

One new species of the genus *Isotes* WEISE, 1922 from Peru (Coleoptera: Chrysomelidae, Galerucinae, Luperini)

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Abstract

A new species of the genus *Isotes* WEISE, 1922 are described from Peru: *I. hiermeieri* **sp. n.**

Introduction

The genus *Isotes* was proposed by WEISE (1922). It is a genus from the section of Diabroticites. Diabroticina is a subtribe of Luperini (Galerucinae) and comprises four sections: Diabroticites, Ceratomites, Phyllectrites and Trachyscelidites (WILCOX 1972, SEENO & WILCOX 1982).

Due to the lack of keys and the sometimes-vague descriptions of species there has been a lot of confusion about the taxonomic status of taxa in Diabroticites. SMITH & LAWRENCE (1967) provided information on the type specimens of the species in this group and designated lectotypes where necessary.

Isotes currently includes 179 species (BECHYNÉ & BECHYNÉ 1970; WILCOX 1972, 1975) in eleven groups: *borrei*, *digna*, *divisa*, *puella*, *rubripennis*, *taeniolata*, *dilatata*, *lugubris*, *mexicana*, *complicata* and *not determined* group (WILCOX 1972).

However, not all groups as listed by WILCOX 1972 in the Supplement volume of the Catalogous Coleopterorum are included in the above identification key. According to the identification key of SMITH & LAWRENCE 1967, this species can be classified in the *digna* group. This group has black or brown wing-coverts with lighter margins.

Description of the genre *Synbrotica*¹

- Antennae with segments 3, 4 and 5 not greatly elongated as compared with segment 6; meso-tibiae of males not modified as a clasping organ.
- Genal space (margin of eye to base of mandible) large, width equal to ½ (or more) of the maximum diameter of the eye; eyes small, maximum diameter of eye not more than ¾ interocular distance, usually ⅔ or less.
- Insertion of antennae at or below midline of eyes; face not excavated; proximal three tarsal segments of anterior legs of males uniformly covered by adhesive patch.
- Distal antennal segments of males not distinctly enlarged [type species *borrei* BALY]
..... *Synbrotica* BECHYNÉ, 1956

¹⁾ *Synbrotica* is now a Synonym of *Isotes*

Key for the groups of *Synbrotica*

- 1 Genal space (margin of eye to base of mandible) large, width equal to ½ (or more) of the maximum diameter of the eye; eyes small, maximum diameter of eye not more than ¾ interocular distance, usually ⅔ or less2
 - Genal space small, width less than ½ the maximum diameter of the eye; eyes small to large8
- 2 Elytra with strongly punctured plica in posthumeral area..... *Synbrotica* (*puella* group)
 - Elytra without strongly punctured plica in posthumeral area3
- 3 Elytra entirely red, red-brown or flavous *Synbrotica* (*rubripennis* group)
 - Elytra not entirely red, red-brown or flavous4

- 4 Elytra black or dark brown with pale outer limb; antennae well separated from eyes *Synbrotica (digna group)*
- Elytra not as above 5
- 5 Elytra with posterior half black, anterior half (and usually thorax and head) orange or rufotestaceous .
..... *Synbrotica (divisa group)*
- Elytra not as above 6
- 6 Each elytron with 2 large black or blue-black patches; antennae well separated from eyes
..... *Synbrotica (borrei group)*
- Elytra not as above other *Synbrotica* s.str. 7
- 7 Antennal segment 3 distinctly longer than 4th; mesotibiae with a broad shallow subapical emargination
..... *Synbrotica (dilaticornis group)*
- 8 Genal space medium, width one-fourth to one-half the maximum diameter of the eye. Antennae with
segment three 1,5 or more times as long as second. First segment of hind tarsi short, subequal to
following three segments together 9
- 9 Males with antennal segments four and following slightly dilated and carinate
..... *Synbrotica (dilatata group)*
- Males without carinate antennae 10
- 10 Males with subsutural area of elytra excavated at the tip *Synbrotica (lugubris group)*
- Males with subsutural area of elytra not excavated at the tip 11
- 11 Males with proximal segment of mesotarsi thickened and with an excavation at the base
..... *Synbrotica (mexicana group)*
- Males without mesotarsi modified as above. Males with mesotibiae not excised *Synbrotica* s.l.

