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SYSTEMATIC CHECKLIST OF THE ORIBATIDS (ACARI: ORIBATIDA) OF BEECH FORESTS (*FAGUS SYLVATICA* L.) FROM THE NORTH-EAST OF THE IBERIAN PENINSULA: UPDATED KNOWN DISTRIBUTIONS AND THE FIRST RECORD OF *DAMAEUS (D.) FIRMUS* KUNST, 1957

Iñaki Balanzategui[1], Elena Corral-Hernández[2] & J. Carlos Iturrondobeitia[3]

Zoology and Animal Cell Biology Department. Faculty of Science and Technology. University of the Basque Country (UPV-EHU). Barrio Sarriena s/n. 48940 Leioa. Bizkaia.
— [1] inaki.balanzategui@ehu.eus — [2] elena.corral@ehu.eus —[3] juancarlos.iturrondobeitia@ehu.eus

Abstract: The oribatid mite communities of five beech forests from the north-east of the Iberian Peninsula was studied for three years. 8,502 specimens were collected, and a systematic checklist of the 153 identified species is presented here. *Damaeus (D.) firmus* Kunst, 1957 is recorded for the first time from the Iberian Peninsula and the known distribution of 76 species is extended.
Key words: Acari, Oribatida, *Fagus sylvatica*, checklist, distribution, first record, taxonomy, biogeography, Iberian Peninsula.

Listado sistemático de oribátidos (Acari: Oribatida) de hayedos (*Fagus sylvatica* L.) del nordeste de la Península Ibérica: ampliación al conocimiento de su distribución y primera cita de *Damaeus (D.) firmus* Kunst, 1957
Resumen: Durante tres años se estudiaron las comunidades de ácaros oribátidos de cinco hayedos del nordeste de la Península Ibérica. Se recogieron 8.502 ejemplares, y se presenta aquí el listado sistemático de las 153 especies identificadas. Se cita por primera vez de la Península Ibérica a *Damaeus (D.) firmus* Kunst, 1957 y se amplía la distribución conocida de 76 especies.
Palabras clave: Acari, Oribatida, *Fagus sylvatica*, listado sistemático, distribución, primera cita, taxonomía, biogeografía, Península Ibérica.

Introduction

Oribatid mites are, with springtails (Collembola), the dominant arthropod group of soil decomposer community in highly organic soils of temperate forests (Norton & Behan-Pelletier, 2009). More than 10,800 species representing 164 families are known worldwide (Subías, 2004), and 991 species and subspecies are currently known in peninsular Spain and the Balearic Islands (Subías *et al*., 2013).

This study is included in the context of the Basque Plan to Combat Climate Change 2008-2012. It shows part of the results of the strategic governmental project ETORTEK: K-Egokitzen, focused on the study of soil oribatid mite communities of different ecosystems in different climatic zones in the Basque Country.

Materials and methods

Sampling was conducted in late spring of 2008, 2009 and 2010 in five beech forests from the north-east of the Iberian Peninsula:

- HA01: acidophilous beech forest (*Saxifrago hirsutae–Fagetum sylvaticae* Br.-Bl. 1967). Artikutza (Navarra). UTM (datum WGS84): 30T 598725, 4785430. Elevation 382 m.
- HA02: acidophilous beech forest (*Saxifrago hirsutae–Fagetum sylvaticae* Br.-Bl. 1967). Añarbe (Gipuzkoa). UTM (datum WGS84): 30T 591287, 4787309. Elevation 200 m.
- HA03: acidophilous beech forest (*Saxifrago hirsutae–Fagetum sylvaticae* Br.-Bl. 1967). Altube (Araba); UTM (datum WGS84): 30T 511000, 4759205. Elevation 600 m.
- HA04: neutro-basophilous beech forest (*Epipactido helleborines–Fagetum sylvaticae* (Rivas-Martínez 1962)). Arriano (Araba). UTM (datum WGS84): 30T 501522, 4747071. Elevation 822 m.
- HA05: neutro-basophilous beech forest (*Epipactido helleborines–Fagetum sylvaticae* (Rivas-Martínez 1962)). Puerto de Osluna (Araba). UTM (datum WGS84): 30T 521963, 4718540. Elevation 938 m.

