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NEW HARVESTMEN (ARACHNIDA: OPILIONES) FROM MENORCA ISLAND

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Abstract: Only seven publications, citing 38 specimens from nine sites, have provided taxonomic or faunistic data on the order Opiliones for Menorca Island. It resulted in a list of four species: *Metaphalangium cirtanum* (C.L. Koch, 1839), *Homalenotus buchneri* (Schenkel, 1936), *Histricostoma argenteolunulatum* (Canestrini, 1875) and *Dicranolasma soerensenii* Thorell, 1876. The new data, based on 806 specimens, allow the addition of five species to the Minorcan catalogue: *Scotolemon krausi* Rambla, 1972 and *Dasylobus ferrugineus* (Thorell, 1876), both being Balearic endemisms from Mallorca and Ibiza islands; *Nelima doriae* (Canestrini, 1872), a widely distributed Mediterranean species; *Nelima cf. hispana* Martens, 1969, until now restricted to the Iberian Levantine coast; and *Nelima minorica* sp. nov., which is according to the nowadays knowledge the only species inhabiting exclusively the island of Menorca. The most abundant species are *Homalenotus buchneri* (55.2% of the specimens, 18 localities) and *Nelima doriae* (18.5%).
Key words: *Nelima minorica* sp. nov., New records, Phalangiidae, Sclerosomatidae, Phalangodidae.

Nuevos opiliones (Arachnida: Opiliones) para la isla de Menorca.
Resumen: Sólo siete publicaciones, citando 38 ejemplares de nueve localidades, han aportado datos taxonómicos o faunísticos del orden Opiliones para la isla de Menorca. Ello ha producido una lista de cuatro especies: *Metaphalangium cirtanum* (C.L. Koch, 1839), *Homalenotus buchneri* (Schenkel, 1936), *Histricostoma argenteolunulatum* (Canestrini, 1875) y *Dicranolasma soerensenii* Thorell, 1876. Los nuevos datos, basados en 806 ejemplares, permiten añadir cinco especies al catálogo de Menorca: *Scotolemon krausi* Rambla, 1972 y *Dasylobus ferrugineus* (Thorell, 1876), dos endemismos baleares que ya estaban citados de Mallorca e Ibiza; *Nelima doriae* (Canestrini, 1872), una especie mediterránea de amplia distribución; *Nelima cf. hispana* Martens, 1969, restringida hasta ahora al litoral levantino; y *Nelima minorica* sp. nov., que constituiría la única especie exclusiva de la isla de Menorca. Las especies más abundantes son *Homalenotus buchneri* (55,2% de los especímenes, 18 localidades) y *Nelima doriae* (18,5%).
Palabras clave: *Nelima minorica* sp. nov., Nuevas citas, Phalangiidae, Sclerosomatidae, Phalangodidae.

Taxonomy / Taxonomía: *Nelima minorica* Prieto, Wijnhoven & Febrer, 2022 **sp. nov.**

Introduction

The Balearic fauna of Opiliones consist of barely a dozen species, including some phalangiid species that require confirmation, as the identification was based on juveniles or females alone. Thorell (1876) and L. Koch (1882) provided first data by describing *Phalangium ferrugineum* Thorell, 1876 from San Antonio (Ibiza), *Phalangium pusillum* L. Koch, 1882 from Puch Major (Mallorca) and *Phalangium abstrusum* L. Koch 1882 from Cala Molí in Maó (Menorca) and Prat de San Jordi (Mallorca). Later, Roewer (1911) described *Phalangium clavipus* Roewer, 1911 from Palma (Mallorca), while synonymizing *Phalangium pusillum* with *P. ferrugineum*. Fifty years passed until Kraus (1961) added six species to the species list of the Balearic archipelago, with *Homalenotus buchneri* (Schenkel, 1936) as the only species cited for Menorca, while none of the other species were correctly identified. Four of them, erroneously identified as well-known continental species, turned out to be three new Balearic endemisms that were described later: the phalangodid *Scotolemon krausi* Rambla, 1972 from Ibiza and the trogulids *Anelasmocephalus balearicus* Martens & Chemini, 1988 from Mallorca (identified by Kraus as *A. cambridgei* and *A. lycosinus*) and *Trogulus balearicus* Schönhofer & Martens, 2008 from Mallorca and Ibiza. The sixth, *Phalangium opilio* Linnaeus, 1758, based on a juvenile female from Mallorca, was considered doubtful by Rambla (1972) in her review recording twelve species, including some without precise locality (*Homalenotus monoceros* from "Balearen", according to Roewer, 1957) or based on juveniles (*Odiellus gallicus*? and *Leiobunum rotundum*?, both presented as new records for Mallorca).

Subsequently, more additions followed: *Nelima doriae* (Canestrini, 1872) for Mallorca (Marcellino, 1974); the Mallorcan endemism *Ptychosoma balearicum* (Rambla, 1977), described as *Scotolemon balearicus*, from Pollensa caves in Mallorca (Rambla, 1977); *Histricostoma argenteolunulatum* (Canestrini, 1875) from Sant Joan, Menorca (Rambla, 1979); *Dicranolasma soerensenii* Thorell, 1876 from a cave from Alaior, Menorca (Rambla, 1983). Staręga (1984) removed two species from the list by synonymizing *P. abstrusum* and *P. clavipus* with *Metaphalangium cirtanum*. Thereafter, the only taxonomic contributions were the addition of two endemic trogulids mentioned above (Martens & Chemini, 1988; Schönhofer & Martens, 2008). Several researchers (Pons & Rambla, 1993; Pons & Palmer, 1996; Thaler, 1996; Vadell *et al*., 2006; Pons, 2007; Prieto & Las Heras, 2020) have contributed new records of species. Summary faunal lists include three species for Ibiza, eight (plus three doubtful) for Mallorca and four for Menorca (Table I).

Material and methods

The material studied comes mostly from araneological sampling carried out by B. Febrer (indicated as BF in the corresponding sections) in 20 sites through direct sampling and pitfall trapping in the period 2015-2020 (Fig. 1). Four specimens were provided by Bernardo Mateo from two sites in

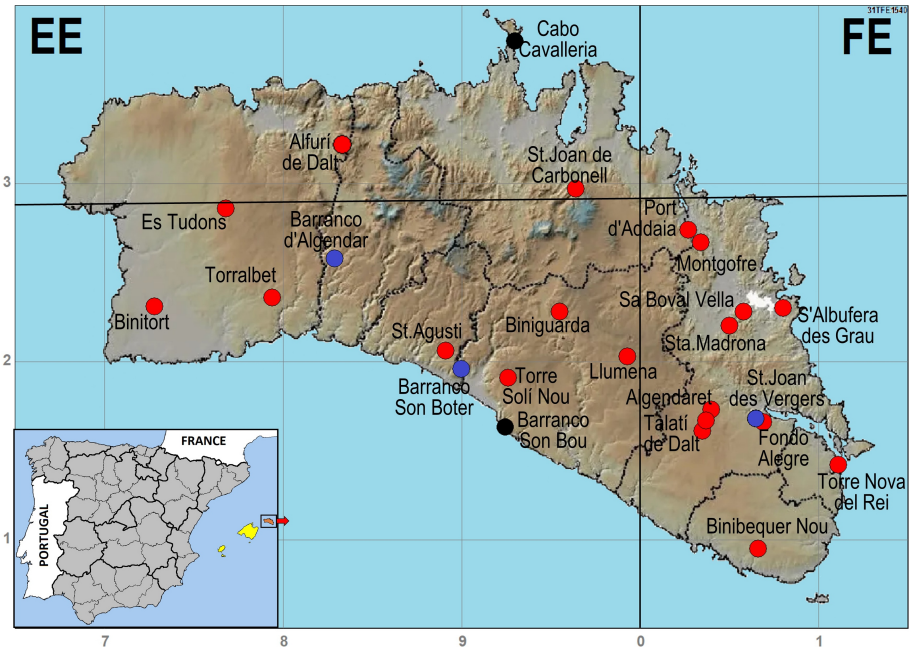


Fig. 1. Map of Menorca Island with the sampling sites (black dots, sampled by B. Mateo; red dots, sampled by B. Febrer; blue dots, sampled by C. Prieto, I. Merino-Sáinz, J. Fernández, A. Castro and B. Febrer). / ***Fig. 1.*** *Mapa de la isla de Menorca con las localidades muestreadas (puntos negros, muestras de B. Mateo; puntos rojos, muestras de B. Febrer; puntos azules, muestreos de C. Prieto, I. Merino-Sáinz, J. Fernández, A. Castro y B. Febrer).*

Table I. List of recorded species from the Balearic Islands (the Pityuses includes Ibiza, Formentera and their islets; Mallorca includes the Cabrera islets). For each species, the first locality cited is mentioned; additional or later localities are collectively replaced by "+". / ***Tabla I.*** *Lista de las especies citadas para las islas Baleares (los islotes de Cabrera se consideran parte de Mallorca; Pitiusas es el conjunto de Ibiza, Formentera y sus islotes). Para cada especie se menciona la primera localidad citada; si hay otras, se han sustituido por "+".*

Family	Species	Cited as / STATUS	Pityuses	Mallorca	Menorca
TROGULIDAE	*Anelasmocephalus balearicus*	*lycosinus, cambridgei*		Sóller +	
	Trogulus balearicus	*nepaeformis*	San José +	Manacor	
DICRANOLASMATIDAE	*Dicranolasma soerensenii*				Alaior +
NEMASTOMATIDAE	*Histricostoma argenteolunulatum*				Sant Joan
PHALANGIIDAE	*Dasylobus ferrugineus*	*pusillus*	San Antonio	Puch Major	
	Metaphalangium cirtanum	*abstrusum, clavipus*		Prat Sant Jordi	Cala Molí
	Odiellus troguloides	DOUBTFUL		Coll Rabasa	
	Phalangium opilio	DOUBTFUL		Palma	
SCLEROSOMATIDAE	*Homalenotus buchneri*			Palma+	Monte Toro +
	Leiobunum rotundum	DOUBTFUL		Valldemosa	
	Nelima doriae			Artá +	
PHALANGODIDAE	*Ptychosoma balearicum*			Pollensa +	
	Scotolemon krausi	*lespesi*	Jesús +	I. Cabrera	

1984 and the most recent samples, 79 specimens from three sites, were obtained by Bosco Febrer, Carlos Prieto, Izaskun Merino-Sáinz, Jon Fernández and Alberto Castro during the XX Iberian Conference on Arachnology, held in October 2021 in Maó.

