

Taxonomy and phylogeny of the *Tegenaria-Malthonica*-complex (Araneae, Agelenidae), using morphological and molecular data

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Abstract

Agelenidae (Araneae) constitutes a spider family currently comprising 42 genera and 514 described species (Platnick, 2010). In Europe *Tegenaria* and *Malthonica* are the most species rich genera of the family. The latest version of “World Spider Catalogue” (version 10.5) lists 32 *Malthonica* and 55 *Tegenaria* species (plus 1 subspecies). Based upon available specimens from museum collections and field excursions, the taxonomy of the *Tegenaria/Malthonica*-complex is investigated applying morphological and molecular methods. Parsimony and Bayesian analyses, performed individually or with combined data, of three gene sections (CO1, NADH subunit 1, 28S) and 88 morphological characters showed that the genera *Malthonica* and *Tegenaria*, in their present compositions, are poly- or paraphyletic. The constituent taxa of the *Tegenaria/Malthonica*-complex are from four monophyletic clades. The four clades are recovered in all analyses and are well supported by posterior probability, jackknife or bremer support. The relationships between the four clades are not resolved and remain unknown. Based upon these phylogenetic results a merging of all four clades to one monophyletic group is not possible because then other well established groups (e. g. *Histopona* or genera of Textricini or Agelenini) would have to be included too. The four clades are attributed, therefore, generic: *Tegenaria*, *Malthonica*, *Aterigena* n. gen. and *Eratigena* n. gen. While the generic concept definition for *Malthonica* by Barrientos & Cardoso (2007) is supported by the present analyses, *Tegenaria* has to be redefined and the new genera *Aterigena* n. gen. and *Eratigena* n. gen. are added here. In addition, eleven species (one in *Aterigena* n. gen., two in *Eratigena* and eight in *Tegenaria*) and the males of three species are newly described and 17 new synonyms are proposed here. The new generic concepts necessitate numerous new or revised combinations (rev. stat. or n. comb.). Due to the lack of specimens or diagnostic descriptions, four species remain unplaced and one taxon is regarded as “nomen dubium”.

Additional information is given and taxonomic changes are proposed for some extra European *Malthonica* and *Tegenaria* species.

For most of the included European taxa, supplementary information or redescrptions with figures are provided. In addition, dichotomous keys for the European agelenid genera and for all *Aterigena* n. gen., most European *Eratigena* n. gen. and *Tegenaria* species are provided.

1. Introduction

The United Nations proclaimed 2010 the International Year of Biodiversity (<http://www.cbd.int/2010/welcome>, <http://www.countdown2010.net/year-biodiversity>). This declaration is intended to raise the awareness for biological diversity and for showing the fundamental importance of its conservation for the welfare of our planet among the general public.

A necessary prerequisite to understand and protect biodiversity is to know its components. The exploration, description and recognition of the evolutionary relationships of the biological diversity are the main tasks of the research field of systematics. Since Linnaeus' *Systema Naturae* and Darwin's publication on the theory of evolution biological systematics has developed a variety of methods to investigate the global species diversity and reconstruct the phylogeny of living and extinct organisms. While these methods have changed a lot during the last century, the basic functional unit used throughout biology remained and will remain the same, the species. The species in biology is accepted as a "real" unit existing in nature by some authors and seen as "concept" by others still constitutes a controversially discussed topic (De Queiroz, 2007; Wheeler, 2007; Wheeler & Meier, 2000). This theoretical discussion about the most appropriate species concept does not affect the present work directly but it is important to be aware of it, since in this thesis the delimitation of species plays an important role.

The aim of the taxonomist is to define taxa and reconstruct their phylogenetic relationships based on the study of characters (e. g. morphology, genes, behaviour), which groups the involved species in monophyletic groups, reflecting their evolutionary history. The resulting phylogenetic hypotheses (trees) are then converted into a classification and the constituent taxa are named following the rules of e. g. the zoological nomenclature.

The aim of the present thesis is to investigate the systematics of a fascinating group of organism, the spider genus *Tegenaria* Latreille and its relatives (Araneae: Agelenidae). Spiders, as predators, play an important role in most terrestrial ecosystems, e. g. in pest control or as food recourse for other animals during winter time. In the perspective of humans, this taxon is very useful because these arthropods serve as very good biological indicators (e. g. Cardoso, et al., 2004; Marc, et al., 1999) and they produce venom. Spider venoms of different species are currently screened for potential substances for future insecticides or drugs (e. g. De Lima, et al., 2010; Redaelli, et al., 2010).

The initial reason for choosing the European *Tegenaria/Malthonica*-complex as the group of interest was that one of the European species, *Tegenaria agrestis* (Walckenaer, 1802), was introduced to North America and there reached publicity because it had been blamed to cause necrotic wounds after biting humans (Akre & Myhre, 1991; Baird & Stoltz, 2002; Vetter, et al., 2003). The medical relevance of this species makes it desirable to have a good knowledge of its relatives because these may be problematic as well. Among arachnologists this group is well known for its many taxonomical problems. For these the scope of the present thesis had to be slightly modified during the work process. Guseinov et al. (2005) published a taxonomic work on agelenid spiders from Azerbaijan. They transferred more than 20 *Tegenaria* species to the genus *Malthonica*. This transfer was based on a character on the secondary male genitalia. Some authors doubted this rearrangement because the phylogenetic value of the involved character is questionable. Due to this situation I was forced to include more taxa in my analyses, e. g. all *Malthonica* species. Thus, the original aim to revise the genus *Tegenaria* and infer the phylogeny within this group based on morphological and

molecular characters had to be completed with a thorough investigation of the generic level relationship of the taxa in focus.

The use of different methods and character systems (e. g. morphology, gene sequences) improve the outcome of phylogenetic analyses (e. g. Arnedo, et al., 2009; Lee & Camens, 2009). For this reason morphological as well as molecular data were analysed. In order to get usable samples for the molecular analyses, three field trips to southern Europe were conducted. The field trips yielded a lot of material and additional species. Another source of material comes from several private or museum collections. With this material it was possible to describe several new species, redescribe known species and described the hitherto unknown sex in some species. These descriptions with illustrations represent an important part of work in this study and are the prerequisite for any other study on these taxa.

In the introduction of chapter two, an extensive historical review of the genus *Tegenaria* and the family Agelenidae is provided. The goal of this chapter is to define and diagnose the European species of the *Tegenaria* and *Malthonica* and to formulate a hypothesis of their phylogenetic relationships. This chapter represents the most recent state of knowledge of the group in focus, including the genus *Aterigena* Bolzern et al. (see chapter three). As consequence of this newly proposed phylogeny, numerous nomenclatural changes have to be proposed. These changes are presented, at least for the European species, in a detailed revision of the species. In addition, dichotomous key for the identification of the European agelenid genera and the species of the genera *Tegenaria* and *Eratigena* n. gen. are provided.

Chapter three focuses on a new genus of Agelenidae, *Aterigena* n. gen., recruited from species of the two genera *Tegenaria* and *Malthonica*. The manuscript (accepted for publication in *The Journal of Arachnology*) comprises a phylogenetic hypothesis based on an analysis of mitochondrial CO1 gene sequences and the description of synapomorphic characters (morphological and molecular ones). A revision with drawings and photographs of relevant structures of the four included species plus the description of a new species are provided. In addition, a dichotomous identification key for the *Aterigena* n. gen. species and a map is provided, implying an interesting pattern of distribution with one widely dispersed species and several endemics.

Even though most European species of the *Tegenaria/Malthonica*-complex are medium to large sized spiders, several new species of this group could be discovered during the present study. Chapters four and five are dedicated to the description of these. It is important that alpha-taxonomy, the description of new species, is appropriately done by modern standards. These descriptions were done before the final results of the whole thesis (chapter two) were available. Therefore, the two species from Portugal, *Tegenaria barrientosi* Bolzern, Crespo & Cardoso, 2009 and *Tegenaria incognita* Bolzern, Crespo & Cardoso, 2009 were placed in the existing classification at that time and have now to be transferred to the newly described genus *Eratigena* n. gen. (see chapter two). The species described from the French Alps, *Tegenaria mercanturensis* Bolzern & Hervé, 2010 could be correctly placed in *Tegenaria*.

Chapter six includes the first published paper of this thesis, concerning alpha-taxonomy. It presents the taxonomical results gained of the examination of specimens collected during two field excursions to Sardinia.

Phylogeny and taxonomy of European funnel-web spiders of the *Tegenaria-Malthonica* complex (Araneae: Agelenidae) based upon morphological and molecular data

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Replace everywhere
£ by female and \$ by male symbols

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Abstract

In the “World Spider Catalogue” (version 10.5) 32 *Malthonica* species, 55 *Tegenaria* species (plus 1 subspecies) and five *Pseudotegenaria* species are listed for European countries. Three species (two *Malthonica*, one *Tegenaria*) were previously placed in another genus, *Aterigena* (see Bolzern et al., 2010). In the same work, Bolzern et al. replaced four of the five *Pseudotegenaria* species back to *Tegenaria*.

Based on an adequate sample of species and specimens, phylogenetic analyses were performed using morphological and molecular methods. 88 morphological characters were chosen, including character complexes like spination patterns, spinnerets and genital structures. From the available specimens, three gene sections (CO1, NADH subunit 1, 28S) were amplified. Morphological and molecular analyses were performed individually and in combination applying maximum parsimony and Bayesian tree search methods. All resulting trees showed that the genera *Malthonica* and *Tegenaria*, at their present compositions are poly- or paraphyletic. Consequently, in order to achieve a monophyletic grouping, we do propose a rearrangement of the involved taxa into four genera: *Malthonica*, *Tegenaria*, *Aterigena* and *Eratigena* **n. gen.**

Based on the proposed phylogeny, detailed genus definitions are provided for *Tegenaria* and *Eratigena* **n. gen.** Subsequently, all involved species had to be revised. During this process, 16 new synonyms could be detected, 14 species are transferred back to their original designation, 20 taxa are replaced (n. comb.), four species could not be placed (inc. sed.) and one taxon has to be regarded as “nomen dubium”. Additionally, seven species are newly described.

Information and proposed taxonomical changes, according to the here presented phylogenetic hypothesis, concerning *Malthonica* and *Tegenaria* species known from other geographical regions (North American endemics are excluded) are listed. Within these species, two new synonyms are proposed, seven species are transferred back to their original designation, four taxa are replaced (n. comb.), six species remain unplaced and one species, previously regarded as “nomen nudum” could be reactivated due to the finding of type material. For most of the included taxa, supplementary information or redescriptions with figures are provided. In addition, dichotomous keys for the European Agelenid genera and for most European *Tegenaria* and *Eratigena* **n. gen.** species are provided.

1. Introduction

Araneomorph funnel-web spiders (Agelenidae) are remarkable for several reasons. Probably due to their impressive size and general appearance, they are well-known to the general public. The European House Spiders (e. g. *Tegenaria atrica* C. L. Koch, 1843, *T. duellica* Simon, 1875 and *T. domestica* (Clerck, 1757)) with their impressively long legs are perfect candidates for causing arachnophobia in susceptible persons. The notorious hobo spider (*T. agrestis* (Walckenaer, 1802)) in North America, where it has been introduced, is being blamed for biting humans and causing necrotic wounds (Akre & Myhre, 1991; Baird & Stoltz, 2002; Binford, 2001; Vest, 1987; Vetter et al., 2003; Vetter & Swanson, 2004). It may be a species of medical relevance.

Some agelenid spiders are used as laboratory animals in research. They are convenient for their size and are easy to keep in captivity. One important research topic concerns venoms, both in a medical and chemical point of view, e. g. the potential use in insecticides (Benli & Yigit, 2008; Binford, 2001; Foradori, Keil, Wells, Diem, & Tillinghast, 2001; Johnson et al., 1998; Schroeder et al., 2008; Yamaji et al., 2007; Yigit, Bayram, Danisman, & Sancak, 2007). Other research areas concern the evolution of specific behaviour patterns (Ibarra, 1985; Pourie

& Trabalon, 1999, 2001; Pruitt, 2010; Trabalon & Assi-Bessekon, 2008; Uhl, Nessler, & Schneider, 2010), evolution in general (Blackledge et al., 2009; Croucher, Jones, Searle, & Oxford, 2007; Král, 2007; Stratton, Suter, & Miller, 2004) or developmental biology (Jacunski & Templin, 2003; Napiorkowska, Jacunski, & Templin, 2007; Pourie & Trabalon, 2003).

Despite this wide interest the taxonomic and phylogenetic relationships within the Agelenidae are still poorly understood (e. g. see Zhang, Zhu, & Song, 2006).

C.L. Koch (1837) established the family “Agelenides”, comprising the genera *Philoica* and *Tegenaria* (now regarded as synonyms), *Asagena* (now in Theridiidae), *Arachne* (synonym of *Tegenaria* and *Agelena*), *Lachesis* (*Lachesana*, now in Zodariidae), *Nyssus* (*Supunna*, now in Corinnidae), *Textrix*, *Agelena*, *Hersilia* (now in Herselidae) and *Argyroneta* (now in Cybaeidae). Around the same time, Blackwall published the discovery of the calamistrum (Blackwall, 1833: 473–474, tab. 31, figs. 2–3) and the cribellum (Blackwall, 1841b: 223–224). These detections led him to describe a new, cribellate family Ciniflonidae (today considered as a synonym of Amaurobiidae) including the genera *Ciniflo* (synonym of *Amaurobius*) (Blackwall, 1841a) and *Ergatis* (synonym of *Dictyna*). In the same publication, Blackwall established the genus *Coelotes*, with *Coelotes saxatilis* as type species (synonym of *Coelotes atropos*; prior to that, Blackwall affiliated this species with *Clubiona* and *Drassus*) and placed it into the family Agelenidae C.L. Koch.

C. L. Koch (1850) revised the family and established three subfamilies: 1. “Eigentliche Trichterspinnen” (*Tegenaria*, *Agelena*, *Textrix*, *Hahnia* and *Hersilia*), 2. “Wanderspinnen” (*Philoica* (= *Tegenaria*), *Anyphaena* (currently regarded as own family, not closely related with Agelenidae)), and 3. “Wasserspinnen” (*Argyroneta* (currently regarded as own family)).

L. Koch (1868) accepted the family Ciniflonidae Blackwall and the placement of *Coelotinae* in Agelenidae by Blackwall, and described a new species in *Coelotes* (spelled as *Caelotes*) which is now regarded as a member of *Tegenaria* (*Coelotes bucculentus*, synonym of *Tegenaria bucculenta*). Based on two characters observed for two species, 1) the lack of two segmented posterior spinnerets and 2) the lack of calamistrum and cribellum, L. Koch (1868) established the genus *Cybaeus*, though without assigning it to a family.

In his work on European spiders, Thorell (1869) stated, that his family “Agalenoidae” (=Agelenoidae) comprises “tolerably heterogeneous elements” (Thorell, 1869: 119) and grouped its members into three subfamilies: the Amaurobiinae, the “Agaleninae” (=Ageleninae) and the Argyronetinae. In reference to C.L. Koch’s (1850) subfamily “Wanderspinnen” he states that it seems to be an “unnatural section” and transferred the constituent genera to the “Agalenoidae” (*Philoica*) and “Drassoidae” (*Anyphaena*), respectively. Even though Thorell (1869: 118) considered the shape of the cephalothorax taxonomically more informative than the calamistrum and cribellum, he left *Coelotes* in the “Agalenoidae”, despite the fact that it resembles in this character *Amaurobius*. Thorell (1869: 129–131) discussed the confusing nomenclatural and taxonomical history of *Tegenaria*.

