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**Three new species of Staphylinidae from Spain, with a new
synonymy
(Insecta: Coleoptera)**

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A b s t r a c t : Three species of Staphylinidae from Jaén and Córdoba provinces, southern Spain, are described and illustrated: *Phloeocharis baenai* nov.sp. (Phloeocharinae), *Geostiba jaenica* nov.sp. (Aleocharinae), and *Atheta tenebrarum* nov.sp. (Aleocharinae). *Myllaena oviedensis* PACE 2004, syn.n., is synonymised with *M. brevicornis* (MATTHEWS 1838). Additional records of the cave species *Atheta temeris* ASSING & VOGEL are presented. The distributions of the newly described species are mapped.

K e y w o r d s : Coleoptera, Staphylinidae, Phloeocharinae, Aleocharinae, *Phloeocharis*, *Geostiba*, *Atheta*, Palaearctic region, Spain, taxonomy, new species, new synonymy, cave fauna.

Introduction

Approximately three years ago, an examination of Staphylinidae collected in various caves in southern Spain and sent to me by Manuel Baena, Córdoba, led to the discovery of *Atheta temeris* ASSING & VOGEL, a species apparently confined to cave habitats (ASSING & VOGEL 2003). In the meantime, more material has become available, primarily from caves, but also from other localities in southern Spain, suggesting that *A. temeris* and *Sepedophilus cavicola* (SCRIBA), another cavernicolous species of Staphylinidae, are quite common in caves of this region. In addition, the material included three undescribed species, one of them an *Atheta* from the Cueva Secreta del Sagreo in the Sierra de Cazorla. The new *Geostiba* species from the Sierra Almadén had already been collected by myself in 2003.

Material, measurements, and abbreviations

The material examined is deposited in the following collections:

OÖLL..... Oberösterreichisches Landesmuseum Linz

cAss..... author's private collection

cFel private collection B. Feldmann, Münster

cGia.....private collection P. M. Giachino, Torino

cSch.....private collection M. Schülke, Berlin

cVog.....private collection J. Vogel, Görlitz

cWun.....private collection P. Wunderle, Mönchengladbach

The following abbreviations are used for the measurements, which are given in mm:

AL: length of antenna; HW: head width; PW: maximal width of pronotum; PL: length of pronotum along median line; EL: length of elytra from apex of scutellum to posterior margin; EW: combined width of elytra; AW: maximum width of abdomen; ML: length of aedeagus from apex of ventral process to base; TL: total length.

The map was generated using the online generic mapping tool (GMT) of the Geomar website at www.aquarius.geomar.de/omc.

***Phloeocharis baenai* nov.sp. (Figs 1-7; Map 1)**

Holotype ♂: E - Córdoba, Luque, Santa Lucía, 18.I.2003, leg. M. Baena / Holotypus ♂ *Phloeocharis baenai* sp.n. det. V. Assing 2006 (cAss).

Description: Measurements (in mm) and ratios: AL: 0.50; HW: 0.32; PW: 0.41; PL: 0.30; EL: 0.34; EW: 0.41; AW: 0.40; ML: 0.38; TL: 2.2; PW/HW: 1.26; PW/PL: 1.35; EL/PL: 1.13; EW/PW: 1.00; AW/EW: 0.98.

Small species (see measurements); facies as in Fig. 1. Coloration: body brown, with the posterior margins of abdominal segments III-VII, and abdominal apex paler; legs light brown; antennae yellowish brown.

Head with distinct microreticulation and almost matt; puncturation extremely fine and sparse, barely noticeable; eyes not reduced, composed of numerous ommatidia (Figs 2-3). Antenna with antennomere IV approximately as wide as long, V weakly transverse, V-IX increasingly transverse and of increasing width, IX twice as wide as long, X distinctly longer and less transverse than IX, and XI weakly oblong, somewhat longer than X, but shorter than the combined length of IX-X (Fig. 4).

Pronotum relatively slender, but wider than head and transverse (see ratios PW/HW, PW/PL, and Fig. 2); maximum width about in the middle; lateral margins weakly convex in dorsal view; posterior angles obtuse, but well-marked; posterior margin straight; microsculpture and puncturation similar to those of head.

Elytra about as wide as and at suture longer than pronotum (see ratios EW/PW, EL/PL, and Fig. 2); posterior margin weakly convex; microsculpture shallower than that of head and pronotum, surface consequently with more shine; puncturation fine, but more distinct than that of head and pronotum. Hind wings not examined.. Legs not distinctive.

