Linzer biol. Beitr.	36/2	615-638	30.11.2004

A revision of the Turkish species of *Geostiba* THOMSON. V. New species and additional records (Coleoptera: Staphylinidae, Aleocharinae)

V. ASSING

A b s t r a c t : Based on an examination of recently collected material from Turkey, eight species are described, illustrated, and distinguished from their congeners: *Geostiba* (*Tropogastrosipalia*) *sinuosa* sp.n. (Gaziantep), *G.* (*T.*) *kartalana* sp.n. (Gaziantep), *G.* (*T.*) *adunca* sp.n. (Kahramanmaraş), *G.* (*T.*) *marasica* sp.n. (Kahramanmaraş), *G.* (*Sipalotricha*) *ahirana* sp.n. (Kahramanmaraş), *G.* (*Sibiota*) *tuberosa* sp.n. (Kahramanmaraş), *G. giaurica* (*S.*) sp.n. (Kahramanmaraş), and *G. occaecata* sp.n. (Gaziantep). The previously unkown female genitalia of *G. seleucica* PACE are illustrated. *Tetratropogeostiba* PACE 1984, syn. n. is synonymised with *Sibiota* CASEY 1906. Additional records are reported for several species, among them *G. seleucica*, *G. hamata* ASSING, *G. granulipennis* ASSING, *G. akceliensis* ASSING, and *G. iconiensis* PACE, which were previously known only by their type specimens from their respective type localities. The currently known distributions of *G. oertzeni* (EPPELSHEIM), *G. helvetiorum* PACE, *G. seleucica* PACE, and *G. giaurica* sp.n. are mapped.

K e y w o r d s : Coleoptera, Staphylinidae, Aleocharinae, *Geostiba*, Palaearctic region, Turkey, taxonomy, new species, new records, new synonym, endemism.

1. Introduction

The *Geostiba* species of Turkey have been revised in several steps (ASSING 2000, 2001a, 2001b, 2003). An updated key to the species of the Eastern Mediterranean region is provided by ASSING (2003), indicating a total of 37 species from Turkey, four of which are more widespread and have also been recorded from other countries. In the meantime, more material has been collected during two recent field trips to southern Anatolia, the first of them organised by Michael Schülke and the author in the beginning of April 2004 and the second by Claude Besuchet, Volker Brachat, and Heinrich Meybohm in late April and early May 2004. This material included a total of eight undescribed species, raising the number of *Geostiba* species recorded from Turkey to 45, which again shows that our current knowledge of the Turkish *Geostiba* fauna is still far from complete. Also, additional records of several recently described species are presented; five of them were previously known only by their type specimens. Based on the new data, it can be concluded that – like *G. oertzeni* (EPPELSHEIM), *G. lucens* (BENICK), and *G. rhodiensis* PACE – *G. helvetiorum* PACE is rather widespread in central southern Anatolia.

2. Material

The material referred to in this study is deposited in the following public institutions and private collections:

NHMW ..... Naturhistorisches Museum Wien (H. Schillhammer)
OÖLL ..... Oberösterreichisches Landesmuseum Linz (Biologiezentrum)
cAss ..... author's private collection
cFel ..... private collection B. Feldmann, Münster
cSch ..... private collection M. Schülke, Berlin
cWun ..... private collection P. Wunderle, Mönchengladbach

3. New species, redescriptions, and additional records of *Geostiba* from Turkey

Below, new records are commented on only when the known range of distribution is extended or when they are remarkable in other respects.

Geostiba (*Tropogastrosipalia*) *simulans* PACE

Material examined: Antakya: 3♂♂, 6♀♀, 22 km S Antakya, SW Şenköy, 36°01N, 36°07E, 940 m, pasture with bushes, 2.IV.2004, leg. Assing (cAss); 2 exs. [det. Schülke], same data, but leg. Schülke (cSch); 9♂♂, 13♀♀, 19 km S Antakya, SW Şenköy, 36°03N, 36°07E, 880 m, pasture with bushes, 5.IV.2004, leg. Assing (cAss); 22 exs.[det. Schülke], same data, but leg. Schülke (cSch); 2 exs., Ziyaret Dağı, W Sungur, 35°59'34N, 36°05'18E, 760 m, 21.IV.2004, leg. Brachat & Meybohm (cAss).

Previously, only the male holotype and a recent record from the surroundings of Şenköy were known (ASSING 2003, PACE 1983). The specimens from Şenköy were sifted from roots of grass and herbs near bushes at the edges of two pastures.

Geostiba (*Tropogastrosipalia*) *hamata* ASSING

Material examined: Antakya: 9♂♂, 14♀♀, 8 km SE Iskenderun, 4 km NE Belen, 36°31N, 36°14E, 1130 m, N-exposed pasture, 4.IV.2004, leg. Assing (cAss); 9 exs. [det. Schülke]: same data, but leg. Schülke (cSch); 17♂♂, 14♀♀, 9 km SE Iskenderun, 6 km NE Belen, 36°32N, 36°15E, 1480 m, N-slope, under stones at the edge of a snow-patch, 4.IV.2004, leg. Assing (cAss, cFel); 4 exs. [det. Schülke]: same data, but leg. Schülke (cSch); 1 ex., N Belen, 36°30'33N, 36°13'47E, 1010 m, 23.IV.2004, leg. Brachat & Meybohm (cAss); 7 exs., same data, but 36°31'04N, 36°14'21E, 1140 m (cAss); 2 exs., same data, but 36°31'18N, 36°14'56E, 1310 m (cAss).

The species was described only very recently based on two males from the surroundings of Iskenderun (ASSING 2003). Numerous specimens were found under stones at the edge of a snow-field.

Geostiba (*Tropogastrosipalia*) *granulipennis* ASSING

Material examined: Turkey: Mersin: 26 exs., road to Güzeloluk, S Aydinlar, 05°44'34N, 34°08E, 1380 m, 4.V.2004, leg. Besuchet, Brachat & Meybohm (cAss); 8 exs., Kirobasi-Güzeloluk, 36°45'33N, 33°56'36, 1500 m, 7.V.2004, leg. Brachat & Meybohm (cAss); 87 exs., Kirobasi-Güzeloluk, 1430 m, 36°45'01N, 33°57'51E, 7.-8.V.2004, leg. Besuchet, Brachat &

Meybohm (cAss, cFel, cWun); 19 exs., Güzeloluk-Erdemli, S Aydinlar, 35°44'59N, 34°07'48E, 1350 m, 7.-8.V.2004, leg. Besuchet, Brachat & Meybohm (cAss).

Previously, only the two type specimens of this species from the type locality 30 km to the northwest of Erdemli were known (ASSING 2001b).

Geostiba (*Tropogastrosipalia*) *iconiensis* PACE

Material examined: Turkey: Mersin: 2 exs., road Mut-Karaman, Sertavul Geçidi, 36°55'28N, 33°16'26E, 1570 m, 5.V.2004, leg. Brachat & Meybohm (cAss).

The two specimens were found near the type locality. The species had not been recorded since its description by PACE (1983).

Geostiba (*Tropogastrosipalia*) *akceliensis* ASSING

Material examined: Turkey: Mersin: 10 exs., road Silifke-Gülnar, 36°20'37N, 33°35'17E, 1000 m, 6.V.2004, leg. Brachat & Meybohm (cAss).

Previously, only the type material of this species had become known (ASSING 2001b).

Geostiba (*Tropogastrosipalia*) *adunca* sp.n. (Figs 1, 5-14)

Holotype ♂: TR - Kahramanmaraş [39], 34 km SW Kahramanmaraş, 37°22'57N, 36°40'42E, 1070 m, oak, shrubs, grass, 12.IV.2004, leg. V. Assing / Holotypus ♂ *Geostiba adunca* sp.n. det. V. Assing 2004 (cAss). Paratypes: 2♂♂, 2♀♀: same data as holotype (cAss); 2♀♀: same data, but leg. Schülke (cSch).

Description: Relatively large species, 2.8-3.2 mm. Coloration: forebody more or less distinctly bicoloured; head blackish, pronotum and elytra bright reddish to reddish brown; abdomen dark brown to blackish, with the anterior 2-3 segments and the apex usually slightly lighter; antennae brown; legs testaceous.

Facies as in Fig. 5. Head and pronotum with distinct microreticulation (Fig. 7). Eyes approximately half the length of postgenae in dorsal view (Figs 6, 7).

Pronotum without sexual dimorphism, approximately 1.10 times as wide as long and with broadly and weakly convex, almost truncate posterior margin (Fig. 4).

Elytra in large ♂ with pronounced, strongly elevated sutural carinae extending from apex of scutellum to the middle of suture or slightly beyond (Figs 7), in lateral view rounded (Fig. 6); near lateral margin and posterior external angles somewhat depressed or slightly impressed; microsculpture present, but very shallow; in ♀ without impressions and carina, and with slightly more distinct microsculpture.

Abdomen rather shining, microsculpture of tergites III-VI very shallow or indistinct, that of tergites VI-VIII more distinct.

♂: abdominal tergites III and IV unmodified; process of tergite VII highly distinctive, in antero-dorsal view long, slender, and apically acute (Fig. 9), and in lateral view hook-shaped (Fig. 8); tergite and sternite VIII as in Figs 10-11; median lobe of aedeagus with small, slender, and apically acute cristal process (Fig. 12).

♀: tergite VIII similar to that of ♂; sternite VIII as in Fig. 13; spermatheca as in Fig. 14.

Etymology: The name (Lat., adj.: bent like a hook) refers to the distinctive shape of the process of the ♂ sternite VII.

Intraspecific variation: In small males, the secondary sexual characters on the elytra and the process of tergite VII may be strongly reduced.

Comparative notes: In the key by ASSING (2003), the species would key out at couplet 49, together with *G. hamata* ASSING from the southern parts of the Nur Dağları, quite evidently its sister species, with which it shares a similar external morphology and similar male sexual characters, especially the doubtlessly synapomorphic hook-shaped process of the male tergite VII. From this species, *G. adunca* is readily distinguished by the more slender and tightly contiguous sutural carinae in dorsal view (in *G. hamata* more voluminous and with somewhat diverging apices), as well as by the much more slender (antero-dorsal view) and dorso-ventrally not flattened process of the male tergite VII.