Simon (1897–1903) gave a very extensive description of the Agelenidae and included four subfamilies: Nicodaminae (Australian taxon which was doubtfully included in the family by Simon; now family Nicodamidae), Cybaeinae (now family Cybaeidae), “Hahniae” (now family Hahniidae) and Ageleninae. He divided the Ageleninae into the Ageleneae and Cryphoeceae. In the former he included *Textrix*, *Agelena*, *Malthonica*, *Hadites*, *Coras*, *Tegenaria* and *Coelotes*.

Lehtinen (1967) narrowed the concept of the Agelenidae in transferring many genera to other families. His Agelenidae comprises only the genera of Simon’s Ageleneae and some taxa described after Simon’s revision including several by himself. He divided the family Agelenidae into two subfamilies, the Ageleninae and Coelotinae. Lehtinen’s “radical classification” was criticised by many subsequent authors. Roth & Brame (1972: 2–3) rejected Lehtinen’s changes due to the “...extreme difficulty experienced in using his grouping of

genera, the inadequacy of his tables for separating genera and higher categories, and general lack of acceptance of his proposals by arachnologists”(Roth & Brame, 1972: 3).

Based on the similarity in genital structures, Wunderlich (1986) regarded the ecribellate Coelotinae as a junior synonym of Amaurobiinae and placed it in the Agelenidae s. l. This concept is adopted in the catalogue of Platnick (2010) by listing all Coelotinae genera under Amaurobiidae.

Currently the Agelenidae comprises 42 genera and 514 described species (Platnick, 2010), excluding Coelotinae. In the world spider catalog, this ecribellate subfamily is listed under the cribellate family Amaurobiidae. Recent studies suggest that this classification is highly artificial (Bi, Zhou, & Song, 2005; Bolzern, Hänggi, & Burckhardt, accepted; Spagna & Gillespie, 2008). In addition to the “Coelotinae problem”, there is an ongoing discussion about the definition of Agelenidae and whether the Australian genera are closely related with Agelenidae or not (Griswold, Coddington, Platnick, & Forster, 1999; Griswold, Ramirez, Coddington, & Platnick, 2005; Jocqué & Dippenaar-Schoeman, 2006; Spagna & Gillespie, 2008; Jeremy Miller, pers. comm. 2009). During the last years many taxonomical papers with descriptions of new genera and species of Agelenidae (including Coelotinae) were published from Asia (Chami-Kranon, Likhitrakarn, & Dankittipakul, 2007; Dankittipakul & Wang, 2008; Dankittipakul & Zhang, 2008; Guseinov, Marusik, & Koponen, 2005; Nishikawa & Ono, 2004; Ovtchinnikov & Inayatullah, 2005; Tanikawa, 2005; Wang & Jäger, 2008; Wang & Jäger, 2007; Wang, Xu, & Li, 2008; Xu, Li, & Wang, 2005, 2008; Xu & Li, 2007; Zhang, Li, & Xu, 2008; Zhang & Zhu, 2010; Zhang, Zhu, & Song, 2006, 2007; Zhang, Zhu, Sun, & Song, 2006; Zhang, Zhu, & Wang, 2005), Europe (Barrientos & Cardoso, 2007; Bolzern, Crespo, & Cardoso, 2009; Bolzern, Hänggi, & Burckhardt, 2008; Bolzern et al., accepted; Bolzern & Hervé, 2010; Deltshv, 2008b; Gasparo, 2007; Kovblyuk, 2006; Kovblyuk & Ponomarev, 2008) and North America (Ayoub, Riechert, & Small, 2005; Stocks, 2009).

The confused history and the unstable concept of Agelenidae s. l. with over 900 valid species make the taxonomical revision of the family an urgent task given its popularity as laboratory animals. The aim of the present work is to contribute to this goal by revising a spider group, predominantly distributed in Europe: the *Tegenaria-Malthonica*-complex. These taxa are members of Lehtinen’s subfamily Ageleninae. Ageleninae includes, as defined by Lehtinen (1967), four tribes: Agelenopsini (Nearctic and Neotropical), Agelenini (Holarctic and Afrotropical), Textricini and Tegenariini (mainly Palaearctic). According to Lehtinen (1967) the tribe Tegenariini comprises following nominal genera: *Hadites* Keyserling, 1862, *Histopona* Thorell, 1869, *Malthonica* Simon, 1898, *Pseudotegenaria* Caporiacco, 1934, and *Tegenaria* Laterille, 1804. Most species have been associated with *Tegenaria* and *Malthonica*. Bolzern et al. (accepted) have shown that the tribes as conceived by Lehtinen are only partly monophyletic and that the current generic affiliation of several species is doubtful. This is especially true for *Tegenaria* (Guseinov et al., 2005; Levy, 1996) and *Malthonica* (Barrientos & Cardoso, 2007; Bolzern et al., accepted). This problematic situation has been partly investigated by Bolzern et al. (accepted), who described a new genus, *Aterigena*, comprising species previously assigned to both genera.

Here all known European species of the *Tegenaria-Malthonica* complex are revised and their phylogenetic relationships are analysed. As the combination of morphological and molecular data improves the reliability of the resulting phylogenies (e. g. Arnedo, Hormiga, & Scharff, 2009; Giribet, Edgecombe, & Wheeler, 2001) we use both approaches. Based on the performed analyses, new phylogenetic hypotheses are presented. For *Tegenaria* and *Eratigena* **n. gen.** definitions, dichotomous keys to species and (re)descriptions of many constituent species including seven new ones are provided.

2. Material and methods

Specimens were examined or are cited from following institutions: American Museum of Natural History, New York, United States (AMNH, N. Platnick), Göteborgs Naturhistoriska Museum, Sweden (T. Nordander), Hungarian Natural History Museum, Budapest, Hungaria (HNHM, D. László), Muséum d'histoire naturelle de la Ville de Genève, Switzerland (MHNG, P. Schwendinger), Muséum National d'Histoire naturelle, Paris, FR (MNHN, Ch. Rollard), Museo Civico di Storia Naturale di Verona, Italy (MCSN, including the Brignoli collection, L. Latella), Museo Civico di Scienze Naturali "E. Caffi", Bergamo, Italy (MSNB, P. Pantini), Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw, Poland (MIZ, D. Mierzwa), Naturhistorisches Museum Basel, Switzerland (NMB), Naturhistorisches Museum der Burgergemeinde Bern, Switzerland (NHMB, Ch. Kropf), Naturhistorisches Museum Wien, Austria (NHMW, Ch. Hörweg), Royal Belgian Institute of Natural Sciences, Belgium (RBINS, contact through Johan van Keer), Senckenberg Forschungsinstitut und Naturmuseum, Frankfurt am Main, Germany (SMF, including the Wunderlich collection (JW), P. Jäger), Swedish Museum of Natural History, Stockholm, Sweden (SMNH, G. Lindberg), The Manchester Museum, Manchester, Great Britain (D. Logunov), Universitat de Barcelona, Departament de Biologia Animal, Facultat de Biologia, Spain (UB, C. Ribera) and the Zoological Museum, Natural History Museum of Denmark. Copenhagen, Denmark (ZMUC, N. Scharff). Additionally, many specimens from private collections were provided for examination by following persons: I. Alberti (Germany), J. Altmann (Germany), M. A. Arnedo (Spain), J. A. Barrientos (Spain), E. Bauchhenss (Germany), A. Bayram (Turkey), G. Bergthaler (Austria), T. Blick (Germany), J.-L. Boevé (Belgium), P. Cardoso (Portugal), L. Crespo (Portugal), E. de Mas (Spain), P. Dettwiler (Switzerland), H. Eikamp (Germany), C. Gack (Germany), M. M. Gaver (United States), M. Geiser (Switzerland), P. Graf (Switzerland), K.-H. Harms (Germany), Ch. Hervé (France), S. Huber (Germany), J & K. van Keer (Belgium), W. Kirchner (Germany), U. Kluge (Germany), M. Lemke (Germany), C. Lötscher (Switzerland), P. Michalik (Germany), R. Mühlethaler (Switzerland), S. Öberg (Sweden), P. Paquin (United States), S. Bolzern-Ramseyer (Switzerland), M. Reimke (Germany), T. Russell-Smith (Great Britain), A. Schönhofer (Germany), A. Stäubli (Switzerland), M. Trüssel (Switzerland), N. Txasko (Spain), Z. Zhang (China), S. Zschokke (Switzerland). All specimens are preserved in 70–75 % ethanol.

Three field excursions to Italy and Crete were conducted by the first author for collecting specimens for DNA extraction. Additional material suitable for molecular work was provided by many colleagues mentioned above and listed in the acknowledgments. Several specimens were collected as juveniles and raised to maturity in the laboratory at the NHMB. The specimens from which DNA was successfully extracted are listed in Appendix 1.

Morphological methods

For the morphological examinations and for the preparation of the drawings a Leica stereomicroscope MZ12 (up to 110 x magnification) and MZ Apo with drawing tube were used. The pencil drawings were scanned and digitally reworked/executed/processed with the help of a graphics tablet and Adobe Illustrator. Most measurements were taken from digital pictures made with a Leica DFC320 camera and calculated with the program ImageJ 1.38x (<http://rsb.info.nih.gov/ij/>). In order to get sharp pictures several photographs with different focal levels were taken followed by a stacking procedure using the program CombineZM (<http://hadleyweb.pwp.blueyonder.co.uk/CZM/News.htm>).

For clearing the vulva, the removed epigyne was placed into clove oil for several minutes. The descriptions of the bulb are given from a ventral view. The spines on the male palp are not illustrated as they are considered of minor taxonomic significance. Leg measurements were taken from the dorsal side. All measurements are given in millimetres. Measurements of

palps and legs are given as (femur, patella, tibia, (metatarsus), tarsus/cymbium). Patterns of leg spination are given for the palps (femur dorsal–prolateral–retrolateral, patella dorsal–prolateral–retrolateral, tibia dorsal–prolateral–retrolateral) and for each leg segment (leg I dorsal–prolateral–retrolateral–ventral, leg II ...). A “p” in the spination formula indicates "paired spines" (two spines at approximately the same longitudinal position). The colour description is based on ethanol preserved specimens.

Specimens used for SEM (Scanning Electron Microscopy) were immersed in 2-ethoxy ethanol for 48–72 hours and then placed into ethyl acetate for two–four hours. After several minutes air drying, the samples were mounted on Cambridge SEM stubs followed by sputter coating with 20 nm gold (BAL-TEX MED 020). Pictures were generated using the Scanning Electron Microscope (XL30 ESEM, Philips) at an accelerating voltage of 5 kV.

The morphological terminology follows Jocqué & Dippenaar-Schoeman (2006) and Bolzern et al. (2008). The following abbreviations are used:

AER	anterior eye row
ALE	anterior lateral eyes
AME	anterior median eyes
ALS	anterior lateral spinnerets
bulbL	distance of the cymbium base to the most distal tip of the male bulb
CB	cymbium breadth
CBD	combined duct (vulva without recognisable RC)
CD	copulatory duct
CL	carapace length
CLY1	clypeus height under AME
CLY2	clypeus height under ALE
CO	copulatory opening at female epigyne
CW	carapace width
FD	fertilisation duct
MA	median apophysis
OL	opisthosoma length
OW	opisthosoma width
PMS	posterior median spinnerets
PER	posterior eye row
PLA	posterior lateral eyes
PME	posterior median eyes
PLS	posterior lateral spinnerets
RC	receptaculum
RTA	retrolateral tibial apophysis (used here as the sum of all structures in retrolateral position of the tibia of the male pedipalp)
STL	sternum length
STW	sternum width

The programme DELTA was used for preparing the morphological data matrix for the phylogenetic analyses (Appendix 5) (Dallwitz, 1980; Dallwitz, Paine, & Zurcher, 2000). Redescriptions, drawings and photographs are provided only for species lacking good descriptions or illustration in the literature.

Molecular methods

For the DNA extraction, 1 leg was removed from a freshly sampled and alcohol fixed (pure absolute ethanol) specimen. The ethanol was removed by placing the legs into a vacuum centrifuge for 30 min by 40 °C. Then the legs were processed according to the protocol for the

purification of total DNA from animal tissues (Spin-Column Protocol) of the “DNeasy Blood & Tissue Kit” (Qiagen). The DNA concentration of the resulting solution was measured by using a NanoDrop equipment. The amplification of three loci was undertaken by using following primer pairs: C1-J-1718 and C1-N-2191 (Simon et al., 1994) for the mitochondrial Cytochrome Oxidase 1 gene (CO1, 471-bp), TL-1-N-12718 (Hedin, 1997; numbered following Simon et al., 1994) and M510 (Murphy et al., 2006) for the mitochondrial NADH Dehydrogenase subunit 1 (NADH1, 591-bp) and 28S “O” and 28 “C” (Hedin & Maddison, 2001) for the nuclear-encoded large subunit of the rDNA-repeat (28S, 848-bp). For the PCR illustra PuReTaq Ready-To-Go PCR Beads (GE Healthcare) were used. The following thermocycling conditions were applied: initial denaturation step of 93 °C for 3 min, followed by 35 cycles of 95°C for 30 sec, an annealing temperature of 55 °C (for CO1 and 28S) or 48 °C (for NADH1) for 30 sec, and an extension temperature of 72 °C for 45 sec. This was then followed by an additional extension of 72 °C for 7 min. To eliminate incorporated dNTP and primers, the PCR products were treated with ExoSAP-IT® (GE-Healthcare). Then, the fragments were sequenced in both directions using ABI PRISM® BigDye™ Terminator Cycle Sequencing Ready Reaction Kit (Applied Biosystems). Sequences were then analysed using an ABI Prism 3100 Genetic Analyzer and edited with the software Sequence Navigator (Applied Biosystems).

Alignments. The complementary sequences (5’ and 3’ directions) of each specimen were aligned using the web based ClustalW 2 (Larkin et al., 2007; Thompson, Higgins, & Gibson, 1994) for testing the sequence quality. If parts of these complementary strands could not be aligned due to reading mistakes during sequencing and the remaining strand was not obviously well readable, the corresponding sequences were discarded. Each good sequence was checked for contamination by passing a Blast search.

The alignments of the mitochondrial gene sections were done manually, using the translated sequences into amino acids as a guide, checking for any inappropriately placed stop codon and the triplet positions. All sequences were then cut to a length of 471-bp (CO1) or 591-bp (NADH1). Within these two alignments no indels occur.

In favour of repeatability and objectivity we used a fixed automatic alignment for the 28S sequences instead of manually edited alignments or alignments based on secondary structures (as proposed by different authors; e. g. see Arnedo et al., 2009; Spagna & Gillespie, 2008). Therefore we computed 14 alignments, using ClustalX 2.0.1.1 (Larkin et al., 2007; Thompson, Gibson, Plewniak, Jeanmougin, & Higgins, 1997), with varying the global-alignment gap opening and gap extension parameters over a range from 1 to 16/7 (1/1, 2/1, 2/2, 4/1, 4/2, 4/4, 7/1, 7/2, 7/4, 7/7, 16/1, 16/2, 16/4, 16/7) by holding the parameter for “DNA transition weight” at 0.5 and the pairwise alignment parameters at standard. For all resulting alignments we recorded the included gaps as separate presence/absence characters by using the software FastGap V. 1.2 (Borchsenius, 2009) following the method proposed by Simmons & Ochoterena (2000). This procedure allows including gaps as potential important characters in phylogenetic tree searches but treating them as single indel events. Thereby the effect of increased weight of overlapping multiple non-homologous gaps is minimized (Pons & Vogler, 2006). For objectively choosing the best alignment, we performed a “incongruence length different” (ILD) test as described by Farris et al. (1994). From a character matrix X and Y the incongruence length difference D_{xy} is given by the length of the most parsimonious tree of the combined matrices (L_{xy}) minus the sum of the most parsimonious trees calculated for each matrix separately (L_x+L_y). The higher the value D_{xy} the more conflicting are characters in the matrices and the alignment that minimises this value has to be chosen. One matrix is represented by a 28S alignment and the other by the combined CO1 and NADH1 alignments, which were trivial to align (triplet codes). The results of this test showed that the lowest value of incongruence length differences was achieved by the alignment 7/2. Therefore, this alignment has been chosen for all subsequent analyses.

