

THE IDENTITY AND TAXONOMIC STATUS OF *SITARIS LATIVENTRIS* SCHAUFUSS, 1861 AND *SITARIS MELANURUS* KÜSTER, 1849, TWO ENIGMATIC IBERIAN TAXA (COLEOPTERA, MELOIDAE)

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ABSTRACT

J. L. Ruiz, M. A. Bologna & M. García-París. 2013. The identity and taxonomic status of *Sitaris lativentris* Schaufuss, 1861 and *Sitaris melanurus* Küster, 1849, two enigmatic Iberian taxa (Coleoptera, Meloidae). *Graellsia*, 69(2): 169-178.

Extensive morphological variability in Nemognathinae has often led to proliferation of species descriptions. Most species of Nemognathinae are seldom encountered in nature and some species remain only known by the specimens used for the original descriptions. Two examples of this problem are represented by *Sitaris lativentris* Schaufuss, 1861 and *Sitaris melanurus* Küster, 1849, both described from Spain. The rediscovery of specimens morphologically assignable to *S. lativentris* in southern Spain, and a careful reading of the original description of *S. melanurus*, allow us to shed light on the taxonomic status of these enigmatic taxa. *Sitaris lativentris* has been considered a synonym of *Sitaris solieri* Pecchioli, 1840 until now; however, neither the lectotype of *S. lativentris* (here designated), nor the newly found specimens morphologically assignable to *S. lativentris*, correspond to *S. solieri*, except in coloration. Alternatively, comparisons between *S. lativentris* and *S. muralis* did not render any differences, except in the pattern of elytral coloration and coloration of the pilosity, both variable in other species of Nemognathinae. Therefore *S. lativentris* is hereby synonymised with *S. muralis* (**new synonymy**). The identity of *Sitaris melanurus* has been overlooked by most researchers, probably because the type specimens seem to be lost. However, the original description provides sufficient information to discard the inclusion of the taxon in *Sitaris*. Morphological characters presented in the description correspond to traits that, among western European sitarine beetles, are only present in *Stenoria apicalis* (Latreille, 1804). Küster's (1849) description corresponds to one of the most frequent color variants of this species. As a consequence we include the name *S. melanurus* as a **new synonym** of *S. apicalis*.

Key words: Coleoptera; Meloidae; *Sitaris*; Taxonomy; Morphological variability; Scientific Collections; New synonymies; Lectotypes; Iberian Peninsula; Spain.

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RESUMEN

J. L. Ruiz, M. A. Bologna & M. García-París. 2013. The identity and taxonomic status of *Sitaris lativentris* Schaufuss, 1861 and *Sitaris melanurus* Küster, 1849, two Iberian enigmatic taxa (Coleoptera: Meloidae). *Graellsia*, 69(2): 169-178 (in Spanish).

La amplia varibilidad morfológica en Nemognathinae a menudo ha originado una proliferación en la descripción de especies distintas. La mayoría de la especies de Nemognathinae rara vez se encuentran en la naturaleza y algunas sólo son conocidas por los ejemplares utilizados en las descripciones originales. Dos ejemplos de este problema son los casos de *Sitaris lativentris* Schaufuss, 1861 y *Sitaris melanurus* Küster, 1849, ambas descritas de España. El redescubrimiento de ejemplares morfológicamente asignables a *S. lativentris* en el sur de España, y una detallada lectura crítica de la descripción original de *S. melanurus*, nos permiten dilucidar el estatus taxonómico de estos taxones enigmáticos. *Sitaris lativentris* ha sido considerado hasta ahora un sinónimo de *Sitaris solieri* Pecchioli, 1840; sin embargo, ni el lectotipo de *S. lativentris* (aquí designado) ni los nuevos especímenes encontrados asignables a *S. lativentris*, se corresponden con *S. solieri*, excepto en que ambos presentan una coloración similar. Alternativamente, el estudio comparativo de *S. lativentris* y *Sitaris muralis* (Forster, 1771) no muestra diferencias entre ellas, excepto en el patrón cromático elytral y la coloración de la pilosidad, ambos caracteres ampliamente variables en otras especies de Nemognathinae. Por tanto, se sinonimiza *S. lativentris* con *S. muralis* (nuevo sinónimo). La identidad de *Sitaris melanurus* ha sido pasada por alto por la mayoría de los investigadores, posiblemente porque los ejemplares tipo parecen estar perdidos. No obstante, la descripción original ofrece suficiente información para descartar la adscripción de este taxón a *Sitaris*. Los caracteres morfológicos expuestos en la descripción corresponden a rasgos que, en el ámbito de los sitarinos europeos, se encuentran sólo en *Stenoria apicalis* (Latreille, 1804). La descripción de Küster (1849) corresponde a una de la variantes cromáticas más frecuentes en esa especie. Como consecuencia, incluimos el nombre *S. melanurus* como un nuevo sinónimo de *S. apicalis*.