Distribution and bionomics: As can be inferred from the restricted distributions of the other species of the subgenus, *G. adunca* may be endemic to the north of the Nur Dağları, southwest of Kahramanmaraş. The types were sifted from roots of herbs and grass below shrubs near a stream (Fig. 1) at an altitude of 1070 m.

Fig. 1: Type locality of *Geostiba adunca* sp.n.

***Geostiba* (*Tropogastrosipalia*) *sinuosa* sp.n.** (Figs 2, 15-25)

Holotype ♂: TR - Gaziantep [24], 33 km E Osmaniye, 1520 m, NE Nurdağı Geç., 37°08′19N, 36°37′09E, 8.IV.2004, leg. V. Assing / Holotypus ♂ *Geostiba sinuosa* sp.n. det. V. Assing 2004 (cAss). Paratypes: 23♂♂, 34♀♀: same data as holotype (cAss, cFel, cWun); 10♂♂, 19♀♀: same data, but leg. Schülke (OÖLL, cSch); 2♂♂, 2♀♀: TR - Gaziantep [25], 32 km E Osmaniye, 1310 m, NE Nurdağı Geç., 37°07′23N, 36°36′59E, 8.IV.2004, leg. V. Assing (cAss); 2♂♂, 2♀♀: same data, but leg. Schülke (cSch); 1♂, 2♀♀: Osmaniye, Asm., 1000m, 1.-8.5.69, leg. F. Schubert / Paratypus *Geostiba lunata* [sic] sp.n. det. V. Assing 2001 / Paratypus *Geostiba sinuosa* sp.n. det. V. Assing 2004 (NHMW, cAss).

D e s c r i p t i o n : 2.8-3.2 mm. Coloration: forebody weakly bicoloured; head blackish, pronotum and elytra brown; abdomen dark brown to blackish, with the anterior 2-3 segments and the apex usually slightly lighter; antennae brown; legs testaceous.

Facies as in Fig. 15. Head and pronotum with distinct microreticulation. Eyes approximately half the length of postgenae in dorsal view or slightly larger (Figs 16-17).

Pronotum without sexual dimorphism, approximately 1.05-1.10 times as wide as long and with broadly and weakly convex posterior margin (Fig. 16).

Elytra in large ♂ with pronounced, strongly elevated sutural carinae extending from apex of scutellum along the anterior 2/3 of suture (Fig. 16), in lateral view rounded (Fig. 17); without distinct impressions or depressions; puncturation very fine and sparse; microsculpture present, but very shallow; in ♀ without sutural carina, otherwise as in ♂.

Abdomen rather shining, microsculpture of tergites III-VI very shallow or indistinct, that of tergites VI-VIII more distinct.

♂: abdominal tergites III and IV unmodified; process of tergite VII erect, long, apically acute, and laterally compressed (Figs 18-20); tergite and sternite VIII as in Figs 21-22; median lobe of aedeagus with small, slender, and apically acute cristal process (Fig. 23).

♀: tergite VIII similar to that of ♂, but posterior margin not pointed in the middle; sternite VIII as in Fig. 24; spermatheca as in Fig. 25.

E t y m o l o g y : The name (Lat., adj.: with fold) refers to the pronounced sutural carinae on the ♂ elytra.

I n t r a s p e c i f i c v a r i a t i o n : In small males, the secondary sexual characters on the elytra and the process of tergite VII may be strongly reduced.

C o m p a r a t i v e n o t e s : In the key by ASSING (2003), the species would key out at couplet 47, together with *G. lunata* ASSING from Mersin, an extremely similar and closely related species, with which it was previously confounded. Part of the type series of *G. lunata* in fact refer to *G. sinuosa*. A study of the numerous types of *G. sinuosa* revealed that the shorter sutural carinae on the ♂ elytra is a constant difference; even in the largest *G. sinuosa* males, the carinae end at some distance before the elytra posterior margin. In addition, the process of the ♂ tergite VII seems to be longer and more acute on average. Considering the very restricted distributions of other Turkish representatives of *Tropogastrosipalia* it would indeed seem strange if *G. lunata* were present both in the Taurus and in the Nur Dağları.

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 apparently endemic to the northern Nur Dağları to the southeast and east of Osmaniye. The recently collected types were sifted from the roots of grass and herbs in a stand of scattered oak and beech (Fig. 2) and below shrubs at altitudes of approximately 1300 and 1500 m, together with the types of *G. occaecata* sp.n. and with *G. helvetiorum* PACE.

Fig. 2: Type locality of *Geostiba sinuosa* sp.n. and *G. occaecata* sp.n.

***Geostiba* (*Tropogastrosipalia*) *kartalana* sp.n.** (Figs 3, 26-34)

Holotype ♂: TR - Gaziantep [30], 23 km WNW Gaziantep, Kartal Dağı, 1070 m, 37°10′53N, 37°08′23E, 9.IV.2004, leg. V. Assing / Holotypus ♂ *Geostiba kartalana* sp.n. det. V. Assing 2004 (cAss). Paratypes: 7♂♂, 9♀♀: same data as holotype (OÖLL, cAss); 1♀: same data, but leg. Schülke (cSch); 1♂, 1♀: TR Gaziantep (17), Kartal Dag, 1200 m, W Yamacoba / 37°10′N, 37°5′E, (17) 25.4.2004, leg. Brachat & Meybohm (cAss); 1♂: TR - Gaziantep, Kartal Dağı, W Yamacoba, 37°10N, 37°05E, 1200 m, 25.IV.2004, leg. Besuchet (OÖLL).

Description: 2.7-3.1 mm. Coloration: forebody weakly bicoloured; head blackish, pronotum and elytra brown; abdomen dark brown to blackish, with the anterior 2-3 segments and the apex usually slightly lighter; antennae brown; legs testaceous.

Head and pronotum with distinct microreticulation. Eyes approximately half the length of postgenae in dorsal view or slightly larger (Figs 26-28).

Pronotum without sexual dimorphism, approximately 1.05-1.10 times as wide as long and with broadly and weakly convex posterior margin (Fig. 27).

Elytra in large ♂ with pronounced, strongly elevated (lateral view), very slender (dorsal view) sutural carinae extending from apex of scutellum along the anterior 2/3 of suture (Fig. 27), posteriorly abruptly sloping down in lateral view (Figs 28-29); without distinct impressions or depressions; puncturation very fine and sparse; microsculpture present, but very shallow; in ♀ without sutural carina, otherwise as in ♂.

Abdomen rather shining, microsculpture of tergites III-VI very shallow or indistinct, that of tergites VI-VIII more distinct.

♂: abdominal tergites III and IV unmodified; process of tergite VII erect, long, apically acute, and laterally compressed (Fig. 30); tergite and sternite VIII as in Figs 31-32; median lobe of aedeagus with small, slender, and apically acute cristal process (Fig. 33).

♀: tergite VIII similar to that of ♂, but posteriorly not pointed in the middle; sternite VIII similar to that of *G. sinuosa*; spermatheca as in Fig. 34.

Etymology: The name (adj.) is derived from the name of the mountain range where the type locality is situated.

Intraspecific variation: In small males, the secondary sexual characters on the elytra and the process of tergite VII may be strongly or completely reduced.

Comparative notes: The species is extremely similar to *G. lunata* ASSING and *G. sinuosa* sp.n. From both species, it is distinguished especially by the shape of the sutural carinae on the elytra, which abruptly slope down posteriorly (lateral view), whereas in the other two species they are evenly and smootly rounded. In addition, *G. kartalana* is, on average, somewhat smaller than *G. sinuosa* and the cristal process is of slightly different shape.

Distribution and bionomics: The species is probably endemic to the Kartal Dağı, a mountain range to the east of the Nur Dağları. The type specimens were collected by sifting roots of grass and herbs in the shade of oak trees (*Q. ilex*), bushes, and shrubs at an altitude of almost 1100 m (Fig. 3).

Fig. 3: Type locality of *Geostiba kartalana* sp.n.

***Geostiba* (*Tropogastrosipalia*) *marasica* sp.n.** (Figs 35-43)

Holotype ♂: TR - Kahramanmaraş [24], 30 km W Baskonus Yaylasi, 1270 m, 37°33´58N, 36°34´10E, 28.IV.2004, leg. Brachat & Meybohm / Holotypus ♂ *Geostiba marasica* sp.n. det. V. Assing 2004 (cAss). Paratypes: 5♂♂, 7♀♀: same data as holotype (cAss); 2♀♀: same data, but leg. Besuchet (OÖLL, cAss).

D e s c r i p t i o n : 2.7-3.1 mm. Coloration variable: head light to dark brown; pronotum and elytra reddish brown to brown; abdomen dark brown to blackish, with the apex slightly lighter; legs and antennae yellowish to yellowish brown.

Facies as in Fig. 35. Head and pronotum with distinct microreticulation. Eyes small, approximately 0.35-0.40 times the length of postgenae in dorsal view (Fig. 36).

Pronotum with moderate sexual dimorphism, in large ♂ rather large, almost 1.3 times as wide as head, 1.05-1.10 times as long as wide, and with moderately pointed posterior margin (Fig. 36); in ♀ relatively smaller, 1.20-1.25 times as wide as head, approximately as wide as long, and with simply convex posterior margin.

Elytra in large ♂ with not very pronounced, relatively short (about half the length of suture) sutural carinae near apex of scutellum, with deep and extensive impression of variable shape, and with weakly granulose puncturation (Fig. 36); in ♀ with shallow impressions and with fine, non-granulose puncturation.

Abdomen moderately shining, microsculpture of tergites III-VI shallow, but distinct, that of tergites VII-VIII more distinct.

♂: abdominal tergites III and IV with indistinct median tubercle, which may be obsolete; process of tergite VII erect, long, apically bluntly pointed (Figs 37-38); posterior margin of tergite VIII in the middle weakly pointed (Fig. 39); sternite VIII more oblong than in ♀ (Fig. 40); median lobe of aedeagus with long, slender, and apically acute cristal process (Fig. 41).

♀: posterior margin of tergite VIII not pointed in the middle (Fig. 42); sternite VIII transverse similar to that of *G. sinuosa*; spermatheca as in Fig. 43.

