©www.senckenberg.de/; download www.contributions-to-entomology.org/


| Beitr. Ent. | Berlin | ISSN 0005-805X |
|---|---|---|
| 45(1995)1 | S. 217-237 | 07.04.1995 |


# The Palaearctic species of *Emplenota* CASEY, *Polystomota* CASEY, *Triochara* BERNHAUER and *Skenochara* BERNHAUER & SCHEERPELTZ, with descriptions of three new species (Coleoptera, Staphylinidae, Aleocharinae)

With 10 figures

VOLKER ASSING[1]


**Abstract**

The Palaearctic members of the seashore-dwelling taxa *Emplenota* CASEY, *Polystomota* CASEY, *Triochara* BERNHAUER and *Skenochara* BERNHAUER & SCHEERPELTZ of the *Aleochara*-complex are treated. Special emphasis is placed on the lesser known Eastern Palaearctic species, whose types were revised, and on the Western Palaearctic *E. albopila* (MULS. & REY). Lectotypes are designated for *Aleochara squalithorax* SHARP, *A. fucicola* SHARP, *A. trisulcata* WEISE and *Homalota variolosa* WEISE. *H. variolosa* WEISE is regarded as a junior synonym of *Aleochara fucicola* SHARP. Three new species are described: *Emplenota puetzi* **n. sp.** (Russian Far East), *Triochara zerchei* **n. sp.** (Sakhalin, Primorskiy Kray) and *T. nubis* **n. sp.** (Kamchatka, Sakhalin).
Diagnostic keys allowing identification and pointing out systematically relevant characters are supplemented by illustrations of the genitalia and the sclerites of urite VIII and by notes on taxonomy, distribution, ecology and phylogenetic relationships.

**Zusammenfassung**

Die paläarktischen Vertreter der strandbewohnenden Taxa *Emplenota* CASEY, *Polystomota* CASEY, *Triochara* BERNHAUER und *Skenochara* BERNHAUER & SCHEERPELTZ aus dem *Aleochara*-Komplex werden unter besonderer Berücksichtigung der weniger bekannten ostpaläarktischen Arten, deren Typen revidiert wurden, sowie der westpaläarktischen *E. albopila* (MULS. & REY) untersucht. Für *Aleochara squalithorax* SHARP, *A. fucicola* SHARP, *A. trisulcata* WEISE und *Homalota variolosa* WEISE werden Lectotypen designiert. *H. variolosa* WEISE wird mit *A. fucicola* SHARP synonymisiert. Drei neue Arten werden beschrieben: *Emplenota puetzi* **n. sp.** (Kamtschatka, Sakhalin, Primorskiy Kray), *Triochara zerchei* **n. sp.** (Sakhalin, Primorskiy Kray) und *T. nubis* **n. sp.** (Kamtschatka, Sakhalin).
Ausführliche Bestimmungsschlüssel mit Hinweisen auf systematisch relevante Merkmale werden durch Zeichnungen der Genitalien und der Sklerite des 8. Abdominalsegments, durch weitere Angaben zur Taxonomie, Verbreitung und Ökologie sowie durch phylogenetische Betrachtungen ergänzt.


## 1. Introduction

*Emplenota* CASEY, 1884, and *Polystomota* CASEY, 1906, formerly treated as subgenera of *Aleochara* Gravenhorst, were raised to generic rank by LOHSE (1984, 1985, 1989) and LOHSE & SMETANA

[1]Anschrift des Verfassers: VOLKER ASSING, Gabelsbergerstr. 2, D-30163 Hannover

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



(1985); for synonyms and a full discussion see LOHSE (1985). The species of both genera usually inhabit decaying seaweed on seashores, their larvae being ectoparasitoids of pupae of Cyclorrhapha (Diptera). PESCHKE & FULDNER (1977) list the host species of *Emplenota obscurella* (GRAV.). In the northern hemisphere recent taxonomic studies exist only for Central Europe treating the species *Polystomota grisea* (KRAATZ), *P. punctatella* (MOTSCH.) and *Emplenota obscurella* (GRAV.) (e.g. LOHSE 1985) and for North America with *Emplenota littoralis* (MÄKLIN), *E. pacifica* (CASEY) and *E. curtidens* (KLIMASZEWSKI) as valid taxa (KLIMASZEWSKI 1984). BERNHAUER & SCHEERPELTZ (1926), whose concept of *Emplenota* included *Polystomota* (and corresponding names), also list a species of *Emplenota* (*albopila* MULSANT & REY) from the Mediterranean and two from Japan (*fucicola* SHARP and *variolosa* WEISE). In addition, these authors indicate two further species of *Aleochara* from Japan, which - according to the original descriptions - resemble the species of *Emplenota* and *Polystomota* morphologically and/or ecologically: *A.* (subgenus *Triochara* BERNHAUER) *trisulcata* WEISE and *A.* (subgenus *Skenochara* BERNHAUER & SCHEERPELTZ) *squalithorax* SHARP.

Both the study of new material from the Eastern Palaearctic region, which required an examination of the relevant types and yielded three species new to science, and the uncertainty regarding the (generic) identity of the species not treated in recent revisions have eventually led to the present paper. It particularly aims at providing a means of identification for the Palaearctic species of four former subgenera of *Aleochara*, all of them restricted to seashore habitats, with special emphasis on the Eastern Palaearctic taxa. The Western Palaearctic species are also included, but, with the exception of the poorly known *Emplenota albopila* (MULS. & REY), dealt with briefly.

While *Emplenota*, *Triochara* and *Polystomota* appear to be well-defined monophyletic groups, the situation is much more complex with *A. squalithorax* (see below). On the whole the current knowledge and the confusing, inconsistent treatment of taxa related to *Aleochara* on the subgeneric and generic level can only be regarded as both unsatisfactory and preliminary. A thorough phylogenetic analysis reconsidering all supraspecific taxa of the *Aleochara* complex is needed in order to put the systematics of these staphylinids on a new and firm basis.

In the course of the present study, which required a decision one way or the other, I followed LOHSE´s concept (LOHSE 1985, 1989) and, through application of equal standards and for further reasons discussed below, not only treated *Emplenota* and *Polystomota*, but also *Triochara* and *Skenochara* as genera rather than subgenera.

I am indebted to the following persons and institutions for the loan of (type) material:
P.M. HAMMOND, E. DE BOISE, British Museum of Natural History, London (BMNH)
L. ZERCHE, Deutsches Entomologisches Institut, Eberswalde (DEI)
M. UHLIG, Museum für Naturkunde der Humboldt-Universität, Berlin (MNHB)
In addition, I am grateful to Dr. LOTHAR ZERCHE for his valuable advice and his critical comments on the manuscript and to ANDREAS PÜTZ, Eisenhüttenstadt, and MICHAEL SCHÜLKE, Berlin, who provided me with material from the Russian Far East.

## 2. Diagnostic key to genera

1. Hairs on head and and pronotum erect and rather sparse, mostly straight and ± stout, in midline of pronotum directed neither cephalad nor caudad, on elytra erect to suberect. Head and pronotum with characteristic sculpture and punctation. The former with two distinct subparallel furrows, formed by very large, deep and confluent punctures and extending from the frons between the eyes almost to hind margin; central dorsal area of head between and adjacent to these furrows only with micropunctation; temples and interior margins of eyes with large punctures; back of head with ± distinct transverse depression connecting the furrows posteriorly. Pronotum cordiform with three furrows formed by large confluent punctures, one along the middle and one on both sides of midline, the latter two diverging anteriorly and often ±

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



irregular; lateral and hind pronotal surface also with rather irregularly spaced large punctures; between furrows and some domed areas particularly in the middle of pronotum adjacent to the lateral furrows only with micropunctation. Legs short and stout; middle and hind tibiae dilated, slightly or distinctly curved; external surface of pro- and mesotibiae with numerous very stout spines, that of the metatibiae with spines usually present in the whole distal half; hind tarsi short with the first tarsal segment shorter than second and third together. Hypomera of pronotum visible in lateral view. Mesosternum not carinate. ♂: aedeagus with long flagellum, median lobe with a pair of ventral processes. . . . . *Triochara* BERNHAUER

- Dorsal surfaces of head, pronotum and elytra with denser and thin pubescence, without erect hairs; suberect, usually slightly bent hairs may, however, be present in the lateral areas of the head, particularly near the eyes and on the temples, and sometimes also on the pronotum; hairs in pronotal midline either absent or directed cephalad or caudad. Head and pronotum without furrows and with clearly less conspicuous punctation, micropunctation often invisible due to ± pronounced microreticulation. Dorsal and lateral surface of head, except for the median area, usually with ± evenly spaced and distinct, but much smaller and less deep punctures; punctation of pronotum evenly spaced, rather or very indistinct. Legs slenderer, mid- and particularly hind tibiae less dilated; spines on external surface of pro- and mesotibiae less stout, on metatibiae mostly restricted to apical fourth. . . . . 2

2. Pronotum along midline without pubescence and slightly elevated; head and pronotum completely mat due to coarse microreticulation; elytra with granulose punctation, partly confluent and forming transverse ridges. Hind tarsi elongate with segment 1 about as long as segments 2 and 3 together. Hypomera not visible in lateral view; mesosternum carinate. ♂: aedeagus with long and projecting flagellum; ♀: spermatheca with duct long and strongly coiled. . . . . *Skenochara* BERNHAUER & SCHEERPELTZ

- Pronotum along midline with pubescence and not elevated, often with weaker microreticulation and somewhat shiny; elytra with simple and sometimes indistinct punctation. ♂: aedeagus with flagellum either not projecting or apically of different shape; ♀: spermatheca with duct shorter and uncoiled . . . . . 3

3. Pronotum with pubescence along midline directed cephalad or caudad; hypomera visible in lateral view. Hind tarsi shorter, tarsal segment 1 shorter than or, at most, as long as segments 2 and 3 together. Mesosternum not carinate. ♂: aedeagus with long projecting flagellum, median lobe with a pair of ventral processes. . . . . *Emplenota* CASEY

- Pronotum with pubescence along midline directed caudad; hypomera not visible in lateral view. Metatarsi longer, tarsal segment 1 longer than segments 2 and 3 together. Mesosternum carinate. ♂: aedeagus with flagellum not projecting, median lobe without ventral processes. . . . . *Polystomota* CASEY

## 3. *Emplenota* CASEY, 1884

Diagnosis: see key, KLIMASZEWSKI (1984) and LOHSE (1985).

