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Revision of the Palearctic species of the genus *Ochthebius* Leach X. the *punctatus* species group (Hydraenidae: Coleoptera)

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Abstract

Forty-one Palearctic species of the Ochthebius punctatus *species group (Hydraenidae) are treated. Lectotypes are designated for* Ochthebius atratulus *Régimbart,* O. sexfoveolatus *Rey and* O. quadrifoveolatus *Wollaston. New synonymies:* O. pilosus *Waltl (=* O. berbericus *Ferro syn.nov.),* O. cuprescens *Guillebeau (=* O. osellai *Ferro syn.nov.),* O. difficilis *Mulsant (=* O. johanni *Pankow syn.nov.,* O. zurstrasseni *Pankow syn.nov.),* O. iranicus *Balfour-Browne (=* O. martius *Ferro syn.nov.),* O. micans *Balfour-Browne (=* O. subdifficilis *Jäch syn.nov.) and* O. schneideri schneideri *Kuwert (=* O. aeneocupreus *Sahlberg syn.nov.).* Ochthebius wewalkai *Jäch is regarded as a subspecies of* O. schneideri. *New species:* O. hauseri *sp.n. (Central Asia),* O. joosti *sp.n. (Turkmeniya, Iran, Iraq) and* O. silfverbergi *sp.n. (Morocco). The aedeagi of seventeen species are illustrated.*

Zusammenfassung

Einundvierzig Arten der Ochthebius punctatus *Gruppe werden behandelt. Lectotypen werden für folgende Arten designiert:* Ochthebius atratulus *Régimbart,* O. sexfoveolatus *Rey und* O. quadrifoveolatus *Wollaston. Neue Synonymien:* O. pilosus *Waltl (=* O. berbericus *Ferro syn.nov.),* O. cuprescens *Guillebeau (=* O. osellai *Ferro syn.nov.),* O. difficilis *Mulsant (=* O. johanni *Pankow syn.nov.,* O. zurstrasseni *Pankow syn.nov.),* O. iranicus *Balfour-Browne (=* O. martius *Ferro syn.nov.),* O. micans *Balfour-Browne (=* O. subdifficilis *Jäch syn.nov.) und* O. schneideri schneideri *Kuwert (=* O. aeneocupreus *Sahlberg syn.nov.).* Ochthebius wewalkai *Jäch wird als Subspezies von* O. schneideri *betrachtet. Neue Arten:* O. hauseri *sp.n. (Zentralasien),* O. joosti *sp.n. (Turkmenien, Iran, Irak) und* O. silfverbergi *sp.n. (Marocco). Die Aedeagi von siebzehn Arten werden dargestellt.*

In the present paper I have included all species with irregular elytral punctation (formerly known as "*Bothochius*") and all those species (with regular elytral striation), which are obviously closely related to them (due to external and aedeagal resemblance). I propose the name *punctatus* group for these species most of which probably form a monophyletic unit. The majority of those species with irregular elytral striation have been already treated by JÄCH (1989b).

As it has been already shown by JÄCH (1989b), the presence of irregular elytral striae cannot be used adequately to define subgenera or species groups since this character varies greatly within (e.g. *inermis*) and between (e.g. *pilosus*) populations in several species.

Morphological characteristics: Colouration of dorsal surface usually black (exceptions: *cuprescens*, *mongolicus*, *joosti* **sp.n.**), frequently with metallic reflections on head and pronotum. Dorsal surface covered with characteristic, long, whitish or bluish adpressed hairs which may be rubbed off in some specimens. I have not observed these hairs in the syntypes of *O. atratulus*. Front margin of labrum usually entire or very slightly emarginate, only rarely distinctly excised (*mongolicus*, *joosti* **sp.n.**, *nepalensis*, *ovatus*); ocelli hardly visible. Postocular tooth present in several species (its size varies greatly within populations); admedian pronotal foveae usually present, only occasionally obsolete (variable within populations; e.g. *schneideri*, *difficilis*, *cuprescens*); lateral margins of lateral depression of pronotum rounded, or parallel-sided and straight; front angles of pronotum rounded or rectangular, only rarely slightly produced and acute (*wewalkai*, *mongolicus*). Elytral striation regular or irregular. Metasternum and first 5 abdominal ventrites densely pubescent, apical sternites glabrous. Legs (especially tarsi and claws) and palpi comparatively long and slender (exception: *O. opacipennis*), which distinguishes most species of the *punctatus* group from the *metallescens* group.

Aedeagus: Main piece usually short and straight (ventral aspect) and strongly curved in basal third (lateral aspect), rarely long and slender (*flumineus*, *ovatus*, *inermis*, *turcicus*,...) and only very rarely sinuous in ventral aspect (*cuprescens*, *bifoveolatus*, *silfverbergi* **sp.n.**); phallobasis slightly asymmetrical; subapical bristles usually present, but very small and reduced in some of the smaller species. Distal lobe cylindrical or flat. Parameres more or less symmetrical, usually inserted near the phallobasis, which distinguishes the *punctatus* group and the *metallescens* group (only rarely are the parameres inserted at some distance from phallobasis: *flumineus*, *opacipennis*, *ovatus*); apices usually not, or very slightly, dilated and with short hairs, very rarely more strongly dilated and with longer hairs (*bifoveolatus*, *pilosus*, *silfverbergi* **sp.n.**, *cuprescens*). In a number of species the parameres are quite distinctly separated from the main piece of the aedeagus behind their basis (*atratulus*, *montesi*, *ciffidilis*, *ragusae*, *nobilis*, *sulpuris*, ...) which resembles the situation typical for the subgenus *Asiobates*. Except in a few species (*nanus*, *opacipennis*, *flumineus*) there is always some space between the main piece and the parameres behind their basis in the species of the *punctatus* group, a situation never found in any other group of *Ochthebius* s.str.

Sexual dimorphism: Very weakly developed. Front margin of labrum of male sometimes slightly upturned. Elytra of female sometimes more distinctly shagreened. First two segments of protarsus slightly enlarged in male (at least in most species). Apical segments modified as in other species groups. Very rarely elytral margin more widely explanate in female (*nepalensis*, *ovatus*).

Geography: Members of the *punctatus* group are widely distributed throughout the Palearctic and Ethiopian (e.g. Namibia) regions. They are also found along the northern fringe of the Oriental realm (Taiwan). Obviously not in the Nearctic region.

Biology: The species are found in a variety of habitats: running water with gravelly margins, saline pools and springs.

Acknowledgement and abbreviations: The material used for this study was borrowed from the following institutions and private collections (abbreviations are used to refer to collections in the text):

BML	The Natural History Museum, London (E. DE BOISE) [= British Museum (Natural History)]
CAL	Coll. BALFOUR-BROWNE, in Coll. ANGUS, London
CBG	Coll. BELLSTEDT, Gotha
CBHB	Coll. BALKE & HENDRICH, Berlin
CFL	Coll. FERRO, Lancenigo
CHD	Coll. HEBAUER, Deggendorf
CMM	Coll. MONTES, Madrid
CNU	Coll. NILSSON, Umeå
CPL	Coll. PRETNER, Ljubljana (B. DROVENIK)
DEI	Deutsches Entomologisches Institut, Eberswalde (L. ZERCHE)
FSF	Forschungsinstitut Senckenberg, Frankfurt/Main (R. ZUR STRASSEN)
HUB	Museum der Alexander Humboldt Universität, Berlin (F. HIEKE)
ISNB	Institut royal des Sciences naturelles de Belgique, Bruxelles (K. DESENDER)
MGL	Musée Guimet d'Histoire Naturelle, Lyon (J. CLARY)
MHNG	Muséum d'Histoire Naturelle, Genève (I. LÖBL)
MHNP	Muséum national d'Histoire Naturelle, Paris (Y. CAMBEFORT)
MMB	Musée Municipal de Brou, Bourg-en-Bresse (F. POIRET)
MTD	Museum für Tierkunde, Dresden (R. KRAUSE)
MZF	Museo Zoologico de "La Specola", Firenze (S. ROCCHI)
NMB	Naturhistorisches Museum, Basel (M. BRANCUCCI)
NMP	Národní Museum v Praze (J. JELÍNEK)
NMW	Naturhistorisches Museum, Wien
SIW	Smithsonian Institution, Washington, D.C. (P. SPANGLER) [= National Museum of Natural History]
ZMH	Universitetets Zoologiska Museum, Helsingfors (H. SILFVERBERG)

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Scale next to figures represents 0.1 mm.

Fourty-one Palearctic species are at present included in the *punctatus* group.

