

**THREE NEW *EDAPHUS*- SPECIES FROM MEXICO (COLEOPTERA:
STAPHYLINIDAE) (83th CONTRIBUTION TO THE KNOWLEDGE OF
EUAESTHETINAE)**

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ABSTRACT

Description of 3 new species of the genus *Edaphus* Motschulsky from Mexico including new records and a key to hitherto known Mexican species.

With more than 350 species the staphylinid genus *Edaphus* Motschulsky, 1857, is widely distributed, mainly in the Southern hemisphere. From Mexico there have been described 2 species, 3 new species are added here.

Abbreviations (see Fig. 1): alIF = anterolateral furrows of frons; alpF = anterolateral portions of frons; ampF = anteromedial portion of frons; dE = distance between eyes; dlbc = distance of laterobasal carinae of pronotum; HT = holotype; lbc = laterobasal carina at pronotum; lbf = laterobasal fovea of pronotum; lEl = greatest length of elytra; lE = length of eyes; lG = length of genae; lP = length of pronotum; lS = length of suture; lT = length of temples; mbc = mediobasal carina of pronotum; mbct3 = mediobasal carina on posterior portion of tergite 3; mbf = mediobasal foveae of pronotum; PT = paratype; ptIF = posterotransverse furrow of frons; shC = special humeral characters; SpP = sperm pump; vs = vesica seminalis; wEl = greatest width of elytra; wH = width of head; wP = width of pronotum. - Measurements of the parts of the body are proportional measurement (1 unit = 0.0085 mm).

Acronyms for museums and private collections:

FMNH Field Museum of Natural History, Chicago
NHMK Natural History Museum University of Kansas, Lawrence, KS
ZML Zoological Museum Lund
cP coll. Puthz

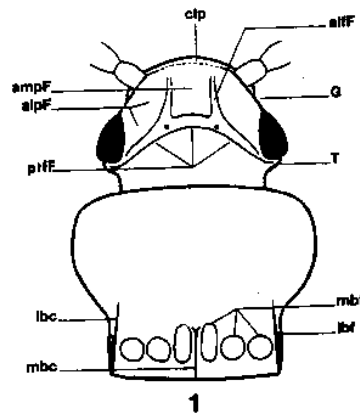


Figure 1. Head and pronotum of *Edaphus* spec., explanation of abbreviations see introduction

Edaphus tizoc sp. nov.

DESCRIPTION. Fully winged, light brown, shining, impunctate, pubescence dense, recumbent. Antennae, maxillary palpi and legs yellowish.

Length: 1.4-1.5 mm (fore parts: 0.8-0.9 mm).

Male: unknown.

Head distinctly narrower than pronotum ($wH:wP = 0.86$), eyes moderately large ($IE: 0.08$), moderately finely faceted, temples slightly cheeklike prominent ($IT: 0.02$), frons broad ($dE: 0.22$), $ptfF$ distinct, $ampF$ slightly less broad than $alpF$, flat, no offset between $ampF$ and clp , $alpF$ strongly elevated. Antennae moderately long, club 2-segmented, segment 10 slightly broader than long, somewhat longer than half 11th segment. Pronotum distinctly broader than long ($wP:IP = 1.16$), moderately strongly constricted behind, with distinct lbc ($dlbc: 0.28$), a very sharp, elevated mbc which extends toward posterior margin and 6 distinctly delimited, regular mbf , the medial 2 slightly broader than long. Elytra broader than long ($wEl:IEl = 1.19$), shoulders moderately prominent, no shC , $IS: 0.37$. Abdomen: $mbct3$ nearly $2/3$ the length of the posterior portion of that tergite.

TYPE MATERIAL. Holotype (♀): MEXICO: Chiapas: Volcan Tacana, lower slopes, ca. 4 km N Union Juarez, 1800 m, cloud forest litter, 18.IX.1992, R. S. Anderson 92-108: in NHMK.

DISCUSSION. *Edaphus tizoc* sp. nov. – the name is taken from an Aztec leader – is distinguished from *E. torresbolloi* Puthz (Paraguay) by greater length, stronger elevated median carina of the pronotum and shorter mediobasal carina on posterior portion of tergite 3, from *E. remilleti* Orousset (French Guyana, Brazil) by the posteriorly less constricted longer pronotum, from *E. ashei* sp. nov. by the greater length, the smaller eyes, the less broad anteromedial portion of frons and the deeper, sharply delimited mediobasal foveae of the pronotum.

Edaphus andersoni sp. nov.

Figs. 4, 5

DESCRIPTION. Fully winged, reddish brown, shining, impunctate, pubescence moderately long, very dense, semierect. Antennae, maxillary palpi and legs yellow.

Length: 1.5-1.7 mm (fore parts: 1.0 mm).