Most material is deposited in the Collection of the Department of Zoology of the University of the Basque Country (ZUPV, Bilbao, Spain); the sample numbers are indicated in square brackets; further specimens are in the collection of Hay Wijnhoven (CHW, Nijmegen, Netherlands), Jochen Martens (CJM, Mainz, Germany) and in Museo Nacional de Ciencias Naturales (MNCN, Madrid, Spain).

Photographs and measures were obtained using a Nikon SMZ-1500 stereomicroscope, while drawings were made using the camera lucida of a Nikon Optiphot microscope. Photographs were stacked with the Helicon Focus (v. 7.7.5) software and then cleaned. Line drawings of *Nelima minorica* sp. nov. by H. Wijnhoven; map, photos and other line drawings by C. Prieto.

Results

Suborder DYSPNOI

Family DICRANOLASMATIDAE

***Dicranolasma soerensenii* Thorell, 1876**

Dicranolasma soerensenii Thorell, 1876, *Ann. Mus. Civ. St. Nat. Genoa* (s.1)8: 505 (TL: Niza, Francia)

MATERIAL: [5551] 1F: Es Tudons, EE768286, BF, 17·01·2016. [6137] 2M,3H: Maó: Sant Joan des Vergers, FE065168, CP, J. Fernández, I. Merino, 09·10·2021. [6141] 1H: Son Bou: Cova de S'Aigo, EE900196, CP, J. Fernández, I. Merino, 10·10·2021. [6145] 7M,3H,7J: Barranco d'Algendar: Pas d'en Rebull, EE829258, CP, J. Fernández, I. Merino, 12·10·2021.

GEOGRAPHICAL DISTRIBUTION: Western Mediterranean species, ranging from the Apennine peninsula and Sicily to the eastern Iberian coast, and also to the north of Tunisia and Algeria (Martens, 1978: fig. 245). From Balearic Islands it has only been cited from two caves from Menorca, Cova de Ses Bruixes in Alaior and Cova Polida in Es Mercadal (Ram-

bla, 1983; Bellés, Damians & Petrus, 1989). New records, mostly from epigean habitats, expand its distribution on the island.

Family NEMASTOMATIDAE

***Histricostoma argenteolunulatum* (Canestrini, 1875)**

Nemastoma dentipalpe var. *argenteo-lunulata* Canestrini, 1875, *Atti Soc. Ven.-Trent. Sc. Nat.*, 4: 4 (TL: Calabria, Italia).
Nemastoma argenteolunulatum — Roewer 1923: 668.
Histricostoma argenteolunulatum — Gruber 1976: 799.

MATERIAL: [6138] 1H: Maó: Sant Joan des Vergers, FE065168, CP, J. Fernández, I. Merino, 09·10·2021. [6142] 2M, 2H: Son Bou: Barranco Son Boter, EE900196, CP, J. Fernández, I. Merino, 10·10·2021.

GEOGRAPHICAL DISTRIBUTION: Western Mediterranean species, distributed on the Apennine Peninsula, Sicily, Sardinia and Corsica (Martens, 1978: fig. 193); Rambla (1979) added Menorca Island. Delfosse & Iorio (2015; Fig. 5)) record it for the French Alpes-Maritimes (in our opinion, this might be *Histricostoma dentipalpe* (Ausserer, 1867) because it lacks the diagnostic silvery spots). Rambla (1979) cited it from "Sant Joan", at 200 m a.s.l., a location that we interpret as "Sant Joan des Vergers", a hermitage located in a ravine to the north of Maó. The new data confirm its occurrence on Menorca Island.

Suborder EUPNOI

Family PHALANGIIDAE

***Dasylobus ferrugineus* (Thorell, 1876)** (Figs. 2-3)

Phalangium ferrugineum Thorell, 1876, *Ann. Mus. Civ. St. Nat. Genova* (s.1) 8: 483 (TL: San Antonio, Ibiza).
Dasylobus ferrugineus — Simon, 1879: 219.
Phalangium pusillum L. Koch, 1882: 668 (synonymized by Roewer, 1911: 56).

MATERIAL: [5550] 1F: Es Tudons, EE768286, BF, 17·01·2016. [5556] 3M,4F,1J: S'Albufera des Grau (este), FE0823, BF, 17·01·2016. [5563] 4M,2F,1J: S'Albufera des Grau: Sta. Madrona (este), FE0522, BF, 20·02·2016 + [5564] 2M,3F: BF, 19·03·2016 + 2M: BF, 26·04·2016 + [5565] 1M,7J: BF, 17·12·2016. [5569] 1F,3J: Alaior: Torre Solí Nou, EE926191, BF, 30·01·2016. [5574] 1F: Es Mercadal: St. Joan de Carbonell, EE964297, BF, 08·04·2017. [5577] 1F,7J: Biniguarda, EE955228, BF, 17·12·2017. [5580] 1M,4J: Es Castell: Torre Nova del Rei, FE111142, BF, 19·11·2015 + [5582] 1M: BF, 30·01·2017.

Thorell (1876) provided relatively comprehensive description of the species, but without drawings, genital morphology, and missing description of some specific characters, e.g., in chelicerae. We therefore redescribe the species here.

DESCRIPTION. **Male** from S'Albufera des Grau, Menorca Island (Fig. 2 A-B): Body length 2.00-4.35 mm; prosomal width 1.65-2.60 mm; femur 1 length 1.48-2.22 mm; BLI 0.82-1.08.

Prosoma (Fig. 2A). Concave frontal edge, slightly protruding medially. Anterolateral corners protruding and densely toothed. Supracheliceral plates with a medial denticle. Ozopores with 1-2 denticles before and behind. Preocular area light, with two longitudinal brown lines. Lateral areas with some denticles in the anterior part. Thoracic tergites with a row of 14-16 denticles each. Intercoxal vertices with 1-2 denticles. Ocularium relatively large (approx. 0.5 x 0.5 mm), half its length behind the frontal prosoma margin, golden and somewhat canaliculated medially, with paramedian rows of 9-10 denticles.

Opisthosoma as wide as the prosoma. Background light brown, with scattered silvery spots. Saddle inconspicuous, widest on the second tergite and almost faded in the fourth, forming two brownish paramedian bands, bordered with white. Tergites with rows of light denticles. Macules (indicating apodemas) more visible on the sides of the 3rd and 4th areas, forming a transverse row in the 5th area.

Venter (Fig. 2B). Silvery coxae, with abundant stiff bristles, brown macules concentrated at the base and dark stained on lateral margins of coxae. Genital operculum silvery, with abundant stiff bristles and a brown medial line. Posteriorly of the genital operculum a pair of dark brown patches (these are apodemic plaques of muscle attachment sites of extrinsic penial muscle). Free sternites with rows of bristles on the posterior margin. Anal operculum light.

Legs. Relatively short (BLI < 1.1), light with brown rings; first leg more robust than the others. Femora cylindrical, with a diffuse basal ring and a darker subdistal ring, with five rows of spines accompanied by a sensory seta. Patellae with rows of sensilla within longitudinal trichome strips; distal edge with three white-based denticles with rigid apical sensillum. Tibiae angular with longitudinal edges delineated by a row of sensilla and a band of trichomes; with two dark rings. Metatarsi cylindrical and covered with trichomes. Table II.

Chelicerae (Fig. 3A). Variable in size and armature. The robust chelicerae have a basichelicerite 1 mm length with a sinusoid dorsal margin, includig a large hump distally, covered with spines, and equilateral convex ventral margin. Second segment 1.7 mm length until articulation, swollen, with dorsobasal bulge covered with granules, a pattern of parallel, transversal brown lines on dorsal and median side, and a dorsal field of sensilla, longer near chela. Third segment 0.7 mm length.