In 2008, a 5 cm depth soil sample, composed by 3 sub-samples, one litre each, was taken. In 2009 and 2010, a composite soil sample consisting of 8 sub-samples of 250 cc each was collected with a corer (8 cm in diameter and 5 cm depth).

The soil fauna was extracted using Berlese -Tullgren funnels (Coineau, 1974) and stored in 70% ethanol. To identify the adults of oribatid mites to species level, dichotomous keys were used, e.g. Balogh & Mahunka (1983), Pérez-Íñigo (1993, 1997) and Subías & Arillo (2001). The specimens were preserved in 70% ethanol or mounted in semi-permanent slides with Hoyer's medium, and have been deposited at the Laboratory of Arthropods (Zoology and Animal Cell Biology Department, UPV-EHU).

The systematic checklist has been prepared according to the checklist of the world's oribatid mites (Subías, 2004) and new distribution data to the Iberian Peninsula have been compared with Subías *et al*. (2013). For each species, the beech forest code in which had appeared is presented and when necessary, the Spanish province for which the known distribution is extended, coded as 1st plus province abbreviation (A: Araba, G: Gipuzkoa, N: Navarra).

Results

A total of 8,502 specimens belonging to 153 species of 47 families were identified. *Damaeus (D.) firmus* Kunst, 1957 is recorded for the first time in the Iberian Peninsula and the known distribution area of 76 species is extended to Spanish provinces of Araba, Gipuzkoa and / or Navarra.

Order O R I B A T I D A Dugès, 1834

Suborder PARHYPOSOMATA Balogh & Mahunka, 1979

Parhypochthonioidea Grandjean, 1932
- Gehypochthoniidae Strenzke, 1963
  - *Gehypochthonius* Jacot, 1936
    - *Gehypochthonius rhadamanthus* Jacot, 1936. HA01, HA02. **1st G**.

Suborder ENARTHRONOTA Grandjean, 1947

Brachychthonioidea Thor, 1934
- Brachychthoniidae Thor, 1934
  - *Liochthonius s.str.* Hammen, 1959
    - *Liochthonius (L.) brevis* (Michael, 1888). HA04, HA05.
    - *Liochthonius (L.) horridus* (Sellnick, 1928). HA05. **1st A**.
    - *Liochthonius (L.) hystricinus* (Forsslund, 1942). HA01, HA02, HA03, HA04, HA05. **1st G**.
    - *Liochthonius (L.) leptaleus* Moritz, 1976. HA05. **1st A**.
    - *Liochthonius (L.) muscorum* Forsslund, 1964. HA01.
    - *Liochthonius (L.) simplex* (Forsslund, 1942). HA01.
    - *Liochthonius (L.) strenzkei* Forsslund, 1963. HA01, HA05.
  - *Poecilochthonius* Balogh, 1943
    - *Poecilochthonius spiciger* (Berlese, 1910). HA03, HA04, HA05.
  - *Sellnickochthonius* Krivolutsky, 1964
    - *Sellnickochthonius furcatus* (Weis-Fogh, 1948). HA03. **1st A**.
    - *Sellnickochthonius immaculatus* (Forsslund, 1942). HA01, HA03, HA05.
    - *Sellnickochthonius jacoti* (Evans, 1952). HA01, HA03, HA05. **1st A**.
    - *Sellnickochthonius rostratus hungaricus* (Balogh, 1943). HA03. **1st A**.
    - *Sellnickochthonius zelawaiensis* (Sellnick, 1928). HA02. **1st G**.

