

Some interesting Miridae (Hemiptera: Heteroptera) from the Basque Country

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Abstract

Three species of plant bugs are recorded for the first time in the Iberian Peninsula: *Bryocoris pteridis* (Fallén, 1807), *Polymerus (Polymerus) nigrita* (Fallén, 1807) and *Macrotylus (Alloeonycha) horvathi* (Reuter, 1876). The following synonymy is established: *Macrotylus (Alloeonycha) solitarius* (Meyer-Dür, 1843) = *Macrotylus (Alloeonycha) mayri* (Reuter, 1904) **syn. n.** In addition, new localities and data are provided on that species and on three others considered as rare or interesting: *Isometopus intrusus* (Herrich-Schaeffer, 1835), *Orthotylus (Orthotylus) verticatus* Wagner, 1958 and *Orthotylus (Orthotylus) siuranus* Wagner, 1964. All the specimens were captured in the Basque Country.

Key words: New synonymy, *Macrotylus (Alloeonycha) solitarius* (Meyer-Dür, 1843) = *Macrotylus (Alloeonycha) mayri* (Reuter, 1904) **syn. n.**, Miridae, Heteroptera, Basque Country, Iberian Peninsula, new records.

Resumen

Algunos Miridae (Hemiptera: Heteroptera) interesantes del País Vasco

Se constata por primera vez la presencia en la Península Ibérica de las tres especies de míridos siguientes: *Bryocoris pteridis* (Fallén, 1807), *Polymerus (Polymerus) nigrita* (Fallén, 1807) y *Macrotylus (Alloeonycha) horvathi* (Reuter, 1876). Se establece la siguiente sinonimia: *Macrotylus (Alloeonycha) solitarius* (Meyer-Dür, 1843) = *Macrotylus (Alloeonycha) mayri* (Reuter, 1904) **syn. n.** Además se aportan nuevas localidades y datos sobre ésta y otras tres especies consideradas raras o interesantes: *Isometopus intrusus* (Herrich-Schaeffer, 1835), *Orthotylus (Orthotylus) verticatus* Wagner, 1958 y *Orthotylus (Orthotylus) siuranus* Wagner, 1964. Todos los ejemplares han sido capturados en el País Vasco.

Palabras clave: Nueva sinonimia, *Macrotylus (Alloeonycha) solitarius* (Meyer-Dür, 1843) = *Macrotylus (Alloeonycha) mayri* (Reuter, 1904) **syn. n.**, Miridae, Heteroptera, País Vasco, Península Ibérica, nuevas citas.

Laburpena

Zenbait Miridae (Hemiptera: Heteroptera) interesgarri Euskal Herrian

Hiru mirido-espezie aurkitu dira lehenengo aldiz Iberiar Penintsulan: *Bryocoris pteridis* (Fallén, 1807), *Polymerus (Polymerus) nigrita* (Fallén, 1807) eta *Macrotylus (Alloeonycha) horvathi* (Reuter, 1876). Ondorengo sinonimia eratu da: *Macrotylus (Alloeonycha) solitarius* (Meyer-Dür, 1843) = *Macrotylus (Alloeonycha) mayri* (Reuter, 1904) **syn. n.** Espezie horren eta arraro edo interesgarritzat hartu ohi diren beste hiru espezieren leku eta datu berri ere ematen dira: *Isometopus intrusus* (Herrich-Schaeffer, 1835), *Orthotylus (Orthotylus) verticatus* Wagner, 1958 eta *Orthotylus (Orthotylus) siuranus* Wagner, 1964. Ale guztiak Euskal Herrian harrapatu dira.

Gako-hitzak: Sinonimia berria, *Macrotylus (Alloeonycha) solitarius* (Meyer-Dür, 1843) = *Macrotylus (Alloeonycha) mayri* (Reuter, 1904) **syn. n.**, Miridae, Heteroptera, Euskal Herria, Iberiar Penintsula, aipu berriak.

Introduction

The Miridae Hahn, 1833 is the largest family of Heteroptera, with about 1500 species known from the Palaearctic Region (Kerzhner and Josifov, 1999). The fauna of the Iberian Peninsula can be considered as very diverse, but it is far less well known than that of some other parts of Europe. One exception is the relatively well studied fauna of Catalonia, which provides a sound quantitative reference, since 372 mirids have been recorded there out of a total of 1037 species of Heteroptera (J. Ribes *et al.*, 2004).

