

## A revision of the Nearctic species of the genus *Halobrecta* Thomson, 1858 (Coleoptera: Staphylinidae: Aleocharinae) with notes on some Palaearctic species of the genus

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### Abstract

The marine littoral genus *Halobrecta* Thomson, 1858 is redescribed. Descriptions and a key to species known from the Nearctic Region (*Ha. algophila* (Fenyès, 1909) and *Ha. flavipes* Thomson, 1861) are provided. *Atheta barbarae* Casey, 1910 and *At. importuna* Casey, 1911 are placed in synonymy with *Halobrecta algophila* (Fenyès, 1909). *Atheta pocahontas* Casey, 1910, *At. vaticina* Casey, 1910 and *Aloconota incertula* Casey, 1910 are synonymized with *Halobrecta flavipes* Thomson, 1861. Lectotypes are designated for *Homalota puncticeps* Thomson, 1852, *Halobrecta flavipes* Thomson, 1861, *Atheta algophila* Fenyès, 1909, *At. pocahontas* Casey, 1910, *At. vaticina* Casey, 1910, *Aloconota incertula* Casey, 1910 and *At. importuna* Casey, 1911.

**Key words:** Coleoptera, Staphylinidae, Aleocharinae, *Halobrecta*, Nearctic, taxonomy, nomenclature, synonymy, identification key

### Introduction

Thomson (1858) erected the genus *Halobrecta* and included a single species, *Ha. puncticeps* (Thomson 1852), originally described from Sweden. Later he added a second species, *Ha. flavipes* Thomson, 1861. Since then several additional species were described or moved to *Halobrecta* (Bernhauer & Scheerpeltz 1926; Sawada 1985, 1987; Pace 1999), but only one species (*Ha. algophila* (Fenyès 1909) described from California) was known from North America before my contribution was published. In this paper I redescribe *Halobrecta* and two valid species now known from the Nearctic Region.

I follow the terminology accepted in the taxonomy of Aleocharinae (Sawada 1970, 1972; Newton *et al.* 2000). Additional terms used to refer to some setae and pores of the epipharynx were introduced by Gusarov (2003). A discussion of the terms applied to the parts of the internal sac of the aedeagus can be found in Gusarov (2002b). To avoid confusion on which side of the aedeagus should be called ventral (Gusarov 2002b), 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.

Alexandria Digital Library Gazetteer Server (ADLGS 2004: <http://www.alexandria.ucsb.edu/>) was used to find coordinates for some localities.

### Depositories

- BMNH – The Natural History Museum, London, United Kingdom (Mr. M. Brendell)  
CASC – California Academy of Sciences, San Francisco, United States (Dr. D.H. Kavanaugh)  
FMNH – Field Museum of Natural History, Chicago, United States (Dr. A.F. Newton)  
KSEM – Snow Entomological Collection, University of Kansas, Lawrence, United States (Dr. J.S. Ashe)  
MZLU – Museum of Zoology, Lund University, Lund, Sweden (Dr. R. Danielsson)  
NMNH – National Museum of Natural History, Washington, DC, United States (Dr. T.L. Erwin)  
ZMUN – Natural History Museum, University of Oslo, Oslo, Norway (Dr. V.I. Gusarov)

### *Halobrecta* Thomson, 1858

(Figs. 1–65)

*Halobrecta* Thomson, 1858: 35 (type species *Homalota puncticeps* Thomson, 1852, by monotypy).

*Halobrectha*: Thomson, 1861: 49 (as valid genus; incorrect subsequent spelling).

*Glaphya* Mulsant & Rey, 1873: 172 (as subgenus of *Dinaraea* Thomson, 1858; type species *Dinaraea pubes* Mulsant & Rey, 1873, by monotypy).

*Halobrectha*: Mulsant & Rey, 1875: 35 (as valid genus; incorrect subsequent spelling).

*Atheta* (*Halobrecta*): Fenyes, 1920: 185 (as valid subgenus).

*Glaphya*: Fenyes, 1920: 185 (as synonym of *Atheta* (*Halobrecta*)).

*Exatheta* Cameron, 1920: 265 (type species *Exatheta cingulata* Cameron, 1920, by subsequent designation (Blackwelder 1952)).

*Atheta* (*Halobrecta*): Bernhauer & Scheerpeltz, 1926: 621 (as valid subgenus in subtribe Athetina Casey, 1910).

*Glaphya*: Bernhauer & Scheerpeltz, 1926: 621 (as synonym of *Atheta* (*Halobrecta*)).

*Exatheta*: Bernhauer & Scheerpeltz, 1926: 681 (as valid genus in subtribe Schistogeniina Fenyes, 1918).

*Atheta* (*Halobrecta*): Scheerpeltz, 1934: 1600 (as valid subgenus).

- Halobrecta*: Blackwelder, 1952: 179 (as valid genus).  
*Glaphya*: Blackwelder, 1952: 170 (as synonym of *Halobrecta*).  
*Exatheta*: Blackwelder, 1952: 163 (as valid genus).  
*Halobrecta*: Benick & Lohse, 1974: 219 (as valid genus in tribe Callicerini Lohse, 1969).  
*Halobrecta*: Moore & Legner, 1975: 434 (as valid genus).  
*Halobrecta*: Seevers, 1978: 121 (as valid genus in subtribe Xenotae Seevers, 1978 (*nomen nudum*)).  
*Halobrecta*: Sawada, 1985: 108 (as valid genus in *Coprothassa* series).  
*Exatheta*: Sawada, 1985: 108 (as synonym of *Halobrecta*).  
*Halobrecta*: Lohse, 1989: 219 (as valid genus in tribe Athetini).  
*Halobrecta*: Ashe in Newton, Thayer, Ashe & Chandler, 2000: 369 (as valid genus in subtribe Athetina Casey, 1910).

**Diagnosis.** *Halobrecta* is distinguished from other athetine genera by the combination of the following characters: body parallel-sided; anterior margin of labrum straight; sensilla *a* of epipharynx long; antennal article 2 longer than article 3, articles 7–10 transverse; ligula long, parallel-sided, with narrow base and slightly split apically (Fig. 6); labial palpus with setae  $\alpha$  and  $\gamma$  present (Fig. 6); pronotum slightly transverse, 1.1–1.2 times as wide as long, with microsetae directed anteriorly along anterior half of midline, and posteriorly along posterior half of midline; in lateral portions of the disc microsetae directed laterally (Type III, Benick & Lohse 1974) (Fig. 14); pronotal macrosetae long; pronotal hypomera fully visible in lateral view; medial macroseta of mesotibia thin, as long as tibial width; mesothoracic process narrow (Fig. 15); posterior margin of elytra emarginate; tarsal formula 4-5-5; metatarsal segment 1 longer than segment 2; single empodial seta longer than claws; abdominal terga 3–5 with transverse basal impression; posterior margin of female tergum 8 with comb of scattered tiny projections (Figs. 20, 39); median lobe of aedeagus without athetine bridge, apex of paramere long and narrow, medial lamellae of internal sac absent; copulatory piece with pointed apex (Figs. 30, 41, 62) and without sclerotized suspensoria; spermatheca short, not divided into distal and proximal portions, with large umbilicus (Figs. 32, 51).

*Halobrecta* differs from other littoral aleocharines with the same tarsal formula (*Adota* Casey, 1910, *Psammotiba* Yosii & Sawada, 1976, *Pontomalota* Casey, 1885, *Tarphiota* Casey, 1894) in having a different type of pronotal pubescence (Fig. 14); the posterior margin of the elytra emarginate; the posterior margin of the female tergum 8 with a comb of scattered tiny projections (Figs. 20, 39); the median lobe without the athetine bridge (Figs. 25, 28); the paramere with a long apex (Figs. 36, 50) and a short spermatheca with a large umbilicus (Figs. 32, 51).

**Description.** Length 2.9–3.9 mm, pronotal width 0.53–0.66 mm. Body parallel-sided, dark brown, with legs, basal or all antennal articles, and mouthparts yellowish brown to yellow.

Head transverse; eye length to temple length ratio 0.7–1.2; infraorbital carina complete. Antennal article 2 longer than article 3, article 4 elongate, 5 elongate or subquadrate, 6 subquadrate or transverse, 7–10 transverse, apical article without coeloconic