Table II. *Dasylobus ferrugineus* (Thorell, 1876) (ZUPV·5556: S'Albufera des Grau, Menorca Island). Leg measurements of a male (above) and a female (below). Abbreviations: PA(Mt), number of metatarsal pseudoarticulations; N(Ta), number of tarsomeres. / ***Tabla II.*** *Dasylobus ferrugineus (Thorell, 1876) (ZUPV·5556: S'Albufera des Grau, Isla de Menorca). Medidas de las patas de un macho (arriba) y de una hembra (debajo). Abreviaturas: PA(Mt), número de pseudoarticulaciones del metatarso; N(Ta), número de tarsómeros.*

		Troch.	Femur	Patella	Tibia	Metat.	Tarsus	PA(Mt)	N(Ta)	Length
♂	Leg 1	0.40	1.95	0.80	1.80	2.25	4.05	1	27	11.25
	Leg 2	0.37	3.85	1.12	3.45	3.65	8.95	3	44	21.40
	Leg 3	0.35	2.05	0.82	1.75	2.62	4.55	1	27	12.15
	Leg 4	0.40	3.10	0.88	2.57	3.80	6.10	2	32	16.85
♀	Leg 1	0.32	1.55	0.75	1.55	1.80	3.50	1	26	9.47
	Leg 2	0.33	3.35	1.02	3.07	3.05	7.45	3	45	18.27
	Leg 3	0.30	1.77	0.65	1.67	2.22	3.80	1	27	10.40
	Leg 4	0.33	2.80	0.92	2.35	3.30	5.30	2	30	15.00

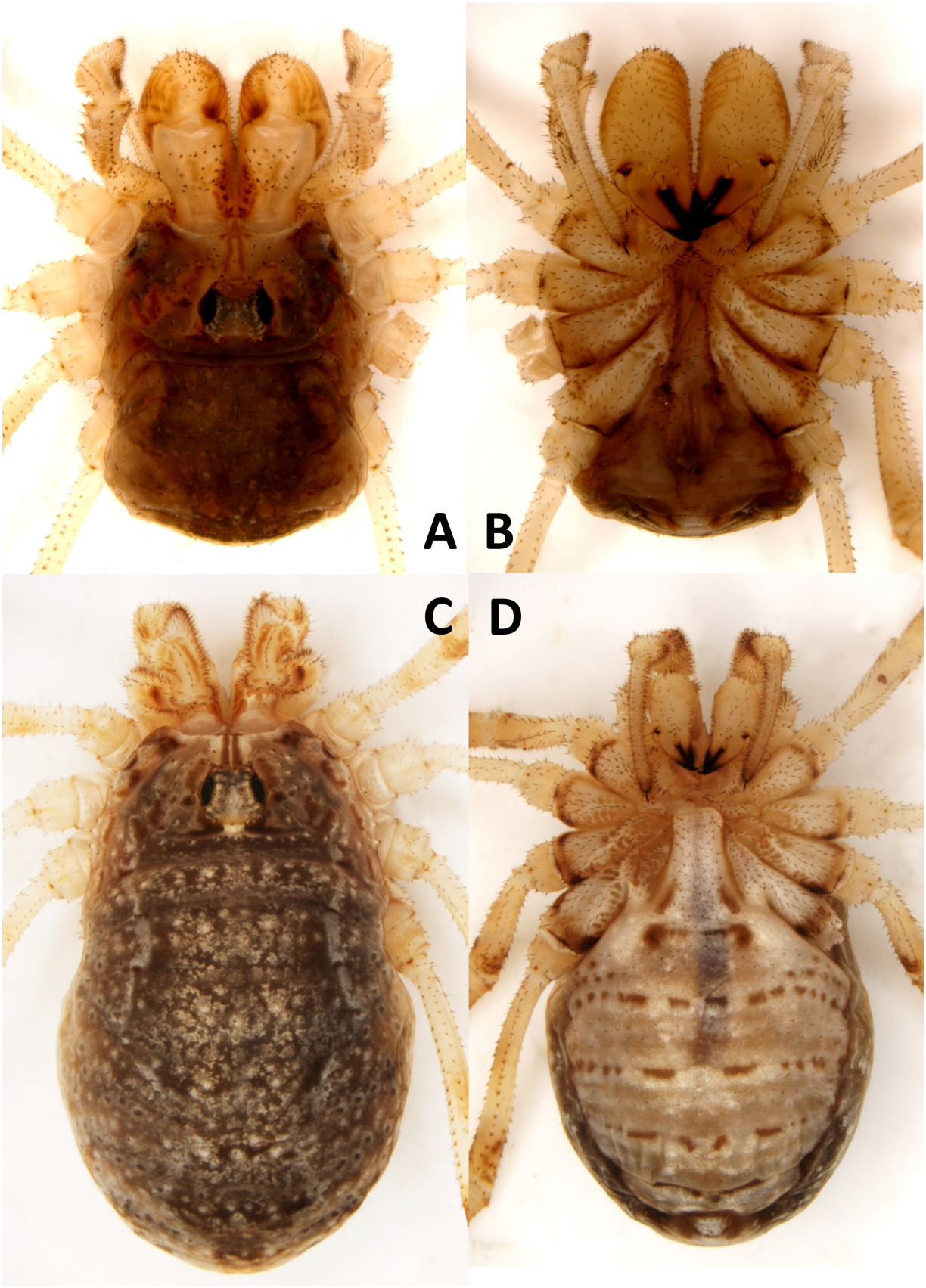


Fig. 2. *Dasylobus ferrugineus* (Thorell, 1876). S'Albufera des Grau (Menorca Island) [ZUPV·5556]. **A-B**, male (dorsal and ventral view), body length 2.78 mm. **C-D**, female (dorsal and ventral view), body length 4.67 mm. / ***Fig. 2.*** *Dasylobus ferrugineus (Thorell, 1876). S'Albufera des Grau (Isla de Menorca) [ZUPV·5556].* ***A-B****, macho (vistas dorsal y ventral view), longitud del cuerpo 2.78 mm.* ***C-D****, hembra (vistas dorsal y ventral), longitud del cuerpo 4.67 mm.*

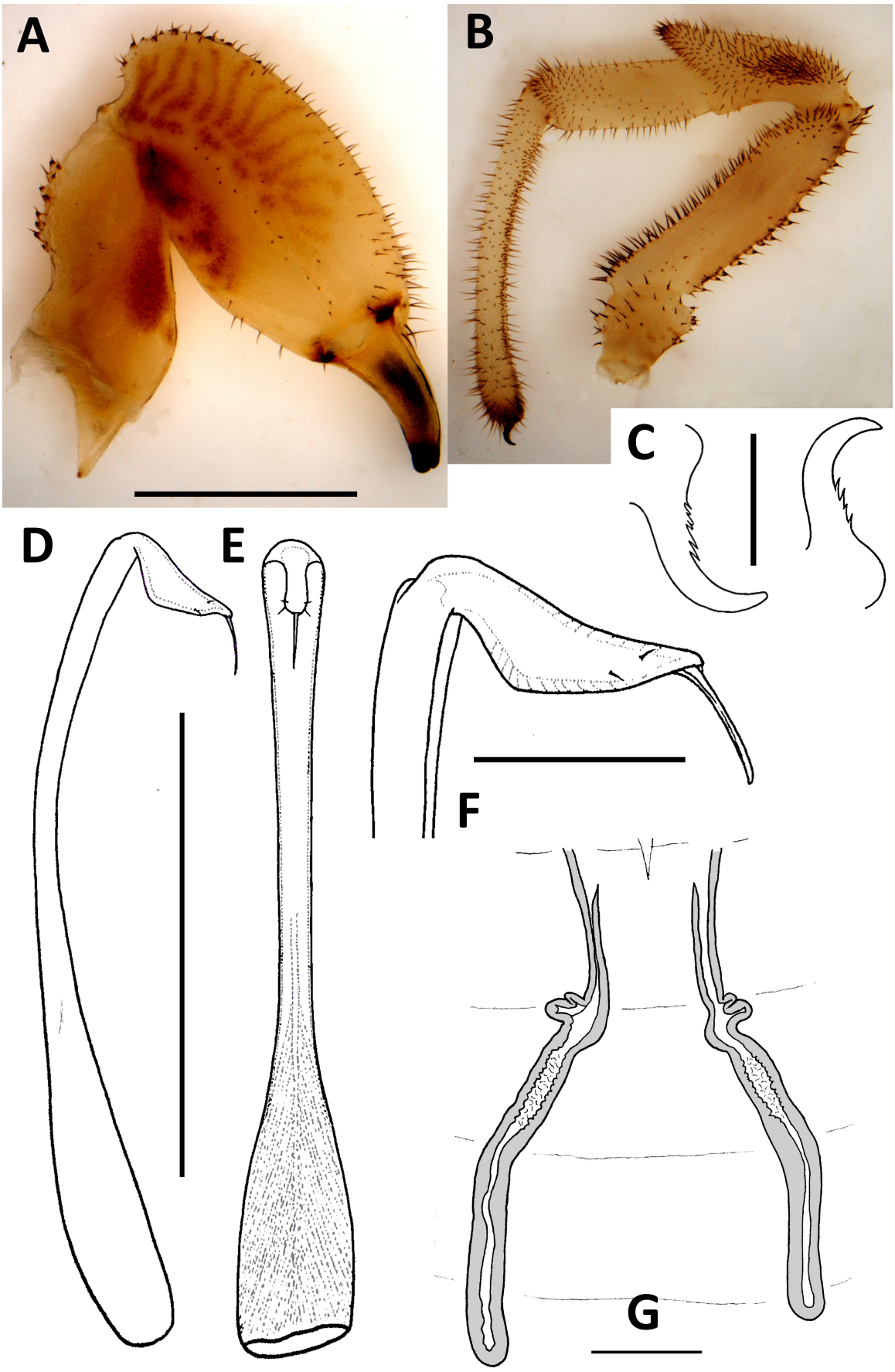


Fig. 3. *Dasylobus ferrugineus* (Thorell, 1876). S'Albufera des Grau (Menorca Island) [ZUPV·5556]. **A**, right male chelicera (lateral view). **B**, right male pedipalp (medial view). **C**, tarsal claw of two males. **D-E**, penis (lateral and dorsal views) of the male in Fig. 2. **F**, glans penis (lateral view). **G**, seminal receptacles. Scale bars: A-B, D-E, 1 mm; C, 0.2 mm; F, 0.1 mm; G, 50 µm. / ***Fig. 3.*** *Dasylobus ferrugineus (Thorell, 1876). S'Albufera des Grau (Isla de Menorca) [ZUPV·5556].* ***A****, quelícero derecho del macho (vista lateral).* ***B****, pedipalpo derecho del macho (vista medial).* ***C****, uña tarsal de dos machos.* ***D-E****, pene (vistas lateral y dorsal) del macho de la Fig. 2.* ***F****, glans penis (vista lateral).* ***G****, receptáculos seminales (vista ventral). Escalas: A-B, D-E, 1 mm; C, 0.2 mm; F, 0.1 mm; G, 50 µm.*