For a long time very little effort has been directed towards studying this family in the Basque Country. Apart from some very old, isolated records (Bolívar and Chicote, 1879; Seebold and Schramm, 1899), the only recent contribution worthy of note is that of Biurrun Aramayo and Herrera Mesa (1985), who reported 58 species from Nafarroa. The first two authors of the present paper have been studying mirids in the Basque Country for several years, collecting mainly in the Basque provinces of the Iberian Peninsula (Araba, Bizkaia, Gipuzkoa and Nafarroa). As a partial result, some interesting species found in the last two years are now presented.

For each species, some data on the specimens collected, such as their hosts or habitats are given and the contribution of the taxa to the increase of knowledge about Iberian Miridae is emphasized. Previously

published records from elsewhere in the Iberian Peninsula, where such records exist, as well as European or Palaearctic distributions of the species considered are commented. Some illustrations are also provided of their habitus or male genitalia, with the aim of helping in their identification.

All the specimens were captured by the first author and are deposited in the «Pagola-Carte and Zabalegui» collection unless otherwise stated.

Species list

MIRIDAE Hahn, 1833

ISOMETOPINAE Fieber, 1860

ISOMETOPINI Fieber, 1860

Isometopus intrusus (Herrich-Schaeffer, 1835)

Material studied: 1 ♀, La Mina mendatea, Izki Parke Naturala, Arraia-Maeztu (ARABA), 810 m, 30°17'N, 42°14/07/2004.

A European species previously known only from three Iberian localities: Montecillo, in Ciudad Real

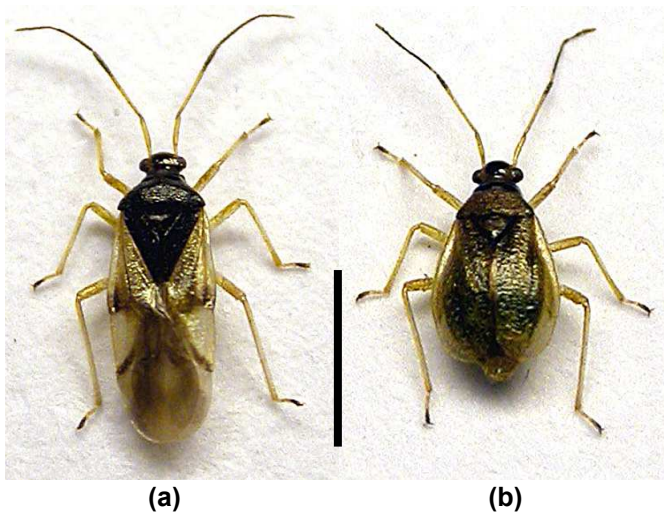


FIGURE 1. Habitus of *Bryocoris pteridis* (Fallén, 1807): (a) macropterous male; (b) brachypterous female; both from Gipuzkoa (Scale bar = 2 mm).



FIGURE 2. Habitus of *Polymerus (Polymerus) nigrita* (Fallén, 1807): female from Araba (Scale bar = 2 mm).

(Castile La Mancha) (J.M. de la Fuente, 1920), Prades, in Baix Camp, Tarragona (Catalonia) (Goula and J. Ribes, 1995), and Santa Coloma (Andorra) (Gessé *et al.*, 1997). It is considered «rare» by J. Ribes *et al.* (2004).

This is the species with the widest distribution of the four *Isometopus* spp. present in Europe, having been recorded in a number of countries (Kerzhner and Josifov, 1999). Once placed as a separate family, the Isometopinae are now recognized as a mirid sub-family (see Schuh and Slater, 1995, for more details on this matter). Peculiar behaviours are sometimes involved. Concerning *I. intrusus*, individuals have been observed running fast on the bark of apple trees (Wagner and Weber, 1964; pers. obs. by the third author). However, other species of trees have also been mentioned as potential hosts by those authors. Moreover, the specimens from Ciudad Real (J.M. de la Fuente, 1920) were found by beating the branches of several *Quercus ilex*.

The specimen from Izki Nature Reserve was captured with an aspirator after some branches of *Quercus pyrenaica* were beaten with a net. It was collected together with a great number of the orthotyline *Malacocoris chlorizans* (Panzer, 1794), upon which it might have been preying at the time. However, given the high degree of specialization in preying on scale insects (Homoptera) for which several Isometopinae are known (Wheeler, 2001), it is likely that both species (*I. intrusus* and *M. chlorizans*) were feeding on smaller prey, probably on the same ones.