Palabras-clave: Coleoptera; Meloidae; *Sitaris*; Taxonomía; Variabilidad morfológica; Colecciones científicas; Nuevas sinonimias; Lectotipos; Península Iberica, España.

Introduction

Several species of Meloidae parasitoids on solitary bees, show during the adult phase various levels of morphological modifications with respect to the typical “meloid bauplan”, which is easily recognizable in the speciose tribes Mylabrini and Lyttini (Bologna, 1991). These modifications are particularly obvious in some genera of Nemognathinae, namely in the sitarine lineage of the tribe Nemognathini (Bologna, 1991; Bologna & Pinto, 2002; Bologna *et al.*, 2008). In this tribe elytral reduction and general body shape modification are common (e.g. *Allendesalazaria* Martínez de la Escalera, 1910, *Apalus* Fabricius, 1775, *Glasunovia* Semenov, 1895, *Hornia* Riley, 1877, *Nyadatus* Aksentjev, 1981, *Sitaris* Latreille, 1802, *Sitarobrachys* Reitter, 1883, *Sitaromorpha* Dokhtouroff, 1890, and *Stenoria* Mulsant, 1857) (Pinto & Bologna, 1999; Bologna & Pinto, 2002). Moreover, some species in those genera show a surprisingly high intraspecific variability in external morphological traits (MacSwain, 1956, 1958; Pardo Alcaide,

1958; Bologna, 1991), which otherwise are generally constant in Meloidae, including head, prothorax and elytral shape, antennae and leg width and length, and coloration of body parts and vestiture (Pardo Alcaide, 1958; Kaszab, 1963; Bologna, 1991). This variability has often led to taxonomic confusion and in many cases proliferation of species descriptions often representing the morphological diversity within single species [see for example the synonym list of *Sitarobrachys thoracicus* (Kraatz, 1862) (Bologna, 1994, 2008)]. To complicate the problem further, species of these groups are seldom encountered in nature, adult activity being limited to a few days, generally restricted around bee nests where larval development occurs, and therefore comparative series are often limited (e.g. Bologna, 1991; Schawaller, 1996; Bologna & Aberlenc, 2002; Bologna & Pinto, 2002). As a consequence many species descriptions are based on single or few specimens and many of these taxa remain known by only those specimens (e.g. Escherich, 1897; Martínez de la Escalera, 1906; Kaszab, 1953; Pardo Alcaide, 1961).

Sitaris lativentris Schaufuss, 1861 and *Sitaris melanurus* Küster, 1849, both described from Spain, represent a good example. Descriptions of both taxa are quite precise and permit an accurate identification, but no other specimens were found again after the descriptions. The nomenclatural history of these names is diverse, while *S. melanurus* was used in recent catalogues (Bologna, 2008; García-París *et al.*, 2010), the name *S. lativentris* was placed in the synonym list of *Sitaris solieri* Pecchioli, 1840 without any justification (Escherich, 1897; Bologna, 1991).