Comments: *Emplenota* appears to be a holarctic genus. Presently, three species are known from North America and four from the Palaearctic region. Like the Nearctic *Emplenota* (KLIMASZEWSKI 1984), the two Eastern Palaearctic species have the pubescence on the midline of the pronotum directed posteriorly, whereas in the Western Palaearctic species it is directed anteriorly. Thus, the pronotal pubescence pattern, a character which has been considered more or less systematically significant in several aleocharine taxa, indicates a closer phylogenetic relationship between the North American and the Eastern Palaearctic representatives of the genus. It should be noted that the descriptions of *Emplenota* in LOHSE (1985) and KLIMASZEWSKI (1984) exclusively apply to either the Western Palaearctic or the Eastern Palaearctic and Nearctic species, respectively.

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



### 3.1. Diagnostic key to the species of *Emplenota* CASEY

Due to high interspecific similarity and considerable intraspecific variability in external morphology the identification of the species should primarily be based on an examination of the male and female genitalia.

1. Pronotum with pubescence along midline directed cephalad; dorsal surface of pronotum strongly convex and with very indistinct punctation. Western Palaearctic species . . . . . 2
- Pronotum with pubescence along midline directed caudad; dorsal surface less convex, somewhat flattened, its punctation distinct or indistinct. Eastern Palaearctic species. . . . . 3
2. On the average larger (4.0-6.5 mm). Surface of head, pronotum and elytra with strong microreticulation and mat. Tergites VIII with a row of short, conical spines posteriorly.
♂: hind margin of tergite VIII with shallow central concavity, sternite VIII convex posteriorly (Figs. 1c-d); aedeagus as in Figs. 1a-b.
♀: posterior margin of tergite VIII ± straight, that of sternite VIII slightly rounded (Figs. 1e-f); spermatheca as in Fig. 1g.
Coasts of the North and Baltic Sea, Mediterranean(?), Atlantic Islands(?) . . . . . *E. obscurella* (GRAVENHORST)
- On the average smaller (3.5-5.0 mm). Surface of head, pronotum and elytra with distinct, but weaker microreticulation and subdued shine. Tergites VIII posteriorly with a row of long thin hairs.
♂: hind margin of tergite VIII ± straight or slightly concave, that of the corresponding sternite rounded (Figs. 2c-d); aedeagus as in Figs. 2a-b.
♀: posterior margin of tergite VIII ± straight, that of sternite VIII bluntly projecting (Figs. 2e-f); spermatheca as in Fig. 2g.
Mediterranean region, Atlantic islands. . . . . *E. albopila* (MULSANT & REY)
3. On the average smaller: 3.5-5.0 mm. Dorsal surface with weaker microreticulation and subdued shine; pronotum relatively narrower, only 1.25-1.32x wider than head, with shallow, but distinct punctation. Tergites VIII with a row of short, stout and conical spines posteriorly.
♂: hind margin of tergite VIII straight to slightly rounded, sternite VIII strongly convex posteriorly (Figs. 3c-d); aedeagus as in Figs. 3a-b.
♀: posterior margin of tergite VIII slightly convex, that of sternite VIII weakly obtuse (Figs. 3e-f); spermatheca as in Fig. 3g.
Japan. . . . . *E. fucicola* (SHARP)
- Larger species: 4.0-6.5 mm. Dorsal surface with strong microreticulation and mat; pronotum relatively wider, 1.30-1.39x wider than head, with very indistinct punctation. Tergites VIII with a row of short, conical spines posteriorly.
♂: hind margin of tergite VIII almost straight, sternite VIII bluntly pointed posteriorly (Figs. 4c-4d); aedeagus as in Figs. 4a-b.
♀: posterior margin of tergite VIII nearly straight, that of sternite VIII rounded to weakly obtuse (Figs. 4e-f); spermatheca as in Fig. 4g.
Russian Far East. . . . . **E. puetzi spec. nov.**

### 3.2. The species of *Emplenota* CASEY

#### *Emplenota obscurella* (GRAVENHORST)

Figs. 1a-g
*Aleochara obscurella* GRAVENHORST, 1806, p. 159
*Aleochara algarum* FAUVEL, 1862, p. 92
*Emplenota obscurella* (GRAV.), LOHSE 1985, p. 327ff.

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



*E. obscurella* is widely distributed along the coasts of the North Sea and the Baltic Sea, from where I have seen specimens from several localities. It has also been reported from the Mediterranean and the Atlantic Isles, but due to the taxonomic confusion with *Polystomota punctatella* (MOTSCH.) and possible misidentifications (see LOHSE 1985) these records must be reexamined before drawing any conclusions regarding its distribution in this region.

Unfortunately, it was not possible to clarify the identity of *Aleochara phycophila* ALLEN with certainty, since I was denied the loan of the type, which is kept in the author's collection. The spe-

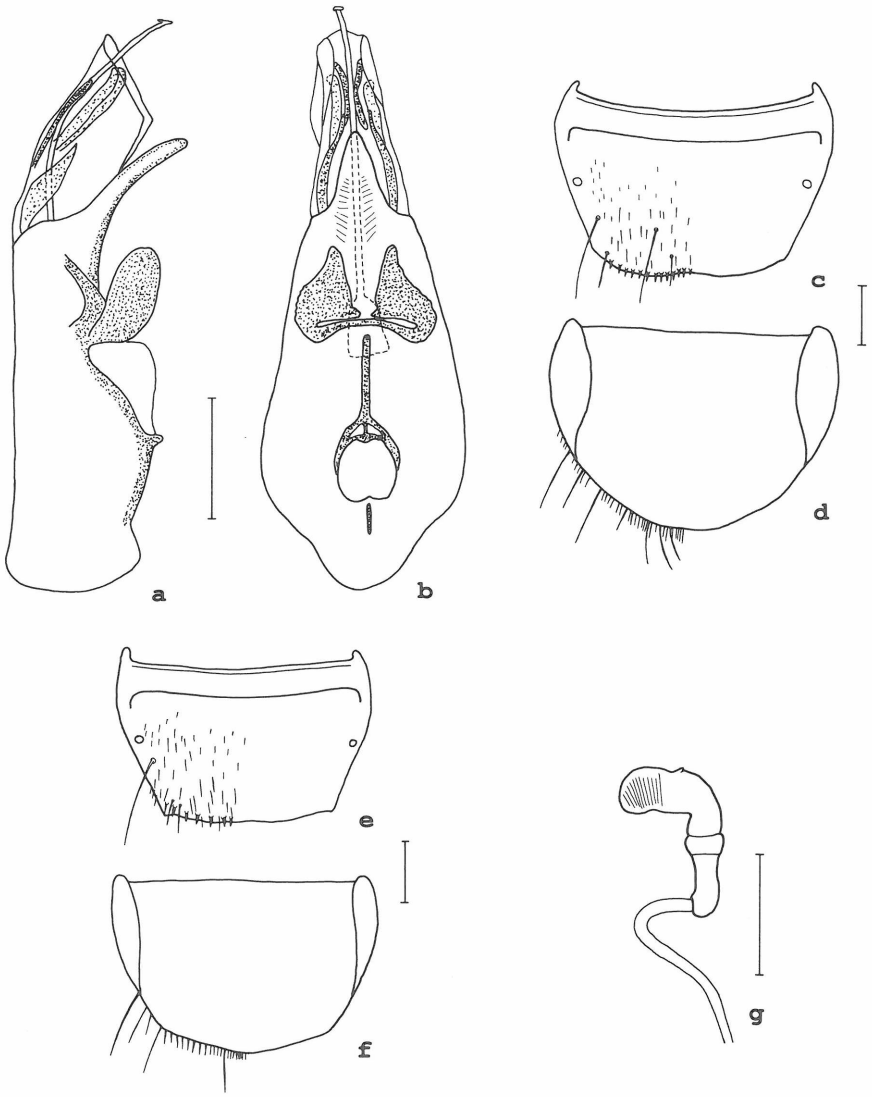



**Fig. 1:** *Emplenota obscurella* (GRAV.): Aedeagus (a,b), ♂ tergite (c) and sternite (d) VIII, ♀ tergite (e) and sternite (f) VIII, spermatheca (g); pubescence and setae partly omitted. Scale: 0.25 mm.

