

## Revision of the palearctic species of the genus *Ochthebius* LEACH

### II. The subgenus *Cobalius* REY

#### (Hydraenidae, Coleoptera)

By Manfred A. JÄCH, Vienna

#### Abstract

Eight species and two subspecies of the subgenus *Cobalius* REY are treated. Types of all taxa except *algicola* WOLLASTON, *aspectabilis* ORCHYMONT and *serratus* ROSENHAUER were studied. Lecto-types are designated for *Ochthebius adriaticus adriaticus* REITTER, *O. a. pleuralis* REITTER, *O. a. moreanus* PRETNER, *O. lejolisi* MULSANT & REY and *O. asper* SAHLBERG. Two new synonymies are proposed: *O. subinteger* MULSANT & REY (= *O. aspectabilis* syn. nov. = *O. asper* syn. nov.). *Ochthebius pleuralis* is regarded as a subspecies of *O. adriaticus*. The name *O. balfourbrowni* nom. nov. is substituted for the name *O. lindbergi* BALFOUR-BROWNE, which is a homonym of *O. lindbergi* JANSSENS. *Ochthebius celatus* n. sp. is described as new. The male copulatory organs of all species except *algicola* are described and illustrated.

The subgenus *Cobalius* was erected by C. REY (1886) on two species: *Ochthebius lejolisi* MULSANT & REY (1861b) and *O. subinteger* MULSANT & REY (1861a). Subsequent revising authors (REITTER, 1886 and KUWERT, 1887) regarded *Ochthebius subinteger* as a possible variety of *O. lejolisi*. Thus I designate *O. lejolisi* as type-species of the subgenus *Cobalius*.

As the name *Cobalius* (anagram of *Calobius*) displeased KUWERT (1887), he emended it into *Prionochothebius* (type-species: *O. lejolisi*, by present designation), thus creating a junior objective synonym. In the same paper he erected the subgenus *Acanthochthebius* for *Ochthebius serratus* ROSENHAUER (type-species by monotypy), which can be considered a subjective junior synonym of *Cobalius*.

In this paper I do not intend to elucidate the phylogenetic position of *Cobalius* and at the present state of knowledge I have no objections to its subgeneric status. It differs from all other subgenera of *Ochthebius* by the peculiar dentation of the elytral margin. The genus *Neochthebius* ORCHYMONT differs clearly by the smooth elytral margin, the reduced eyes and the shape of the antennal segments.

Eight species and two subspecies are at present included in the subgenus (I have seen the types of all taxa except *algicola*, *aspectabilis* and *serratus*):

- |                                          |                                       |
|------------------------------------------|---------------------------------------|
| 1) <i>O. a. adriaticus</i> REITTER       | 5) <i>O. freyi</i> ORCHYMONT          |
| <i>O. a. moreanus</i> PRETNER            | 6) <i>O. lejolisi</i> MULSANT & REY   |
| <i>O. a. pleuralis</i> REITTER           | 7) <i>O. subinteger</i> MULSANT & REY |
| 2) <i>O. algicola</i> WOLLASTON          | = <i>aspectabilis</i> ORCHYMONT       |
| 3) <i>O. celatus</i> n. sp.              | = <i>asper</i> SAHLBERG               |
| 4) <i>O. balfourbrowni</i> nom. nov.     | 8) <i>O. serratus</i> ROSENHAUER      |
| (for <i>O. lindbergi</i> BALFOUR-BROWNE) |                                       |

The sexual dimorphism is confined to the last abdominal tergum and sternum. Females are sometimes larger than males. Spermatheca very small and not diagnostic.

Main piece of aedeagus usually simple (ventrally curved); subapical setae very short or completely reduced. Distal lobe simple, long and cylindrical or flattened; geographical and interpopulational variability modest; only moderately sclerotized; spermathecal duct opening terminally; lateral membrane inconspicuous, 5-10 micropores. Parameres characterized by a morphoclinical phylogenetic reduction: *adriaticus* (long parameres, inserting near phallobasis) – *serratus* – *lejolisi*, *subinteger*, *celatus* – *freyi* – *balfourbrowni* (parameres very short, inserting near apex of main piece). The parameres of *Cobalius* are generally slender, not enlarged apically, but usually with well developed apical setae.

All species (except *serratus*) are known to live in marine rockpools. The ecology of *O. adriaticus* was studied by BEIER (1956).

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):

GBT	Coll. Bameul, Talence	MTD	Museum für Tierkunde, Dresden (R. Krause)
CMM	Coll. Montes, Madrid	NMB	Naturhistorisches Museum Basel (M. Brancucci)
CPL	Coll. Pretner, Ljubljana (B. Drove-nik)	NMW	Naturhistorisches Museum Wien
CSB	Coll. Scheuern, Bad Neuenahr	OLL	Oberösterreichisches Landesmuseum, Linz (F. Gusenleitner)
CSM	Coll. Schembri, Malta	TMB	Természettudományi Múzeum Budapest (O. Merkl)
HUB	Museum der Alexander Humboldt Universität, Berlin (F. Hieke)	ZMH	Universitetets Zoologiska Museum, Helsingfors (H. Silfverberg)
MGL	Musée Guimet d'Histoire Naturelle, Lyon (J. Clary)		

My sincere thanks are due to all persons mentioned above for sending material and valuable information. I thank Dr. P. Cate for reading the manuscript.

