

## New species of *Entomobryini* from the Mediterranean Palaearctic (Collembola, Entomobryidae) and a new name for *Folsomia potapovi* (Collembola, Isotomidae)

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### Abstract

New species of the genera *Entomobrya* and *Mesentotoma* from the Mediterranean Palaearctic region are described: *Entomobrya akritohoriensis* n. sp. from Greece, *Entomobrya luqueensis* n. sp. and *Entomobrya vergarensis* n. sp. from Spain, *Entomobrya transversalis* n. sp. from Morocco, and *Mesentotoma hispanica* n. sp. from Spain. A new name is proposed for *Folsomia potapovi* Jordana & Baquero 2008 nec Babenko 2007.

**Key words:** morphological characters, chaetotaxy, *Entomobrya*, *Mesentotoma*, *Folsomia*

### 1. Introduction

During the revision of the genus *Entomobrya* from the Palaearctic, a great number of specimens from different localities were studied. It is relatively common to find new species that had not been detected due to their similar coloration with previously described species. The combined use of colour and macrochaetotaxy allows the identification of new species and provides a reliable differentiation and characterisation of new species. Two new species are described from a single specimen. One of them (from Greece) is clearly separated from all other *Entomobrya* species due to its chaetotaxy of Abd IV. It is very similar to the species of the genus *Homidia*; the other one is a specimen found among the material labelled as *E. atrocincta*, deposited in the Muséum National d'Histoire Naturelle at Paris, with a very characteristic colour and chaetotaxy. The rest of the described species have been compared with species sharing similar coloration and chaetotaxy. The combination of characters proposed by Jordana & Baquero (2005) has been used for the identification of these specimens.

**Abbreviations:** Abd = abdominal segment, Ant = antennal segment, Mc = macrochaeta, MZNA = Museo de Zoología Universidad de Navarra, Th = thoracic segment

## 2. Material and Methods

The specimens were mounted in Hoyer medium, sometimes cleared with Nesbitt solution. Observation of the slides was done under an Olympus BX51-TF microscope with a multi viewing system and phase contrast, and a Zeiss Axio Imager.A1 with differential interference contrast (DIC). For the measurements, a UDA drawing attachment UIS (Universal Infinity System) and a scale calibrated with a slide (1 mm/0.01 div) from Graticules Ltd were used.

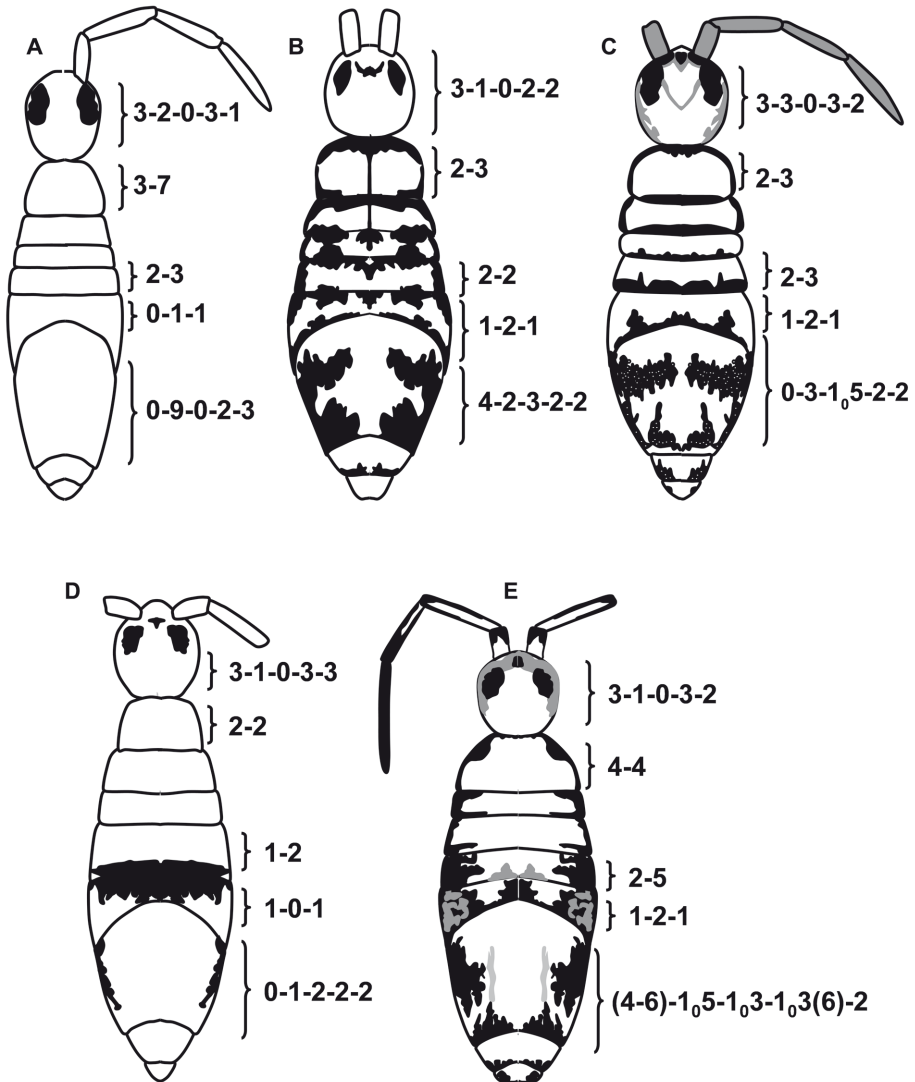


Fig. 1

Colour pattern of *Entomobrya* species described in this paper. A: *E. akritohoriensis* n. sp.; B: *E. luqueensis* n. sp.; C: *E. vergarensis* n. sp.; D: *E. transversalis* n. sp.; E: *Mesentotoma hispanica* n. sp.

### 3. Results

*Entomobrya akritohoriensis* Baquero & Jordana n. sp. (Figs 1A, 2A–D, 9A, Tab. 1)

**Type locality.** Greece, Kerkini mountains (Akritohori), coordinates 41°15'180,8 N, 023°19'86,6 E, altitude 75 m. The site was a south facing valley floor, very damp and shaded, with the dominant tree species being the Oriental Plane (*Platanus orientalis*). More data about this area in Ramel et al. (2008).

**Type material.** One specimen on slide, sample A20040819, 19.VIII.2004, light trap, Gordon Ramel leg. Deposited in MZNA (Museum of Zoology of the University of Navarra).

#### Description

Body length up to 1.9 mm excluding antennae (Tab. 1). Body colour whitish as in Fig. 1A.