Different alignments and matrices were combined using WINCLADA v. 1.00.08 (Nixon, 2002).

Phylogenetic methods

We used two phylogenetic methods: 1. Bayesian analyses, which uses likelihood models in a Markov Chain Monte Carlo algorithm (MCMC) using the program MrBayes v. 3.1.2 (Huelsenbeck & Ronquist, 2001; Ronquist & Huelsenbeck, 2003; Yang & Rannala, 1997) and 2. Maximum Parsimony analyses using the program TNT (Goloboff, Farris, & Nixon, 2008). For the selection of best-fit models of nucleotide substitution for the present alignments the software jModelTest 0.1.1 (Psoda, 2008; Guindon & Gascuel, 2003) was used. Since the underlying sequences of the two mitochondrial gene sections are coding for proteins, the analyses was performed with respect to the codon-position, allowing MrBayes to use different substitution models with independent rates for each partition (one partition for each codon position and loci). The statistically chosen models under the Akaike information criterion with correction for small samples (AICc) were: K80+G (1st CO1, nst=2, rates=gamma, statefreqpr=fixed(equal)), JC+I (2nd CO1, nst=1, rates=propinv, statefreqpr=fixed(equal)), HKY+G (3rd CO1, 1st and 3rd NADH1, nst=2, rates=gamma), TrNef+G (2nd NADH1, nst=6 rates=gamma, statefreqpr=fixed(equal)) and GTR+G+I (28S, nst=6, rates=invgamma). The present/absence matrix of the gap coding of the 28S is specified with the model JC (nst=1 coding=variable rates=gamma). For all Bayesian analyses, the outgroup was defined after the analyses by rooting the resulting trees at the *Amaurobius* branch/clade. Two parallel and independent analyses, each with four chains (three heated, one cold MCMC chains) were run for 1–10 million generations (depending on when the average standard deviation of split frequencies dropped below 0.01 and retained there), sampling trees every 1000 generations. For all analyses the heating temperature was left at the default value 2.0, except for the separate 28S and NADH1 analyses. In these cases, no branch swapping between chains 1, 3, 4 and 2, 4 took place. Thus, the temperature was reduced to 1.5. At the end of the analysis, 10–15% of the collected trees were discarded as “burnin”. Of the remaining trees, a consensus tree was calculated applying the 50% majority rule.

Parsimony analyses were performed using the program TNT (Goloboff, Farris et al., 2008) applying the full heuristic traditional tree search with TBR. For all analyses including the 28S alignment, the gaps were read as missing data. For all parsimony analyses, rooting of the trees was defined before running the analyses by defining *Amaurobius ferox* or the *Amaurobius* clade as outgroup. A variety of parameters of random additions of taxa (sequences) and holding trees per iteration were applied to search the whole tree space (100/1000, 300/300, 1000/100, 10000/10, 50000/2, 100000/1) and to check, if the same trees were found. The best compromise, which yielded most hits on all most parsimonious trees was then chosen for further analyses (1000/100). Branch support was estimated applying the jackknife resampling method (1000 replicates) with default removal probability of characters left at standard value (0.36). Bremer branch support (Bremer, 1994) was calculated for the morphological and the all combined data set applying the procedure proposed by Goloboff (2008): the optimal trees were used as a starting point for searches, saving successively larger sets (holding 3000 trees as starting point, increasing by 3000 for each step up to 60000 trees) of more suboptimal trees (sub 1–20) by using the trees saved in RAM and stop when maximum trees is hit (selecting “trees from RAM” and “stop when maxtrees hit”). With the 60000 optimal and suboptimal trees stored in memory, the program checks minimum score differences to lose each group by using the “bsupport” command.

Since the weighting of characters is a highly controversial topic (Goloboff, Carpenter, Arias, & Esquivel, 2008; Kjer, Swigonova, LaPolla, & Broughton, 2007; Ojanguren-Affilastro & Ramirez, 2009), we analysed the data under weighting regimes against homoplasy, using implied weighting (Goloboff, 1993) by varying the strength of the weighting function with

different values of the constant of concavity K (0=equal weight, 1, 3, 4, 5, 6, 10, 15, 20, 50) and calculated the corresponding jackknife supports.

All Bayesian analyses were carried out on the freely available Bioportal (www.bioportal.uio.no). Trees were drawn in FigTree v1.2.2 (Freeware from Andrew Rambaut, Institute of Evolutionary Biology, University of Edinburgh; available at: <http://tree.bio.ed.ac.uk/software/figtree/>) and edited in Adobe Illustrator.

Taxa selection

This study concentrates on European taxa all of which are included. Additional material comes from Asia and North America (Appendix 4).

3. Results

3.1. Phylogeny

3.1.1. Morphological character assessment

Short definitions of the family Agelenidae are e. g. provided by Bennett & Ubick (2005) and Jocqué & Dippenaar-Schoenman (2006).

The 8 eyes arranged in two transverse rows are used in the literature to define genera (char. 10–15). The eye size patterns separate some taxa, e. g. *Textricini* species have PME smaller than all other eyes (char. 10). We use relative size values, since adaptations to cave-dwelling can be found in agelenids. The curvature of eye rows, a character commonly used in identification keys (e. g. Nentwig, Hänggi, Kropf, & Blick, 2003; Roberts, 1995), is used in both, frontal and top view and for each eye row individually (char. 12–15). The curvature of the eye rows is a potential synapomorphy linking *Textricini* + *Agelenini* within the remainder of European Agelenidae.

The two segmented PLS are a diagnostic character for agelenids (e. g. Fig. 11 D). Simon (1937) and subsequent authors used the colouration of the segments (*Tegenaria sensu stricto* species have almost always a pale distal segment, char. 49) and the relative length of the distal segment (probably homoplastic, char. 50) as grouping characters. In addition to this character Lehtinen (1967) introduced the paired colulus of the spinnerets as one of the three characters diagnosing the Agelenidae (Figs. 1 C, G, 11 D; the other diagnostic characters proposed by Lehtinen are the lengthened PLS and three tarsal claws). This is problematic, since a large group of species, e. g. the *Tegenaria/Malthonica*-complex, does not have this character state (char. 47). The paired colulus is characteristic for European species of the tribes *Agelenini* and *Textricini* and for several species of *Hitopona* but not for *Tegenaria sensu lato* or *Aterigena*, which have a trapezoidal colulus with the distal margin medially notched or “w” shaped (Fig. 11 D, char. 48). In *Malthonica* (e. g. the type species, *M. lusitanica*) the colulus is strongly reduced. As shown by Griswold et al. (2005) for different spider families or by Murphy (2007) for Gnaphosidae, spinnerets with the corresponding spigots are potentially informative phylogenetic characters. Therefore, we define three characters concerning the number of prominent spigots distally on PMS (char. 51), the number and arrangement of minor ampullate and cylindrical gland spigots on PMS (char. 52) and the number and arrangement of cylindrical gland spigots on the distal segment of PLS (char. 53) (Figs. 1 B, D, F, 2 A, C, F, E). We do not include the spigots on the ALS, since they always have (in all groups examined) two major ampullate gland spigots (or one major ampullate gland spigot and one nubbin, a probably broken off spigot (e. g. see Griswold et al., 2005)) and a variable number of pyriform gland spigots in combination with several tartipores (Fig. 1 E, H, 2 B). The last character concerning the posterior appendages of spiders is a character newly

detected in this study: in several species of the genera *Agelena*, *Agelescape*, *Allagelena* and *Hololena* a special kind of spikes could be detected at the anal tubus (Fig. 3 A, absent in all other examined species, char. 54).

Another character important for Agelenidae is the row of dorsal trichobothria (Fig. 2 G) increasing in length towards tip on leg tarsi. The species of Textricini have less trichobothria than *Tegenaria* sensu lato. We include this character (char. 45) by dividing the counted tarsal trichobothria on tarsus I into two classes (less than 6 or 6 and more). Only some species bear such rows of trichobothria on the palpal tarsus and the cymbium. This character is regarded as, at least taxonomically, important and therefore is included here (char. 29, 35). In *Agelena* and *Allagelena* a field of trichobothria is present dorsally on male palp tibia, whereas specimens of other genera have only one or two rows of trichobothria at the corresponding position (char. 34). Another kind of hairs important for Agelenidae are the “feathery hairs” (Lehtinen, 1967) or “plumose hairs” (Roth, 1968; Roth & Brame, 1972) (Figs. 2 H, char. 20). Roth (1968) first thought that this character is a key character for *Tegenaria*. Lehtinen (1967) stated correctly, that these hairs are only present in his tribes Agelenopsini, Agelenini and Tegenariini but are absent in Textricini and Coelotinae (they are also present in two subfamilies of Amaurobiidae) (char. 20). A special kind of white hairs may be a potential apomorphic character for Textricini (char. 21).

A notched trochanter is a character also discussed in the literature (e. g. Barrientos & Cardoso, 2007; Bolzern et al., accepted; Lehtinen, 1967). We include it, as together with other characters, it defines *Aterigena* (Bolzern et al. (accepted)). For *Histopona* it may be an apomorphic character (all trochanters notched, char. 25).

Lehtinen (1967) used extensively colouration patterns. This is problematic for several reasons. The colour patterns of the opisthosoma and other structures are very variable. Cave-dwellers tend to have reduced pigmentation. Spiders are generally fixed and conserved in ethanol which strongly affects colours. All these points are the case for the present work. Therefore we reduce the use of such characters to a minimum. We score the colouration pattern of the carapace margin, which is significantly discontinuous in many *Tegenaria* species (Figs. 18 J, 29 A, char. 16), the shape of the symmetric longitudinal darkened bands dorsally on carapace (char. 17), the sternal pattern (often used as good character for species identification, e. g. Dahl, 1931; Roth, 1968) (e. g. Fig. 18 K, char. 18) and pigmentation pattern of the legs (char. 19).

Several authors used cheliceral teeth (e. g. Fig. 12. H) as important character for taxa definition or description (e. g. Bolzern et al., accepted; Brignoli, 1971a; Levy, 1996; Simon, 1897–1903). The character 22 divides the analysed data in two classes: promargin with 3 (0) or more than 3 teeth (1). The number (char. 23) and shape (char. 24) of the teeth at the cheliceral retromargin provide potential apomorphies for *Eratigena* **n. gen.**, *Malthonica* and Textricini.

In several spider groups, e. g. in Linyphiidae, leg spination pattern are used for identification (Bolzern et al., accepted; Roth & Brame, 1972) even though it can be very variable in some species (e. g. see Kovblyuk, 2004). This high variation is observable in some areas of the legs but not everywhere. The presence or absence of lateral spines on the patella is informative in Agelenidae (e. g. see Bolzern et al., accepted) and is a potential apomorphy defining *Aterigena* (char. 37). The spination patterns, especially on the female (char. 26–28) and male palp segments (char. 30–32), are phylogenetically informative. A special structure, possibly a synapomorphy grouping several *Eratigena* **n. gen.** species, is a short spike (probably a reduced spine) dorsodistally on the male tibia (Fig. 11 C, char. 33). Additional seven characters (36–41, 43) are defined concerning absence and presence of different spination patterns. Ventrodistally on metatarsi III & IV special groupings of spines are present in *Aterigena* and Textricini (char. 42). Ventral spines on tarsi III & IV are absent in *Tegenaria*, *Eratigena* **n. gen.** and *Malthonica* but present in all other examined taxa (char. 44).

Besides the spination patterns, the number of small denticles at the paired claw on tarsus I is variable and was scored (Fig. 3 B, char. 46) resulting as highly homoplastic character. The same is true for the denticles counted at the claw of the female palp tarsus (char. 7). In order to detect potential information in the relative size of carapace, sternum, labium or legs, we include relative measurements of males (char. 1–4) and females (char. 5–6, 8–9). The most important characters for species diagnosis are the female epigyne and vulva as well as the secondary genitalia of males.

For males, we included 24 characters (e. g. Fig. 3 D, 55–78). The first concerns the presence (absence) of femoral apophysis (char. 55), a potential apomorphy of *Maimuna*, and patellar apophyses (char. 56), present in several Agelenini, *Maimuna*, *Histopona* and also in a *Eratigena n. gen.* (e. g. *E. feminea*) species. For the very important retrolateral tibial apophyses (RTA) we used tree characters (57–59). The hypothesis that this character is phylogenetic meaningful is supported by several important works about spider phylogeny (the so called "RTA-clade", see e. g. Blackledge et al., 2009; Charles E. Griswold et al., 2005; Spagna & Gillespie, 2008). A challenging problem is to address homologous branches of the RTA of different taxa. Several taxa have strongly modified (fused or reduced branches) RTA's. For this reasons we just counted the branches (char. 57) as one character and judged the whole RTA for its complexity (char. 58). The most powerful character of this complex may be character 59, the presence (absence) of a special lateroventral ridge (Fig. 3 C), even though probably a homoplastic character. For all examined *Histopona* species, we could observe a small but distinct prolateral tibial apophysis (char. 60). A character shared by all Tegenarini, Textricini (and Coelotinae) is the filiform embolus (sometimes distally truncated, char. 61). As proposed by Levy (1996) or Guseinov et al. (2005) the position of the origin of the free apex of the embolus may be of phylogenetic importance (char. 62), in our analysis this is not supported. The same may be true for the shape of the embolus tip (Fig. 3 E, char. 63). A more important role plays the shape of the conductor (Fig. 3 D, char. 64–72). Even though this character-complex is variously expressed and modified in different taxa, the general shape (char. 64), the presence (absence) of a transversal ridge or an additional apophysis (char. 65–66), its connection to the tegulum (char. 67), the shape of the distal portion (char. 68), the lateral margin or the terminal end (char. 69–71) obviously provides important information. The second very important apophysis on the male palp is the median apophysis (Fig. 3 D, MA). Its shape, connection to the tegulum and the expressed distal sclerite do help grouping the involved taxa and are most probably phylogenetically important (char. 73–77). The last character used at the male palp is the conspicuousness and the shape of the basal portion of the tegulum (char. 78), a character potentially important for grouping of *Tegenaria* species.

For females we included ten genital morphological characters (Fig. 3 F, char. 79–88). Epigyne and vulvae differs between the included groups to a very high extend. Also in these structures, the detection of homologous characters is a major problem. For this reason, the ontology proposed by Sierwald (1989) for genital structures of Pisauridae could only be adopted partly. The presence of a distinct atrium (Fig. 10 C, char. 79) is an important character for Agelenini, but appears also in *Eratigena n. gen.*. The absence of a distinctly separated median plate could be observed in *Agelena*, *Maimuna*, and *Eratigena n. gen.* (char. 80). The characterisation of the posterior sclerite (e. g. Fig. 25 C, E) remains problematic and is implemented by only one character (char. 81). During the morphological examination of the listed material, it became clear that epigynal teeth had been used in literature for different structures (for a discussion of this character concerning Coelotinae see Wang & Jäger, 2010). "True" teeth (posteriorly of the GO, Fig. 10 C) seem to be a synapomorphy of some species of *Eratigena n. gen.*, whereas "pseudo teeth" (only a pointed protuberance of the lateral margin limiting the median area, Figs. 3 F, 12 A, C) are a plesiomorphic character which could be observed in e. g. *Aterigena*, *Malthonica*, *Eratigena n. gen.* and *Tegenaria*. Very special

character is the presence of sclerotised pockets on the epigyne (char. 83), probably a synapomorphy for some *Tegenaria* species around *T. parmenidis* and (for another character state) for several *Eratigena n. gen.* species around *E. arganoi*. An important character is the “fused”, very special formed vulva (Fig. 12 B, D, F), probably a synapomorphy of many *Eratigena n. gen.* species (char. 84). Another kind of “fused” vulvae observed in *Tegenaria*, distinctly differs from the other structure. In many *Tegenaria* species, the vulva does not show any distinct structure which could be called receptaculum, they just have a continuous duct (Fig. 25 D, H), a synapomorphic character of those species (char. 84). For the examined *Agelena* and *Allagelena* species and several species of *Eratigena n. gen.*, the presence appendages (blind ending ducts, this structure may be synonymous to “spermathecal head”, e.g. used by Sierwald (1989) and Bennet (2006)) at the CD could be observed (char. 87). The level of sclerotisation of the CD (char. 86), the relative lengths of the CD (char. 85) or the FD (char. 88) are included characters, which showed to be strongly homoplastic. The scores for all included species and characters are listed in Appendix 5.