### *Ochthebius subinteger* MULSANT & REY

*Ochthebius subinteger* MULSANT & REY, 1861: Opusc. Ent. 12: 57.

*Ochthebius asper* SAHLBERG, 1900: Ofvers. Finsk. Vet. Soc. Förh. 42: 193, syn. nov.

*Ochthebius aspectabilis* ORCHYMONT, 1932: Bull. Ann. Soc. Ent. Belg. 72: 47, syn. nov.

Type-locality: Marseille (France).

The Rey collection (MGL) contains 7 specimens under the name *Ochthebius subinteger*. Each of them is mounted on a separate pin which carries one round coloured label. This small label is black in six of the specimens and light blue in one of them. According to Rey's handwritten catalogue, a black label means Provence (Alpes Maritimes, Var, etc.) and the light blue label indicates that the specimen was collected in the Department Pyrénées Orientales. Thus the six specimens with black labels can be considered syntypes. I have not yet designated one of them as lectotype.

The ZMH contains just one specimen, which can be regarded as a syntype of *Ochthebius asper* "Phaleron / J. Sahlb. / *O. asper* Sbg. Spec. typ. / Mu. Zool. H: fors Spec. typ. No 771 *Ochthebius asper* J. Sbg. / Zool. Mus. Helsinki Loan Nr. C-87 644". This specimen is a male (identical with *O. subinteger*) and herewith designated as lectotype of *Ochthebius asper*. Four further syntypes are housed in the TMB: "Phaleron J. Sahlberg / Spec. typ. / *asper* Sahlberg J. n. sp. Typen". There is no trace of the syntypes from Crete.

I have not seen the types of *O. aspectabilis*, but the original description (illustration of the aedeagus) leaves no doubt about this synonymy.

Specimens from the Yugoslavian coast are rather small, with elytral denticules only feebly developed.

Aedeagus (fig. 6): Distal lobe slender, almost cylindrical; almost no variability observed. Subapical bristles of main piece reduced.

Last sternite of female (fig. 8c,d) quite variable, without taxonomic significance. Last tergite of female (fig. 8h) with pointed bristles. Spermatheca variable in shape and size, without taxonomic significance.

Distribution (fig. 10): This species has a very wide distribution. It is known from the Mediterranean Sea, the Black Sea and the Indian Ocean.

### *Ochthebius lejolisi* MULSANT & REY

*Ochthebius lejolisi* MULSANT & REY, 1861: Mem. Soc. Sc. nat. Cherbourg 7: 181.

Type-locality: Cherbourg (France).

Type-material: The Rey collection (MGL) contains 5 specimens of *Ochthebius lejolisi*, which are probably syntypes. Two of them are labeled "Cherbourg", while the 3 others are labeled "Cherbourg Perrin / ♂", "Cherbourg Fauvel" and "Cherbourg Mulsant" respectively. The NMW contains 1 ♂ ("*Ochthebius Lejolisi* Mt Cherbourg / Lejolisi / Sartorius 1876"), which I herewith designate as lectotype. The HUB (coll. Schaufuß) contains one old specimen ("*Ochthebius lejolisi* Mlst. Cherbourg"), which could also be a syntype.

*Ochthebius lejolisi* differs from *subinteger* by the pronotal puncturation, which is very dense (interstices smaller than puncture diameter), coarse and rugulous. Dentation of elytral margin variable and not significantly different. Spermatheca and last sternite (fig. 8a,b) not significantly different from *subinteger* and *celatus*. Last tergite of ♀ with apical bristles blunt, not pointed (fig. 8g).

Aedeagus (fig. 5b,c,d): Distal lobe very similar to *subinteger*. Main piece slightly stronger than in *subinteger*; dorsal side more convex near insertion of distal lobe; ventral side less concave (more straight) near basis.

Distribution (fig. 10): Atlantic coast of western Europe.

### *Ochthebius algicola* WOLLASTON

*Ochthebius algicola* WOLLASTON, 1871: Trans. Ent. Soc. London: 223.

I have not yet seen any specimen of *algicola*, but according to the redescription of ORCHYMONT (1940) it seems possible, that *algicola* is a synonym of either *subinteger* or *lejolisi*, as the distinguishing features mentioned (shape of labrum, colouration, . . .) are very variable and not significant in this subgenus.

### *Ochthebius celatus* n. sp.

*Ochthebius asper*, ORCHYMONT, 1932: Ann. Soc. Ent. Belg. 72: 48.

Holotype ♂: "Israel 9.4. Rosh HaNiqra leg. Jäch 1986"; in NMW. – Paratypes: 13 exs. from the same locality (NMW); 8 exs.: "Meleda Dalmatien" (NMW); 7 exs.: "Cattania / Bittner 24 Italien" (NMW); 1 ex.: "Eleusis J. Sahlberg" (NMW); 1 ex.: "I. Meleda Reitter / Sammlung Dr. J. Jörgen Masans - Chur 1957" (NMB); 1 ex.: "Eleusis / J. Sahlb. / 2656" (ZMH); 1 ex.: "Gallia Reitter" (ZMH); 1 ex.: "I. Meleda subinteger" (ZMH); 1 ex.: "Is. Meleda MoczarSKI / det. Kniz subinteger" (ZMH); 1 ex.: "Catania, J. Sahlb." (ZMH); 1 ex.: "Genova Dodero" (ZMH); 1 ex.: "Malta Ras il-Mignuna 2.7.1978 S.P. Schembri" (CSM).