**Head:** Eight eyes, GH smaller than EF. Antennae length 1340 µm, three or more times

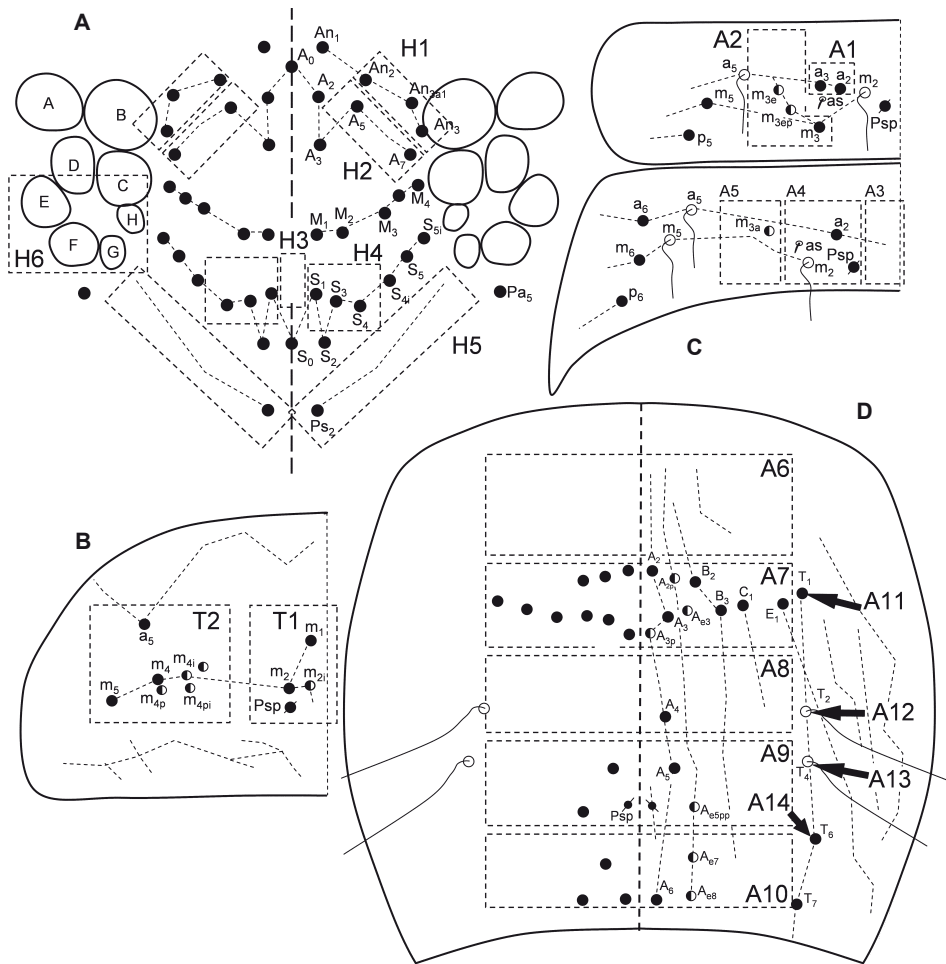


Fig. 2 *Entomobrya akritohoriensis* n. sp. macrochaetotaxy. A: Head; B: Th II; C: Abd II–III; D: Abd IV (the arrows point to the trichobothrium insertions).

Tab. 1 Measurements of the studied specimens, in micrometers. ‘-’: no data. <sup>(1)</sup>, average from 3 specimens.

	<i>E. akritohoriensis</i> n.sp.	<i>E. luqueensis</i> n.sp. <sup>(1)</sup>	<i>E. vergarensis</i> n.sp. <sup>(1)</sup>	<i>E. transversalis</i> n.sp.	<i>M. hispanica</i> n.sp. <sup>(1)</sup>
Ant I	350	140	120	110	140
Ant II	460	260	230	200	400
Ant III	460	-	230	-	350
Ant IV	750	-	270	-	550
Ant	2020	-	850	-	1440
Head	410	400	330	240	480
Ant/head ratio	<b>4,93</b>	-	<b>2,58</b>	-	<b>3,00</b>
Th II	240	240	180	140	300
Th III	140	260	120	90	220
Abd I	100	100	90	70	200
Abd II	120	150	150	90	150
Abd III	120	120	130	80	150
Abd IV	600	500	430	330	740
Abd IV/III ratio	<b>5,00</b>	<b>4,17</b>	<b>3,31</b>	<b>4,13</b>	<b>4,93</b>
Abd V	100	120	90	90	150
Abd VI	80	110	70	35	100
Body	<b>1910</b>	<b>2000</b>	<b>1590</b>	<b>1165</b>	<b>2490</b>
Manubrium	500	280	300	210	470
Dens	670	530	390	290	640
Claw	38	40	40	30	65
Empodium	20	24	25	15	35
Tenent hair	40	46	35	30	65

the length of the head, antennal segment IV with a bilobed apical vesicle. Relative length of antennal segments 1/1.3/1.3/2.1. 4 smooth labral tubercles (Fig. 8A).

**Body:** Length ratio of Abd IV/III > 4 (Tab. 1). The ciliated chaetae on Abd tergite IV are slightly broader, to a lesser degree in *Himalanura* (Fig. 8B). Claw with 4 internal teeth: first pair at 60% of distance from base of claw, 2 unpaired teeth, first at 75% of distance from base and the most distal one minute; dorsal tooth at half distance between the claw base and the paired teeth (Fig. 8C). Empodium spike-like, with smooth external edge on leg III (Fig. 8C). Manubrium and dens length 1170  $\mu\text{m}$  (Tab. 1); dens with longer external and internal chaetae. Manubrial plate with 10 chaetae and 2 pseudopores. Dens with some long chaetae, 2–3 times the width of dens at their insertion point (Fig. 8D). Mucronal sub-apical teeth with similar size to terminal one, and mucronal spine present (Fig. 8E). Male genital plate with almost all chaetae flattened (Fig. 8F)

**Chaetotaxy:** Simplified formula: 3-2-0-3-1b/3-7/2-3/0-1-1/0-9-0-2-3 (Tab. 2).

Head chaetotaxy as in figure 2A; macrochaetae of H5 are true macrochaetae, Ps<sup>2</sup> a little bigger than others. Th chaetotaxy: T1 area on thoracic tergite II with 3 macrochaetae ( $m_1$ ,  $m_2$  and  $m_{21}$  present), T2 area on thoracic tergite II with 7 macrochaetae (Fig. 2B). Abdomen chaetotaxy (Figs 2C–D): A1 area on Abd tergite II with 2 macrochaetae and A2 area on Abd tergite II with 3 macrochaetae. Abd III with 1 macrochaeta on area A5.