A - species with slightly or distinctly irregular elytral striation (Fig. 21)

1. *O. almorensis* JÄCH (see JÄCH, 1989b)
2. *O. bifoveolatus* WALTL (see JÄCH, 1989a)
3. *O. caucasicus* KUWERT (see JÄCH, 1989a)
4. *O. danjo* NAKANE
5. *O. flexus* PU (see JÄCH, 1989a)
6. *O. grandipennis* FAIRMAIRE (see JÄCH, 1989a)
7. *O. imbensimbi* JÄCH (see JÄCH, 1989a)
8. *O. inermis* SHARP
9. *O. joosti* **sp.n.**
10. *O. klapperichi* JÄCH (see JÄCH, 1989a)
11. *O. lanuginosus* REICHE & SAULCY (see JÄCH 1989a)
12. *O. lobatus* PU (see JÄCH, 1989a)
13. *O. mongolicus* JANSSENS (see JÄCH, 1989a)
14. *O. nobilis* VILLA (see JÄCH, 1989a)
15. *O. orientalis* JANSSENS (see JÄCH, 1989a)
16. *O. pilosus* WALTL (specimens from Egypt with more or less regular elytral striae, see JÄCH, 1989a)
    = *berbericus* FERRO **syn.nov.**
17. *O. punctatus* STEPHENS (see JÄCH, 1989a)
18. *O. quadrifoveolatus* STEPHENS (see JÄCH 1989a)
19. *O. ragusae* KUWERT (see JÄCH, 1989a)
20. *O. silfverbergi* **sp.n.**
21. *O. sulpuris* JÄCH (see JÄCH, 1989a)
22. *O. turcicus* JÄCH (see JÄCH, 1989a)
23. *O. turkestanus* KUWERT (see JÄCH, 1989a)
24. *O. verrucosus* PU (see JÄCH, 1989a)

B - species with more or less regular elytral striae (Fig. 22)

25. *O. atratulus* RÉGIMBART
26. *O. ciffidilis* FERRO
27. *O. cuprescens* GUILLEBEAU
    = ? *tuniseus* NORMAND (see JÄCH, 1990)
    = *osellai* FERRO **syn.nov.**
28. *O. darius* J. BALFOUR-BROWNE
29. *O. difficilis* MULSANT
    = ? *splendidus* KUWERT
    = *johanni* PANKOW **syn.nov.**
    = *zurstrasseni* PANKOW **syn.nov.**
30. *O. flumineus* ORCHYMONT
31. *O. hauseri* **sp.n.**
32. *O. iranicus* J. BALFOUR-BROWNE
    = *martius* FERRO **syn.nov.**
33. *O. micans* BALFOUR-BROWNE
    = *subdifficilis* JÄCH **syn.nov.**
34. *O. montesi* FERRO
35. *O. nanus* STEPHENS
    = *aeratus* STEPHENS
    = *pellucidus* MULSANT
    = *pyrenaeus* FAUVEL
    = *sexfoveolatus* REY
36. *O. nepalensis* JÄCH (see JÄCH, 1989b)
37. *O. nilssoni* HEBAUER
38. *O. opacipennis* CHAMPION
39. *O. ovatus* JÄCH (see JÄCH, 1989b)
40. *O. schneideri schneideri* KUWERT
    = *aeneocupreus* SAHLBERG **syn.nov.**
    O. schneideri orchymonti JÄCH stat.nov.
41. *O. wewalkai* JÄCH

Ochthebius atratulus RÉGIMBART

Ochthebius atratulus RÉGIMBART, 1904: 221; KNISCH, 1924.

Type locality: "Saganeiti" [= Segeneyti, west of Adi Ugri], Eritrea, northern Ethiopia.

Type material: Lectotype ♂ (by present designation): "TYPUS/ERITRAEA SAGANEITI IV.1901 Dr. A. ANDREINI/57/Ochthebius atratulus Rég. n.sp. Typus/La Specola Firenze 7313" (MZF). Seven paralectotypes with very similar labels in the MZF (4), MHNP (2 ♀♀) and NMW (1 ♂).

Diagnosis: This species closely resembles *Ochthebius nanus* by the very short lateral depressions of the pronotum. It differs from the latter mainly in the less deeply excised pronotal lateral margin and in the deeply impressed elytral punctures.

Aedeagus (Fig. 3): Main piece moderately long, distinctly curved after insertion of parameres; phallobasis slightly asymmetrical. Distal lobe more or less cylindrical, considerably shorter than in *nanus*; slightly flattened dorso-ventrally.

Distribution: So far known only from the type locality.

Ochthebius bifoveolatus WALTL

Additional records:
SPAIN: CANARY ISLANDS: Lanzarote, 28.II.1972 (ZMH).

Ochthebius ciffidilis FERRO

Ochthebius ciffidilis FERRO, 1984b: 65.

Type locality: 1) according to original description: Chasemabad, E Bampur; 2) According to type labels: 16 km SE Tangé-Sarhé, 900 m. Both localities are in southeastern Iran.

Type material: I have seen one male (NMP): "SE Iran, 16 km SE Tangé-Sarhé 900 m, 10.4.1973/Loc. no. 154 Exp. Nat. Mus. Praha/O. Hymenodes ciffidilis det FERRO, 1983 Holotypus". This specimen is probably the holotype, but according to the original description (FERRO, 1984b), the holotype should be from Loc. no. 157. Paratypes: Seven specimens from 3 different localities in southern and southeastern Iran are mentioned in the original description. I have examined one female from Loc. no. 202 (12 km NW Minab).

Diagnosis: Very similar to *Ochthebius difficilis* from which it is usually distinguished by the more deeply impressed pronotal foveae. *Ochthebius micans* differs mainly in the wider pronotum.

Aedeagus (Fig. 9): Main piece shorter and stouter than in *difficilis*. Distal lobe not as flat as in that species.

Distribution: So far known only from southern and southeastern Iran.

Ochthebius cuprescens GUILLEBEAU

Ochthebius cuprescens GUILLEBEAU, 1893: XXXV; KNISCH, 1924; ORCHYMONT, 1943; JÄCH, 1990; GERECKE, 1991; VALLADARES & MONTES, 1991.
? *Ochthebius tuniseus* NORMAND, 1933: 302; JÄCH, 1990.
Ochthebius osellai FERRO, 1984b: 68 (= **syn.nov.**).

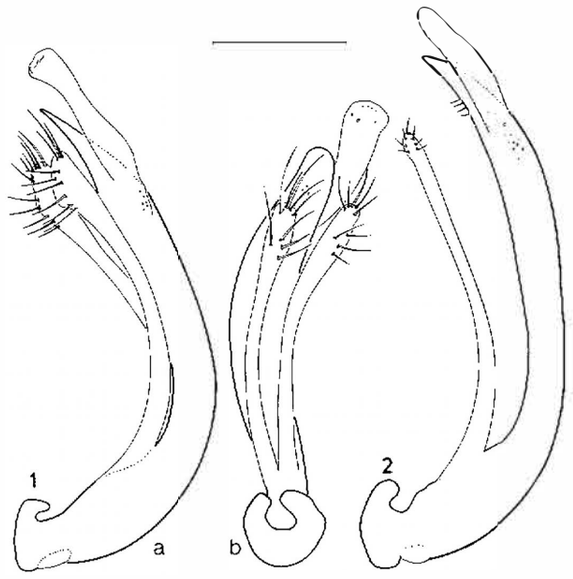
Type locality: L'Ougasse, Algeria.

Type material: I did not find the holotype (by monotypy) of *cuprescens* in the MMB (GUILLEBEAU collection) and not in the MHNP, where I checked the following collections: BEDEL, FAIRMAIRE, PEYERIMHOFF and PIC. Accor-

ding to the original description it should be deposited in the PIC collection, which is unfortunately a very large collection and not very well organized.

Synonyms: I have not seen the holotype ♂ (NMP) or any of the 7 paratypes (NMP, CFL) of *O. osellai*, described from Tunisia, but I have examined one male from Tunisia (Magroume, NMW), determined as *osellai* by FERRO. Although I have not been able to trace the holotype of *cuprescens* there is little doubt that *osellai* is a junior synonym of this well-known species, as its external characters agree very well with the original description and in several old collections (ZMH - coll. SAHLBERG, MHNP - coll. RÉGIMBART, NMW - coll. HAMPE, NMB) I found specimens of this particular species determined as *cuprescens*.

I did not see any of the 10 syntypes of *Ochthebius quadrifossulatus* "ab." *tuniseus* NORMAND, described from Tunisia (Kebili - 4 exs. and Souk-el-Arba - 6 exs.). I was not able to trace these specimens in the MHNP. They might be deposited in Tunis. According to the original description the specimens lack the pronotal foveae ("Corselet sans aucune fovéole"). I have seen one specimen of *cuprescens* from Kebili (NMW), in which the anterior and posterior foveae are almost completely obsolete, while in other Tunisian specimens (Touzeur, Douz, Fernana) these foveae are shallow, but always clearly visible. Thus I believe that *tuniseus* is a junior synonym of *cuprescens*.



Figs 1-2. Aedeagus of (1) *O. silfverbergi* sp.n., holotype (a) lateral, (b) ventral and (2) *O. joosti* sp.n., paratype, lateral.

Diagnosis: A very variable species. Colouration of pronotum and elytra varies from yellowish to black; head always black; pronotum (except in brownish and yellowish specimens) always with metallic lustre. Front margin of labrum entire, only very rarely very shallowly emarginate. Pronotal foveae deeply impressed to almost completely obsolete; specimens from Spain with lateral fossula very deeply impressed and anterior foveae connected by a deeply impressed line (? subspecies); postocular tooth varies from very small and inconspicuous to moderately prominent. Elytral punctures usually well impressed, sometimes only superficial.

Aedeagus (Fig. 18): Main piece moderately long, distinctly curved in lateral aspect and distinctly sinuous in ventral aspect; phallobasis asymmetrical; usually 4 subapical bristles present. Distal lobe flat. Parameres long, with long apical bristles. Italian specimens differ markedly from African and Spanish specimens in the less strongly arched distal lobe (? subspecies).

Distribution: Western Mediterranean.