Abdomen approximately as wide as combined width of elytra (see ratio AW/EW and Fig. 1); individual segments less transverse than in *P. subtilissima*; with distinct microreticulation and subdued shine; puncturation extremely fine and relatively sparse; posterior margin of tergite VII with narrow rudiment of a palisade fringe.

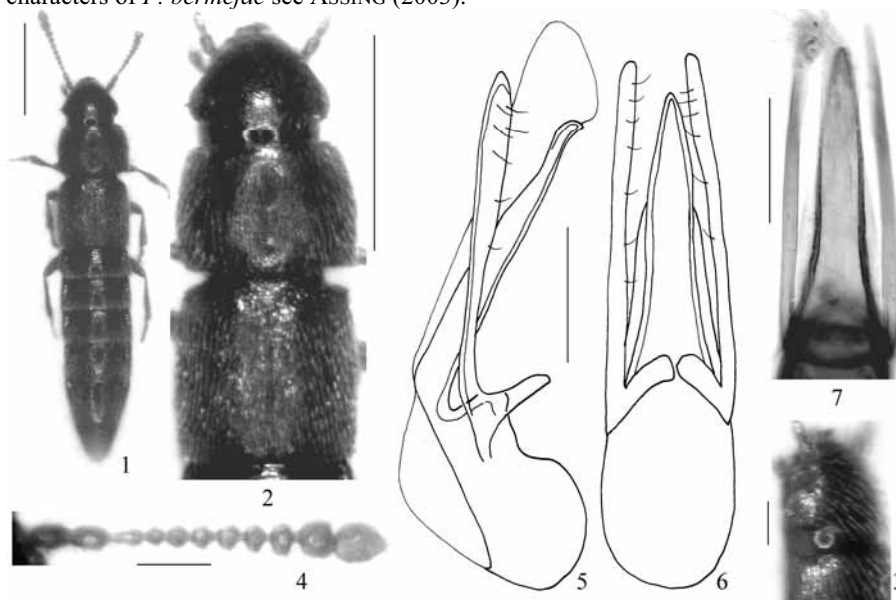
♂: sternites VII and VIII unmodified; aedeagus as in Figs 5-7, without spines in internal sac.

E t y m o l o g y: The species is dedicated to Manuel Baena, Córdoba, who collected the holotype.

Comparative notes: From the widespread *P. subtilissima* MANNERHEIM, *P. baenai* is

distinguished by its distinctly smaller size and the more slender body (less transverse pronotum, elytra, and abdominal segments), the darker coloration of the elytra, the different morphology of the antennae (in *P. subtilissima*, antennomere V is not transverse, VI-IX are weakly transverse, and the club is formed by antennomeres IX-XI), the reduced palisade fringe at the posterior margin of tergite VIII, and by the smaller aedeagus.

Previously, only one endemic *Phloeocharis* species had become known from southern Spain: *P. bermejae* ASSING. From this species, *P. baenai* is separated by much darker coloration (body in *P. bermejae* uniformly dark yellowish), less bulging eyes, shorter antennae with much more transverse antennomeres V-IX, a more slender and less transverse pronotum with less convex lateral margins (dorsal view), distinctly longer and more slender elytra, a more slender abdomen, the presence of a rudiment of a palisade fringe at posterior margin of tergite VII (in *P. bermejae* absent), and a smaller aedeagus with a more slender ventral process (lateral view). For illustrations of external and sexual characters of *P. bermejae* see ASSING (2003).



Figs 1-7: *Phloeocharis baenai* nov.sp.: (1) habitus; (2) forebody; (3) head in lateral view; (4) antenna; (5-7) aedeagus in lateral and in ventral view. Scales: 1-2: 0.5 mm; 3-7: 0.1 mm.

Distribution and bionomics: The type locality is situated some 10 km to the southeast of Baena, Córdoba (Map 1). The reduced palisade fringe at the posterior margin of tergite VII is characteristic of species with reduced wings and wing muscles. This, as well as the absence of other records suggests that *P. baenai* may have a restricted distribution. The holotype was found under a stone at an altitude of approximately 800 m (BAENA pers. comm.). Additional bionomic data are not available.