**Biology:** Unknown.

**Discussion.** This species has a very characteristic macrochaetae distribution on Abd IV that is similar to that of *Homidia* spp., but the new species lacks spines on. Only two species of *Entomobrya* of the Palaearctic have 2-3/0-1-1 macrochaetae on Abd tergites II and III (*E. akritohoriensis* n. sp. and *E. sibirica* Stach, 1963), but they differ in the chaetotaxy of Abd IV and Th II (2-3 macrochaetae on T1 and T2 area on Th II in *E. sibirica*, 3-7 in the new species) and in colour. Its peculiar features permit the description of this species from a single well-preserved specimen.

**Etymology.** The species was named after the type locality.

***Entomobrya luqueensis* n. sp.** (Figs 1B, 3A–D, 8G–I, Tab. 1 and 2)

**Type locality.** Spain, Luque, Córdoba, ‘Sierra de la Lastra’, coordinates 37°30’34”N, 4°14’45”O, altitude 900 m. Surroundings of ‘Cortijo de la Nava’.

**Type material.** One specimen on slide, sample ECO0021 (Arbea Coll.), 9.II.2003, Manuel Baena leg. Two paratypes, one on slide, other in tube with ethyl alcohol. Deposited in MZNA.

### Description

Body length up to 2 mm excluding antennae (Tab. 1). Body colour pattern see Fig. 1B.

**Head:** Eight eyes, GH smaller than EF. Antennae length unknown (antennae broken). Four labral smooth tubercles (Fig. 8G).

**Body:** Length ratio of Abd IV/III > 4 (Tab. 1). Claw with 4 internal teeth: first pair at 56% of distance from base of claw, 2 unpaired teeth, first at 77% of distance from base and the most distal one minute, dorsal edge of the claw with a tooth in basal position. Empodium spike-like, with smooth external edge on leg III (Fig. 8H). Length of manubrium and dens 910  $\mu\text{m}$ . Manubrial plate with 4 chaetae and 2 pseudopores. Mucronal sub-apical teeth similar to terminal one and mucronal spine present (Fig. 8I).

**Chaetotaxy:** Simplified formula: 3-1-0-2-2/2-3/2-2/1-2-1/4-2-3-2-2 (Tab. 2).

Head chaetotaxy as in figure 3A. Th chaetotaxy: T1 area on thoracic tergite II with 2 macrochaetae ( $m_1$  and  $m_{21}$  present), T2 area on thoracic tergite II with 3 macrochaetae

Tab. 2 Comparison of the character sets of the cited *Entomobrya* species. Last line with the number of differences. 'c', no data. Differences with *E. luqueensis* n. sp (1); differences between *E. vergarensis* n. sp. and *E. multifasciata* (2). Differential characters in bold with grey background.

Character	Location	Description	Range within the genus	<i>E. multifasciata</i>	<i>E. quinquifasciata</i>	<i>E. vadelli</i>	<i>E. luqueensis</i> n.sp.	<i>E. vergarensis</i> n.sp.
Ch. 1	H1 (Head)	An <sub>2</sub> -An <sub>3</sub>	1-6	3	3	3	3	3
Ch. 2	H2	A <sub>5</sub> -A <sub>7</sub>	1-3	1	1	1	1	<b>3</b>
Ch. 3	H3	S <sub>0</sub> <sup>c</sup>	0-1	0	0	0	0	0
Ch. 4	H4	S <sub>1</sub> -S <sub>3</sub> -S <sub>4</sub>	0-3	2	2	2	2	<b>3</b>
Ch. 5	H5	P <sub>32</sub> -P <sub>43</sub> -P <sub>45</sub>	0-3	2	2	2	2	2
Ch. 6	Labral papillae	simple and smooth papillae (1) wrinkled or with some projections (2) a projection chaetae like (3)	1-3	<b>2</b>	1	<b>2</b>	1	2
Ch. 7	Eyes G&H size	= E&F (1), <E&F (2)	1-2	<b>1</b>	2	2	2	1
Ch. 8	Apical antennal retractile bulb	no bulb (0), lobe simple (1), two lobe (2), three lobe (3)	0-3	1-2	1	1	-	2
Ch. 9	Ratio Ant./ Head	> or = 3 (1), > or = 2 < 3 (2), < 2 (3)	1-3	2	2	2	-	-
Ch. 10	Anterior dorsal mane Th II Mc	with Mc type 1 (1), without Mc or type 2 (2)	1-2	1	1	1	1	1
Ch. 11	T1	chaetae number m <sub>1</sub> -m <sub>212</sub> or >4 (5)	0-5	2	2	2	2	2
Ch. 12	T2	chaetae number a <sub>3</sub> , m <sub>4</sub> -m <sub>5</sub> or >8 (9)	0-9	3	3	3	3	3
Ch. 13	Smooth chaetae on tibiotsarsi	not or 1 in tibiotsarsi III = 0, double file = 1	0-1	0	0	0	0	0
Ch. 14	Claw internal teeth	1(1), 2(2), 3(3), 4(4)	1-4	4	4	4	4	4