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



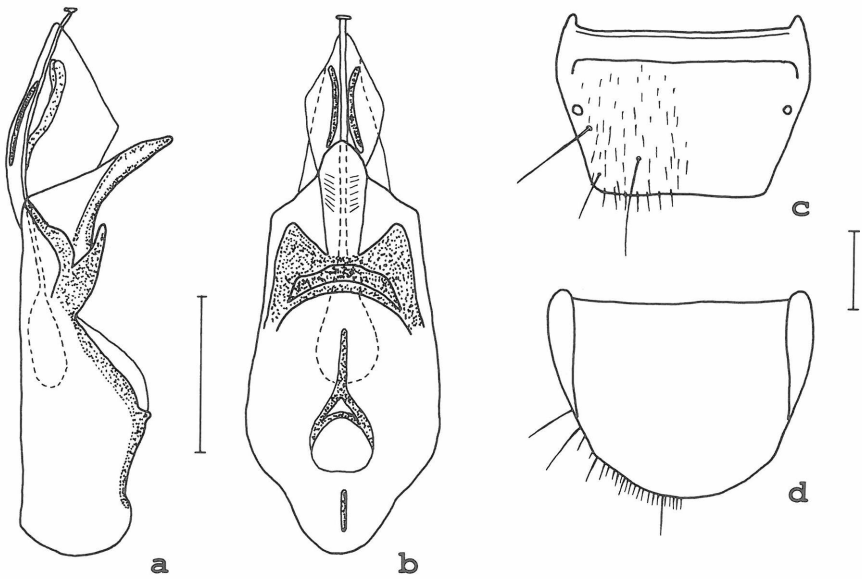
cies was described after a single female from Studland, Dorset, and collected together with *E. obscurella* and the two species of *Polystomota* (ALLEN 1937). Since then it has never been found again. According to the very detailed description in WELCH (1964), who studied the type and also figures the spermatheca, "the specimen may have been damaged slightly when still immature", so that the possibility that the differential characters are indeed artefacts cannot be ruled out, and "only further specimens will prove this point one way or the other". The same author also states that the mesosternum lacks a keel, which would characterize the species as a member of *Emplenota*. Against this background it appears likely that the type of *A. phycophila* in fact represents an aberrant specimen of *E. obscurella*.

### *Emplenota albopila* (MULSANT & REY) comb. nov.

Figs. 2a-g
*Homalota albopila* MULSANT & REY, 1852, p. 29
*Aleochara albopila* (MULS. & REY), KRAATZ 1856-58, p. 97

*E. albopila* is distinguished from *E. obscurella*, the only other species of *Emplenota* occurring in the Western Palaearctic, by its smaller size, its weaker microsculpture and, therefore, more shiny appearance, the absence of a row of spines on the posterior margins of the abdominal tergites VIII and particularly by the size and shape of the aedeagus and the shape of the spermatheca.
I am much indebted to JÜRGEN VOGEL, Görlitz, who examined the types and confirmed that the specimens in my collection are indeed *albopila*.

The types were collected in the south of France (Aiguemortes). Since then the species has been reported from various localities in the Western and Eastern Mediterranean (BERNHAUER 1901a), from Corse (COIFFAIT 1968), Albania (SCHEERPELTZ 1967), Tunisia (NORMAND 1934), the Canary Islands and the Azores (ISRAELSON 1984; ISRAELSON et al. 1982). However, there appear to have been misidentifications; most of the specimens from museum collections, which were examined in




DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



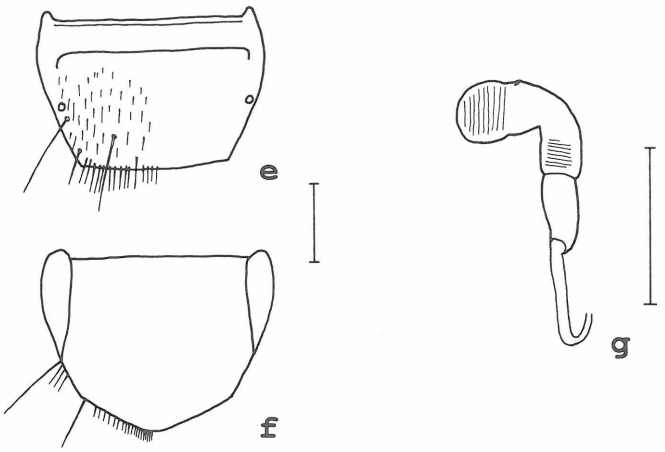



**Fig. 2:** *Emplenota albopila* (MULS. & REY): Aedeagus (a,b), ♂ tergite (c) and sternite (d) VIII, ♀ tergite (e) and sternite (f) VIII, spermatheca (g); pubescence and setae partly omitted. Scale: 0.25 mm.

the course of this study and which carried the label '*albopila*', were in fact *Polystomota grisea* (KRAATZ). I have seen true *albopila* from the coasts of Tenerife, Dalmatia, Italy (Venice) (material in DEI) and Greece (Kassandra, Polichronon, 22.III.1989), where I collected 4 ♂♂ and 5 ♀♀ under seaweed together with *P. grisea*. VOGEL (pers. comm.) identified 7 specimens from the coast of the Black Sea (Bulgaria: Varna-Galata, 30.VII.1984, Opitz leg.; Vlas, Nesebar, 17.-26.VII.1983, WRASE & SCHÜLER leg.).

### *Emplenota fucicola* (SHARP)

Figs. 3a-g
*Aleochara fucicola* SHARP, 1874, p. 9f.
*Aleochara fucicola* SHARP, Anonymous 1989, p. 280
*Homalota variolosa* WEISE, 1877, p. 89, **syn. nov.**
*Emplenota variolosa* (WEISE), Anonymous 1989, p. 283

Material studied:
- *Aleochara fucicola* SHARP:
Lectotype ♀, here designated and labelled accordingly, 'Japan, G. Lewis; SHARP Coll. 1905-313; Aleochara fucicola ♀, Type D.S.' (BMNH).
Paralectotypes: 3 ♂♂,2 ♀♀: 'Japan, G. Lewis; SHARP Coll. 1905-313' (BMNH, 1 ♂ in coll. m.).

- *Homalota variolosa* WEISE:
Lectotype ♀, here designated and labelled accordingly, 'Japon. Hiller; coll. WEISE; Homalota variolosa m.; Syntypus' (DEI).
Paralectotype ♂, 'coll. WEISE; Syntypus' (DEI).

Further material: 2 ♂♂: 'Japan, Hiller' (MNHB).
Comments: The study of the external morphology as well as of the genitalia revealed that *Aleochara fucicola* SHARP and *Homalota variolosa* WEISE are clearly conspecific. Hence, the latter must be regarded as a junior synonym of the former.

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



Diagnosis: Among the species of *Emplenota*, *E. fucicola* is characterized by the following combination of characters (see also key and the very detailed description in SAWADA (1971)): relatively small size and lighter colour, with the legs brown to reddish brown, the pronotum dark brown to blackish brown and the elytra brown to dark brown; pronotum relatively narrow, only slightly (1.25-1.32x) wider than head; its dorsal surface less convex than in the preceding species, with subdued shine in spite of distinct microsculpture and with more distinct punctation than in the other species of *Emplenota*; pubescence of pronotum along midline directed caudad; shape and size of genitalia (Figs. 3a-b, g).

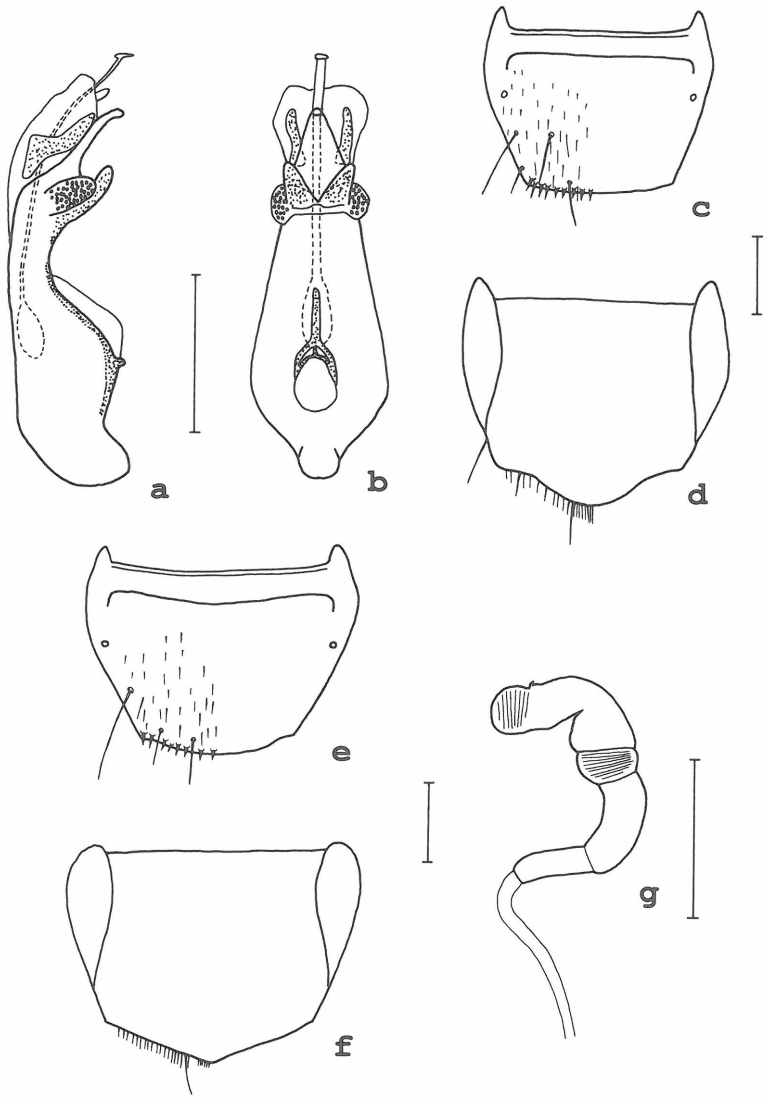



**Fig. 3:** *Emplenota fucicola* (SHARP): Aedeagus (a,b), ♂ tergite (c) and sternite (d) VIII, ♀ tergite (e) and sternite (f) VIII, spermatheca (g); pubescence and setae partly omitted. Scale: 0.25 mm.