The collection of new specimens morphologically assignable to *S. lativentris* in southern Spain, the availability of series of Iberian specimens of *S. muralis* and *S. solieri* for comparison (Appendix I), the examination of type material of most *Sitaris* taxa (Bologna, in prep.), and a careful reading of the original description of *S. melanurus*, allow us to shed light on the taxonomic status of these enigmatic taxa.

The taxonomic status of *Sitaris lativentris* Schaufuss, 1861

Sitaris lativentris was described from southern Spain (Type locality: "Hispania mer."; Schaufuss, 1861: 49), based on an undetermined number of specimens (more than one). Escherich (1897) included the name in the synonym list of *S. solieri* without discussion—probably influenced by the colouration pattern of the specimens described (Schaufuss, 1861) and by the comments of Schaufuss (1870: 47)—, where it has remained since then (Mader, 1927; Bologna, 1991, 2008; García-París *et al.*, 2010). Borchmann (1917: 144) disagreed and treated *S. lativentris* as an independent taxon, indicating "Andalusien" as its geographic range, as Beauregard (1890) had already pointed out. The original description of *S. lativentris* does not include any information about the tarsal claws structure. Presence or absence of a row of teeth in the ventral margin of the upper blade of tarsal claws, allows a ready assignment of specimens to the species complexes related to either *S. solieri* (with a row of teeth) or to *S. muralis* (without teeth) (Bologna, 1991).

Recent field surveys in southern Spain led to discovery of a few specimens that correspond precisely to the description of *S. lativentris*. These specimens

are two males (Fig. 1) collected in Sorvilán (36°47'38.35"N – 3°16'01.91"W) (Province of Granada, Spain, 12-IX-2005, J.L. Ruiz leg.), which were found in strict microsympatry with three specimens of typical *S. muralis* (Appendix I). Both series of *Sitaris* were found together inside the village of Sorvilán, resting on one of the ancient walls of the church at mid-day. Subsequent visits to the locality during the same dates of 2006, 2007 and 2008 yielded more specimens of typical *S. muralis*, but none morphologically similar to *S. lativentris* or *S. solieri* (Appendix I).

We had the opportunity of examining a female syntype of *S. lativentris* (Fig. 2) held at the collection of the Magyar Természettudományi Múzeum (HNHM, Budapest), and to compare it with specimens of *S. solieri*, *S. muralis* and with the atypical specimens from Sorvilán. This specimen is pinned with the following labels: (a) "Hispania mer., Staudinger" (white, handwritten, rectangular); (b) "Holotypus 1861, *Sitaris lativentris*, L.W. Schaufuss (white with red contour line, rectangular, handwritten, with "Holotypus" red printed). However, Schaufuss (1861) did not designate a holotype for *S. lativentris*, and based on the original description the type series included more than one specimen. Consequently the "Holotypus" label was added posteriorly. In order to avoid further taxonomic problems and in accordance with article 74.7.3 of the International Code of Zoological Nomenclature (ICZN, 1999), we designate here the specimen above indicated (Fig. 2) as lectotype of *S. lativentris* (present designation). We add to this specimen the following label: "Lectotypus / *Sitaris lativentris* Schaufuss, 1861 / Ruiz, Bologna & G^a-París des. 2013" (red printed label).

The specimens from Sorvilán are identical in all aspects to the lectotype of *S. lativentris*, including color pattern, pilosity coloration and shape, antennae morphology and length, and structure of tarsal claws. A brief description follows: total length: 10.8-11.9 mm; head and thorax black, shiny; legs with tibiae and tarsi orange-yellow, except the apical tarsal segment, yellowish brown, femora dark brown with distal portions lighter, metafemora with a narrow longitudinal yellowish broad line in their ventral margin; upper blade of tarsal claws ventrally smooth or only with one or few faint teeth; antennae with first segment black, shiny, the second dark reddish brown, all other segments (III-XI) dark brown, almost black, not shiny; labrum