Suborder MIXONOMATA Grandjean, 1969

Infraorder DICHOSOMATA Balogh & Mahunka, 1979

Perlohmannioidea Grandjean, 1954
- Perlohmaniidae Grandjean, 1954
  - *Perlohmannia s.str.* Berlese, 1916
    - *Perlohmannia (P.) dissimilis* (Hewitt, 1908). HA02.

Infraorder EUPTYCTIMA Grandjean, 1967

Euphthiracaroidea Jacot, 1930
- Euphthiracaridae Jacot, 1930
  - *Acrotritia* Jacot, 1923
    - *Acrotritia duplicata* (Grandjean, 1953). HA03, HA04. **1st A**.
  - *Euphthiracarus s.str.* Ewing, 1917
    - *Euphthiracarus (E.) monodactylus* (Willmann, 1919). HA01, HA02. **1st G**.
  - *Microtritia* Märkel, 1964
    - *Microtritia minima* (Berlese, 1904). HA02.

Phthiracaroidea Perty, 1841
- Phthiracaridae Perty, 1841
  - *Atropacarus* Ewing, 1917
    - *Atropacarus wandae* (Niedbała, 1981). HA03, HA04, HA05.
  - *Phthiracarus s.str.* Perty, 1841
    - *Phthiracarus (P.) laevigatus* (Koch, 1841). HA01, HA05.
    - *Phthiracarus (P.) ferrugineus* (Koch, 1841). HA01, HA02, HA03. **1st G**.
  - *Phthiracarus (Archiphthiracarus)* Balogh & Mahunka, 1979
    - *Phthiracarus (A.) anonymus* Grandjean, 1933. HA02, HA03, HA05. **1st G**.
    - *Phthiracarus (A.) globosus* (Koch, 1841). HA01, HA02, HA04. **1st G**.
    - *Phthiracarus (A.) montanus* Pérez-Íñigo, 1969. HA01, HA03, HA04. **1st A**.
    - *Phthiracarus (A.) piger* (Scopoli, 1763). HA01, HA02, HA05. **1st G, 1st N**.
  - *Rhacaplacarus s.str.* Niedbała, 1986
    - *Rhacaplacarus (R.) ortizi* (Pérez-Íñigo, 1970). HA01, HA02, HA03, HA04, HA05. **1st G**.
  - *Steganacarus s.str.* Ewing, 1917
    - *Steganacarus (S.) herculeanus* Willmann, 1953. HA01, HA02, HA03. **1st A, 1st G**.
    - *Steganacarus (S.) magnus s. str.* (Nicolet, 1855). HA01, HA02.
    - *Steganacarus (S.) magnus anomalus* (Berlese, 1883). HA03, HA04, HA05. **1st A**.

Suborder HOLOSOMATA Grandjean, 1969

Crotonioidea Thorell, 1876
- Malaconothridae Berlese, 1916
  - *Malaconothrus s.str.* Berlese, 1904
    - *Malaconothrus (M.) monodactylus* (Michael, 1888). HA01, HA02. **1st G**.
- Nothridae Berlese, 1896
  - *Nothrus* Koch, 1836
    - *Nothrus silvestris s. str.* Nicolet, 1855. HA02, HA03, HA05. **1st G**.

Suborder BRACHYPYLINA Hull, 1918

Infraorder PYCNONOTICAE Grandjean, 1954

Nanhermannioidea Sellnick, 1928
- Nanhermanniidae Sellnick, 1928
  - *Nanhermannia s.str.* Berlese, 1913
    - *Nanhermannia (N.) nana* (Nicolet, 1855). HA02, HA03, HA04, HA05. **1st G**.
    - *Nanhermannia (N.) sellnicki* Forsslund, 1958. HA02. **1st G**.

Hermannioidea Sellnick, 1928
- Hermanniidae Sellnick, 1928
  - *Hermannia s.str.* Nicolet, 1855
    - *Hermannia (H.) gibba* (Koch, 1839). HA01.