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



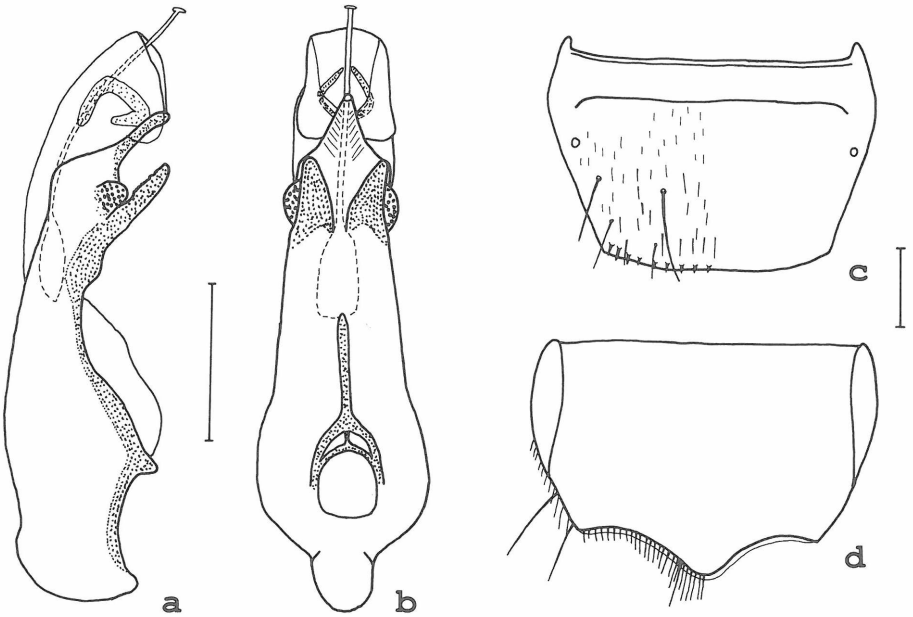
SAWADA (1971) states that *E. fucicola* is "near the European *A.* (*E.*) *grisea*", a species which, however, is a member of *Polystomota* (see below).
So far, *E. fucicola* has only been recorded from Japan: "under seaweed at Amakusa and Iwosima, near Nagasaki" (SHARP 1874) and Hagi (WEISE 1877). According to SAWADA (1971), who lists numerous records, it is very common everywhere on the seashores of Japan.

### *Emplenota puetzi* spec. nov.

Figs. 4a-g

Holotype ♂, RUSSIA, Sakhalin, Korsakov distr., Ismenshyroye lake, 21./22.VII.1993, PÜTZ & WRASE (coll. m.).
Paratypes: 5 ♂♂, 2 ♀♀: same data as holotype (coll. PÜTZ, coll. m.); 2 ♀♀: Petropavlovsk, Kamtschatka, 6.8.1981, leg. R. PREDEL (coll. m.); 4 ♀♀: RUSSIA: Primorskiy Kray, Ryazanovka, 14 km SW Slavyanka, 42.48 N 131.12 E; 16.VI.1993, Beach, leg. ZERCHE (DEI).

Diagnosis: *E. puetzi* spec. nov. is closely related and in general appearance, external proportions, shape and somewhat flattened pronotal surface as well as the shape of the genitalia very similar to *E. fucicola*, from which it can, however, be distinguished by the following characters (see also key): Its greater size and darker colour with, except for the dark brown legs, the whole body black; the pronotum is relatively wider (1.30-1.39x wider than head), mat and with very indistinct punctation.
♂: hind margin of sternite VIII more strongly pointed (Fig. 4d), aedeagus larger than in *E. fucicola*; sides of median lobe at apex angled in ventral view (straight in *E. fucicola*); shape of ventral processes different (Figs. 4a-b).
♀: in spite of the usually greater body length the spermatheca, although similar in shape, is constantly smaller than in the preceding species (Fig. 4g).
Derivatio nominis: The species is dedicated to ANDREAS PÜTZ, who collected all three of the new species treated in the present study.




DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



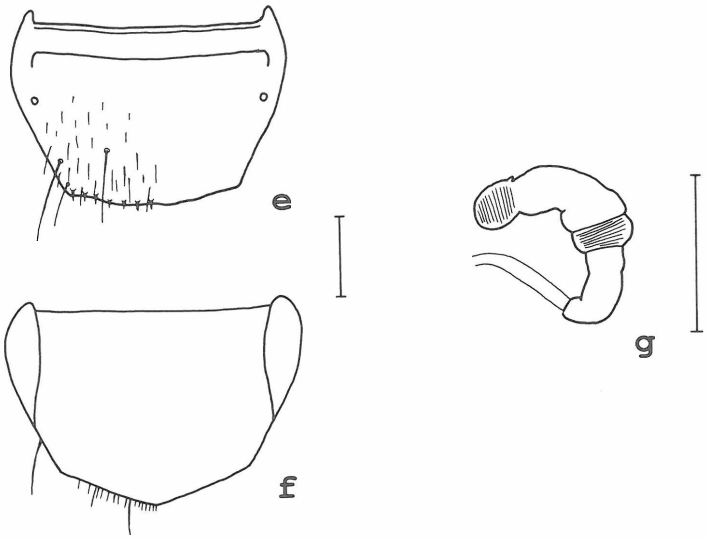



**Fig. 4:** *Emplenota puetzi* **spec. nov.**: Aedeagus (a,b), ♂ tergite (c) and sternite (d) VIII, ♀ tergite (e) and sternite (f) VIII, spermatheca (g); pubescence and setae partly omitted. Scale: 0.25 mm.

Distribution: The records stated above indicate that *E. puetzi* is widely distributed on the seashores in the Eastern Palaearctic region. PÜTZ (pers. comm.) collected his material from Sakhalin on the sandy shore of a salt lake under seaweed.

## 4. *Polystomota* CASEY, 1906

Diagnosis: see key and LOHSE (1985).

Distribution: Presently, two species are known from the Western Palaearctic region.

### 4.1. Diagnostic key to the species of *Polystomota* CASEY

1. Dorsal surface of body with conspicuous white, dense and rather long pubescence; head, pronotum and elytra with very distinct microreticulation, therefore almost completely mat and punctures hardly visible; abdominal tergites with dense punctation and little shine. Antennae shorter with penultimate antennomeres strongly transverse (>2x wider than long). Tergites VIII with numerous spines in posterior half. Length: 3-5 mm.
   ♂: hind margin of tergite VIII ± straight or slightly convex, sternite VIII bluntly, but strongly pointed posteriorly (Figs. 5c-d); aedeagus as in Figs. 5a-b.
   ♀: posterior margin of tergite VIII slightly rounded, that of sternite VIII weakly pointed (Figs. 5e-f); spermatheca as in Fig. 5g.
   Coasts of Northern and Central Europe. . . . . ***P. punctatella*** (MOTSCHULSKY)
- Pubescence of dorsal surface less conspicuous and less dense; head, pronotum and elytra with

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



weaker microreticulation, therefore somewhat shiny and punctures distinct; abdominal tergites with rather sparse punctation, mostly very superficial microsculpture and pronounced shine. Antennae longer with segment 3 more elongate and penultimate antennomeres less transverse (< 2x wider than long). Tergites VIII only with a single row of spines near hind margin. Length: 2.5-5 mm.

♂: hind margin of tergite VIII ± straight, sternite VIII bluntly, but strongly pointed posteriorly (Figs. 6c-d); aedeagus as in Figs. 6a-b.

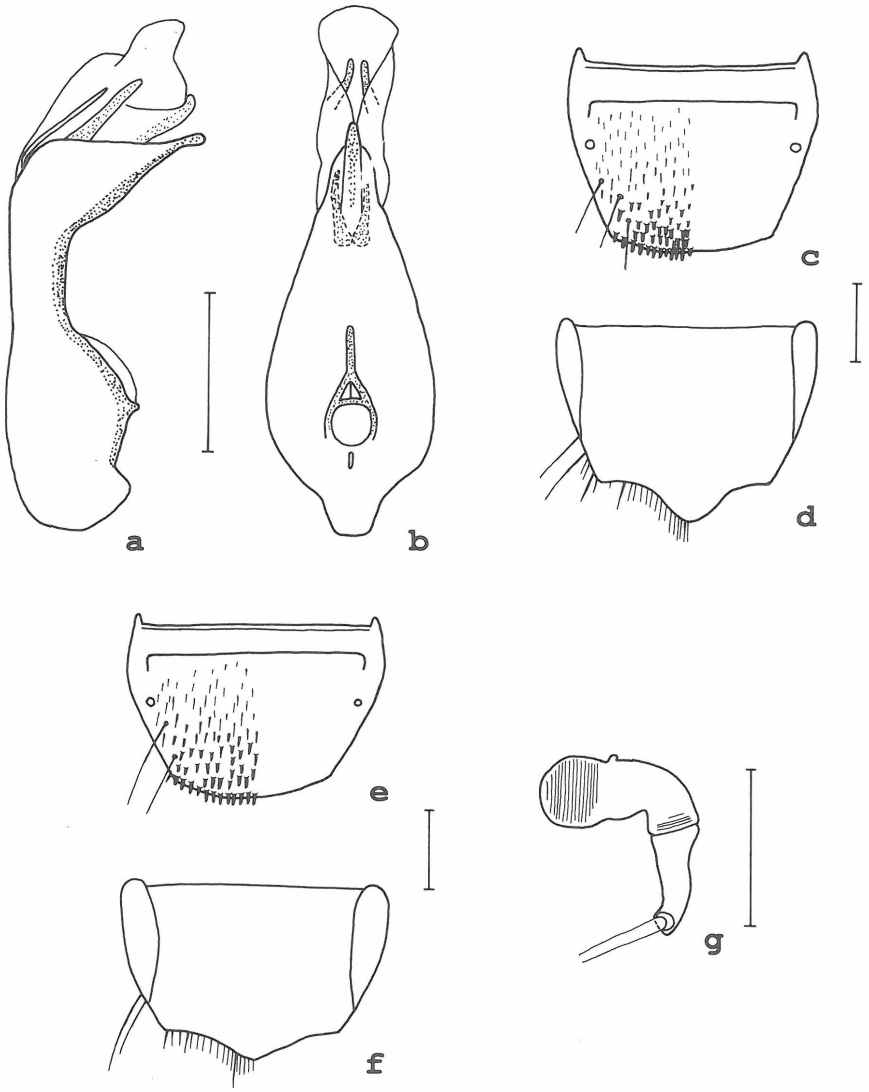



**Fig. 5:** *Polystomota punctatella* (MOTSCH.): Aedeagus (a,b), ♂ tergite (c) and sternite (d) VIII, ♀ tergite (e) and sternite (f) VIII, spermatheca (g); pubescence and setae partly omitted. Scale: 0.25 mm.