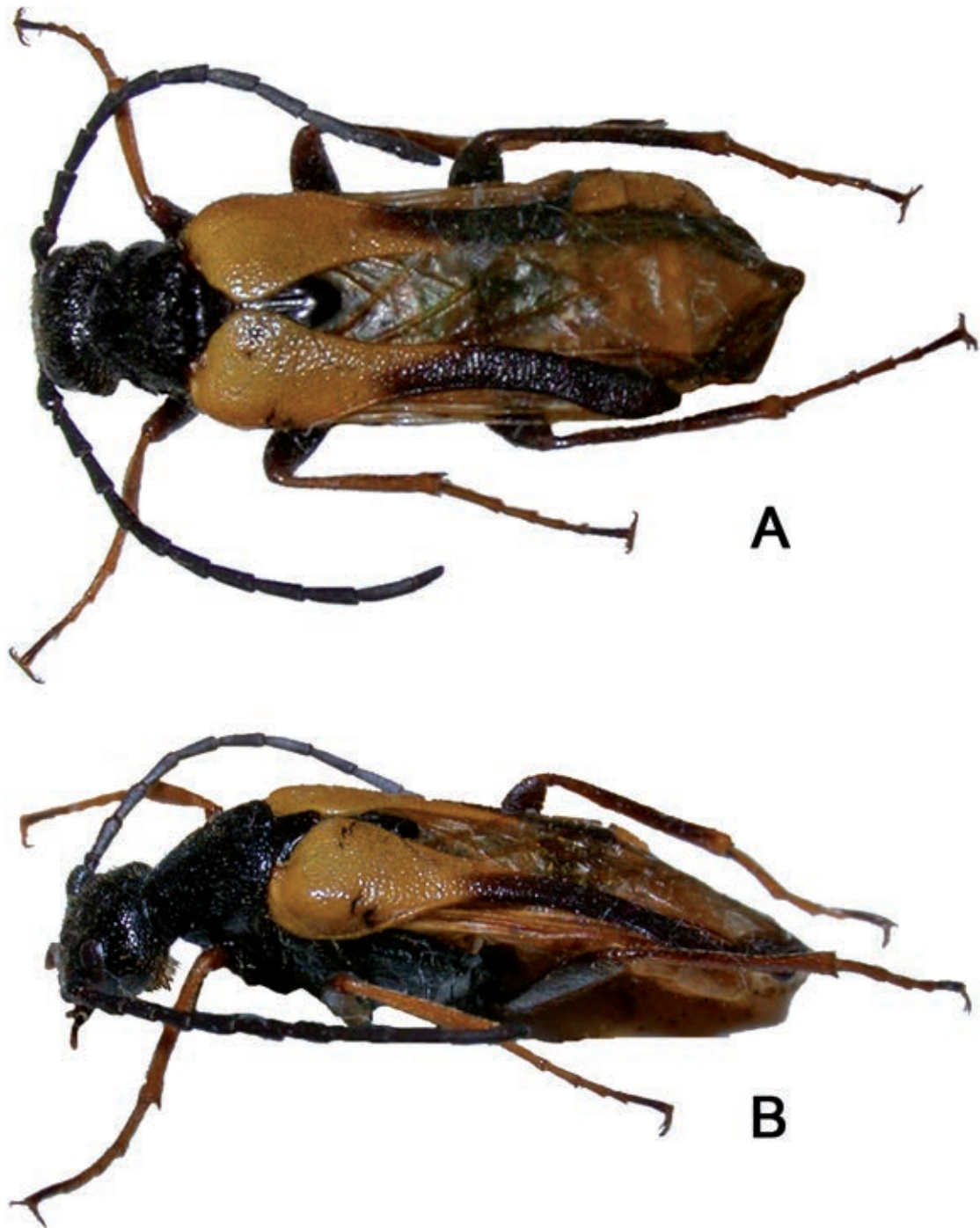


Fig. 1.— Male specimen of *S. muralis*, perfectly fitting the description of *S. lativentris*, recently collected in Sorvilán (36°47'38.35"N – 3°16'01.91"O) (Province of Granada, Spain) (J.L. Ruiz leg.). A. Dorsal view. B. Lateral view.