BRYOCORINAE Baerensprung, 1860

BRYOCORINI Baerensprung, 1860

Bryocoris pteridis (Fallén, 1807)

Material studied: 1 ♂ and 1 ♀, Epele erreka, Aiako Harria Parke Naturala, Hernani (GIPUZKOA), 40 m, 30TWN88, 21/06/2002; 3 ♂♂ and 7 ♀♀, Latsa (Usoko erreka), Aiako Harria Parke Naturala, Hernani (GIPUZKOA), 60 m, 30TWN88, 07/09/2002 (1 ♀, Zabalegui *leg.*) (1 ♂, J. Ribes *coll.*); 1 ♀, Latsa (Usoko erreka), Aiako Harria Parke Naturala, Hernani (GIPUZKOA), 60 m, 30TWN88, 16/10/2002; 5 ♂♂ and 3 ♀♀, Murgil, Larraul (GIPUZKOA), 450 m, 30TWN78, 11/06/2003 (1 ♂ and 1 ♀, J. Ribes *coll.*); 4 ♀♀, Latsa (Usoko erreka), Aiako Harria Parke Naturala, Hernani (GIPUZKOA), 60 m, 30TWN88, 14/06/2003 (1 ♀, J. Ribes *coll.*); 1 ♀, Ugaldetxo, Aiako Harria Parke Naturala, Hernani (GIPUZKOA), 40 m, 30TWN88, 14/06/2003; 1 ♀, Behien

edanlekua (Idoia), Aiako Harria Parke Naturala, Errenteria (GIPUZKOA), 370 m, 30TWN98, 19/06/2003; 2 ♀♀, Maixar-Arkaitzeta (Urdaburu), Aiako Harria Parke Naturala, Errenteria (GIPUZKOA), 370 m, 30TWN98, 19/06/2003; 1 ♀, Aizpegieta iturria, Aiako Harria Parke Naturala, Irun (GIPUZKOA), 490 m, 30TWN99, 05/07/2003.

Two genera of Bryocorini are known from the Palaearctic Region: *Bryocoris* Fallén, 1829 and *Monalocoris* Dahlbom, 1851. Only two species have been recorded in continental Europe: *B. pteridis* (Fallén, 1807) and *M. filicis* (Linnaeus, 1758), which are largely distributed over the mainland (Kerzhner and Josifov, 1999). A single species, *M. filicis*, was previously known from the Iberian Peninsula. These are the first records of *B. pteridis*.

Wing polymorphism is characteristic in the genus *Bryocoris* (Fig. 1). According to Wagner (1974a), who reported macropterous and brachypterous forms in both sexes, brachyptery is the most frequent. Among the Basque specimens studied, all the females, which were observed more often than males, are brachypterous, and all the males macropterous.

Éhanno (1987b) states that this species is less frequent in France than *M. filicis*, both living on the same plants and habitats (Éhanno, 1987a). In the Basque Country, it has been collected on Dryopteridaceae ferns of the species *Dryopteris filix-mas*; it probably also lives on some other Dryopteridaceae such as *Polystichum aculeatum* and Woodsiaceae such as *Athyrium filix-femina*, where *M. filicis* has also been found. In several localities both Bryocorini have appeared together and a preference for ferns which are full of spores has been repeatedly verified. All the Pteridophyta mentioned grow in humid habitats in the shade of the forests.

MIRINAE Hahn, 1833

MIRINI Hahn, 1833

Polymerus (Polymerus) nigrita (Fallén, 1807)

Material studied: 2 ♂♂, Urkillaga (Aia), Aralar Parke Naturala, Ataun (GIPUZKOA), 510 m, 30TWN65, 20/06/2003; 1 ♀, Lizarragabengoa, Etxarri-Aranatz (NAFARROA), 500 m, 30TWN75, 20/06/2003; 2 ♂♂ and 1 ♀, Los Campos (Antoñana), Izki Parke Naturala, Kanpezu (ARABA), 620 m, 30TWN42, 23/06/2004.