Pedipalps (Fig. 3B). Light yellow, without dark patches except the distal tip of the tarsus. Trochanter 0.35 mm long with a ventral tubercle with sensilla and a granulate dorsal protuberance. Femur 1.40 mm long slightly arched; medially, except distal area, smooth; dorsally with a row of about 12 denticles with sensillum and a distal, forward oriented spine; ventrally with a longitudinal band of rigid sensilla, smaller distally. Patella 0.90 mm long with a distal conical apophysis medio-dorsally, as long as half patella; surface covered with sensilla, with an oval patch with denser sensilla on medial side. Tibia 0.80 mm long slightly longer than patella, without sensilla in proximal medial area, and otherwise longest sensilla on ventral side and in dorsal bunch distally. Tarsus 1.55 mm long distinctly arched ventrally, half as thick as tibia, distal portion slightly bulbous and covered with trichomes; with a ventral, longitudinal band of microgranules. Claw with acute, oblique, unequally shaped 4–6 denticles in the basal area (Fig. 3C).

Penis (Fig. 3 D-F). Truncus (length 1.7 mm) with widened (> 0.2 mm), slightly bulbous-shaped basal third, containing the intrinsic penial muscle, tapering to a slender (0.07 mm) central third and then evenly widening (0.13 mm) in dorsally shallow spoon-shaped distal truncus portion. Glans penis with evenly, moderately concave dorsal margin and isolaterally-shaped convex ventral margin (Fig. 3F) (0.3 x 0.09 mm) with two pairs of subdistal setae. Stylus length 0.12 mm.

Female (Fig. 2 C-D): Body length 3.75-4.9 mm; prosomal width 1.85-2.5 mm; femur 1 length 1.4-1.83 mm; BLI 0.64-0.81. Background light, with light brown patches. Prosoma with smooth frontal margin, golden preocular field with two brown parallel maculae, ocularium bright with golden reflects in granular lines. Saddle ill defined, light brown with small irregular patches with silver shiny. Chelicera not enlarged. Pedipalp with a small medio-distal apophysis in the femur, medio-distal apophysis of patella more swollen, and a small medio-distal apophysis in the tibia. Seminal receptacles (Fig. 3 G) located in the second to fifth ovipositor segments, tubular, 150 µm length, 15-18 µm wide, with accessory receptacle unequally bilobed.

COMMENTS. The genus *Dasylobus* Simon, 1879 was differentiated originally (Simon, 1879) by pedipalps having a large distal patellar apophysis and a distal tibial bump (both densely covered with setae), palpal tibia tapering at articulation, and small eye tubercle standing at its length from the frontal margin. Roewer (1911) highlighted these characters and added smooth supracheliceral lamellae, smooth tarsal claw, chelicerae normally build in both sexes and leg I not thickened in males. But Chemini (1989) stated in his revision of Italian species that supracheliceral laminae have a denticle, both chelicerae and leg I may be greatly thickened in males, tarsal claw has some "minuto dentello basale" and that the spoon-shaped structure on the distal truncus penis is a synapomorphy of two Italian species, *D. argentatus* (Canestrini, 1871) and *D. gestroi* (Thorell, 1876). The genus currently includes 18 Mediterranean species (WCO Lite, 2022; Barrientos *et al*., 2017), and one from New Zealand *Dasylobus australis* Simon, 1899 (probably wrongly attributed to *Dasylobus*). Most Iberian species, and at least three Italian (Chemini, 1989) present small acute denticles in the tarsal claw. Rambla (1959, 1966, 1967) described three Iberian species with such armature in tarsal claw in the genus *Dentizacheus* Rambla, 1956, which was erected for *Dentizacheus tinerfensis* Rambla, 1956 from the Canary archipelago. As Staręga (1973) synonymized it with *Metadasylobus fuscoannulatus* (Simon, 1883), *Dentizacheus* became a synonym of *Metadasylobus*; two of the Iberian *Dentizacheus* were transferred to *Dasylobus,* and a further one synonymized with *Phalangium opilio*.

GEOGRAPHICAL DISTRIBUTION. Balearic endemism. Described from Ibiza Island; L. Koch (1882, as *P. pusillum*) added Mallorca Island; Pons & Rambla (1993) and Pons & Palmer (1996) refer the species from new localities on Cabrera and Dragonera islets. Our data is the first record for Menorca Island.

***Metaphalangium cirtanum* (C.L. Koch, 1839)** (Fig. 4)

Opilio cirtanus C.L. Koch, 1838, *Übers. Arachnidensystems*, 2: 35 (TL: northern Africa).

Phalangium abstrusum L. Koch, 1882: 669 (TL: Cala Molí, Menorca Island) (synonymized by Staręga, 1984).

Phalangium clavipus Roewer, 1911: 12 (TL: Palma, Mallorca Island) (synonymized by Staręga, 1984).

Paropilio abstrusus — Roewer, 1911: 49; Roewer, 1912: 147; Roewer, 1923: 782, f. 956.

Metaphalangium cirtanum — Roewer, 1911: 73, pl.2, fig. 12; Roewer, 1912: 104, pl. 3, figs. 1-2; Roewer, 1923: 758, fig. 935.

Metaphalangium abstrusum — Staręga, 1984: 41.

MATERIAL: [444] 1F: Barranco de Son Bou, EE9216, B. Mateo, 27·05·1984. [445] 1M,2F: Cavalleria, EE9338, B. Mateo, 26·05·1984. [5566] 1F: S'Albufera des Grau: Sta. Madrona (este), FE0522, BF, 12·11·2016. [5579] 2F: Es Castell: Torre Nova del Rei, FE111142, BF, 19·11·2015. [5852] 8M,5F: Llumena, EE993203, BF, 23·06·2018 + [5853] 18F: BF, 23·06·2019 + [5856] 5M,7F: BF, 20·07·2018 + [5857] 7J: BF, 07·04·2018. [6031] 1M,2F: Maó: Talatí de Dalt, FE035161, BF, 27·10·2019. [6032] 1F: Torralbet, EE794236, BF, VII·2020. [6035] 1M,1F: Sant Lluis: Binibequer Nou, FE066095, BF, VII·2020. [6039] 3M: Algendaret, FE040173, BF, 25·05·2019.

COMMENTS: Pons & Palmer (1996) considered *Phalangium clavipus* as a species without "outstanding chorological or taxonomic doubts" and *Metaphalangium abstrusum* still has valid species status (WCO Lite, 2022). Staręga (1984) considered that *P. abstrusum* and *P. clavipus* are synonyms of *M. cirtanum*, which he later reaffirmed (Staręga, 2004). The genus includes species endemic to some large Mediterranean islands (*M. corsicum* (Roewer, 1956) in Corsica or *M. abruptum* (Roewer, 1923) in Sicily), which could support a taxonomic separation, but no significant differences are observed between the Iberian populations of *M. cirtanum* and the Balearic populations.

Roewer (1911: 49, pl. 3, figs. 6,7), provided two figures for *Paropilio abstrusus* (L. Koch) and cited "*Phalangium abruptum* KOLLAR" as a *nomen nudum*. He did not indicate the geographical origin of the figured specimen but it would be "Sicily" by saying "vidi" ("I have seen it") for 2 males and 2 females from there. Roewer (1912: 147; pl. 5, fig. 1,5) redescribed *Paropilio abstrusus*, copying the figures from the previous work and pointing out again that "*Phalangium abruptum*" is a non-existent *nomen*, although the redrawn cited figures were assigned by Roewer (1923: 783; fig. 957) to "*Paropilio abruptus* KOLLAR MS" when he gave the first description. Staręga (2004) mentions it as *Metaphalangium abruptum* (Roewer, 1911), a species restricted to the island of Sicily, while WCO Lite (2022) rightly attributed it to Roewer (1923).