Fig. 1.— Ejemplar macho de *S. muralis*, totalmente coincidente con la descripción de *S. lativentris*, recientemente colectado en Sorvilán (36°47'38.35"N - 3°16'01.91"O) (Provincia de Granada, España) (J.L. Ruiz leg.). A. Vista dorsal. B. vista lateral.



Fig. 2.– Female syntype of *S. lativentris* from "Hispania mer.", held at the collection of the Magyar Természettudományi Múzeum (HNHM, Budapest), here designated as lectotype. A. Lateral view. B. Dorsal view.

Fig. 2.– Sintipo hembra de *S. lativentris* de "Hispania mer.", conservado en la colección del Magyar Természettudományi Múzeum (HNHM, Budapest), aquí designado como lectotipo. A. Vista lateral. B. Vista dorsal.

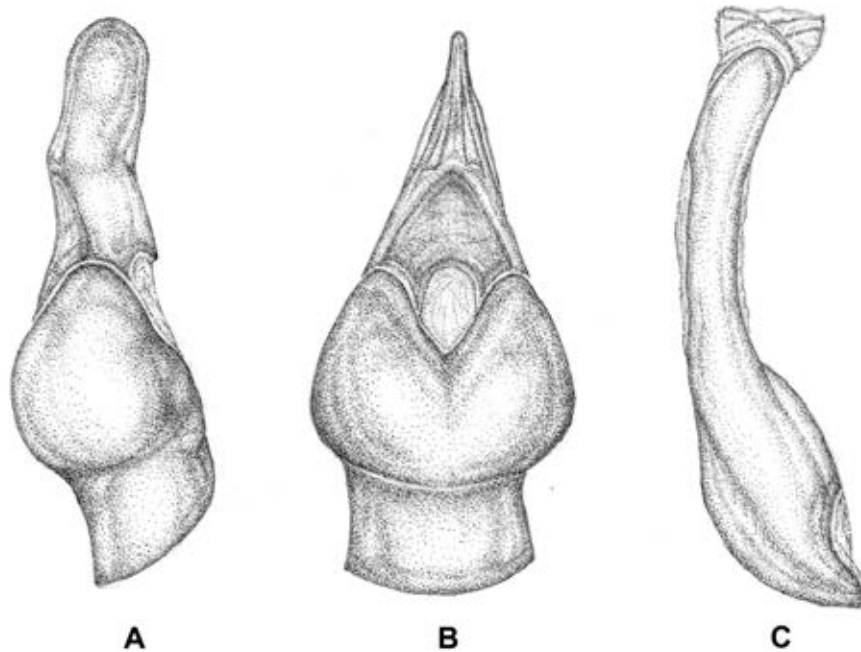


Fig. 3.— Male genitalia of *Sitaris muralis* (Sorvilán, Granada, España): A.- Tegmen lateral view; B.- Tegmen dorsal view; C.- Median lobe lateral view. Scale bar: 0.5 mm. (J. L. Ruiz del.).

Fig. 3.— Genitalia masculina de *Sitaris muralis* (Sorvilán, Granada, España): A.- Tegmen en visión lateral; B.- Tegmen en visión dorsal; C.- Lóbulo medio en visión lateral. Escala: 0.5 mm. (J.L. Ruiz del.).

yellowish, darker in the central area; elytra orange-yellow along the basal two thirds, dark brown along the distal third (the narrowed area of the elytra), the contact between the brown and yellow colour areas is diffuse, obliquely placed; wings functional with an amber hue, darker on the sides; abdomen orange-yellow, except a light brown central area in the last sternite; dorsal and ventral pilosity golden yellow, including all the body and appendages, except the apical third of the elytra. Male genitalia identical to that of specimens of *S. muralis* from the same locality, including some variability at the phallobasis and distal portion of aedeagus, broader and lighter in the specimens described (Fig. 3).