A Eurosiberian species recorded in a number of European countries (Kerzhner and Josifov, 1999). In

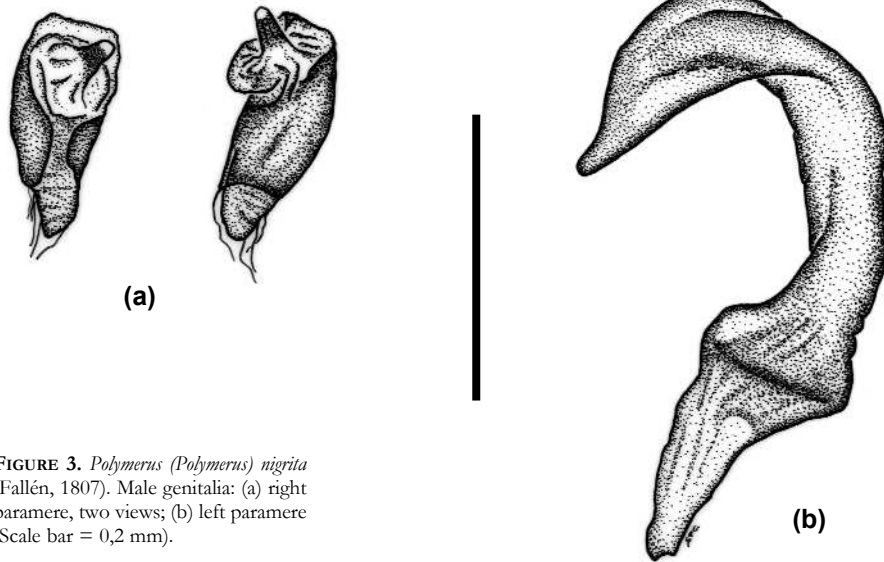


FIGURE 3. *Polymerus (Polymerus) nigrita* (Fallén, 1807). Male genitalia: (a) right paramere, two views; (b) left paramere (Scale bar = 0,2 mm).

France, Éhanno (1987b) states that it is an uncommon and poorly known species. These are the first records from the Iberian Peninsula.

Until now, six *Polymerus* species had been recorded in the Iberian Peninsula, only one of them, *P. (P.) holosericeus* Hahn, 1831, belonging to the nominal subgenus. *P. (P.) nigrita*, now added to this list, can be easily separated from *P. (P.) holosericeus* by the wholly dark antennae and the two pale rings on the tibiae of all legs (Fig. 2). Concerning the male genitalia, the parameres were illustrated by Kerzhner and Jaczewski (1964) and Wagner (1974a), although their figures are somewhat simplified. In the specimen dissected, the right paramere shows a weakly chitinized region anterior to the point of the hypophysis (Fig. 3), in agreement with Wagner's statement: «Rechtes paramer [...] keulenförmig, Hypophysis stumpf, lang, in einer schüsselförmigen Grube sitzend». This feature (the presence of a membranous region) is shared with the subgenus *Stictophytocoris* of *Phytocoris*, the description of which includes it explicitly: «Rechtes paramer im Apikalteil [...] oft häutig» (Wagner, 1974a).

According to the literature, *P. (P.) nigrita* lives on plants of the genus *Galium*, preferably in habitats such as forest clearings (Wagner, 1974a; Éhanno, 1987a). All the specimens were collected by sweeping in diverse meadows bordering forests near roads, but it has not

been possible to determine whether they were on *Galium*. By contrast, it seems probable that they could have been on *Stachys*.

ORTHOTYLINAE Van Duzee, 1916 (1865)

ORTHOTYLINI Van Duzee, 1916 (1865)

Orthotylus (Orthotylus) verticatus Wagner, 1958

Material studied: 3 ♂♂, Loiti mendatea (Izko), Ibargoiti (NAFARROA), 770 m, 30TXN22, 28/05/2003; 1 ♂, Sta. M^a de la Blanca, Uxue (NAFARROA), 730 m, 30TXN20, 28/05/2003; 2 ♂♂ and 3 ♀♀, Lotza, Urizaharra (ARABA), 700 m, 30TWN22, 13/06/2004 (1 ♂ and 1 ♀, J. Ribes coll.).

Described on material from northern Africa (three localities in Morocco) by Wagner (1958), its presence in the European continent was only recently detected. Baena and Susín (1999) found it in Córdoba (Andalusia) and Cuenca (Castile) and E. Ribes and J. Ribes (2000) in Lleida (Segrià, Catalonia).

The specimens from the Basque Country fit the clarification given by E. Ribes and J. Ribes (2000) with regard to the original description, concerning the biometrics as well as the sclerotized appendages of the vesica (Fig. 4).