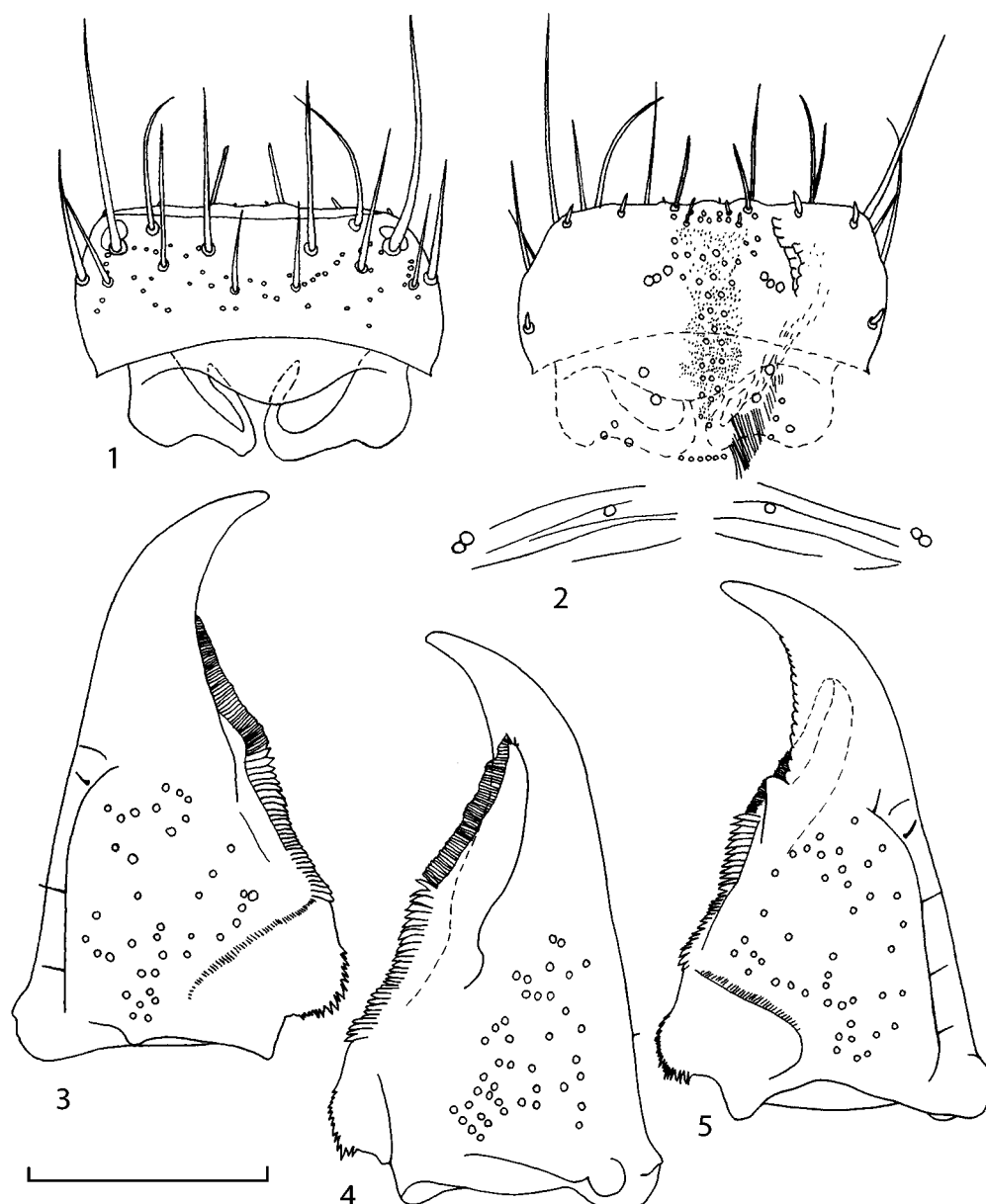
sensilla, as long as articles 9 and 10 combined. Labrum (Fig. 1) transverse, with straight anterior margin. Epipharynx (Fig. 2) with long sensilla *a*, with three pairs of small marginal setae, medial field with 32 pores, lateral rows with two pores each, anterolateral groups with three pores each, transverse row with six pores, posterolateral groups with three–four pores each, with one medial proximal pore on each side and two lateral proximal pores. Mandibles (Figs. 3–5) broad, right mandible with a small medial tooth; velvety patch of dorsal molar area not visible at 400x. Maxilla (Figs. 8–11) 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 (Fig. 9); distal comb of lacinia is divided into isolated groups of 5 and 2 closely placed spines (Figs. 10–11), middle portion produced medially and covered with numerous fine setae (Figs. 10–11), ventral surface of lacinia with a marginal group of 4 strong setae (Fig. 10), dorsal surface of lacinia with a row of 18 weak setae (Fig. 11). Labium as in Figs. 6–7, 12; ligula long and parallel-sided, with narrow base, slightly split apically (Fig. 6); medial area of prementum with 2 pores and 12 pseudopores, lateral areas each with two asetose pores, single setose pore and 9–10 pseudopores (Fig. 6). Hypopharyngeal lobes as in Fig. 7. Labial palpus with setae  $\alpha$  and  $\gamma$  present (Fig. 6). Mentum (Fig. 12) with concave anterior margin.

Pronotum (Fig. 14) slightly transverse, 1.1–1.2 times as wide as long, with microsetae directed anteriorly along anterior half of midline, posteriorly along posterior half of midline, and laterally in lateral portions of the disc (Type III, Benick & Lohse 1974) (Fig. 14); macrosetae long; hypomera fully visible in lateral view. Meso- and metasternum as in Fig. 15, 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 contiguous. Medial macroseta of mesotibia thin, as long as tibial width. Tarsal segmentation 4-5-5, metatarsal segment 1 longer than segment 2 (Fig. 17). One empodial seta, longer than claws (Fig. 16). Posterior margin of elytra emarginate. Wings fully developed.

Abdominal terga 3–5 with moderate basal impressions. Tergum 7 is as long as tergum 6. Punctuation on terga 6–7 finer and slightly sparser than on terga 3–5. Tergum 7 with wide white palisade fringe. Posterior margin of female sternum 8 with comb consisting of tiny projections (Fig. 21). Posterior margin of female tergum 8 with irregular comb of scattered projections (Fig. 20, 39) (in some males this comb is also present but may consist of just a few projections).

Median lobe of aedeagus without athetine bridge (Figs. 25, 28), internal sac without medial lamellae (Figs. 62–65); copulatory piece with pointed apex (Figs. 30, 62, 64) and without sclerotized suspensoria; paramere with long and narrow apex (Figs. 33–36); spermatheca short, not divided into distal and proximal portions, with large umbilicus (Figs. 32, 51).

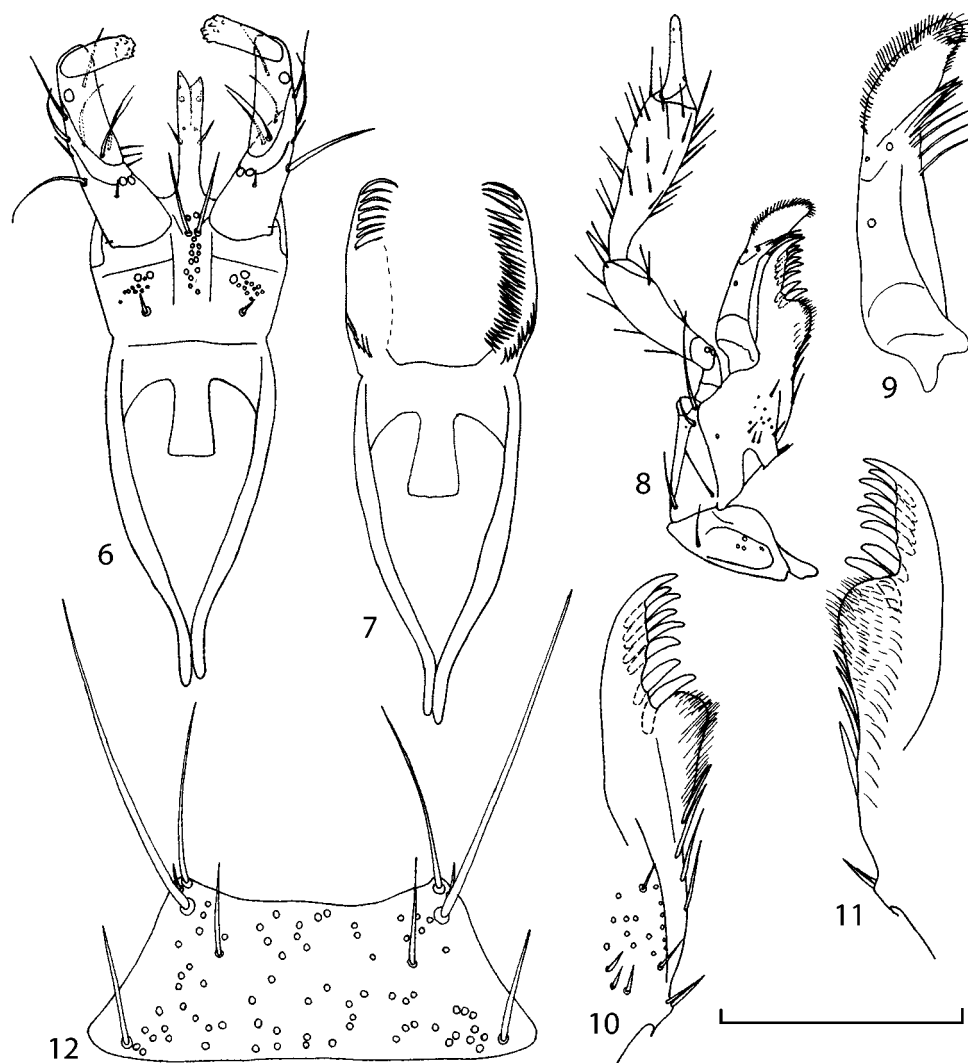
**Type species.** *Homalota puncticeps* Thomson, 1852, by monotypy (Thomson 1858).



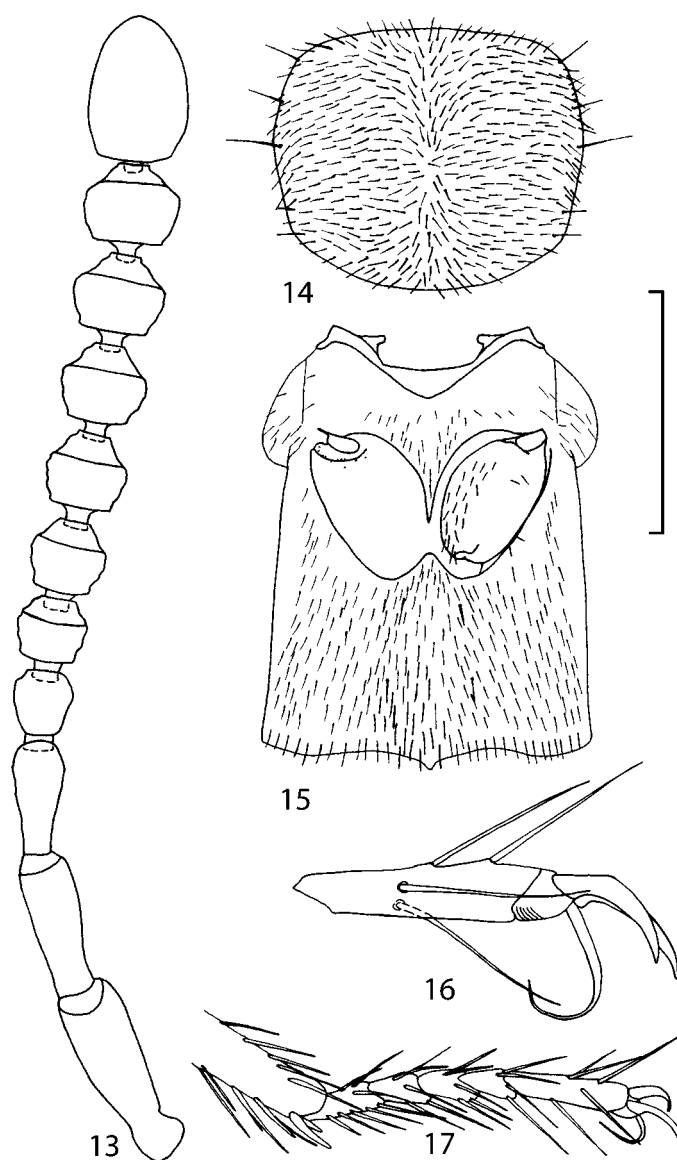
**FIGURES 1-5.** Mouthparts of *Halobrecta* sp. aff. *algae* (Hardy) (female, Grado, Italy). 1 — labrum; 2 — epipharynx; 3 — left mandible, dorsal view; 4 — left mandible, ventral view; 5 — right mandible, dorsal view. Scale bar 0.1 mm.