The specimens examined correspond to the characteristics of the genus and essentially to the characteristics of the *digna* group, which is why the new species is assigned to this group.

Besides the new taxa, the *digna* group of *Isotes* is represented with thirteen species: *I. abbreviata* (BALY, 1886), *I. amazona* (WEISE, 1916), *I. caryocara* (BECHYNÉ, 1956), *I. certans* (BECHYNÉ, 1958), *I. digna* (GAHAN, 1891), *I. discoplana* (BECHYNÉ, 1956), *I. diversa* (GAHAN, 1891), *I. exserta* (BECHYNÉ, 1958), *I. lata* (BALY, 1886), *I. luctuosa* (WEISE, 1921), *I. neoallardi* (BLAKE, 1953), *I. nestina* (BECHYNÉ, 1956) and *I. protalma* (BECHYNÉ, 1958).

Abbreviations: MLCL= MICHAEL LANGER collection, Lichtenwalde, Germany; MHNL = Museo de Historia Natural Lima, Peru; ZSM = Zoologische Staatssammlung, München, Germany.

WILCOX (1972) gives the information on the whereabouts of the type specimens:

- I. abbreviata* (BALY, 1886) (♀ lectotype Calamar BMNH)
- I. amazona* (WEISE, 1916) (♀ lectotype Amazonas BMNH)
- I. caryocara* (BECHYNÉ, 1956), (♀ holotype FREY)
- I. certans* (BECHYNÉ, 1958), (♀ holotype FREY)
- I. digna* (GAHAN, 1891), (♀ holotype Petropolis BMNH)
- I. discoplana* (BECHYNÉ, 1956), (♂ holotype FREY)
- I. diversa* (GAHAN, 1891), (♀ holotype Amazonas BMNH)
- I. exserta* (BECHYNÉ, 1958), (♂ holotype FREY)
- I. lata* (BALY, 1886), (♀ lectotype Peru BMNH)
- I. luctuosa* (WEISE, 1921), (♀ holotype Rio Autáz, STOCKHOLM)
- I. neoallardi* (BLAKE, 1953), (♂ holotype Tinga Maria USNM)
- I. nestina* (BECHYNÉ, 1956) (♀ holotype FREY)
- I. protalma* (BECHYNÉ, 1958) (♀ holotype FREY)

Extensive research on the genus *Isotes* on the Internet has shown that no other species from this genus have been described since the catalog was published by WILCOX 1972.

Description of the type locality

The discovery site is in the nature reserve in the immediate vicinity of the Biological Research Station of the Panguana Foundation. The research station is located in the Peruvian lowland rainforest (primary forest), in the upper catchment area of the Amazon. Large parts of the Panguana protected area are still covered by primary Amazon rainforest and consequently have a very high level of biodiversity, which has only been researched in fragments so far.

The geographical position of Panguana is between the Cordillera Oriental in the west (distance about 140 km) and the Sira Mountains in the east (distance about 40 km) in the department of Huánuco. The biological research station is located at an altitude of about 230 m on the Rio Yuyapichis, a 40 m wide tributary of the Rio Pachitea, which is a source river of the Amazon.

Diagnosis of the genus *Isotes* WEISE, 1922

The genus *Isotes* is among the Diabroticites particularly characterized by small eyes, Genae $\frac{1}{2}$ (or more) of the largest eye diameter, antennae homodyne, from the basal segments of the antennae only the 2nd segment is shortened, antennal segments 3,4 and 5 not very much elongated compared to segment 6, antennae inserted at or below median line of eye; face not hollowed out; first three segments of tarsi of anterior legs in males uniformly covered with attached spots, middle tibiae unmodified as a clasping organ.

Description of the new *Isotes* species

Isotes hiermeieri sp.n. (Figs 1-9)

Type material

Holotype: 1 ♂, Peru, Dept. Huánuco, Panguana: ACP, Rio Yuyapichis, S 9° 37' W 74° 56', H=230 m, (Malaise trap), 26.IX. - 12.X.2014, leg. E. Diller (MHNL)

Paratypes: 1 ♀ (same location and date) (MHNL), 2 ♂ + 19 ♀ (same location) (1 ♂, 9 ♀ ZSM – X.2010, 1 ♂, 10 ♀ MLCL – X.2010)

Description

Length: ♂ (HT) 5.4 mm, ♂ (PT) 5.5 mm, ♀ 4.5-5.8 mm.