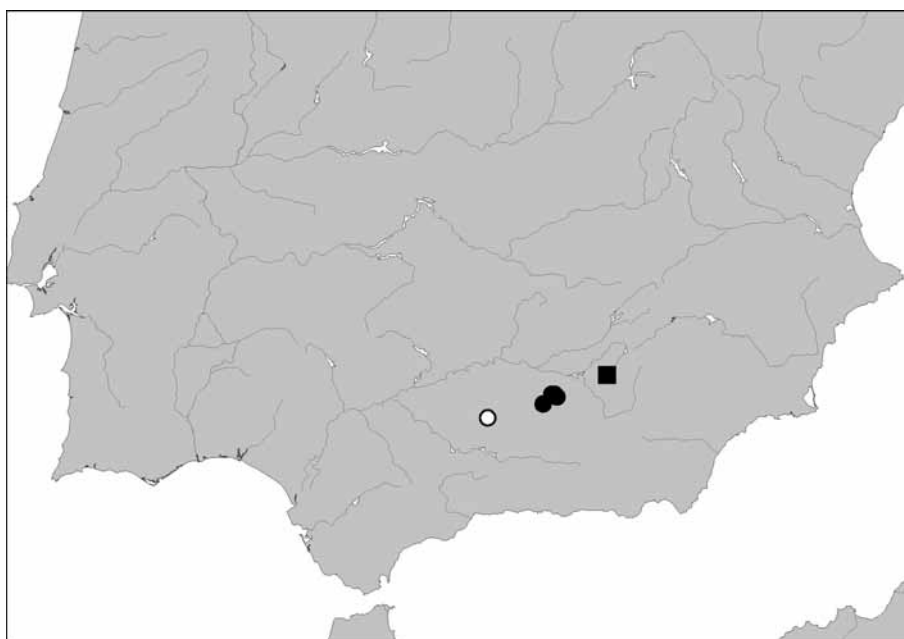
***Myllaena brevicornis* (MATTHEWS 1838)**

Myllaena oviedensis PACE 2004: 15 f., **syn.n.**

Type material examined: **Holotype** ♂: E - Oviedo Pola de Lena, Urbies, m 600, 20.VI.1989, Meregalli leg. / Holotypus *Myllaena oviedensis* n.sp. det. R. Pace 2004 / *Myllaena*

oviedensis n.sp. det. R. Pace 2004 / *Myllaena brevicornis* (Matthews) det. V. Assing 2005 (cGia).
Paratype: same data as holotype (cGia).

C o m m e n t s : The original description of *M. oviedensis* is based on a male holotype and a female paratype from the surroundings of Oviedo, Spain. PACE (2004) compares the type material with *M. gracilis* (MATTHEWS), but there is no reference whatsoever to *M. brevicornis*, a widespread and common species in Spain, which perfectly matches the details indicated in the original description (including the illustrations of the genitalia). An examination of the type material of *M. oviedensis* eventually confirmed that it is conspecific with *M. brevicornis*; hence the synonymy indicated above.



Map 1: Distributions of *Phloeocharis baenai* nov.sp. (open circle), *Geostiba jaenica* nov.sp. (filled circles), and *Atheta tenebrarum* nov.sp. (square) in southern Spain.

***Geostiba (Sipalotricha) jaenica* nov.sp. (Figs 8-21; Map 1)**

Holotype ♂: E - No. 7, Andalucía, E Jaén, SE Mancha Real, Sierra Almadén, 1850 m, 37°44N, 03°31W, 26.XII.2003, V. Assing / Holotypus ♂ *Geostiba jaenica* sp.n. det. V. Assing 2006 (cAss).
Paratypes: 7♂♂, 13♀♀: same data as holotype (cAss, OÖLL); 10♂♂, 6♀♀: E - No. 8, Andalucía, E Jaén, Sierra Almadén, 1450-1850 m, 37°45N, 03°33W, 26.XII.2003, V. Assing (cAss); 1♂, 2♀♀: E - No. 9, Andalucía, E Jaén, Sierra Almadén, 1300 m, ca. 37°45N, 03°35W, 26.XII.2003, V. Assing (cAss); 2♂♂, 2♀♀: E - No. 16, Andalucía, SE Jaén, 1500 m, Sierra de la Pandera, Puerto Alto, 37°40N, 03°40W, 29.XII.2003, V. Assing (cAss); 1♂, 1♀: E - Jaén, Mancha Real, Pico Almadén, 16.IV.2005, leg. M. Baena (cAss).