Neither the type of *S. lativentris* nor the Sorvilán specimens are similar to *S. solieri*, except in coloration (resembling pale specimens of the latter). Determinant differences between *S. lativentris* and *S. solieri* include: upper blade of tarsal claws ventrally smooth or only with one or few faint teeth at the basis in *S. lativentris*, strongly dentate along the complete ventral surface in *S. solieri*; male genitalia with the apex of parameri evenly pointed in dorsal

view in *S. lativentris* (Fig. 3), with a lateral narrowing in *S. solieri*. Because these traits are precisely diagnostic characters for the *S. solieri* species-group, *S. lativentris* cannot be considered a synonym of *S. solieri*.

Comparisons between type material of *S. lativentris* and Sorvilán specimens with *S. muralis*, did not render any significant differences, except in the pattern of elytral coloration (similar to pale specimens of *S. solieri*) and coloration of pilosity. Since those coloration characters are variable in other species of *Sitaris* it is reasonable to assume they may be variable in *S. muralis* as well. Consequently *S. lativentris* and the Sorvilán specimens correspond to a paler phenotype of *S. muralis* with the elytral black colouration slightly reduced anteriorly when compared to typical specimens and with yellow golden vestiture all over the body except on the apical third of the elytra.

The name *S. lativentris* is thus here transferred to the synonym list of *S. muralis* which currently stands as follows (modified from García-París *et al.*, 2010):

Sitaris (Sitaris) muralis (Forster, 1771)

Necydalea muralis Forster, 1771: 48
Necydalis humuralis Fabricius, 1775: 209
Necydalis humeralis Fabricius, 1787: 170 (emendation)
Cantharis attenuata Geoffroy in Fourcroy, 1785: 154
Sitaris humeralis (Fabricius, 1775): Westwood, 1839: 297
Sitaris muralis (Forster, 1771): Mulsant, 1857: 191
Sitaris lativentris Schaufuss, 1861: 49 (**syn. nov.**)
Sitaris splendidus Schaufuss, 1861: 49
Sitaris nitidicollis Abeille de Perrin, 1869: 42
Apalus (Sitaris) muralis (Forster, 1771): Escherich, 1897: 126
Sitaris muralis var. *flava* Hamm, 1909: 277
Apalus lativentris (Schauffuss, 1861): Borchmann, 1917: 144
Apalus splendidus (Schauffuss, 1861): Borchmann, 1917: 147
Apalus muralis mauritanicus Normand, 1950: 82

The synonymy of *S. splendidus* Schaufuss, 1861, another taxon described from southern Spain (Type locality: “Hispan. mer.”; Schaufuss, 1861: 49), with *S. muralis* was subjected to debate: proposed by Escherich (1897), it was not followed by Borchmann (1917) or Mader (1927), but then it was accepted by Bologna (1991, 2008) and García-París *et al.* (2010). During the present study two syntypes of *S. splendidus* (male and female) preserved at HNHM were examined, confirming the synonymy of this species with *S. muralis*. Type labels are as follows: (a) “Hispania mer., Andalusia, Staudinger” (white, rectangular, handwritten); (b) “Holotypus/Paratypus 1861, *Sitaris splendidus* L.W. Schaufuss” (white with red contour line, rectangular, handwritten, with “Holotypus” and “Paratypus” red printed; added by the Hungarian Museum). The specimens described as *S. splendidus* represent a phenotype in which the extension of the elytral dark colouration is intermediate between typical *S. muralis* and those described as *S. lativentris*. García-París *et al.* (2010: 193, fig. 11) show a photograph of the syntype of *S. splendidus* labelled as “Holotypus”, stating erroneously that it could be the holotype by monotypy. Schaufuss (1861) included more than one specimen in the type series and did not designate a holotype. With the taxonomic purpose of fixing the identity of *S. splendidus* and in accordance with article 74.7.3 of the International Code of Zoological Nomenclature (ICZN, 1999), we designate here the specimen above mentioned and figured by García-París *et al.* (2010: 193, fig. 11) as lectotype of *S. splendidus* (present designation). We add to this specimen the following label: “Lectotypus / *Sitaris splendidus* Schaufuss, 1861 / Ruiz, Bologna & G^a-París des. 2013” (red printed label).