Hermannielloidea Grandjean, 1934
- Hermanniellidae Grandjean, 1934
  - *Hermanniella* Berlese, 1908
    - *Hermanniella dolosa* Grandjean, 1931. HA03, HA04, HA05.
    - *Hermanniella granulata* (Nicolet, 1855). HA01, HA02, HA04, HA05. **1st G**.
    - *Hermanniella septentrionalis* Berlese, 1910. HA01, HA03. **1st A**.

Neoliodoidea Sellnick, 1928
- Neoliodidae Sellnick, 1928
  - *Poroliodes* Grandjean, 1934
    - *Poroliodes farinosus* (Koch, 1839). HA04.

Gymnodamaeoidea Grandjean, 1954
- Gymnodamaeidae Grandjean, 1954
  - *Arthrodamaeus* Grandjean, 1954
    - *Arthrodamaeus reticulatus* (Berlese, 1910). HA01, HA02, HA03. **1st A**.

Damaeoidea Berlese, 1896
- Damaeidae Berlese, 1896
  - *Belba s.str.* Heyden, 1826
    - *Belba (B.) patelloides* (Michael, 1888). HA05. **1st A**.
  - *Damaeus s.str.* Koch, 1835
    - *Damaeus (D.) auritus* Koch, 1835. HA02. **1st G**.
    - *Damaeus (D.) firmus* Kunst, 1957. HA03, HA04, HA05. **1st A**
    - *Damaeus (D.) maximus* Mihelčič, 1957. HA03, HA04, HA05. **1st A**.
  - *Damaeus (Adamaeus)* Norton, 1977
    - *Damaeus (A.) onustus* Koch, 1841. HA05. **1st A**.
  - *Damaeus (Epidamaeus)* Bulanova-Zachvatkina, 1957
    - *Damaeus (E.) pyrenaicus* (Pérez-Íñigo jr., 1991). HA03, HA05. **1st A**.
  - *Damaeus (Paradamaeus)* Bulanova-Zachvatkina, 1957
    - *Damaeus (P.) clavipes* (Hermann, 1804). HA01, HA02, HA03. **1st G**.
  - *Dameobelba* Sellnick, 1928
    - *Dameobelba minutissima* (Sellnick, 1929). HA02.
  - *Metabelba s.str.* Grandjean, 1936
    - *Metabelba (M.) papillipes* (Nicolet, 1855). HA02, HA03.
  - *Porobelba* Grandjean, 1936
    - *Porobelba spinosa* (Sellnick, 1920). HA01, HA03, HA04, HA05. **1st A**.

Eutegaeoidea Balogh, 1965
- Compactozetidae Luxton, 1988
  - *Conoppia* Berlese, 1908
    - *Conoppia palmicincta* (Michael, 1880). HA01, HA02.
  - *Ommatocepheus* Berlese, 1913
    - *Ommatocepheus ocellatus* (Michael, 1882). HA01. **1st N**.
  - *Tritegeus* Berlese, 1913
    - *Tritegeus bisulcatus* Grandjean, 1953. HA04. **1st A**.

Gustavioidea Oudemans, 1900
- Astegistidae Balogh, 1961
  - *Cultroribula* Berlese, 1908
    - *Cultroribula bicultrata* (Berlese, 1905). HA03, HA04, HA05.
- Ceratoppiidae Kunst, 1971
  - *Ceratoppia* Berlese, 1908
    - *Ceratoppia bipilis* (Hermann, 1804). HA02, HA03, HA04, HA05. **1st A**.
- Gustaviidae Oudemans, 1900
  - *Gustavia* Kramer, 1879
    - *Gustavia maior* (Berlese, 1904). HA01.
    - *Gustavia microcephala* (Nicolet, 1855). HA03, HA04, HA05. **1st A**.
- Liacaridae Sellnick, 1928
  - *Liacarus s.str.* Michael, 1898
    - *Liacarus (L.) coracinus s. str.* (Koch, 1841). HA01, HA02, HA03.
    - *Liacarus (L.) subterraneus* (Koch, 1844). HA01, HA04, HA05.
    - *Liacarus (L.) xylariae* (Schrank, 1803). HA05. **1st A**.
  - *Planoristes* Iturrondobeitia & Subías, 1978
    - *Planoristes acuspidatus* Iturrondobeitia & Subías, 1978. HA02, HA03. **1st G**.
- Xenillidae Woolley & Higgins, 1966
  - *Xenillus s.str.* Robineau-Desvoidy, 1839
    - *Xenillus (X.) clypeator* Robineau-Desvoidy, 1839. HA05.
    - *Xenillus (X.) tegeocranus* (Hermann, 1804). HA01, HA02, HA03, HA04, HA05.