Description : Small species, 1.9-2.5 mm; facies as in Fig. 8. Coloration uniformly yellowish to reddish yellow, usually with the middle of abdominal tergite VI and sometimes also the middle of tergite V indistinctly darkened.

Head approximately as wide as long to weakly oblong; eyes very small, composed of only approximately 5 ommatidia (Fig. 10), in dorsal view 1/6-1/5 the length of postocu-

lar region, not projecting from lateral outline of head (Fig. 9); integument with very shallow microreticulation and some shine; puncturation extremely fine and sparse, barely noticeable. Antenna with antennomere IV strongly transverse, IV-X of increasing width and increasingly transverse (Fig. 11).

Pronotum 1.05-1.10 times as wide as head and 1.05-1.10 times as wide as long; maximal width in anterior half; puncturation and microreticulation similar to those of head (Fig. 9).

Elytra without sexual dimorphism, at suture 0.55-0.60 times as long as pronotum; microsculpture more distinct than that of pronotum; puncturation extremely fine, barely noticeable in the microsculpture (Fig. 9). Hind wings reduced.

Abdomen slightly (approximately 1.1 ×) wider than elytra, widest at segments V/VI; puncturation sparse and very fine, barely noticeable; microsculpture shallow; posterior margin of tergite VII without palisade fringe; tergite VII and VIII without sexual dimorphism; posterior margin of tergite VIII in the middle more or less distinctly concave (Figs 12-13).

♂: posterior margin of sternite VIII convex (Fig. 14); median lobe of aedeagus and apical lobe of paramere as in Figs 15-18.

♀: posterior margin of sternite VIII in the middle distinctly concave and with long stout marginal setae (Figs 19-20); spermatheca as in Fig. 21.

E t y m o l o g y : The name (adj.) is derived from Jaén, the province where the species was discovered.

C o m p a r a t i v e n o t e s a n d s y s t e m a t i c s : Based on the absence of a sexual dimorphism of the pronotum, elytra, and of the abdominal tergites VII and VIII, as well as on the morphology of the primary sexual characters, *G. jaenica* is attributed to the subgenus *Sipalotricha* SCHEERPELTZ. From other species of this subgenus occurring in southern Spain, it is distinguished by the sexual characters and additionally as follows:

from the widespread *G. plicatella* (FAUVEL) by paler coloration, smaller size, relatively shorter elytra, much smaller eyes, and more strongly transverse antennomeres IV-X;

from the similarly small and microphthalmous *G. cazorlensis* (FAGEL) by the infuscated preapical abdominal segments and by the indistinctly punctured elytra;

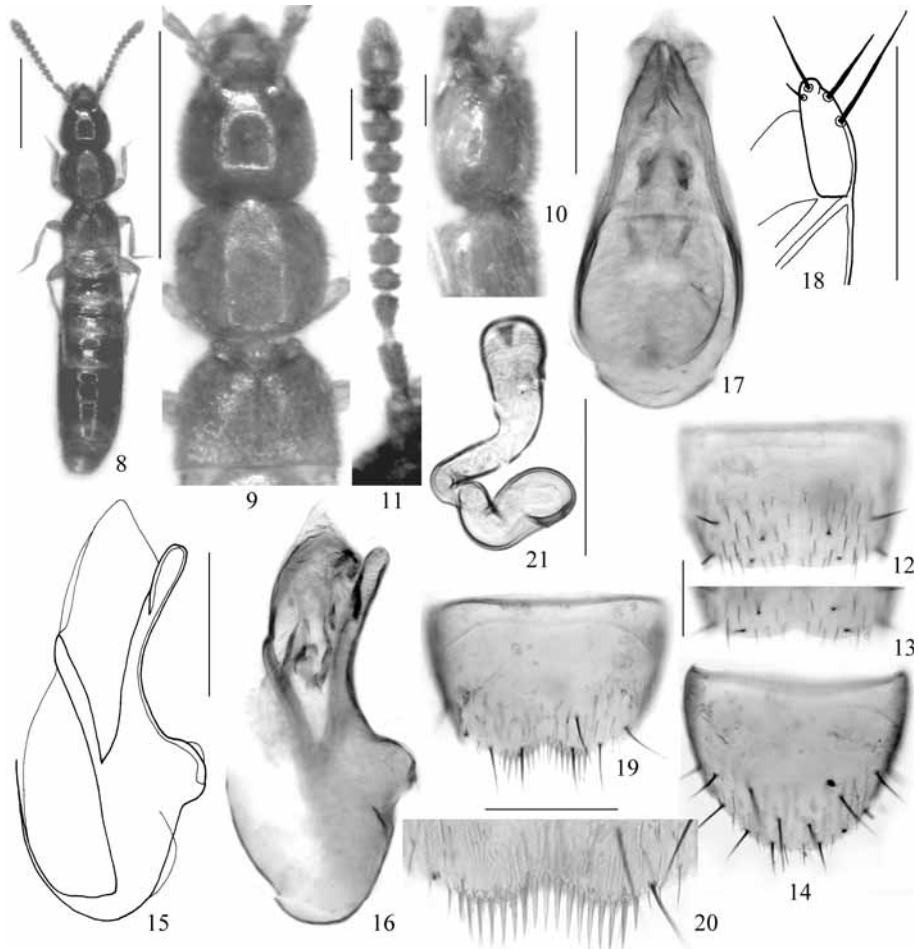
from *G. besucheti* (FAGEL) by much paler coloration and by the indistinctly punctured elytra;