3.1.2. List of morphological character

Measurements males

1. carapace width / carapace length
0: smaller or equal 0.75; 1: greater than 0.75
2. sternum length / sternum width
0: smaller than 1.0; 1: between 1.0 and 1.2; 2: larger than 1.2
3. carapace length / tibia I length
0: tibia I smaller or equal carapace; 1: tibia I longer than carapace
4. length of tibiae
0: I or IV largest, III smallest; 1: I or IV largest, II smallest

Measurements and counts in females

5. labium shape
0: wider than long; 1: as wide as long; 2: longer than wide
6. gnathocoxa width / gnathocoxa length
0: smaller or equal than 0.6; 1: greater than 0.6
7. number of small teeth at the palpal claw
0: less than 5; 1: 5–8; 2: 9 or more
8. carapace length / tibia I length
0: tibia I smaller or equal carapace; 1: tibia I equal carapace; 2: tibia I longer than carapace
9. length of tibiae
0: I or IV largest, III smallest; 1: IV largest, II smallest

Eyes (male and female)

10. eyes size pattern
0: lateral eyes bigger than equally sized median eyes; 1: AME smaller than PME, both smaller than lateral eyes; 2: AME bigger than PME, both smaller than lateral eyes; 3: all equal, except AME smaller; 4: PME smaller than others; 5: AME<PME<PLE<PME (PME biggest)
11. clypeus height (measured under AME, = CLY1)
0: less than 1.5 x AME; 1: 1.5–2 x AME; 2: 2–3 x AME; 3: greater than 3 x AME
12. AER, dorsal view
0: recurved; 1: moderately recurved; 2: straight; 3: moderately procurved
13. PER, dorsal view
0: recurved; 1: moderately recurved; 2: moderately procurved; 3: procurved

14. AER, frontal view
0: recurved; 1: straight or moderately procurved; 2: strongly procurved
15. PER, frontal view
0: straight or moderately procurved; 1: procurved; 2: strongly procurved
- Colouration patterns (male and female)
16. pigmentation pattern of carapace margin
0: continuous; 1: not continuous, with 3–5 crescent shaped spots (where the legs are attached)
17. symmetric longitudinal dark bands dorsally on carapace
0: more or less continuous; 1: not continuous, serrated or reduced to 3 to 4 pronounced triangles
18. sternal pattern
0: no pattern; 1: completely darkened; 2: darkened median region; 3: moderately paler median region; 4: pattern with pale median band and symmetric pale dots laterally
19. pigmentation of the legs
0: no pattern; 1: some darkened dots expressed; 2: annulated; 3: only ventrally annulated; 4: only coxa and proximal part of femorae indistinctly pigmented; 5: patellae and distally of each leg segment darkened; 6: continuously darkened
- Special hairs
20. plumose hairs
0: present at carapace, legs and opisthosoma; 1: absent
21. special white hairs at carapace
0: present; 1: absent
- Chelicerae
22. number of cheliceral teeth at the promargin
0: 3; 1: 4 or 5
23. number of cheliceral teeth at the retromargin
0: less than 3; 1: 3–6; 2: 6 or more
24. shape of cheliceral teeth at the retromargin
0: all equal, sometimes second proximal tooth somewhat slightly or most proximal slightly bigger; 1: most proximal tooth distinctly bigger; 2: more proximal, the teeth are getting very small; 3: one or two big, and more proximal smaller teeth, well separated from the bigger one(s); 4: chaotic pattern of big and small teeth
- Trochanter
25. trochanter
0: straight or slightly curved; 1: notched (III & IV, others straight); 2: all notched
- Patterns of leg-spination, trichobothria and claws
26. female palp femur
0: 1 or 2 dorsal spines; 1: 3 or more dorsal spines
27. prolateral spine at female palp patella
0: absent; 1: present
28. prolateral spines at female palp tibia
0: 1+1 pair; 1: 1 pair +1; 2: 2; 3: 2 pairs
29. trichobothria at female palp tarsus
0: absent; 1: present
30. male palp femur
0: 1 dorsal spine; 1: 2 dorsal spines; 3: 3 dorsal spines
31. dorsal and prolateral spines at male palp patella
0: 1 dorsal spine; 1: 2 dorsal spines; 2 dorsal + 1 prolateral spines
32. prolateral spines at male palp tibial

- 0: absent; 1: 1; 2: 2; 3: 1 pair; 4: 1 + 1 pair; 5: 2 pairs
33. short dorsal spike at male palp tibia
0: absent; 1: present
34. trichobothria at male palp tibia (dorsal)
0: 2 rows of trichobothria present; 1: one or more "fields" of trichobothria
35. trichobothria at male cymbium
0: absent; 1: present (in one row dorsoretrolaterally)
36. dorsal spines at leg femorae
0: 1; 1: 1 or 2; 2: more than 2 (at least at two femora)
37. lateral spines at leg patellae
0: absent; 1: I–II with only prolateral spines, III–IV with pro- and retrolateral spines; 2: I–IV with pro- and retrolateral spines; 3: I–III with only prolateral spines, IV without lateral or only with retrolateral spines
38. lateral spines at tibia I
0: absent; 1: 1–3 prolateral spines, retrolateral spines possible
39. dorsal spines at tibiae III–IV
0: absent; 1: 1; 2: 2
40. dorsal spines at metatarsi
0: absent, sometimes III or IV with 1 spine; 1: I–II absent, III–IV with 1–2 spines; 2: I–II absent, III–IV more than 2 spines; 3: I absent, II–IV with 1 or more spines; 4: all with more than 2
41. lateral spines at metatarsus I
0: 0–1 prolateral spine, 1 retrolateral spine possible; 1: 2 or more prolateral spines, retrolateral spines possible
42. distal spines at metatarsi III–IV
0: no pattern or 1 pair + 1 spine (basic pattern); 1: 1 pair + 1 pair very close together; 2: 1 pair + 1 single or pair of much smaller spines
43. lateral spines at tarsi III–IV
0: 0–1 prolateral spine, 1–2 retrolateral spine or no spines; 1: several prolateral and 1 to several retrolateral spines
44. ventral spines at tarsus III–IV
0: present; 1: absent
45. number of dorsal trichobothria on tarsus I
0: less than 6; 1: 6 or more
46. number of small teeth at the paired claw of leg I
0: less than 10; 1: 10–12; 2: 13 or more

Spinnerets

47. shape of colulus
0: strongly reduced; 1: somewhat reduced, two separated plates or only two hairy region present; 2: trapezoidal or rectangular plate
48. shape of distal margin of trapezoidal or rectangular colulus
0: more or less straight; 1: with a notch in the middle, not concave; 2: a kind of "w"-shaped or concave.
49. colouration of distal segment of PLS
0: pale; 1: somewhat darkened
50. length of distal segment of PLS in relation to the length of the basal segment
0: shorter than basal; 1: as long as basal; 2: longer than basal
51. pattern of special, prominent spigots distally on PMS (in females)
0: 1 prominent spigot; 1: 1 prominent spigot anteriorly and 1 posteriorly; 2: 2–3 prominent spigots in a group; 3: more than 3 prominent spigots; 4: no special thing
52. number of minor ampullate and cylindrical gland spigots distally on PMS, in

females

0: 2 (posteriorly, on both lateral sides); 1: 2 (one in the middle, 1 more posteriolaterally); 2: 3 (one in the middle, 2 more posteriolaterally); 3: 4–5 (one in the middle, 3–4 more posteriorly in a transversal row or semicircle); 4: 8 (one in the middle, one posteriorly, 3 and 3 laterally); 5: 4 (two in the middle, 2 more posteriolaterally); 6: 6 (two in the middle, 2 and 2 laterally); 7: 4–7 in a semicircle

53. number of cylindrical gland spigots on the distal segment of PLS

0: 1 (basal); 1: 2 (one basal, one medial); 2: more than 3 (1–2 basal, others in a row towards distal end)

54. analtubus with special long and dark spikes

0: present; 1: absent

Male genitalia

55. femoral apophysis

0: absent; 1: present

56. patellar apophysis

0: absent; 1: present

57. RTA, number of branches

0: absent; 1: 1 branch; 2: 2 branches; 3: 3 branches

58. RTA complexity

0: low (one peak, bulge or flat ridge); 1: medium; 2: high (more peaks, bent points, fused branches, ...)

59. palp tibia with retrolateroventral ridge, sometimes fused with ventral branch of RTA

0: present; 1: absent

60. palp tibia with prolateroventral apophysis

0: present; 1: absent

61. embolus shape

0: filiform, getting thinner to the end or distally truncated; 1: more complex

62. position of embolus origin (free apex) at the left palp in ventral view

0: 6–8 o'clock; 1: 8–10 o'clock; 2: 10–12 o'clock; 3: 12–2 o'clock

63. shape of embolus tip

0: special formed; 1: inconspicuous

64. general shape of conductor

0: lamelliform; 1: lamelliform, complex (several lamellae); 2: massive, complex; 3: massive, with a large membranous part and often with a broad connection to the tegulum

65. transversal ridge on conductor

0: absent; 1: present, sclerotised; 2: present, lamelliform, membranous; 3: present, massive

66. additional tegular apophysis

0: absent; 1: lobe-like, flat and somewhat protruding; 2: big bulge between tegulum and conductor; 3: strongly sclerotised ridge forming a pocket-like structure; 4: strongly sclerotised structure originating at the basis of the free embolus, complex

67. connection of conductor to tegulum

0: membranous, not strongly sclerotised; 1: sclerotised and fixed

68. shape of distal portion of conductor

0: differently shaped, no real distal portion detectable; 1: broadly rounded, not elongated (distance from the connection to the tip smaller than the width of the distal portion); 2: not really elongated, as long as wide; 3: elongated (distance from the connection to the tip larger than the width of the distal portion)

69. lateral margin of conductor
0: not folded; 1: folded only at the terminal half; 3: completely folded
70. terminal end of conductor, dorsal part
0: absent; 1: pointed apophysis; 2: rounded plate; 3: rounded outgrowth, more complex than a plate; 4: big rounded outgrowth; 5: more complex structure
71. terminal end of conductor, ventral part
0: rounded, one short point or cone shaped; 1: one elongated and strong point; 2: more complex (several peaks, plates, etc.)
72. conductor with special characters
0: absent; 1: winded, spiral; 2: a peak between dorsal and ventral branch; 3: clearly divided in two "conductors", the ventral branch functional; 4: conductor terminally elongated to dorsal side of cymbium; 5: very complex
73. median apophysis
0: present; 1: absent
74. position of origin of MA at the left palp in ventral view
0: 1–3 o'clock; 1: 3–5 o'clock; 2: 5–7 o'clock; 3: 7–9 o'clock
75. MA protruding
0: only somewhat protruding, connection wider than MA long; 1: protruding, connection as wide as MA long; 2: protruding, connection narrower than MA long
76. connection of MA to the tegulum
0: sclerotised (at least partly); 1: membranous
77. shape of distal sclerite of MA
0: absent, only membranous; 1: platelike, forming a kind of pocket; 2: platelike, forming a kind of spoon; 3: thornlike, finger shaped or pointed (also several points possible); 4: more complex, with more than one ending; 5: very complex, strongly sclerotised
78. basal portion of tegulum, in ventral view
0: not visible; 1: visible, simple with a more or less continuous margin; 2: visible, more complex, margin undulated

Female genitalia

79. atrium
0: no or indistinct atrium expressed; 1: distinct cavity
80. lateral disruption, separating the epigynal plate from the median plate
0: absent (no separated median plate does exist or median plate is strongly fused to epigynal plate); 1: present (separated median plate does exist)
81. posterior sclerit
0: absent; 1: present, expressed as a strongly sclerotised bar or big plate, almost touching the anterior border, well separated from the epigynal plate; 2: present, big bulge; 3: present, expressed as a strongly sclerotised plate, transversally and protruding ventrad
82. epigynal teeth
0: absent; 1: only "pseudoteeth" as posteriolateral elongation of lateral margin of atrium present; 2: present, anteriorly of CO at anterior margin of atrium; 3: present, posteriorly of the CO
83. sclerotised "pockets"
0: absent; 1: median of the epigyne, open towards anterior; 2: median of the epigyne, open towards posterior (by the posterior sclerit); 3: lateral, open towards posteriomedial (posteriorly of the CO); 4: lateral, open towards lateral
84. shape of vulva
0: combined duct; 1: 1 pair of receptacula; 2: 2 pairs of receptacula; 3: receptacula irregularly sclerotised enclosing convoluted ducts

85. length of CD or combined duct
0: short; 1: long
86. sclerotisation of CD or combined duct
0: less sclerotised part (first part, starting at the CO) present; 1: all more or less equally sclerotised
87. appendages at CD
0: absent; 1: small diverticula at CD present; 2: long band-like appendages at the CD present
88. length of fertilisation duct
0: very small (only leave shaped appendages at receptacula expressed); 1: as long as or longer than receptaculum width

3.1.3. Morphological analyses

Parsimony analysis of the morphological dataset under equal weight resulted in 8 shortest trees (Tab. 2, Fig. 4). As for the molecular analysis, all species from the *Tegenaria/Malthonica*-complex are divided into four well supported monophyletic clades (*Tegenaria*, *Malthonica*, *Eratigena n. gen.*, *Aterigena*). Implied weighting with different strength (Tab. 2, App. 2–3) did not have a remarkable impact. Jackknife values and Bremer support suggests that *Tegenaria sensu stricto* constitutes the most problematic clade (jackknife value 71, Bremer support 5, App. 2, no apomorphy detectable). Generic relationship between the included genera is not resolved. Within the taxa in focus, only very few groups are good supported by both branch support values (Fig. 4, App. 1–3).

3.1.4. Molecular analyses

The most inclusive Bayesian analysis, including all three gene sections (CO1, NADH1 and 28S) resulted in a tree dividing the included *Tegenaria/Malthonica sensu lato* species in three highly (100 % posterior probability) supported monophyletic clades (Fig. 5, Tab. 1–2, App. 2–3). One clade, including *Tegenaria domestica*, comprises all *Tegenaria* species, the second corresponds to the genus, *Aterigena* (Bolzern et al., accepted) and the newly proposed genus *Eratigena n. gen.* (corresponding to the “*Tegenaria*-Clade 2” in Bolzern et al. (accepted)). Furthermore, the Bayesian tree suggests (Fig. 5) that *Malthonica* (represented by *M. oceanica* Barrientos & Cardoso, 2007) is the basal genus and sister to all other included agelenid genera. From those taxa, *Tegenaria*, constitutes the sister group of *Aterigena*, *Histopona*, *Textricini* (*Textrix*, *Lycosoides*), *Agelenopsini/Agelenini* (*Hololena*, *Agelena*), and *Eratigena n. gen.*. The later genus is sister to the *Textricini/Agelenopsini/Agelenini* clade and together they constitute a polytomic clade with *Aterigena* and *Histopona*. Within the genus *Tegenaria* three highly supported clades can be observed: *T. domestica* and *T. ariadnae* are closely related; they form the basal sister clade of the other *Tegenaria* species; *T. ferruginea* and *T. parietina* are closely related. Within the genus *Eratigena n. gen.* also three well supported clades are identifiable: *E. sicana* and *E. vomeroi* are basal taxa of the clade; *E. agrestis* and *E. atrica* are closely related; they form, together with *E. picta* and *E. feminea*, a terminal clade within this group.