<b>Ch.15</b>	Claw dorsal tooth	basal = 1, internal teeth level = 2, intermediate=3	1-2	1	1	1	1	1	<b>3</b>
<b>Ch.16</b>	Claw internal edge	without ciliation (0), with ciliation (1)	0-1	0	0	0	0	0	0
<b>Ch.17</b>	External empodium	smooth (0), serrate (1)	0-1	0	0	0	<b>1</b>	0	0
<b>Ch.18</b>	A1 Abd II	a <sub>2-8</sub>	0-2	2	2	2	2	2	2
<b>Ch.19</b>	A2 Abd II	m <sub>3</sub> series chaetae number	0-7	2	2	2	2	2	3
<b>Ch.20</b>	A3 Abd III	a <sub>1</sub>	0-1	1	1	1	1	1	1
<b>Ch.21</b>	A4 Abd III	above m <sub>2</sub> chaetae number	0-3	2	2	2	2	2	2
<b>Ch.22</b>	A5 Abd III	m <sub>3</sub> -m <sub>4</sub> series chaetae number	0-4	1	1	1	1	1	1
<b>Ch.23</b>	A6 Abd IV	a <sub>1-8</sub> (A <sub>1</sub> -D <sub>1</sub> ) chaetae number; >8 (9)	0-9	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>
<b>Ch.24</b>	A7 unpaired chaeta	ma <sub>0</sub> (A <sub>03</sub> )	0-1	0	0	0	0	0	0
<b>Ch.25</b>	A7 Abd IV	ma <sub>1</sub> -ma <sub>4</sub> (A <sub>2</sub> -E <sub>1</sub> ) chaetae number; >9 (10)	0-10	<b>2</b>	<b>3(4)</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>
<b>Ch.26</b>	A8 unpaired chaeta	m <sub>0</sub> (A <sub>04</sub> )	0-1	0	0	0	0	0	1
<b>Ch.27</b>	A8 Abd IV	m <sub>1</sub> -m <sub>3</sub> (A <sub>4b</sub> -C <sub>2b</sub> ) chaetae number; >5 (6)	0-6	3	3(4-5)	3	3	3	5
<b>Ch.28</b>	A9 unpaired chaeta	mp <sub>0</sub> (A <sub>05</sub> )	0-1	0	0	0	0	0	0
<b>Ch.29</b>	A9 Abd IV	mp <sub>1</sub> -mp <sub>3</sub> (A <sub>5</sub> -B <sub>3</sub> ) chaetae number; >6 (7)	0-7	2	2	2	2	2	2
<b>Ch.30</b>	A10 Abd IV	p <sub>1a</sub> -p <sub>3</sub> (A <sub>6</sub> -B <sub>6</sub> ) chaetae number; >5 (6)	0-6	2	2	2	2	2	2
<b>Ch.31</b>	A11 Abd IV	T <sub>1</sub> (ma <sub>4</sub> ) as trichothrium	0-1	0	0	0	0	0	0
<b>Ch.32</b>	A12 Abd IV	T <sub>2</sub> (m <sub>4</sub> ) as trichothrium	0-1	1	1	1	1	1	1
<b>Ch.33</b>	A13 Abd IV	T <sub>4</sub> (mp <sub>4</sub> ) as trichothrium	0-1	1	1	1	1	1	1
<b>Ch.34</b>	A14 Abd IV	T <sub>6</sub> (p <sub>4</sub> ) as trichothrium	0-1	0	0	0	0	0	0
<b>Ch.35</b>	Ratio Abd IV/Abd III	2 < R < 4 (1), R > 4 (2)	1-2	2	<b>1</b>	2	2	2	<b>1</b>
<b>Ch.36</b>	Manubrial plate	chaetae number; >10 (11)	0-11	4	4	<b>3</b>	4	4	4
<b>Ch.37</b>	Manubrial plate	pseudopores 1-2	1-2	2	2	2	2	2	2
<b>Ch.38</b>	Mucro	sub-apical tooth, without (0), normal (1), big (2)	0-1	1	1	1	1	1	1
<b>Ch.39</b>	Mucro	basal spine, absent (0), present (1)	0-1	1	1	1	1	1	1
<b>Number of differences</b>									<b>6<sup>(2)</sup></b>
									<b>3<sup>(1)</sup></b>
									<b>5<sup>(0)</sup></b>
									<b>3<sup>(0)</sup></b>
									<b>5<sup>(0)</sup></b>
									<b>6<sup>(2)</sup></b>

present ( $a_5$ ,  $m_4$  and  $m_{4i}$ ) (Fig. 3B). Abdomen chaetotaxy (Figs. 3C–D): A1 area on Abd tergite II with two macrochaetae and A2 area on Abd tergite II with two macrochaetae; Abd III with one macrochaeta on area A3 and A5, and two macrochaetae on A4 area.

**Biology:** Unknown.

**Discussion.** The colour pattern of this new species is similar to *E. multifasciata* (Tullberg, 1871) and other similar species with transversal bands, and the macrochaetotaxy of Th II and Abd tergites II and III (2-3/2-2/1-2-1) is similar to that of 4 species from the Palearctic region (the new species and *E. multifasciata*, *E. quinquelineata* Börner, 1901 and *E. vadelli* Jordana & Baquero, 2005). But its smooth labral tubercles (with some projections in *E. multifasciata* and *E. vadelli*), the characteristic colour pattern in *E. quinquelineata* and, in particular, the chaetotaxy of Abd tergite IV warrant its classification as new species (Tab. 2).

**Etymology.** The species has been named after the type locality.

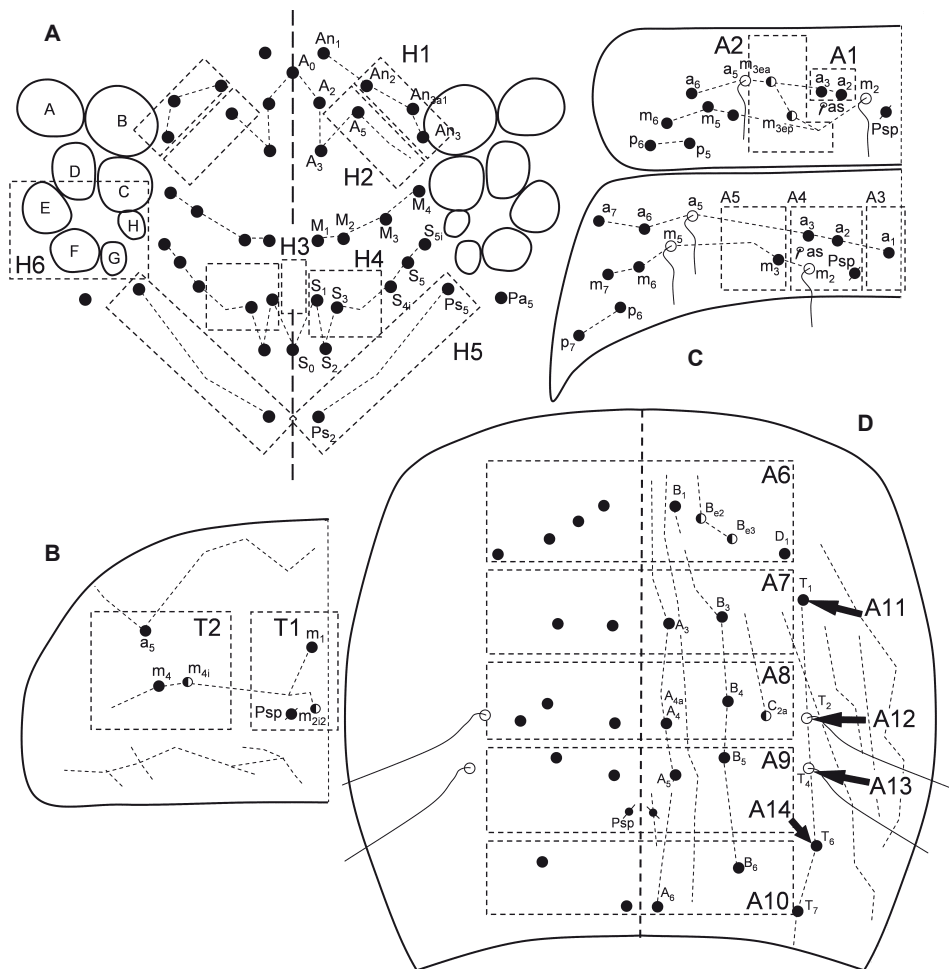


Fig. 3 *E. luqueensis* n. sp. macrochaetotaxy. A: head; B: Th II; C: Abd II–III; D: Abd IV.