Head: yellowish, smooth, only very sparsely finely punctured, almost triangular. Eyes small, oval, slightly protruding. Exactly $\frac{1}{2}$ the length of the eye. Frons smooth with a deep central pit between the eyes. Clypeus with a broad carina and long pale hairs on the sides. Labrum transverse, with individual bristles. Maxillary palpus with a yellowish pointed terminal segment that is narrower than the penultimate segment. Antennae with 11 segments, 2nd segment short, 3rd segment twice as long as 2nd, 3rd and 4th segment of equal length, 5th-11th segment of equal length. Base segments 1-3 yellowish, 4th segment yellowish at base, apex black, segments 5-8 black, segments 9-11 yellowish except extreme tip of 11th segment which is black.

Pronotum: almost twice as wide as long (measured in the middle), fine, widely punctured. Margin wide, curved from base to center and converging from center to front corner. Protruding front and back corners. Disc in the posterior half impressed with 2 oblong pits.

Scutellum: yellowish, triangular.

Elytra: complete black, very finely and sparsely finely punctured. Tip of the elytra flatly impressed and strongly punctured in the impression. Posteriorly widened. Both lateral margins viewed from above, visible along the entire length, broadened in the middle. Suture finely margined. Disc of the elytra bulging in the first third near the suture, followed by a flattened area. In the middle with a deep transverse impression. Plicate in the front third on the sides between the shoulder bulge and the side edge. From the humeral callus backwards with a cavity. Humeral callus prominent.

Body ventrally: yellowish, sternite of the abdomen with scattered yellowish hairs; middle less hairy; sternite V of male with a semicircular bulge, sternit V of female without a bulge. Epipleura do not reach the top of the elytra. The epipleura are broad from the base to the middle, then narrowing very quickly and connecting with the lateral margin in the posterior third.

Legs: yellowish, tibiae partially darkened. Anterior tibiae shaped the same in both sexes. First joint of anterior tarsi slightly widened in male.

Aedaeagus: figs 4-5: In dorsal view the sides are somewhat converging towards the apex. The apex is an obtuse triangle. In the lateral view, the sides are nearly straight.

Spermatheca: fig. 9.



Figs 1-5: *Isotes hiermeieri* sp.n. male, Holotypus:

- 1 dorsal view,
- 2 Head,
- 3 Abdomen,
- 4 Aedeagus dorsal view,
- 5 Aedeagus lateral view.

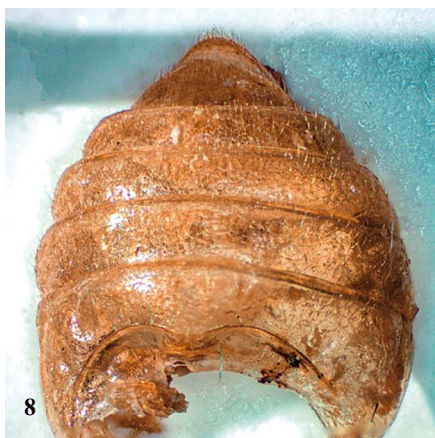


Sexual differences:

Sexual dimorphism: first segment of anterior tarsi in male are slightly wider than in female. Anal sternite V with a semicircular bulge in the male; in female rounded.

Etymology:

This species is dedicated to Michael HIERMEIER, a good friend of the autor.



Figs 6-9: *Isotes hiermeieri* sp.n.
female, Paratypus:
6 dorsal view,
7 Head,
8 Abdomen,
9 Spermatheca.

Diagnosis

Isotes hiermeieri sp.n. is a yellowish species except for the black elytra. This species can be assigned to the *digna* group (SMITH & LAWRENCE 1967). All previously known species of this group from Peru and adjacent areas have black or brown elytra with a light lateral edge. Besides that the previously known species of this group differ considerably in their external form. These tend to be larger and more elongated, and the elytra are not as strongly expanded backwards. The bulgs on the elytra in the front third are flatter.

The present series is a total of 23 copies (3 ♂♂ and 20 ♀♀). This series has no abnormalities in the color variations. It can therefore be assumed that this species does not variegate much in coloration.

Zusammenfassung

Eine neue Art von *Isotes* WEISE, 1906, wird aus Peru beschrieben: *I. hiermeieri* sp. n.

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