1.7-1.95 mm long. Very closely related to *O. subinteger*, from which it differs by a number of vague characters, which are mainly statistical. Comparing populations from the Adriatic

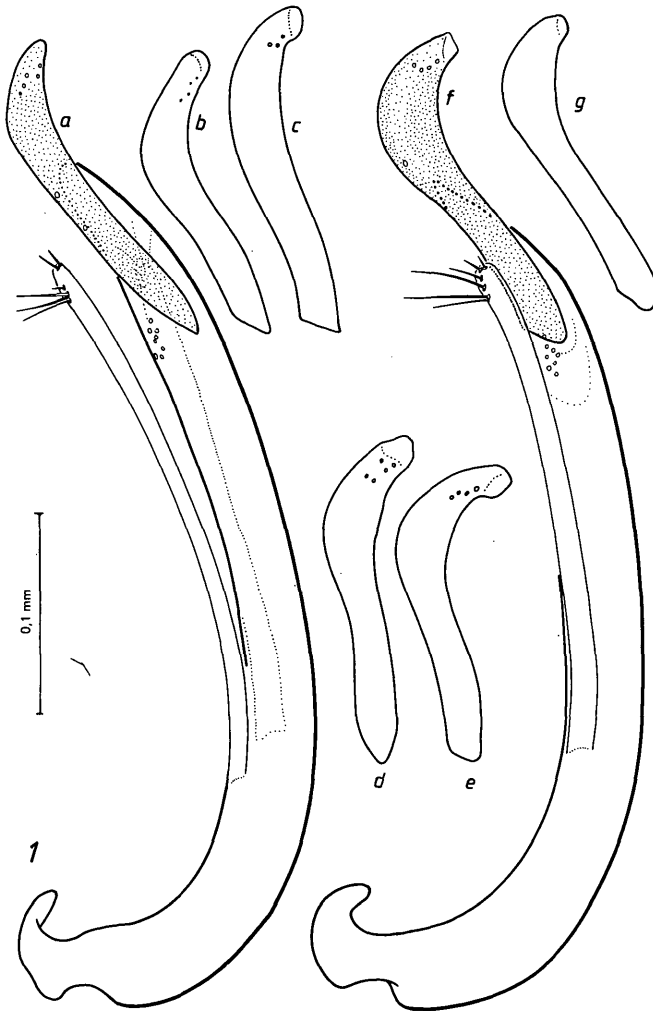
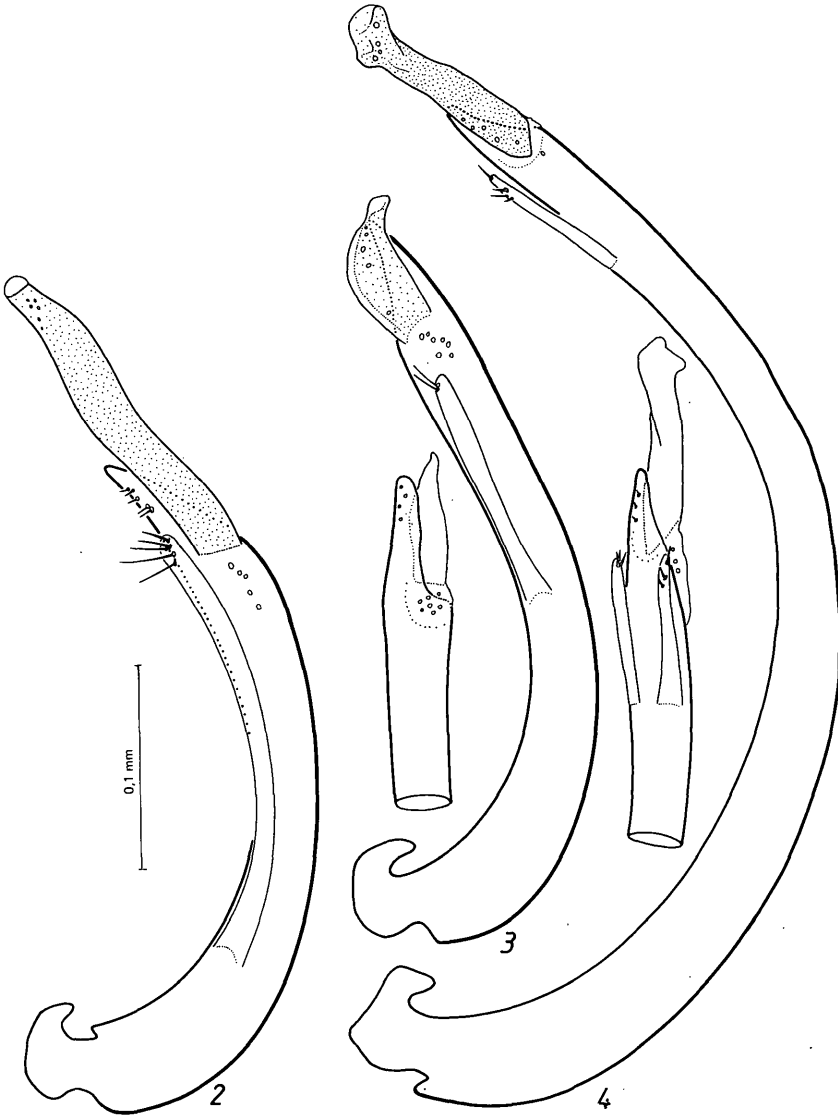