Male. Sternite 7 with a broad, obtusely angled apical emargination. Sternite 8 (Fig. 4). SpP short, $2/3$ the length of aedeagus, "vs" consists of a big coiled tube of same length as SpP . Aedeagus (Fig. 5), median lobe broad-triangularly narrowed, expulsed internal structures contain stronger sclerotized hooklike elements, parameres bifid with two very long setae.

Head as broad as pronotum (0.36), eyes moderately large ($IE: 0.1$), moderately finely faceted, temples oblique, short ($IT: 0.02$), frons very broad ($dE: 0.27$), $ptfF$ distinct, trapezoid, $ampF$ twice as broad as $alpF$, flat, no offset between $ampF$ and clp , $alpF$ entire, moderately elevated. Antennae moderately long, club distinctly 2-segmented, segment 10 about as long as broad, slightly longer than half segment 11. Pronotum slender, nearly as long as broad ($IP:wP = 0.98$), moderately constricted behind, with hint of lbc ($dlbc: 0.25$) and 6 equally sized mbf (of which 2 may be confluent or separated into minor punctures), no mbc . Elytra very large, broader than long ($wEl:IEl = 1.08$), shoulders prominent with a minute denticle, $IS: 0.45$. Abdomen: $mbct3$ half as long as posterior portion of that tergite.

TYPE MATERIAL: Holotype (♂): MEXICO: Chiapas: 6 km SW Ocosingo, 1400 m, wet oak/pine forest litter, 22.IX.1991, R. Anderson # 116: in NHMK.

DISCUSSION. *Edaphus andersoni* sp. nov. – which I dedicate to its collector – is

distinguished from both *E. mexicanus* Puthz and *E. hirsutus* Puthz by the greater length, from the latter also by lacking punctation, from both by the male sexual characters.

***Edaphus ashei* sp. nov.**

Figs. 2, 3

DESCRIPTION. Fully winged, reddish brown, shining, impunctate, pubescence moderately short, erect on pronotum, recumbent on elytra. Antennae, maxillary palpi and legs yellowish to light brown.

Length: 1.2-1.3 mm (fore parts: 0.7 mm).

Male. Sternite 8 (Fig. 3). SpP nearly twice as long as the median lobe, vs small, less long than apical portion of the median lobe. Aedeagus (Fig. 2), median lobe triangularly narrowed, expulsed internal structures resembles fruit of maple tree, parameres short with two long setae apically.

Head distinctly narrower than pronotum ($wH:wP = 0.85$), eyes moderately large ($IE:0.08$), finely faceted, in both sexes no distinct temples, frons broad ($dE:0.17$), ptfF distinct, ampF nearly twice as broad as each alpF, flat, no offset between alpF and clp, ptfF distinct, alpF entire, moderately elevated. Antennae short, club 2-segmented, segment 10 distinctly broader than long, $2/3$ the length of segment 11. Pronotum distinctly broader than long ($wP:IP = 1.18$), moderately strongly constricted behind, lbc distinct ($dlbc:0.24$), mbc distinct, extending to posterior margin proper, 6 small, indistinctly delimited mbf (in the HT one is represented by 2 very small punctures) of nearly equal size. Elytra broader than long ($wEl:IEl = 1.13$), shoulders prominent, no shC. Abdomen: mbct3 more than $2/3$ as long as the posterior portion of that tergite.

TYPE MATERIAL: Holotype (σ) and 1 ♀ -paratype: MEXICO: Chiapas: 8 km S Chicoasen, 690 m, leaf litter sifted, 1.VI.1991, J. S. Ashe # 42: in NHMK.

DISCUSSION. *Edaphus ashei* sp. nov. – which I warmly dedicate to its collector, Dr. James S. Ashe – is distinguished from *E. torresbolloi* Puthz and *E. remilleti* Orousset by the broader anteromedial portion of frons, the smaller mediobasal foveae of the pronotum and the male sexual characters, from *E. tizoc* as indicated above.

New records

Edaphus mexicanus Puthz: MEXICO: Chiapas: 1 σ , 1 ♀ : 15 km E Bochil, 1400 m, sifting litter in small remnant cloud forest, 23.IX.1986, R. Baranowski (ZML, cP); 1 ♀ : Jitotol, 1500 m, sifting litter, mixed pine forest, 22.IX.1986, R. Baranowski (ZML); 1 σ , 3 ♀ : Chiapas: 10 km W El Bosque, 1475 m, pine/cloud forest litter, 15.IX.1992, R. S. Anderson 92-103 (NHMK, cP); GUATEMALA: 1 ♀ : Baja Verapaz, 8 km S Purulha, 1660 m, pine/cloud forest litter, 20.V.1991, R. Anderson 91-4.5 (NHMK); 1 ♀ : 7.5 km S Purulha, 1630 m, cloud forest litter, 26.V.1991, R. Anderson 91-26 (NHMK); 4 ♀ : 3 km SW Purulha, 1650 m, sifting litter, cloud forest, 21.XI.1991, R. Baranowski (ZML, cP); 1 ♀ : 7 km SSW Purulha, 1630 m, sifting litter near small stream in ravine cloud forest, 27.XI.1991, R. Baranowski (ZML); 1 σ : 8 km SSW Purulha, 1650 m, small stream in very shaded position, wet montane forest, 2.XII.1991, R. Baranowski (cP).