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



♀: posterior margin of tergite VIII ± straight, that of sternite VIII weakly obtuse (Figs. 6e-f); spermatheca as in Fig. 6g.
Coasts of Northern, Central and Western Europe; Mediterranean; Canary Islands(?).. . . . . *P. grisea* (KRAATZ)

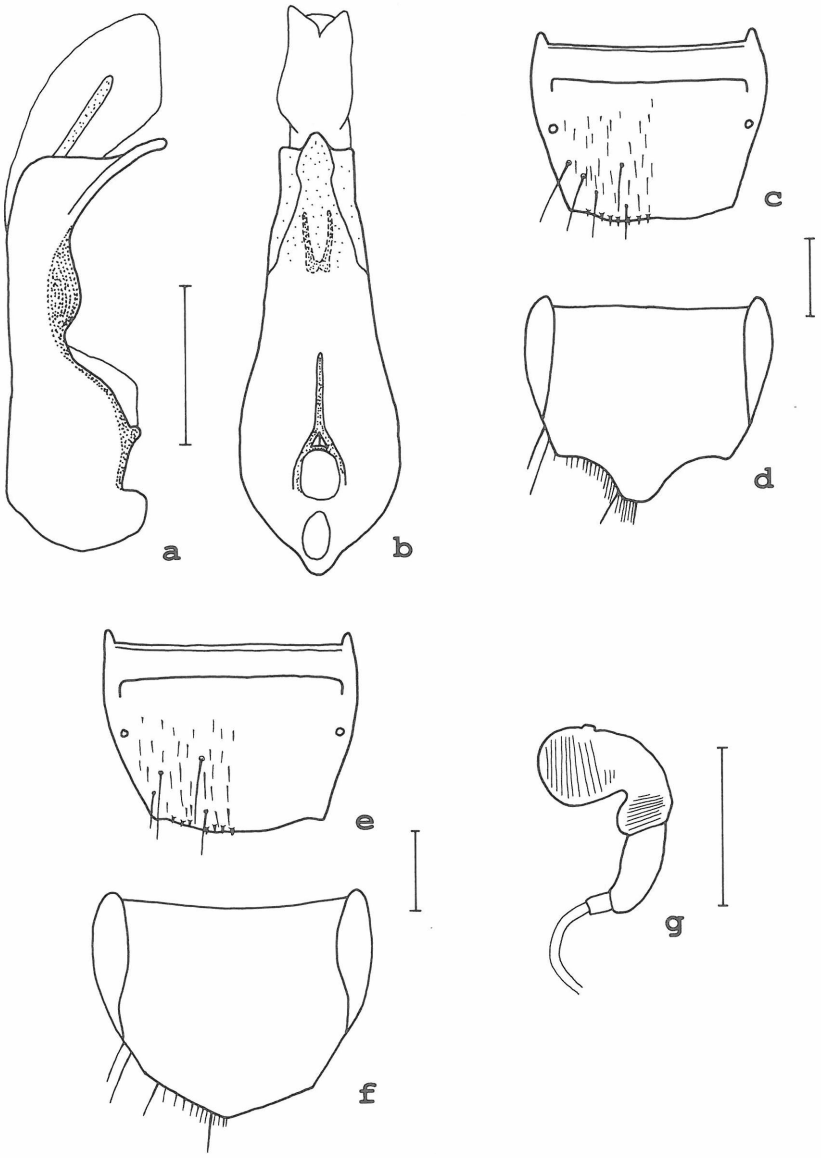



**Fig. 6:** *Polystomota grisea* (KRAATZ): Aedeagus (a,b), ♂ tergite (c) and sternite (d) VIII, ♀ tergite (e) and sternite (f) VIII, spermatheca (g); pubescence and setae partly omitted. Scale: 0.25 mm.

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



### 4.2. The species of *Polystomota* CASEY

#### *Polystomota punctatella* (MOTSCHULSKY)

Figs. 5a-g
*Aleochara punctatella* MOTSCHULSKY, 1858a, p. 240
*Polystomota punctatella* (MOTSCHULKY), LOHSE 1985, p. 328f.

Due to the taxonomic confusion with *E. obscurella* (GRAV.) (see LOHSE 1985) earlier records of *P. punctatella* need to be revised. I have seen specimens from the coasts of the North Sea, the Baltic Sea and the Atlantic near Arcachon (SW-France).

#### *Polystomota grisea* (KRAATZ)

Figs. 6a-g
*Aleochara grisea* KRAATZ, 1856-58, p. 96
*Polystomota grisea* (KRAATZ), LOHSE 1985, p. 329

According to the literature (e.g. HORION 1967) the species is widely distributed from the Northern, Central and Western European coasts of the North Sea, the Baltic Sea and the Atlantic to the Western Mediterranean region including the Balearic islands, from where I have seen material. UYTTENBOOGAART (1930) reports it for the Canary Islands. Recent data suggest that *P. grisea* is even more widely distributed. VOGEL (pers. comm.) has seen a specimen from the Bulgarian coast of the Black Sea (Varna-Galata, 30.VII.84, OPITZ leg.). I examined a 1 ♂ and 2 ♀♀ from Crete (Malie, V.1971, G. BENICK leg.) and collected series of altogether 44 specimens near Kassandra, Greece (21.-22.III.1989).

## 5. *Triochara* BERNHAUER, 1901

Diagnosis: see key.

BERNHAUER (1901b) based his original description on three unique characters of *Aleochara trisulcata* WEISE: the cordiform pronotum, the deep median furrow of the pronotum and the short legs. FENYES (1920) included five further species in *Triochara*, which were, however, subsequently excluded again by BERNHAUER & SCHEERPELTZ (1926). Since then *A. trisulcata* has remained the only representative of the subgenus.

Here, *Triochara* is treated as a genus not only for the purpose of consistency with the status of *Emplenota* and *Polystomota* and because its characters render it sufficiently distinctive, but also because it appears to be very closely related to and probably is the sister group of *Emplenota*.
*Triochara* and *Emplenota* share the following characters, at least part of which should be considered apomorphies: mesosternum not carinate, hypomera visible in lateral view, presence of tibial spines, short tarsi, tergites VIII with at most a single row of spines posteriorly, the ♂ sternites VIII not strongly pointed, the restriction to seashore habitats, and above all the striking resemblance of the aedeagus. In both taxa, the latter possesses a long projecting flagellum, which is of similar shape apically, and the median lobe carries two symmetric processes ventrally, a unique feature in the *Aleochara*-complex. In addition, SAWADA (1971) indicates great similarities in the mouthparts. Against this background the phylogenetic relationships would be distorted, if one were raised to generic rank and the other regarded as a subgenus of *Aleochara*.

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



Distribution and ecology: At present species of *Triochara* are only known from the Eastern Palaearctic region. Both the localities of collection and the considerable variability of body size suggest habitats and a life-history similar to those of *Emplenota* and *Polystomota*.

### 5.1. Diagnostic key to the species of *Triochara* BERNHAUER

1. Dorsal surface of pronotum completely covered with distinct microreticulation and mat, micropunctation invisible; furrows on head and pronotum shallower and less clear-cut, ± irregular; whole body usually darker with head, pronotum, elytra and abdomen uniformly black, antennae dark to blackish brown with the base only slightly lighter; antennae longer and wider. Posterior margin of tergite VIII in both sexes without spines. Length: 3.5-5.0 mm.
   ♂: hind margin of tergite VIII ± straight with a shallow concavity centrally, that of sternite VIII bluntly triangular (Figs. 9c-d); aedeagus as in Figs. 9a-b.
   ♀: posterior margin of tergite VIII without spines and ± truncate, that of the corresponding sternite VIII obtuse (Figs. 9e-f); spermatheca as in Fig. 9g.
   Kamchatka, Sakhalin. . . . . ***T. nubis* spec. nov.**
- Pronotum with microreticulation usually only at the base of furrows and punctures, between punctures and particularly the lateral domed areas shining and with visible micropunctation, if microreticulation is present on lateral domed areas (occasionally in *T. zerchei*), it is superficial and weaker than in *T. nubis*; furrows on head and pronotum deeper and usually ± clear-cut; often at least elytra lighter in colour, brown to blackish brown, antennae reddish brown to dark brown with the base clearly lighter in colour; antennae shorter and slenderer. . . . . 2
2. Lateral furrows on pronotum diverging anteriorly, punctures on elytra somewhat larger. Tergite VIII in both sexes with a single row of short spines posteriorly. Length 3.0-5.0 mm.
   ♂: hind margin of tergite VIII ± straight to slightly concave, that of sternite VIII bluntly triangular (Figs. 7c-d); aedeagus as in Figs. 7a-b.
   ♀: posterior margins of tergite and sternite VIII similar to ♂; spermatheca as in Fig. 7e.
   Japan. . . . . ***T. trisulcata*** (WEISE)
- Lateral furrows on pronotum mostly subparallel, punctures on elytra slightly smaller. Tergite VIII without short spines posteriorly. Length 3.0-5.5 mm.
   ♂: hind margin of tergite VIII with shallow concavity centrally, that of sternite VIII weakly obtuse (Figs. 8c-d); aedeagus as in Figs. 8a-b.
   ♀: posterior margins of tergite and sternite VIII as in ♂; spermatheca as in Fig. 8e.
   Sakhalin, Primorskiy Kray. . . . . ***T. zerchei* spec. nov.**