Additional material examined:

SPAIN: MURCIA: Rambla del Moro, 14.VII.1987 (NMW), 7.VII.1983, leg. DELGADO (NMW).

ITALY: SICILY: Villadoro, T. Feliciosa, 620 m, 4.III.1986, leg. GERECKE (NMW); Bompensiere, 200 m, 8.X.1985, leg. GERECKE (NMW).

ALGERIA: Biskra, leg. DE VAULOGER (NMW, MHNP); Dj. Ressas, leg. SAHLBERG (ZMH); Constantine, leg. SAHLBERG (ZMH, HUB, NMW).

TUNISIA: Fernana (NMW, MHNP, CPL); Douz, 14.IV.1986, leg. SCHILLHAMMER (NMW); Touzeur (NMW); Kebili, 4.IV.1925, leg. Omer COOPER (NMW, MHNP); 20 km s Gafsa, 23.V.1982, leg. MALICKY (NMW).

Ochthebius danjo NAKANE

Ochthebius danjo NAKANE, 1990: 64.

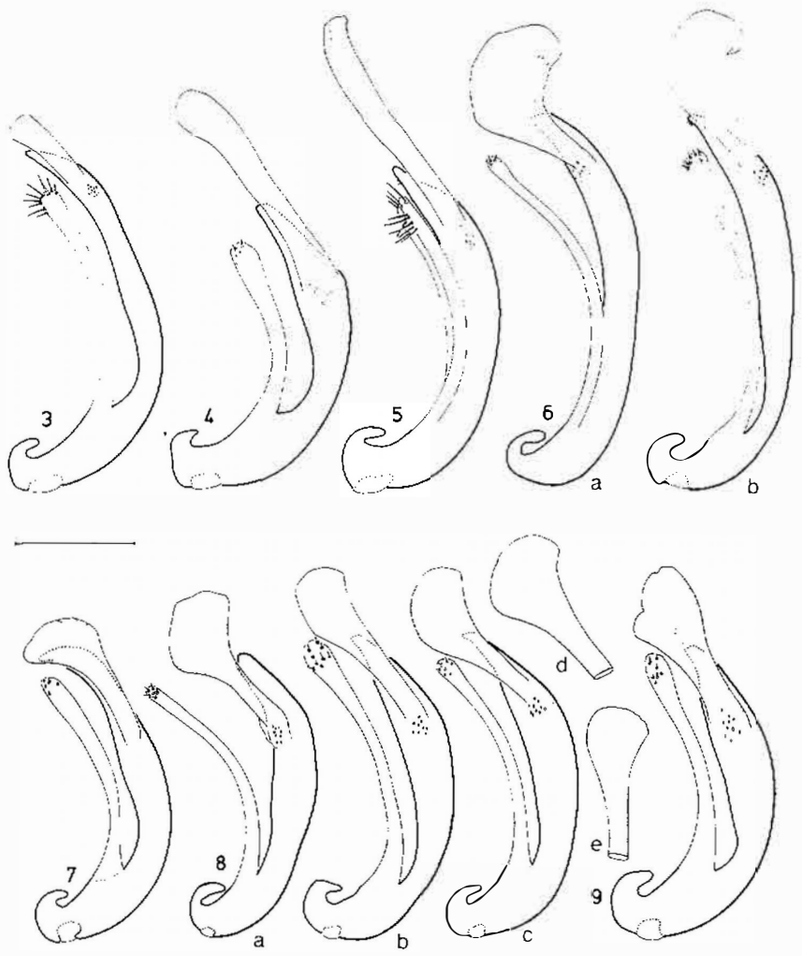
Remarks: I have not seen the holotype ♀ of *O. danjo*, described from Danjo-gunto Island, west of Kyushu, Japan and compared with *O. lobatus* (described from Szechuan) in the original description. Unfortunately it is not mentioned in the original description how this species can be distinguished from *O. inermis*, described from Japan.

Ochthebius darius BALFOUR-BROWNE

Ochthebius darius J. BALFOUR-BROWNE, 1979: 167.

Type locality: Almost dry stream with seepage from water table, 50 km S of Shahabad on Birjand Road, Khorasan Province, eastern Iran.

Type material: The holotype ♂ of *O. darius* is deposited in the Iranian National Museum of Natural History. Eighty paratypes are housed in the Iranian National Museum of Natural History, SIW, BML and CAL. I have examined two male paratypes (BML, CAL): "Iran: Khorasan 50 km s. Shahabad on Birjand Rd. 6.VI.1975 R. Mc CULLERS".



Figs 3-9. Aedeagus of (3) *O. atratulus*, lectotype (4) *O. montesi*, paratype (5) *O. nanus*, Spain (Palencia), (6) *O. hauseri* sp.n., (a) holotype, (b) same, slightly different orientation, (7) *O. micans*, Israel, (8) *O. difficilis*, (a) Lebanon, (b) Turkey (Kars), (c) southern France, (d) Turkey (Mersin), distal lobe only, (e) Turkey (Van), distal lobe only, (9) *O. ciffidilis* (holotype). Main piece of figs. 6a and 8a in dorsolateral aspect, all others in lateral view. Distal lobe of figs. 6a and 6b not with maximum outlines, all others with maximum outlines.

Diagnosis: Very similar to *iranicus* and *schneideri*; more black, less cupreus than *iranicus*; labral notch very small; pronotum slightly wider than in these two species.

Aedeagus (Fig. 17): Distal lobe flattened dorso-ventrally; orifice of ductus ejaculatorius on the left side.

Distribution: Known only from the type locality.

Ochthebius difficilis MULSANT

Ochthebius difficilis MULSANT, 1844a: 375; KNISCH, 1924; ORCHYMONT, 1927, 1940; NORMAND, 1933; JANSSENS, 1963; CHIESA, 1959; ANGELINI & FERRO 1974; ALFIERI, 1976; J. BALFOUR-BROWNE, 1978; IENISTEA, 1978; PIRISINU, 1981; LAGAR, 1984; JÄCH, 1984; VALLADARES, 1986; VALLADARES & MONTES, 1991.
? *Ochthebius splendidus* KUWERT, 1887: 378; KNISCH, 1924.
Ochthebius johanni PANKOW, 1986: 71 (= **syn.nov.**).
Ochthebius zurstrasseni PANKOW, 1986: 70 (= **syn.nov.**).

Type locality: Sardinia, Italy.

Type material: "Cette espèce habite la Sardaigne. Elle m'a été communiquée par M. CHEVROLAT." I was not able to trace any type material (number of syntypes unknown) of *O. difficilis* in the BEDEL collection (MHNP) where - according to HORN *et al.* (1990) - all "Palpicornia" of L.A.A. CHEVROLAT (1799 - 1884) should be deposited.

Synonyms: I could not find any alleged syntype of *O. splendidus* (described as "var. *splendidus* MOTSCH." of *O. aeratus* from "Anatolien, Persien") in the MHNP (KUWERT collection). I have seen one specimen of *O. difficilis* (HUB) labelled as "splendens MOTSCH. Smyrna", which might be a syntype. Syntypes of *splendidus* may be deposited in the Zoological Museum, Moscow (MOTSCHULSKY collection).

I have examined the holotypes of *O. johanni* and *zurstrasseni* (both described from the Caucasus), which are deposited in the FSF. They are synonyms of *O. difficilis*. The holotype of *johanni* is teneral.

Diagnosis: Pronotal foveae usually more deeply impressed in specimens from the western Mediterranean. But since this character is quite variable within eastern populations (moderately deep to very shallow or almost completely obsolete in Turkish specimens) we cannot separate subspecies on account of that feature. The punctation of the pronotal disc is also variable in Turkish populations (moderately densely punctate to almost completely glabrous).

Aedeagus (Fig. 8): Main piece short and stout, subapical bristles very short and inconspicuous, phallobasis slightly asymmetrical; distal lobe flat, its ventral margin strongly convex; width of distal lobe somewhat variable; parameres inserted near phallobasis.

Distribution: Mediterranean.

Additional material examined:

FRANCE: VAR: La Crau, coll. Sainte Claire Deville (NMW); EURE (NMW); ALP.MAR.: Nice (CPL).

SPAIN: Rambla del Puerto de la Cadena, 27.VIII.1989, leg. DELGADO (NMW). Widely distributed (see VALLADARES & MONTES, 1991).

ITALY: EMILIA: 31.VI.1896, leg. FIORI (HUB); NW LATIUM: Aquapendente, 31.III.1991, leg. JÄGER (NMW); SARDINIA: Dorgali; SICILY: Noto, 21.VI.1978, leg. WEWALKA (NMW); Palermo (HUB).

BOSNIA: Visegrad, leg. ZOUFAL (NMW).

GREECE: Thassos: Prinos, 16.X.1980, leg. MALICKY (NMW).