**Discussion.** *Halobrecta* is usually placed in the tribe Athetini but it lacks the athetine bridge of the median lobe which is considered as an autapomorphy of Athetini (Seevers 1978; Muona 1987; Newton *et al.* 2000) although this character is also present in the tribes Lomechusini Fleming (1821) and Falagriini Mulsant & Rey (1874). The lack of the athetine bridge in *Halobrecta* may suggest that it belongs to Oxypodini Thomson (1859). Another character traditionally used to distinguish between the aleocharine tribes is the

tarsal formula (*e.g.*, Lohse 1974). In *Halobrecta* it is 4-5-5 and supports the placement of the genus in Athetini. However there are examples of changes in tarsal formula even within a genus (*Gyronycha* Casey, 1894 (Seevers 1978), *Microlia* Casey, 1910 (Gusarov 2002a)). In addition to lacking the athetine bridge, *Halobrecta* is similar to some Oxypodini in having the apex of the paramere long; the spermatheca short with a large umbilicus; the posterior margin of the elytra emarginate; the ligula bisetose, long and narrow, split only at the very apex. The tribal placement of *Halobrecta* cannot be resolved until the phylogeny of Athetini and Oxypodini is analyzed.



**FIGURES 6–12.** Mouthparts of *Halobrecta* *sp. aff. algae* (Hardy) (female, Grado, Italy (6–11)) and *Ha. sp. cf. halensis* Mulsant & Rey, 1873 (female, Lignano, Italy (12)). 6 — prementum; 7 — hypopharynx; 8 — right maxilla, ventral view; 9 — right galea, ventral view; 10 — right lacinia, ventral view; 11 — right lacinia, dorsal view; 12 — mentum. Scale bar 0.1 mm (6–7, 9–12), 0.2 mm (8).



**FIGURES 13–17.** Details of *Halobrecta* sp. aff. *algae* (Hardy) (female, Grado, Italy). 13 — right antenna; 14 — pronotum; 15 — meso- and metathorax; 16 — left metatarsal segment 5 and metapretarsus, anterior view; 17 — right metatarsus, posterior view. Scale bar 0.1 mm (16), 0.2 mm (13, 17), 0.4 mm (14–15).

According to a recent review of the British intertidal beetles (Hammond 2000) *Halobrecta* includes at least four valid species, all of them recorded from the British Isles: *Ha. algae* (Hardy, 1851), *Ha. flavipes* Thomson, 1861, *Ha. princeps* (Sharp, 1869) and *Ha. algophila* (Fenyés, 1909). Two species from Singapore were described by Cameron (1920) in the genus *Exatheta* Cameron, 1920 (*E. cingulata* and *E. consors*) and subse-

quently transferred to *Halobrecta* and synonymized with each other by Sawada (1985, 1987). Pace (1999) described *Halobrecta discipula* from Chile. I am aware of an additional species of *Halobrecta* (**AUSTRALIA**: ♂, Victoria (FMNH); **GREECE**: ♂, 5 specimens (sex undetermined), Kérkira (J.Sahlberg); ♂, Elevsís (J.Sahlberg) (FMNH); **ITALY**: 18 specimens (sex undetermined), Friuli, Lignano, 25.v.1929 (A.Gagliardi); ♂, 1 specimen (sex undetermined), Fiumicino, 7.vi.1898 (FMNH); **MACEDONIA**: ♂, Vardar (FMNH); **YUGOSLAVIA**: 5 specimens (sex undetermined), Sutorina (Paganetti); ♂, ♀, Sutorina near Castelnuovo; ♂, 2 specimens (sex undetermined), Castelnuovo (Hummler) (FMNH)). This species differs from the other four species in the shape of the median lobe (Figs. 64–65) and may be conspecific with *Ha. halensis* Mulsant & Rey, 1873 described from the coast of Languedoc (France).

### Key to Nearctic species of *Halobrecta*

- 1 Males: spatuliform apex of median lobe (in parameral view) smaller, 1.1 times as wide as median lobe measured subapically at its narrowest point (Figs. 22–23, 26–27). Body length 3.0–3.9 mm, pronotal length 0.49–0.57 mm. Distributed along the Pacific coast of North America (California) (Fig. 66). Also known from Europe, Chile, New Zealand and Inaccessible Island of the Tristan da Cunha archipelago ..... 1. *H. algophila* (Fenyès)
- Males: spatuliform apex of median lobe (in parameral view) larger, 1.4–1.6 times as wide as median lobe measured subapically at its narrowest point (Figs. 41–44). Body length 2.9–3.2 mm, pronotal length 0.43–0.51 mm. Distributed along the Atlantic coast of North America (Virginia, New York) (Fig. 66). Also known from Europe and Chile ..... 2. *H. flavipes* Thomson

### 1. *Halobrecta algophila* (Fenyès, 1909)

(Figs. 18–36)

*Atheta* (*Halobrecta*) *algophila* Fenyès, 1909: 419.

*Atheta* (*s. str.*) *barbarae* Casey, 1910: 18, **syn. nov.**

*Atheta* (*s. str.*) *importuna* Casey, 1911: 111, **syn. nov.**

*Atheta* (*Halobrecta*) *algophila*: Fenyès, 1920: 185 (as valid species).

*Atheta* (*Halobrecta*) *algophila*: Bernhauer & Scheerpeltz, 1926: 621 (as synonym of *At. flavipes*).

*Atheta* (*s. str.*) *barbarae*: Bernhauer & Scheerpeltz, 1926: 638 (as valid species).

*Atheta* (*s. str.*) *importuna*: Bernhauer & Scheerpeltz, 1926: 644 (as valid species).

*Halobrecta algophila*: Moore & Legner, 1975: 434 (as valid species).

*Halobrecta algophila*: Seevers, 1978: 263 (as valid species).

*Halobrecta algophila*: Ashe in Newton, Thayer, Ashe & Chandler, 2000: 369 (as valid species).

*Halobrecta algophila*: Hammond, 2000: 275 (as valid species).

*Halobrecta flavipes*: Pace, 2000: 376 (*ex parte*; as valid species; misidentification).



*Halobrecta flavipes*: Klimaszewski, Maus & Gardiner, 2002: 483 (as valid species; misidentification).

*Halobrecta algophila*: Klimaszewski, Maus & Gardiner, 2002: 483 (as synonym of *Ha. flavipes*).

**Type material.** Lectotype of *Atheta algophila* (here designated): ♂, "San Diego, Cal. [ifornia] Dr. A.Fenyés", "2590", "*algophila* Feny.", "*algophila* Fen. Cotypus Fenyés" (yellow label), "Chicago NHMus. M.Bernhauer Collection", "*flavipes* [pencil] not = [black pen; by Lohse] (= [pencil; crossed with a black pen; by Lohse] *algophila*) [pencil] no! Lohse [with a black pen; by Lohse]" (FMNH); Paralectotypes: ♀, "San Diego, Cal. [ifornia] Dr. A.Fenyés", "2597", "*algophila* Fen. Cotypus Fenyés" (yellow label), "Chicago NHMus. M.Bernhauer Collection" (FMNH); ♀, "San Diego, Cal. [ifornia]", "2315", "Type!", golden circle, "A.Fenyés Collection" (yellow label), "*Atheta algophila* Feny.", "California Academy of Sciences. Type No. 4861" (CASC).

Holotype of *Atheta barbarae*: ♀, "S. [anta] Barbara Cal. [ifornia] 2.7.91 [7.ii.1891]", "*Atheta barbarae* Csy.", "TYPE USNM 39309" (red label), "CASEY bequest 1925" (NMNH).

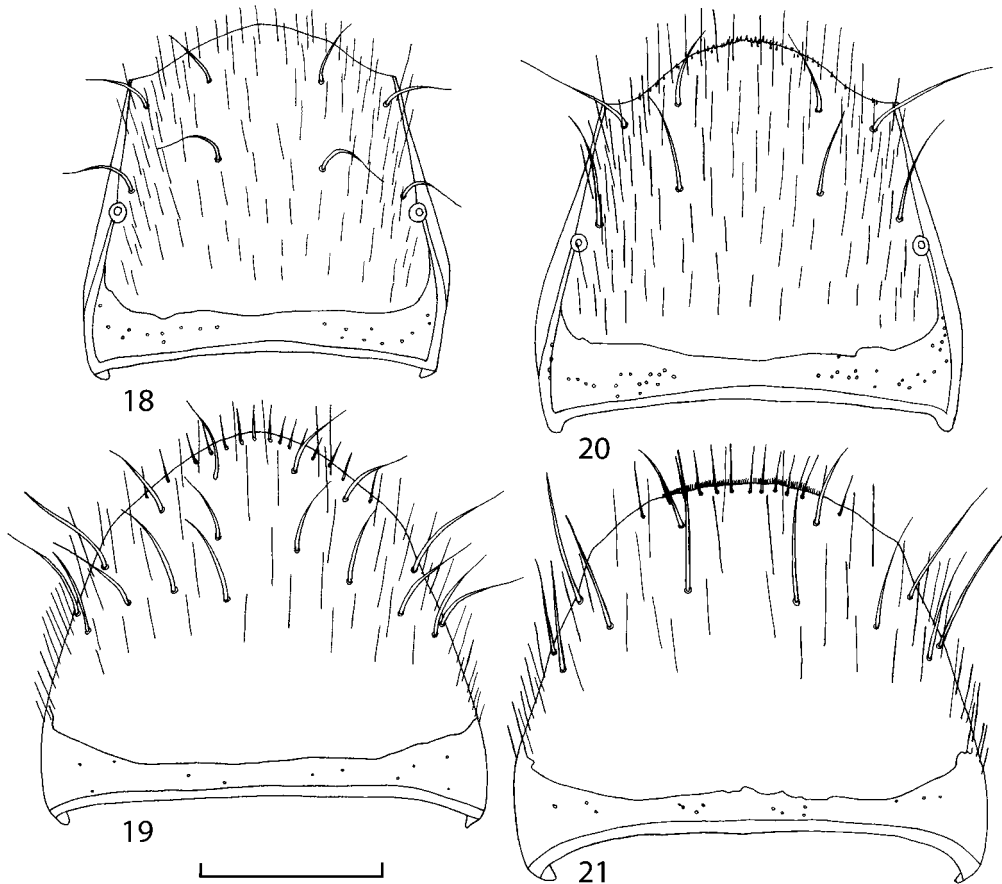
Lectotype of *Atheta importuna* (here designated): ♀, "Cal. [with black dot inside C; California: San Francisco]", "*importuna* Csy.", "TYPE USNM 39298" (red label), "CASEY bequest 1925" (NMNH).