***Entomobrya vergarensis* n. sp.** (Figs 1C, 4A–D, 9C–E, Tab. 1 and 2)

**Type locality.** Spain, Tudela, Navarra, Soto de Vergara, UTM Coordinates 30TXM1665, altitude 260 m. Poaceae in grove vegetation.

**Type material.** Holotype: one specimen on slide, sample MZ-19980323a, 23.III.1998, Poaceae in grove vegetation, R. Jordana and E. Baquero leg. Capture method: docking.

**Paratypes:** Four specimens (two on slides and two in tube with ethyl alcohol) from the same sample as the Holotype. Deposited in MZNA.

**Other material.** One specimen on slide EZA1001-09 from Spain, Zaragoza, Monegros, Pina de Ebro, Retuerta de Pina, Coordinates 41°29'44"N, 0°26'52"W, 270 m. Agropyron cristati-lygeetum sparti association, humus of *Juniperus thurifera*, 16.XII.1989, Javier Blasco-Zumeta leg. (J. Arbea Coll.).

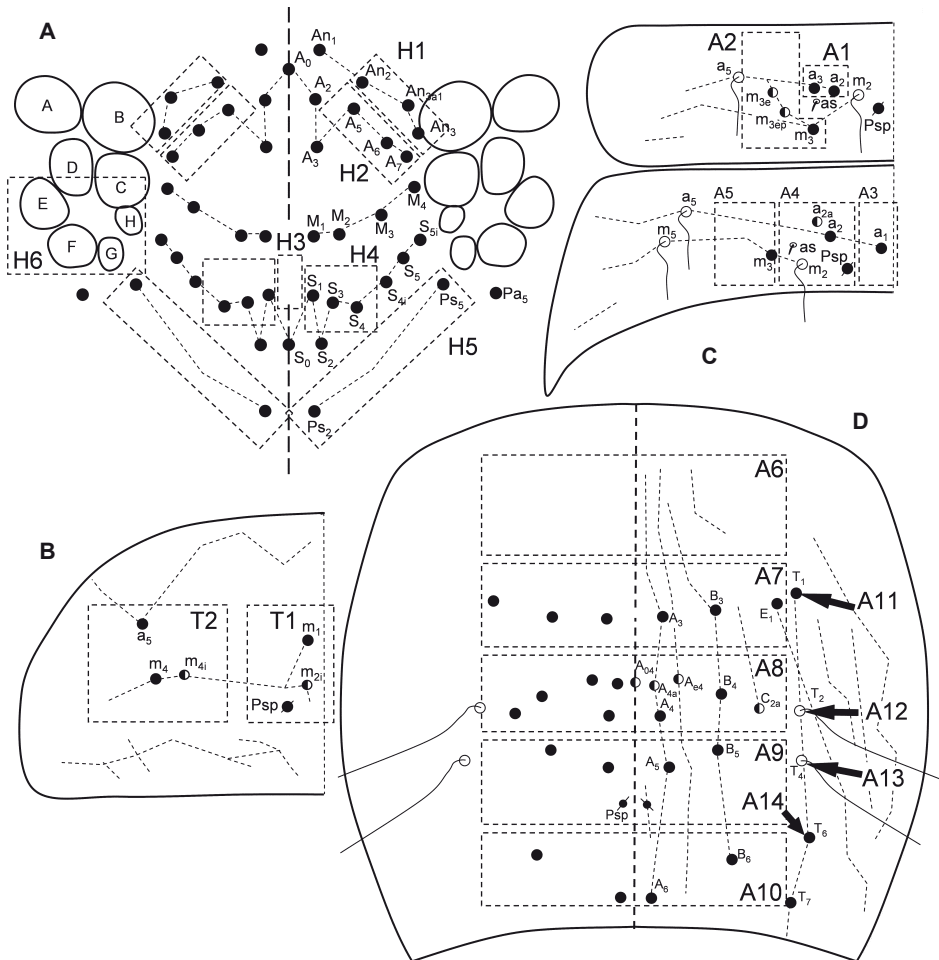


Fig. 4 *E. vergarensis* n. sp. macrochaetotaxy. A: head; B: Th II; C: Abd II–III; D: Abd IV.

### Description

Body length up to 1.6 mm excluding antennae (Tab. 1). Body colour pattern see Fig. 1C.

**Head:** Eight eyes, GH smaller than EF. Antennae length 850  $\mu\text{m}$ , between two and three times the length of the head, antennal segment IV with bilobed apical vesicle. Relative length of antennal segments 1/1.9/1.9/2.3 (Table 1). Four labral tubercles wrinkled or with some projections (Figs. 8J–K).

**Body:** Length ratio Abd IV/III < 4 (Tab. 1). Claw with 4 internal teeth: first pair at 60% of distance from base of claw, and 2 odd teeth, first at 80% of distance from the base of the claw and the most distal one minute; dorsal tooth between paired teeth and basal part of the claw. Empodium spike-like, with smooth external edge on leg III (Fig. 8L). Length of manubrium and dens 690  $\mu\text{m}$ . Manubrial plate with 4 chaetae and 2 pseudopores (Fig. 8M). Mucro with basal spine, sub-apical teeth similar to terminal one (Fig. 8N).

**Chaetotaxy:** Simplified formula: 3-3-0-3-2/2-3/2-3/1-2-1/0-3-1<sub>0</sub>-5-2-2 (Tab. 2).

Head chaetotaxy as in figure 4A. Th chaetotaxy: T1 area on thoracic tergite II with 2 macrochaetae ( $m_1$  and  $m_{2i}$  present); T2 area on thoracic tergite II with 3 macrochaetae present ( $a_5$ ,  $m_4$  and  $m_{4i}$ ) (Fig. 4B). Abdomen chaetotaxy (Figs 4C–D): A1 area on Abd tergite II with 2 macrochaetae and A2 area on Abd tergite II with 3 macrochaetae. Abd III with 1 macrochaeta on area A3 and A5, 2 macrochaetae on A4 area.

**Occurrence:** Navarra and Zaragoza, Spain.

**Biology:** Found on Poaceae in grove vegetation (Navarra) and in humus of *Juniperus thurifera* in *Agropyro cristati-lygeetum sparti* association (Zaragoza).

**Discussion.** The colour pattern of this new species is very similar to *E. multifasciata* but it differs in six characters (see Tab. 2). The macrochaetotaxy on thoracic tergite II and Abd tergite II and III (2-3/2-3/1-2-1) is shared by 5 species (*E. atrocincta* Schött, 1896, *E. colettae* Cassagnau, 1964, *E. maroccana* Baquero & Jordana, 2008, *E. melitensis* Stach, 1963 and *E. numidica* Jordana, Hamra-Kroua, Baquero, 2008), but its color pattern and the small projection or wrinkled labral tubercles are distinct from *E. atrocincta*, *E. colettae* and *E. maroccana*. In this last character, it is coincident with *E. numidica* and *E. melitensis*. The chaetotaxy of abdomen IV of *E. melitensis* (0-0-0-4-2) distinguishes it from the new species. It differs from *E. numidica* due to the characteristic colour of *E. numidica* (black saddle-like pattern colour) and the chaetotaxy (0-0-3-3-2) of abdomen IV.

