

## Two new Phylinae (Hemiptera: Heteroptera: Miridae) from the Canary Islands

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**Abstract.** Two new species of Phylinae (Hemiptera: Heteroptera: Miridae) are described from the Canary Islands. Their habitus, several characters of external morphology and genitalia are illustrated. *Systellonotus stysi* sp. nov., belonging to the tribe Hallodapini, is well recognized by its scutellar hump and some other myrmecomorphic characters. *Atomoscelis pictifrons* sp. nov. of the tribe Phylini is easily recognized, among other features, by a pair of purple-red spots on the head. Their generic placement and differences to other taxa are discussed.

**Key words.** Heteroptera, Miridae, Phylinae, Hallodapini, Phylini, *Systellonotus stysi* sp. nov., *Atomoscelis pictifrons* sp. nov., Canary Islands

### Introduction

During a revision of the Canarian Miridae in the collections of Jordi Ribes and Ernst Heiss, several specimens of the subfamily Phylinae have proved to belong to two new species. They belong to the genera *Systellonotus* Fieber, 1858 (Hallodapini), and *Atomoscelis* Reuter, 1875 (Phylini), and are described below. *Systellonotus* is therefore recorded for the first time from the archipelago, whereas *Atomoscelis* has been already known from there, being represented by its most widespread Palaearctic species *A. onusta* (Fieber, 1861) (AUKEMA et al. 2006).

According to the most recent checklist, 385 species of Heteroptera have been known from the Canary Islands (AUKEMA et al. 2006). With the present contribution, that number rises to 387 species.

## Results

### *Systellonotus stysi* sp. nov.

(Figs. 1-3)

**Type locality.** Canary Islands, Tenerife, Los Cristianos.

**Type material.** HOLOTYPE: ♀, 'TENERIFE / Los Cristianos / 7-II-57 J. de Ferrer' [white, handwritten label] // 'HOLOTYPE / *Systellonotus stysi* n. sp. / J. Ribes, Pagola-Carte / & Heiss, 2008' [red, typewritten label]. PARATYPES: 1 ♀, 'Isl. Can., Tenerife / Adeje, Bco. del In- / fierno, 400m, / Euphorbia carariensis [sic!] / 9.IV.1992, leg. Zerche' [white, typewritten label]; 1 ♀, 'La Palma / Volcán Martín / VIII-86 / P. Oromí' [white, handwritten label]. Both paratypes: 'PARATYPE / *Systellonotus stysi* n. sp. / J. Ribes, Pagola-Carte / & Heiss, 2008' [red, typewritten label].

Holotype and paratypes mounted on a card; the female paratype from La Palma with the genitalia glued on a second card below. Holotype deposited in the collection of J. Ribes (Barcelona, Spain); paratypes deposited in the collections of E. Heiss (Innsbruck, Austria) and Pagola-Zabalegui (Donostia, Spain), respectively.

**Description.** Length: 3.50-3.85 mm.

Body surface shiny. Dorsal colouration reddish brown or golden brown, with abdomen darker brown (Fig. 1a). Dorsal vestiture of head, pronotum, scutellum and hemelytra consisting of erect, pale setae, shorter than or as long as the diameter of anterior tibiae. Dorsal vestiture of abdomen consisting of semierect, stout, pale uniformly scattered hairs, twice as long as the diameter of anterior tibiae.

Head in dorsal view (Fig. 1b) almost spherical, 1.2 times as long and 1.6 times as wide as pronotum. Eyes relatively small and flattened, postocular region rounded and strongly constricted towards pronotal collar. Head in frontal view (Fig. 2b) subtriangular and approximately as high as wide; antennal fossae equally distant from the inferior margin of eye and the base of clypeus. Head in lateral view (Fig. 2a) ovoid, gula slightly curved and covered by erect hairs like the juga; clypeus weakly protruding and separated from frons by a slight transversal sulcus; maxillary plates small.

Rostrum reaching or slightly surpassing metacoxae, reddish brown in colour. Segment I thick and nearly as wide as segment I of antennae, its basal half concealed by small bucculae, the latter antero-laterally projected and visible in frontal view (Fig. 2b); segments II, III and IV thinner.

Antennae stout; segment I thick, cylindrical, pale brown; segment II brownish with darker apex, slightly to distinctly arched in its basal half and somewhat enlarged apically (Fig. 2a); segment III cylindrical, its basal half whitish and apex blackish; segment IV fusiform, black (Fig. 1a). Length of antennal segments I-II-III-IV = 0.30-1.05-0.65-0.50 mm. Ratio of segments III/II = 0.62.