E t y m o l o g y : The name (adj.) is derived from Maras, the ancient name of Kahramanmaraş.

I n t r a s p e c i f i c v a r i a t i o n : In small males, the secondary sexual characters on the elytra and the process of tergite VII may be strongly or completely reduced. The tubercles on the male abdominal tergites III and IV may be indistinct or obsolete.

C o m p a r a t i v e n o t e s : *Geostiba marasica* is similar to and apparently the sister species of *Geostiba balkarensis* ASSING (type locality: Mersin: Çamlıyayla). From this species, it is distinguished by the different shape of the ♂ pronotum (in *G. balkarensis*, the posterior margin is laterally truncate and in the middle abruptly pointed), the broader sutural carinae on the ♂ elytra, and by the deeper and more irregularly shaped impression on the ♂ elytra.

D i s t r i b u t i o n a n d b i o n o m i c s : As can be inferred from the restricted distributions of other species of the subgenus, *G. marasica* may be endemic to the mountains to the southwest of Kahramanmaraş. The types were collected by sifting leaf litter in a forest with *Abies* and *Cedrus* with some scattered deciduous trees (MEYBOHM pers. comm.) at an altitude of 1270 m.

Geostiba (*Sipalotricha*) *lucens* (BENICK)

M a t e r i a l e x a m i n e d : Mersin: 1 ex., road to Güzeloluk, S Aydinlar, 35°44′34N, 34°08E, 1380 m, 4.V.2004, leg. Brachat & Meybohm (cAss); 1 ex., same data, but 35°43′10, 34°09′39E, 1220 m (cAss); 1 ex., Kirobasi-Güzeloluk, 36°45′01N, 33°57′51E, 1430 m, 7.-8.V.2004, leg. Besuchet (cAss).

The distribution of this species in Turkey is mapped by ASSING (2003)

***Geostiba* (*Sipalotricha*) *ahirana* sp.n.** (Figs 4, 44-55)

Holotype ♂: TR - Kahramanmaraş [36], Ahır Dağı, 1580 m, 11 km NE Kahramanmaraş, 37°40′48N, 37°01′49E, 11.IV.2004, leg. V. Assing. / Holotypus ♂ *Geostiba ahirana* sp.n. det. V. Assing 2004 (cAss). Paratypes: 1♂, 3♀♀: same data as holotype (cAss).

Description: 2.5-2.8 mm. Coloration: reddish to brownish yellow with the preapical abdominal segments slightly infuscate.

Facies as in Fig. 44. Head and pronotum with distinct, but shallow microreticulation. Eyes moderately small, slightly less than half the length of postgenae in dorsal view, distinctly larger than antennomere IV in cross-section (Fig. 45).

Pronotum approximately 1.15-1.20 times as wide as long and about 1.10-1.15 times as wide as head (Fig. 45).

Elytra slightly wider than pronotum and at suture 0.65-0.70 times as long as pronotum; with distinct sexual dimorphism; suture of ♂ elytra elevated, more so anteriorly than posteriorly; this elevation with granulose puncturation; disc of elytra with extensive, but shallow impression and with weakly granulose puncturation (Fig. 45); in ♀ without elevation and impressions, and with non-granulose puncturation. Hind wings reduced.

Abdomen slightly wider than elytra (Fig. 44), with sparse and fine puncturation, and with microsculpture composed of transverse meshes on anterior tergites and of a mixture of isodiametric and short transverse meshes on posterior tergites; tergite VII posteriorly without palisade fringe.

♂: tergite VII in posterior half with sparse and somewhat granulose puncturation; posterior margin of tergite VIII more or less truncate and with sparse marginal pubescence (Fig. 46; sternite VIII posteriorly convex (Fig. 47); median lobe of aedeagus with long spines in internal sac (Figs 48-50); apical lobe of paramere as in Fig. 51.

♀: tergite VII unmodified, puncturation in posterior half as fine as that of anterior half; posterior margin of tergite VIII broadly convex, marginal setae moderately sparse, but distinctly denser than in ♂ (Fig. 52); sternite VIII in the middle weakly concave, with moderately modified marginal setae (Fig. 53); spermatheca as in Figs 54-55.

Etymology: The name (adj.) is derived from the name of the mountain range where the type locality is situated.

Comparative notes: The species is similar to *G. itschiliensis* ASSING (western Mersin) and *G. emirdaghensis* ASSING (Afyon), together with which it would key out at couplet 75 of the key in ASSING (2003). From both species, *G. ahirana* is readily distinguished by larger size, slightly darker coloration, the modifications of the ♂ elytra, the different shape and the long internal structures of the median lobe of the aedeagus, and by the slightly different shape of the spermatheca; from *G. emirdaghensis* it is additionally distinguished by distinctly larger eyes.

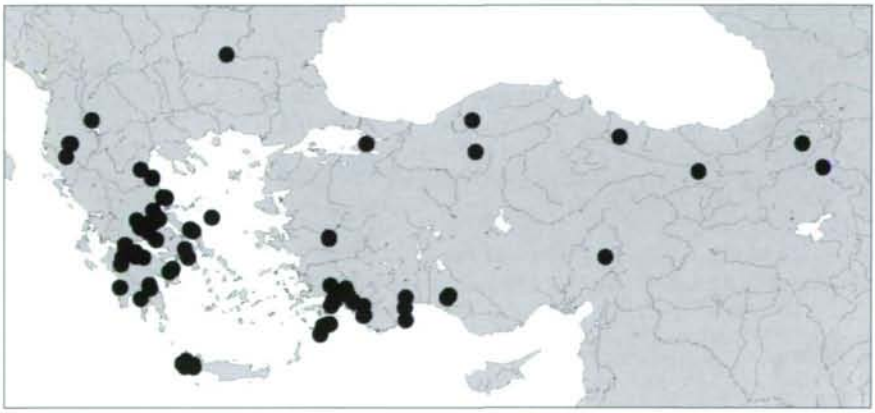
Distribution and bionomics: The species is probably endemic to the Ahır Dağı, a mountain range in the direct vicinity of Kahramanmaraş. The types were collected by sifting roots of scattered grass, herbs, and shrubs in the shade of rocks at an altitude of almost 1600 m (Fig. 4). One dissected female had a mature egg in the ovaries.

Fig. 4: Type locality of *Geostiba ahirana* sp.n.

***Geostiba* (*Sibiota*) *oertzeni* (EPPELSHEIM)** (Map 1)

Material examined: Kahramanmaraş: 7 exs., 50 km NW Kahramanmaraş, Pass N Tekir, S Göksun, 37°56′56N, 36°34E, 1400-1550 m, 26.IV.2004, leg. Besuchet (cAss, cFel).

The above record extends the known range of this species further to the southeast by more than 600 km. In central southern Anatolia, *G. oertzeni* is apparently much rarer than in the more western parts of Turkey. In the above locality it was collected together with *G. helvetiorum*. The currently known distribution is summarised in Map 1.



Map 1: Distribution of *Geostiba oertzeni* (EPPELSHEIM) based on revised records.

***Geostiba* (*Sibiota*) *helvetiorum* PACE** (Map 2)

Material examined: Antakya: 3♀♀, 10 km S Iskenderun, W Soğukoluk, 36°29°, 36°09E, 760 m, ruderal pine forest with oak undergrowth, 4.IV.2004, leg. Assing, Schülke (cAss, cSch); 38♂♂, 43♀♀, 9 km SE Iskenderun, 6 km NE Belen, 36°32N, 36°15E, 1480 m, N-slope, under stones at the edge of a snow-patch, 4.IV.2004, leg. Assing (cAss, cFel); 19 exs. [det Schülke], same data, but leg. Schülke (cSch); 3♂♂, 6♀♀, 9 km SE Iskenderun, 5 km NE Belen, 36°31N, 36°15E, 1240 m, mixed oak and beech forest, sifted litter, 4.IV.2004, leg. Assing (cAss); 1 ex. [det Schülke], same data, but leg. Schülke (cSch); 9 exs., N Belen, 36°31'18N, 36°14'56E, 1310 m, 23.IV.2004, leg. Brachat & Meybohm (cAss). Adana: 37♂♂, 32♀♀, 13 km E Osmaniye, NW Yarpuz, 37°08N, 36°25E, 930 m, beech and *Platanus* forest; 6.IV.2004, leg. Assing (cAss); 32 exs. [det Schülke], same data, but leg. Schülke (cSch); 1♂, 1♀, 10 km E Osmaniye, NW Yarpuz, 37°05N, 36°22E, 900 m, mixed oak and beech forest, 6.IV.2004, leg. Assing (cAss); 5 exs. [det Schülke], same data, but leg. Schülke (cSch); 15 exs., Yarpuz, 37°03'53N, 36°24'29E, 920 m, 30.IV.2004, leg. Besuchet, Brachat & Meybohm (cAss, cFel); 66 exs., SE Osmaniye, Zorkum, 36°58'08N, 36°21'39E, 1670 m, 29.IV.2004, leg. Besuchet, Brachat & Meybohm (cAss, cFel). Gaziantep: 2♀♀, 33 km E Osmaniye, NE Nurdağı Geç., 37°08N, 36°07E, 1520 m, NW slope with oak and beech, roots of grass and herbs sifted, 8.IV.2004, leg. Assing (cAss). Kahramanmaraş: 11♂♂, 21♀♀, 50 km NW Kahramanmaraş, Pass N Tekir, S Göksun, 37°57N, 36°34E, 1360 m, NW-slope with old cedar, sifted, 10.IV.2004, leg. Assing (cAss); 7 exs. [det Schülke], same data, but leg. Schülke (cSch); 57 exs., Pass N Tekir, S Göksun, 37°56'56N, 36°34E, 1400-1550 m, 26.IV.2004, leg. Besuchet, Brachat & Meybohm (cAss, cFel).

This species was previously known only from the northern parts of the Nur Dağları. The new records suggest that it is apparently widespread in central southern Anatolia (Map 2). One dissected female collected on 6 April had a mature egg in the ovaries.