Fig. 1: Aedeagus of *Ochthebius adriaticus*; (a) *O. a. moreanus* (lectotype from Kalamata) in dorso-lateral view, showing maximum outlines of distal lobe; (b,c) distal lobe (max. outl.) of *O. a. moreanus* (2 specimens from Samos); (d) ssp. *adriaticus* from Catania; (e) ssp. *adriaticus* from Pula; (f) ssp. *pleuralis* from Israel; (g) same specimen in slightly different orientation.

Sea, where both species occur together, the following differences can be observed: pronotum usually less shining than in *subinteger*; elytral punctures slightly more impressed; intervals sometimes mat; teeth on elytral margin (especially near distal end) more numerous and longer (dentation rather obsolete in Adriatic *subinteger*). Females of *subinteger* from outside the Adriatic Sea are usually larger than their males and usually larger than *celatus*. In a population from Elba, 7 ♀♀ measured from 2.1 to 2.3 mm, while males measured 1.8-2.0 mm. Only occasionally I have seen large males (2.2 mm; from Turkey) and small females (1.95 mm; from Greece).



Figs. 2-4: Aedeagus (lateral view) of (2) *O. serratus*, (3) *O. freyi* (inset: ventral aspect of apex), (4) *O. balfourbrownnei* (inset: ventral aspect of apex).

Last abdominal sclerites and spermatheca like in *subinteger*.

Aedeagus (fig. 7): Quite distinctive from *subinteger*. Distal lobe wide and curved. Some variability observed. Subapical bristles present.

Distribution (fig. 10): Eastern Mediterranean Sea.

Etymology: Latin, *celatus* (hidden, secret). Although known since many years, this species has not yet been described.

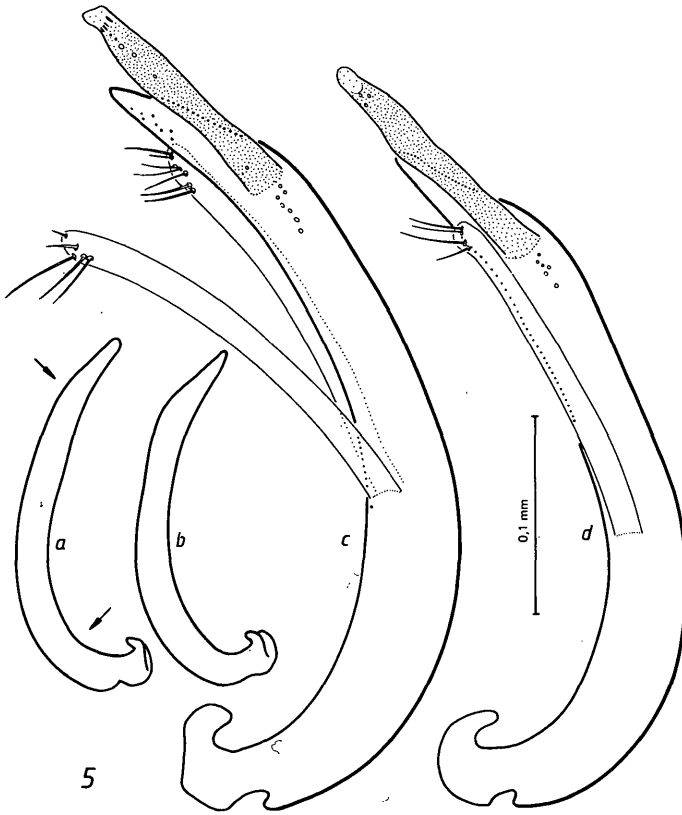


Fig. 5: Main piece (lateral view) of (a) *O. subinteger* and (b) *O. lejolisi*; (c,d) aedeagus of *O. lejolisi* from France, lateral aspect.

### *Ochthebius adriaticus* REITTER

*Ochthebius adriaticus* REITTER, 1886: Wiener Ent. Ztg. 5 (4): 157.

*Ochthebius pleuralis* REITTER, 1886: Wiener Ent. Ztg. 5 (4): 157.

*Ochthebius adriaticus moreanus* PRETNER, 1929: Col. Centr. 3 (5/6): 129.

Type-localities: *O. a. adriaticus* – Pula (Yougoslavia), *O. a. moreanus* – Kalamata (Greece), *O. a. pleuralis* – Syria, Lebanon or Israel.

The NMW contains 30 syntypes collected by A. Steinbühler in Pola (today: Pula), as mentioned in the original description. Herewith I designate one male (“Pola Steinbühler”) as lectotype.

