25 in Brundin 1943; Figs. 34, A-E in Yosii & Sawada 1976)

Homalota hilleri Weise, 1877: 90.
Atheta (*Metaxya*) *hilleri*: Fenyes, 1920: 198.
Atheta (*Metaxya*) *hilleri*: Bernhauer & Scheerpeltz, 1926: 614.
Atheta (*Panalota*) *hilleri*: Brundin, 1943: 20.
Ischnopoda (*Chaetida*) *multipunctata* Sawada, 1971: 301.
Atheta (*Psammostiba*) *hilleri*: Yosii & Sawada, 1976: 82.
Atheta (*Psammostiba*) *multipunctata*: Yosii & Sawada, 1976: 82 (as synonym of *At. hilleri*).
Atheta (*Psammostiba*) *hilleri*: Sawada, 1977: 171.

Diagnosis. *Psammostiba hilleri* can be recognized by smooth posterior margin of male tergum 8, and by the distinct shape of the aedeagus (Figs. 34, A-E: Yosii & Sawada 1976) and spermatheca (Fig. 25: Brundin 1943).

Psammostiba hilleri differs from *P. comparabilis* and *P. kenaii* by lack of crenulation of the posterior margin of male tergum 8.

Discussion. Brundin (1943) based his redescription of *P. hilleri* on a single female type from Hagi, Japan. His description of *P. jessoensis* (Brundin 1943) was also based on a single female type from Hokkaido, Japan. Apparently, Yosii and Sawada (1976) did not examine the types of these two species and based their interpretation entirely on Brundin's descriptions and on assumption that *P. hilleri* is a southern species, while *P. jessoensis* occurs in Northern Honshu and Hokkaido. However, the female spermatheca of *P. hilleri* illustrated by Sawada (1971: Fig. 5, M) does not match Brundin's drawing (1943: Fig. 25). To confirm the status of *P. hilleri* and *P. jessoensis* the types of both species and additional samples of *Psammostiba* from different localities in Japan need to be examined.

Distribution. *Psammostiba hilleri* is known from Japan (central and southern Honshu and Kyushu).

***Psammostiba jessoensis* (Brundin, 1943), comb. nov.**
(Figs. 21-27 in Brundin 1943; Figs. 34, F-N in Yosii & Sawada 1976; Figs. 53-63, 65, 67)

Atheta (*Panalota*) *jessoensis* Brundin, 1943: 22.
Atheta (*Psammostiba*) *jessoensis*: Yosii & Sawada, 1976: 84.
Atheta (*Psammostiba*) *jessoensis*: Sawada, 1977: 173.

Examined material: Russia: Maritime Territory (Primorskiy Kray): 20 specimens, Dalnegorsk Distr., env. of Rudnaya Pristan', "Smychka" Research Station, seashore, in seaweed (V.I.Gusarov), 11.ix.1987 (SPSU).

Diagnosis. *Psammostiba jessoensis* can be recognized by smooth posterior margin of male tergum 8, and by the distinct shape of the aedeagus (Figs. 34, J-N: Yosii & Sawada 1976) and spermatheca (Fig. 27: Brundin 1943).

Psammostiba jessoensis differs from *P. comparabilis* and *P. kenaii* by lack of crenulation of the posterior margin of male tergum 8.

Distribution. *Psammostiba jessoensis* is known from Japan (northern Honshu and Hokkaido) and Russia (Maritime Territory).

***Psammostiba kamtschatica* (Brundin, 1943), comb. nov.**
(Figs. 20, 26 in Brundin 1943; Fig. 35 in Yosii & Sawada 1976)

Atheta (*Panalota*) *kamtschatica* Brundin, 1943: 21
Atheta (*Psammostiba*) *kamtschatica*: Yosii & Sawada, 1976: 84.

Examined material: Russia: Sakhalin Region: ♀, Kuril Islands, Rasshua Island, SW part, W of Serp Mt., seashore, 47°43.24'N 152°58.36'E (Yu.M.Marusik), 12-13.viii.1992; 3 ♂♂, Kuril Islands, Urup Island, Negodnaya Bay, Vstrechnyy Ck., seashore, 45°57.55'N 150°10.33'E (Yu.M.Marusik), 29.viii.1995 (all - SPSU).

Diagnosis. *Psammostiba kamtschatica* can be recognized by smooth posterior margin of male tergum 8, and by the distinct shape of the aedeagus (Figs. 35, H-K: Yosii & Sawada 1976) and spermatheca (Fig. 26: Brundin 1943)

Psammostiba kamtschatica differs from *P. comparabilis* and *P. kenaii* by lack of crenulation of the posterior margin of male tergum 8.

Distribution. *Psammostiba kamtschatica* is known from Russia (Kamchatka Peninsula, Kuril Islands) and northern Japan (Hokkaido).

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