from *G. tarifensis* PACE by smaller size, paler coloration, smaller eyes, and the more strongly transverse antennomere IV-X;

from *G. jarasteparensis* PACE by the infuscated preapical abdominal segments, the more transverse antennomeres IV-X, and the less distinct elytral puncturation;

from *G. fretoria* (FAGEL) by the infuscated preapical abdominal segments, the more transverse antennomeres IV-X, and smaller eyes;

and from *G. araneaensis* PACE by less pronounced microsculpture on the forebody and by less distinctly infuscated preapical abdominal segments.



Figs 8-21: *Geostiba jaenica* nov.sp.: (8) habitus; (9) forebody; (10) head in lateral view; (11) antenna; (12) ♂ tergite VIII; (13) posterior margin of ♂ tergite VIII; (14) ♂ sternite VIII; (15-17) median lobe of aedeagus in lateral and in ventral view; (18) apical lobe of paramere; (19) ♀ sternite VIII; (20) posterior margin of ♀ sternite VIII; (21) spermatheca. Scales: 8-9: 0.5 mm; 10-21: 0.1 mm.

Distribution and bionomics: The absence of records from other localities, as well as the adaptive reductions of the eyes, pigmentation, and wings suggest that *Geostiba jaenica* has a restricted distribution; it seems very likely that it is an endemic of the Sierra Almadén and the Sierra de la Pandera near Jaén (Map 1). The type specimens were collected by sifting grass roots, moss, and leaf litter in *Quercus ilex* forests at altitudes of 1300-1850 m.

***Atheta temeris* ASSING & VOGEL**

A d d i t i o n a l m a t e r i a l e x a m i n e d : **Córdoba:** 8 exs., Carcabuey, Cueva del Macho, 12.IV.2003, leg. Baena & Moreno; 4 exs., Cueva de los Corralones, 7.VIII.2005, leg. G40; 1 ex., Cabra, Cueva Mina de Jarcas, 17.VIII.2003, leg. Baena & Moreno; 1 ex., Cabra, Cueva del Puchero, 22.VI.2003, leg. Baena & Moreno. **Jaén:** 1 ex., La Iruela, 6.XI.2005, leg. GEV; 1 ex., same locality, 4.III.2006, leg. GEV; 55 exs., same locality, 18.III.2006, leg. GEV; 33 exs., same locality, 26.III.2006, leg. GEV; 2 exs., Hornos, Cueva de la Murcielaguina, 8.XII.2005, leg. GEV; 12 exs., same locality, 21.XI.2004, leg. GEV; 15 exs., same locality, 5.XII.2004, leg. GEV; 2 exs., Hornos, Cueva Hornos, 5.VI.2005, leg. GEV; 2 exs., Hornos, Sima Jesúsín, 23.V.2004, leg. GEV (material in cAss, cFel, cSch, cVog, cWun).

R e m a r k s : This recently described species has been recorded from various caves in the provinces Córdoba and Jaén, southern Spain, partly in large numbers (see also ASSING & VOGEL 2003), and is apparently a regular inhabitant of caves in this region.