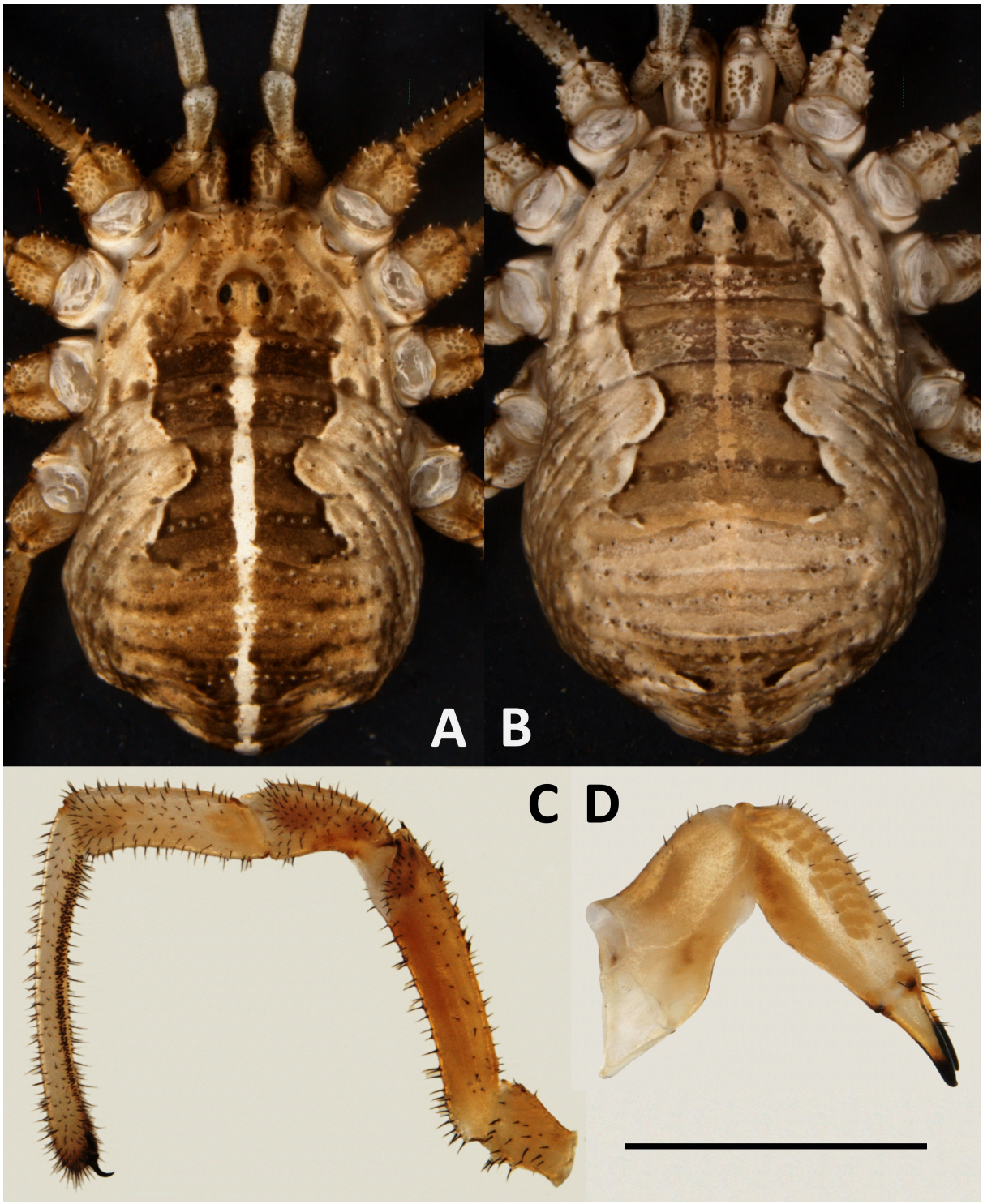


Fig. 4. *Metaphalangium cirtanum* (C.L. Koch, 1839). Binibequer Nou (Sant Lluis, Menorca Island) [ZUPV·6035]. **A**, male, body length 5.52 mm (dorsal view). **B**, female, body length 6.07 mm (dorsal view). C, right male pedipalp (medial view). **D**, right male chelicera (lateral view). Scale bar: C-D, 1 mm. / ***Fig. 4.*** *Metaphalangium cirtanum (C.L. Koch, 1839). Binibequer Nou (Sant Lluis, Isla de Menorca) [ZUPV·6035].* ***A****, macho, longitud del cuerpo 5.52 mm (vista dorsal).* ***B****, hembra, longitud del cuerpo 6.07 mm (vista dorsal).* ***C****, pedipalpo derecho del macho (vista medial).* ***D****, quelícero derecho del macho (vista lateral). Escala: C-D, 1 mm.*

GEOGRAPHICAL DISTRIBUTION. Widely distributed Mediterranean species (Martens, 1978), being known from all European and North African Mediterranean countries but Morocco (Staręga, 1984).

Family SCLEROSOMATIDAE

Homalenotus buchneri (Schenkel, 1936)

Parasclerosoma buchneri Schenkel, 1936, *Zool. Anz.,* 116 (1–2): 24 (TL: Ischia, Italia).

Homalenotus buchneri — Grasshoff, 1959: 286.

Homalenotus maroccanus Roewer, 1957: 336 (synonymized by Grasshoff, 1959).

Homalenotus roeweri Kraus, 1959: 301 [*n.nom.* for *P. lusitanicum* Roewer] (synonymized by Grasshoff, 1959).

MATERIAL: [5546] 1M,3F,2J: Port d'Addaia: antigua salina, FE027274, BF, 10·06·2017. [5549] 1M,7F,2J: Es Tudons, EE768286, BF, 17·01·2016 + [5552] 1M,1F,1J: BF, 17·04·2016 + 2M,5F,1J: BF, 14·05·2016 + [5553] 5M,7F: BF, 10·12·2016. [5554] 1F: Maó: Fondo Alegre, FE069166, BF,

02·10·2016 + 1F: BF, 29·10·2016 + 1M,1F: BF, 03·06·2016 + 1M,1F: BF, 27·11·2016 + 1M,1J: BF, 28·12·2016 + 2M, 1F: BF, 01·07·2016. [5555] 1F,8J: S'Albufera des Grau (este), FE0823, BF, 27·02·2016 + 1F: BF, 19·11·2016 + 1M,1F: BF, 17·01·2016 + 2J: BF, 25·06·2016 + 2M: BF, 23·07·2016. [5560] 2J: S'Albufera des Grau: Sta.Madrona (este), FE0522, BF, 20·02·2016 + 2M,2F: BF, 26·04·2016 + 5J: BF, 19·03·2016 + 6M,4F,9J: BF, 21·05·2016 + [5561] 73M, 29F, 44J: BF, 19·06·2016 + [5562] 1M: BF, 15·07·2016 + 1M: BF, 20·08·2016 + 3M, 1F: BF, 15·10·2016 + 3M, 2F: BF, 17·12·2016 + 5M, 1F: BF, 12·11·2016. [5567] 2F: Es Migjorn Gran: Sant Agusti, EE891206, BF, 16·04·2016. [5568] 1F,7J: Alaior: Torre Solí Nou, EE926191, BF, 10·04·2016 + 1M, 4F, 2J: BF, 30·01·2016 + 2M, 3F, 2J: BF, 28·12·2015 + 3F: BF, 01·11·2016 + 3M, 1F, 1J: BF, 02·07·2016. [5570] 3M, 2F, 2J: Maó: Montgofre, FE034267, BF, 19·03·2017 + 4M, 2F, 3J: BF, 13·05·2017. [5572] 1M, 7J: Es Mercadal: St. Joan de Carbonell, EE964297, BF, 12·03·2017 + 5M, 7F, 1J: BF, 06·05·2017 + 6M,5F,6J: BF, 08·04·2017. [5575] 13M, 2F: Maó: Sa Boval Vella, FE058228, BF, 30·09·2017 + 6M, 3F, 2J: BF, 28·10·2017. [5578] 1M: Maó: Talatí de Dalt, FE037167, BF, 15·10·2017. [5581] 1F: Es Castell: Torre Nova del Rei, FE111142, BF, 19·11·2015. [5854] 2M,5F: Llumena, EE993203, BF, 23·06·2019 + [5858] 1M, 1F, 5J: BF, 07·04·2019. [6029] 12M, 9F, 12J: Ciutadella: Alfurí de Dalt, EE834322, BF, VII·2019. [6034] 6M: Torralbet, EE794236, BF, VII·2020. [6037] 4M: Sant Lluis: Binibequer Nou, FE066095, BF, VII·2020. [6038] 3M, 3F, 3J: Binitort, EE728231, BF, 12·05·2018. [6143] 3M, 3H: Son Bou: Barranco Son Boter, EE900196, CP, J. Fernández, I. Merino, 10·10·2021.

GEOGRAPHICAL DISTRIBUTION. Western Mediterranean species (Marcellino 1975: fig. 2), described from Ischia Island (Naples, Italy). The verified distribution includes northwestern Africa, Andalusia, southern Portugal (Kraus, 1959; Grasshoff, 1959) and Balearic Islands (Kraus, 1961; Rambla, 1972), but without reaching Pityusic Islands. Marcellino (1975) adds it from the Tuscan archipelago. It is widely distributed on Menorca Island, being the most frequent and abundant species.

Nelima doriae (Canestrini, 1872)

Lejobunum Doriae Canestrini, 1872, *Boll. Soc. Ent. Ital.*, 3(4): 384 (TL: Genova, Trentino, Italia).

Lejobunum agile Canestrini, 1872 (synonymy: Kulczynski 1904).

Nelima doriae — Roewer, 1910: 244, pl. 5, figs. 31-32. Martens, 1969: 398, figs. 6, 8, 15-27.

Nelima maroccana Roewer, 1957: 348 (synonymized by Martens 1969).

Nelima pisarskii Staręga, 1966: 407, figs. 23, 24 (synonymized by Martens 1969).