**Etymology.** The species was named after the place where it was found.

***Entomobrya transversalis* Baquero & Jordana n. sp.** (Figs 1D, 5A–D, Tab. 1)

**Type locality.** Morocco, C'Chauen RIF.

**Type material.** One specimen on slide, labelled as '*Entomobrya atrocincta* vers C'Chauen RIF; MAROC MRI-1 1974 leg. Deharveng', deposited in the Muséum National D'Histoire Naturelle, Paris (MNHN).

### Description

Body length up to 1.2 mm excluding antennae (Tab. 1). Body colour pattern see Fig. 1D.

**Head:** Eight eyes, GH smaller than EF. Antennae length unknown (antennae broken). Four labral tubercles wrinkled or with some projections.

**Body:** Length ratio of Abd IV/III > 4 (Tab. 1). Claw with 4 internal teeth, dorsal tooth on basal part of the claw. Empodium spike-like, with smooth inner edge on leg III. Length of manubrium and dens 500  $\mu\text{m}$ . Manubrial plate with 4 chaetae and 2 pseudopores. Mucro with basal spine, sub-apical teeth similar to terminal one.

**Chaetotaxy:** Simplified formula: 3-1-0-3-3/2-2/1-2/1-0-1/0-1-2-2-2.

Head chaetotaxy as in Fig. 5A. Th chaetotaxy: T1 area on thoracic tergite II with 2 macrochaetae ( $m_1$  and  $m_{21}$  present); T2 area on thoracic tergite II with 2 macrochaetae present ( $a_5$  and  $m_{41}$ ) (Fig. 5B). Abdomen chaetotaxy (Figs 5C–D): A1 area on Abd tergite II with 1 macrochaeta and A2 area on Abd tergite II with 2 macrochaetae. Abd III with 1 macrochaeta on area A3 and A5.

**Biology:** Unknown

**Discussion.** Only one specimen is known, but its reduced macrochaetotaxy is quite distinct. The macrochaetotaxy of Abd tergites II and III is shared by 8 species in the Palaearctic, but the new species is the only one with 2+2 macrochaetae on thoracic tergite II. The colour pattern is very characteristic, especially its transversal stripes (Fig. 1D).

**Etymology.** The species was named after its body colour pattern (transversal stripes on Abd tergites II–III).

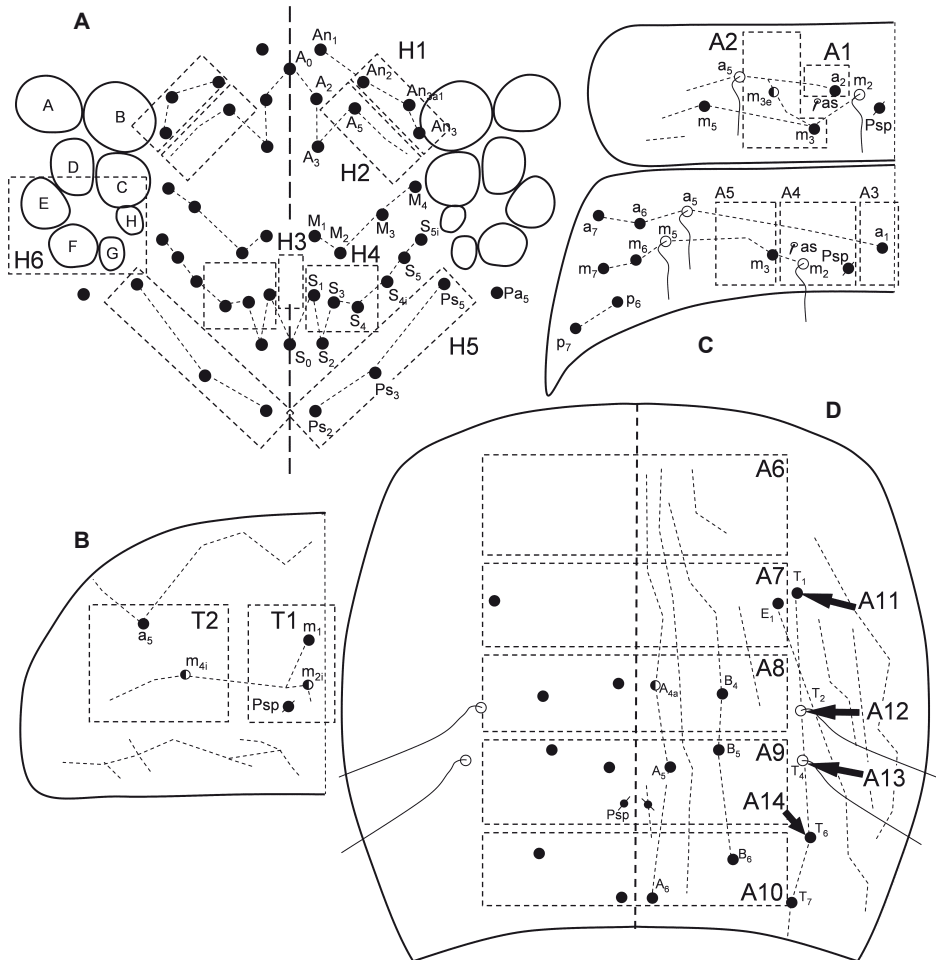


Fig. 5 *E. transversalis* n. sp. macrochaetotaxy. A: head; B: Th II; C: Abd II–III; D: Abd IV.

*Mesentotoma hispanica* n. sp. (Figs 1E, 6A–D, 7A–D, 9F–H, Tab. 1)

**Type locality.** Spain, Asturias, Bricias (Playa de Postacos). On marine seaweed.

**Type material.** Holotype and two paratypes on the same slide, labeled as '328N Museo de Madrid Lab. de Entomol. Playa de Postacos Bricia (Asturias) C. Cardin. En algas marinas 24.II.929 (*E. corticalis*?)'. Captured on marine seaweeds. C. Cardin leg. Deposited in MNCN (National Museum of Natural Sciences –CSIC–, Madrid, Spain).

**Other material.** Two specimens on two separate slides (sample code: EO0008 01) and various specimens in tube with ethyl alcohol from SPAIN, Asturias, Celorio, Playa de Troenzo, Coordinates 43°26'09,78"N, 4°49'04,99"O, Altitude 7 m. Under stones at the sea shore, 19.VIII.2002. J. Arbea leg. Material deposited in MZNA and Arbea Coll.