***Geostiba* (*Sibiota*) *tuberosa* sp.n.** (Figs 56-64)

Holotype ♂: TR - Kahramanmaraş [24], 30 km W Baskonus Yaylasi, 1270 m, 37°33'58N, 36°34'10E, 28.IV.2004, leg. Brachat & Meybohm / Holotypus ♂ *Geostiba tuberosa* sp.n. det. V. Assing 2004 (cAss). Paratypes: 5♂♂, 11♀♀: same data as holotype (cAss); 17 exs.: same data, but leg. Besuchet (OÖLL, cAss); 1♀: Kahramanmaraş [25], 30 km W Baskonus Yaylasi, 1500 m, 37°33'30N, 36°35'12E, 28.IV.2004, leg. Brachat & Meybohm (cAss).

Description: 2.1-2.6 mm. Coloration: uniformly reddish yellow, with the legs testaceous.

Facies as in Fig. 56. Head indistinctly oblong; with distinct microreticulation and with extremely fine puncturation (Fig. 57). Eyes strongly reduced to minute rudiments without ommatidia and pigmentation (Fig. 58).

Pronotum about 1.15 times as wide as head and 1.15 times as wide as long; microreticulation similar to that of head; puncturation extremely fine, not discernible in the microsculpture (Fig. 57).

Elytra 1.10-1.15 times as wide and at suture about 0.6 times as long as pronotum; with sexual dimorphism; in ♂ on either side of suture with more or less circular tubercle shortly behind the middle and with slightly more distinct puncturation (Fig. 57). Hind wings reduced. Mesotarsus distinctly 5-jointed.

Abdomen about 1.1 times as wide as elytra, widest at segment VI (Fig. 56); with sparse and extremely fine puncturation, and with microsculpture predominantly composed of transverse meshes; segments III-VI without sexual dimorphism; tergite VII posteriorly without palisade fringe.

♂: tergite VII in posterior half with pair of posteriorly converging carinae; tergite VIII

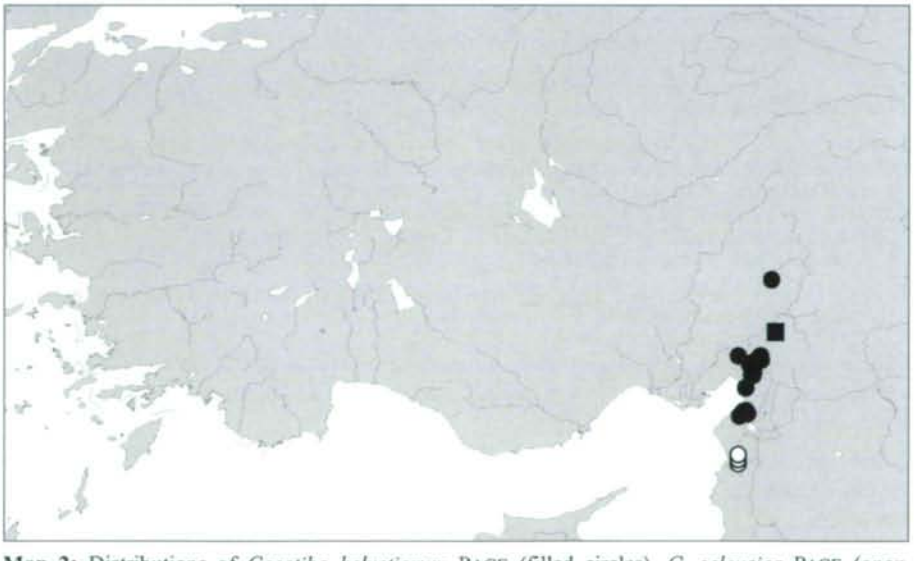
posteriorly weakly convex; posterior margin of sternite VIII broadly convex (Fig. 59); median lobe of aedeagus shaped as in Figs 60-61; apical lobe of paramere long and slender (Fig. 62).

♀: tergite VIII shaped as in ♂; posterior margin of sternite VIII broadly convex, with distinctly modified marginal setae, and in the middle with or without indistinct concavity (Fig. 63); spermatheca as in Fig. 64.

Etymology: The name (Lat., adj.) refers to the pair of tubercles on the ♂ elytra..

Comparative notes: Based on the presence of a pair of carinae on the male abdominal tergite VII, the species is referred to the subgenus *Sibiota*. From all other *Sibiota* species, it is distinguished by the sexual characters, especially the modifications of the male elytra and the shape of the aedeagus, from almost all the species of the subgenus also by the strongly reduced eyes without ommatidia.

Distribution and bionomics: As can be inferred from the restricted distributions of other microphthalmous *Geostiba* species, *G. tuberosa* may be endemic to the mountains to the southwest of Kahramanmaraş. The types were collected by sifting leaf litter in a forest with *Abies* and *Cedrus* with some scattered deciduous trees (MEYBOHM pers. comm.) at altitudes of 1270 and 1500 m, together with the types of *G. marasica* sp.n.



Map 2: Distributions of *Geostiba helvetiorum* PACE (filled circles), *G. seleucica* PACE (open circles), and *G. giaurica* sp.n. (square), based on revised records.

***Geostiba* (*Sibiota*) *seleucica* PACE** (Figs 65-66, Map 2)

Material examined: Antakya: 1♂, 1♀, 19 km S Antakya, SW Şenköy, 36°02N, 36°07E, 920 m, oak and laurel litter, 2.IV.2004, leg. Assing (cAss); 1♀, SW Şenköy, 36°02N, 36°07E, 880 m, N-exposed pasture, 5.IV.2004, leg. Schülke (cSch); 4♂♂, 11♀♀, 22 km S Antakya, SW Şenköy, 36°01N, 36°07E, 940 m, oak and laurel litter, 2.IV.2004, leg. Assing (cAss); 4 exs. [det Schülke], same data, but leg. Schülke (cSch).

Despite the absence of a pair of carinae on the male abdominal tergite VII, the species is here attributed to the subgenus *Sibiota* CASEY. For more details see comments below *G. giaurica*. Previously, only the male holotype of this species was known. The spermatheca and ♀ abdominal sternite VIII are illustrated in Figs 65-66. The above specimens were sifted from deep litter of oak and laurel. The known distribution of this endemic species is illustrated in Map 2.

***Geostiba* (*Sibiota*) *giaurica* sp.n.** (Figs 67-76, Map 2)

Holotype ♂: TR - Kahramanmaraş [21], ca. 35 km SW Doluca, 1200 m, 37°22'03N, 36°40'24E, 27.IV.2004, Besuchet / Holotypus ♂ *Geostiba giaurica* sp.n. det. V. Assing 2004 (cAss). Paratypes: 1♀ [terminalia lost]: same data as holotype (cAss); 1♂, 1♀: same data, but 1280 m, leg. Brachat & Meybohm (cAss).

Description: 2.5-2.8 mm. Coloration: uniformly reddish to brownish yellow, with the appendages pale yellow.

Facies as in Fig. 67. Head weakly oblong, with very shallow microsculpture and rather shining; puncturation extremely fine, barely noticeable (Fig. 69). Eyes strongly reduced to minute rudiments without ommatidia and pigmentation (Fig. 70).

Pronotum only slightly (1.1 ×) wider than head and about 1.1 times as wide as long; microreticulation very distinct, much more so than that of head; puncturation extremely fine, not discernible in the microsculpture (Fig. 69).

Elytra 1.10-1.15 times as wide and at suture barely about 0.6 times as long as pronotum; with distinct sexual dimorphism; suture in large ♂ strongly elevated; this elevation smooth, broader and higher anteriorly than posteriorly; disc of elytra with extensive impression and with indistinctly granulose puncturation (Fig. 68); in ♀ without elevation and impressions, and with non-granulose puncturation. Hind wings reduced. Mesotarsus 5-jointed (Fig. 71).

Abdomen 1.15-1.20 times as wide as elytra, widest at segment VI (Fig. 67); with sparse and extremely fine puncturation, and with microsculpture predominantly composed of transverse meshes; segments III-VII without sexual dimorphism; tergite VII posteriorly without palisade fringe.

♂: posterior margins of tergite and sternite VIII broadly convex; median lobe of aedeagus shaped as in Figs 72-73, with moderately long flagellum; apical lobe of paramere apically acute and with one long and three very short setae (Fig. 74).

♀: tergite VIII posteriorly weakly convex; posterior margin of sternite VIII in the middle weakly concave, with distinctly modified marginal setae (Fig. 75); spermatheca as in Fig. 76.

Etymology: The name (adj.) is derived from Giaur Dagh, the ancient name of the mountain range where the type locality is situated.

Intraspecific variation: In the smaller ♂ paratype, the modifications of the elytra are much less pronounced than in the holotype; the sutural elevation is only weakly indicated.

Comparative notes and systematics: Based on external and sexual characters, *Geostiba giaurica* is apparently most closely related to *G. seleucica*. The similarities especially in the male primary and secondary sexual characters with some species of the subgenus *Sibiota* (e. g. *G. tuberosa*, see above) suggest that the ab-

sence of a pair of carinae on the male abdominal tergite VII is most likely to be a result of a secondary reduction. Consequently, both *G. seleucica* and *G. giaurica* are here attributed to the subgenus *Sibiota*. Similarly, *Geostiba loebliana* PACE from Israel was attributed to a subgenus of its own, *Tetratropogeostiba*, by PACE (1984) based on an autapomorphy. Since, however, other characters suggest a close relationship to species of *Sibiota*, the species is here referred to that subgenus, too. This renders *Tetratropogeostiba* PACE a junior synonym.

In the key by ASSING (2003), *G. giaurica* would key out at couplet 5 with *Geostiba seleucica*, from which it is distinguished by the sexual characters, particularly the modified male elytra (in *G. seleucica* unmodified) and the different shape of the median lobe of the aedeagus, especially in lateral aspect.

Distribution and bionomics: The species is probably endemic to the mountains to the southwest of Kahramanmaraş (Map 2). The types were collected by sifting leaf litter under pine and oak trees at an altitude of 1200-1300 m (MEYBOHM pers. comm.).