Edaphus hirsutus Puthz: MEXICO: Oaxaca: 1 σ : 25 km S Valle Nacional, 1300 m, sifting litter, cloud forest, 12.IX.1994, R. Baranowski (cP); 2 ♀ : 21 km S Valle Nacional, 1200 m, sifting litter at roadside, cloud forest, 10.IX.1986, R. Baranowski (ZML); 1 ♀ : 23 km SW

Dugesiana

Valle Nacional, km 76, 1300 m, cloud forest leaf litter, berlese, 28.VII.1992, R. S. Anderson 92-029 (NHMK).

Key to the Mexican *Edaphus*-species

- 1(4) Base of pronotum with distinct lateral carinae and a distinct median carina
2(3) Smaller species, basal foveolae of pronotum smaller, indistinctly delimited. Eyes larger, no temples. ♂: Sternite 8 (Fig. 3), Aedeagus (Fig. 2). 1.2-1.3 mm *ashei* sp. nov.
Mexico: Chiapas
3(2) Larger species, basal foveolae of pronotum larger, distinctly delimited. Eyes smaller, temples present. ♂ unknown. 1.4-1.5 mm *tizoc* sp. nov.
Mexico: Chiapas
4(1) Base of pronotum without distinct lateral carinae
5(8) Fore parts impunctate
6(7) Larger species. ♂: Sternite (Fig. 4), Aedeagus (Fig. 5), apex of median lobe acute, parameres bifid. 1.5-1.7 mm *andersoni* sp. nov.
Mexico: Chiapas
7(6) Smaller species. ♂: Aedeagus (Fig. 13, Puthz, 1973), apex of median lobe rounded, parameres distinctly shorter than median lobe, slender with 2 long apical setae. 1-1.4 mm *mexicanus* Puthz
Mexico: Chiapas; Guatemala
8(5) Fore parts distinctly punctate. ♂: Aedeagus similar to that of *E. mexicanus* but parameres longer, about as long as the median lobe, apical portion broader with only 1 preapical seta. 1.2-1.5 mm *hirsutus* Puthz
Mexico: Oaxaca

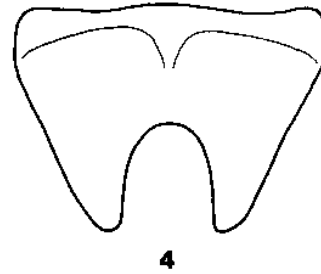
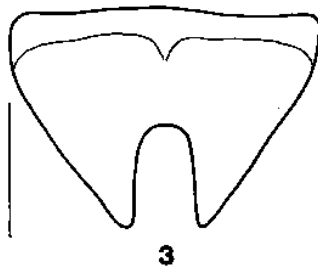
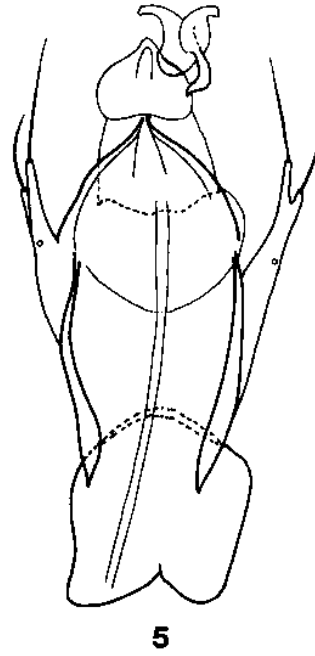
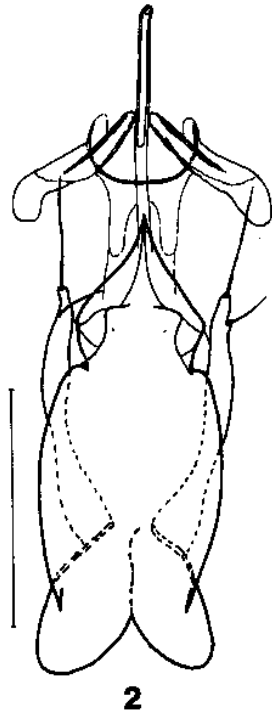
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Figures 2-5. 2-5. Ventral aspect of aedeagus, and 3,4. 8th sternite of male. 2-3. *Edaphus ashei* sp. nov. (HT). 4-5. *Edaphus andersoni* sp. nov. (HT). Scale = 0.1 mm.