The parsimony analyses resulted in 1 single tree (Tab. 2, tree not shown; jackknife support >50 specified on the tree in Fig. 5). Using implied weighting k=5, jackknife values support most mentioned clades specified above for the Bayesian analysis (Fig. 5), all three *Tegenaria/Malthonica sensu lato* clades with a value of 100 %. The most important exception is that parsimony analysis did not resolve any generic relationship within Agelenidae, except that *Malthonica* constitutes a basal genus and that the *Textricini/Agelenopsini/Agelenini* clade is monophyletic. Within the genus *Tegenaria* the sister-relationship of *T. domestica/ariadnae*

and all other species collapse. Within *Eratigena n. gen.* the jackknife support suggest reduced stability of the mentioned clades (App. 3).

The Bayesian trees resulted from analyses of single genes or combined mitochondrial genes (CO1, NADH1) do all show the same three well supported monophyletic *Tegenaria/Malthonica* sensu lato clades (Tab. 1, App. 2–3, Figs. 6–7). No partial analyses could resolve all clades detected by the most inclusive analysis, but, most probably due to different taxa composition, they could detect additional supported clades. The most obvious contradicting hypothesis is the placement of *Malthonica* (for 28S and NADH1 also the monophyletic *Malthonica* clade, including *M. lusitanica* and *M. oceanica*, with 100 % posterior probability) which clusters together with *Tegenaria* (in 28S, 98%, no jackknife support; in NADH1, 53 %, 58 % jackknife support) or with Agelenopsini/Agelenini, Tetricini and *Eratigena n. gen.* (in combined mitochondrial analysis, 58 %, no jackknife support). The single analyses of the NADH1 sequences and the combined mitochondrial data could detect additional well supported (>90 % posterior probability) clades within the *Eratigena n. gen.* clade (*E. atrica*+*E. saeva*; *E. atrica*+*E. saeva*+*E. agrestis*+*E. feminea*; *E. sardoa*+*E. sicana*+*E. herculea*), and additional or contradicting clades in the *Tegenaria* clade (*T. eleonora*+*T. parmenidis*; *T. rilaensis*+*T. campestris*; *T. silvestris*+*T. parvula*+*T. tridentina*; *T. parmenidis*+*T. circeoensis*; contradicting placement of *T. domestica*). The single analysis of 28S sequences recovered four well supported clades (*T. hasperi*+*T. pagana*; *T. hasperi*+*T. pagana*+*T. silvestris*+*T. maronita*+*T. parvula*+*T. tridentina*; *T. campestris*+*T. ramblae*; *T. parmenidis*+*T. circeoensis*+*T. rilaensis*).

As for the most inclusive analyses, most well supported clades of the Bayesian analyses did also appear in the shortest trees (if more than one tree, in the strict consensus tree) computed during parsimony analyses (Tab. 2, App. 2–3, Figs. 6–7

3.1.5. Combined analyses

The most inclusive Bayesian analysis with combined morphological and molecular data (Tab. 1) resulted in a tree with highly resolved clades for the genera (100 % posterior probability, Fig. 8). As it can be expected from the molecular data, the relationship between genera are much less supported and remain unresolved. Species relationships within the genera *Tegenaria* and *Eratigena n. gen.* are in correspondence with the combined DNA analysis with two exceptions: 1. *Eratigena picta* and *E. feminea* (71 % posterior probability, App. 3), 2. *Tegenaria ferruginea*, *T. parietina*, *T. campestris* and *T. tridentina* (99 % posterior probability, App. 3).

Parsimony analysis of all data combined (DNA and morphology) resulted in 1 most parsimonious tree (Tab. 1–2, partly shown in Fig. 8). The three clades in focus are, in correspondence with the Bayesian analysis, all very well supported (jackknife values 100, Bremer support 19 or >20). Genus relationship is not resolved and resulted in a polytomy. Within the genera *Tegenaria* and *Eratigena n. gen.*, supported clades are very sensitive to different strength of implied weighting (App. 3).

3.2. Taxonomy

Family: Agelenidae C. L. Koch, 1837

“Agelenides” C. L. Koch (1837): 13.

„Small to medium size araneomorph spiders; three tarsal claws; ecribellate; entelegyne; eight eyes; posterior spinnerets two-segmented, long and slender, with apical segment tapering

towards tip; tarsi with trichobothria increasing in length towards tip; colulus paired.” (Jocqué & Dippenaar-Schoeman, 2006: 60). In relation to European spiders only, agelenids are rather medium to large sized spiders.

All agelenids build a kind of sheet web with a special tube or funnel shaped retreat. Their webs are attached to various substrates (vegetation, rocks, caves, buildings).

3.2.1. Key to European agelenid genera

Pseudotegenaria Caporiacco, 1934 is excluded here because the remaining species of that genus, *P. parva* Caporiacco, 1934, is mentioned only for Libya and no specimen was available for examination.

- 1 Trochanter III and IV notched..... 2
- All trochanter straight or only slightly curved 5
- 2 Dorsal and lateral spines present on patellae III and IV, 1–2 ventral spines present on tarsus IV *Aterigena* (5 spp.)
- Only dorsal spines present on all patellae, tarsus IV ventrally lacking spine 3
- 3 Colulus strongly reduced, only hairs present, patellar apophysis on male palps absent, median apophysis present..... 4
- Colulus developed as median somewhat divided plate, patellar apophysis on male palps sometimes present, median apophysis absent *Histopona* (18 spp.)
- 4 Eyes fully developed, tarsi with less than 7 dorsal trichobothria, 1 or 2 bigger and several smaller teeth at the cheliceral retromargin..... *Malthonica* (2 spp.)
- Eyes very small or lacking, tarsi with 7 or more dorsal trichobothria, several equally big teeth at the cheliceral retromargin *Hadites* (1 sp.)
- 5 PER in dorsal view considerably recurved or procurved, AER in frontal view either considerably procurved or slightly recurved, patellae I and II with dorsal and prolateral spines, colulus clearly divided into two hairy plates..... 6
- Both eye rows in frontal and dorsal view more or less straight (eyes may be reduced), patellae with dorsal spines only, colulus trapezoidal plate with the distal margin straight, “w”-shaped or with a notch 12
- 6 Eye rows in dorsal view recurved, PME biggest, feathery hairs absent or conspicuously different to the hairs of *Tegenaria* sensu lato..... 7
- Eye rows in dorsal view procurved, PME never biggest, feathery hairs present 9
- 7 Conductor at the male palp with a conspicuous laterodorsal projection, femur of male palp with a flat but obvious prominence, no patellar apophysis, epigyne with large atrium *Maimuna* (7 spp.)
- Conductor at the male palp without laterodorsal projection, femoral apophysis absent, patellar apophysis sometimes present, epigyne with posteriorly protruding pocket or slightly raised median portion 8
- 8 Conductor simple, median apophysis absent, patellar apophysis absent, epigyne with posteriorly protruding pocket *Textrix* (7 spp.)
- Conductor more complex, median apophysis present, patellarapophysis present, epigyne with slightly raised median portion *Lycosoides* (10 spp.)
- 9 Anal tube with very strong and special “spikes”, conductor differently shaped but never helical, Epigynal plate not completely longitudinally divided..... 10
- Special spikes absent at the anal tubes, helical conductor, epigynal plate with 2 clearly divided copulatory openings *Benoitia* (9 spp.)
- 10 Embolus either broad and short or spiral elongated with an attached membrane, conductor complex, anterior margin of epigynal atrium without scapus 11

- Embolus thin and filamentous, conductor simple, anterior margin of epigynal atrium with protruding scapus*Agelescape* (7 spp.)
- 11 Patellar protuberance absent, two tibial apophysis, short and broad embolus, vulva with an innerly originating spermathecal head, spermathecal apophyses present*Agelena* (70 spp.)
- Patellar protuberance with a long spine, one tibial apophysis, long spiral embolus with attached membrane, vulva with a laterally or medially originating spermathecal head, spermathecal apophyses present.....*Allagelena* (5 spp.)
- 12 6 or more teeth (some equally big ones, rest getting smaller more distally) at the cheliceral retromargin, RTA with mostly 2 branches, lateroventral ridge absent, conductor with a membranous or massive (not very strongly sclerotised) transversal ridge, terminal end not bifid (only in *montigena*) with ventral terminal ending expressed as elongated point or more complex (several points or spiral), median apophysis strongly (by sclerotization) attached to the tegulum (sometimes only membranous), distally with a simple pocket like sclerite, vulva irregularly sclerotised (enclosed convoluted duct) and/or with diverticula attached to the copulatory duct (exception: *E. sicana* with a kind of two ST)*Eratigena n. gen.*
- 3 to 6 almost equally big teeth at the cheliceral retromargin, RTA mostly with three branches or strongly protruding bulge and lateroventral ridge, lamelliform conductor, sometimes with a sclerotised transversal ridge, terminal end often bifid with ventral ending simple, median apophysis strongly protruding with distal sclerite plate like or more complex, vulva only convoluted duct or with more or less regularly sclerotised, globular spermathecae.....*Tegenaria*

3.2.2. Genus diagnosis and description: *Eratigena n. gen.*

Genus: *Eratigena n. gen.*

Type species: *Tegenaria atrica* C. L. Koch, 1843, present designation.

Etymology

Eratigena is an anagram of *Tegenaria*, gender feminine.

Diagnosis

Agelenid spiders bearing the combination of following characters: plumous hairs present (absent in *Lycosoides*, *Maimuna* and *Textrix*). AER and PER straight or only slightly pro- or recurved in dorsal view (both rows recurved in *Lycosoides*, *Maimuna* and *Textrix*; both rows procurved in *Agelena*, *Agelescape*, *Allagelena* and *Benoitia*) and moderately procurved in frontal view (AER strongly procurved in *Agelena*, *Agelescape*, *Allagelena*, *Benoitia* and *Malthonica*; AER recurved in *Lycosoides*, *Maimuna* and *Textrix*). Cheliceral retromargin with 6 and more teeth (less than 3 teeth in *Lycosoides*, *Maimuna* and *Textrix*; 6 or less teeth in *Tegenaria*) getting smaller in size from distal to proximal (all equal in *Tegenaria*). Trochanter straight or slightly curved (notched in *Aterigena*, *Histopona* and *Malthonica*). Patellae with dorsal but no lateral spines (as is in *Histopona*, *Malthonica* and *Tegenaria*; all other European genera with lateral patellar spines). Absence of ventral spines at all tarsi (as is in *Malthonica* and *Tegenaria*; all other European genera with ventral spines). Colulus expressed as rectangular or trapezoidal plate with the distal margin straight or “w”-shaped (in *Tegenaria* trapezoidal and notched medially; colulus strongly reduced in *Hadites* and *Malthonica*; two separated plates in all other European Agelenids). Females with 1 minor ampullate gland spigot, very prominent, and 2–4 cylindrical gland spigots distally on PMS (as in some species

of *Aterigena* and *Malthonica*, all other European genera with other pattern). Male palp: RTA with 1 or 2 branches, may also be reduced (more complex in most *Tegenaria*), palp tibia often with short dorsal spike (absent in all other European genera), filiform embolus, mostly with massive conductor (lamelliform in *Tegenaria*) with a membranous or massive transversal ridge (as in *Lycosoides*, *Maimuna* and *Textrix*; in other genera absent or thin sclerotised) and a complex or strongly elongated terminal ending (as in *Allagelena* and *Maimuna*; simple in *Tegenaria*), only moderately elongated median apophysis with distal plate like sclerite (absent in *Histoipona* and *Textrix*; without sclerite in *Agelena*, *Agelescape* and *Benoitia*). Female: epigyne without separated or strongly fused median area (as in *Agelena*, *Agelescape*, *Allagelena*, *Benoitia*, *Lycosoides* and *Maimuna*; clearly separated in *Tegenaria*). Vulvae with an irregularly sclerotised RC with enclosed convoluted ducts or with distinct appendages at the copulatory duct (exception: *E. sicana*).

Description

Body size medium to large (carapace length between 2 and 7 mm). Margin of carapace narrowly and continuously darkened, continuous (for cave living species, pigmentation is absent); two symmetric longitudinal dark bands dorsally on carapace present, serrated, continuous or reduced to 3 to 4 pronounced triangles. Sternum slightly longer than wide with a distinct pattern of pale median region, sometimes additionally with 3–4 lateral spots; plumose hairs present on carapace, legs and opisthosoma. Chelicerae with 3 promarginal teeth and 6 or more retromarginal teeth; retromarginal teeth getting distinctively smaller more proximally. Labium mostly as wide as long. AER and PER straight or only slightly pro- or recurved in dorsal view and moderately procurved in frontal view. Anterior eyes bigger than posterior eyes or lateral eyes bigger than median eyes or all equal, except AME somewhat smaller. All trochanter straight or slightly curved. Leg I or IV longest, III shortest. Legs can be without pattern, only coxa and proximal of femora darkened, annulated or completely darkened. Palp and leg spination: palpal femora with 1–2 dorsal and sometimes 1 pro- and/or 1 retrolateral spines, female palp tibia with 2 dorsal and either 1 + 1 pair or 2 or 2 paired prolateral spines; male palp tibia dorsodistally often with a short spike and prolateral with 1 + 1 pair, 2 or 2 pair of spines; all leg femora with 1–2 dorsal spines and variable lateral spines; patellae with 2 dorsal and no lateral spines; number of dorsal spines on metatarsi variable; metatarsus I without or 1 prolateral spine, others variable; metatarsi III and IV with 1 pair + 1 ventrodiscal spines; tarsi I and II spineless, III and IV with 0 to several prolateral and 1 to several retrolateral spines, no ventral spines. Spinnerets: colulus developed as rectangular or trapezoidal plate with the distal margin straight or “w”-shaped. ALS one segmented, distally with a field of several pyriform spigots and medially with 2 major ampullate spigots (present in all Agelenids). PMS as long as or slightly shorter than ALS, bearing 1 conspicuously prominent spigot. PMS with 1 minor ampullated and 2–4 cylindrical gland spigots, 1 medially and 2–4 more posteriolaterally and several aciniform gland spigots. PLS longer than all others with distal segment as long as or longer than basal segment. PLS bearing typically 1 basal and 1 medial cylindrical gland spigots. Male palp without femoral apophyses, patellar apophysis can be present. RTA mostly with 2 branches and low complexity (in some species several short or bent points can be expressed), can also be reduced to one branch or even be absent. Embolus filiform, getting thinner to apex. Conductor mostly massive (thick and broad, if not then always median with a white membranous part), transversally with a membranous or massive ridge, mostly indistinct elongated distal portion (exception: *E. picta*) and lateral margin folded along the terminal half or the whole length, terminal end consists mostly of one elongated peak or a more complex structure (spiral, several points) but dorsally only rarely with rounded bulge. Median apophysis mostly not protruding, (as wide as or wider than long, exception e. g. *E. sardoa*), consisting of membranous base and distal sclerite which is pocket- or spoon-like shaped and can be fixed to the tegulum by strong sclerotisation. Epigynal plate

strongly sclerotised without or with strongly fused median plate; epigynal plate can show a distinct, cave-like atrium. Posterior sclerite is either absent, a big bulge or expressed as a strongly sclerotised transversal plate, protruding ventrally (posteriorly of the copulatory openings!). Epigynal teeth mostly present, originating posteriorly of the genital openings, but may be reduced or expressed as “pseudo teeth” (= elongation of lateral margin of atrial region). Vulvae at least partly with irregularly sclerotised structure enclosing a convoluted duct or with appendages at the copulatory duct (may be homologous to “spermathecal head”, see e.g. Bennett, 2006 or Sierwald, 1989) (exception: *E. sicana*). Fertilisation ducts only represented by the short leaf shaped appendages.