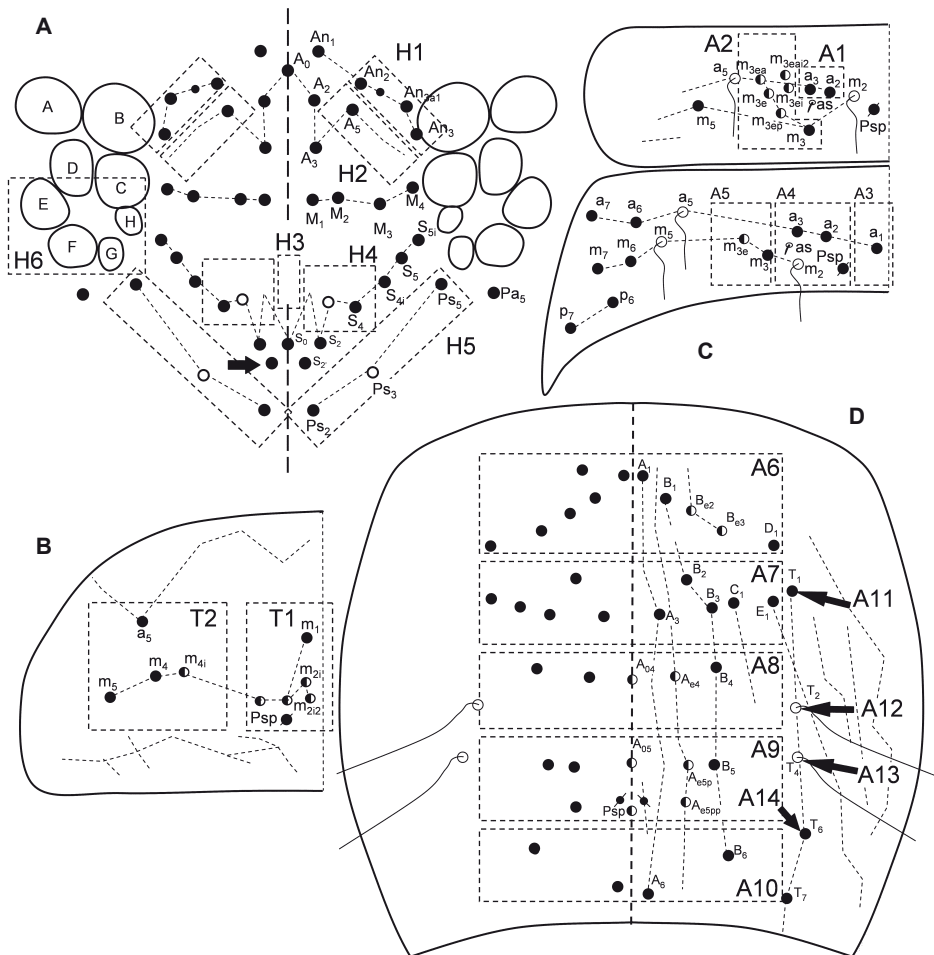


Fig. 6 *M. hispanica* n. sp. macrochaetotaxy (holotype, specimen from MNCN). A: head; B: Th II; C: Abd II–III; D: Abd IV.

### Description

Body length up to 2.5 mm, excluding antennae. Body colour pattern see Fig. 1E.

**Head:** Eight eyes, GH smaller than EF. Antennae length 1440  $\mu\text{m}$ , three times the length of the head. Relative length of antennal segments 1/2.8/2.5/3.9. 4 simple labral papillae, large and smooth.

**Body:** Length ratio of Abd tergite IV/III > 4. Claw with 4 internal teeth: first pair at 45% of distance from base of claw, and 2 unpaired teeth, first at 80% of distance from base and the most distal one minute; dorsal tooth located on basal part of the claw. Empodium truncated, with smooth inner edge on leg III (Fig. 8O). Trocanteral organ with 10–15 chaetae (Fig. 8P).

Length of manubrium and dens 1110  $\mu\text{m}$ . Manubrial plate with 4 chaetae and 2 pseudopores. Mucro without basal spine, and sub-apical teeth smaller than terminal one (Fig. 8Q).

**Chaetotaxy:** Simplified formula: 3-1-0-1(2)-2/4-4/2-5/1-2-1/4(6)-1<sub>0</sub>-5-1<sub>0</sub>-3-1<sub>0</sub>-3(6)-2 (variations in brackets, caused by presence of mesochaetae).

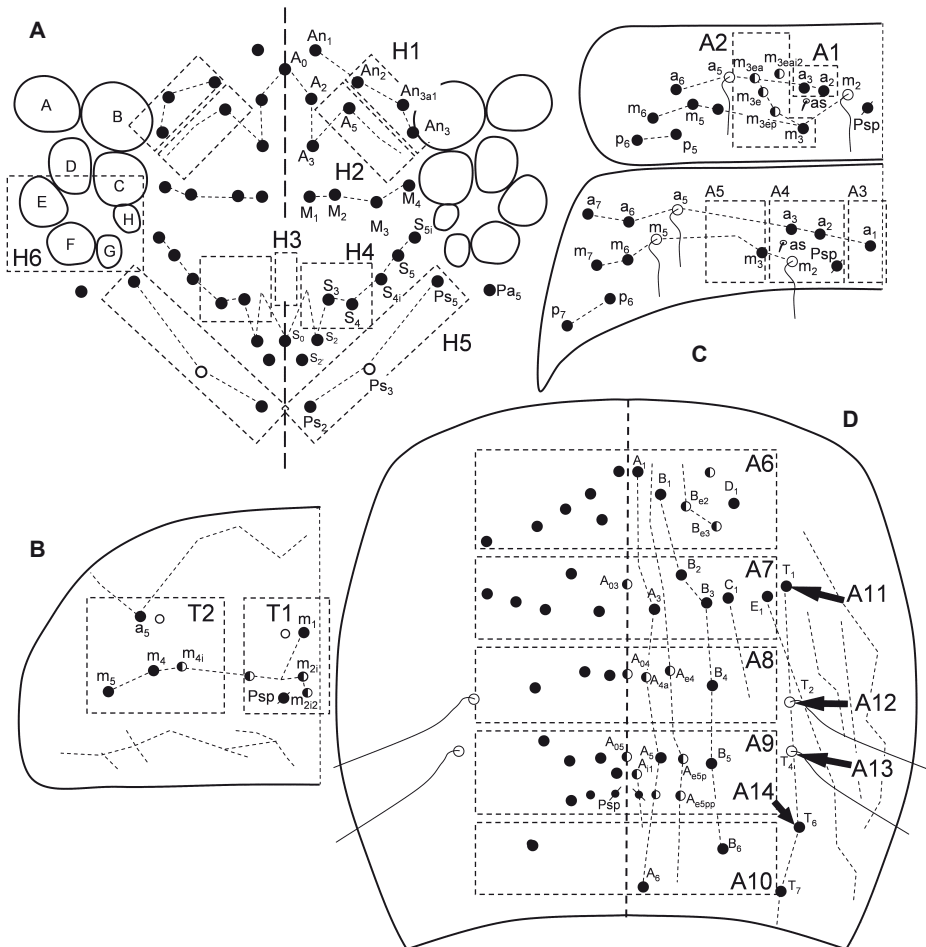


Fig. 7 *M. hispanica* n. sp. macrochaetotaxy (specimen from Celorio, Asturias). A: head; B: Th II; C: Abd II–III; D: Abd IV.