MATERIAL: [5547] 8F,1J: Port d'Addaia: antigua salina, FE027274, BF, 10·06·2017. [5548] 18M: BF, 10·06·2017. [5557] 1F, 5J: S'Albufera des Grau (este), FE0823, BF, 17·01·2016 + 1F: BF, 19·11·2016 + 1J: BF, 25·06·2016 + 4J: BF, 23·07·2016 + 5J: BF, 27·02·2016. [5558] S'Albufera des Grau: Sta.Madrona (este), FE0522, 1M, 1F, 13J: BF, 20·02·2016 + 1M, 3J: BF, 21·05·2016 + 2F, 13J: BF, 26·04·2016 + 3M, 1F, 1J: BF, 19·06·2016 + 5J: BF, 16·01·2016 + 7J: BF, 19·03·2016 + [5559] 10J: BF, 20·08·2016 + 1F: BF, 17·12·2016 + 1M, 1F, 3J: BF, 12·11·2016 + 1M, 4J: BF, 15·10·2016 + 4F: BF, 17·09·2016 + 5M, 1F, 11J: BF, 15·07·2016. [5571] 2F: Maó: Montgofre, FE034267, BF, 19·03·2017 + 4M, 2F: BF, 13·05·2017. [5573] 1F: Es Mercadal: St. Joan de Carbonell, EE964297, BF, 08·04·2017. [5576] 2M, 1J: Maó: Sa Boval Vella, FE058228, BF, 28·10·2017.

GEOGRAPHICAL DISTRIBUTION. Very variable Mediterranean species (supposedly a species group; Martens 1969), recognizable by a brown opisthosoma without distinct pattern, or with diffuse patches in areas I and II; penis with a long and thin truncus and extended V-shaped distal wing part. According to Martens (1969, 1978), it is distributed from northwestern Africa (under the synonym *N. maroccana*) and Andalusia to the Dalmatian coasts of the Adriatic, and even to the eastern coast of the Black Sea (under the synonym *N. pisarskii*). Recently, *N. doriae* colonized parts of western Europe (Martens, 2021). The new data constitute the first record for Menorca Island, where it has only been found in the northwestern part.

Nelima minorica Prieto, Wijnhoven & Febrer sp. nov.

(Figs. 5-8)

TYPE LOCALITY: Near Sant Joan des Vergers hermitage, and ravine to southeast (Maó, Menorca Island, Spain), 30SFE065168, 20 m a.s.l.

TYPE MATERIAL: **Holotype**: male [MNCN 20.02/20487, ex ZUPV·5859], BF, 25·11·2018.

Paratypes: [5859] 2F: Maó: Sant Joan des Vergers, FE065168, BF, 25·11·2018 + [6139] 11M + [6140] 11H,8J: CP, J. Fernández, I. Merino, 09·10·2021. [5855] 1F: Llumena, EE993203, BF, 23·06·2019. [6033] 1M, 2F: Torralbet, EE794236, BF, VII·2020. [6036] 2F, 1J: Sant Lluis: Binibequer Nou, FE066095, BF, VII·2020. Two paratypes (1M, 1F; ex ZUPV-6139/6140) are deposited in CHW (CHW·492; will be donated to collection of Naturalis Biodiversity Center, Leiden, Netherlands); two paratypes (1M, 1F; ex ZUPV-6139/6140) are in CJM; another female paratype (ex ZUPV-6140) is at Museo Nacional de Ciencias Naturales (MNCN 20.02/20488).

DIAGNOSIS. Small body (male <3mm) with long legs (BLI ≈ 3); leg coxae with dark distal band; chelicerae very slender; truncus penis with two rows of canaliculi; glans base bulged.

DESCRIPTION. **Male** (Fig. 5 A-B). Very small (holotype: length 2.75, prosoma width 1.88, femur I 5.59; BLI 2.97).

Prosoma (Fig. 5 A): Yellowish-brown background with darker lateral edges. Supracheliceral laminae and the preocular area dark, forming a distinctive triangle; posterior part of the prosomal tergites also dark.

Ocularium at its length from the frontal margin, slightly wider than long, with dark periocular areas, and light brown anterior; whitish posterior portion of the sagittal groove, with a golden medial line.

Opisthosoma: Yellowish-brown with dark anterior and lateral borders. Segments 1-4 with ill-defined dark brown paramedian patches extending onto the lateral margins, leaving a central lighter band with pale yellowish spots; light spots also on the lateral patches.

Ventrum (Fig. 5 B) pale yellowish. Distal third of the coxae with irregular dark markings and two small triangular spots on coxae IV next to ventral plate. Coxae and genital operculum with sensilla chaetica (more abundant on coxae I).

Legs (Table III): Trochanters dark laterally; femora with a basal whitish ring followed by a dark ring. Femora I, III and IV 0.19 mm wide, femur II 0.14 mm; with rows of short spines distally inclined (smaller on femur II), 6-7 spines/mm per row.

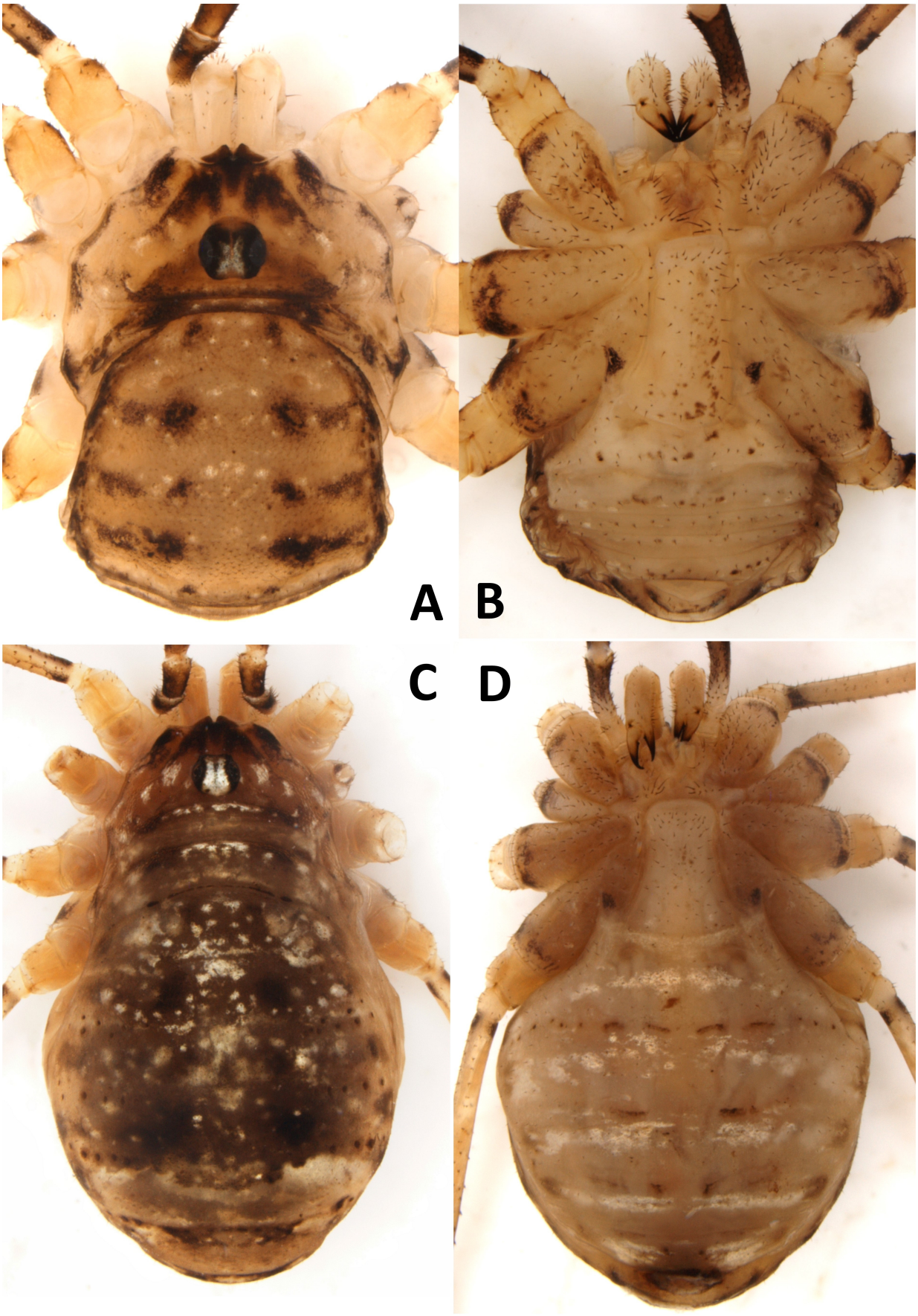


Fig. 5. *Nelima minorica* sp. nov. Sant Joan des Vergers (Maó, Menorca Island). [ZUPV·5859]. **A-B**, male holotype, body length 2.75 mm (dorsal and ventral view). **C-D**, female paratype, body length 4.85 mm (dorsal and ventral view). / ***Fig. 5.*** *Nelima minorica sp. nov. Sant Joan des Vergers (Maó, Isla de Menorca). [ZUPV·5859].* ***A-B****, macho holotipo, longitud del cuerpo 2.75 mm (vistas dorsal y ventral).* ***C-D****, hembra paratípica, longitud del cuerpo 4.85 mm (vistas dorsal y ventral).*