Ocular index = 4.32-4.65.

Pronotum 1.18 times as long as wide and 1.4-1.5 times as long as scutellum, dorsally globose with rounded lateral margins (Fig. 1b); collar (Fig. 2a) depressed, flattened and finely granulate; posterior margin emarginate and depressed, finely granulate. Supracoxal lobes of fore legs visible from above on the sides of pronotum.

Scutellum triangular, nearly as wide as long, lateral margins slightly convex. Disc with a distinctive conical hump on posterior half, its apex blunt, as high as the upper level of head and pronotum (Figs. 2a,c).

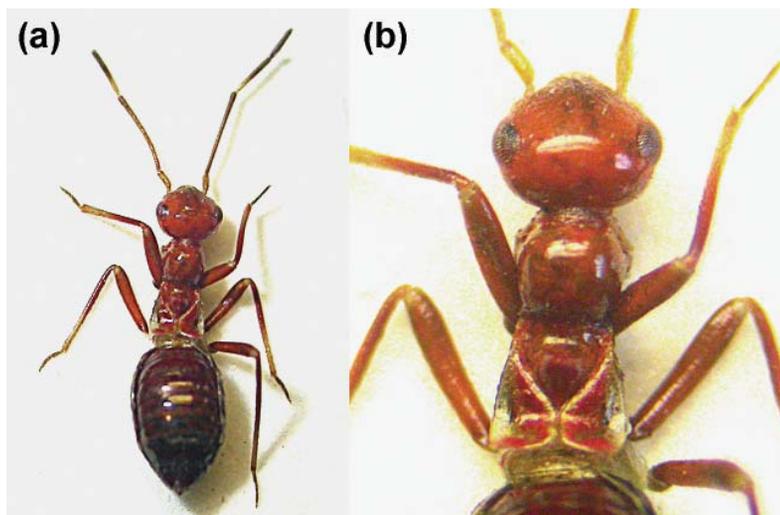


Fig. 1. *Systellonotus stysi* sp. nov., paratype ♀ from Tenerife. a – habitus, b – head and thorax.

Hemelytra without membrane, shiny, distinctly surpassing the apex of scutellum (Fig. 1b), subparallel at base and then convex, posterior part of triangular shape and strongly turned upward (Figs. 2a,c). Clavus indistinct, claval suture short (0.35 times as long as scutellum) but distinct. Exocorium with a longitudinal whitish spot, not reaching anterior and posterior apices of corium (Fig. 1b).

Abdomen transversally arched or swollen in semicircle; colouration brown with darker terminal segments; connexivum reflexed dorsally (Fig. 1a).

Evaporatory area of metathoracic scent glands very prominent, transverse, of ivory-whitish colour (Fig. 2c), with a robust peritreme and a large orifice bordering metacoxae.

Legs long and slender. Tibiae with short, reclining, brown hairs and short, isolated spines arranged along the inner sides. Length of metatarsus = 0.43 mm; claw of metatarsus = 0.08 mm; length of metatarsal segments I-II-III = 0.17-0.23-0.17 mm (Fig. 2d).

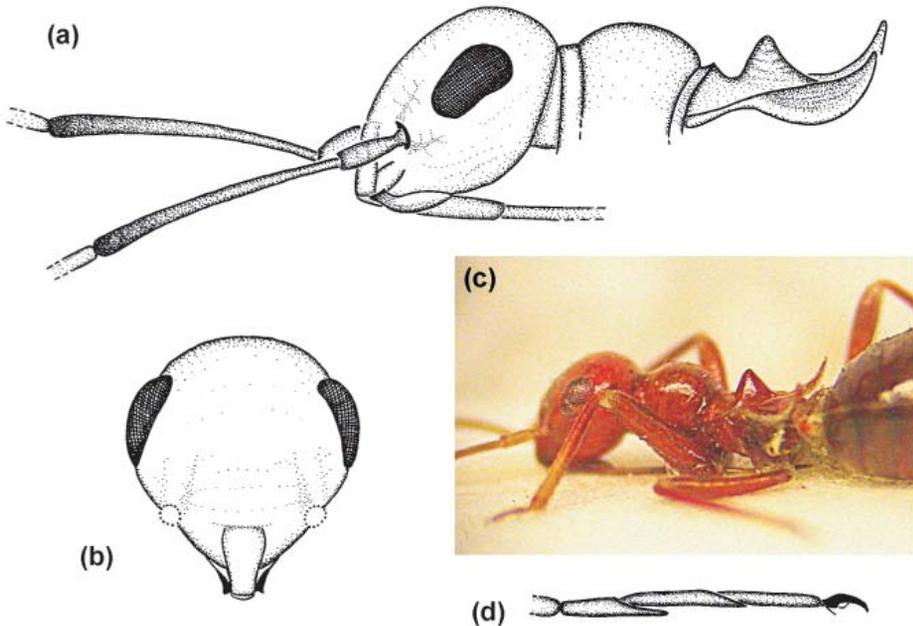
Female genitalia. Dorsal wall of gynatrial complex as in Fig. 3. See remarks in the Discussion.