TURKEY: TEKIRDAG: Saray, 29.VII.1988, leg. JÄCH (NMW); MANISA: Sahlili/Bozdag, 19.V.1991, leg. SCHÖDL (NMW); IZMIR: N Bozdag, 19.V.1991, 1000 m, leg. JÄCH (NMW); N Ören, 400 m, 19.V.1991, leg. JÄCH (NMW); MUGLA: Kale-Mugla, 950 m, 28.V.1991, leg. JÄCH, leg. SCHÖDL (NMW); NW Karaçulha, 1300 m, 22.V.1991, leg. JÄCH, leg. SCHÖDL (NMW); ANTALYA: Gömbe, 35 km SW Elmali, 1250 m, 26.V.1991, leg. JÄCH (NMW); NE Kas, 260 m, 25.V.1991, leg. SCHÖDL (NMW); KONYA: 25 km SE Bozkir, 4.VIII.1990, leg. SCHÖDL (NM); ORDU: Melet river, 28.V.1989, leg. JÄCH (NMW); GÜMÜSHANE: Vaukdagi Pass, 1.VI.1989, leg. JÄCH (NMW); ERZURUM: Çoruh river E Bayburt, 1.VI.1989, leg. JÄCH (NMW); Pazaryolu-Bayburt, 1.VI.1989, leg. JÄCH (NMW); KARS: 50 km E Horasan, 8.VI.1989, leg. JÄCH (NMW); Digor, 7.VI.1989, leg. JÄCH (NMW); MERSIN: Erdemli, 30.VIII. 1981, leg. JÄCH (NMW); Namrun, 26.VIII. 1981, leg. JÄCH (NMW); ADIYAMAN: Narince, 7.IX.1991, leg. WEWALKA (NMW); GAZIANTEP: W Kilis, 26.V.1987, leg. JÄCH (NMW); MALATYA: Beyler river near Malatya, 13.VII. 1987, leg. JÄCH (NMW); MUS: Mus-Bingöl, 11.VI.1987, leg. JÄCH (NMW); SIIRT: Cizre-Sirnak, Kizilsu river, 31.V.1987, leg. JÄCH (NMW). BITLIS: Mutki, 11.VI. 1987, leg. JÄCH (NMW); 60 km SE Tatvan, 8.VI. 1987, leg. JÄCH (NMW); Hizan-Tatvan, 8.VI.1987, leg. JÄCH (NMW); VAN: Güzeldere Pass, 2600 m, 5.VI.1987, leg. JÄCH (NMW); Baskale, 5.VI.1987, leg. JÄCH (NMW).

GEORGIA: Tbilisi, Aragwi river, 13.VI.1987, leg. WRASE & SCHÜLKE (NMW); Hrami, 22.IV.1958, leg. LINDBERG (ZMH).

ARMENIA: "Caucasus", leg. LEDER (ZMH, CPL).

MOROCCO: "Marocco", coll. REITTER (NMW); Gorges du Todra, 1200 m, 7.IV.1985, leg. WEWALKA (NMW); Marrakech, Tizi-n-Test, 2000 m, 18.IV.1985, leg. WEWALKA (NMW).

ALGERIA: Gorges de la Chiffa, Ruisseau des Singes, 4.V.1988, leg. BESUCHET, LÖBL & BURCKHARDT (NMW, MHNG); Constantine, leg. SAHLBERG (ZMH); Dj.Ressas, leg. SAHLBERG (ZMH).

LEBANON: Mt.Barouk, leg. SAHLBERG, coll. HAUSER (NMW); Aouali river, 22.IX.1979 (NMW).

ISRAEL: Hazbani river, 31.VII.1985, leg. JÄCH (NMW); Banyas river, 2.VIII.1985, leg. JÄCH (NMW); western Galilee, En Tamir, 21.VIII.1985, leg. JÄCH (NMW); Sarona [near Jaffa], leg. SAHLBERG (ZMH).

SYRIA: 4 km N Draikich, 23.III.1980, leg. KINZELBACH (CSB).

Ochthebius flumineus ORCHYMONT

Ochthebius flumineus ORCHYMONT, 1937b: 34.

Type locality: Khewra Gorge, Punjab, northwestern India.

Type material: The holotype ♂ and an unknown number of paratypes should be deposited in the "Indian Museum". I did not see any of these specimens. I have examined 7 paratypes (3 ♂♂ + 4 ♀♀), which are housed in the ISNB.

Diagnosis: 1.8 - 2.1 mm long. Externally quite similar to *schneideri*, from which it differs in the generally smaller size, in the narrower pronotum, in the distinctly deflexed lateral margin of the pronotum and in the shape of the elytra (maximum width behind middle in *flumineus*). Explanate margin of elytra of female distinct and wide.

Aedeagus (Fig. 16): Quite distinctive. Main piece very long and evenly curved; distal lobe long and slender, distinctly dilated and flattened apically.

Distribution: So far known only from the type locality.

Ochthebius hauseri sp.n.

Type locality: Dzhambul [= "Aulie Ata"], Kazakhstan.

Type material: Holotype ♂ (NMW): "Turkestan Aulie Ata. Paratypes: 1 ♀ (NMW): "♀/GR. BALACHAN Dschebell F. HAUSER 1898."; 1 ♀ (NMW): "MTS. KARATEGHIN Baldschuan 924m. F. HAUSER, 1898."; 1 ♀ (NMW): "TURKESTAN Mts. Ghissar F. HAUSER, 1898."; 1 ♂ (DEI): "depressus Sahlb. Sur Darja Staudar./303./depressus J. SAHLB./Coll. HEYDEN".

Diagnosis: 1.7 - 1.9 mm long. Dark brown to black, with metallic reflections. Head, pronotum and elytra with long adpressed whitish hairs. Labrum narrow, middle of its front margin entire (truncate) and slightly elevated (♂♂) or slightly (but distinctly) excised (♀♀). Disc of pronotum only moderately convex, pronotal foveae shallow or almost obsolete, median groove well impressed and distinct, impressions distinctly shagreened, interspace moderately densely punctate and glabrous (♂♂) or smooth and superficially shagreened (♀♀), anterior foveae smaller than posterior ones; postocular tooth very small and indistinct or even completely missing (male paratype); front angles rounded or rectangular, lateral margins of lateral depressions gently rounded, short. Elytral striae regular, punctures small and superficial; intervals flat, superficially or distinctly shagreened; explanate margin very narrow.

Aedeagus (Fig. 6): Main piece (lateral aspect) long, strongly curved near insertion of parameres, apically acuminate, with ca. 5 very short subapical bristles; straight or very slightly sinuous in ventral aspect; phallobasis slightly asymmetrical (ventral aspect). Distal lobe flat, recurved and wide. Parameres long, inserted near the phallobasis; very slightly dilated apically, with a few short apical setae.

The aedeagus differs from that of *difficilis* in the longer and more slender main piece. The main piece of *schneideri* differs in the more strongly curved (less straight) lateral aspect and in the insertion of the parameres, which is very close to the phallobasis in *hauseri* **sp.n.** The aedeagus of *iranicus* differs mainly in the distal lobe which is more convex and more robust. The aedeagus of *wewalkai* differs in the curvature of the main

piece, in the position of the insertion of the parameres and in the shorter distal lobe.

The new species differs from *O. schneideri* and its allies (*iranicus*, *wewalkai*) in the distinctly narrower labrum and from *O. difficilis* in the narrower body proportions.

Distribution: Kazakhstan (Dzhambul, Syr Darja), Turkmeniya (Nebit Dag [= "Gr. Balachan"]), northern Tadzhikistan ["Mts.Ghissar", "Mts.Karateghin"].

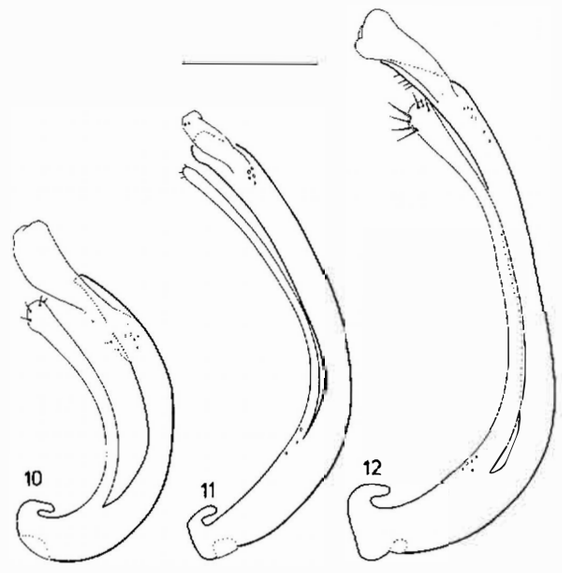
Etymology: Named for Friedrich HAUSER (1853 - 1932) who collected so many interesting species in Central Asia.

Ochthebius inermis SHARP

Ochthebius inermis SHARP, 1884: 456; KNISCH, 1924; SATO, 1985; MATSUI, 1986.

Type locality: "Miyanoshita", Japan.

Type material: Holotype ♂ (by monotypy): "Ochthebius inermis Type D.S. Miyanoshita May 1880/Type/Miyanoshita 11.V. - 14.V.80/Japan G. LEWIS. 1910 - 320.", deposited in the BML. I have not dissected the specimen. It probably represents a male (elytra not reticulated).



Figs 10-12. Aedeagus, lateral aspect, (10) *O. nilssoni*, paratype, (11) *O. opacipennis* (Afghanistan), (12) *O. inermis* (Japan).

Diagnosis: Elytral striae slightly to strongly irregular, especially median ones (2 - 4) in anterior half; only rarely with completely regular lines. Interstices of females usually superficially shagreened.

Since I have not seen *O. danjo* (described from Japan), I do not know how it can be distinguished from *O. inermis*.

Aedeagus (Fig. 12): Main piece long and slender, phallobasis asymmetrical. Distal lobe slightly flattened dorso-ventrally, thus not depicted in maximum outlines.