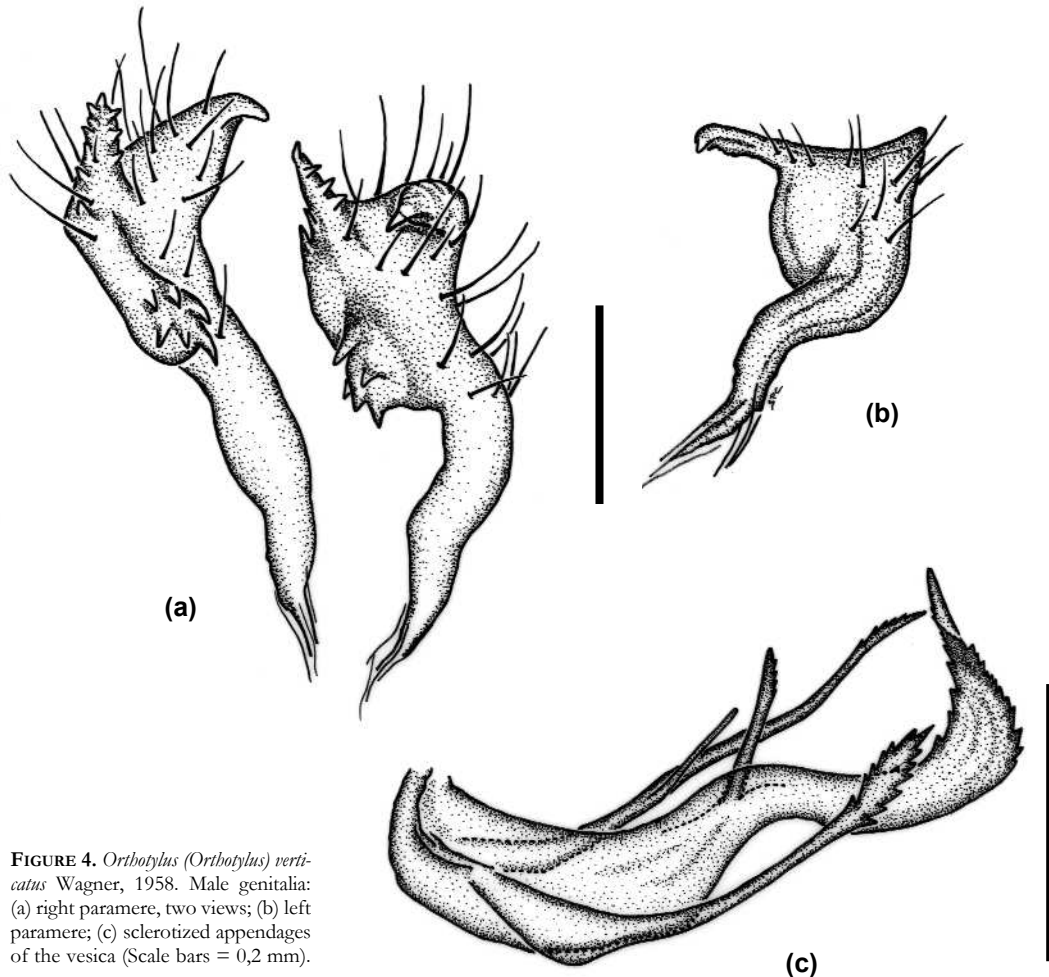


FIGURE 4. *Orthotylus (Orthotylus) verticatus* Wagner, 1958. Male genitalia: (a) right paramere, two views; (b) left paramere; (c) sclerotized appendages of the vesica (Scale bars = 0,2 mm).

All the specimens were collected on *Genista scorpius*, enlarging the list of Leguminosae which are potential hosts for this *Orthotylus (Orthotylus)* of the *nassatus*-group. Baena and Susín (1999) propose the hypothesis of monophagy on *Cytisus fontanesii*, arguing that this could be the main reason for its supposed rarity. However, they also recognize the possibility of a life-cycle based on other Leguminosae.

With the exception of the series from Andalusia (16 April), all the specimens reported to date (from Morocco, Castile, Catalonia, and now the Basque Country) were collected between 25 May and 12 June. Accordingly, it can be suggested that adults mainly live in a short period of the first two weeks

in June. Such a short period could help explain its supposed rarity to a greater degree than host availability does.