Male unknown.

**Etymology.** We are pleased to dedicate this species to our friend Pavel Štys on the occasion of his 75<sup>th</sup> birthday as a recognition of his many and great contributions to our knowledge of the Heteroptera.

**Distribution.** So far only known from two of the Canary Islands: Tenerife and La Palma.

**Discussion.** *Systellonotus stysi* sp. nov. shares the set of diagnostic characters of the mainly Mediterranean genus *Systellonotus* (see WAGNER 1974), except the ratio of segment III to segment II of antennae, which is only 0.62 in contrast to the minimum value of 0.75 given by WAGNER (1974). In our view, this is a variable character and we suggest extending the range

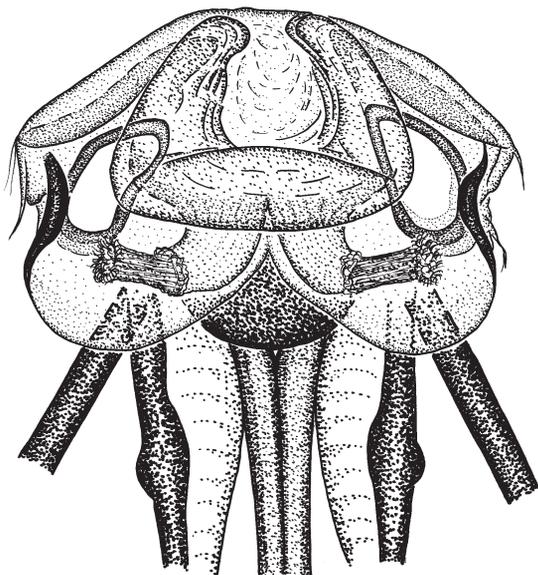


**Fig. 2.** *Systellonotus stysi* sp. nov. a – head and anterior portion of thorax in lateral view (vestiture omitted); b – head in frontal view (vestiture and antennae omitted); c – anterior half of body in lateral view; d – tarsus of middle leg.

of the ratio down to 0.60. In his key, WAGNER (1974) stated: ‘Selten ist das 3. Glied kürzer als das 2., dann sind die Augen vom Vorderrande des Pronotum entfernt’ [= Rarely is segment III shorter than II, but then the eyes are distant from the anterior pronotal margin]. However, the ratio is smaller than 1 in most species of *Systellonotus* (mostly in the range of 0.8–0.9). *Systellonotus stysi* sp. nov. shares both characters as the antennal segment III is shorter than segment II and the eyes quite distant from pronotal collar.

Within the *Systellonotus* group of genera sensu SCHUH (1974) and LINNAVUORI (1996), *Systellonotus* is included in the first subgroup of genera (LINNAVUORI 1996), which displays a striking tendency towards an ant-like appearance. The myrmecomorphic features include the development of a scutellar hump, observed in a few genera, which resembles a hump on the basal abdominal tergite of some ants.

Due to the possession of such a hump and some other morphological adaptations (small eyes, general habitus, etc.), *S. stysi* sp. nov. could be misplaced, at first glance, in the mainly African, ant-mimetic genus *Aspidacanthus* Reuter, 1901. Nevertheless, it clearly lacks a number of generic diagnostic features of the latter genus (according to LINNAVUORI (1996): antennal fossae closer to eyes, neck narrower, rostrum shorter, posterior part of pronotum strongly widened, claval suture not developed, tarsal segment III longer than II). In fact, various myrmecomorphic characters have evolved separately in different lineages. For instance, the genus *Laemocoris* Reuter, 1879, which also includes both African and European species, belongs to the *Halodapus* group of genera (LINNAVUORI 1996) but shows a strongly ant-mimetic appearance as well, and most of its species possess a scutellar hump.