The identity of *Sitaris melanurus* Küster, 1849

Sitaris melanurus was described (as *Sitaris melanura*) from southern France and Spain (Type locality: “Südfrankreich und Spanien”) (Küster, 1849a). The identity of this enigmatic taxon escaped the attention of most researchers on the group, which simply retained the name as a valid taxon from catalogue to catalogue without discussion (Beauregard, 1890; Rodríguez López-Neyra, 1914; Borchmann, 1917; Mader, 1927; Bologna, 2008), or with vague statements about its taxonomic value (Escherich, 1897: 132; Pardo Alcaide, 1958: 21; García-París *et al.*, 2010: 193). The species has not been found since its original description, despite the relatively wide geographic range deduced from the type locality (Pardo Alcaide, 1958; García-París, 2000). To complicate matters, the type specimens seem to be lost (pers. com. M. Balke, Zoologische Staatssammlung, Munich).

However, the original description is quite detailed and provides sufficient basis to discard the inclusion of the taxon in *Sitaris*. As a matter of fact, statements presented in the description like “Brustschild wie der Kopf rostgelb, glänzend (...), der Grund rostgelb, mit einem schwarzen punktförmigen Fleckchen auf der Mitte der Basin”, “Beine lang, schwach, rostgelb” (*sic*), and many others, correspond to traits that, among western European sitarine beetles, are only present in *Stenoria apicalis* (Latreille, 1804) (Pardo Alcaide, 1958; Bologna, 1991). Therefore it is likely that Küster (1849a) was describing one of the most frequent color variants of this species (pronotum yellow-reddish with a basal central dark spot; Bologna, 1991). The geographic range of *S. apicalis* (see Bologna, 1991, 2008; Ruiz, 2001) includes the range indicated in the original description for *S. melanurus*, adding support to our taxonomic subjective statement.

As a consequence we include the name *S. melanurus* as a new synonym in the synonym list of *S. apicalis* as follows (modified from García-París *et al.*, 2010):

Stenoria (Stenoria) apicalis (Latreille, 1804)

Sitaris apicalis Latreille, 1804: 403
Sitaris melanura Küster, 1849a: 84 **syn. nov.**
Ctenopus sturmii Küster, 1849b: n° 72
Stenoria apicalis (Latreille, 1804): Mulsant, 1857: 186
Stenoria kraatzii Mulsant et Rey, 1861: 191
Hapalus (Stenoria) apicalis (Latreille, 1804): Procházka, 1892: 269

Apalus (Stenoria) apicalis picicollis Escherich, 1897: 123
Stenoria brunneicollis Pic, 1914: 74 (this synonymy requires further study)
Apalus melanurus (Küster, 1849): Borchmann, 1917: 144
Stenoria apicalis ab. *basicollis* Kaszab, 1956: 158 (name not available)
Stenoria apicalis ab. *vitticollis* Kaszab, 1956: 158 (name not available)
Stenoria apicalis ab. *bipunctata* Kaszab, 1956: 158 (name not available)
Stenoria apicalis ab. *communimacula* Kaszab, 1956: 159 (name not available)
Stenoria apicalis ab. *nigroplagiata* Kaszab, 1956: 159 (name not available)
Stenoria apicalis ab. *tristicula* Kaszab, 1956: 160 (name not available)
Stenoria apicalis ab. *paucinigra* Pardo Alcaide, 1958: 17 name not available)
Stenoria apicalis ab. *kaszabiana* Pardo Alcaide, 1958: 17 name not available)
Stenoria apicalis ab. *catalonica* Pardo Alcaide, 1958: 18 (name not available)
Stenoria apicalis ab. *luteifrons* Pardo Alcaide, 1958: 18 (name not available)
Stenoria apicalis var. *iranica* Kaszab, 1959: 440 (this synonymy requires further study)