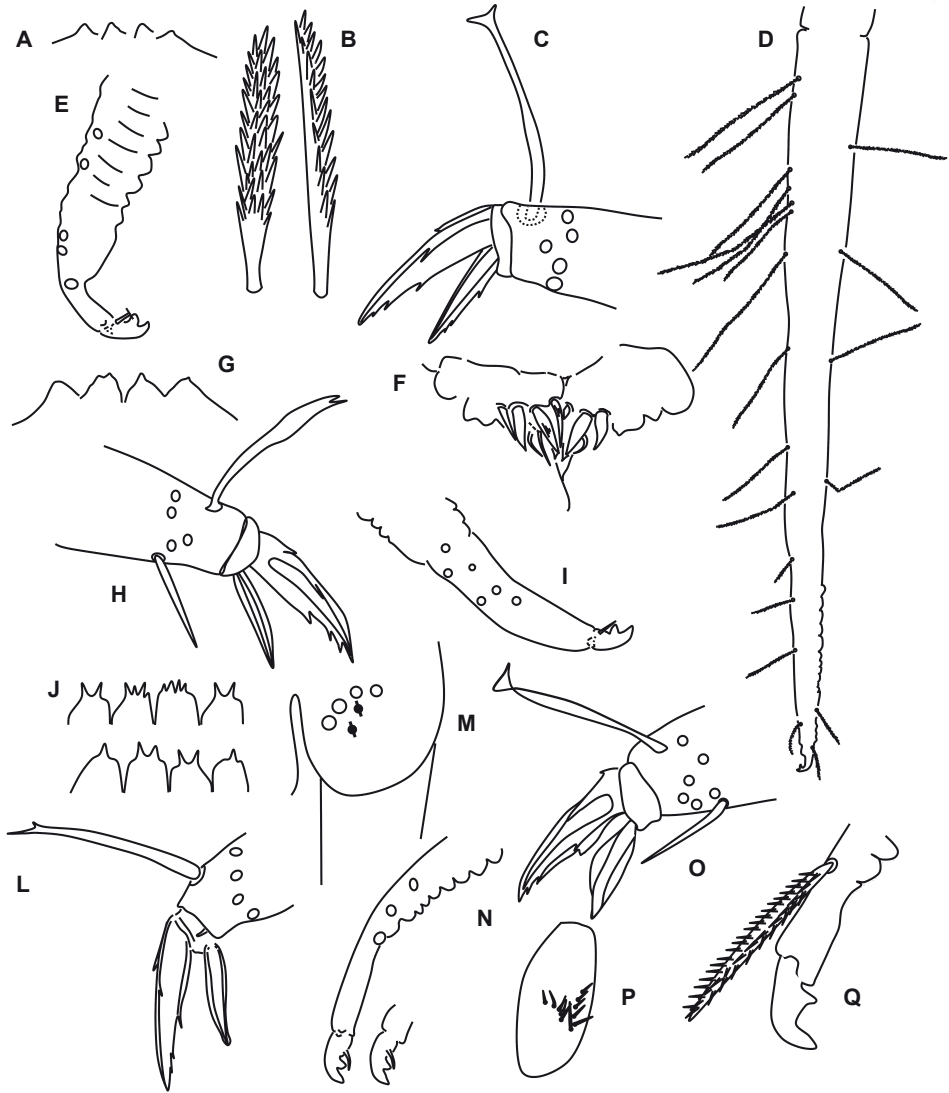


Fig. 8

A–F: *E. akritohoriensis* Baquero & Jordana n. sp.; A: labral papillae. B: abdominal tergite IV ciliated chaetae, front and lateral view. C: unguis-claw (leg II). D: dens and mucro with some long chaetae drawn. E: tip of dens and mucro. F: male genital plate.

G–I: *E. luqueensis* n. sp. G: labral papillae. H: unguis-claw; I: tip of dens and mucro.

J–N: *E. vergarensis* n. sp.; J: labral tubercles of the holotype. K: labral tubercles of the specimen from Monegros, Zaragoza. L: unguis-claw. M: manubrial plate. N: tip of dens and mucro.

O–Q: *M. hispanica* n. sp.; O: unguis-claw. P: trocanteral organ. Q: tip of dens and mucro.

Head chaetotaxy as in Fig. 6A and 7A, with the singularity of two additional chaetae behind  $S_0$  and  $S_2$ . Th chaetotaxy: T1 area on thoracic tergite II with four macrochaetae ( $m_1$ ,  $m_{21}$  and  $m_{212}$  present, and one or two additional chaetae at the level of  $m_{212}$ ), T2 area on thoracic tergite II with four macrochaetae present ( $a_5$ ,  $m_4$ ,  $m_{41}$  and  $m_5$ ) (Figs 6B, 7B). Abdomen chaetotaxy (Figs 6C–D, 7C–D): A1 area on Abd II with 2 and A2 area on Abd II with 5 to 6 macrochaetae. Abd III with 1 macrochaeta on area A3 and A5, 2 macrochaetae on A4 area.

**Biology:** Found under stones next to sea shore and on marine seaweed.

**Discussion.** The species can be clearly recognised by the presence of additional chaetae behind  $S_0$  and  $S_2$  on the head. The macrochaetotaxy is very different from the other species of *Mesentotoma*.

**Etymology.** The specific name is derived from the country of origin of the new species.

### ***Folsomia mikhaili* Jordana & Baquero new nom.**

**Syn:** *Folsomia potapovi* Jordana & Baquero, 2008, not Babenko, 2007

Due to the coincidence that two different species of the same genus (*Folsomia*) have been described with the same name (*F. potapovi*) by Babenko (2007) and Jordana & Baquero (Ramel et al., 2008), we propose changing the name of the species most recently nominated to the new name *F. mikhaili* n. nom., dedicating the species to the same colleague, Mikhail Potapov, the eminent Russian specialist of this genus.

## **5. Acknowledgements**

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