The TMB contains one female (lectotype of *O. a. pleuralis* by present designation) with two labels: “Ochth. pleuralis m. Syrien . . .” (in Reitter’s handwriting; one word is illegible) and “coll. Reitter”.

The NMW contains 4 specimens (2 ♂♂ and 2 ♀♀) of *O. a. moreanus* labeled “375 / Morea Kalamata Ing. Meschnigg / Ochtholebius adriaticus moreanus Pretner / Type”. One of the 2 males is herewith designated as lectotype. Three further paralectotypes are housed in the CPL.

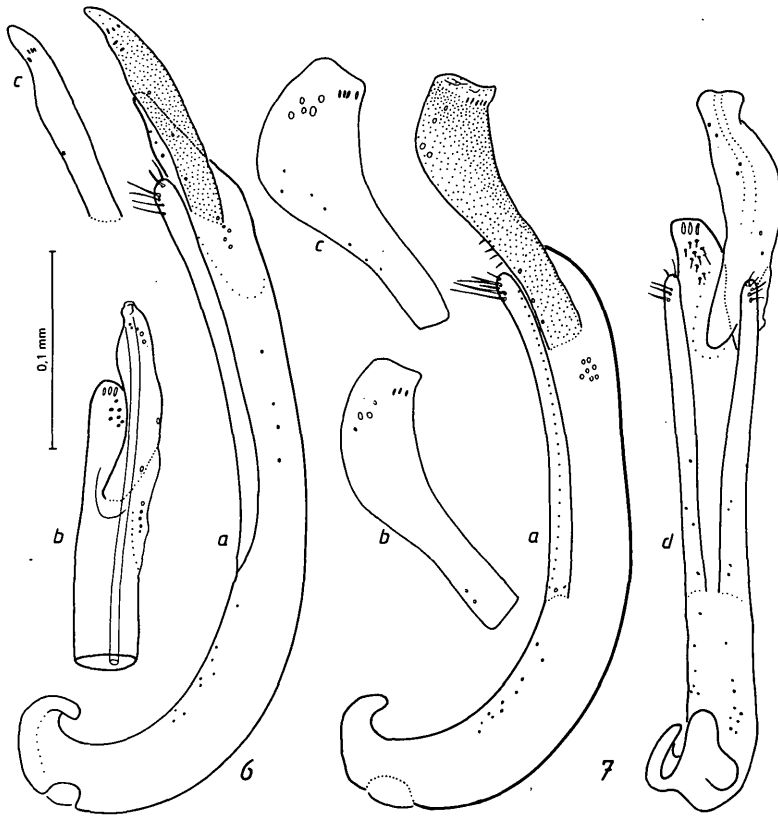


Fig. 6: Aedeagus of *O. subinteger*; (a) from Greece, lateral aspect; (b) ventral aspect of apex of same; (c) distal lobe of specimen from Elba. — Fig. 7: Aedeagus of *O. celatus* n.sp.; (a) lateral aspect of holotype; distal lobe (in maximum outlines) from (b) Sicily and (c) Mljet; (d) ventral aspect.

This species (? species complex) is very variable. Body length varies between 1.9 and 2.6 mm, ssp. *moreanus* usually being larger than the two other subspecies. The elytral margin and the pronotum are very wide in *adriaticus* and even wider in *moreanus*, separating these two subspecies clearly from *Ochthebius subinteger* and *celatus*. Pronotum and elytral margin of *O.a.pleuralis* only slightly wider than in *celatus* and *subinteger*. In *O.a.adriaticus* and *O.a.moreanus* the width of the elytral margin varies to some extent, even within one population.

As the elytral margin of *O.a.pleuralis* is considerably narrower than in the two other subspecies, I hesitated before I decided to rank it as a subspecies of *adriaticus*. But the variability of the elytral margin and the morphology of the aedeagus encouraged my decision.

Aedeagus (fig. 2): Main piece identical in all three subspecies, subapical setae reduced. Distal lobe quite variable, in *O.a.moreanus* less curved than in *O.a.adriaticus*; distal lobe of *O.a.pleuralis* slightly wider than in the two other subspecies, dorsal side very convex (like in *adriaticus*), but more evenly rounded, giving it a more regular appearance.

Distribution (fig. 9): Eastern Mediterranean Sea.