**Fig. 3.** Female genitalia of *Systellonotus stysi* sp. nov.: dorsal wall of gynatrial complex. Scale bar = 0.2 mm.

MAGNIEN (2000), in his revision of the genus *Cremnocephalus* Fieber, 1860, was the first to deal with the female genitalia in the tribe Hallodapini. More recently, WYNIER (2006) examined and illustrated the dorsal and posterior walls, the ventral sac and the vestibulum of 10 species belonging to five genera in a comprehensive study of Central European Hallodapini. Concerning the dorsal view of the gynatrial complex, she has shown that the three species of *Systellonotus* studied (*S. alpinus* Frey-Gessner, 1871, *S. discoidalis* Horváth, 1894, and *S. triguttatus* (Linnaeus, 1767)) are diverse in the shape of their sclerotized rings (more or less circular or triangular, pointed or rounded apically, and with or without an auricle-like apex) but always have voluminous lateral oviducts. In *S. stysi* sp. nov., those structures (Fig. 3) are more similar to WYNIER's (2006) drawing for *Omphalonotus quadriguttatus* (Kirschbaum, 1856) due to the more roundish sclerotized rings, less voluminous lateral oviducts, general shape of the gynatrial complex and membranous, U-shaped antero-medial fold.

Despite these similarities in the female genitalia, *S. stysi* sp. nov. cannot be included in the genus *Omphalonotus* Reuter, 1876, because of the quite different external morphology. In *Omphalonotus*, the eyes are in contact with the anterior margin of the pronotum, the ratio of segments III and II of the antennae is close to 1, and the body shape is rather different. However, one morphological feature of the new species deserves attention, since it is shared with *Omphalonotus*: the prominent bucculae, which are similar to those of *O. quadriguttatus* as illustrated by WAGNER (1974: p. 325: Figs. 571c-d), but different to those previously outlined by WAGNER & WEBER (1964: p. 369: Figs. 205c-d). Although the prominent structures are referred to as the maxillary plates (= 'brides' in French; 'Zügel' in German) in both books (WAGNER & WEBER 1964, WAGNER 1974), they actually represent bucculae in the more recent book as well as in our specimens of *S. stysi* sp. nov. (Fig. 2b).

*Atomoscelis pictifrons* sp. nov.

(Figs. 4-5)

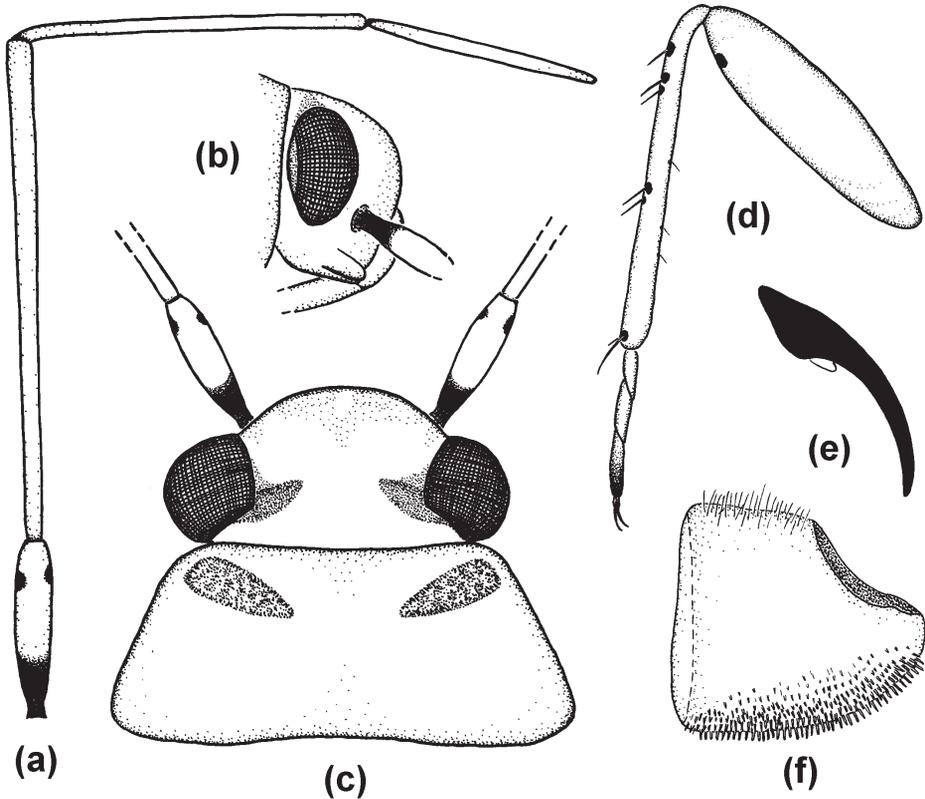
**Type locality.** Canary Islands, Tenerife, Las Cañadas.**Type material.** HOLOTYPE: ♂, '25W/HE2255 / Tenerife, Las Cañadas / Fecha: 13-VII-95 / A. Camacho, leg.' [white, type- and handwritten label] // 'HOLOTYPE / *Atomoscelis pictifrons* n. sp. / J. Ribes, Pagola-Carte / & Heiss, 2008' [red, typewritten label].