Distribution

Most species are limited to Italy, France and the Iberian Peninsula. *E. agrestis* and the species of the *E. atrica*-complex occur also in Central Europe, Great Britain as well as North America where they may have been introduced.

3.2.3. Key to European *Eratigena* n. gen. species

- 1 Legs distinctly annulated, at least two femora with more than 2 dorsal spines, male bulb with distinct and massive transversal ridge at conductor base (Fig. 19 A), vulva with distinct and long appendages at the CD 2
- Legs either pale, completely darkened or only coxa and proximal part of femora darkened (exception: *E. sicana*, legs may be annulated), other characters different 3
- 2 Basal part of MA very strongly sclerotised, transversal ridge at conductor base with distinct border line of sclerotisation, long appendix anteriorly of CD shorter than RC height *inermis*
- Basal part of MA less sclerotised, transversal ridge at conductor base without special border line of sclerotisation, long appendix anteriorly of CD reaches at least to the top of the RC *vomeroi*
- 3 Trichobothria on female tarsal tibia and on male cymbium present, length of male tibia I shorter or equal the length of carapace 4
- Trichobothria on female tarsal tibia and on male cymbium absent, male tibia I longer than carapace (exceptions: *E. fuesslini* and *E. bucculenta* sensu Barrientos, 1991) 7
- 4 Patellar apophysis at male palp present, RTA strongly reduced, epigyne with special posterior plate, protruding posteriad (Figs. 14, G, I, K, 15 B, D) 5
- Patellar apophysis absent, RTA with two simple branches, distally truncated, epigyne without posterior sclerite 6
- 5 Patellar apophysis with 2 well separated points, conductor as long as the alveolus with straight terminal end, epigynal posterior sclerite rectangularly shaped, copulatory openings lateral *feminea*
- Patellar apophysis with 3 moderately separated points, conductor shorter than the alveolus with terminal end bent ventrad, epigynal posterior sclerite more triangular, copulatory opening anterior *E. bucculenta* (sensu Machado, 1941)
- 6 Male palp with pyramidally shaped structure at conductor connection, terminal end of conductor pointing orthogonally away from cymbium (in lateral view), vulva with small diverticula at copulatory duct originating laterally, egg-shaped receptacula irregularly sclerotised *barrientosi*
- Male palp without conspicuous structure at connection of conductor, terminal end of conductor pointing dorsad or posteriad (in lateral view), vulva with small diverticula at copulatory duct originating dorsally, globular receptacula smoothly sclerotised *incognita*

- 7 Legs with only coxa and proximal part of femora darkened (exception: *E. fuesslini*, completely darkened), distal segment of PLS as long as or only marginally longer than basal segment, median apophysis on male left palp originating 7–9 o'clock, basal portion of tegulum not visible between embolus and conductor in ventral view (Fig. 10 A), epigyne with "pseudo teeth" (Fig. 12 A, C) or with distinct atrial cavity in combination with a posterior sclerite expressed as a big bulge 8
- Legs either pale or completely darkened (exception: *E. sicana*, legs may be annulated), distal segment of PLS longer than basal segment, median apophysis on male left palp originating 5–7 o'clock, basal portion of tegulum visible in ventral view (Fig. 13 E), epigyne different 10
- 8 Sternum with a pattern of a pale median band and symmetric pale dots laterally, female tibia I longer than carapace length, origin of embolus at 10–11 o'clock, terminal end of conductor simple, epigynal "pseudoteeth" present, atrium without a distinct cavity *atricica*-complex
- Sternum with a pale median band, female tibia I shorter than or as long as carapace length, origin of embolus at 8–10 o'clock, terminal end of conductor complex, epigynal teeth present, atrium forms a distinct cavity in combination with a posterior sclerite expressed as a big bulge 9
- 9 Carapace larger than 4.8 mm, conductor very broad in retrolateral view with a very complex terminal end, epigyne with a posterior sclerite expressed as a big bulge, not protruding posteriad, copulatory ducts relatively short..... *agrestis*
- Carapace shorter than 4.5 mm, conductor relatively slender in retrolateral view with a bifid terminal end, epigyne with a posterior sclerite expressed as a big bulge protruding posteriad, copulatory ducts relatively long *fuesslini*
- 10 Distal portion of conductor not elongated (shorter than broad), lateral margin of conductor folded only at the terminal half, transversal ridge massive and moderately protruding, epigyne and vulva as in Figs. 13 G–H and 14 N–P..... 11
- Distal portion of conductor moderately to strongly elongated, lateral margin of conductor completely folded, transversal ridge (if present) only expressed as a membranous ridge, epigyne and vulva different 12
- 11 RTA strongly protruding ventrad, terminal end of conductor bifid and with additional spur (Fig. 13 F, black arrow), strongly sclerotised epigynal plate with two symmetrically arranged reniform depressions with its copulatory openings (Fig. 13 G)..... *montigena*
- RTA simple, terminal end indistinct with only one somewhat elongated point, epigyne with posterior sclerite expressed as strongly sclerotised and protruding plate (median of the atrium) *bucculenta* (sensu Barrientos, 1991)
- 12 Dorsal branch of RTA dorsally bent posteriad (Fig. 17 A), short dorsal spike at male palp tibia present, terminal end of conductor bent or convoluted, complex, median apophysis only moderately protruding, epigyne with a distinct atrial cavity..... 13
- Dorsal branch of RTA different, short dorsal spike at male palp tibia absent, terminal end of conductor simple elongated point, median apophysis protruding, epigyne with a distinct posterior sclerite expressed as a protruding sclerotised plate or with a strongly posteriad protruding portion (Fig. 16)..... 14
- 13 Distal portion of conductor strongly elongated, terminal end of conductor convoluted, relatively short male palpal tibia, CD barely visible through epigynal plate, vulva with very long and convoluted CD (Fig. 17 F) *picta*
- Distal portion of conductor only moderately elongated, terminal end of conductor bent, relatively long male palpal tibia, CD distinctly visible trough epigynal plate, vulva with short CD *balearica*

- 14 Eyes very small, clypeus higher than 3 x AME, at least 1 pair of spines prolateral at palp tibia, 7 or more tarsal trichobothria, dorsal branch of RTA distinct (Figs. 16 L–M) female tibia I longer than carapace, appendages at copulatory ducts long 15
- Eyes larger, clypeus lower than 3 x AME, 2 (not paired) prolateral spines at palp tibia, up to 6 tarsal trichobothria, dorsal branch of RTA different, female tibia I shorter or equal length of carapace, appendages at copulatory ducts short or absent 16
- 15 Carapax shorter than 3.5 mm, distal tip of conductor not reaching distal margin of alveolus, epigyne lacking distinct membranous region anteriorly of posterior sclerite, vulva with short convoluted appendages *herculea*
- Carapax longer than 4 mm, RTA as in Fig. 16 L–M, distal tip of conductor reaching distal margin of alveolus, epigyne with distinct membranous region anteriorly of posterior sclerite, vulva with long convoluted appendages.....*hispanica*
- 16 Dorsal branch of RTA 3-pointed (Fig. 16 O), vulva with oblong oval and irregularly sclerotised (enclosing convoluted ducts) receptacula *arganoi*
- Dorsal branch of RTA with 1 point, vulva with globular and smoothly sclerotised receptacula..... 17
- 17 Ratio bulb to cymbium length larger than 0.65, terminal end of conductor expressed as a strongly posteriad elongated point, epigyne with a strongly posteriad protruding portion, vulva with very long convoluted ducts *sardoa*
- Ratio bulb to cymbium length smaller than 0.60, terminal end of conductor inconspicuous, epigyne with a posterior vulva *sicana*

3.2.4. *Eratigena* n. gen. species

The following species are listed in alphabetic order. For each taxon, taxonomical and nomenclatorial relevant references are provided (first descriptions, synonymies, etc.). Additional citations concerning the distribution (see e. g. van Helsdingen, 2009) or published illustrations see Bonnet (1959) and Platnick (2010).

The examined material is listed in the following order: **Country: state/region/canton:** commune, locality, number of specimens (comments, Collection code, voucher number), collecting date, collector(s).

Eratigena agrestis (Walckenaer, 1802) new combination

Figs. 2 A, 9 c–f, 10 A–H

Aranea agrestis Walckenaer (1802): 216.

Tegenaria agrestis Walckenaer (1805): 50.

Tegenaria alpestris Walker (1864): 9276; probably lapsus (see P. Bonnet, 1959: 4269).

Philoica agrestis Karsch (1873): 136.

Tegenaria rhaetica Thorell (1875b): 94, female; Thorell (1875a): 79.

Tegenaria magnacava Exline (1936): 23, pl. 1, fig. 3, male; Exline (1938): 24, pl. 4, fig. 34, female.

Tegenaria osellai Brignoli (1971a): 76–79, figs. 20–22, **new synonym.**

Tegenaria trinacriae Brignoli (1971a): 79–81, figs. 23–25, **new synonym.**

Type material examined

Type material of *Eratigena agrestis*, *T. rhaetica* and *T. magnacava* was not available for examination.

Sub *Teegenaria osellai*: holotype. Italy: Toscana: Lucca, Alpi Apuana, Monte Pisanino, 1 \$ (MCSN, 77), 22.VII.1970, Osella.

Sub *Teegenaria trinacriae*: holotype. Italy: Sicily: Palermo, Parco Reg. delle Madonie, Piano della Battaglia (MCSN, 77), 28.VII.1968, Aliquo.

Other material examined

Austria: Pfaffenberg, 2 \$, 1 £ (SMF, 24022/3-135); **Tyrol:** 1 \$ (MNHN, 1951), L. Koch.

Croatia: Dubrovnik-Neretva: Dubrovnik, Ragusa, 1 \$, 1 £ (NHMW), 1896, Reimoser.

Czech Republic: Středočeský kraj: Kopec, close to Odolena Voda, 7 £ (NMB, AB606), 30.IX.2006, Bolzern & Buchar; **Zlínský:** Radotin, 1 \$ (SMF, 17647/1-135), 28.IX.1960, Zdarkova.

France: Alpes-de-Haute-Provence: La Palud sur Verdon, 1 £ (SMF, 34070-135), VII.1982, Müller; Briançon, Orpierre, 1 \$ (SMF, 33288-135), 26.IX.1982, Müller; **Alpes-Maritimes:** Sospel, 1 \$ (NMB, AB982), 6.IX.2008, Schönhofer; Grasse, “nahe Quelle der Siagnole”, 1 £ (NMB, AB824), VIII.2007, Wunderlich; **Var:** Toulon, la Crau, 10 \$, 10 £ (MNHN, 1951), 12.XI.1913; Callian, 1 \$, 1 £ (MNHN); **Pyrenees-Orientales:** Banyuls, 10 \$, 10 £ (MNHN, 1951), XII.1908; Prades, Villefranche-de-Conflent, Grotte de Villefranche, 1 £ (MHNG), III.1906, Revilliod; La Massane, 2 £ (MNHN, 1974), 20.XI.; Massane, 1 £ (MCSN, 540), II.1969, Marcuzzi; **Isère:** Gorges de la Romanche, below Rochetaillé, 1 £ (NMB, AB989), 1.IX.2008, Schönhofer; **Ardèche:** Roche Sauve, “plt. du Choiron”, 1 £ (MHNG), 16.VIII.1971, Billaud.

Germany: Baden-Württemberg: Kaiserstuhl, Vogtsburg, Badberg, 3 £ (NMB, AB221, AB252, AB292), 9.X.2005, Exkursion-SARA 2006 & Gack; **Bayern:** Hainberg, W of Nürnberg, 6 \$, 3 £ (coll. Bauchhenss, 329), 2002, Weigl; Main-Spessart, Romberg, 1 £ (SMF, 15165-135), 2.XI.1954, Stadler; **Brandenburg:** Barnim, Schorfheide-Chorin, 2 \$ (NHMB), 29.IX.1992, Sommer; Seeberge, 3 \$ (NHMB), 1995, Sommer; Cottbus, Bräsinchen, 2 \$, 1 £ (NHMB), 29.IX.1996, Jako; **Bremen:** Bremen, 1 \$ (SMF), Hagen; **Hessen:** Darmstadt, Kelkheim, 1 £ (NMB, AB290), 11.IX.2005, Schönhofer; Darmstadt, Lorchhausen, 1 £ (NMB, AB564), 24.IX.2006, Huber; Vogelsberg / Lohberg, 1 \$ (SMF, 32068-135), VIII.1983, Müller; Brandoberndorf, 2 \$, 2 £ (SMF, 32069-135, 32071-135), 1983, Müller; Gießen, Wetzlar, 1 \$ (SMF, 32067-135), 25.VIII.1981, Müller; Darmstadt, Offenbach a. M., 4 £ (SMF, 10292/4-135), 10.X.1948, Schnellbäcker; Darmstadt, Frankfurt am Main, 1 £ (SMF, 6119-135), 6.VIII.1912, Lengle; Darmstadt, Taunus, Neuenhain, 2 £ (SMF, 6481-135), 18.IV.1949, Hesse; **Niedersachsen:** NSG Fischbeker Heide, 2 \$, 2 £ (NMB, 384 c), 12.VIII.1992, Lisken-Kleinmans; **Nordrhein-Westfalen:** Köln, Wahn, NSG Wahner Heide, 2 \$, 2 £ (SMF), 4.IX.1994, Jäger; Troisdorf, Molkehügel (?), 1 £ (SMF), 2.X.1994, Kloid; Köln, Porz-Grengl, 1 £ (SMF), 12.IX.1994, Kloid; Köln, Hürth, Efferen, 1 £ (SMF), 28.XI.1991, Jäger; **Rheinland-Pfalz:** Mainz-Bretzenheim, 1 \$ (SMF, 15127-135), 5.IX.1956, Braun; Mainz, Universität, 1 £ (SMF, 15166-135), 11.X.1952, Braun; **Schleswig-Holstein:** 3 £ (NMB, AB251, AB303), 2005, 1.IX.2005, Lemke; “Ehemalige Kiesgrube, 1 £ (NMB, AB571), 9.X.2006, Lemke; Helgoland, 1 \$ (SMF, 10956/1-135), VIII.1960, Schmidt; **Thüringen:** Rotleben, 1 \$ (SMF), 11.IX.1992, Jäger; **Berlin:** Berlin, 3 \$, 1 £ (SMF, 33963-135), Wunderlich.

Greece: Ioannina: Ioannina, “dint. Mazzia”, 1 £ (MCSN, 540), 4.XI.1974, Vigna; Street E92 btw. Penagia and Metsovo, 1 £ (SMF), 2.IV.2006, Schönhofer; **Thesprotia:** Igoumenitsa, 1 \$ (MCSN, 540), 25.IX.1966, Brignoli; Lago Psaka, 6 £ (MCSN, 540), 8.XI.1964, Vigna, 5.XI.1974, Bruschi; **Evvoia:** Nea Pagantas-Prokopia, 1 £ (coll. K. van Keer, 2049), 10.V.2001, van Keer; **Crete:** Chania, Akrotiri, 2 £ (SMF); **Evros:** Alexandropoulos, 1 £ (MCSN, 540), 21.X.1974, Vigna; **Anatoliki Attiki:** Athens, near Koropion, 3 £ (SMF), 19.III.2007, Schönhofer; **Magnisia:** N of Volos, 3 £ (SMF), 30.III.2006, Schönhofer; Lokrum, 1 £ (NHMW).