Geostiba occaecata **sp.n.** (Figs 2, 77-88)

Holotype ♂: TR - Gaziantep [24], 33 km E Osmaniye, 1520 m, NE Nurdağı Geç., 37°08′19N, 36°37′09E, 8.IV.2004, leg. V. Assing / Holotypus ♂ *Geostiba occaecata* sp.n. det. V. Assing 2004 (cAss). Paratypes: 1♂: same data as holotype (cAss); 2♀♀: Turkey (Adana/Gaziantep), 32 km E Osmaniye, NE Nurdağı Geç., 37°07′23′′N, 36°36′59′′E, 1310 m, dry N-slope with shrubs, 8.IV.2004, leg. M. Schülke [T04-25] (cSch, cAss).

Description: Very small species, 1.8-2.3 mm. Coloration: uniformly pale yellowish.

Facies as in Fig. 77. Head weakly, but noticeably (about 1.1 ×) oblong, with distinct microreticulation and subdued shine; puncturation extremely fine, barely noticeable (Fig. 78). Eyes strongly reduced to minute rudiments without ommatidia and pigmentation (Fig. 79).

Pronotum narrow, about 1.1 times as wide as head and very weakly transverse, about 1.05 times as wide as long; microreticulation very distinct, even more so than that of head; puncturation extremely fine, not discernible in the microsculpture (Fig. 78).

Elytra approximately as wide and at suture less than 0.6 times as long as pronotum; with weak sexual dimorphism; in ♂ with more distinct microsculpture and posteriorly weakly elevated suture (Fig. 78). Hind wings reduced. Mesotarsus 4-jointed, i. e. fourth and fifth tarsomere fused (Fig. 80).

Abdomen 1.10-1.20 times as wide as elytra, widest at segments VI/VII (Fig. 77); with sparse and extremely fine puncturation and with very shallow microsculpture; segments III, IV, and VII with sexual dimorphism; tergite VII posteriorly without palisade fringe.

♂: tergite III with rather large, dorsally smooth and shining median elevation in posterior half (Fig. 77); tergite IV with minute median elevation; posterior margin of tergite VII with stout, short, and erect spine-like median process (Figs 81-82); tergite VIII with weakly convex posterior margin; sternite VIII obtusely pointed posteriorly; median lobe of aedeagus shaped as in Figs 83-84, with moderately long flagellum and with short transparent spines in internal sac; apical lobe of paramere slender, with one long and three short setae (Fig. 85).

♀: tergite VIII posteriorly weakly convex; posterior margin of sternite VIII slightly projecting posteriad, in the middle weakly concave, with distinctly modified marginal setae (Fig. 86); spermatheca as in Figs 87-88.

Etymology: The name (Lat., adj.: blinded) refers to the strongly reduced eyes.

Intraspecific variation: In the ♂ paratype, the modifications of the ♂ tergites III and IV are less pronounced than in the holotype.

Comparative notes: Based on external characters (size, shape and proportions, reduced eyes, reduced pigmentation, fused fourth and fifth mesotarsomeres), as well as on the similar sexual characters, *G. occaecata* is closely related to, possibly the sister species of *G. confusa* ASSING, which is currently known only from the Karatepe National Park, north of Osmaniye. It is distinguished from that species by the more distinct microsculpture of the forebody, the slightly narrower pronotum (in relation to head), the shallower microscupture of the abdomen, and the different male sexual characters (but note that in *G. confusa*, the modifications of the ♂ elytra and the ♂ abdomen are often obsolete), the absence of tubercles near the scutellum, the absence of a lateral fold of the elytra, the more pronounced modifications of the male abdominal tergite III, the more massive process of the male tergite VII, the different position of the process (in *G. confusa* directly at the posterior margin), and the somewhat different shape of the aedeagus, especially in lateral view. For illustrations of the sexual characters of *G. confusa* see ASSING (2001b).

Distribution and bionomics: The type locality is situated in the northern extension of the Nur Dağları, where the species is probably endemic, as is suggested by the reduced wings and eyes. The types were collected by sifting the roots of grass and herbs on a northwest-slope with oak and beech (Fig. 2), as well as by sifting the litter of shrubs on a dry north slope at elevations of 1520 m and 1310 m, respectively.

Acknowledgements

I am most grateful to C. Besuchet, V. Brachat and H. Meybohm for the most generous gift of their staphylind by-catches collected during their 2004 field trip to Turkey. Michael Schülke kindly provided the photographs. Benedikt Feldmann proof-read the manuscript.

Zusammenfassung

Neun *Geostiba*-Arten werden beschrieben und abgebildet: *Geostiba* (*Tropogastrosipalia*) *sinuosa* sp.n. (Gaziantep), *G.* (*T.*) *kartalana* sp.n. (Gaziantep), *G.* (*T.*) *adunca* sp.n. (Kahramanmaraş), *G.* (*T.*) *marasica* sp.n. (Kahramanmaraş), *G.* (*Sipalotricha*) *ahirana* sp.n. (Kahramanmaraş), *G.* (*Sibiota*) *tuberosa* sp.n. (Kahramanmaraş), *G. giaurica* (*S.*) sp.n. (Kahramanmaraş), and *G. occaecata* sp.n. (Gaziantep). Die bislang unbekannten weiblichen Genitalien von *G. seleucica* PACE werden abgebildet. *Tetratropogeostiba* PACE 1984, syn. n. wird mit *Sibiota* CASEY 1906 synonymisiert. Für eine Reihe von Arten werden weitere Nachweise gemeldet, darunter *G. seleucica*, *G. hamata* ASSING, *G. granulipennis* ASSING, *G. akceliensis* ASSING sowie *G. iconiensis* PACE, von denen bisher nur die Typen und die Typuslokalitäten bekannt waren. Für *G. oertzeni* (EPPELSHEIM), *G. helvetiorum* PACE, *G. seleucica* PACE und *G. giaurica* sp.n.werden Verbreitungskarten erstellt.

References

ASSING V. (2000): The Turkish species of *Geostiba* s.str. THOMSON 1858 (Coleoptera: Staphylinidae, Aleocharinae). — Linzer biol. Beitr. **32** (2): 1033-1042.

ASSING V. (2001a): A revision of the Turkish species of *Geostiba* THOMSON 1858 and *Tropimenelytron* PACE 1983 (Coleoptera: Staphylinidae, Aleocharinae). — Linzer biol. Beitr. **33**: 137-185.

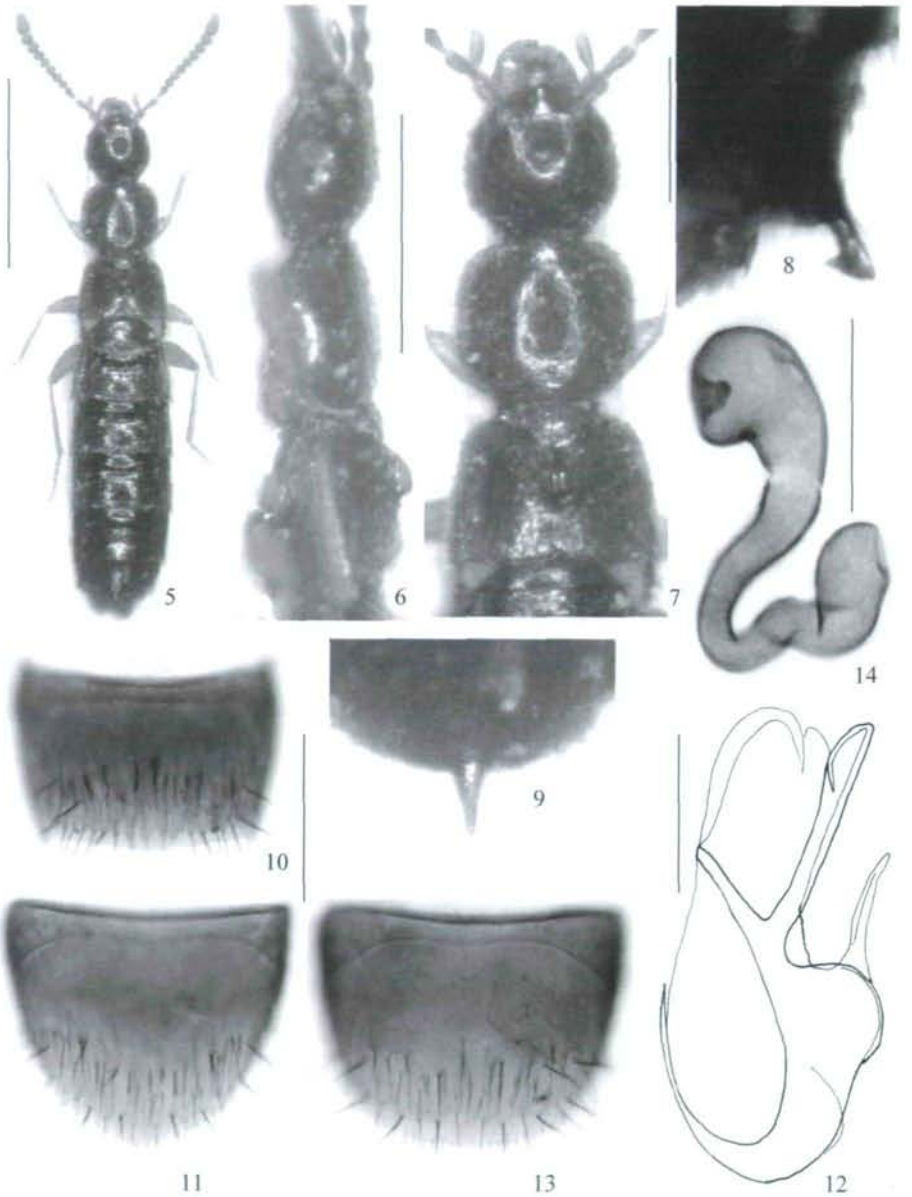
ASSING V. (2001b): A revision of the species of *Geostiba* THOMSON of the Balkans and Turkey. V. New species, a new synonym, new combinations, and additional records (Coleoptera: Staphylinidae, Aleocharinae). — Linzer biol. Beitr. **33** (2): 686-707.

ASSING V. (2003): A revision of the species of *Geostiba* THOMSON of the Eastern Mediterranean. VI (Coleoptera: Staphylinidae, Aleocharinae) — Linzer biol. Beitr. **35** (1): 103-129.