Eremaeoidea Oudemans, 1900
- Eremaeidae Oudemans, 1900
  - Eremaeus Koch, 1835
    - *Eremaeus hepaticus cordiformis* Grandjean, 1934. HA01, HA02, HA03, HA04, HA05.

Ameroidea Bulanova-Zachvatkina, 1957
- Ctenobelbidae Grandjean, 1965
  - *Ctenobelba s.str.* Balogh, 1943
    - *Ctenobelba (C.) pseudomahnerti* Subías y Shtanchaeva, 2013. HA01, HA02. **1st G**.
  - *Mongaillardia* Grandjean, 1961
    - *Mongaillardia eveana* Grandjean, 1961. HA01, HA04.
- Damaeolidae Grandjean, 1965
  - *Damaeolus* Paoli, 1908
    - *Damaeolus ornatissimus* Csiszár, 1962. HA04. **1st A**.
  - *Fosseremus* Grandjean, 1954
    - *Fosseremus laciniatus* (Berlese, 1905). HA05.
- Ameridae Bulanova-Zachvatkina, 1957
  - *Amerus s.str.* Berlese, 1896
    - *Amerus (A.) polonicus* Kulczynski, 1902. HA 01, HA02, HA03. **1st A**, **1st G**

Oppioidea Sellnick, 1937
- Autognetidae Grandjean, 1960
  - *Autogneta s.str.* Hull, 1916
    - *Autogneta (A.) parva* Forsslund, 1947. HA05. **1st A**.
- Thyrisomidae Grandjean, 1953
  - *Banksinoma* Oudemans, 1930
    - *Banksinoma lanceolata* (Michael, 1885). HA03. **1st A**.
- Oppiidae Sellnick, 1937
  - Oppiinae Sellnick, 1937
    - *Oppia* Koch, 1836
      - *Oppia denticulata* (G. & R. Canestrini, 1882). HA02.
  - Multioppiinae Balogh, 1983
    - *Multioppia s.str.* Hammer, 1961
      - *Multioppia (M.) neglecta* Pérez-Íñigo, 1969. HA01, HA02, HA05. **1st A**, **1st G**.
    - *Ramusella (Insculptoppia)* Subías, 1980
      - *Ramusella (I.) elliptica* (Berlese, 1908). HA03, HA05.
      - *Ramusella (I.) insculpta* (Paoli, 1908). HA01, HA03, HA04, HA05.
  - Medioppiinae Subías & Mínguez, 1985
    - *Microppia* Balogh, 1983
      - *Microppia minus s. str.* (Paoli, 1908). HA01, HA02, HA03, HA04, HA05.
    - *Rhinoppia s.str.* Balogh, 1983
      - *Rhinoppia (R.) media* (Mihelčič, 1956). HA03, HA04, HA05. **1st A**.
      - *Rhinoppia (R.) obsoleta s. str.* (Paoli, 1908). HA01, HA02, HA03, HA04.
      - *Rhinoppia (R.) ordunensis* (Iturrondobeitia & Saloña, 1988). HA04, HA05. **1st A**.
      - *Rhinoppia (R.) subpectinata* (Oudemans, 1900). HA01, HA02, HA03, HA04.