***Orthotylus (Orthotylus) siuranus* Wagner, 1964**

Material studied: 8 ♂♂ and 4 ♀♀, Vergalijo, Miranda-Arga (NAFARROA), 320 m, 30TWN90, 31/05/2004 (1 ♂ and 1 ♀, J. Ribes coll.); 1 ♂ and 3 ♀♀, Delika, Amurrio (ARABA), 350 m, 30TWN05, 14/06/2004.

An Iberian endemism described on specimens from Siurana de Prades, in Tarragona (Wagner, 1964), and subsequently only known from two other Catalanian

localities: Cerdanyola, in Barcelona, and Flix, in Tarragona (J. Ribes *et al.*, 2004; Jiménez *et al.*, in press). It belongs to the *virens*-group of subgenus *Orthotylus*, and can be easily separated from the remaining Iberian species of that group by the dark antennae in males (a feature only shared with *O. (O.) interpositus* Schmidt, 1938) and particularly by the male genitalia (Fig. 5).

Like the other species of the *virens*-group, its biology is closely linked to the genus *Salix*. The specimens from Nafarroa were collected on *Salix alba* on the banks of the Arga river, a tributary of the Ebro (Mediterranean basin), while those from Araba were found on *Salix eleagnos* along the edges of the Nerbioi river near its source (Cantabrian basin). These are both vulnerable habitats due to their limited extent and to the risk of invasion by the surrounding farming activities: crops and cattle, respectively.

An error has been detected in the original description by Wagner (1964) in regard to data on capture. The specimens from Siurana de Prades (Priorat, Tarragona) were collected on 3/06/1963, and not on 2/04/1963, as was published (a mistake in the transcription/interpretation of the month «VI» as «IV» may be suspected). It was possible to check the

label as six of the eight paratypes are deposited in the collection of the third author (J. R.), who captured all the previous Catalanian material of this species.

PHYLINAE Douglas and Scott, 1865

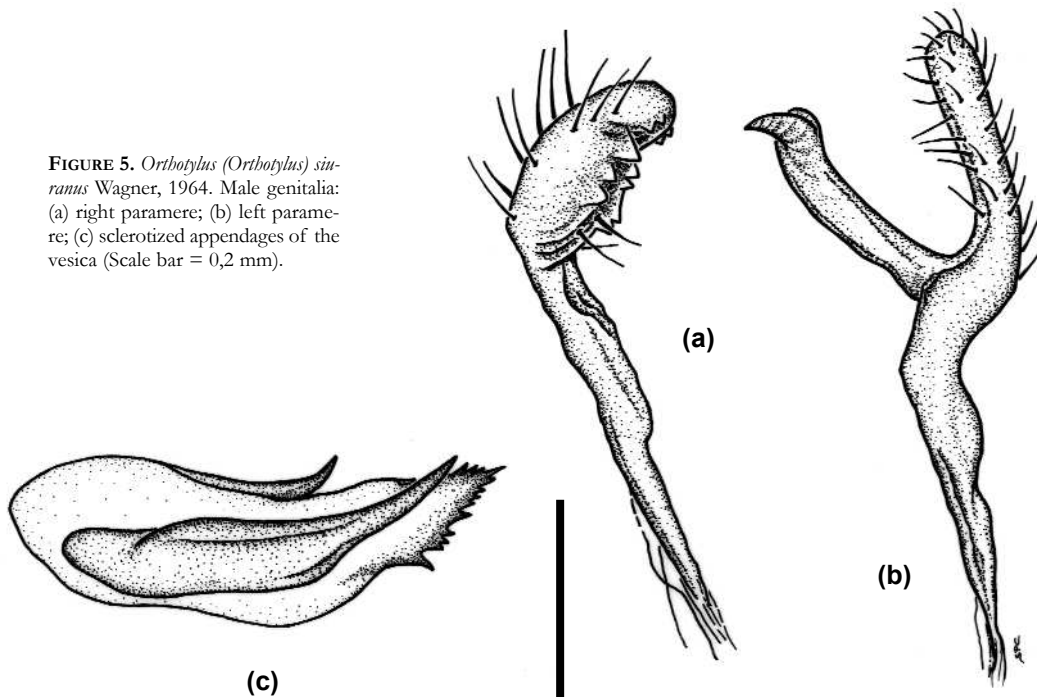
PHYLINI Douglas and Scott, 1865

Macrotylus (Alloeonycha) horvathi (Reuter, 1876) (Fig. 6)

Material studied: 2 ♂♂ and 3 ♀♀, Vergalijo, Miranda-Arga (NAFARROA), 320 m, 30°1'W, 30/06/2003 (1 ♂ and 1 ♀, J. Ribes *coll.*).