Distribution: Japan.

Additional material examined:
JAPAN: KYUSHU: Nishiki T., Kuma-gun, Kuamoto Pref., 28.IX.1986, leg. MATSUI (NMW).

Ochthebius iranicus BALFOUR-BROWNE

Ochthebius iranicus J. BALFOUR-BROWNE, 1979: 168.
Ochthebius martius FERRO, 1984b: 66 (= **syn. nov.**).

Type locality: Almost dry stream with seepage from water table, 50 km S of Shahabad on Birjand Road, Khorasan Province, eastern Iran.

Type material: The holotype ♂ of *O. iranicus* is deposited in the Iranian National Museum of Natural History. Thirty-nine paratypes are housed in the Iranian National Museum of Natural History, SIW, BML and CAL. I have examined two male paratypes (BML, CAL): "Iran: Khorasan 50 km s. Shahabad on Birjand Rd. 6.VI.1975 R. Mc CULLERS".

Synonym: I have examined one male paratype (NMW) of *O. martius*, which was described from eastern Iran (Kahurak, Baluchestan Province). The holotype ♂ is housed in the NMP, 12 additional paratypes are deposited in the NMP and CFL.

Diagnosis: Very closely related to *O. schneideri*, of which it may even be a subspecies. Due to the variability of *O. schneideri* it not possible to name any significant external distinguishing features. Labrum of the male paratype of *O. martius* (NMW) clearly emarginate; pronotum similar to that of *O. s. orchymonti*.

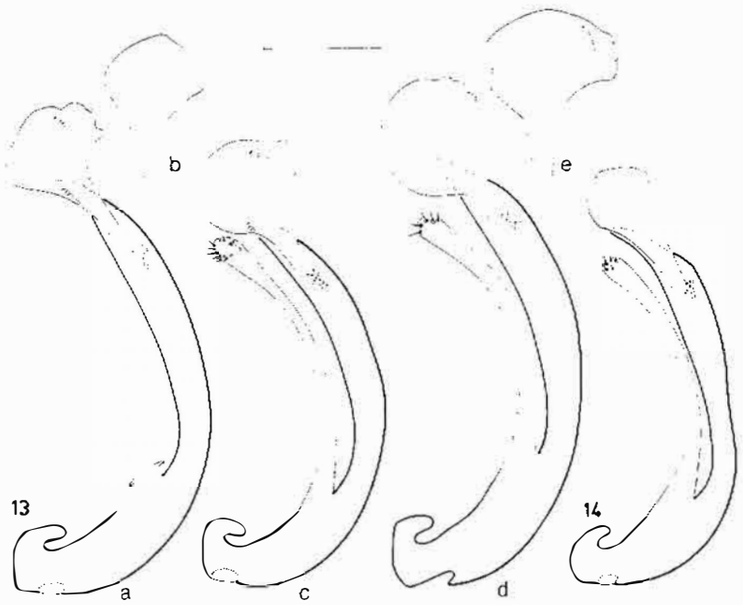
Aedeagus (Fig. 15): Differs from *O. schneideri* in the stouter and more strongly convex main piece; shape of distal lobe very variable.

Distribution: So far known only from eastern Iran.

Ochthebius joosti sp.n.

Type locality: Ashkhabad, Turkmeniya.

Type material: Holotype ♂ (NMW): "TURKM. 17.10.1981 ASHABAD leg. W. JOOST". Paratypes: IRAQ: 1 ♀: "Yusufiya, Bagh. [= Bagdad] 19.VII. 1983 Al-Faisal and Auda/8" (CHD); IRAN: 1 ♀: "S.Iran Isin 26.5.1978" (CFL); TURKMENIYA: 10 exs.: "Transcasp./ Ahnger" (NMW, ZMH, CFL).



Figs 13-14. Aedeagus, lateral aspect, (13) *O. schneideri*, (a) ssp. *schneideri*, Turkey (Tuz Gölü), parameres omitted, (b) ssp. *schneideri*, Turkey (Kars), distal lobe only, (c) ssp. *schneideri*, paralectotype of *O. aeneocupreus*, Turkmeniya, (d) ssp. *orchymonti*, paratype, (e) same, different orientation, (14) *O. wewalkai*, Israel. - Distal lobe of fig. 13d not with maximum outlines, all others with maximum outlines.

Diagnosis: 2.8 - 3.0 mm long. Brown to dark brown, pronotum and head sometimes with a slight cupreous sheen, elytra yellowish. Head, pronotum and elytra with long adpressed whitish hairs. Front margin of labrum distinctly emarginate, occasionally upturned in male. Disc of pronotum only moderately convex, pronotal foveae and median groove shallowly or distinctly impressed, impressions distinctly shagreened, interspace sparsely punctate and smooth, anterior foveae small and round, posterior foveae larger and oval; front margin excised behind eyes, thus forming a distinct postocular tooth; front angles sligthly produced or rectangular, lateral margins of lateral depressions almost parallel-sided and distinctly crenulate; elytral striae slightly irregular, punctures moderately deep; explanate margin very narrow in male, moderately wide in female. Metasternum and first 5 abdominal sternites densely pubescent, apical sternites glabrous.

Aedeagus (Fig. 2): Differs from *mongolicus* in the distal lobe beeing not enlarged apically.

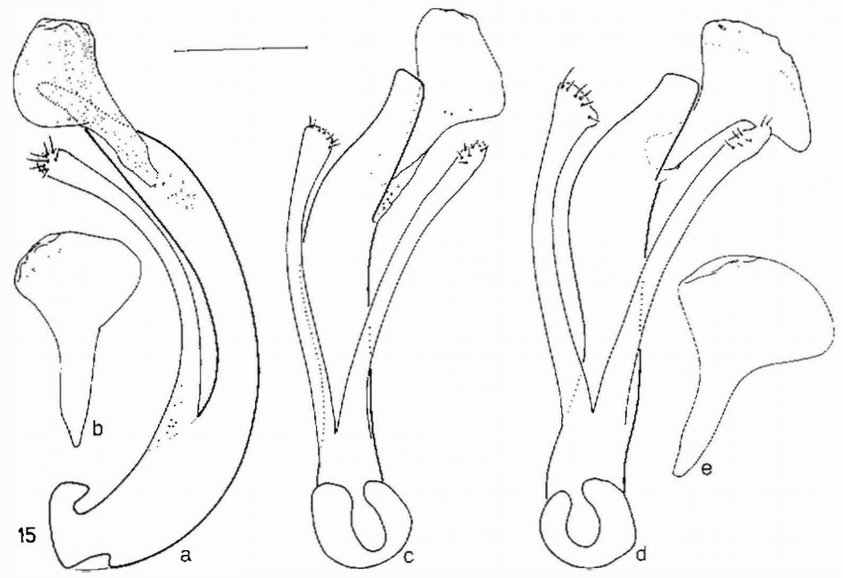


Fig. 15. *Ochthebius iranicus*, Aedeagus, (a) paratype, lateral aspect, (b) distal lobe of same, slightly different orientation, (c) same, ventral aspect, (d) paratype of *O. martius*, ventral aspect, (e) distal lobe of same, lateral aspect. Distal lobe of figs 15b and 15c with maximum outlines.

This species is very similar to *Ochthebius mongolicus*. I was not able to find significant external distinguishing characters.

Distribution: Iranian (Turkmeniya, Iran, Iraq).

Etymology: Named for W. JOOST, who collected the holotype.

Ochthebius micans BALFOUR-BROWNE

Ochthebius micans J. BALFOUR BROWNE, 1951: 198.
Ochthebius subdifficilis JÄCH, 1984: 110 (= **syn.nov.**); JÄCH, 1987.

Type locality: "wadi at foot of Jebel Harir, c. 5000 ft", South Yemen.

Type material: I have not seen the holotype ♂ or any of the 51 paratypes (all deposited in the BML), which were collected at the type locality (49 exs.) and in Yemen ("Wadi Ghailama, tributary of Wadi Siham, c. 2200 ft - 2 ♀♀").

Synonym: Although I have not seen any of the type specimens of *O. micans* and although the main piece of the aedeagus, as it is depicted in the original description (see BALFOUR-BROWNE, 1951: fig. 2) disagrees considerably with the main piece of the aedeagus of *O. subdifficilis* (Fig. 7), I

think that the latter is a junior synonym of the former, due to the identical shape of the distal lobe. The holotype ♂ of *subdifficilis* is deposited in the NMW. Fifty-nine paratypes are housed in the NMW, CWW, Hebrew University and several additional collections.

Diagnosis: Very similar to *O. difficilis*. It differs from the eastern populations of *difficilis* in the deeper and more distinct pronotal impressions.

Since *micans* is a halobiontic species, it will probably not be found associated with *difficilis*.

Aedeagus (Fig. 7): Quite distinctive. Main piece short and stout, strongly curved in basal third (lateral aspect), apex curved ventrad; distal lobe not as flat as in *difficilis*, apically widened; parameres inserted near the phallobasis.

Distribution: Israel to South Yemen.