Italy: **Abruzzo:** Monte Marsia, 1 \$ (MCSN, 540), 25.VII.1969, Turillazzi; L'Aquila, Camporotondo, 1 \$ (MSNB), 24.VI.2000, Isaia; **Basilicata:** Pollino, Col Dragone, 1 £ (MCSN, 540), 8.VIII.1969, Vomero; Monte Vulture, Laghi di Monticchio, 2 £ (MCSN, 540), 11.XI.1966, Hartig; Corleto, 1 \$ (MCSN, 540), 9.IX.1969, Vomero; Potenza, San Severino Lucano, sotto Santuario Madonna del Pollino, 1 £ (MSNB), 27.VIII.2008, Valle; **Calabria:** Aspromonte, 1 £ (NHMW), 1906, Paganetti-Humler; **Emilia-Romagna:** Modena, Campogalliano, 1 \$ (MSNB), VIII.1987; Forli-Cesena, Casa i Piani prato, 3 \$ (MSNB), 3.IX.1997, Scaravelli & Berozzi; **Lazio:** Civitella Cesi, 1 £ (MCSN, 540), 1.XI.1965, Brignoli; Roma, Moricone, 2 £ (MCSN, 540), 6.I.1976, Brignoli; Isola Palmarola, la Radica, 1 £ (MCSN, 540), 3.IV.1964, Brignoli; Rieti, Pian delle Rosce, Monte Terminillo, 1 £ (MCSN, 540), 5.X.1969, Brignoli; Isola Zannone, 1 £ (MCSN, 540), 28.II.1966, Brignoli; Isola Ponza, Linguana, 2 £ (MCSN, 540), 26.I.1966, Argano; Frosinone, Piglio, 1 £ (MCSN, 540), 19.X.1969, Brignoli; **Piemonte:** Alessandria, Lobbi, 1 \$ (MCSN, 540), 3.IX.1964, Ferrero; **Sardegna:** Sassari, Limbara, Punta Balestreri, 4 £ (MCSN, 540), 30.III.1972, Vigna; **Sicilia:** Sicily, 1 \$, 1 subadult £ (SMF, coll. Wiehle); Palermo, Piana degli Albanesi, 1 £ (MCSN, 540), 20.XI.1972, Aliquò; Messina, Nebrodi, Portella Femminamorta, 1 £ (MCSN, 540), 26.III.1967, Ferro; **Toscana:** Elba, Marciana marina, 1 £ (NHMW), 8.IV.1955; **Umbria:** Monte Cucco, 1 \$, 2 £ (MCSN, 540), 17.VIII.1966, Argano; Perugia, Sigillo, verso Monte Cucco, 1 £ (MSNB), VI.1991, Buttarelli & Ghilardi, Pantini, Valle. **Poland:** **Opolskie:** Zabrze, , Biskupice, 4 \$, 2 £ (SMF, 35681-135), 18.IX.1981, Sypien. **Romania:** Batin, Sibin, 1 \$ (MCSN, 540), 27.VIII.1972, Rampini. **Spain:** 1 \$, 2 £ (SMF, coll. Wiehle); **Balearic Islands:** Albufar (Menorca?), 1 £ (MHNG), 20.III.1970, Hauser; **Madrid:** Guadarrama, Sant. Estrella (?), 1 £ (MNHN, 1976), de la Brùlerie; Madrid, 1 \$ (AMNH), 1961, Haller; Sierra Nevada, Penones de San Francisco, 1 \$ (MNHN, 1952), 16.VII.1954, Janetschek. **Switzerland:** **Ticino:** Mte. S. Giorgio, Cugnoli, 1 \$ (NMB, 384 d), 3.X.1989, Hänggi. No data, 1 £ (NHMG), Lindberg; “Umgebung Basel” (includes parts of Switzerland, Germany and France), 11 \$, 19 £ (NMB, 384 b), Schenkel; La Grandière, 1 £ (MNHN, 1951), 30.IX.1917, Dalmas (this specimen is labeled as “neotype” by de Blauwe; this has never been published and is therefore invalid).

North America

United States: **New York:** Onondaga Co., Liverpool, 2 \$ (AMNH), 22.VIII.2005, Chermak; **Oregon:** Benton Co., Corvallis, 1 \$, 3 £ (AMNH), 23.VIII.1983, 13.IX.1983, Radtke; **Washington:** Spokane, Marshall, 1 £ (NMB, AB880), 2007, Gaver; Seattle, 2 \$, 2 £ (AMNH), IV.1951, VIII.1954, Malkin.

Diagnosis

E. agrestis can be separated from other *Eratigena* **n. gen.** species by leg coxa and proximal parts of femora darkened (spotted, as in the *atrica*-complex, all other *Eratigena* **n. gen.** species with different patterns), short dorsal spike at male palp tibia present (as in the *atrica*-complex, *E. fuesslini*, *E. barrientosi*, *E. montigena*, *E. picta* and *E. balearica*, all other species absent), MA expressed as a broad pocket, strongly attached to the tegulum, originating at 7–9 o'clock (as in *atrica*-complex and *E. fuesslini*, in all other species more basal, 5–7 o'clock), basal portion of tegulum almost completely hidden by upper part (embolic deviation) of tegulum (as in *atrica*-complex, *E. fuesslini*, and to some extent also in *E. sardoa*, in all other species of *Eratigena* **n. gen.** good visible), the distinct terminal end of the conductor, and the atrial cavity posteriorly limited by a big bulge, bearing epigynal teeth pointing posteriomediad (these characters do show variation to some extent). From the closely related species, *E. fuesslini*, it can be separated by the body size (*E. fuesslini* much smaller than *E. agrestis*), the broad conductor (in retrolateral view, less broad in *E. fuesslini*), the terminal end of the

conductor, the posterior bulge at the epigyne (not protruding to posterior in *E. agrestis* but in *E. fuesslini*).

Description

Measurements

Male (n=2): CL 5.0–5.25, CW 3.5–3.75, STL 2.3, STW 2.0–2.3, OL 5.0–6.0, OW, 3.25–3.5. Leg I (5.4–6.0, 1.75–2.0, 5.5–6.0, 5.35–5.75, 3.15–3.4), II (4.5–5.0, 1.65–1.85, 4.0–4.25, 4.2–4.5, 2.5–2.75), III (4.1–4.15, 1.5, 3.5, 4.3–4.5, 2.15–2.35), IV (5.25–6.0, 1.75–1.85, 5.1–5.25, 6.1–6.35, 2.75–3.0). Pedipalp (2.23, 0.96, 0.83, 2.2–2.25), bulbL 1.25–1.5.

Female (n=3): CL 5.4–6.1, CW 3.7–4.25, STL 2.65–2.85, STW 2.35–2.5, OL 5.5–8.85, OW 3.75–5.75. Leg I (5.55–5.75, 2.0–2.15, 5.1–5.75, 4.9–5.25, 2.95–3.1), II (4.8–4.85, 1.85–2.0, 3.75–4.25, 4.1–4.5, 2.35–2.5), III (4.5, 1.65–2.0, 3.2–3.65, 4.5–4.75, 2.0–2.4), IV (5.7–6.0, 1.9–2.0, 4.9–5.5, 6.35–6.65, 2.6–2.8). Pedipalp (2.2–2.35, 1.02–1.06, 1.36–1.38, 2.29–2.42). EPL 0.95–1.04, EPW 1.1–1.4, ATL 0.3, ATW 0.55.

Eyes: PME 0.18–0.19, PLE 0.21–0.24, AME 0.22–0.23, ALE 0.23–0.24. Eye distances: PME-PME 1.5 x PME, PME-AME 1 x PME, PME-PLE 1–1.5 x PME, PME-ALE 1.5 x PME, AME-AME 0.5–1 x AME, AME-ALE <0.5 x AME. CLY1 2–3 x AME, CLY2 2–2.5 x ALE.

Male palp

RTA with 2 branches, lateral branch simple and pointed, dorsal branch a broad apophysis, distally truncated and variable shaped (from one bigger and several smaller points to almost only one point). Short dorsal spike on palp tibia present. Embolus base between 9–10 o'clock. Embolus less than 1.5 CB with distal tip at 3–4 o'clock. Conductor massive and very broad (in retrolateral view), anteriodistally not elongated, folded only at the terminal half which is strongly twisted ventroprolaterally. Terminal end very complex, consisting of 2 to 3 strongly sclerotised, stepped and elongated points (can be very variable in size). Retrolaterally, conductor distinctly furrowed. Transversal ridge at the conductor consists of a membranous lamella. Connection of conductor to tegulum is membranous. MA wider than long, originating at 7–8 o'clock, only moderately protruding, distal sclerite plate like shaped forming a pocket, connection of MA at least partly strongly sclerotised.

Epigyne and vulva

Epigyne medially with a distinct atrial cavity, posteriorly limited by a posterior sclerite expressed as a distinct big bulge (due to variation, this bulge can be strongly extended anteriorly, described in Lit., e.g. Brignoli (1971a)), which is strongly fused to the epigynal plate. Epigynal teeth present, originating lateral on the posterior bulge, pointing posteriomediad. Vulva consists of distinguishable CD, RC and FD. CD very short and curved, distinct appendages absent. RC irregularly oblong and not constantly sclerotised enclosing convoluted ducts, separated by about their diameter or less. FD only represented by small leave shaped appendages.

Other important characters

Cheliceral retromargin with 6–9 teeth. Colulus rectangularly shaped with distal margin “w” shaped. PMS with 1 prominent minor ampullate gland spigot and 3–4 cylindrical gland spigots laterally. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 7–10. Denticles at paired claw of leg I 17–18. Leg spination: male palp (2–0–0–0, 2–0–0, 1–2p–0–0 or 2–2p–0–0), female palp (2–0–0–0, 2–0–0, 2–2p–0–0), leg femora (2–2–0–0 or 2–3–0–0 or 2–2–1–0 or 2–2–2–0 or 2–3–1–0 or 3–2–1–0, 2–2–1–0 or 2–2–3–0 or 2–3–2–0 or 2–3–3–0 or 3–3–2–0, 2–2–3–0 or 2–3–2–0 or 2–3–3–0, 2–1–1–0 or 2–2–1–0), patellae (all 2–0–0), tibiae (0–0–0–3p or 0–0–0–3p+1 or 0–0–0–4p, 0–1–0–3p or 0–1–0–3p+1 or 0–2–0–3p, 2–2–2–3p or 2–2–2–3p+1, 1–2–2–3p+1 or 2–2–2–3p or 2–2–2–3p+1), metatarsi (0–0–0–4p+1, 0–2–0–5p, 1–4–4–5p or 1–4–4–5p+1, 1–4–4–1p+2+3p), tarsi (I–II 0 (in males 1 prolateral spike on tarsus II possible), III 0–2–3–0; IV 0–2–3–0 or 0–2–4–0).

Colouration

Carapace with weakly serrated symmetric longitudinal dark bands. Sternum with distinct pale median region. Opisthosoma darkened green-brownish, at the cardiac mark yellowish, continuing posteriorly in broad chevrons (~ 5). Legs not annulated, only coxa and proximal part of femora with dark spotted. ALS and both segments of PLS dorsally darkened.

Distribution

E. agrestis is known from most European countries. This species has been introduced to North America in the early years of the last century (Baird & Stoltz, 2002; Roth, 1968).

Discussion

The examination of a large number of specimens from a wide geographical range showed clearly, that different characters of this species, in particular the male and female genital structures, are highly variable. In females, this variation has been documented by Bignoli (1971a) and in the present work by the Figures 10 E–F. Surprisingly, Bignoli did not expect such a high variation in males. This led him to describe two new species: *T. osellai* and *T. trinacriae* (Bignoli, 1971a). In his description he mentioned that both species are very close to *T. agrestis* and that they differ only by the shape of the distal end of the conductor and the dorsal branch of the RTA. This observation is obviously true. But after the examination of a large number of specimens, also from locations close to the type localities of the two other species, these differences seem not to be constant and, therefore, reflect intraspecific variation. Bignoli's two species represent extreme forms of *E. agrestis*. It is noticeable that the descriptions of both species are each based on a single male only.

***Eratigena arganoi* (Brignoli, 1971) new combination**

Figs. 16 C–D, H, N–O

Cicurina arganoi Brignoli (1972): 124–128, figs. 82–87, female.

Malthonica arganoi Brignoli (1977a): 38, figs. 20–22.

Type material examined

Paratype. Italy: Lazio: Roma, Altopiano di Arcinazzo (MHNG); 17.IV.1966, Brignoli.

Other material examined

Italy: Abruzzo: L'Aquila, Street close to Rovere – Secinaro, 1 ♀ (NMB, AB770), 8.VI.2007, Bolzern; Teramo, Tossicia, Tozzanella, verso Colle Petato, Gran Sasso, 13 ♂ (MSNB, 002), 27.VIII. and 3.X.2002, Marotta, Carissimi & Di Marco; Teramo, Rocca Santa Maria, Monti della Laga, 3 ♂, 1 ♀ (MSNB, 002), 28.X.2001 and 6.X.2002, Marotta; **Basilicata:** Potenza, San Severino Lucano, 6 ♂, 2 ♀ (MSNB, 003), VI.1990, 1993, Buttarelli, Ghilardi, Pantini & Valle; Potenza, Lucania, Accettura, 1 ♂, 2 ♀ (MSNB, 002), 21.VIII.1991, Giachino; **Calabria:** Parco Naz. Del Pollino, Cosenza, 1 ♂ (was juvenile, raised in the lab, NMB, AB783), 31.V.2007, Bolzern, **Lazio:** street from Cave to Valmontone, 1 ♀ (SMF), 10.IV.2006, Schönhofer; Castelnuovo di Farfa, Gr. Scura, 1 ♀ (MSNB, 004), 26.I.2003, Sbordoni; **Marche:** Macerata, Fiuminata, Passo Cornello, 1 ♂, 2 ♀ (MSNB, 003), VI.1991 and VI.1992, Buttarelli, Ghilardi, Pantini & Valle; Ascoli Piceno, Montemonaco, Isola S. Biagio, 1 ♀ (MSNB, 001), 23.VI.2004, Rismondo & Fabbri; Macerata, Castelsantangelo sul Nera, Sopra Rapegna, 1 ♀ (MSNB, 003), VI.1991, Buttarelli, Ghilardi, Pantini & Valle; **Umbria:** Perugia, S. Giustino, Parnacciano, 1 ♂, 3 ♀ (MSNB, 003), VI.1992, Pantini & Valle; Perugia, Sigillo, Monte Cucco, 4 ♀ (MSNB, 003), 15.VI.1992, Buttarelli, Ghilardi, Pantini & Valle; Perugia, Nocera Umbra, Colle Aprico, Pendici Monte Pennino, 6 ♂, 1 ♀ (MSNB, 003), VI.1991, Buttarelli, Ghilardi, Pantini & Valle; Perugia, S. Giustino, Monte Moziccio, 3 ♀ (MSNB,

001), I.1992, Pantini & Valle; Perugia, Sigillo, Sopra il paese, 2 £ (MSNB, 003), VI.1991, Buttarelli, Ghilardi, Pantini & Valle.