Like *M. (A.) solitarius*, *M. (A.) horvathi* belongs to the *solitarius*-group of species, which were discussed and illustrated by Carapezza (1994). Widely distributed in central and eastern Europe (Kerzhner and Josifov, 1999), it seems to become rarer towards the western areas of the continent, and is absent from the British Isles. In France, it has been recorded at a few localities, mainly in the Mediterranean domain (Éhanno, 1987b). This is the first record from the Iberian Peninsula.

FIGURE 5. *Orthotylus (Orthotylus) siuranus* Wagner, 1964. Male genitalia: (a) right paramere; (b) left paramere; (c) sclerotized appendages of the vesica (Scale bar = 0,2 mm).



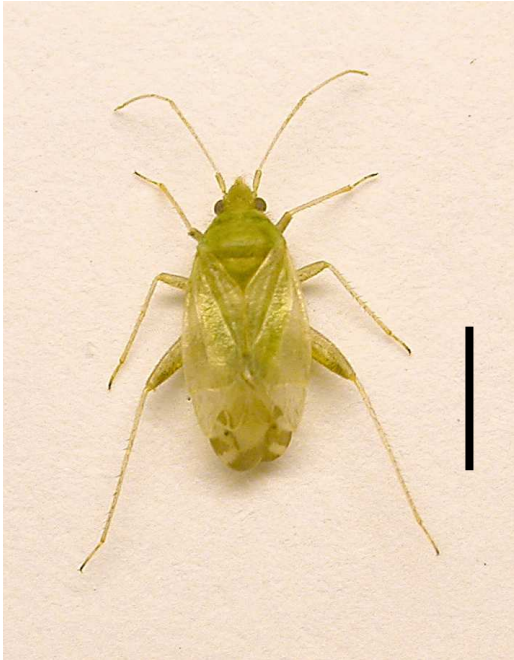


FIGURE 6. Habitus of *Macrotylus (Alloeonycha) borvathi* (Reuter, 1876): female from Nafarroa (Scale bar = 2 mm).



FIGURE 7. Habitus of *Macrotylus (Alloeonycha) solitarius* (Meyer-Dür, 1843): male from Gipuzkoa (Scale bar = 2 mm).

The specimens were collected on *Ballota nigra* growing in a gallery forest beside the river Arga, a tributary of the Ebro.

It must be stressed that the body size of the specimens studied (males: 3,9-4,3 mm; females: 4,0-4,2 mm) is smaller than that of specimens from other parts of Europe. Wagner (1974b) gave the lengths as 4,2-4,8 mm for males and 4,7-5,1 mm for females, in agreement with the sizes shown by a large series of specimens from Nieder-Österreich (Austria) in the collection of the third author, which were determined by the German hemipterist.

***Macrotylus (Alloeonycha) solitarius* (Meyer-Dür, 1843)** (Fig. 7)

= *Macrotylus (Alloeonycha) mayri* (Reuter, 1904) **syn. n.**

Material studied: 1 ♂, Saraszelaieta-Kaxeta, Aralar Parke Naturala, Ataun (GIPUZKOA), 300 m, 30TWN65, 06/06/2004; 1 ♂, Bitoria, Erriberagoitia (ARABA), 800 m, 30TWN03, 23/07/2004.

M. (A.) solitarius (Meyer-Dür, 1843) was described on specimens from Switzerland as *Capsus solitarius*. Type

material seems to be lost (Kerzhner, 1996). The species is known from a number of countries in central and eastern Europe and extends to the Caucasus (Kerzhner and Josifov, 1999). In France, it has been considered «fort peu connu» (Éhanno, 1987b). According to Wagner (1974b) and Éhanno (1987a), it lives on *Stachys sylvatica*. On the other hand, *M. (A.) mayri* (Reuter, 1904), described from Germany, is thought to live on *Stachys recta* in drier habitats, according to the same authors (Wagner, 1974b; Éhanno, 1987a). Wagner (1952) studied the type material and established a lectotype for this species.