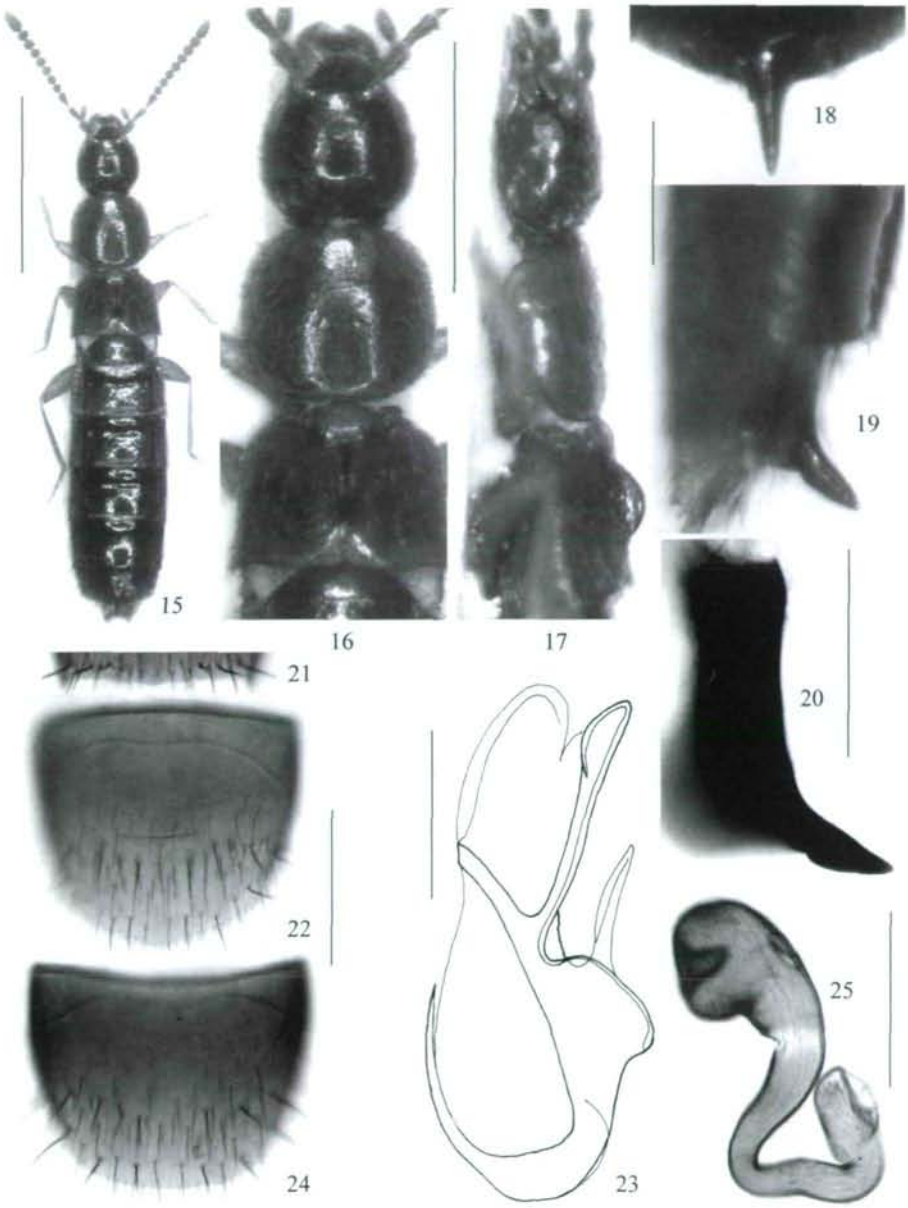
PACE R. (1983): Specie del genere *Geostiba* THOMSON raccolte dal Dr. C. Besuchet e collaboratori in Marocco, nella Penisola Iberica e Balcanica, e nel Medio Oriente (Coleoptera, Staphylinidae). — Revue suisse Zool. **90**: 3-46.

PACE R. (1984): Nuove Aleocharinae microftalme mediterranee e dell'Iran, del Muséum d'Histoire naturelle di Ginevra (Coleoptera Staphylinidae). — Arch. Sc. Genève **37**: 211-219.

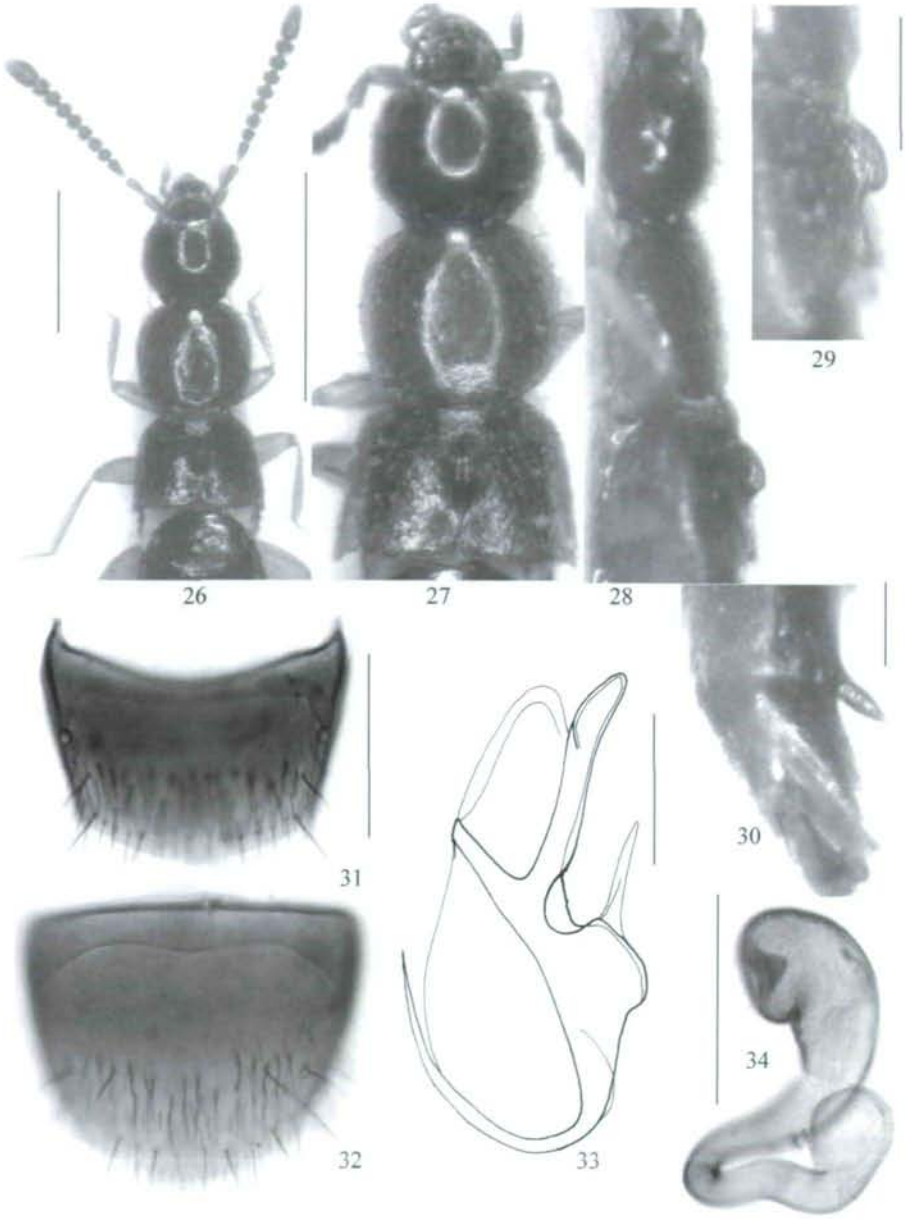
Author's address: Dr. Volker ASSING
Gabelsbergerstr. 2
D-30163 Hannover, Germany
E-Mail: vassing.hann@t-online.de



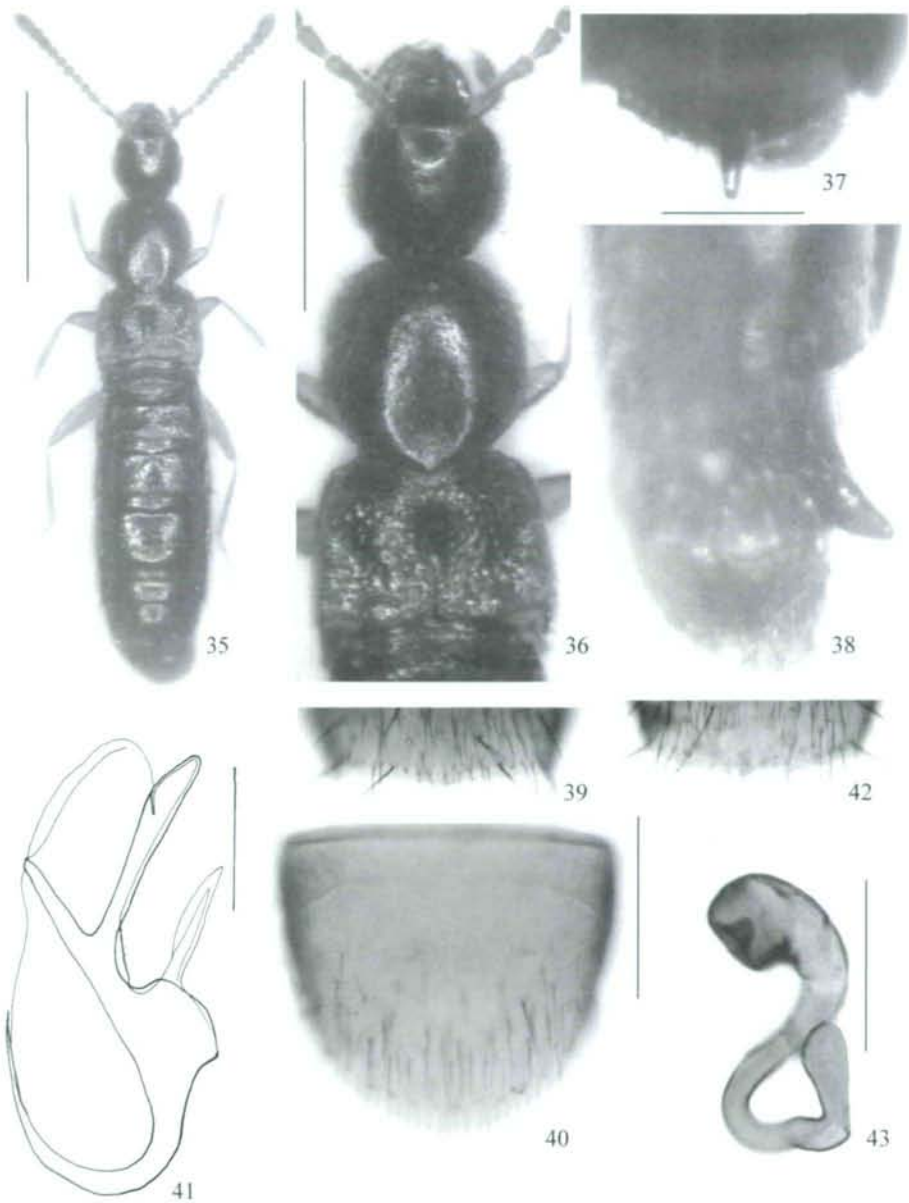
Figs 5-14: *Geostiba adunca* sp.n. (5-9: holotype): **5** – facies; **6** – ♂ forebody in lateral view; **7** – ♂ forebody in dorsal view; **8** – ♂ tergite VII in lateral view; **9** – ♂ tergite VII in antero-dorsal view; **10** – ♂ tergite VIII; **11** – ♂ sternite VIII; **12** – median lobe of aedeagus; **13** – ♀ sternite VIII; **14** – spermatheca. Scale bars: 5: 1.0 mm; 6-7: 0.5 mm; 8-11, 13: 0.2 mm; 12, 14: 0.1 mm.