Rhinoppia (R.) tridentata (Subías y Mínguez, 1985). HA01, HA02, HA03, HA04. **1st N**.
Rhinoppia (R.) truncata (Iturrondobeitia & Saloña, 1988). HA03, HA04.
Rhinoppia (R.) vera (Mihelčič, 1956). HA01, HA02. **1st G, 1st N**.
Serratoppia Subías & Mínguez, 1985
Serratoppia intermedia Subías & Rodríguez, 1988. HA01, HA02, HA03, HA04.
Serratoppia serrata (Mihelčič, 1956). HA04, HA05.
Oppiellinae Seniczak, 1975
Berniniella s.str. Balogh, 1983
Berniniella (B.) conjuncta (Strenzke, 1951). HA01, HA03, HA04. **1st A**.
Berniniella (B.) inornata (Mihelčič, 1957). HA01, HA03, HA04, HA05.
Berniniella (B.) serratirostris s. str. (Golosova, 1970). HA01, HA03, HA04, HA05.
Berniniella (B.) serratirostris hauseri (Mahunka, 1974). HA01, HA03, HA04, HA05 **1st A**.
Berniniella (B.) setilonga Iturrondobeitia & Saloña, 1988. HA03, HA04, HA05 **1st A**.
Dissorhina Hull, 1916
Dissorhina ornata s. str. (Oudemans, 1900). HA01, HA02, HA03, HA04, HA05.
Moritzoppia s.str. Subías & Rodríguez, 1988
Moritzoppia (M.) unicarinata s. str. (Paoli, 1908). HA01, HA02.
Neotrichoppia s.str. Subías & Iturrondobeitia, 1980
Neotrichoppia (N.) pseudoconfinis Subías & Iturrondobeitia, 1980. HA03, HA04, HA05 **1st A**.
Neotrichoppia (Ancestroppia) Subías & Rodríguez, 1986
Neotrichoppia (A.) berninii Subías & Rodríguez, 1986. HA03, HA04.
Neotrichoppia (Confinoppia) Subías & Rodríguez, 1986
Neotrichoppia (C.) confinis tenuiseta Subías & Rodríguez, 1986. HA01.
Neotrichoppia (C.) variabilis Iturrondobeitia & Subías, 1981 HA01, HA02, HA03, HA04.
Oppiella s.str. Jacot, 1937
Oppiella (O.) nova s. str. (Oudemans, 1902). HA01, HA02, HA03, HA04.
Oxyoppiinae Subías, 1989
Subiasella (Lalmoppia) Subías & Rodríguez, 1986
Subiasella (L.) quadrimaculata (Evans, 1952). HA02. **1st G**.
• Machuellidae Balogh, 1983
Machuella Hammer, 1961
Machuella draconis Hammer, 1961. HA01, HA02, HA03, HA05.
• Quadroppiidae Balogh, 1983
Quadroppia s.str. Jacot, 1939
Quadroppia (Q.) maritalis Lions, 1982. HA01, HA02, HA03, HA04, HA05.
Quadroppia (Q.) quadricarinata (Michael, 1885). HA05. **1st A**
Quadroppia (Coronoquadroppia) Ohkubo, 1995
Quadroppia (C.) monstruosa Hammer, 1979. HA04, HA05.
Quadroppia (C.) pseudocircumita Mínguez, Ruíz & Subías, 1985. HA03, HA04, HA05.
Trizetoidea Ewing, 1917
• Suctobelbidae Jacot, 1938
Suctobelba Paoli, 1908
Suctobelba granulata Hammen, 1952. HA02. **1st G**.
Suctobelba regia Moritz, 1970. HA04. **1st A**.
Suctobelba trigona (Michael, 1888). HA01, HA02, HA03, HA05.
Suctobelbella s.str. Jacot, 1937
Suctobelbella (S.) acutidens s. str. (Forsslund, 1941). HA01, HA02, HA03, HA04, HA05.
Suctobelbella (S.) acutidens sarekensis (Forsslund, 1941). HA01, HA02, HA03, HA04, HA05.
Suctobelbella (S.) longicuspis s. str. Jacot, 1937. HA01, HA02, HA03.
Suctobelbella (S.) perforata (Strenzke, 1950). HA01. **1st N**.
Suctobelbella (S.) similis (Forsslund, 1941). HA02.
Suctobelbella (S.) subcornigera s. str. (Forsslund, 1941). HA01, HA02, HA03, HA04, HA05.
Suctobelbella (Flagrosuctobelba) Hammer, 1979
Suctobelbella (F.) alloenasuta Moritz, 1971. HA05.
Suctobelbella (F.) forsslundi s. str. (Strenzke, 1950). HA01, HA02, HA03, HA04, HA05.
Suctobelbella (F.) subtrigona (Oudemans, 1900). HA05.
Carabodoidea Koch, 1837
• Carabodidae Koch, 1837
Carabodes s.str. Koch, 1835
Carabodes (C.) arduinii Valle, 1955. HA03. **1st A**.
Carabodes (C.) areolatus Berlese, 1916. HA01. **1st G**.
Carabodes (C.) coriaceus Koch, 1835. HA03, HA04, HA05.
Carabodes (C.) perezinigoi Salinas, 1971. HA01, HA02. **1st G**, **1st N**.
Carabodes (Klapperiches) Mahunka, 1979
Carabodes (K.) similis translamellatus Pérez-Íñigo jr., 1990. HA04. **1st A**.