***Atheta tenebrarum* nov.sp. (Figs 22-33; Map 1)**

Holotype ♂: E - Jaén, La Iruela, Cueva Secreta del Sagreo, 18.III.2006, leg. GEV / **Holotypus** ♂ *Atheta tenebrarum* sp.n. det. V. Assing 2006 (cAss). **Paratypes:** 2♂♂, 1♀: same data as holotype (cAss).

D e s c r i p t i o n : Species of moderately large size, 3.8-4.2 mm; facies as in Fig. 22. Coloration: head dark brown; pronotum reddish brown; elytra yellowish to yellowish brown; abdomen reddish brown, with the preapical segments somewhat infusate; legs yellowish; antennae dark brown, with the basal 3-4 antennomeres yellowish.

Head slightly wider than long; eyes of normal size (Fig. 24), approximately as long as postocular region in dorsal view, or slightly longer; postgenae finely carinate ventrally; integument with distinct microreticulation; puncturation rather dense and fine, barely visible in the microsculpture (Fig. 23). Antennae slender; antennomere III slightly longer than II, IV weakly oblong, V-IX approximately as long as wide, X weakly transverse, and XI approximately as long as the combined length of IX-X or slightly longer (Fig. 25).

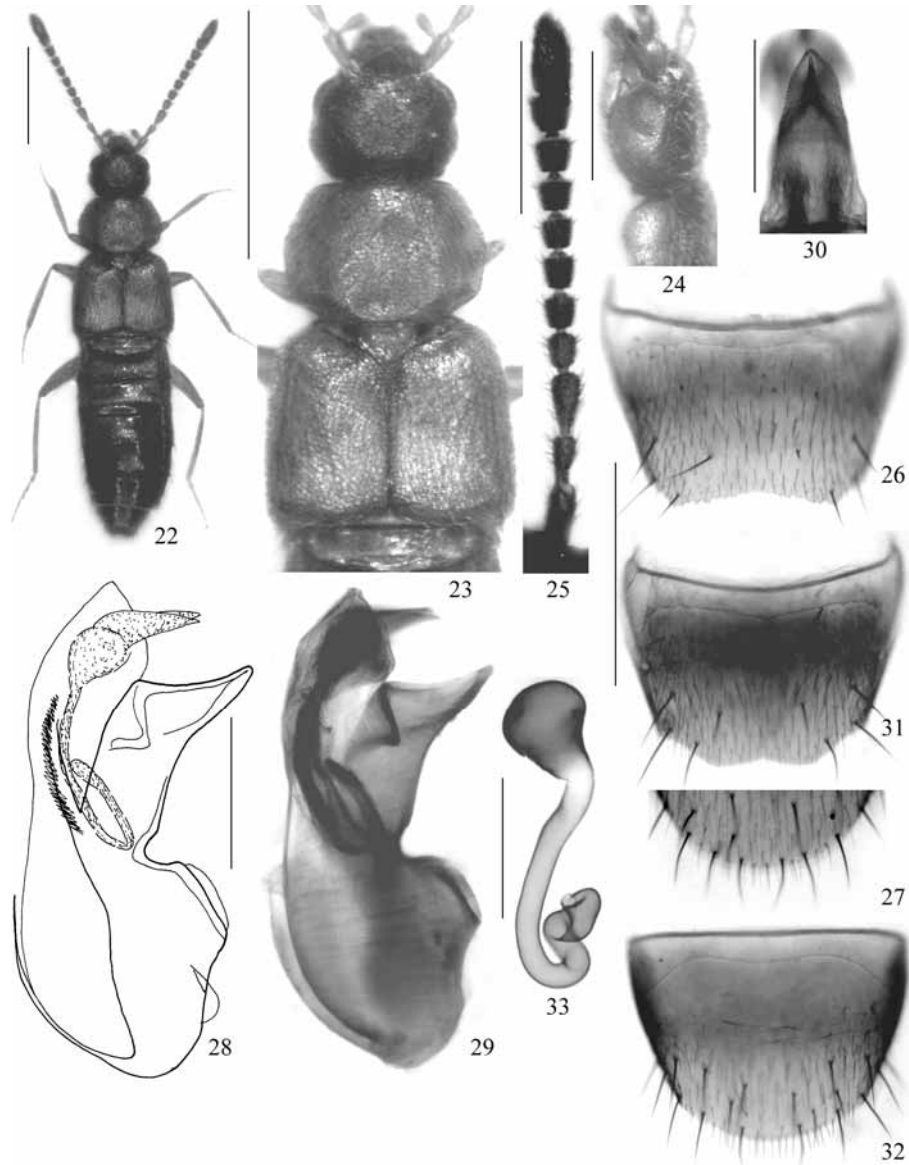
Pronotum approximately 1.3 times as wide as head and 1.35 times as wide as long; maximal width a short distance anterior to middle; posterior angles obtuse, weakly marked; puncturation and microreticulation similar to those of head (Fig. 23); pubescence directed cephalad in anterior 1/4 of midline, caudad in posterior 3/4, and diagonally latero-caudad in lateral area; marginal setae short, slightly shorter than maximal width of antennomere III.