The *solitarius*-group of species of *Macrotylus (Alloeonycha)* was first discussed by Wagner (1947), when he described *M. singeri* on German specimens and studied its differences with respect to *M. (A.) borvathi* (Reuter, 1876) and *M. (A.) solitarius* (Meyer-Dür, 1843). Later on *M. singeri* was synonymized with *M. mayri*, whose type he saw (Wagner, 1952), in a further approach to the study of this group of species, in which differences between *M. (A.) borvathi*, *M. (A.) mayri* and *M. (A.) solitarius* were discussed. The most recent approach to the whole *solitarius*-group was provided by Carapezza (1994), who described *M. (A.) ribesi* from Soria (Spain) and distinguished it from the remaining spe-

cies belonging to the group. He illustrated the vesica of *M. (A.) borvatbi*, *M. (A.) mayri* and *M. (A.) solitarius* with great detail.

Nevertheless, differences in genitalia between *M. (A.) mayri* and *M. (A.) solitarius* have been rejected by Rieger (1996), who has argued that the former is an «ecomorph» of the latter. In a recent paper, in which *M. (A.) mayri* is included in the check-list of Heteroptera of Austria, Rabitsch (2004) suspects its synonymy with *M. (A.) solitarius*.

The specimens from the Basque Country have been examined together with previous material preserved in the collection of one of the authors (J.R.) from Catalonia (determined as *M. (A.) mayri* by J.R.), Bulgaria (determined as *M. (A.) mayri* by Josifov) and Germany (determined as *M. (A.) solitarius* by Wagner). After studying the characters commonly used to separate both taxa (see Wagner and Weber, 1964; Wagner, 1974b), we reach the conclusion that they belong to a single species. Specifically:

The usefulness of the coloration of body and antennae is very limited, since it greatly depends on the condition of the specimens. Among the specimens determined as *M. (A.) mayri*, body length is approximately the same in both sexes, in contrast to Wagner's statement. The rostrum length and the «vertex/eye» and «width/length» ratios of the head range within acceptable limits of variability for any species. Moreover, the specimens often show an intermediate position between *M. (A.) solitarius* and *M. (A.) mayri* sensu Wagner.

Concerning the male genitalia, differences in the right paramere between *M. (A.) solitarius* and *M. (A.) mayri* as given by Wagner and Weber (1964: figs. 216b and 216c) and Wagner (1974b: figs. 620d and 620e) are probably due to a slight axial rotation. In addition, a small hypophysis is also appreciable in the specimens studied. Similarly, the differences in the drawings of the left paramere given by Wagner and Weber (1964: figs. 216e and 216f) are easily obtained for a single specimen by slightly changing the point of view chosen for representation. With respect to the vesica, all the specimens studied are identical and fit the illustrations of Carapezza (1994: figs. 2b and 2c) for *M. solitarius*. On the other hand, the differences between those drawings and those of the vesica of *M. (A.) mayri*, which belongs to another Bulgarian specimen (Carapezza, 1994: fig. 2a), could be based on a misleading interpretation of the apex, particularly of the apical processes and of the shape or angle.

The specimens from the Basque Country were pro-

bably collected on *Stachys sylvatica*, especially in the case of the record from Gipuzkoa, which corresponds to a habitat very similar to that described by Éhanno (1987a: p. 323). Anyway, both *S. sylvatica* and *S. recta* belong to the flora of the region (Aipuru et al., 1999) and could be potential hosts.

The genus *Macrotylus* as a whole is now represented in Iberian fauna by 16 species and the *solitarius*-group by the following four: *M. (A.) colon* Reuter, 1880, *M. (A.) borvatbi* (Reuter, 1876), *M. (A.) ribesi* Carapezza, 1994 and *M. (A.) solitarius* (Meyer-Dür, 1843). *M. (A.) solitarius* was previously known from Castellar de N'Hug (Berguedà, Barcelona, Catalonia) (J. Ribes, 1993), under *M. (A.) mayri*. The specimens from the Basque Country therefore are the second record from the Iberian Peninsula.

Acknowledgements

Some of the specimens were captured in the following Nature Reserves: Aralar («Aralar Parke Naturala») and Izki («Izki Parke Naturala»), where the first two authors are studying the Miridae under a project funded by the Basque Government (Biodiversity Office); and Aiako Harria («Aiako Harria Parke Naturala»), where a study of the entomological diversity is being conducted with the aid of the Gipuzkoa Provincial Council and the Town Councils of Donostia, Errenteria, Hernani, Irun and Oiartzun. Thanks are also given to Manuel Baena, who provided us with some ancient bibliography.

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