Odontocepheus s.str. Berlese, 1913
Odontocepheus (O.) elongatus (Michael, 1879). HA01, HA02, HA04. **1st G**.
Odontocepheus (O.) espatulatus Saloña & Iturrondobeitia, 1989. HA01, HA02.
Tectocepheoidea Grandjean, 1954
• Tectocepheidae Grandjean, 1954
Tectocepheus Berlese, 1896
Tectocepheus alatus Berlese, 1913. HA03, HA05. **1st A**.
Tectocepheus minor Berlese, 1903. HA01, HA02, HA03, HA05.
Tectocepheus velatus s. str. (Michael, 1880). HA01, HA02, HA03, HA04, HA05. **1st A**.
Cymbaeremaeoidea Sellnick, 1928
• Cymbaeremaeidae Sellnick, 1928
Cymbaeremaeus Berlese, 1896
Cymbaeremaeus cymba (Nicolet, 1855). HA05. **1st A**.

Infraorder PORONOTICAE Grandjean, 1954

Licneremaeoidea Grandjean, 1931
• Micreremidae Grandjean, 1954
Micreremus Berlese, 1908
Micreremus brevipes (Michael, 1888). HA01.
• Lamellareidae Balogh, 1972
Tenuelamellarea Subías & Iturrondobeitia, 1978
Tenuelamellarea hispanica Subías & Iturrondobeitia, 1978. HA02. **1st G**.
Phenopelopoidea Petrunkevitch, 1955
• Phenopelopidae Petrunkevitch, 1955
Eupelops Ewing, 1917
Eupelops acromios s. str. (Hermann, 1804). HA01.
Eupelops major s. str. (Hull, 1914). HA03, HA05.
Eupelops uraceus (Koch, 1839). HA02. **1st G**.
Microzetoidea Grandjean, 1936
• Microzetidae Grandjean, 1936
Amiracarus Miko, 2013
Amiracarus similis (Subías & Iturrondobeitia, 1978). HA01, HA02.
Achipterioidea Thor, 1929
• Achipteriidae Thor, 1929
Achipteria s.str. Berlese, 1885
Achipteria (A.) coleoptrata (Linnaeus, 1758). HA02, HA04. **1st G**.
Cerachipteria Grandjean, 1935
Cerachipteria digita jugata Mihelčič, 1956. HA01, HA02, HA03, HA04, HA05.
Parachipteria Hammen, 1952
Parachipteria punctata (Nicolet, 1855). HA02. **1st G**.
Oribatelloidea Jacot, 1925
• Oribatellidae Jacot, 1925
Ophidiotrichus Grandjean, 1953
Ophidiotrichus tectus (Michael, 1884). HA02, HA03, HA05.
Ceratozetoidea Jacot, 1925
• Ceratozetidae Jacot, 1925
Ceratozetes s.str. Berlese, 1908
Ceratozetes (C.) armatus Mihelčič, 1956. HA04.
Ceratozetes (C.) gemmula Pérez-Íñigo jr., 1990. HA04. **1st A**.
Ceratozetes (C.) peritus Grandjean, 1951. HA01, HA02, HA03, HA04, HA05.
Ceratozetes (C.) simulator Pérez-Íñigo, 1970. HA02.
Hispanozetes Subías & Shtanchaeva, 2012
Hispanozetes striatus Subías y Shtanchaeva, 2012. HA03.
• Chamobatidae Thor, 1937