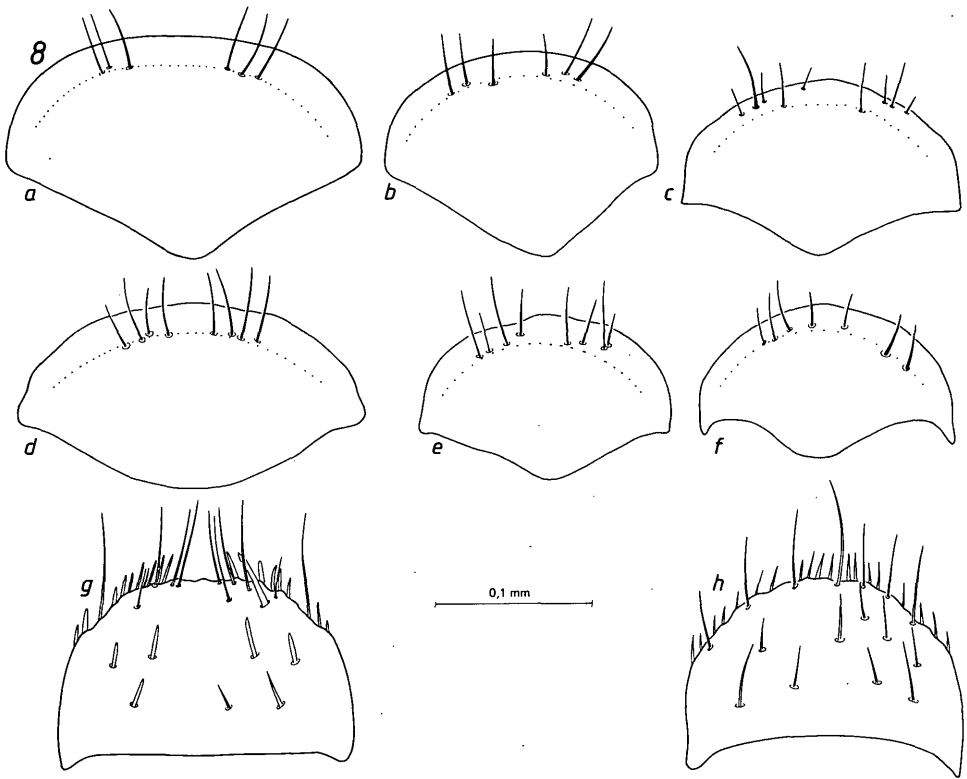


Fig. 8: Last abdominal sternite of females of (a,b) *O. lejolisi* (Manche), *O. subinteger* from (c) Elba and (d) Sicily, *O. celatus* n.sp. from (e) Catania and (f) Mljet. Last abdominal tergite of female of (g) *O. lejolisi* from Manche and of (h) *O. subinteger* from Elba.

### *Ochthebius freyi* ORCHYMONT

*Ochthebius freyi* ORCHYMONT, 1938: Soc. Scient. Fenn., Comm. Biol. 8: 1.

Type-locality: Azores.

I have examined the holotype and one paratype, which are deposited in the ZMH. The species is easily distinguished from *lejolisi* and *subinteger* by the small size (1.6-1.7 mm), the distinctly microsculptured head and pronotum, the very dense elytral puncturation and the elytral margin, which is widely explanate near apical third. The latter character seems to have sexual significance, as it is less pronounced in the male.

The aedeagus (fig.3) possesses one pair of short parameres (see also SVENSSON, 1973). Subapical setae of main piece reduced. Apex of distal lobe truncate in lateral view.

### *Ochthebius balfourbrownei* nom. nov.

*Ochthebius lindbergi* BALFOUR-BROWNE, 1976: Not. Ent. 56: 30.

Type-locality: Cape Verde Islands.

As the epithet *lindbergi* was already used by JANSSENS (1961) I replace the name *Ochthebius lindbergi* BALFOUR-BROWNE with *Ochthebius balfourbrownei* nom. nov.



I have seen the holotype and 5 paratypes, which are deposited in the ZMH. *Ochthebius balfourbrowni* is the most deviating species of the subgenus. Very small (1.4-1.5 mm long); puncturation – especially on head and pronotum – superficial, giving the beetle a glabrous appearance; sides of pronotum not abruptly constricted, but evenly roundly convergent to base; denticles of pronotum and elytra almost obsolete and hardly visible; elytral striae not always regular, intervals flat; explanate margin very narrow; legs and palpi much thinner than in all other species.

Aedeagus (fig.4): Main piece very long and slender, with subapical setae almost reduced. Parameres very short, inserting near distal end of main piece.

Distribution: Cape Verde Islands.

### *Ochthebius serratus* ROSENHAUER

*Ochthebius serratus* ROSENHAUER, 1856: Thiere Andalusiens: 54.

Type-locality: Algeciras (Spain).

Type-material: The types are probably in Paris (or Berlin or Munich). I did not yet search for an eligible lectotype.

This species deviates from all other members of the subgenus by the deep and distinct impressions on head and pronotum, by the conspicuous rows of erect hairs on the elytral intervals and also by the brownish colour. Dentation of pronotum and elytra very strongly developed.

Aedeagus (fig.1): Main piece with subapical bristles. Distal lobe very long. Parameres well developed and long, inserting near base of main piece.

This species seems to have a limited distribution (fig.10) and to be very rare. As far as I know it was not collected in this century. The only indication we have about its ecology is from the original description: “. . . found in a small stream near Algeciras, . . .”.

Distribution: Southern Spain.