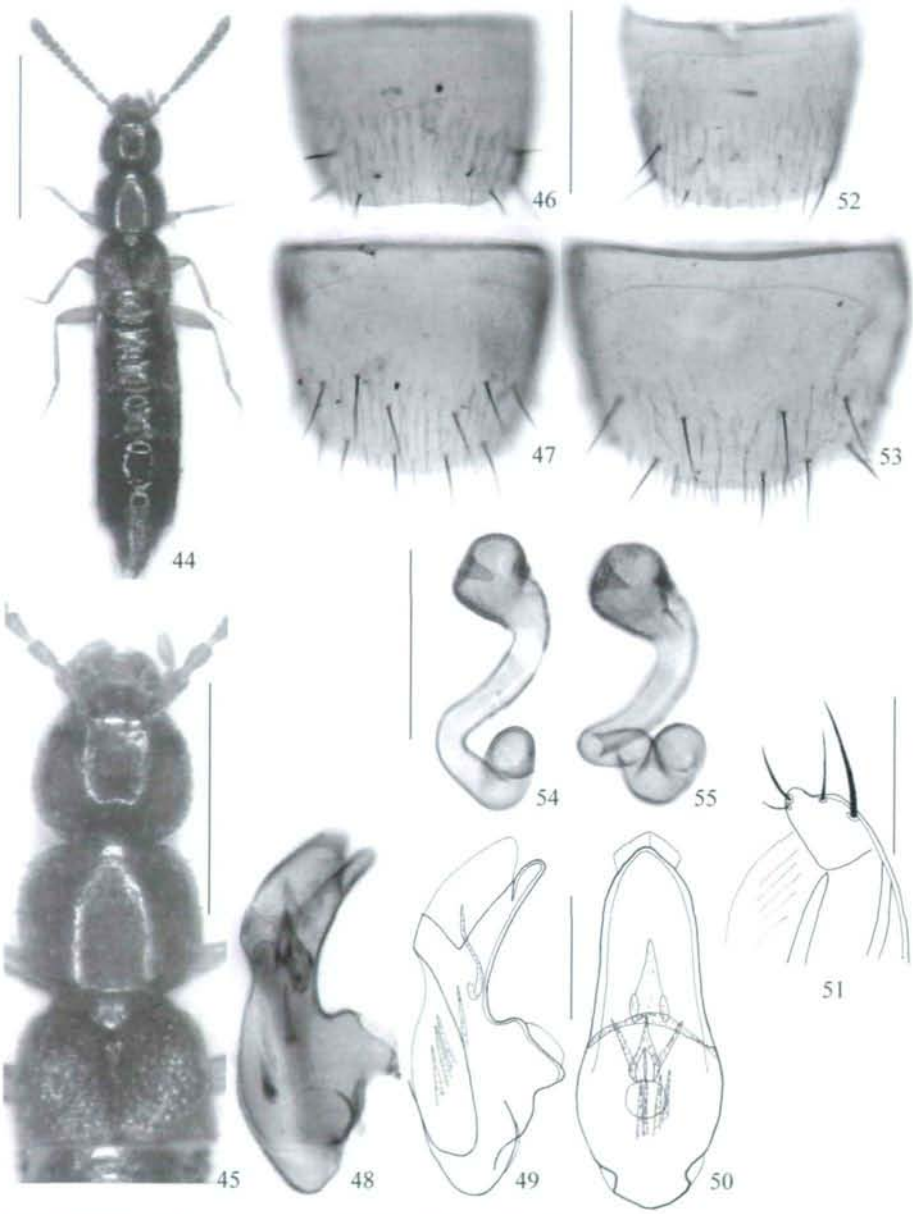
Figs 15-25: *Geostiba sinuosa* sp.n. (15-19: holotype): **15** – facies; **16** – ♂ forebody in dorsal view; **17** – ♂ forebody in lateral view; **18** – process of ♂ tergite VII in antero-dorsal view; **19** – apex of ♂ abdomen in lateral view; **20** – ♂ tergite VII in lateral view; **21** – posterior margin of ♂ tergite VIII; **22** – ♂ sternite VIII; **23** – median lobe of aedeagus; **24** – ♀ sternite VIII; **25** – spermatheca. Scale bars: 15: 1.0 mm; 16-17: 0.5 mm; 18-22, 24: 0.2 mm; 23, 25: 0.1 mm.



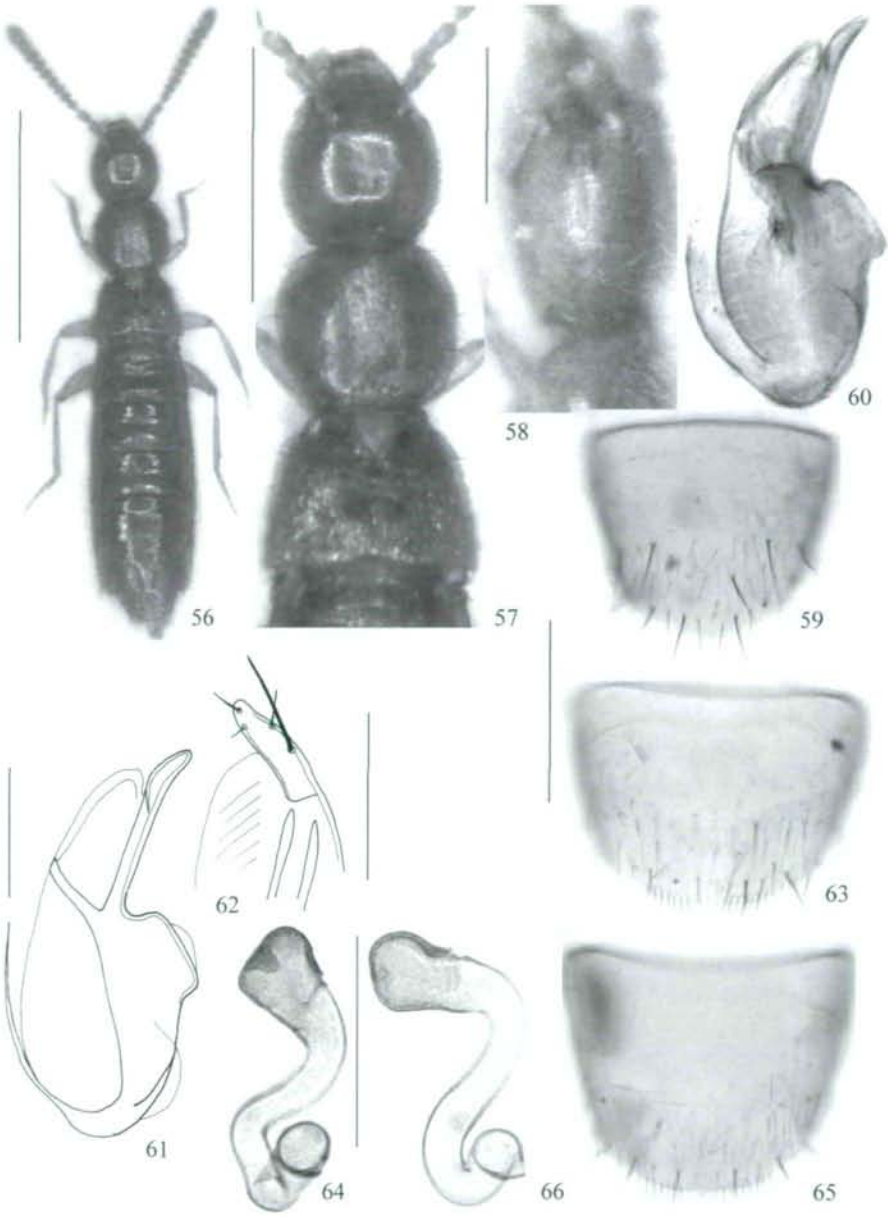
Figs 26-34: *Geostiba kartalana* sp.n. (27, 29: holotype): **26** – forebody; **27** – ♂ forebody in dorsal view; **28** – ♂ forebody in lateral view; **29** – ♂ elytra in lateral view; **30** – ♂ abdominal apex in lateral view; **31** – ♂ tergite VIII; **32** – ♂ sternite VIII; **33** – median lobe of aedeagus; **34** – spermatheca. Scale bars: 26-28: 0.5 mm; 29-32: 0.2 mm; 33-34: 0.1 mm.