**Additional material.** **CHILE: Palena Prov.:** 2♂♂, 8 specimens (sex undetermined), 4 km NW Chaiten, rocky beach drift, 31.i.1985 (S. & J.Peck) (FMNH); **FRANCE:** ♂, ♀, "Corsica" (FMNH); **NEW ZEALAND:** ♂, Auckland Wattle Bay, shore debris, 11.i.1984 (P.M.Hammond) (BMNH); ♂, 2♀♀, 1 specimen (sex undetermined), Timaru, under littoral algae, 11.i.1978 (S.Peck) (FMNH); **UNITED KINGDOM:** ♂, "41267" (C.E.Tottenham); 2 specimens (sex undetermined), South sea, Sharp (iv.1914); ♂, Kent, Chatham (G.C.Champion) (BMNH); **UNITED STATES: California:** ♂, without locality data (BMNH); Humboldt Co.: ♂, Samoa, 21.vi.1916 (F.E. Blaisdell) (CASC); Marin Co.: ♂, ♀, Chimney Rock, eelgrass drift, 24–30.iv.2002 (P.M.Hammond) (BMNH, ZMUN); San Diego Co.: 7♂♂, 2♀♀, San Diego (A.Fenyés) (BMNH (2), CASC (5), KSEM (1), ZMUN (1)).

**Diagnosis.** *Halobrecta algophila* is closely related to *Ha. flavipes*, but differs in having the body size smaller on average; and the spatuliform apex of the median lobe smaller (in parameral view), the apex is 1.1 times as wide as the median lobe measured subapically at its narrowest point (1.4–1.5 times in *Ha. flavipes*) (Figs. 22–23, 26–27; 41–44).

*Halobrecta algophila* differs from the Mediterranean species tentatively identified as *Ha. halensis* (see Discussion for *Halobrecta*) in having a narrower median lobe of the aedeagus (in parameral view) (Figs. 22–23, 26–27; 64).

*Halobrecta algophila* differs from the Palaearctic *Ha. algae* and *Ha. princeps* by having the posterior margin of the male tergum 8 rounded and not crenulate (Fig. 18) (in *Ha. algae* and *Ha. princeps* the posterior margin is straight and may be slightly crenulate (Fig. 52)); and by the apex of the median lobe broader (Figs. 23, 26; 56).



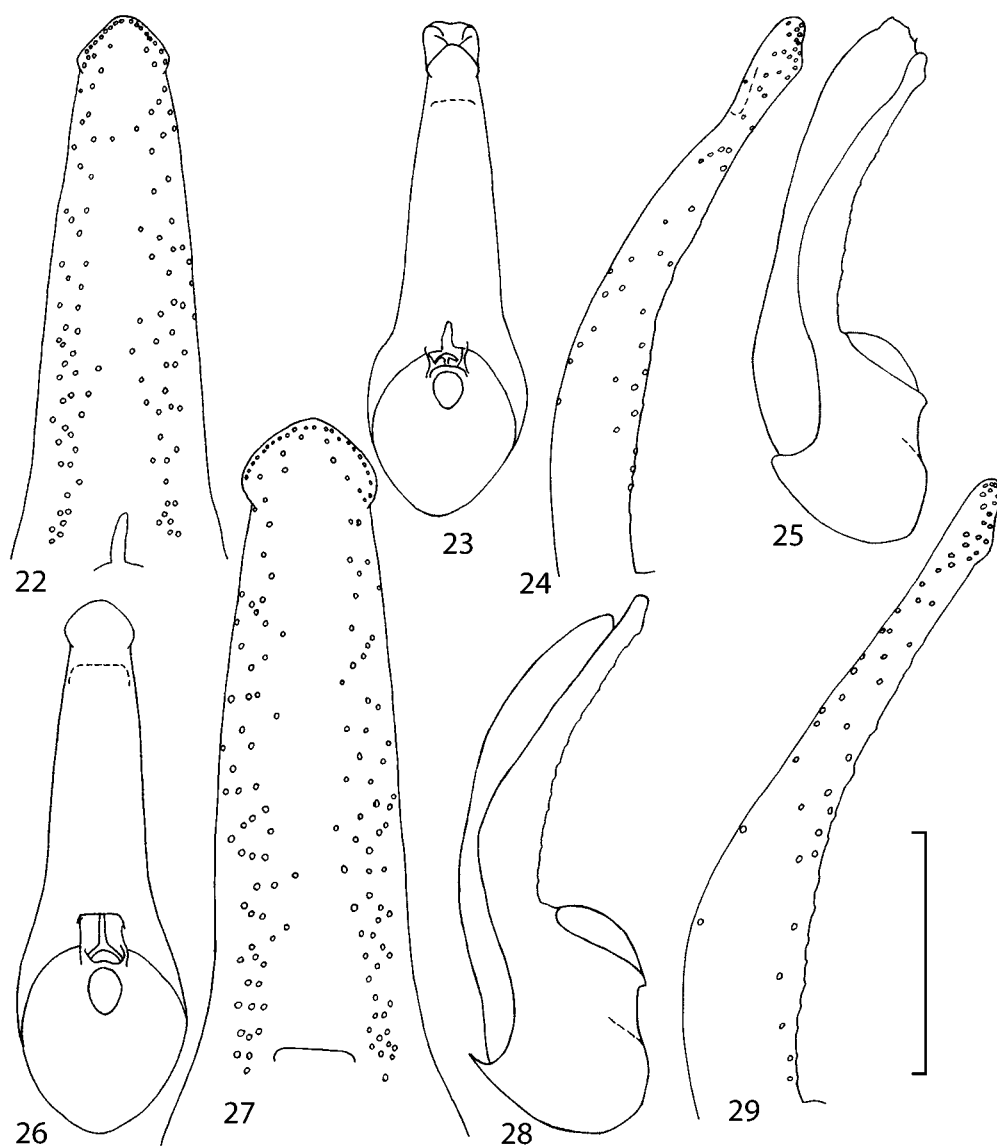
**FIGURES 18–21.** Abdominal segment 8 of *Halobrecta algophila* (Fenyés) (male lectotype (18–19) and female paralectotype of *At. algophila* (20–21)). 18 — male tergum 8; 19 — male sternum 8; 20 — female tergum 8; 21 — female sternum 8. Scale bar 0.2 mm.

*Halobrecta algophila* differs from the Oriental *Ha. cingulata* in having a different shape of the median lobe (in lateral view) (Figs. 24–25, 28–29: this paper; Fig. 9, G: Sawada 1985).

*Halobrecta algophila* differs from the Neotropical *Ha. discipula* in having a different shape of the median lobe (in parameral view) (Figs. 22–23, 26–27: this paper; Fig. 3: Pace 1999).

**Description.** Length 3.0–3.9 mm. Body dark brown, legs, mouthparts and 3–4 basal antennal articles yellow.

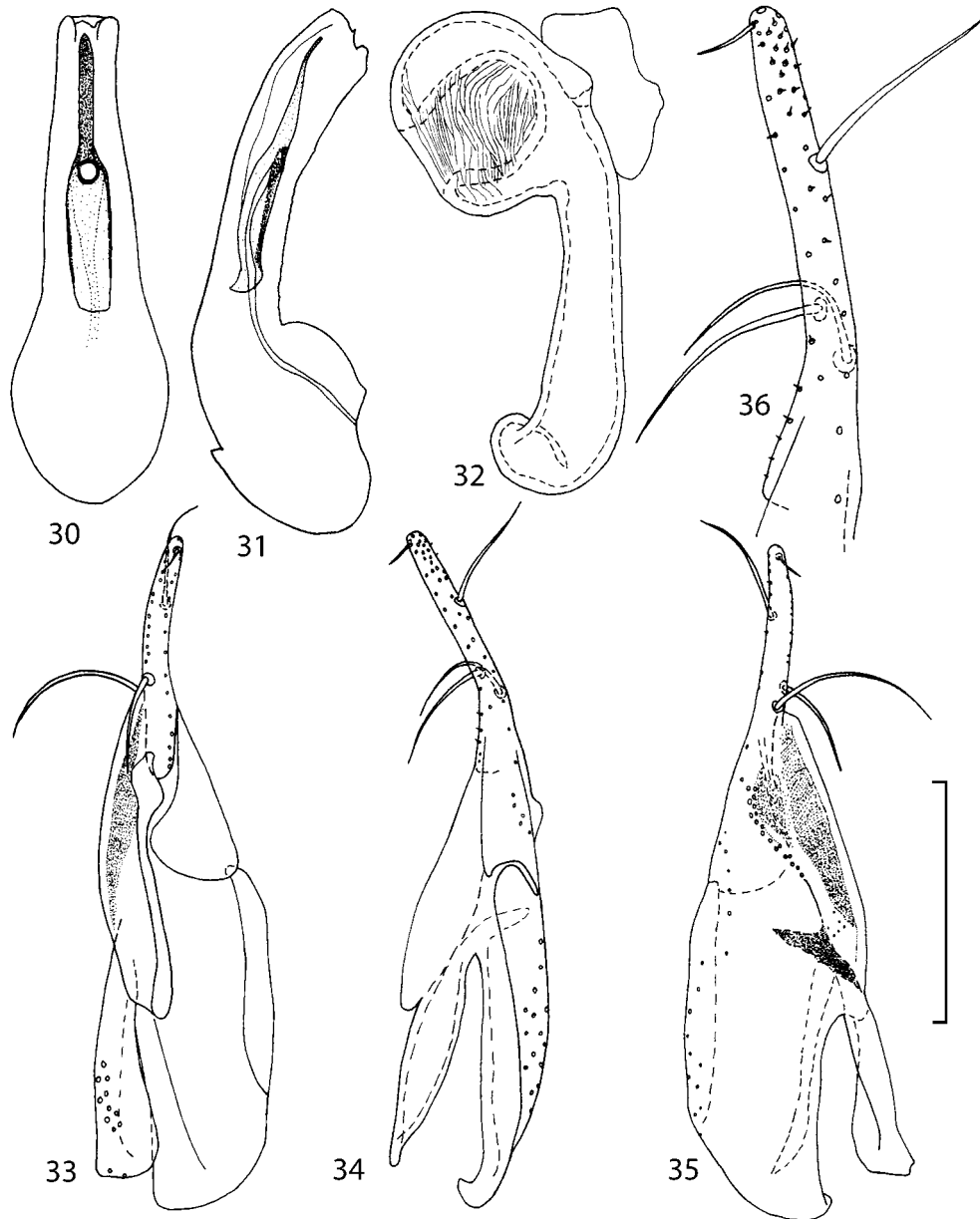
Head surface glossy, with weak isodiametric microsculpture, with strong punctation, distance between punctures equal to their diameter. Eyes 0.7–0.9 times as long as temples. Antennal article 2 slightly longer than article 3, article 4 elongate, 5 slightly elongate or subquadrate, 6 subquadrate or slightly transverse, 7–10 transverse, article 11 as long as articles 9 and 10 combined.