## Material examined

### *Ochthebius adriaticus adriaticus*

ITALY: Cattania, 1914, leg. Bittner (NMW); Sistiana (near Trieste), 13.5.1928, leg. Pretner (CPL).  
YUGOSLAVIA: Istrija: Figarola Grande, 9.4.1959, leg. Pretner (CPL); Peroso Grande, 4.4.1959, leg. Pretner (CPL); Rovigno, 1.4.1912 (CPL); Volosca, 1.1.1928, leg. Pretner (CPL); Isola Brioni, 5.1923, leg. C. Mancini (ZMH); Isola Longa, Vrsar, 6.4.1959, leg. Pretner (CPL); Miramar, 5.1913, leg. Pretner (CPL); Abbazia (= Opatija) (MTD); Croatia: Spalato (= Split), 4.1928, leg. Heberdey (NMW); Hvar, 11.1950, leg. Pretner (CPL); Meleda (= Mljet), leg. Gobanz (NMW); Lastovo, Zaklopatica, 30.11.1964, leg. Pretner (NMW, CPL); Gravosa (near Dubrovnik), leg. Apfelbeck (NMW); Lapad (near Dubrovnik), 15.11.1960, leg. Pretner (NMW, CPL); Lacrova (= Lokrum, near Dubrovnik), leg. Sahlberg (ZMH, MTD); Crna Gora: Castelnuovo (= Hercegnovi), leg. Hummler (NMW); Ulcinj, 28.5.1957, leg. Pretner (CPL).  
GREECE: Corfu, 1903, leg. Paganetti (MTD).

### *Ochthebius adriaticus moreanus*

GREECE: Elevisis (near Athens), leg. A. Sahlberg (ZMH); Phaleron (near Athens), leg. A. Sahlberg (ZMH); Crete, leg. Sahlberg (ZMH); Samos, Psili Ammos, 9.9.1983, leg. Jäch (NMH).

### *Ochthebius adriaticus pleuralis*

ISRAEL: Rosh HaNiqra, 9.4.1986, leg. Jäch (NMW); Achziv, 5.1985 (NMW).  
LEBANON: Beirut, leg. Sahlberg (ZMH).

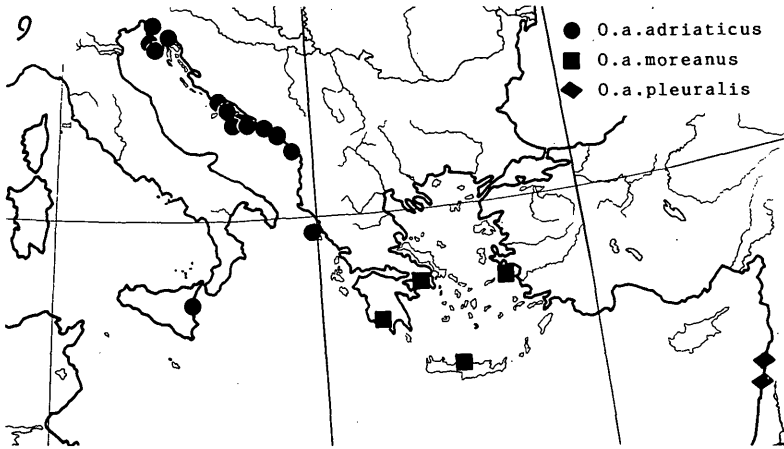


Fig. 9: Geographical distribution of *Ochthebius adriaticus*.

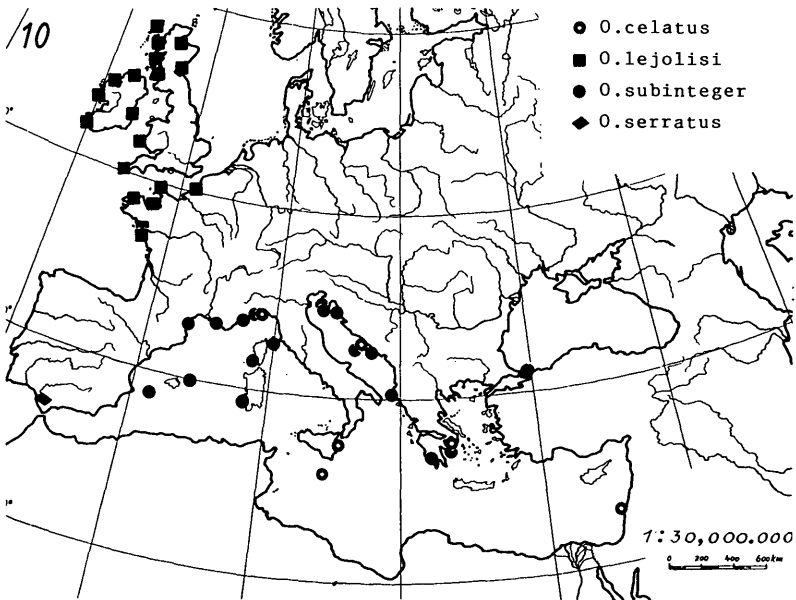


Fig. 10: Geographical distribution of *O. celatus*, *O. lejolisi*, *O. subinteger* and *O. serratus*.

*Ochthebius lejolisi*

FRANCE: Seine-Maritime: Dieppe (NMW); Ile-et-Vilaine: St. Malo (NMW); Finistère: Morlaix, leg. E. Herve (NMW); Loire Inferieure: Le Croisic, leg. Deville (NMW); Calvados (NMW); Manche: Querqueville, 7. 3. 1983, leg. Bameul (NMW, CBT); Vendée: Ile de Noirmoutier (OLL).

*Ochthebius serratus*

SPAIN: Cadiz (NMW); Andalucia (NMW, ZMH, OLL).