### 5.2. The species of *Triochara* BERNHAUER

#### *Triochara trisulcata* (WEISE)

Figs. 7a-e
*Aleochara trisulcata* WEISE, 1877, p. 88f.
*Aleochara* (*Triochara*) *trisulcata* WEISE, BERNHAUER 1901b, p. 373
*Aleochara* (*Triochara*) *trisulcata* WEISE, FENYES 1920, p. 414

Material studied: Lectotype ♂, here designated and labelled accordingly, 'Japonia, D. Hiller; Aleochara trisulcata m.; Coll. WEISE; Syntypus´ (DEI).
Paralectotypes: 2 ♂♂, 2 ♀♀: 'Coll. WEISE; Syntypus´ (DEI); 1 ♂,1 ♀: '59038, Hagi, Hiller, Type´ (MNHB).
Further material: 9 sex? (partly damaged): 'Japan, coll. Kraatz, BERNHAUER det., Aleochara trisulcata Ws.´ (DEI); 2 ♂♂, 5 ♀♀, 16 sex?: 'Japan, Hiller´ (MNHB).

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



Diagnosis: see keys and the very detailed description in SAWADA (1971).

Distribution: The species is only known from Japan. According to WEISE´s original description numerous specimens were observed in seaweed on the seashore near Hagi. SAWADA (1971) mentions further records from Seto, Tomogashima (Pref. Wakayama) and Kamakura (Pref. Kanagawa).

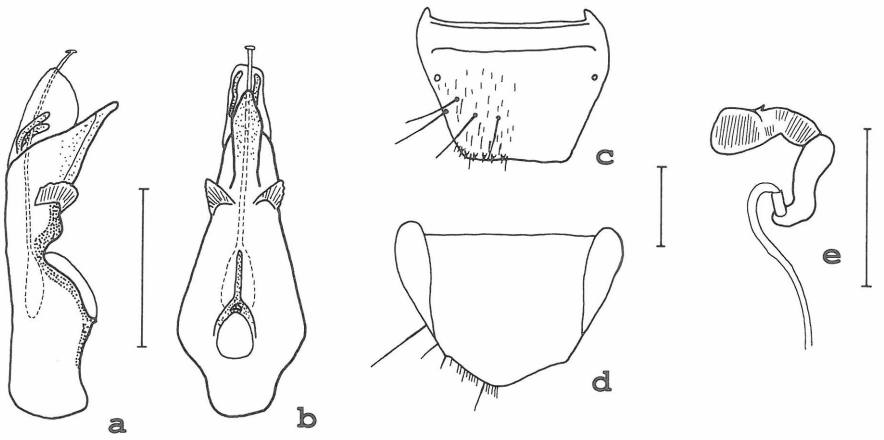



**Fig. 7:** *Triochara trisulcata* (WEISE): Aedeagus (a,b), ♂ tergite (c) and sternite (d) VIII (paralectotype), spermatheca (e) (paralectotype); pubescence and setae partly omitted. Scale: 0.25 mm.

### *Triochara zerchei* spec. nov.

Figs. 8a-e

Holotype ♂, RUSSIA: Primorskiy Kray, Ryazanovka, 14km SW Slavyanka, 42.48 N 131.12 E; 16.VI.1993, Beach, leg. ZERCHE (DEI).
Paratypes: 2 ♂♂, 1 ♀ , 1 sex?: same data as holotype (DEI, coll. m.); 6 ♂♂, 2 ♀♀, 102 sex?: RUSSIA, Sakhalin, Aniva distr., Lososey Bay, 3km W Aniva, 14.VII.1993, PÜTZ & WRASE leg. (DEI, coll. m., coll. PÜTZ, coll. SCHÜLKE).

Diagnosis: In size, colour and external morphology *T. zerchei* spec. nov. is similar to *T. trisulcata*. Length 3.0-5.5 mm. Colour of body, except for appendages, uniformly black, elytra often slightly lighter; legs brown to dark brown, antennae reddish to - particularly towards apex - dark brown. Head with furrows and punctation typical of *Triochara*; central dorsal area shining, without or with only very superficial microsculpture and with micropunctation; at base of furrows, punctures and especially the posterior transverse groove distinctly microreticulate.
Pronotum cordiform, ca. 1.3x wider than head with maximal width in anterior half; lateral furrows usually subparallel, sometimes somewhat irregular; furrows and punctures microreticulate at base, areas between punctures and the lateral domed areas in most specimens without or with only superficial microreticulation and shining, micropunctation visible; occasionally microreticulation also present between punctures, but at least on lateral domed areas superficial and clearly weaker than in the following species. Elytra with dense punctation, the punctures usually slightly smaller than in *T. trisulcata*; whole surface microreticulate.

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



Exterior faces of fore, middle and the apical half of hind tibiae with numerous stout spines; all tibiae somewhat curved; tarsi shorter than the corresponding tibiae, segment 1 of hind tarsi longer than segment 2, but shorter than segments 2 and 3 together.
Abdominal tergites III-V with rather sparse punctation, tergite VII with very sparse punctation; tergite VIII without spines. Tergite VIII, sternite VIII, aedeagus and spermatheca as in Figs. 8a-e.

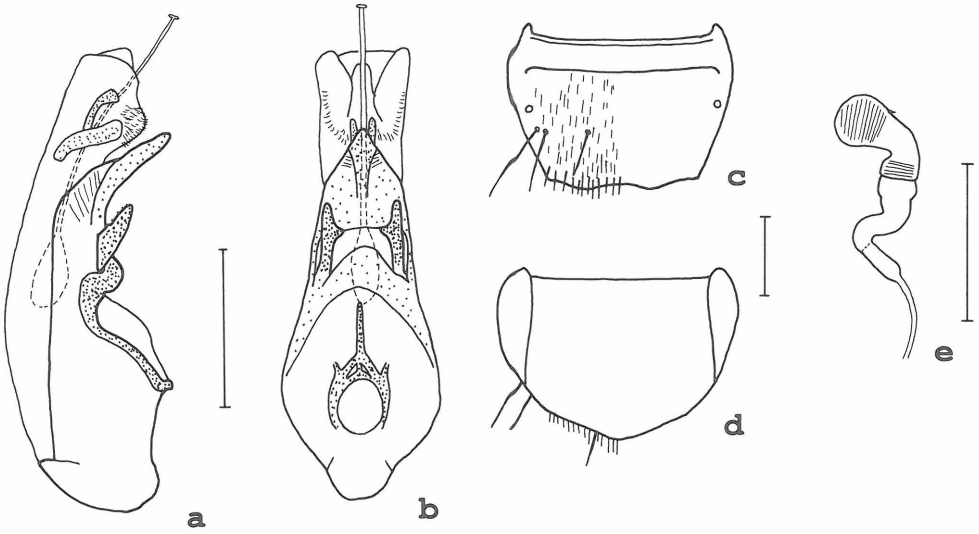



**Fig. 8:** *Triochara zerchei* **spec. nov.**: Aedeagus (a,b), ♂ tergite (c) and sternite (d) VIII, spermatheca (e); pubescence and setae partly omitted. Scale: 0.25 mm.

Derivatio nominis: I dedicate this species to the renowned specialist of Staphylinidae and dear friend LOTHAR ZERCHE, who collected part of the type series.

Distribution: At present, *T. zerchei* is only known from the localities indicated above.

### *Triochara nubis* spec. nov.

Figs. 9a-g

Holotype ♂, RUSSIA, Sakhalin, Korsakov distr., Ismenhyroye lake, 21./22.VII.1993, PÜTZ & WRASE (coll. m.).
Paratypes: 3 ♀♀: Petropavlovsk, Kamtschatka, 20.VII.1991, leg. R. PREDEL (coll. m.).

Diagnosis: Length 3.5-5.0 mm. Very similar and most closely related to *T. zerchei*. Colour of body, except for appendages, uniformly black; legs and antennae dark brown to blackish brown, bases of antennae at most only slightly lighter.
Head with furrows and punctation typical of genus; central dorsal area with superficial microsculpture and with micropunctation; bases of furrows, punctures and especially the posterior transverse groove distinctly microreticulate.
Pronotum cordiform, ca. 1.3x wider than head with maximal width in anterior half; furrows rather shallow, lateral furrows somewhat irregular and diverging anteriorly; whole surface including the lateral domed areas distinctly microreticulate and mat; micropunctation not visible.

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



Elytra with dense punctation, punctures larger than interstices; completely microreticulate.
Exterior faces of fore, middle and the apical half of hind tibiae with numerous stout spines; all tibiae somewhat curved; tarsi shorter than the corresponding tibiae, segment 1 of hind tarsi longer than segment 2, but shorter than segments 2 and 3 together.
Punctation of abdominal tergites III-VII as in *T. zerchei*; tergite VIII without spines.