**FIGURES 22–29.** Aedeagus of *Halobrecta algophila* (Fenyés) (male lectotype of *At. algophila* (22–25), and male from the environs of Bolinas, California (26–29)). 22, 27 — apex of median lobe, parameral view; 23, 26 — apex of median lobe, parameral view; 25, 28 — median lobe, lateral view; 24, 29 — apex of median lobe, lateral view. Scale bar 0.1 mm (22, 24, 27, 29), 0.2 mm (23, 25, 26, 28).

Pronotum slightly transverse, 1.2 times as wide as head, width 0.57–0.66 mm, length 0.49–0.57 mm, width to length ratio 1.1–1.2; less glossy than head, isodiametric microsculpture stronger than on disk of head; punctation finer than on head, poorly visible on microsculptured background, distance between punctures equal to 1–2 times their diameter. Elytra much wider (0.57–0.93 mm) and longer (0.61–0.80 mm; measured from humeral angle) than pronotum (elytral length to pronotal length ratio 1.3–1.4), 0.9–1.2

times as wide as long, surface glossy, with weak isodiametric microsculpture; punctation finer than on disk of head but much stronger than on pronotum, distance between punctures equal to their diameter.



**FIGURES 30–36.** Genitalia of *Halobrecta algophila* (Fenyés) (male lectotype (30–31, 33–36) and female paralectotype of *At. algophila* (32)). 30 — details of retracted internal sac, abparameral view; 31 — details of retracted internal sac, lateral view; 32 — spermatheca; 33 — left paramere, view from the side facing the median lobe; 34 — left paramere, marginal view; 35 — left paramere, view from the side opposite to the median lobe; 36 — apex of left paramere, marginal view. Scale bar 0.1 mm (32, 36), 0.2 mm (30–31, 33–35).

Abdominal terga glossy, with poorly visible (at 70x) microsculpture consisting of transverse waves; with fine punctation, distance between punctures equals 2–4 times their diameter on terga 3–5 and 2–6 times on terga 6–7.

Posterior margin of male tergum 8 rounded and not crenulate (Fig. 18).

Aedeagus as in Figs. 22–31, 33–36.

Spermatheca as in Fig. 32.

**Discussion.** The types of *At. barbarae* and *At. importuna* (both females) are similar in external characters to the examined types of *Ha. algophila* as well as in the shape of the spermatheca. Although *Ha. algophila* and *Ha. flavipes* cannot be reliably distinguished without examination of the male genitalia, I consider *At. barbarae* and *At. importuna* to be synonyms of *Ha. algophila* because all examined males from the West Coast belong to that species.

The specimens from Inaccessible Island of the Tristan da Cunha archipelago identified by Klimaszewski *et al.* (2002) as *Ha. flavipes* seem to be misidentified. The (ab)parameral view of the median lobe (Fig. 1: Klimaszewski *et al.*, 2002) does not agree with that of *Ha. flavipes* (Figs. 41–44: this paper;) but fits *Ha. algophila* (Figs. 22–23, 26–27: this paper).

The examined specimens from Chaiten, Chile, listed by Pace (2000) as *Ha. flavipes* belong in fact to *Ha. algophila*.

**Distribution.** *Halobrecta algophila* is known from the coasts of California, Europe, Chile, New Zealand and Inaccessible Island of the Tristan da Cunha archipelago (Klimaszewski *et al.*, 2002).

**Natural History.** *Halobrecta algophila* is a marine littoral species.

## 2. *Halobrecta flavipes* Thomson, 1861

(Figs. 37–51)

*Halobrecta flavipes* Thomson, 1861: 50.

*Homalota maritima* Waterhouse, 1863: 138 (*nec* Mannerheim, 1843: 224) (replacement name for *Homalota flavipes* (Thomson, 1861), *nec* *Homalota flavipes* (Gravenhorst, 1806)).

*Homalota halobrectha* Sharp, 1869: 139 (replacement name for *Homalota flavipes* (Thomson, 1861), *nec* *Homalota flavipes* (Gravenhorst, 1806)).

*Halobrectha flavipes*: Mulsant & Rey, 1875: 45 (as synonym of *Ha. anthracina* (Fairmaire, 1853)).

*Atheta* (*s. str.*) *pocahontas* Casey, 1910: 19, **syn. nov.**

*Atheta* (*s. str.*) *vaticina* Casey, 1910: 19, **syn. nov.**

*Aloconota* (*s. str.*) *incertula* Casey, 1910: 84, **syn. nov.**

*Atheta* (*Halobrecta*) *flavipes*: Fenyés, 1920: 185 (as valid species).

*Atheta* (*Halobrecta*) *flavipes*: Bernhauer & Scheerpeltz, 1926: 621 (as valid species).

*Atheta* (*Halobrecta*) *maritima* (Waterhouse): Bernhauer & Scheerpeltz, 1926: 621 (as synonym of *At. flavipes*).

*Atheta* (*Halobrecta*) *halobrectha*: Bernhauer & Scheerpeltz, 1926: 621 (as synonym of *At. flavipes*).

*Atheta* (*s. str.*) *pocahontas*: Bernhauer & Scheerpeltz, 1926: 648 (as valid species).

*Atheta* (*s. str.*) *vaticina*: Bernhauer & Scheerpeltz, 1926: 651 (as valid species).

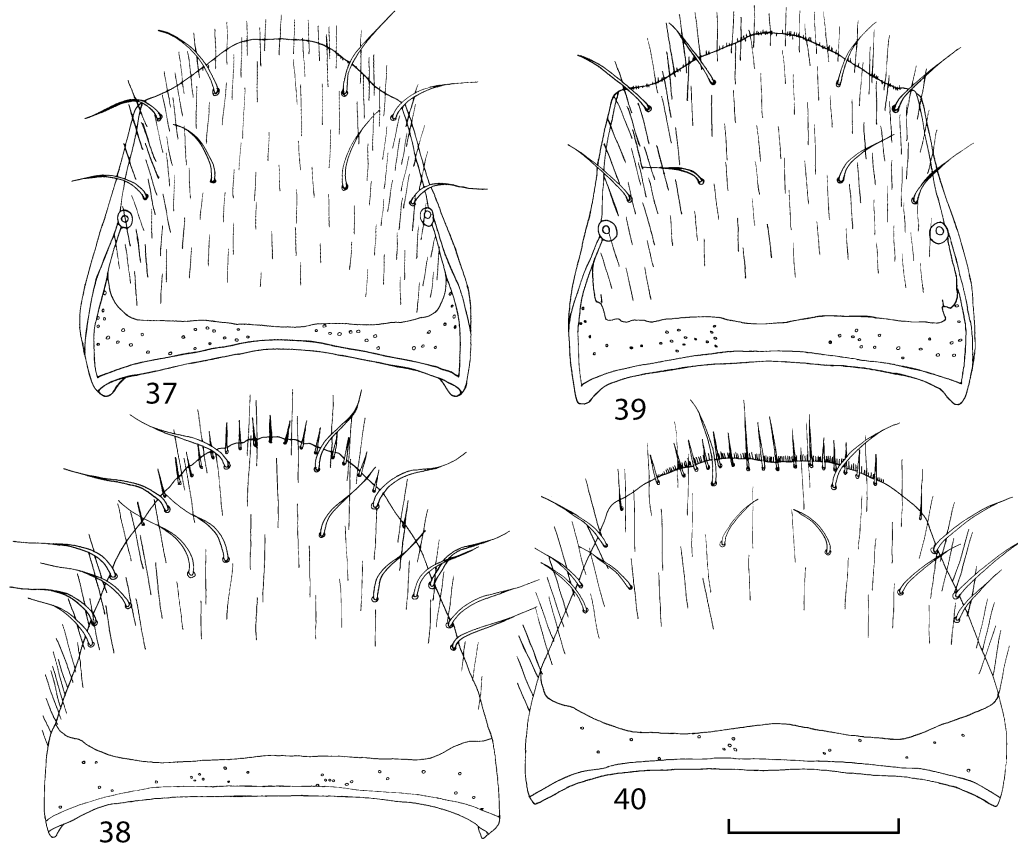
*Atheta* (*s. str.*) *incertula*: Bernhauer & Scheerpeltz, 1926: 644 (as valid species).

*Atheta* (*Halobrecta*) *flavipes*: Scheerpeltz, 1934: 1600 (as valid species).

*Halobrecta flavipes*: Benick & Lohse, 1974: 219 (as valid species).

*Halobrecta flavipes*: Hammond, 2000: 275 (as valid species).

*Halobrecta flavipes*: Pace, 2000: 376 (*ex parte*; as valid species).



**FIGURES 37–40.** Abdominal segment 8 of *Halobrecta flavipes* Thomson (male (37–38) and female paralectotypes *Atheta pocahontas* Casey (39–40)). 37 — male tergum 8; 38 — male sternum 8; 39 — female tergum 8; 40 — female sternum 8. Scale bar 0.2 mm.

**Type material.** Lectotype of *Halobrecta flavipes* (here designated): ♂, "L-a [Lomma, Sweden]" (MZLU (Thomson collection)).