Additional material examined:

ISRAEL: Dead Sea Area: Nahal Arugot, 28.V.1985, leg. JÄCH (NMW); Nahal Zeelim, 23.V.1985, leg. JÄCH (NMW); Jericho, En Qelt, 24.VI.1985, leg. JÄCH (NMW); Northern Negev: M. Ramon, En Saharonim, 1.VI.1985, leg. JÄCH (NMW); Beer Sheva, Tel Nagila, 7.III.1985, leg. JÄCH (NMW); Central Negev: En Zin, 17.VIII.1985, leg. JÄCH (NMW); Southern Negev: Sde Boquer, En Avdat, 16.II.1985, leg. JÄCH (NMW); Arava Valley: Agam Sapir, 16.VIII.1985, leg. JÄCH (NMW).

SAUDI ARABIA: Hofuf [= al Hufuf], south of Dhahran [= Az Zhahran], 28.V.1978, leg. BÜTTIKER (NMB); Addar, 150 m, 22°10'N/39°30'E, 28.I.1983, leg. BÜTTIKER (NMW, NMB); W. Talham, 18°24'N/44°08'E, 1440 m, 28.IX.1980, leg. BÜTTIKER (NMW, NMB).

Ochthebius montesi FERRO

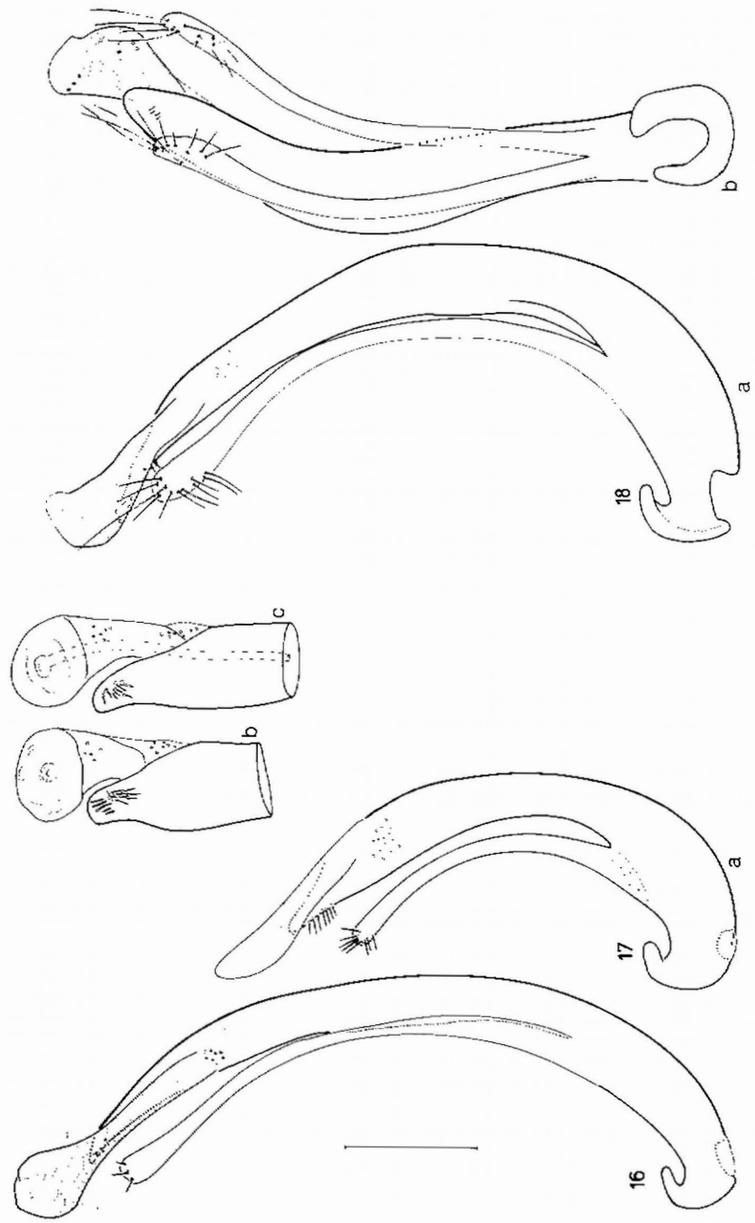
Ochthebius montesi FERRO, 1984c: 111; VALLADARES & MONTES, 1991.

Type locality: Rambla Salada, Murcia, southern Spain.

Type material: I have seen one paratype ♂ (NMW): "Murcia Espana Rambla Salada 3.VI.82 MONTES/Ochthebius (Hymenodes) montesi det. FERRO, 1983 PARATYPUS". The holotype ♂ should be deposited in the CFL, 2 additional paratypes (♂♂) in the CFL and CMM.

Diagnosis: Despite the considerable aedeagal difference between *O. montesi* and *O. difficilis* I could not find any constant morphological external difference between these two species. Three specimens of *O. difficilis* from Murcia (NMW) differ from the paratype of *O. montesi* (NMW) in the entire labral front margin and in the narrower pronotum, but I found no external difference between some Turkish specimens of *O. difficilis* and the paratype of *O. montesi*.

Aedeagus (Fig. 4): Differs from *O. nanus* in the shorter and stouter main piece, in the slightly wider and slightly shorter distal lobe and in the parameres which are distinctly separated from the main piece providing it with a quite "*Asiobates*-like" appearance.



Figs 16-18. Aedeagus, (16) *O. flumineus*, paratype, (17) *O. darius*, (a) paratype, (b) apex of same, ventral aspect, (c) same, slightly different orientation, (18) *O. cupressens*, (a) Tunisia, (b) same, ventral aspect.

Distribution: So far known only from the type locality. To my knowledge it has not been found again. The specimens recorded from Albacete by VALLADARES & MONTES (1991) belong to *O. nanus*.

Ochthebius nanus STEPHENS

Ochthebius nanus STEPHENS, 1829: 116; KNISCH, 1924; ORCHYMONT, 1927, 1937a; HORION, 1949; F. BALFOUR-BROWNE, 1958; CHIESA, 1959; BRAKMAN, 1966; IENISTEA, 1968, 1978; LOHSE, 1971; FOSTER, 1972, 1990; J. BALFOUR-BROWNE, 1978; FERRO, 1979; PIRISINU, 1981; NIEUKERKEN, 1982; LAGAR, 1984; MOL, 1984; VALLADARES, 1986; LUCHT, 1987; FRIDAY, 1988, 1990; GARRIDO, 1990; GERECKE, 1991; VALLADARES & MONTES, 1991.
Ochthebius aeratus STEPHENS, 1829: 116; KNISCH, 1924; ORCHYMONT, 1937a.
Ochthebius pellucidus MULSANT, 1844: 68; KNISCH, 1924; ORCHYMONT, 1937a.
Ochthebius pyrenaeus FAUVEL, 1862: XL; KNISCH, 1924.
Ochthebius sexfoveolatus REY, 1886: 52; KNISCH, 1924.

Type locality: "Britain".

Type material: I have seen the lectotype (designated by ORCHYMONT, 1937a) of *O. nanus*: "Type/BRITAIN STEPHENS Coll./O. aeratus/Holo-TYPE nanus St./A. d'ORCHYMONT Rev. Ochthebius (Hymenodes) nanus STEPHENS", which is deposited in the BML. It is probably a female (see ORCHYMONT, 1937a).

Synonyms: I have seen the lectotype (designated by ORCHYMONT, 1937a) of *O. aeratus* (described from England): "Type/BRITAIN STEPHENS Coll./O. nanus/Holo-TYPE aeratus St./A. d'ORCHYMONT Rev. Ochthebius (Hymenodes) nanus STEPHENS", which is deposited in the BML. It is probably a male (see ORCHYMONT, 1937a).

According to the original description (MULSANT, 1844) there should be syntypes of *O. pellucidus* in the AUBÉ collection: "Cette espèce habite diverses parties de France. Elle a eté prise par M. AUBÉ dans les environs de Paris". I found no specimens labelled as *pellucidus* in the AUBÉ collection in the MHNP. But according to the original description there is little doubt that *pellucidus* is a junior synonym of *nanus*.

I have not seen *O. pyrenaeus* FAUVEL, described from the Pyrenees (number of syntypes unknown), but according to the original description it is most probably a synonym of *O. nanus*.

I have seen two syntypes of *O. sexfoveolatus* (described from Lyon) in the MGL. They represent large females of *Ochthebius nanus*. One of them is herewith designated as lectotype.

Diagnosis: This species is easily recognized by the short lateral depressions of the pronotum. Pronotal foveae vary from deeply impressed to almost obsolete.