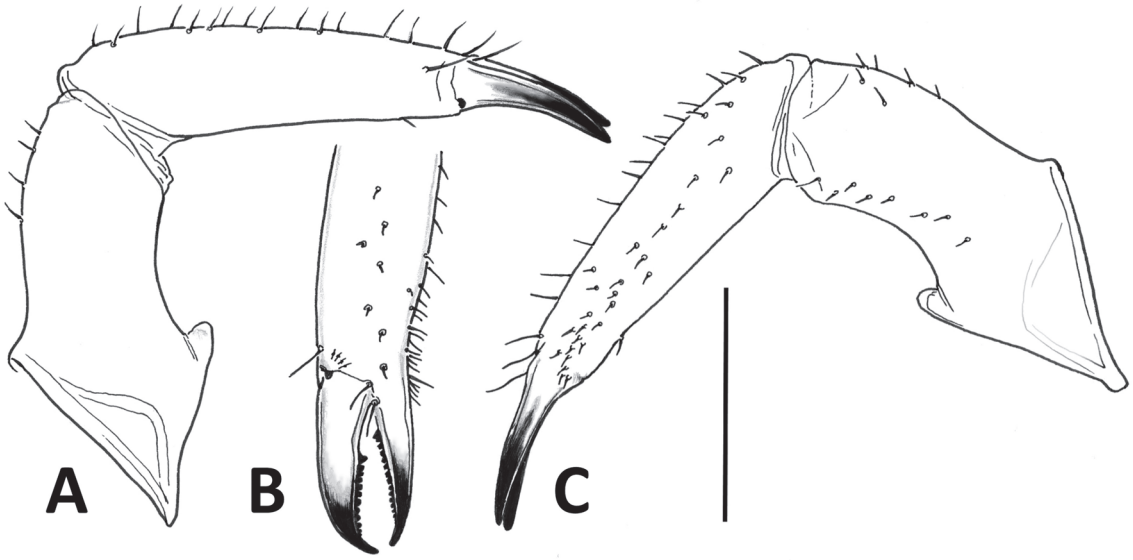


Fig. 6. *Nelima minorica* sp. nov. Sant Joan des Vergers (Maó, Menorca Island) [CHW·492, ex ZUPV·6139]. Right chelicera of a paratype male. **A**, lateral, **B**, frontal, **C**, medial view. Scale bar, 0.5 mm. / ***Fig. 6.*** *Nelima minorica sp. nov. Sant Joan des Vergers (Maó, Isla de Menorca) [CHW·492, ex ZUPV·6139]. Quelícero derecho de un macho paratípico.* ***A****, vista lateral,* ***B****, frontal,* ***C****, medial. Escala, 0.5 mm.*

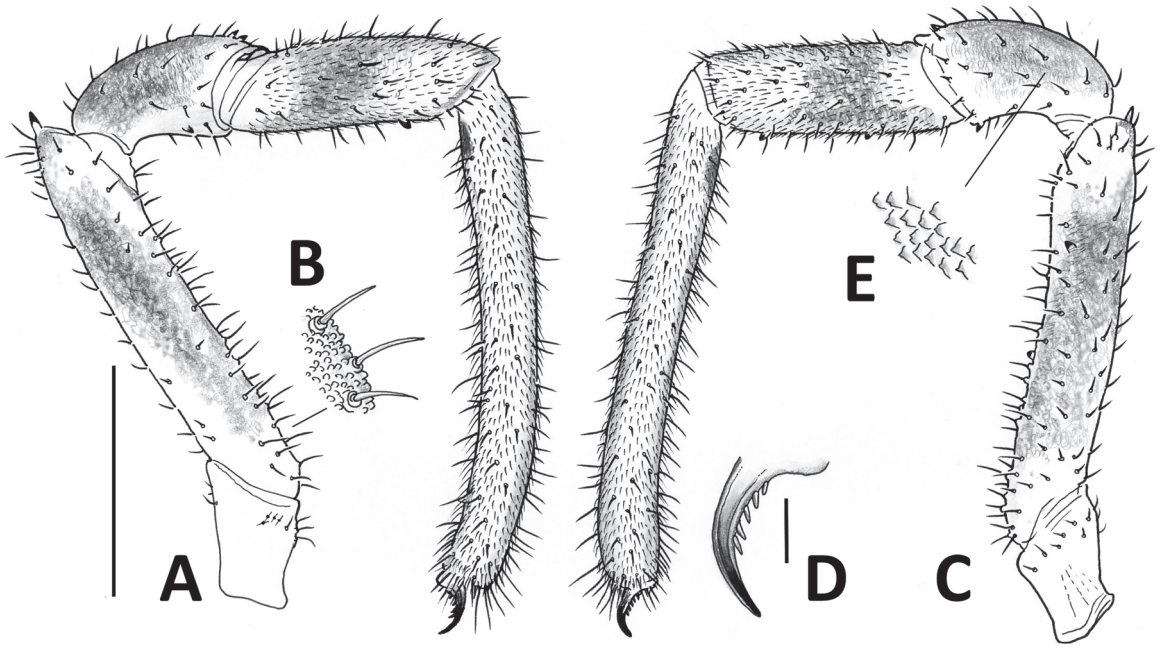


Fig. 7. *Nelima minorica* sp. nov. Sant Joan des Vergers (Maó, Menorca Island) [CHW·492, ex ZUPV·6139]. Right pedipalp of a paratype male. **A**, lateral view. **B**, detail of femur base. **C**, medial view. **D**, tarsal claw. **E**, detail of patellar surface. Scale bar: A, 0.5 mm; D, 50 µm. / ***Fig. 7.*** *Nelima minorica sp. nov. Sant Joan des Vergers (Maó, Isla de Menorca) [CHW·492, ex ZUPV·6139]]. pedipalpo derecho de un macho paratípico.* ***A****, vista lateral.* ***B****, detalle de la base del fémur.* ***C****, vista medial.* ***D****, uña tarsal.* ***E****, detalle de la superficie de la patella. Escala: A, 0.5 mm; D, 50 µm.*

Table III. *Nelima minorica* sp. nov. (St. Joan des Vergers, Maó, Menorca Island). Leg measurements of the male holotype (above) and a female paratype (ZUPV·5859) (below). Abbreviations: PA(Mt), number of metatarsal pseudoarticulations; N(Ta), number of tarsomeres. / ***Tabla III.*** *Nelima minorica sp. nov. (St. Joan des Vergers, Maó, Isla de Menorca). Medidas de las patas del macho holotipo (arriba) y de una hembra paratípica (ZUPV·5859) (debajo). Abreviaturas: PA(Mt), número de pseudoarticulaciones del metatarso; N(Ta), número de tarsómeros.*

		Troch.	Femur	Patella	Tibia	Metat.	Tarsus	PA(Mt)	N(Ta)	Length
♂	Leg 1	0.41	5.59	1.02	4.62	5.6	10.41	1	35	27.65
	Leg 2	0.4	9.62	1.04	9.61	7.35	20.40	7	64	48.42
	Leg 3	0.43	5.65	1.04	4.44	6.81	8.10	2	23	26.47
	Leg 4	0.43	8.38	1.10	6.25	8.20	12.55	3	36	36.91
♀	Leg 1	0.40	3.95	1.05	3.25	3.80	7.25	2	33	19.70
	Leg 2	0.40	—	—	—	—	—	—	—	—
	Leg 3	0.40	4.10	1.05	3.25	4.10	7.10	2	33	20.00
	Leg 4	0.40	6.30	1.15	4.50	5.65	9.10	2	36	27.10