Lectotype of *Atheta pocahontas* (here designated): ♂, "Va. [with two black dots under "a", Virginia: Fort Monroe (according to Casey locality code (FitzGerald 1962))]", "*pocahontas*-3 PARATYPE USNM 39310" (red label), "CASEY bequest 1925". Paralectotypes: ♀, "Va. [with one black dot under "a", Virginia: Norfolk (FitzGerald 1962))]", "*Atheta pocahontas* Csy.", "TYPE USNM 39310" (red label), "CASEY bequest 1925"; ♂, with missing head, prothorax and elytra, ♂, "Va. [with two black dots under "a", Virginia:

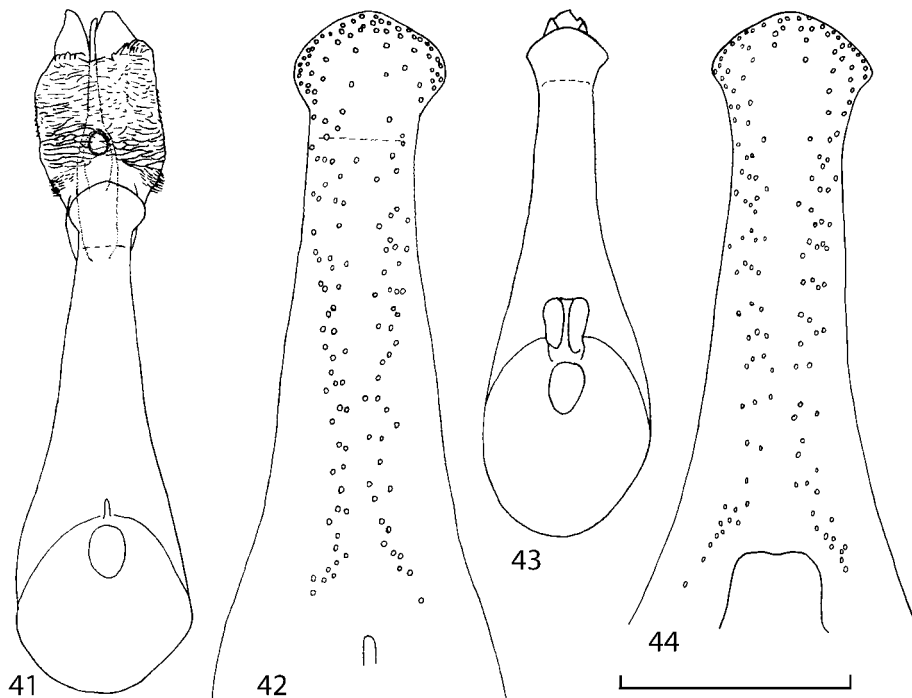
Fort Monroe]", "*pocahontas*-2 PARATYPE USNM 39310" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta vaticina* (here designated): ♀, "L.I. [Long Island, New York]", "*Atheta vaticina* Csy.", "TYPE USNM 39311" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Aloconota incertula* (here designated): ♀, "Va. [with two black dots under "a", Virginia: Fort Monroe]", "*incertula* Csy.", "TYPE USNM 39076" (red label), "CASEY bequest 1925" (NMNH).

**Additional material. CHILE: Llanquihue Prov.:** 2♂♂, 2♀♀, 6 specimens (sex undetermined), Puerto Montt, Pilluco, sifting beach drift, 24.xii.1984 (S. & J.Peck); ♂, ♀, 1 specimen (sex undetermined), Lenca, 34 km SE Puerto Montt, beach drift, 25.xii.1984 (S. & J.Peck) (FMNH); **GERMANY:** ♀, N Friesen Islands, Spekeroo Island, 20.v–16.vi.1992 (B.W.Johanning) (KSEM); **SWEDEN:** ♂, ♀, Oskarshamn, 10.vi.1941 (H.Bachlund) (KSEM); **UNITED KINGDOM:** ♂, Aldeburgh, 15.viii.1925 (C.J.Saunders) (BMNH).

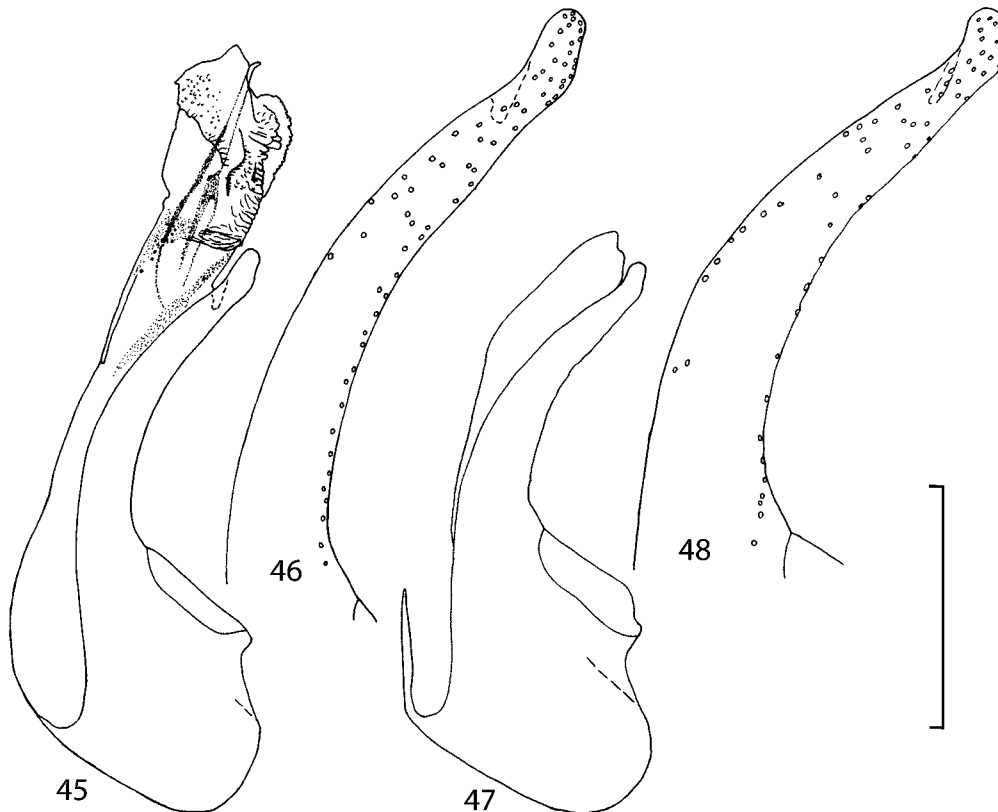
**Diagnosis.** *Halobrecta flavipes* is closely related to *Ha. algophila*, but differs in having the body size smaller on average; and the spatuliform apex of the median lobe larger (in parameral view), the apex is 1.4–1.5 times as wide as the median lobe measured subapically at its narrowest point (1.1 times in *Ha. algophila*) (Figs. 41–44; 22–23, 26–27).



**FIGURES 41–44.** Aedeagus of *Halobrecta flavipes* Thomson (male from Oskarshamn, Sweden (41–42), and male paralectotype of *Atheta pocahontas* Casey (43–44)). 41, 43 — median lobe, parameral view; 42, 44 — apex of median lobe, parameral view. Scale bar 0.1 mm (42, 44), 0.2 mm (41, 43).

*Halobrecta flavipes* differs from the Mediterranean species tentatively identified as *Ha. halensis* (see Discussion for *Halobrecta*) in having the median lobe of the aedeagus narrower (in parameral view) (Figs. 41–44; 64).

*Halobrecta flavipes* differs from the Palaearctic *Ha. algae* and *Ha. princeps* by having the posterior margin of the male tergum 8 rounded and not crenulate (Fig. 37) (in *Ha. algae* and *Ha. princeps* the posterior margin is straight and may be slightly crenulate (Fig. 52)), and by the apex of the median lobe broader (Figs. 41–44; 56–57).



**FIGURES 45–48.** Aedeagus of *Halobrecta flavipes* Thomson (males, from Oskarshamn, Sweden (45–46), and lectotype of *Atheta pochontas* Casey (47–48)). 45, 47 — median lobe, lateral view; 46, 48 — apex of median lobe, lateral view. Scale bar 0.1 mm (46, 48), 0.2 mm (45, 47).

*Halobrecta flavipes* differs from the Oriental *Ha. cingulata* in having a different shape of the median lobe (in lateral view) (Figs. 45–48 in this paper; Fig. 9, G in Sawada 1985).

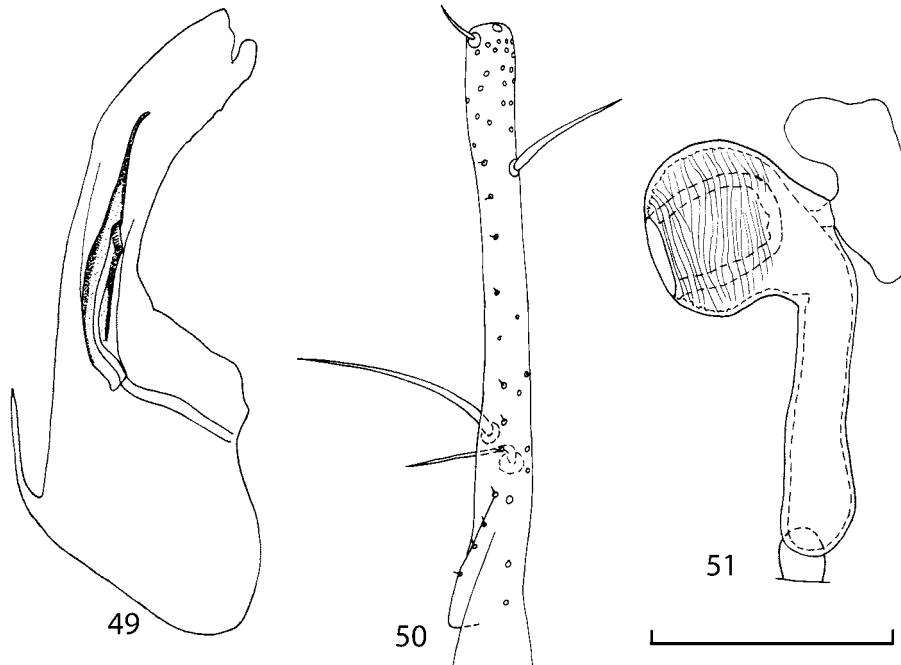
*Halobrecta flavipes* differs from the Neotropical *Ha. discipula* in having a different shape of the median lobe (in parameral view) (Figs. 41–44: this paper; Fig. 3: Pace 1999).

**Description.** Length 2.9–3.2 mm. Pronotal width 0.53–0.61 mm, length 0.43–0.51 mm. Elytra 1.3–1.5 times as long as pronotum.

In all character states very similar to *Ha. algophila*, but differs in the shape of the median lobe as described in the diagnosis.



Aedeagus as in Figs. 41–50.  
Spermatheca as in Fig. 51.