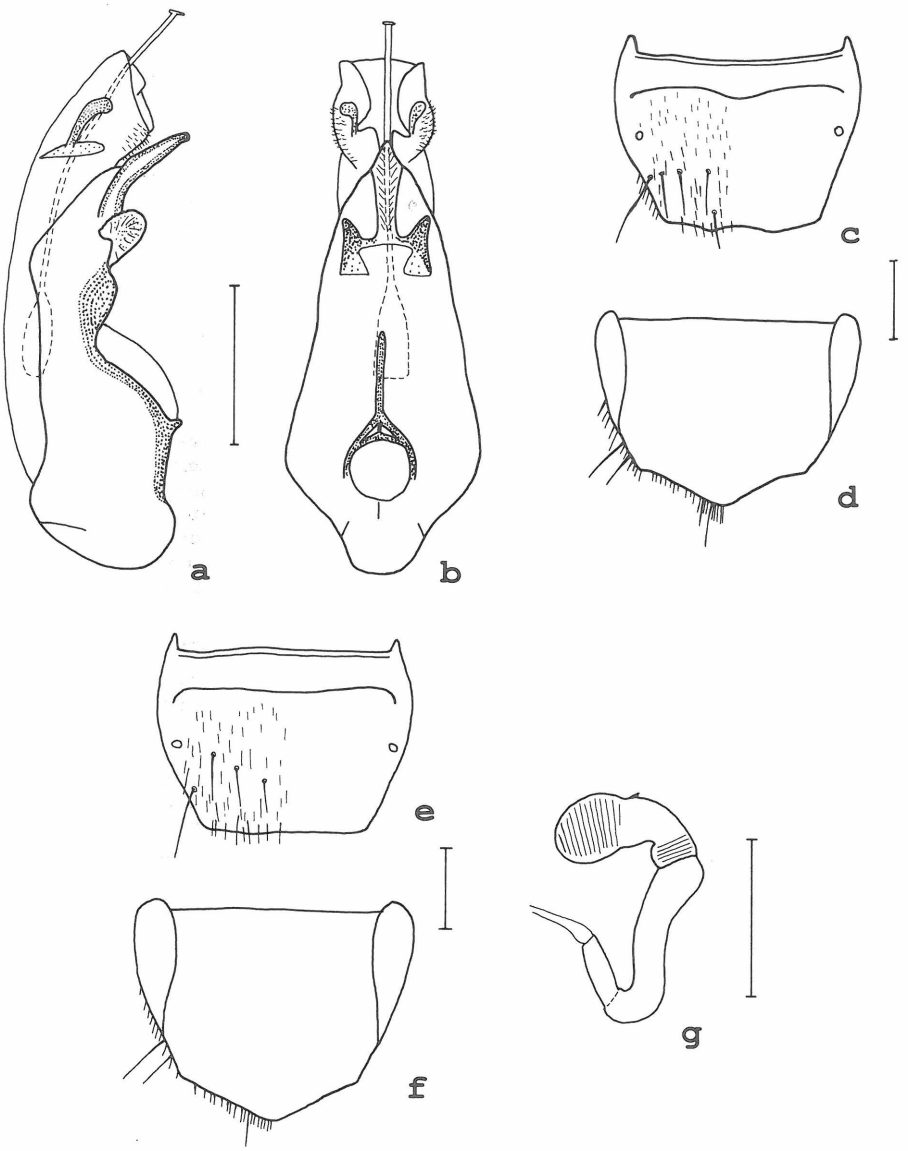



**Fig. 9:** *Triochara nubis* **spec. nov.**: Aedeagus (a,b), ♂ tergite (c) and sternite (d) VIII (holotype), ♀ tergite (e) and sternite (f) VIII, spermatheca (g); pubescence and setae partly omitted. Scale: 0.25 mm.

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



♂: Tergite VIII and sternite VIII as in Figs. 9c-d; aedeagus with ventral processes stouter than in *T. zerchei* in ventral view and rounded in lateral view, median lobe of slightly different shape than in the preceding species (Figs. 9a-b).
♀: Tergite VIII and sternite VIII as in Figs. 9e-f; shape of spermatheca clearly different from that in *T. zerchei* (Fig. 9g).

Derivatio nominis: nubis (lat.: of the cloud) refers to a characteristic of the climate of the localities, where the species was collected.

Distribution: So far *T. nubis* has only been recorded from Sakhalin, where it was collected under seaweed on the sandy shore of a salt lake (PÜTZ pers. comm.), and from Kamchatka.

## 6. *Skenochara* BERNHAUER & SCHEERPELTZ, 1926

CASEY (1906) established the subgenus *Eucharina* for *Aleochara sulcicollis* MANNERHEIM (type species by monotypy) from North America. FENYES (1920) then assigned two further species to *Eucharina*, among them *A. squalithorax* SHARP from Japan. However, it appears very unlikely that he had ever seen specimens of the species, since it does not fit CASEY´s description of the subgenus ("Extremely coarsely punctate. ... Prothorax in the middle with two longitudinal punctate impressions, the punctures confluent. ...). A few years later BERNHAUER & SCHEERPELTZ (1926) transferred *A. squalithorax* to the new subgenus *Skenochara*, basing their description on two characters: the evenly coarse microsculpture of the pronotum and the presence of two weak pronotal furrows. (Strictly speaking, it is the slightly elevated midline of the pronotum which causes the impression of such furrows.) BLACKWELDER (1952) recognized *Eucharina* CASEY as a junior homonym of *Eucharina* AGASSIZ and replaced it with the new name *Funda*, which was later synonymized with *Coprochara* MULS. & REY by KLIMASZEWSKI (1984). According to the latter author, *A. sulcicollis* shows all the subgeneric characters of *Coprochara*, and the unique features of the species (setigerous punctures on head, pronotum and elytra in defined grooves or deep impressions; pro- and mesotibiae with numerous stout spines) "are probably adaptations to its seashore habitats".

Against this background assessing the generic (or subgeneric) identity of *A. squalithorax* proves to be of great difficulty. On the one hand this species shares some characters with *Coprochara* in general - pronotum along midline without setigerous punctures, genitalia of the same basic type, carinate mesosternum - and with *A. sulcicollis* in particular - the presence of spines on fore and middle tibiae as well as on the abdominal tergite VIII, the resemblance of the genitalia (see figs. 41-44 in KLIMASZEWSKI (1984)) and the habitat.

On the other hand it is distinguished from *A. sulcicollis* and other *Coprochara* by its extremely coarse microreticulation on head and pronotum and by the absence of the two subparallel, setigerous rows of punctures on the pronotum. *Squalithorax* also shares a number of characters relating to external morphology (microsculpture, spines on tibiae and on tergite VIII, length of hind tarsi, carinate mesosternum) with *Polystomota* CASEY, especially *P. punctatella*, from which it is, however, distinguished by the absence of punctures along the pronotal midline and, above all, by the morphology of the genitalia. Hence, in order for the problem of evaluating both the characters involved and the systematic position of the taxa treated here to be reconsidered and solved, one will have to await a thorough phylogenetic analysis, which is, however, not the object of this study.
Meanwhile I think it best to leave *A. squalithorax* in *Skenochara*, and, for the sake and purpose of consistency with the other taxa treated here, to regard the latter as a genus, an admittedly unsatisfactory solution, which must at best be considered preliminary.

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



*Skenochara squalithorax* (SHARP)

Figs. 10a-g
*Aleochara squalithorax* SHARP, 1888, p. 282
*Aleochara* (*Eucharina*) *squalithorax* SHARP, FENYES 1920, p. 414
*Aleochara* (*Skenochara*) *squalithorax* SHARP, BERNHAUER & SCHEERPELTZ 1926, p. 795

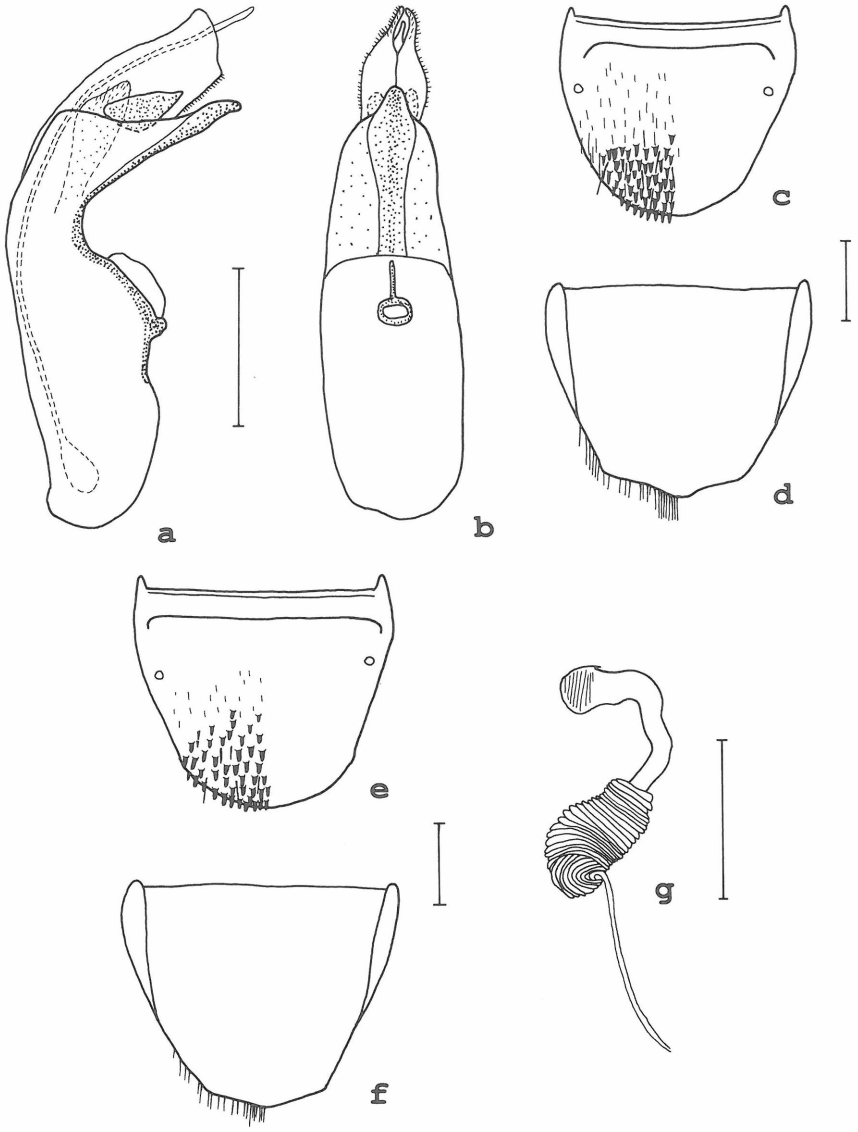



**Fig. 10:** *Skenochara squalithorax* (SHARP): Aedeagus (a,b), ♂ tergite (c) and sternite (d) VIII (lectotype), ♀ tergite (e) and sternite (f) VIII, spermatheca (g) (paralectotype); pubescence and setae partly omitted. Scale: 0.25 mm.

DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



Material studied: Lectotype ♂, here designated and labelled accordingly, 'Aleochara squalithorax, Type D.S., Hakodate, Japan; Type [round curator label]´ (BMNH).
Paralectotypes: 1♀, 2 sex?: 'Aleochara squalithorax Fauvel, Hagi, Japan, G. LEWIS; SHARP Coll. 1905-313; Syntype [round curator label]´ (BMNH).

Further material: 8 ♂♂, 4 ♀♀, 110 sex?: 'Japan, Hiller´ (MNHB).

Diagnosis (see also key to genera): Length 2.8-4.5 mm. Punctures on elytra granulose, partly confluent and forming transverse ridges; head and pronotum with whitish, rather sparse, short, stout and partly semierect pubescence, with very coarse microreticulation, therefore completely mat and punctation rather indistinct; pronotum convex and large, 1.6-1.7x wider than head, along midline without setigerous punctures and slightly elevated. Antennae short with penultimate segments more than 2x wider than long; exterior faces of fore and middle tibia and of apical third of hind tibiae with numerous spines; hind tarsi slender with segment 1 about as long as segments 2 and 3 together. Tergites VIII in both sexes with numerous stout spines in posterior half.
♂: hind margin of tergite VIII rounded, sternite VIII weakly and bluntly pointed (Figs. 10c-d); aedeagus as in Figs. 10a-b.
♀: posterior margin of tergite VIII rounded, that of sternite VIII weakly obtuse (Figs. 10e-f); spermatheca as in Fig. 10g.

Distribution: The species is presently known only from Japan (Hakodate, Hagi).

## References


ALLEN, A.A. 1937: A new species of *Aleochara* (Col., Staphylinidae). - Entomol. mon. Mag. **73**: 218-220.

Anonymous 1989: A checklist of Japanese insects. - Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka, 1767 pp.

BERNHAUER, M. 1901a: Die Staphyliniden der paläarktischen Fauna.- Verh. zool.-bot. Ges. Wien **51**: 430-506.

BERNHAUER, M. 1901b: Neue exotische Arten der Gattung *Aleochara* Gravh.. - Stett. Ent. Zeit. **62**: 366-373.

BERNHAUER, M. & SCHEERPELTZ, O. 1926: Staphylinidae VI, in: Junk-Schenkling, Coleopterorum Catalogus, pars 82, Berlin, 499-988.

BLACKWELDER, R.E., 1952: The generic names of the beetle family Staphylinidae with an essay on genotypy. *Smiths. Inst. U.S. Nat. Mus. Bull.* **200**: 1-483.

CASEY, T.L. 1884: Contributions to the descriptive and systematic coleopterology of North America. - Philadelphia, 198 pp.

CASEY, T.L. 1906: Observations on the staphylinid groups Aleocharinae and Xantholinini chiefly of America. - Trans. Acad. Sci. St. Louis **16**: 125-435.

COIFFAIT, H. 1968: Coléoptères cavernicoles et humicoles de Corse. Description de deux formes nouvelles. - Ann. Spéléol. **23**: 501-509.

FAUVEL, A. 1862: Notice sur quelques aléochariens nouveaux ou peu connus et descriptions de larves de *Phytosus* et *Leptusa*. - Ann. Soc. Ent. France **2**: 81-94.

FENYES, A. 1920: Coleoptera, Fam. Staphylinidae, Subfam. Aleocharinae. - In: WYTSMAN, P.: Genera Insectorum. - Fasc. **173B**: 111-414, Bruxelles.

GRAVENHORST, J.L.CH. 1806: Monographia coleopterorum micropterorum. - Göttingae, 236 pp.

HORION, A. 1967: Faunistik der mitteleuropäischen Käfer. Bd. XI: Staphylinidae, 3. Teil: Habrocerinae bis Aleocharinae (ohne Subtribus Athetae). - Überlingen-Bodensee, 419 pp.

ISRAELSON, G. 1984: Coleoptera from the Azores. - Bol. mus. Mun. Funchal **36**: 142-161.

ISRAELSON, G., MACHADO, A., OROMI, P. & PALM, T. 1982: Novedades para la fauna coleopterologica de las Islas Canarias. - Vieraea **11**: 109-134.

KLIMASZEWSKI, J. 1984: A revision of the genus *Aleochara* Gravenhorst of America north of Mexico (Coleoptera: Staphylinidae, Aleocharinae). - Mem. Ent. Soc. Can. **129**: 1-211.

KRAATZ, G. 1856-1858: Staphylinii. Naturgeschichte der Insecten Deutschlands. II. - Berlin, 1080 pp.

LOHSE, G.A. 1984: 14. Nachtrag zum Verzeichnis der mitteleuropäischen Käfer. - Ent. Blätter **80**: 143-152.


DOI: 10.21248/contrib.entomol.45.1.217-237

©www.senckenberg.de/; download www.contributions-to-entomology.org/



LOHSE, G.A. 1985: Betrachtungen über die Gattung *Emplenota* CASEY (Coleoptera, Staphylinidae). - Faun. - ökol. Mitt. Kiel **5**: 327-330.

LOHSE, G.A. 1989: 23. Familie Staphylinidae (II) (Aleocharinae). In: LOHSE, G.A. & W.H. LUCHT: Die Käfer Mitteleuropas. 1. Supplementband mit Katalogteil, Krefeld, 185-240.

LOHSE, G.A. & SMETANA, A. 1985: Revision of the types of species of Oxypodini and Athetini (*sensu* Seevers) described by Mannerheim and Mäklin from North America (Coleoptera: Staphylinidae). - The Coleopterists Bull. **39**: 281-300.

MOTSCHULSKY, T.V. de 1858a: Enumération des nouvelles espèces de Coléoptères rapportés de ses voyages. 2e Par. - Bull. Soc. Natur. Moscou **31,3**: 204-264.

MOTSCHULSKY, T.V. de 1858b: Synonymies. Remarques du Prof. ERICHSON sur les staphylinites types du Comte Mannerheim. - Etudes Ent. fasc. **6**: 59-73.

MULSANT, E. & REY, C. 1952: Description de quelques Coléoptères nouveaux ou peu connus de la tribu des Brachélytres. - Opusc. ent. **1**: 15-46.

NORDMAND, H. 1934: Contribution au catalogue des Coléoptères de Tunisie (4. fasc.). - Bull. Soc. Hist. nat. Afr. Nord **25**: 356-390.

PESCHKE, K. & FULDNER, D. 1977: Übersicht und neue Untersuchungen zur Lebensweise der parasitoiden Aleocharinae (Coleoptera: Staphylinidae). - Zool. Jb. Syst. **104**: 242-262.

SAWADA, K. 1971: Aleocharinae (Staphylinidae, Coleoptera) from the campus of the Seto Marine Biological Laboratory. - Publ. Seto Mar. Biol. Lab. **18**: 291-315.

SCHEERPELTZ, O. 1967: Wissenschaftliche Ergebnisse der zoologischen Studienfahrt von Dr. A. SMETANA-Praha nach Albanien im Jahre 1958 (Coleoptera, Staphylinidae-Aleocharinae). - Acta Ent. Mus. Nat. Prag. **37**: 517-550.

SHARP, D. 1874: The Staphylinidae of Japan. - Trans. ent. Soc. London **1874**: 1-103.

SHARP, D. 1888: The Staphylinidae of Japan. - Ann. Mag. Nat. Hist. London Ser. **6**, II: 277-295.

UYTTENBOOGAART, D.L. 1930: Contributions to the knowledge of the fauna of the Canary-Islands. Synopsis of the results of the collecting-excursions 1925 and 1927. Coleoptera. - Tijdschr. v. Ent. **73**: 211-235.

WEISE, J. 1877: Japanische Staphylinidae und Pselaphidae. - In: KRAATZ, G.: Beiträge zur Käferfauna von Japan, meist auf R. HILLERs Sammlungen basiert. Erstes Stück. - Dtsch. ent. Z. Berlin **21**: 88-100.

WELCH, R.C. 1964: The biology of the genus *Aleochara* GRAV. (Coleoptera, Staphylinidae). - PhD Thesis, University of London, 432 pp.

DOI: 10.21248/contrib.entomol.45.1.217-237

# ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: Beiträge zur Entomologie = Contributions to Entomology

Jahr/Year: 1995

Band/Volume: 45

Autor(en)/Author(s): Assing Volker

Artikel/Article: The Palaearctic species of Emplenota Casey, Polystomota Casey, Triochara Bernhauer and Skenochara Bernhauer & Scheerpeltz, with descriptions of three new species (Coleoptera, Staphylinidae, Aleocharinae). 217-237