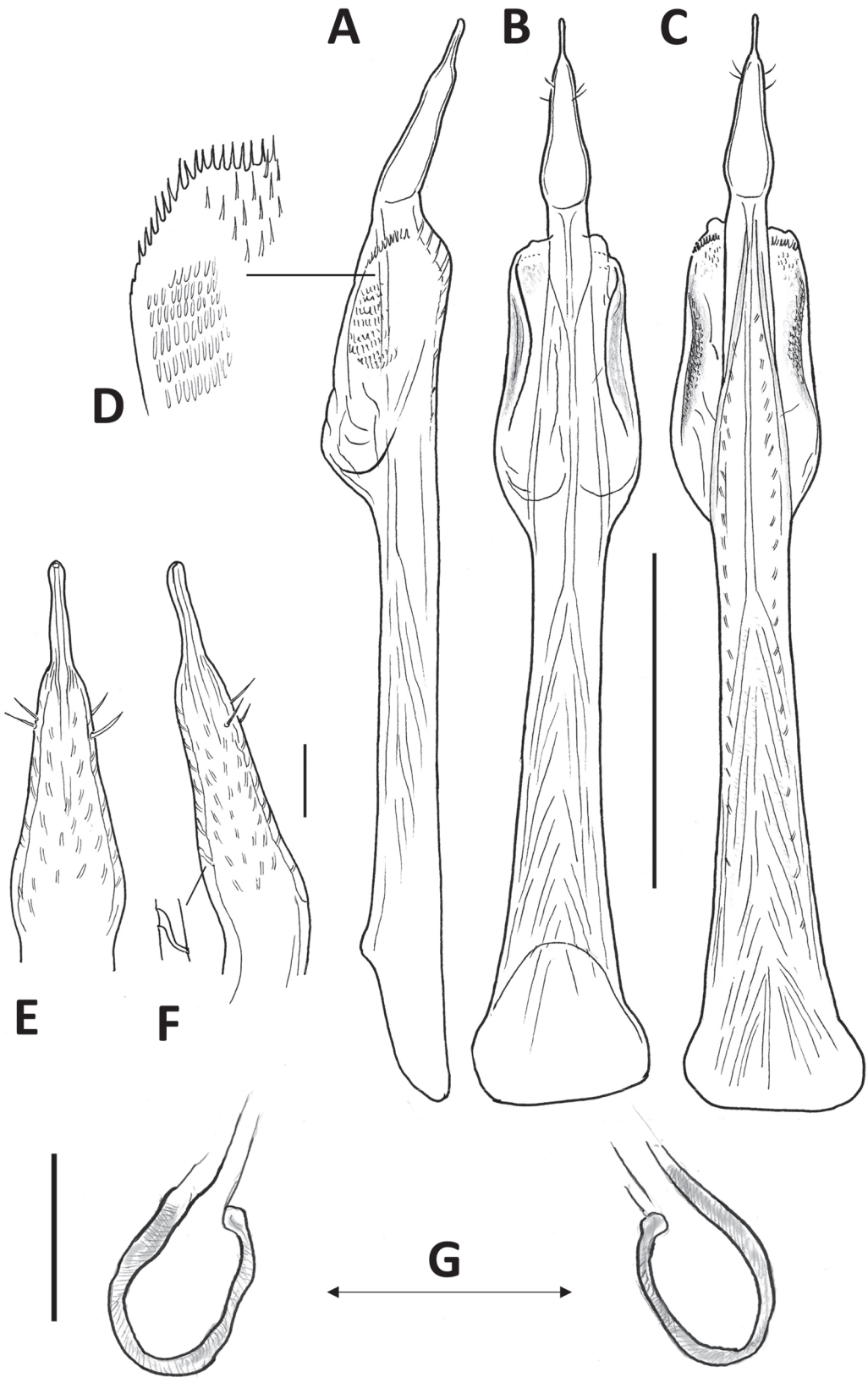


Fig. 8. *Nelima minorica* sp. nov. Sant Joan des Vergers (Maó, Menorca Island) [CHW·492, ex ZUPV·6139]. **A-C**, penis of a paratype male (lateral, ventral and dorsal views). **D**, detail of distal portion of alae. **E-F**, glans penis, dorsal and lateral views. **G**, seminal receptacles of a paratype female. Scale bar: A-C, 0.5 mm; E-G, 50 µm. / ***Fig. 8.*** *Nelima minorica sp. nov. Sant Joan des Vergers (Maó, Isla de Menorca) [CHW·492, ex ZUPV·6139].* ***A-C****, pene de un macho paratípico (en vistas lateral, ventral y dorsal).* ***D****, zona distal de la aleta.* ***E-F****, glans penis, vistas dorsal y lateral.* ***G****, receptáculos seminales. Escala: A-C, 0.5 mm; E-G, 50 µm.*

Chelicerae (Fig. 6 A-C): White-yellowish, basichelicerite with a blunt-tipped ventral spur; second segment conspicuously slender; rigid bristles on the dorsal and median side.

Pedipalps (Fig. 7 A-E): Trochanters pale, with some setae medially subterminally; femur straight, pale, with irregular sooty spot in the middle, with stout bristles on ventral side

and two blunt tubercles; patella sooty except distal third, with large setae and two short dorsodistal denticles; tibia and tarsus with trichomes; tibia with a wide dark ring in the middle, with strong bristles on the ventral side; tarsus slightly bent ventrally, longer than the femur, with a inconspicuous ventrobasal swelling, pale, covered with large sensory setae. Claw pectinate, with 5 distally inclined teeth (Fig. 7E).

Penis (Fig. 8 A-F): Robust, 1.6-1.7 (holotype 1.67) mm long, penis portion from base to alate part slightly longer than the distal portion (alae, glans and stylus); truncus base wide, gradually narrowing towards the glans (dorsal view), dorsally with two paramedian rows of canaliculi more sclerotized dorsodistally. Intrinsic penial muscle in basal 3/5 of truncus. Alate portion slightly converging anteriorly (dorsal view), pockets indistinct; wings with an internal field of about 14 rows of oval-shaped microstructures, apical margin of wings pilose, internally with non-sensory setae (Fig. 8D). Glans 0.2 mm long (Fig. 8 E-F), slightly bulged at its base, provided with canaliculi, distally with two pairs of sensory setae; tubular stylus 0.07 mm long and 0.01 mm wide.

Female (Fig. 5 C-D). Background light brown. Prosoma with similar pigmentation in the frontal region and in the ocularium as in the male, ocularium with a white sagital groove and a fine dark midline. Opisthosoma with scattered bright spots, an indistinct pattern of dark brown paramedian patches and spots; free tergites I and II with a pair of dark patches on their anterior border, spots more abundant on segment IV, segment V with a broad glossy pale pigmentation. Legs shorter than in males (Table III). Seminal receptacles (Fig. 8 G) located in the fifth ovipositor segment, sacculate ovoid, 55 µm length, 40 µm wide and thin walls (5 µm) little sclerotized.

ETIMOLOGY: The specific epithet "minorica", in apposition, refers to the Latin name of Menorca Island, named so because it is smaller than the main Balearic Island Majorica (Mallorca).

GEOGRAPHICAL DISTRIBUTION. Only known from four localities, the type locality and two in the southeastern part of Menorca Island, and one in the southwestern part of the island, 20 km away.

AFFINITIES. Among European species of the genus, *Nelima minorica* sp. nov. is the smallest after *Nelima narcisi* Novak & Slana, 2003, described from the northeastern coast of the Adriatic, which has a size of 2-3.3 mm. Both species have very long legs (BLI > 2.5), a similar pattern of dorsal colouration on the opisthosoma, dark patches distally on the coxae, pedipalps with patches on femur, patella, and tibia, and penis with "fine short microtrichia rows inside each pocket" (Novak & Slana 2003). Differences between the two are subtle; according to characters highlighted by T. Novak (pers. comm.), in *N. narcisi*, the ocularium is somewhat wider than long, the tarsus of the pedipalp is evenly curved, without a ventrobasal bulge, the basichelicerite is robust and not arched, and the second segment is somewhat thickened, the glans penis is not widened at the base; legs are shorter.

The blunt spur on the ventral basichelicerite is not a diagnostic feature for *N. narcisi*, because in some of the paratype material this spur is pointed (checked from sample CJM 4138, collection of Jochen Martens).

Nelima cf. hispana

Nelima hispana Martens, 1969, Senck. Biol. 50 (5/6): 410, figs. 2, 11, 30-31, 36-37 (TL: Sierra s. Zetiva [= Xátiva?], Valencia).

MATERIAL: [6030] 4M, 8J: Ciutadella: Alfurí de Dalt, EE834322, BF, VII·2019.

COMMENTS. Martens (1969) described *N. hispana* in 1969, based on a single male and female, from the province of Valencia, Spain. According to him, this species is closely related to *N. gothica* Lohmander, 1945 and *N. silvatica* (Simon, 1879). Only recently, more samples of *N. hispana* from the Spanish mainland have become available, enabling a comparison with the *Nelima* specimens from Menorca (publication is in preparation). No female is available.

Suborder LANIATORES

Family PHALANGODIDAE

***Scotolemon krausi* Rambla, 1972**

Scotolemon krausi Rambla, 1972, *Rapp. Comm. int. Mer Médit.* 21(3): 89 (TL: Jesús, Ibiza).

MATERIAL: [6136] 10H,4J: Maó: Sant Joan des Vergers, FE065168, CP, J. Fernández, I. Merino, 09·10·2021. [6146] 1H: Barranco d'Algendar: Pas d'en Rebull, EE829258, CP, J. Fernández, I. Merino, 12·10·2021.

COMMENTS. The two studied samples consist solely of females and juveniles, no males were available.

GEOGRAPHICAL DISTRIBUTION: Balearic endemism. Originally described from Ibiza (Rambla, 1972), from where it had been cited as *Scotolemon lespesi* by Kraus (1961) and Brignoli (1968). Pons & Rambla (1993) provided records for two Ibizan islets, and the first record for Mallorca Island Group on the Cabrera islets, confirmed by Thaler (1996) with two records from the west and south of Mallorca Island. First record for Menorca Island.

Discussion

Until now, the opilionological fauna of Menorca Island comprised four species (*Dicranolasma soerensenii, Histricostoma argenteolunulatum, Homalenotus buchneri* and *Metaphalangium cirtanum*); the new data confirm the presence of these species and add five species to the island's checklist. Two, *Scotolemon krausi* and *Dasylobus ferrugineus*, are species whose presence in Menorca was expected because they were already known from Mallorca and the Pytiusics (Ibiza). The Mallorca and Menorca Islands, collectively called Gymnesians, are separated by a strait of 37 km and a maximum depth of about 80 m. Yet, they share the same continental shelf, becoming isolated islands after the last glacial maximum, about 18,000 years ago. Therefore, it is expected that Mallorca and Menorca present a high faunistic similarity. So, maybe *Trogulus balearicus* and *Anelasmocephalus balearicus* may also are present on Menorca.

The other three faunistic novelties for Menorca belong to the genus *Nelima*, so far represented in the Balearic Islands only by *Nelima doriae*, recorded from Mallorca (Marcellino 1974). In addition to *N. doriae*, two other species have been identified, from different locations: *Nelima cf. hispana* and *Nelima minorica* sp. nov. *Nelima doriae* has only been found in the northeast of the island, and N. cf. hispana in a single site in the northwest, both in the Tramuntana region, consisting mainly of Paleozoic and Mesozoic deposits, while *N. minorica* has been found in the southern region only, the Migjorn, consisting mainly of Miocene limestone and conglomerates.

The genus *Nelima* has not been revised so far, so phylogenetic relationships remain obscure. Martens (1969) started considering 'species groups', based on penial morphology, but not much has been done since then, although several new species have been described. In this respect, we agree with Novak & Slana (2003) that *N. narcisi* must be closely related to *N. semproni* Szalay, 1951, and we suspect that *Nelima minorica* sp. nov. also belongs in this 'species group'; one of the characters these species share is the pilose distal margin of the penial wing flaps.

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