**FIGURES 49–51.** Genitalia of *Halobrecta flavipes* Thomson (male (49–50) and female paralectotypes of *Atheta pocahontas* (51)). 49 — details of retracted internal sac, lateral view; 50 — apex of left paramere, marginal view; 51 — spermatheca. Scale bar 0.1 mm (50–51), 0.2 mm (49).

**Discussion.** The male types of *At. pocahontas* are similar in external characters to the lectotype of *Ha. flavipes*, as well as in the shape of the aedeagus. These names are deemed to be synonyms.

The only existing type of *Al. incertula* is a female but it was collected in the same locality as the male lectotype of *At. pocahontas*. Since the type of *Al. incertula* is similar to examined specimens of *Ha. flavipes*, the first name is placed in synonymy with the second.

The single existing type of *At. vaticina* is a female but it is similar in external characters to the examined specimens of *Ha. flavipes*. Considering that all examined males from the East Coast belonged to *Ha. flavipes*, I synonymize *At. vaticina* with that species.

It seems appropriate to discuss the status of the names listed as synonyms of *Ha. flavipes* by Fenyés (1920) and Bernhauer and Scheerpeltz (1926). Unfortunately, these authors sometimes did not distinguish between newly proposed names and subsequent usage of these names. This practice, followed by some recent authors (*e. g.*, Klimaszewski *et al.* 2002), is very confusing. The entries for "*elongatula* Stephens, 1832", "*atricilla* Scriba,

1866" and "*puncticeps* Mulsant & Rey, 1875" (see Fenyés 1920, p. 185; Bernhauer & Scheerpeltz 1926, p. 621; Klimaszewski *et al.* 2002, p. 483) in fact refer to subsequent citations of the names proposed by Gravenhorst (1802, as *Aleochara elongatula*); Erichson, (1839, as *Homalota atricilla*) and Thomson (1852, as *Homalota puncticeps*). Stephens (1832, p. 127), Scriba (1866, p. 290) and Mulsant and Rey (1875, p. 38) clearly did not intend to describe new species and referred to original papers of Gravenhorst, Erichson and Thomson. Even if Stephens, Scriba and Mulsant and Rey applied the same species names in a different sense, their usage did not create new nominal taxa but instead represents misidentifications.

Despite the fact that Thomson described *Ha. flavipes* as a member of the genus *Halobrecta*, this taxon was not accepted as a genus separate from *Atheta* by some of his colleagues (*e.g.*, Waterhouse 1863; Sharp 1869; Bernhauer & Scheerpeltz 1926). Since Waterhouse (1863) placed *Halobrecta flavipes* Thomson in *Homalota*, together with *Aleochara flavipes* Gravenhorst, 1806 (now considered a member of *Notothecta* Thomson, 1858), he had to introduce (Waterhouse 1863, p. 138) a new name (*Homalota maritima*) to replace the resulting secondary junior homonym *Homalota flavipes* (Thomson). Unfortunately, the name proposed by Waterhouse is preoccupied and Sharp (1869) had to propose a different replacement name for *Homalota flavipes* (Thomson). Now that *Halobrecta flavipes* Thomson, 1861 is a member of the genus *Halobrecta* and *Aleochara flavipes* Gravenhorst, 1806 is a member of *Notothecta*, the replacement names *Homalota maritima* Waterhouse and *Ho. halobrectha* Sharp are unnecessary and become objective synonyms of *Ha. flavipes*.

*Homalota atricilla* Erichson, 1839, described from Sardinia, is usually considered a member of *Halobrecta* (*e.g.*, Bernhauer & Scheerpeltz 1926). If this is true then *Ho. atricilla* is the oldest name in the genus *Halobrecta*. However the description of this species, particularly the shape of the antennal segments 4–10 does not fit any of the five species of *Halobrecta* examined by me. According to Kraatz (1857) and Scriba (1866) the single type of *Ho. atricilla* (deposited in the museum of Turin) is an immature poorly pigmented specimen. Scriba (1866) considered *Ho. atricilla* to be conspecific with *Ha. flavipes* but Sharp (1869) did not agree with this opinion because Erichson's description did not fit Sharp's specimens of *Ha. flavipes* (which he referred to as *Ho. halobrectha*). In my opinion, *Ho. atricilla* may not even belong to *Halobrecta*. Reexamination of the type of this species is necessary to clarify the status of this name.

Two species of *Halobrecta* were described from the Channel coasts of northern France: *Ha. pubes* (Mulsant & Rey, 1873) from Normandy and *Ha. anthracina* Fairmaire, 1853) from the embouchure of the River Somme. One species, *Halobrecta halensis* Mulsant & Rey, 1873, was described from the Mediterranean coasts of France (Languedoc) and may be conspecific with the specimen from Italy illustrated in Figs. 64–65 (See Discussion in *Halobrecta*). Examination of types is necessary to clarify the status of these three species.

The examined specimens from Chaiten, Chile, listed by Pace (2000) as *Ha. flavipes* belong in fact to *Ha. algophila*.

**Distribution.** *Halobrecta flavipes* is known from the Atlantic coast of North America (Virginia and New York), from Chile and Europe.

**Natural History.** *Halobrecta flavipes* is a marine littoral species.

### Palearctic species of *Halobrecta*

#### *Halobrecta algae* (Hardy, 1851)

(Figs. 52–61)

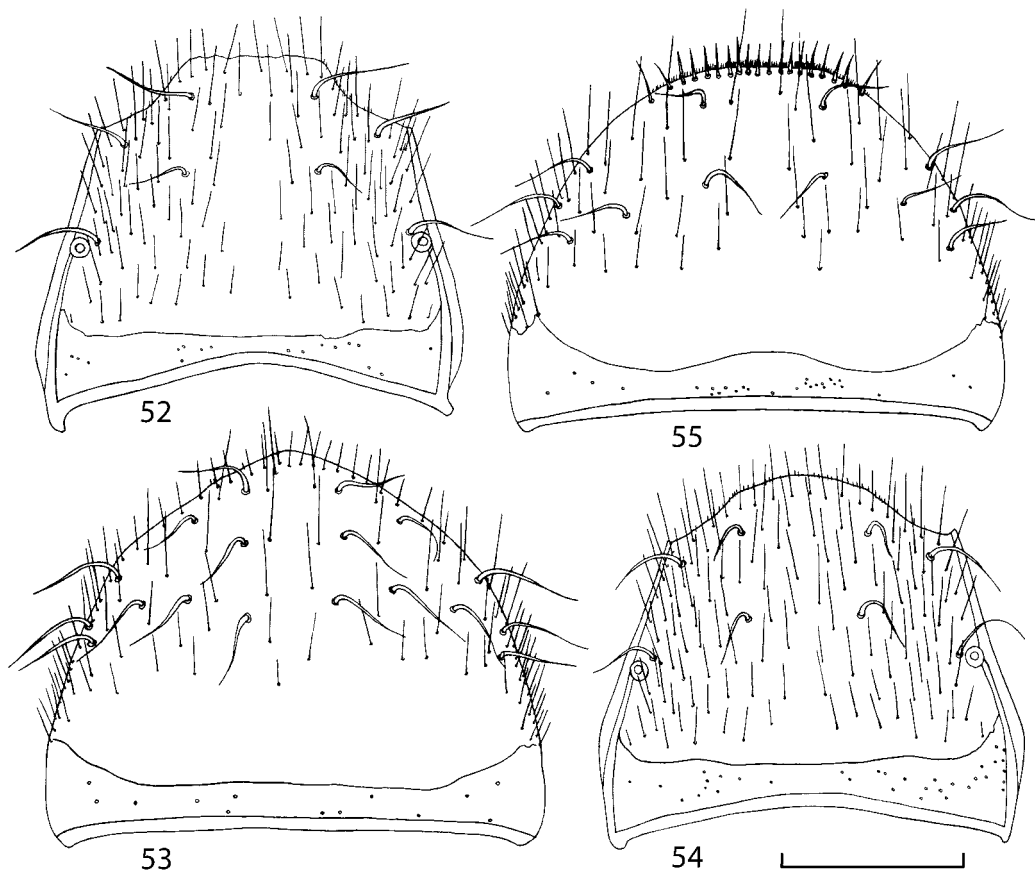
*Homalota algae* Hardy, 1851: 78.

*Homalota puncticeps* Thomson, 1852: 133.

*Halobrecta puncticeps*: Thomson, 1858: 35.

*Halobrecta puncticeps*: Thomson, 1859: 39 (misspelled as *Halobrectha*; as valid species).

*Halobrecta puncticeps*: Thomson, 1861: 49 (misspelled as *Halobrectha*; as valid species).



**FIGURES 52–55.** Abdominal segment 8 of *Halobrecta algae* (Hardy) (male lectotype (52–53) and female paralectotype of *Homalota puncticeps* Thomson (54–55)). 52 — male tergum 8; 53 — male sternum 8; 54 — female tergum 8; 55 — female sternum 8. Scale bar 0.2 mm.

*Atheta (Halobrecta) algae*: Fenyés, 1920: 185 (as synonym both of *Ha. flaviceps* and *Ha. puncticeps*).

*Atheta (Halobrecta) puncticeps*: Fenyés, 1920: 185 (as valid species).

