First data on Leptotyphlinae (Coleoptera: Staphylinidae) from Gibraltar, with the description of *Paratyphlus tristancanoi* sp. n., and new record of *Gynotyphlus perpusillus* (Dodero, 1900)

C. HERNANDO1, K. BENSUSAN2,3, C. PEREZ2,4

1P.O. Box 118; E-08911 Badalona; Catalonia; E-mail: leptotyphlus@gmail.com
2Gibraltar Botanic Gardens; «The Alameda»; Red Sands Road; P.O. Box 843; Gibraltar
3E-mail: kbensusan@gibraltargardens.gi
4E-mail: cperez@gibraltargardens.gi

Abstract
We provide the first records of the subfamily Leptotyphlinae (Coleoptera: Staphylinidae) from Gibraltar. A new species is described, *Paratyphlus tristancanoi* sp. n., and *Gynotyphlus perpusillus* (Dodero, 1900) is recorded for the first time. The latter is a parthenogenetic species that was possibly imported accidentally, at the roots of plants.

Key words: Coleoptera, Staphylinidae, Leptotyphlinae, *Paratyphlus tristancanoi* sp. n., *Gynotyphlus perpusillus* (Dodero, 1900), new species, new records, Gibraltar, Iberian Peninsula.

Resumen
Se aportan los primeros datos sobre la subfamilia Leptotyphlinae (Coleoptera: Staphylinidae) para Gibraltar. Se describe una especie nueva, *Paratyphlus tristancanoi* sp. n., y se cita por primera vez *Gynotyphlus perpusillus* (Dodero, 1900), una especie partenogenética, posiblemente importada accidentalmente en raíces de plantas.

Palabras clave: Coleoptera, Staphylinidae, Leptotyphlinae, *Paratyphlus tristancanoi* sp. n., *Gynotyphlus perpusillus* (Dodero, 1900), new species, new records, Gibraltar, Península Ibérica.

Laburpena
Lehenengo datuak Gibraltarro Leptotyphlinae-ri buruz (Coleoptera: Staphylinidae), *Paratyphlus tristancanoi* sp. n.-ren deskribapena eta *Gynotyphlus perpusillus* (Dodero, 1900)-ren aipu berria direla eta

Leptotyphlinae subfamiliari buruzko (Coleoptera: Staphylinidae) lehenengo datuak ematen dira Gibraltarrerako. Espezie berri bat deskribatzen da, *Paratyphlus tristancanoi* sp. n., eta lehenengo aldia aipatzen da *Gynotyphlus perpusillus* (Dodero, 1900) espezie partenogenetikoa, zeina seguru asko landare-sustraitan importatua izan baita.

Gako-hitzak: Coleoptera, Staphylinidae, Leptotyphlinae, *Paratyphlus tristancanoi* sp. n., *Gynotyphlus perpusillus* (Dodero, 1900), espezie berria, aipu berriak, Gibraltar, Iberiar Península.
Introduction

Until now, the only records of endogean Staphylinidae from the British Overseas Territory of Gibraltar were those by Coiffait (1965), who described the Gibraltarian endemic Lasitanopsis herculana (Staphylinidae: Osoriinae). Recently, two of the authors (KB & CP), both from the Gibraltar Botanic Gardens, have been sampling for endogean Coleoptera in Gibraltar. This has resulted in the first records for Gibraltar of the subfamily Leptotyphlinae, including a new species that is described here: Paratyphlus tristancanoi sp. n. We also provide the second Iberian record of Gynotyphlus perpusillus (Dodero, 1900), a widely distributed parthenogenetic species that was found in an old garden area of Gibraltar and was probably imported accidentally at the roots of ornamental plants.

Results

Paratyphlus tristancanoi sp. n.

Type locality:
Soil sample collected at Bruce’s Farm firebreak, 200 m a.s.l., N 36º 08’28.30” W 5º 20’50.59”, Upper Rock, Gibraltar Nature Reserve, Gibraltar.

Type material:
Holotype ♀ (coll. C. Hernando, Badalona): «GI-BRALTAR, 20.04.2010 // Bruce’s Farm firebreak // N 36º 08’ 28.30” W 5º 20’ 50.59” // K. Bensusan, C. Perez leg.».

Description:
Length: 1.3 mm. Anophthalmous staphylinid, unpigmented (yellowish), slender in form. Antennae with eleven segments, short and robust, not exceeding the length of the head when stretched backwards. Body narrow and long with parallel-sided abdominal segments. Morphology of the aedeagus characteristic, with the sternal plate strongly curved at its apex with a blunt end, and with three copulatory pieces: a small one dorsally, an S-shaped piece in the middle and a third that is stylet-shaped and more or less parallel with the sternal plate.}

Sternite VIII of the male with a symmetrical posterior border strongly notched in the centre and with two blunt angled projections on each side of the notch. With two very irregular lateral groups of punctures with setae that run along the posterior half, approximately (Fig. 1a). Surface between both groups of points totally concave with a polygonal, transverse reticulation that is clearly visible.