Holotype, in a rather bad condition, mounted on a card with the genitalia and some appendages or parts of them glued on a second card below. Deposited in the collection of J. Ribes (Barcelona, Spain).

**Description.** Length: approximately 2.3 mm.

General aspect pale greyish; frons, base of corium and cuneus faintly darker. Pronotal calli brownish red. A bright, purple-red, tear- or horn-shaped spot beside the inner margin of each eye (Fig. 4c).

Dorsal vestiture consisting of pale, shining, reclining hairs, which appear darker depending on the angle of illumination.

**Fig. 4.** *Atomoscelis pictifrons* sp. nov., holotype. a – right antenna; b – head in lateral view; c – head and pronotum in dorsal view; d – fore leg; e – claw of middle leg; f – pygophore in lateral view. Different scales.

Head (Figs. 4b-c) about 2.0 times as high as long in lateral view, 1.25 times as wide as high in frontal view, and 2.0 times as wide as long in dorsal view. Eyes extending over the upper half of head in lateral view. Vertex smooth and slightly concave; frons vertical. Clypeus nearly vertical and arising between antennal fossae.

Rostrum reaching metacoxae. Segments I, II and III pale, segment IV partly darkened distally; segment II slightly longer than segments III and IV together.

Antennae as in Fig. 4a. Segment I fusiform, darkened in its basal quarter and with two small, dark, subapical dots; segment II gradually thickened apically but not clavate, its diameter