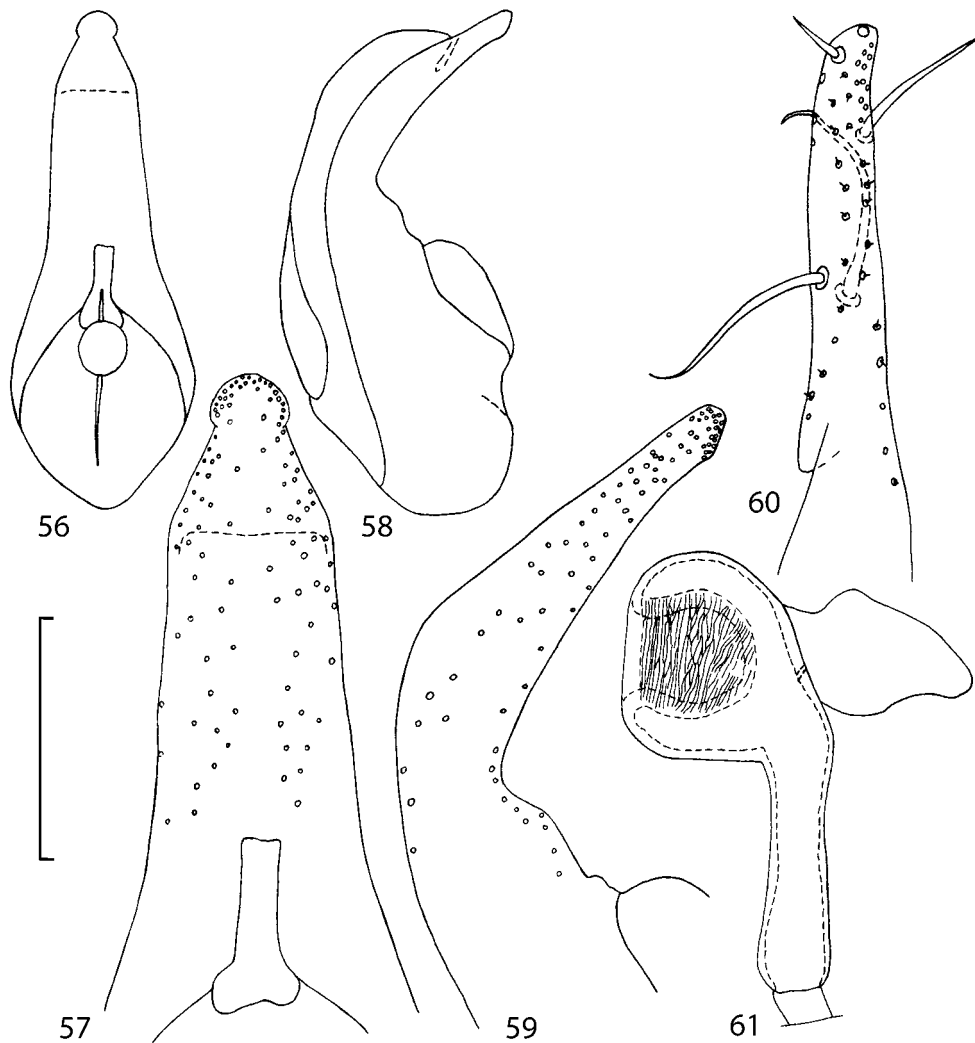
*Atheta (Halobrecta) algae*: Bernhauer & Scheerpeltz, 1926: 621 (as synonym both of *Ha. flavipes* and *Ha. puncticeps*).

*Atheta (Halobrecta) puncticeps*: Bernhauer & Scheerpeltz, 1926: 621 (as valid species).

*Halobrecta puncticeps*: Benick & Lohse, 1974: 219 (as valid species).

*Halobrecta algae*: Hammond, 2000: 275 (as valid species).

(other references are omitted)



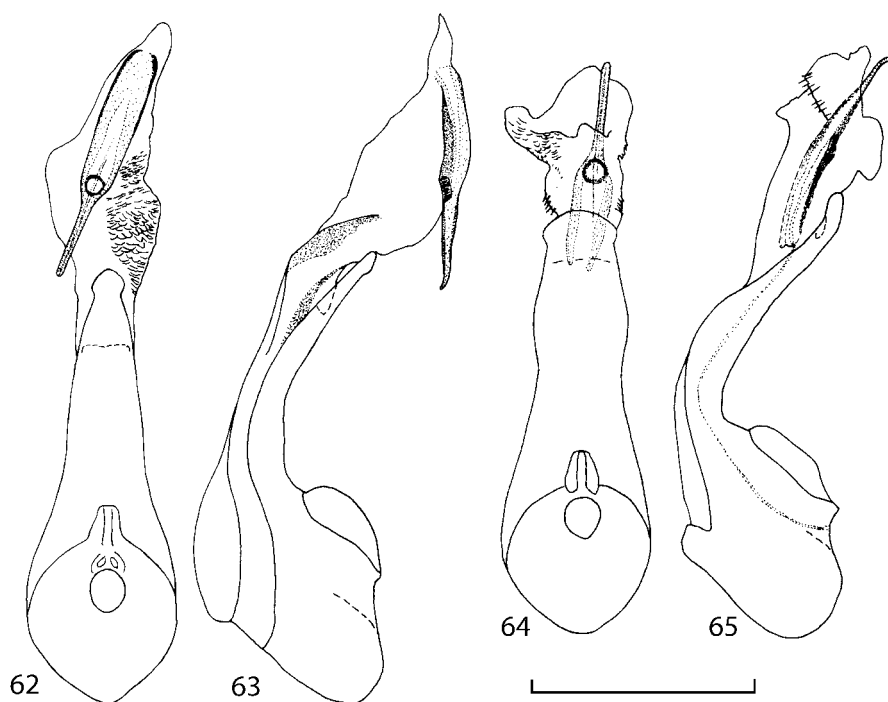
**FIGURES 56–61.** Genitalia of *Halobrecta algae* (Hardy) (male lectotype (56–60) and female paralectotype of *Homalota puncticeps* Thomson (61)). 56 — median lobe, parameral view; 57 — apex of median lobe, parameral view; 58 — median lobe, lateral view; 59 — apex of median lobe, lateral view; 60 — apex of left paramere, marginal view; 61 — spermatheca. Scale bar 0.1 mm (57, 59–61), 0.2 mm (56, 58).

**Type material.** Lectotype of *Homalota puncticeps* (here designated): ♂, "Lå [Lomma, Sweden]" (MZLU). Paralectotypes: ♂, 2♀, "Lå [Lomma, Sweden]" (MZLU (Thomson collection)).

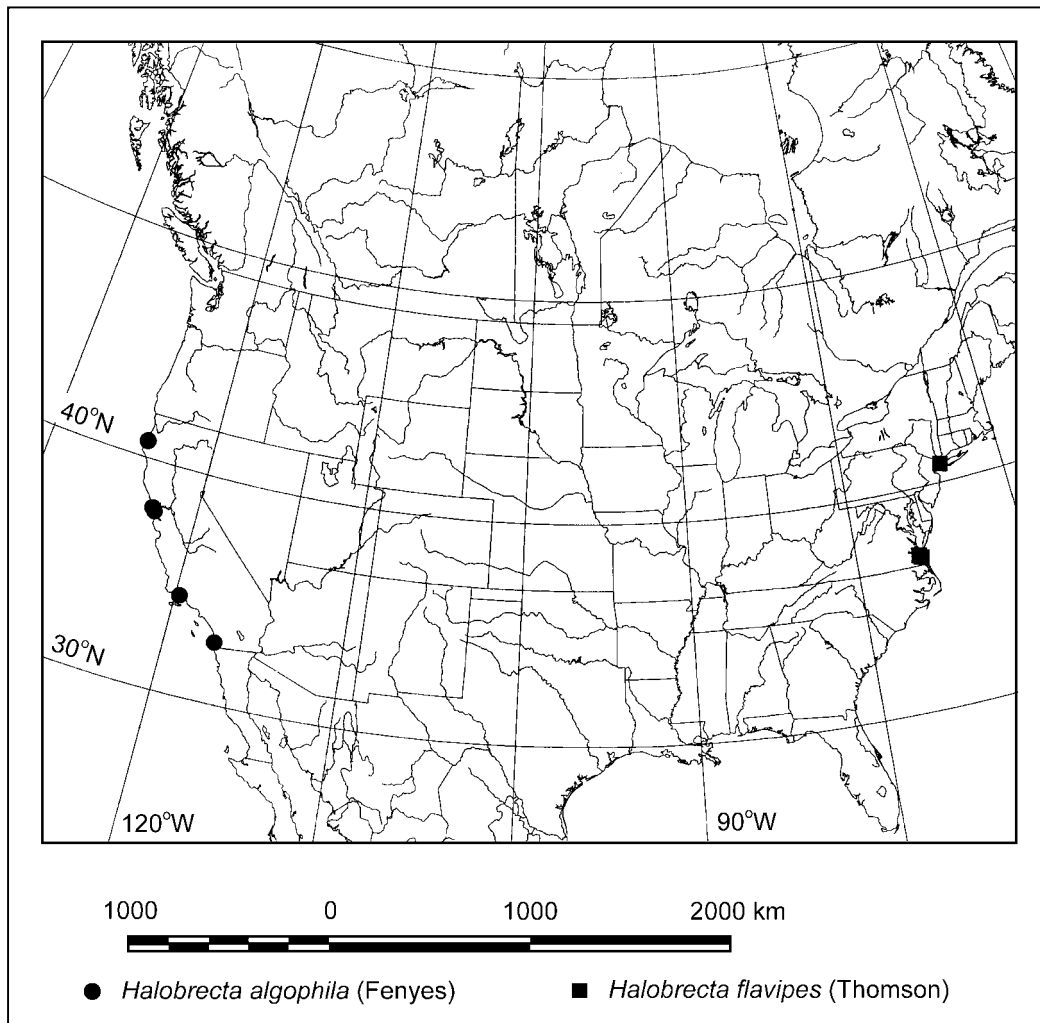
**Additional material.** SWEDEN: ♂, ♀, Oskarshamn, 10.vi.1941 (H.Bachlund) (KSEM).

**Diagnosis.** See Benick and Lohse (1974). Male tergum 8 and aedeagus: Figs. 52, 56–60.

**Discussion.** The lectotype of *Ho. puncticeps* agrees with accepted concept of *Ha. algae* (see Benick & Lohse 1974; as *Ha. puncticeps*). *Halobrecta puncticeps* has not been recorded outside Europe, unlike *Ha. algophila*, *Ha. flavipes* and *Ha. sp. cf. halensis*. However, considering the wide distribution ranges of the last three species, it is possible that *Ha. puncticeps* has also been introduced to other parts of the world. Examined Mediterranean specimens, externally similar to *Ha. algae*, differ in the shape of the aedeagus, particularly in having a narrower median lobe (in parameral view: cf. Fig. 62 and Fig. 56) and in less bent median lobe (in lateral view: cf. Fig. 63 and Fig. 58). These Mediterranean specimens are likely to belong to an undescribed species. Revision of European species of *Halobrecta* is outside the scope of this paper. A revision of the British species of *Halobrecta* is being prepared by Peter Hammond.



**FIGURES 62–65.** Details of *Halobrecta sp. aff. algae* (Hardy) (male, Grado, Italy (62–63)) and *Ha. sp. cf. halensis* Mulsant & Rey, 1873 (male, Lignano, Italy (64–65)). 62 — median lobe with everted internal sac, parameral view; 63 — median lobe with everted internal sac, lateral view; 64 — median lobe with partially everted internal sac, parameral view; 65 — median lobe with partially everted internal sac, lateral view. Scale bar 0.2 mm.



**FIGURE 66.** Geographical distribution of *Halobrecta algophila* (Fenyès) and *Ha. flavipes* Thomson in North America.

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