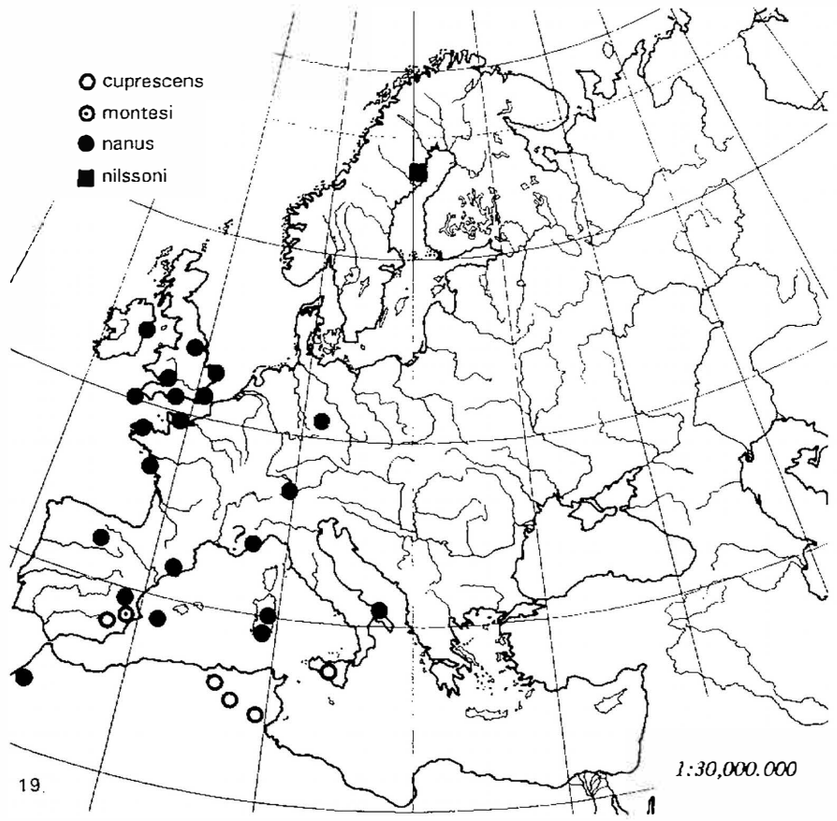


Fig. 19. Geographical distribution of *O. cuprescens*, *O. montesi*, *O. nanus* and *O. nilssoni*.

Aedeagus (Fig. 5): Main piece comparatively short. Distal lobe very long and cylindrical. For distinction from *O. montesi*, refer under the latter.

Distribution: Atlanto-mediterranean.

Additional material examined:

FRANCE: LOIRE INF.: Le Croisic (NMW); FINISTERE: Morlaix (NMW); CALVADOS (NMW); EURE (NMW); ALP.MAR.: Nice (NMW).
GERMANY: THÜRINGEN: Stotternheim, 7.V.1988, leg. BELLSTEDT (NMW, CBG).
AUSTRIA: VORARLBERG: Hard, coll. GRUNDMANN (NMW) - doubtful record.
SPAIN: **Palencia**, leg. PAGANETTI (ZMH, HUB, CPL); Barcelona: Sitges, 22.X.1922, leg. LIEBMANN (HUB, CPL); "Pityusen", leg. POLLATZEK (NMW); Ibiza, Sta.Eulalia, 9.VII. **1983, leg.** MONTES (NMW, CMM). Ibiza, S San Miguel, 20.V.1978, leg. MALICKY **(NMW)**; **Albacete**, Rio Mundo, 27.VII.1988, leg. DELGADO (NMW).

ITALY: Brindisi, leg. SAHLBERG (ZMH); SARDINIA: Assuni, leg. KRAUSSE (ZMH); Cagliari, leg. DODERO (HUB); Terra Nova, leg. PAGANETTI (NMW, CPL); Lostia (NMW); Bosa, V.-VI.1963, leg. BUDBERG (NMW); St.Gavino, V.-VI.1963, leg. BUDBERG (NMW); Oristano (HUB).

MOROCCO: "Marocco", coll. REITTER (NMW); Foum Oued Noun, 20.2.1961, leg. LINDBERG (ZMH); Marrakech, 27.VII.1959, leg. ECKERLEIN (NMW).

Ochthebius nilssoni HEBAUER

Ochthebius nilssoni HEBAUER, 1986: 359; HANSEN, 1987; NILSSON, 1987.

Type locality: Lake Västra Skärträsket, Västerbotten Province, northern Sweden.

Type material: Holotype ♂ (ZMH) and six female paratypes (CNU, CHD). I have examined one female paratype (CHD) and one male (NMW) from the type locality.

Diagnosis: A very remarkable species, which vaguely resembles *O. difficilis*. Small (1.6 mm long); body form narrower than in *O. difficilis*; labrum distinctly wider, its front margin slightly emarginate; elytral interstices somewhat rugulose.

Aedeagus (Fig. 10): Main piece smaller and more evenly arched than in *O. difficilis*, which it otherwise resembles. Distal lobe less strongly convex than in *O. difficilis*.

Distribution: So far known only from the type locality.

Ochthebius opacipennis CHAMPION

Ochthebius opacipennis CHAMPION, 1920: 167; KNISCH, 1924; ORCHYMONT, 1925, 1928; JANSSENS, 1962; JÄCH, 1989b.

Type locality: Almora, Kumaon, Uttar Pradesh, northern India.

Type material: The lectotype ♂ (designated by JÄCH, 1989b) and two paralectotypes are deposited in the BML.

Diagnosis: This species is easily recognized by its well developed microreticulation of the dorsal surface.

Aedeagus (Fig. 11): Differs from most other species of the group in the parameres beeing inserted at some distance from the phallobasis. Distal lobe conspicuously small.

Distribution: Afghanistan to Nepal.

Additional material examined:

AFGHANISTAN: Nuristan, Bashgul Valley, 1300 m, 24.V.1953, leg. KLAPPERICH (NMW).

INDIA: UTTAR PRADESH: Mussourie, Mossy Falls, 22.III.1932, leg. CHAMPION (NMW, BML).

NEPAL: Hetauda, 17.II.1981, leg. JÄCH (NMW).

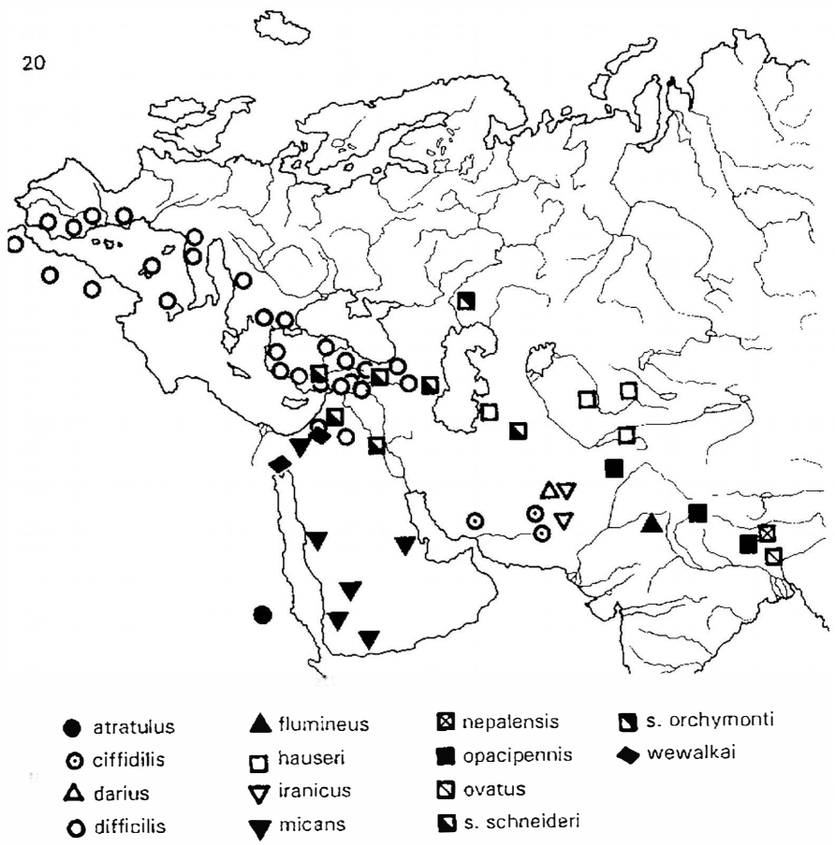


Fig. 20. Geographical distribution of *O. atratulus*, *O. ciffidilis*, *O. darius*, *O. difficilis*, *O. flumineus*, *O. hauseri* sp.n., *O. iranicus*, *O. micans*, *O. nepalensis*, *O. opacipennis*, *O. ovatus*, *O. schneideri schneideri*, *O. schneideri orchymonti* and *O. wewalkai*.

Ochthebius ovatus JÄCH

Additional records:

INDIA: Sikkim, Chungtang, 16.II.1952, leg. CLAY (BML).

Ochthebius pilosus WALTL

Ochthebius pilosus WALTL, 1835: 65.
Ochthebius berbericus FERRO, 1985: 237, fig. 4 (= **syn.nov.**).

I have not seen the holotype of *O. berbericus*, described from northern Morocco (deposited in the Inst. Sci. Charia Ibn di Rabat) or any of the

paratypes (number unknown), which are deposited in the same institution and in the CFL. But according to the original description (FERRO, 1985), which includes a good illustration of the aedeagus, I have no doubt, that *O. berbericus* represents a junior synonym of *O. pilosus* (see JÄCH, 1989b, fig. 17).

Ochthebius punctatus STEPHENS

The lectotype ♀ (designated by ORCHYMONT, 1937a) of *Ochthebius punctatus*: "Britain STEPHENS Coll." is deposited in the BML.

Ochthebius quadrifoveolatus WOLLASTON

The lectotype (present designation) of *Ochthebius quadrifoveolatus*: "*Ochthebius* 4-foveolatus type Woll." and 16 paralectotypes are deposited in the BML (WOLLASTON collection). I have not dissected the lectotype, thus its sex is unknown.

Ochthebius schneideri schneideri KUWERT

Ochthebius schneideri KUWERT, 1887: 388 (375); KNISCH, 1924; ORCHYMONT, 1933; CHIESA, 1959; JANSSENS, 1968; IENISTEA, 1978; JÄCH, 1984.
Ochthebius aeneocupreus SAHLBERG, 1903: 5 (= **syn.nov.**); KNISCH, 1924; FERRO, 1984a; SILFVERBERG, 1987; IENISTEA, 1988.