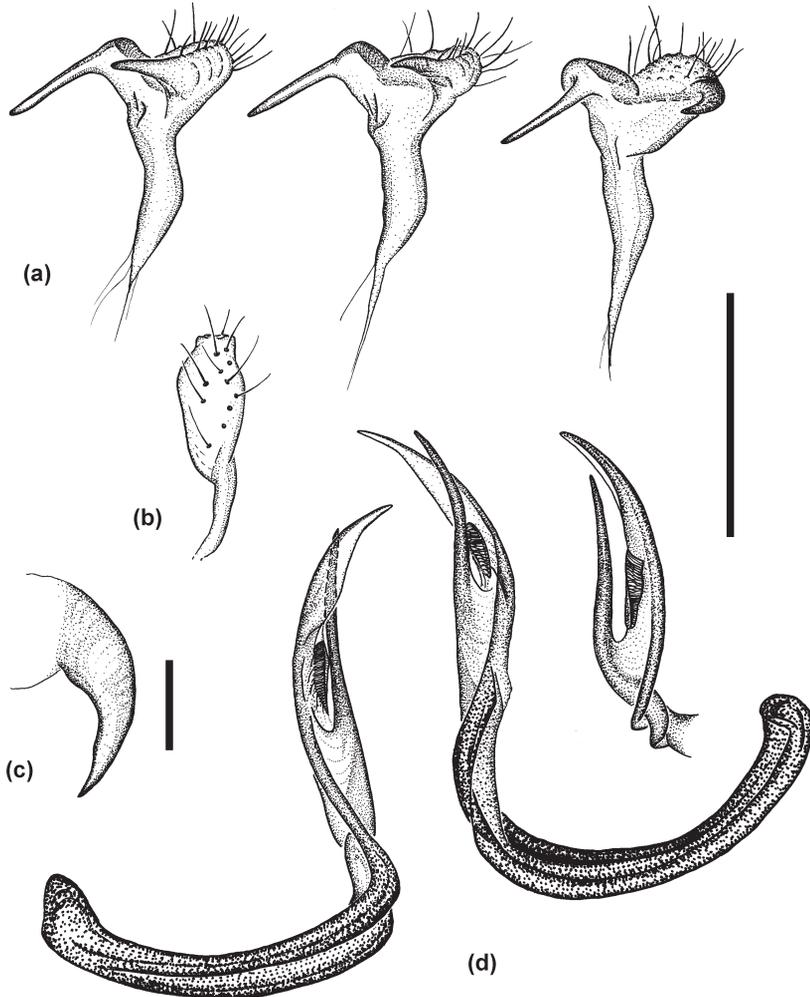


Fig. 5. Male genitalia of *Atomoscelis pictifrons* sp. nov. a – left paramere in different views; b – right paramere; c – apical portion of phallosome; d – vesica in different views. Scale bars: a, b, d = 0.2 mm; c = 0.1 mm.

near apex approximately equal to that of segment I; segments III and IV slender. Length of antennal segments I-II-III-IV = 0.25-0.65-0.45-0.30 mm.

Ocular index = 1.8.

Pronotum (Fig. 4c) trapezoidal, flattened, with straight lateral sides, 2.4 times as wide as long and 1.35 times as wide as diatone. Antennal segment II 0.88 times as long as pronotum wide.

Legs pale (hind legs missing in the single specimen studied). Fore leg as in Fig. 4d. Femur with a black spot on ventral side. Tibia with scattered black spots, from which dark, nearly black, spines arise; spines longer than or as long as tibial diameter, gradually thickened apically. Tarsi pale except segment III, the latter gradually darkened on its distal half; segment III as long as segments I and II together. Claws slender (Fig. 4e, middle leg), uniformly curved and narrowed towards apex, and provided with small but distinct pulvilli, about 0.2 times as long as the claw.

Pygophore ventrally beset with stout setae (Fig. 4f).

Male genitalia. Parameres small; left paramere (Fig. 5a) wide, with two pointed processes, posterior one longer than anterior. Right paramere (Fig. 5b) apically truncate and difficult to see due to its transparency. Apical portion of phallosome as in Fig. 5c. Vesica (Fig. 5d) J- to S-shaped, with two apical, subequally long processes and with secondary gonopore located beyond their diverging point.

Female unknown.

**Etymology.** This species is named for the distinctive red, mask-like spots on the head.

**Distribution.** Up to date, only the holotype has been collected in Tenerife, Canary Islands.

**Discussion.** The new species undoubtedly belongs to the genus *Atomoscelis*, since it fits well all its diagnostic characters (see WAGNER 1975). Particularly noticeable in this genus is the shape of the head (Fig. 4b). WAGNER (1965) previously discussed and compared the characters of *Atomoscelis* and related genera, and LINDBERG (1953) and WAGNER (1965) provided keys to species and/or to the related genera; the keys are now of limited value due to subsequent taxonomic changes (KERZHNER & JOSIFOV 1999).

*Atomoscelis pictifrons* sp. nov. can be easily separated from all other European and northern African species of the genus by the mask-like pair of purple-red spots on the head and the brownish-red pronotal calli (Fig. 4c). It is also distinguished by the relatively small ocular index (1.8 in the male holotype), which is usually larger than 2.2 (males and females) in the remaining species (WAGNER 1975, TAMANINI 1978).

The most closely related taxon to *A. pictifrons* sp. nov. is *A. onusta*. Both species share a similar habitus and the shape of the vesica. However, the apical processes of the vesica have different relative lengths (compare Fig. 5d with Figs. 44b-d in CARAPEZZA (1997)).

In addition, *A. galvagnii* Tamanini, 1978, has a different colouration of the dorsal surface, one dark spot on antennal segment I, and a much more slender vesica (TAMANINI 1978, CARAPEZZA 1997). The vesica is also markedly different in *A. atthis* Linnavuori, 1971, and *A. noualhierii* Reuter, 1902, being stouter and having more basally located secondary gonopore in both species. *Atomoscelis pictifrons* sp. nov. also differs from these mainly Maghrebian species by the lack of longitudinal reddish stripes on the pronotum and dark dots on the hemelytra (LINNAVUORI 1971, WAGNER 1975, TAMANINI 1978, CARAPEZZA 1997).

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