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Appendix I.— Additional non type material examined of *S. muralis* and *S. solieri* from Spain. EEZA: Estación Experimental de Zonas Áridas (CSIC-Almería); JLR: J.L. Ruiz collection (Ceuta); MGP: M. García-París alcohol collection at MNCN; MNCN: Museo Nacional de Ciencias Naturales (CSIC-Madrid); PB: P. Bercedo & L. Arnáiz collection (Devesa de Cureño, León).

Apéndice I.— Material adicional, no tipo, examinado de *S. muralis* y *S. solieri* de España. EEZA: Estación Experimental de Zonas Áridas (CSIC-Almería); JLR: colección J.L. Ruiz (Ceuta); MGP: colección en alcohol de M. García-París, depositada en el MNCN; MNCN: Museo Nacional de Ciencias Naturales (CSIC-Madrid); PB: colección P. Bercedo & L. Arnáiz (Devesa de Cureño, León).

Sitaris muralis

Almería: Sierra de María, Refugio, 1400 m., 30SWG724719: 14-VIII-1990, 1 male, (P. Barranco leg.) [JLR]. **Barcelona:** Pedralbes: 18-XI-1897, 1 specimen (A. Cabrera leg.) [MNCN]. **Cantabria:** Miera: 20-IX-1984, 1 male (ahogado en un abrevadero) (P. Bercedo leg.) [PB]. **Ciudad Real:** Pozuelo de Calatrava: 1 specimen (Seebold leg.) [MNCN]. **Granada:** Barranco del Espartal, Cúllar-Baza, 30SWG2754: 22-IX-1991, 1 male (F.S. Piñero leg.); 1 km SO Cádiar: 14-IX-2006, 9 specimens (M. García-París leg.) [MNCN-MGP field number: 06260]; Sorvilán: 12-IX-2005, 3 males (J.L. Ruiz leg.) [JLR]; Sorvilán: 14-IX-2006, 5 specimens (M. García-París leg.) [MNCN-MGP field number: 06259]. **Madrid:** El Escorial: 1 specimen (A. Cobos leg.) (*Sitaris muralis* Pardo Alcaide det. 1951) [EEZA]; 4 km S de Tielmes: 28-IX-2003, 1 specimen, 5-IX-2004, 5 specimens [MNCN-MGP field number: 04244-245, 08288]; Villaviciosa: 1 specimen (J. Ardois leg.)

[MNCN]; Villaviciosa: 20-VIII-193?, 1 specimen [MNCN]. **Málaga:** 1 specimen (Aragoncillo leg.) (Col. del Sr. Pérez Arcas). [MNCN]. **Navarra:** Corella: 1 specimen (*Sitaris muralis* Pardo Alcaide det. 1957) [EEZA]. **Sevilla:** Cazallas: 1 specimen (Calderón leg.) [MNCN]. **Zaragoza:** Tauste: 9-IX-2004, 1 specimen, escaped (M. García París photograph); Zaragoza: 1 specimen (Aranda leg.) [MNCN].

Sitaris solieri

Ávila: Villarejo it. [del Valle]: 1 specimen [MNCN]. **Jaén:** Santiago de la Espada: 1 specimen (J. Martínez leg.) [MNCN]. **Sevilla:** Osuna: 1 specimen (Rico leg.) [MNCN]. **Tenerife:** Bajamar: X-1921, 1 specimen (A. Cabrera leg.) [MNCN] [see García-París & Ruiz, 2011, for additional material included in the type series of *S. solieri* var. *cabrerai* Martínez de la Escalera, 1921].