*Ochthebius subinteger*

- SPAIN: Ibiza, Sta. Eulalia, 9. 7. 1983, leg. Montes (NMW, CMM); Menorca, Escargol, 5. 8. 1983, leg. Montes (NMW, CMM).
- FRANCE: Pyrénées Orientales: Port Vendres, leg. Reitter (OLL); Bouches du Rhone: Marseille, leg. Guillebeau (NMW); Var, leg. Deville (NMW); Alpes Maritimes: Cap Ferrat (near Nice), leg. Deville (NMW); Corsica: Ajaccio, leg. F. Müller (CPL).
- ITALY: Bordighera, leg. Schneider (ZMH); San Remo, leg. Schneider (HUB); Genova, leg. Solari (NMW); Elba, 1908, leg. Paganetti (NMW); Elba, Isola Gemini, 9. 1975, leg. Scheuern (NMW, CSB); Sardinia: Flumentorgiu, leg. Solari (NMW).
- YUGOSLAVIA: Istria: Pula (NMW); Rovinj, 4. 4. 1959, leg. Pretner (CPL); Croatia: Novi Vinodolski, 7. 8. 1961, leg. Pretner (NMW, CPL); Lastovo, Lucica, 28. 11. 1964, leg. Pretner; Lastovo, Zaklopatica, 30. 11. 1964, leg. Pretner (CPL); Gravosa (near Dubrovnik), leg. Apfelbeck (NMW); Lapad (near Dubrovnik), 15. 11. 1960, leg. Pretner (NMW, CPL); Lokrum (near Dubrovnik), 11. 7. 1955, leg. Pretner (NMW, CPL).
- ALBANIA: Valona (= Vlore), 1940, leg. Stofa (CPL).
- GREECE: Piraeus, leg. Meschnigg (NMW); Peloponnesos, Kalamata, leg. Meschnigg (CPL).
- TURKEY: Sile, 18. 5. 1987, leg. Jäch (NMW).
- INDIA: South Andaman, leg. Starmühlner, at light traps (NMW).

REFERENCES

- BALFOUR-BROWNE, J. (1976): Two new Hydraenidae (Coleoptera, Staphylinoidea) from the Cape Verde Islands. – Not. Ent. LVI: 29-30.
- BEIER, M. (1956): Über Körperbau und Lebensweise von *Ochthebius quadricollis Steinbühleri* und *O. adriaticus*. – Thalassia Jugoslavica: 193-242.
- JANSSENS, E. (1961): Contribution a l'étude de la faune de l'Afghanistan. 63. – Coléoptères torrenticole (Hydraenidae & Elmidae). – Bull. Inst. r. Sci. nat. Belg. XXXVII (17): 7 pp.
- KUWERT, A. (1877): Uebersicht der europäischen *Ochthebius*-Arten. – Deutsche Ent. Zeitschr. XXXI (II): 369-401.
- MULSANT, M. & C. REY (1861a): Description de quelques Coléoptères nouveaux ou peu connus. – Opuscules Entomologiques 12: 47-92.
- (1861b): Description d'un espèce nouvelle d'*Ochthebius* et la larve de cet insecte. – Mem. Soc. Sc. nat. Cherbourg VII: 181-189.
- d'ORCHYMONT, A. (1932): Notes sur certains sous-genres d'*Ochthebius* (*Calobius*, *Cobalius*, etc.). – Bull. Ann. Soc. Ent. Belg. LXXII: 41-52.
- (1938): Palpicornia des Açores et de Madère. – Societas Scientiarum Fennica. Commentationes Biologicae VIII. 3.: 4 pp.
- (1940): Palpicornia des Iles Atlantiques. – Mem. Mus. R. Hist. Nat. Belg. 2 (20): 86 pp.
- PRETNER, E. (1929): Neue Hydrophiliden aus dem östlichen Mittelmeergebiet. – Col. Centr. 3 (5/6): 199-205.
- REITTER, E. (1886): Ueber die *Ochthebius*-Arten aus der Gruppe des *O. Lejolisi* Muls. – Wiener Ent. Ztg. V (4): 156-157.
- REY, C. (1886): Histoire Naturelle des Coléoptères de France. – Ann. Soc. Linn. 32: 186 pp.
- ROSENHAUER, W. G. (1856): Die Thiere Andalusiens. – Verlag Theodor Blaesing, Erlangen: 429 pp.
- SAHLBERG, J. (1900): Coleoptera mediterranea et rosso-asiatica nova vel minus cognita. – Ofvers. Finsk. Vet. Soc. Förh. XLII: 174-208.
- SVENSSON, B. W. (1973): Palpicornia (Coleoptera) from the Azores. – Boletim Mus. mon. Funchal 27: 92.
- WOLLASTON, T. V. (1871): VII. On additions to the Atlantic coleoptera. – Trans. Ent. Soc. London: 203-314.

Author's address: Dr. Manfred JÄCH,  
Naturhistorisches Museum, Burgring 7, A - 1014 Wien, Austria.

# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen](#)

Jahr/Year: 1989

Band/Volume: [41](#)

Autor(en)/Author(s): Jäch Manfred A.

Artikel/Article: [Revision of the palearctic species of the genus Ochthebius Leach. II. The subgenus Cobalius Rey \(Hydraenidae, Coleoptera\). 41-51](#)