Elytra about 1.25 times as wide and at suture almost as long as pronotum; microsculpture and puncturation similar to those of head and pronotum; pubescence short and depressed (Fig. 23). Hind wings fully developed. Tibiae without long prominent setae.

Abdomen slightly narrower than elytra, widest at segments IV/V (Fig. 22); tergal surfaces with fine transverse microsculpture everywhere; puncturation relatively sparse and very fine, barely noticeable; pubescence dark and depressed.

♂: posterior margin of tergite VIII weakly concave and weakly serrate (Fig. 26), that of sternite VIII convex (Fig. 27); median lobe of aedeagus of highly distinctive shape (Fig. 28-30).

♀: posterior margin of tergite VIII in the middle weakly concave (Fig. 31), that of sternite VIII broadly convex and with long thin marginal setae (Fig. 32); spermatheca as in Fig. 33.



Figs 22-33: *Atheta tenebrarum* nov.sp.: (22) habitus; (23) forebody; (24) head in lateral view; (25) antenna; (26) ♂ tergite VIII; (27) posterior margin of ♂ sternite VIII; (28-30) median lobe of aedeagus in lateral and in ventral view; (31) ♀ tergite VIII; (32) ♀ sternite VIII; (33) spermatheca. Scales: 22-23: 1.0 mm; 24-27, 31-32: 0.5 mm; 28-30, 33: 0.2 mm.

E t y m o l o g y : The name (Lat.: noun, genitive: of the darkness) alludes to the fact that this species was discovered in a cave.

C o m p a r a t i v e n o t e s : *Atheta tenebrarum* is distinguished from all its congeners especially by the highly distinctive morphology of the median lobe of the aedeagus and also by the shape of the spermatheca. Based on external morphology (pronotal pubescence pattern, chaetotaxy) and on the primary and secondary sexual characters, the new species is closely related to *A. trinotata* (KRAATZ), *A. hybrida* SHARP, and allied species, its closest relative being *A. hybrida*, as is suggested particularly by the similar internal structures and shape of the median lobe of the aedeagus. From both *A. trinotata* and *A. hybrida*, it is separated also by the longer antennae, the relatively larger eyes, the paler and broader pronotum, the uniformly yellowish elytra, the different coloration of the abdomen (in *A. trinotata* and *A. hybrida* almost uniformly blackish), and by the secondary sexual characters.

D i s t r i b u t i o n a n d b i o n o m i c s : The species is currently known only from one cave near La Iruela in the Sierra de Cazorla, eastern Jaén province (altitude: slightly less than 1200 m). The Staphylinidae from this cave were collected using various methods, so that the particular circumstances, under which the four type specimens of *A. tenebrarum* were found, are unknown (BAENA, pers. comm.).

Acknowledgements

My thanks are extended to Manuel Baena for making his material available for study, to Jürgen Vogel for valuable comments on *Atheta tenebrarum*, as well as to Benedikt Feldmann for proof-reading the manuscript.

Zusammenfassung

Drei Staphylinidenarten aus den südspanischen Provinzen Jaén und Córdoba werden beschrieben und abgebildet: *Phloeocharis baenai* nov.sp. (Phloeocharinae), *Geostiba jaenica* nov.sp. (Aleocharinae) und *Atheta tenebrarum* nov.sp. (Aleocharinae). *Myllaena oviedensis* PACE 2004, syn.n., wird mit *M. brevicornis* (MATTHEWS 1838) synonymisiert. Weitere Nachweise der cavernicolen *Atheta temeris* ASSING & VOGEL werden gemeldet.

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