Chamobates s.str. Hull, 1916
Chamobates (C.) cuspidatus (Michael, 1884). HA04. **1st A**.
Chamobates (C.) pusillus (Berlese, 1895). HA03.
• Punctoribatidae Thor, 1937
Minunthozetes s.str. Hull, 1916
Minunthozetes (M.) semirufus (Koch, 1841). HA03.
Minunthozetes (Inigozetes) Subías, 2000
Minunthozetes (I.) reticulatus Pérez-Íñigo, 1969. HA03.
Punctoribates s.str. Berlese, 1908
Punctoribates (P.) punctum (Koch, 1839). HA03. **1st A**.

Oripodoidea Jacot, 1925
- Oribatulidae Thor, 1929
  Oribatula s.str. Berlese, 1896
    Oribatula (O.) tibialis (Nicolet, 1855). HA01, HA02, HA03, HA04, HA05.
  Oribatula (Zygoribatula) Berlese, 1916
    Oribatula (Z.) exilis s. str. (Nicolet, 1855). HA01.
- Hemileiidae J. & P. Balogh, 1984
  Hemileius s.str. Berlese, 1916
    Hemileius (H.) initialis (Berlese, 1908). HA03, HA04, HA05.
- Liebstadiidae J. & P. Balogh, 1984
  Liebstadia s.str. Oudemans, 1906
    Liebstadia (L.) longior (Berlese, 1908). HA03, HA05
- Scheloribatidae Grandjean, 1933
  Scheloribates s.str. Berlese, 1908
    Scheloribates (S.) laevigatus s. str. (Koch, 1835). HA01, HA02, HA03, HA04, HA05. **1st G**.
- Oripodidae Jacot, 1925
  Truncopes Grandjean, 1956
    Truncopes optatus s. str. Grandjean, 1956. HA05. **1st A**.

Galumnoidea Jacot, 1925
- Galumnidae Jacot, 1925
  Acrogalumna Grandjean, 1956
    Acrogalumna longipluma s. str. (Berlese, 1904). HA02, HA04, HA05. **1st A**, **1st G**.
  Galumna s.str. Heyden, 1826
    Galumna (G.) lanceata (Oudemans, 1900). HA03, HA05. **1st A**.

Discussion

A total of 53 specimens of *Damaeus (D) firmus* Kunst, 1957 were collected. All the specimens fit the redescription provided by Miko (2015), which highlights that all notogastral setae, except row *p* and seta *h1*, are oriented anteriorad and the presence of a very long *d* seta on both femur and genu of leg IV. This species was described and recorded from the mountains of south-west Bulgaria and no other localities were known up to now, being this the first record of *D. firmus* for the Iberian Peninsula.

The known distribution area of 76 species has been extended to three Spanish provinces: 46 species for Araba, 31 species for Gipuzkoa and 7 species for Navarra.

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