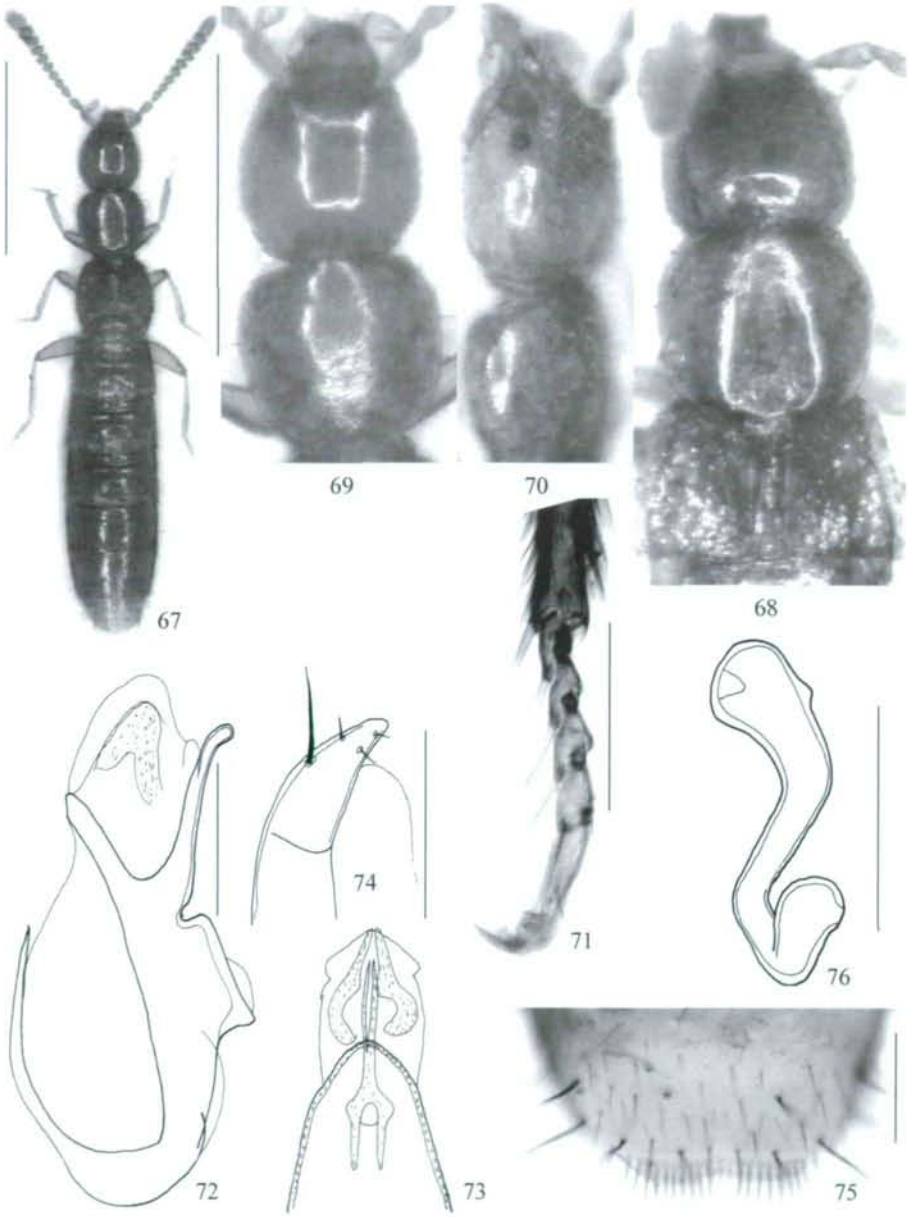
Figs 35-43: *Geostiba marasica* sp.n. (35-38: holotype): **35** – facies; **36** – ♂ forebody in dorsal view; **37** – ♂ tergite VII in antero-dorsal view; **38** – ♂ tergite VII in lateral view; **39** – posterior margin of ♂ tergite VIII; **40** – ♂ sternite VIII; **41** – median lobe of aedeagus; **42** – posterior margin of ♀ tergite VIII; **43** – spermatheca. Scale bars: 35: 1.0 mm; 36: 0.5 mm; 37-40, 42: 0.2 mm; 41, 43: 0.1 mm.



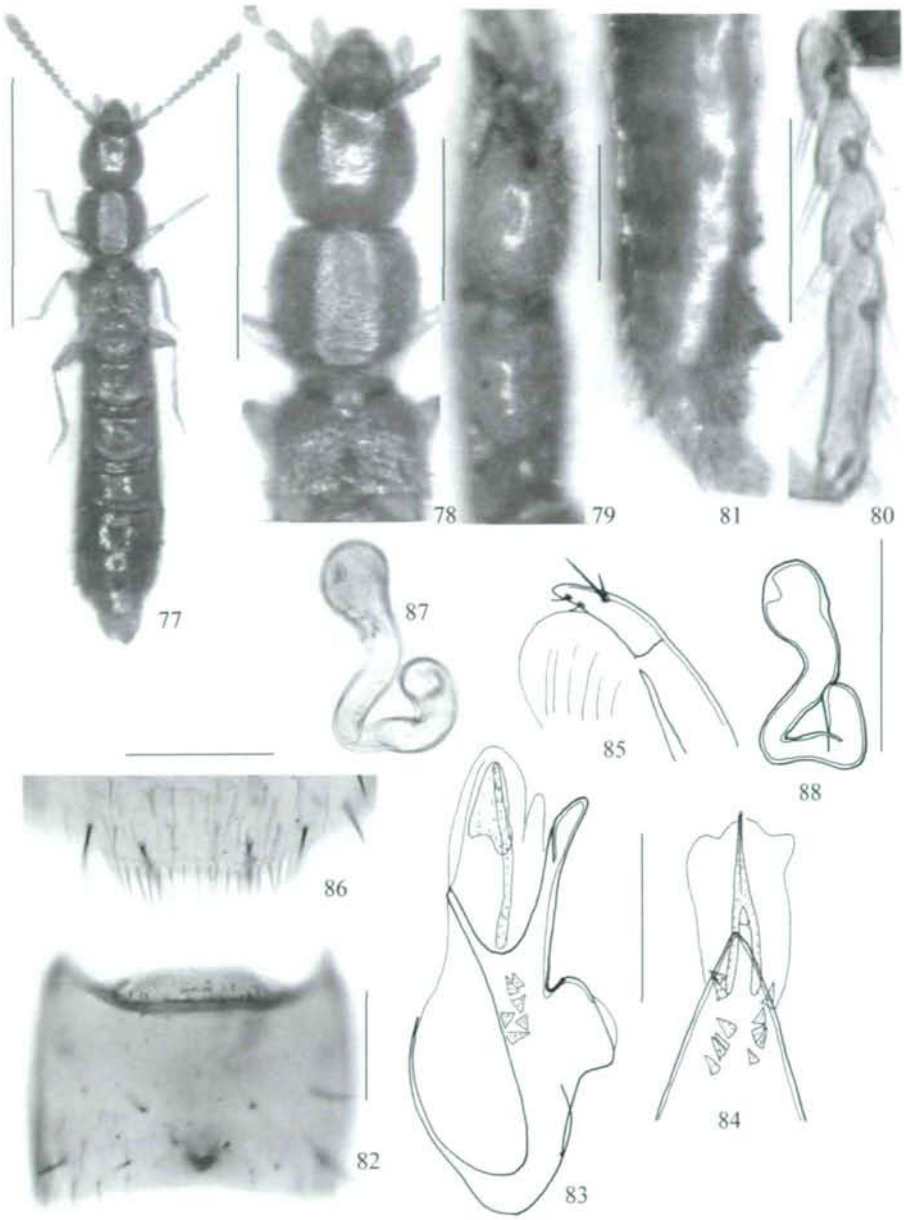
Figs 44-55: *Geostiba ahirana* sp.n. (44-45: holotype): **44** – facies; **45** – ♂ forebody in dorsal view; **46** – ♂ tergite VIII; **47** – ♂ sternite VIII; **48, 49** – median lobe of aedeagus in lateral view; **50** – median lobe of aedeagus in ventral view; **51** – apical lobe of paramere; **52** – ♀ tergite VIII; **53** – ♀ sternite VIII; **54, 55** – spermathecae of two ♀♀. Scale bars: 44: 1.0 mm; 45: 0.5 mm; 46-47, 52-53: 0.2 mm; 48-50, 54-55: 0.1 mm.



Figs 56-66: *Geostiba tuberosa* sp.n. (**56-64**) (56-58: holotype) and *G. seleucica* Pace (**65-66**): **56** – facies; **57** – ♂ forebody in dorsal view; **58** – head in lateral view; **59** – ♂ sternite VIII; **60, 61** – median lobe of aedeagus in lateral view; **62** – apical lobe of paramere; **63, 65** – ♀ sternite VIII; **64, 66** – spermatheca. Scale bars: 56: 1.0 mm; 57: 0.5 mm; 58, 59, 63, 65: 0.2 mm; 60-62, 64, 66: 0.1 mm.



Figs 67-76: *Geostiba giaurica* sp.n. (68: holotype): **67** – facies; **68** – ♂ forebody; **69** – head and pronotum in dorsal view; **70** – head and pronotum in lateral view; **71** – mesotarsus; **72** – median lobe of aedeagus in lateral view; **73** – apex of median lobe of aedeagus in ventral view; **74** – apical lobe of paramere; **75** – posterior half of ♀ sternite VIII; **76** – spermatheca. Scale bars: 67: 1.0 mm; 68-70: 0.2 mm; 71-76: 0.1 mm.



Figs 77-88: *Geostiba occaecata* sp.n. (77-79, 81: holotype): **77** – facies; **78** – ♂ forebody in dorsal view; **79** – ♂ forebody in lateral view; **80** – mesotarsus; **81** – ♂ apex of abdomen in lateral view; **82** – ♂ tergite VII; **83** – median lobe of aedeagus in lateral view; **84** – apex of median lobe of aedeagus in ventral view; **85** – apical lobe of paramere; **86** – posterior part of ♀ sternite VIII; **87-88** – spermatheca. Scale bars: 77: 1.0 mm; 78: 0.5 mm; 79, 81: 0.2 mm; 82-88: 0.1 mm; 80: 0.05 mm.