Aedeagus (Fig. 1b) very characteristic, with a robust sternate plate (stp), strongly curved downwards at its distal end, with a blunt apex and a groove along the base. Three copulatory pieces: one dorsal (dp) and small, very chitinised and joined with the rest of the aedeagus by a membranous tegument, a median, S-shaped piece (mp) that is strongly angled at its apical end and has a lateral, bilobed protuberance at its widest point, the third piece composed of a robust and long stylet (sp) that is practically straight and almost reaches the apex of the sternate plate. Parameres: both very similar, curved, short and robust, slightly widened at the apex and with four apical setae.

Female unknown. It is worth noting that two females of a Paratyphlus have been collected nearby (Windmill Hill Flats, Gibraltar Nature Reserve), but due to an absence of males from the same site, we have preferred not to include these specimens in the type series. The genus Paratyphlus is extraordinarily diverse and there are records of up to four species coexisting within a small geographical area (Hernando, 2013), so it is possible that these females may not belong to the species described here.

Differential diagnosis:
The new species is related to the geographically close Paratyphlus mateui Coiffait, 1955 (Benaoján, Sierra de Grazalema, Málaga), from which it can be separated easily by the following characters of the aedeagus: the apical end of the sternate plate (stp) of P. mateui is truncated and somewhat angled along its internal border, but has a blunt end in P. tristancanoi sp. n. (Fig. 1b), the copulatory piece in the form of a stylet (sp) is longer than the sternate plate in P. mateui, but clearly shorter in P. tristancanoi sp. n. (Fig. 1b), the distal part of the median copulatory piece (mp) of P. mateui is rounded, whereas it is strongly angled in P. tristancanoi sp. n. (Fig. 1b). For illustrations of P. mateui see: Coiffait, 1972.

Distribution and habitat notes:
So far known only from the type locality. The species...
was collected by soil-washing and Berlese extraction. The soil sample was extracted up to the depth of about 50 cm from around the roots of *Asphodelus ramosus* that was growing on a rocky limestone slope in a semi-maintained firebreak consisting mainly of garigue vegetation (Fig. 1c).

**Etymology:**

The species is dedicated to Tristan Cano, a good friend of one of the authors (KB) who frequently accompanied him in the field, contributing companionship and excellent humour. He passed away too soon and is sorely missed.

**New record of *Gynotyphlus perpusillus* (Do- dero, 1900)**

**Material studied:**


*Gynotyphlus perpusillus* is the only known parthenogenetic species of Leptotyphlineae and also the most widely distributed one. Its natural distribution includes a large part of the Mediterranean region (southern France, peninsular Italy, Sicily, Croatia, Macedonia,
Greece and Turkey), but there are also isolated records from a number of localities in central and western Europe, including the Atlantic coast (France [Bordeaux and around Paris], Switzerland, Austria, Slovakia, Hungary and Portugal) (Scheerpeltz, 1959; Bruneau de Miré, 1983; Coiffait, 1984; Rusek, 1994; Christian, 2000). These records most likely refer to accidental introductions with plant material (Coiffait, 1984; Pace, 1996). For example, Coiffait (1984) relates a curious anecdote, detailing that he found specimens of this species by washing the soil of potted sages (Salvia sp.) that he had purchased in Toulouse.

The species is subdivided into eleven subspecies (Smetana, 2015), which we think are of doubtful validity, as they are based on very subtle differences in external morphology and genitalia (Coiffait, 1959). Some of these subspecies (Bruneau de Miré, 1983) were created to define populations that could be of recent origin, as they likely refer to accidental introductions.

The only known Iberian record is from the Jardim do Palace Hotel do Buçaco (Portugal). This population is doubtless introduced, as the park holds a very diverse exotic flora (Coiffait, 1984).

The specimens from Gibraltar constitute the second record for the Iberian Peninsula and expand the species known distribution considerably. All specimens were collected by soil-washing and Berlese extraction, in association with other beetles and ants characterised by adaptations to endogean life (Langelandia reitteri Belon, 1882 [Zopheridae], Torneuma [Torneuma] baeticum Stüben, 2007 [Curculionidae] and Strumigenys tepanicola Emery, 1915 [Formicidae]). The soil sample was extracted up to the depth of about 50 cm from around the roots of Ficus carica in an old garden (Fig. 2) that is currently semi-abandoned, creating a shaded woodland habitat that combines native vegetation with ornamental elements. There can be little doubt that this population too must have been introduced in the roots of plants that were used in the landscaping of this historic garden.

References


Received / Recibido / Hartua: 30/04/2018
Accepted / Aceptado / Onartua: 11/05/2018
Published / Publicado / Argitaratua: 30/06/2018