Type locality: Baku, Azerbaydzhan.

Type material: Lectotype ♂ (des. by JÄCH, 1984) and one paralectotype ♀ are deposited in the MHNP.

Synonyms: The lectotype ♂ (present designation) of *Ochthebius aeneocupreus*: "Kopet Dagh/Ahnger/Spec.typ./Ochthebius (Cheilochthebius) aeneocupreus J.Sahlb." and 7 paralectotypes (♀♀) are deposited in the ZMH. One paralectotype ♂: "Kopet Dagh/Ahnger/ Spec.typ./Bodemeyer 1 2.MK./aeneocupreus J. SAHLB./Syntypus/Coll. HEYDEN" is housed in the DEI.

Diagnosis: A very variable species, very closely related to *O. wewalkai* and *O. iranicus*. Specimens with front margin of labrum truncate or distinctly emarginate and pronotal foveae distinctly impressed or more or less obsolete can be found in the same population. Lateral depressions of pronotum not very large, their sides evenly rounded. Postocular tooth usually small, occasionally completely missing.

Aedeagus (Fig. 13a, c): Main piece long and slender, distinctly curved in basal third (lateral aspect), subapical setae very short, phallobasis slightly asymmetrical; distal lobe flat and wide, shape somewhat variable, ventral margin distinctly convex; parameres not inserted immediately behind phallobasis.

Distribution: Turkey, Azerbaydzhan, Turkmeniya, Syria, Iraq.

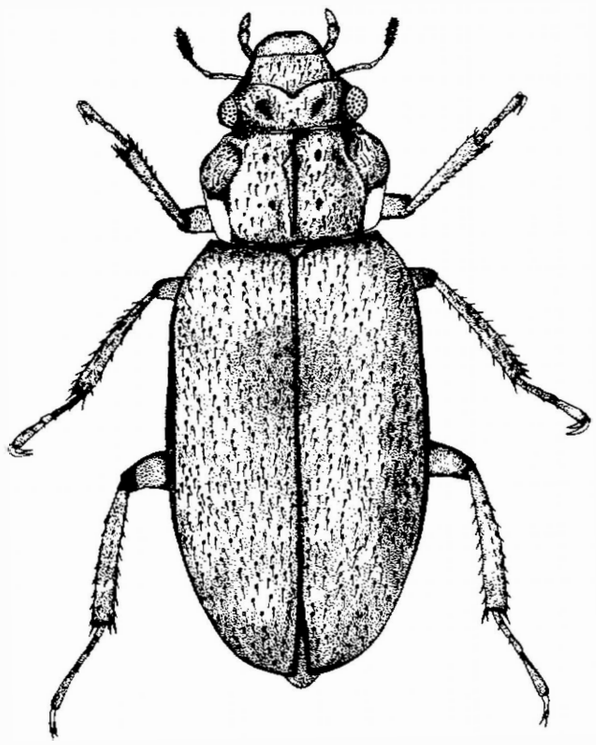


Fig. 21. *O. nobilis*, habitus.

Additional material examined:
TURKEY: ANKARA: Tuz Gölü, 21.V.1987. leg. JÄCH (NMW); KARS: Tuzluca, 7.VI.1989, leg. JÄCH (NMW).
SYRIA: 40 km NE Dayr az Zawr, on the road to Suwar, 15.III.1979, leg. KINZELBACH (CHD).
IRAQ: Yusufiya, Bagdad, 19.VII.1983, leg. AL-FAISAL & AUDA (CHD).
"Caucasus O.Schneider" (MTD).

Ochthebius schneideri orchymonti JÄCH stat.nov.

Ochthebius orchymonti JÄCH, 1984: 112; IENISTEA, 1988.

Type locality: Lake Elton, east of Volgograd, Russia.

Type material: Holotype ♂ (ISNB) and 13 paratypes (ISNB, NMW).

Diagnosis: Differs from *O. schneideri schneideri* only in the larger and

wider pronotum; lateral depressions of pronotum longer and more widely explanate.

Aedeagus (Fig. 13d, e): More or less identical with that of *schneideri schneideri*, but main piece slightly larger and less distinctly curved in basal third (lateral aspect).

Distribution: Known only from the type locality.

Ochthebius silfverbergi sp.n.

Type locality: Oued Noun, near El-Ksabi, southern Morocco.

Type material: Holotype ♂ (ZMH): "Maroc sud Oued Noun pr El-Ksabi 20. II.1961 LINDBERG/Zool. Mus. Helsinki Loan No. C-91 1316". Paratypes: 6 exs. from the type locality (ZMH, NMW).

Diagnosis: 2.3 - 2.4 mm long. Brown to dark brown, pronotum and head sometimes with a slight cupreous sheen. Head, pronotum and elytra with long adpressed whitish hairs. Front margin of labrum more or less truncate, never excised. Disc of pronotum only moderately convex, pronotal foveae shallow or almost obsolete, median groove narrow, but distinct, impressions distinctly shagreened, interspace moderately densely punctate and smooth or superficially shagreened, anterior foveae small and round, posterior foveae larger and oval; front margin with a distinct postocular tooth; front angles rounded or rectangular, lateral margins of lateral depressions gently rounded; elytra densely punctate, striae irregular, punctures small; explanate margin very narrow. Metasternum and first 5 abdominal sternites densely pubescent, last sternites glabrous.

Aedeagus (Fig. 1): Main piece sinuous (ventral aspect), subapical setae almost reduced; phallobasis slightly asymmetrical; distal lobe cylindrical and moderately long; parameres very close to the main piece, apically enlarged, with comparatively long hairs. The aedeagus differs from *bifoveolatus* mainly in the cylindrical distal lobe.

Ochthebius silfverbergi differs from *Ochthebius quadrifoveolatus* in the wider pronotum, in the shorter elytra and in the more distinctly punctate pronotal disc. *Ochthebius bifoveolatus* differs in the wider, less distinctly punctate pronotum and in the presence of a distinct "tooth" at the basal third of the side margin of the pronotum.

Distribution: So far known only from the type locality.

Etymology: Named for Hans SILFVERBERG, curator of Coleoptera at the ZMH.

Ochthebius wewalkai JÄCH

Ochthebius wewalkai JÄCH, 1984: 111.

Type locality: Saline spring at Neot HaKikar, Dead Sea Area, Israel.

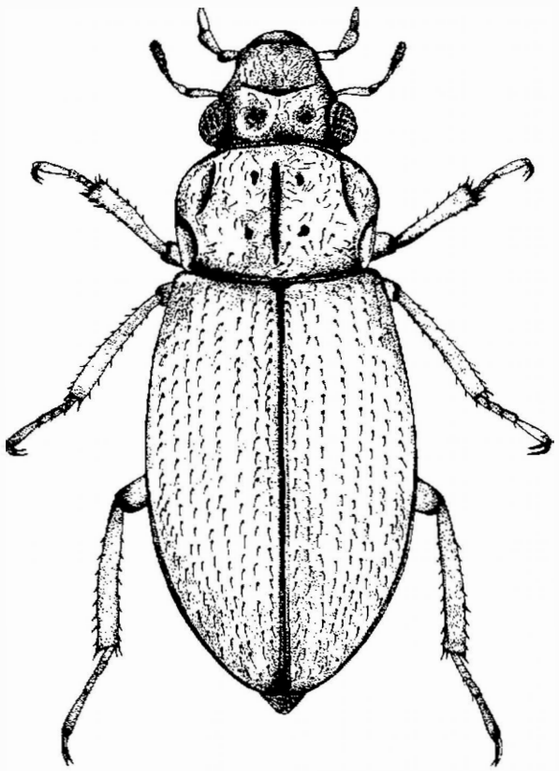


Fig. 22. *O. difficilis*, habitus.

Type material: Holotype ♂ (NMW) and 30 paratypes (NMW, CWW and several other collections).

Diagnosis: Very closely related to *O. schneideri*. Very variable (see *O. schneideri*). It differs from the latter mainly in the shape of the pronotum: lateral margin of lateral depressions usually straight (only very rarely evenly rounded), with front and hind angles well defined; postocular tooth usually well developed; pronotal front margin slightly to strongly emarginate between postocular tooth and pronotal front angle; postocular tooth situated near middle of eye in *O. wewalkai*, but further laterad (near outer margin of eye) in *O. schneideri*.

Aedeagus (Fig. 14): Main piece long and slender, distinctly curved in basal third (lateral aspect); distal lobe flat, shape almost constant, ventral margin strongly convex; parameres inserted near, but not immediately behind phallobasis. The aedeagus is very similar to *O. schneideri* from

which it can be distinguished mainly by the insertion of the parameres being closer to the phallobasis. It differs from *micans* and *difficilis* in the shape of the main piece, from *hauseri* in the position of the insertion of the main piece and from *iranicus* in the shape of the main piece, which is thinner, less strongly curved and more angulate than in *iranicus*.

Distribution: Israel (Dead Sea Area), Egypt (Sinai).

Additional material examined:

ISRAEL: DEAD SEA AREA: En HaKikar, 7.III.1985, leg. JÄCH (NMW).
EGYPT: SINAI: Ayun Musa, 1.IV.1989, leg. BALKE (NMW, CBHB).

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