Diagnosis

The differentiation of *E. arganoi*, *E. sardoa* and *E. sicana* (“*arganoi* – group”) from other *Eratigena* n. gen. species is provided in the diagnosis section of *E. herculea*. The “*arganoi* – group” can be separated from *E. herculea* and *E. hispanica* by having 2 prolateral spines at the palp tibia (in males and females, other species with 1 pair of spines), the small number of tarsal trichobothria (more than 6 in the other species) and the PMS bearing 2 cylindrical gland spigots laterally (others with 3–4). *E. arganoi* can be separated from *E. sardoa* and *E. sicana* by the very special, 3-pointed dorsal branch of the RTA (only one point in the other species), the very long and convoluted CD with attached diverticula (as in *E. sardoa*, much shorter and straight in *E. sicana*) and the oblong oval and irregularly sclerotised RC (globular and smoothly sclerotised in the other species).

Description

Measurements

Male (n=1): CL 2.16, CW 1.65, STL 1.23, STW 1.08, OL 2.31, OW 1.62. Leg I (2.85, 0.88, 2.64, 2.67, 1.42), II (2.32, 0.80, 1.90, 1.94, 1.16), III (2.15, 0.75, 1.65, 2.12, 1.12), IV (2.96, 0.82, 2.54, 3.04, 1.35). Pedipalp (1.12, 0.42, 0.49, 0.95), bulbL 0.69.

Female (n=1): CL 1.80, CW 1.30, STL 1.00, STW 0.89, OL 2.47, OW 1.63. Leg I (1.83, 0.70, 1.57, 1.51, 1.09), II (1.55, 0.61, 1.14, 1.24, 0.83), III (1.49, 0.57, 1.10, 1.39, 0.73), IV (2.02, 0.63, 1.73, 2.03, 1.03). Pedipalp (0.78, 0.33, 0.48, 0.77). EPL 0.41, EPW 0.54, ATL 0.13, ATW 0.22.

Eyes: PME 0.09–0.12, PLE 0.09–0.11, AME 0.06–0.08, ALE 0.10–0.12. Eye distances: PME-PME 0.5–1 x PME, PME-AME 0.5–1 x PME, PME-PLE 0.5–1 x PME, PME-ALE 0.5–1 x PME, AME-AME 0.5–1 x AME, AME-ALE <0.5–0.5 x AME. CLY1 2–2.5 x AME, CLY2 0.5–1 x ALE.

Male palp

RTA with 2 branches, lateral branch only slightly protruding, lobe like, dorsal branch strongly sclerotised and protruding, distally curved triangularly shaped with 3 points. Short dorsal spike on male palp tibia absent. Embolus length about 0.75–1.25 CB, originating at 10 o'clock, distal tip at 4 o'clock. Conductor with distal portion moderately elongated, as long as wide, not reaching distal margin of alveolus, lateral margin folded. Terminal end simple, long draw out and pointed. Transversal ridge at conductor weakly expressed as membranous lamella. Conductor membranously connected to tegulum. MA originating at 6–7 o'clock, protruding, longer than wide, distally with plate like sclerite forming a spoonlike structure, membranously connected with tegulum.

Epigyne and vulva

Epigyne with a distinct posterior sclerit, forming a strongly sclerotised, triangularly shaped and protruding pocket, opening posteriad. Epigynal teeth present, originating distally of the posterior sclerit, pointing posteriomediad. CO located anteriolaterally of the posterior sclerit. Vulva consists of distinguishable CD, RC and FD. CD long and convoluted with attached appendages. RC long oval, irregularly formed and sclerotised enclosing convoluted duct, separated by about the diameter. FD only represented by small leaf shaped appendages.

Other important characters

Cheliceral promargin with 3, retromargin with 8–9 teeth. Colulus rectangularly shaped with distal margin almost straight. Distal segment of PLS longer than basal segment. PMS with 1 prominent minor ampullate gland spigot and 2 cylindrical gland spigots laterally. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 6. Denticles at paired claw of leg I 12–13. Leg spination: male palp (2–0–0–0, 2–0–0, 1–2–0–0), female palp (1–0–

0-0 or 2-0-0-0, 2-0-0, 2-2-0-0), leg femora (2-1-0-0, 1-1-1-0 or 2-1-0-0 or 2-1-1-0, 2-1-1-0, 1-1-1-0), patellae (all 1-0-0), tibiae (2-0-0-1 or 2-0-0-2p, 2-0-0-2 or 2-1-0-2+1p, 2-2-1-1 or 2-2-2-1+1p+1, 2-2-2-2+1p+1 or 2-2-2-3), metatarsi (0-0-0-1+2p+1 or 0-0-0-1p+1+2p+1, 0-0-0-3p+1 or 0-1-0-3p+1, 0-3-2-3p+1 or 0-3-3-3p+1, 0-3-3-1p+1+2p+1 or 0-4-3-1p+1+2p+1), tarsi (I-IV 0).

Colouration

Carapace dorsally with two symmetric longitudinal dark bands, sometimes reduced. Sternum with a distinct pale median region. Opisthosoma brown-grey-green, dorsoanteriorly with two symmetric longitudinal pale bands continuing posteriad in chevrons and spots. Legs without a pattern. ALS indistinctly darkened, PLS both segments darkened.

Distribution

Endemic to mainland Italy.

Discussion

Drawings of the male palp are provided by Bolzern et al. (2008). Drawings of both sexes, also with comment on the variation, are given by Brignoli (1971a, 1977a).

***E. atrica* – complex**

Comprising 3 nominal taxa: *Eratigena atrica*, *E. saeva* and *E. duellica*. For the separation of the three species, see Merret (1980) and Oxford (2008).

***Eratigena atrica* (C. L. Koch, 1843)** new combination, type species of the *Eratigena* n. gen. Figs. 2 B, 9 a-b, 11 A-D, 12 A-B, G-H,

Tegenaria atrica C. L. Koch (1843): 105-107, fig. 825.

T. larva Simon (1875): 86-87, Planche V: fig. 8.

T. nervosa Simon (1870): 273-275, synonymised by Simon (1937), reactivated by Brignoli (1978a) but only based on drawings.

T. hibernica O. P.-Cambridge (1891): 86, fig. 4, male; Cambridge (1893): 150, fig. 6, female.

T. praegrans Fox (1937): 176-177, fig. 3.

T. deroueti Dresco (1957): 212-215, figs. 2, 13-14.

T. derouetae Denis (1959): 173.

Type material examined

No type material available for *Tegenaria atrica*, *T. larva*, *T. nervosa* and *T. deroueti* in the collection of the MNHN or NHML.

Other material examined

Austria: Salzburg: Salzburg, 1 ♀ (NMB, AB265), 21.IX.2005, Bergthaler; **Vienna:** Wien 23, Siebenhirten, 1 ♀ (NHMW), 24.XI.1988, Hamberger; **Kärnten:** Mallnitz, 2 ♀ (SMF, Roewer 9068); Döbriach, 1 ♂ (SMF), 28.VII.1993, Schomecher.

Belgium: Antwerpen: Antwerpen, many different locations, 15 ♀ (coll. van Keer), 28.IV. – 12.VIII.2007, van Keer, De Koninck; Oosthoven-Oud-Turnhout, Dode Dreef, 1 ♀ (coll. van Keer), 15.VIII.2007, De Koninck; Schoten, 1 ♂ (coll. van Keer), 7.IX.2007, Snebbout;

Brüssel: Uccle, 1 ♀ (NMB, AB198), 1.IX.2005, Boevé; **Liège:** Wallerode, Sankt-Vith, 1 ♀ (coll. van Keer), 1.XII.2007, De Koninck.

Czech Republic: Ustecky kraj: Rana close to Louny, 2 ♀ (NMB, AB802, AB844), 1.X.2006, Bolzern.

Germany: Baden-Württemberg: north of the Lake Constance, 3 \$, 2 £ (NMB, AB524, AB514), X.2005, Huber; Kaiserstuhl, Vogtsburg, Badberg, 2 £ (NMB, AB516, AB531), 9.X.2005, Bolzern; Werbach / Tauber, 1 £ (SMF, 5787-135), X.1948, Felten; Neuenbürg bei Pforzheim, 2 \$, 1 £ (SMF, 33976-135), Wunderlich; **Bayern:** Mittelfranken, Nürnberg, ehemaliger Rangierbahnhof, 2 \$ (coll. Bauchhenss, 327), 2003, Pankratius; Schweinfurt, 1 £ (coll. Bauchhenss, 320, 328), VII.1990, IX.1991, Bauchhenss; Ostallgäu, Ettringen, NE Bad Wörishofen, Ettringen, 1 £ (SMF), 20.IX.2005, Jäger; **Bremen:** Bremen, 1 \$, 1 £ (SMF, 1278-135); **Hessen:** Darmstadt, Lorchhausen, „Naturschutzgebiet Engweger Kopf“, 1 \$, 4 £ (NMB, AB547), 24.IX.2006, Bolzern, Hänggi & Huber; Darmstadt, Frankfurt am Main, 1 \$ (NMB, AB253), 12.VIII.2005, Altmann; Darmstadt, Hanau, 2 \$ (NMB, AB269), VIII.2005, Reimke; Hemsberg, 2 £ (SMF, 39419-135), 4.V.1985, Küntzel; Darmstadt, Wächtersbach, 2 \$, 1 £ (SMF, 6320-135, 10141/2-135), 29.V.1949, 1950, Schuckert, Zilch; Darmstadt, Offenbach a. M., 1 \$, 1 £ (SMF, 5690-135), VIII.1948, Schnellbäcker; Main-Kinzig-Krs., Gelnhausen, 2 £, (NMB, AB932), 19.VI.2006, Senchenberg-Schule; Darmstadt, Schwanheim a. M., 1 £ (SMF, 5915-135), 1.X.1948, Hesse; Hanau, 1 £ (SMF), 20.IV.2006, Meuzner; Mainz, Orais, 1 £ (SMF), 12.XI.1995, Jäger; Wiesbaden, 1 £ (AMNH), 21.X.1974, Hutchens; **Mecklenburg-Vorpommern:** Vorpommern, Greifswald, 1 £ (NMB, AB263), 7.IX.2005, Michalik; Greifswald, Kirchdorf, 1 \$, 1 £ (NMB, AB262, AB264), 25.8.2005, 6.IX.2005, Michalik; Neustrelitz, Mirow, 1 \$ (SMF, AB809), 18.VII.2007, Bolzern; **Niedersachsen:** Wilhelmhaven, 1 \$ (SMF, 5835-135), VIII.1948, Zur Strassen; **Nordrhein-Westfalen:** Aachen, Aachen-Walheim, 1 \$, 1 £ (NMB, AB612), 1.X.2005, Kirchner; Hagen, Hohenlimburg, 1 £ (SMF, 2764-134); Rösrath, 1 £ (SMF), 30.IV.1993, Jäger; **Rheinland-Pfalz:** Mainz, Mainz-Mombach, 1 £ (NMB), 22.VIII.2005, Schönhofer; Rheinböllen, Guldenbachtal, 1 \$ (NMB, AB995), 8.IX.2005, Schönhofer; Mainz-Bretzenheim, 1 \$, 1 £ (SMF, 15133-135, 15153-135), VI.1952, X.1956, Braun; Mainz, Draistberghof, 1 £ (SMF, 40024-135), VIII.2001, Jäger; St. Goar, Burg Rheinfels, 1 £ (NHMB), 24.I.1998, Rohner; **Saarland:** Saarbrücken, 2 £ (MNHN, 1959), 1.II.1952, 2.IV.1952; **Schleswig-Holstein:** Helgoland, 1 \$ (SMF, 10961/1), VIII.1960, Schmidt; **Thüringen:** Rottleben, „Barbarossahöhle“, 1 \$ (SMF), 10.IX.1992, Jäger.

France: Drôme: “Gr. de la Luire”, 1 £ (MNHN, Zootheque), 2.IV.1911; **Haut-Savoie:** Annecy, 1 £ (MHNG), 21.III.1967, Deharveng; Orédon, 1 \$ (NMHN, 1959), 23.VII.1954, Denis; Monétier, 1 £ (MCSN, 543), 24.IV.1954, Comellini; **Pyrenees-Orientales:** Taulis, 1 £ (NMB, AB552), 10.IX.2006, Huber; La Massane, 1 £ (MNHN, 1959), Dresco; Banyuls, 1 \$ (MNHN, 1959); **Rhône-Alpes:** Isère, Le-Sappey-en-Chartreuse, 1 £ (NMB, AB986), 31.VIII.2008, Schönhofer.

Italy: Lazio: Frosinone, Pastena, 1 \$ (NMB, AB566), 21.VII.2006, Bolzern; **Lebanon:** 1 £ (SMF).

Luxemburg: Bouillon, 1 £ (SMF), 6.IV.1992, Jäger.

Poland: Kartuski: Kartuzy, 1 £ (SMF, 35900-135), 21.V.1980, Starega; Otrebusy, close to Pruszków, 1 \$ (SMF, 35898-135), 21.VII.1983, Jablonski.

Spain: Guadarrama, La Granja, 1 £ (MNHN, 1964), VI.1908, Simon; **Catalonia:** Barcelona, San Pere de Ribes, „La Cova Negra“, 1 £ (NMB, AB570), 10.IX.2006, Bolzern; Barcelona, Monte Tibidebo, 1 \$ (SMF, 8942/1-135), 12.IX.1953, Zool. Inst. Univ. Ffm; Tarragona, Tortosa, 1 £ (MNHN, 1958); Barcelona, Sierra de Montieni, 1 \$ (SMF), IX, Malicky.

Sweden: Uppsala län: Uppsala, 1 £ (NMB), 2.XII.2006, Öberg.

Switzerland: Aargau: Schinznach-Dorf, 1 \$ (NMB, AB267), 15.VIII.2005, Stäubli; **Basel-Land:** Münchenstein, several locations, 5 \$, 1 £ (NMB, AB508, AB509, AB520, AB309), 14.IV. –19.IX.2005, Ramseyer, Bolzern; Reinach, 1 £ (NMB, AB521), 15.IV.2005, Bolzern; Laufental, many different locations, 5 £, 5 \$ (NMB, AB82, AB526, AB523, AB515, AB510, AB517–519, AB528), 27.II. –21.X.2005, Bolzern; Biel-Benken, Fichtlirain 28, 1 \$ (NMB, AB527), 2.IX.2005, Dettwiler; Oberwil, 1 £ (NMB), 16.IX.2005, Schönhofer; Birsfelden, 1 £

(NMB, AB799), 29.IV.2007; **Basel:** Basel, several locations, 1\$, 2 £ (NMB, 705f, AB190, AB530), 4.V.2005, Mühlethaler, Schönhofer, NLU Basel; **Geneva:** Genève, 2 \$, 1 £ (MNHN, 1959); 1 \$, (MCSN, 543), Comellini; **Grisons:** Engadin, Samedan, 2 \$ (NMB, AB513), 2.IX.2005, Mühlethaler; **Lucerne:** Roggliswil, Netzelten, 1 \$ (NMB, AB946), 30.IX.2007, Geiser; **Solothurn:** Dornach, 1 £ (NMB, AB522), 31.IV.2005, Bolzern; Nunningen, 3 £ (NMB, AB81, AB511, AB529), 22.XI.2004 and 19–26.IV.2005, Hänggi; Trimbach, 1 \$ (NMB, AB220), 22.IX.2005, Stäubli; **Valais:** Saillon, 1 £ (NMB, 705 e); Zermatt, “Randa bei Zermatt”, 1 \$ (SMF), 16.IX.2005, Altmann.

Diagnosis

E. atrica, *E. saeva* and *E. duellica* can be separated from all other *Eratigena* **n. gen.** species having leg coxa and proximal parts of femora darkened (spotted, as in *E. agrestis*, all other *Eratigena* **n. gen.** species with different patterns), short dorsal spike at male palp tibia present (as in *E. agrestis*, *E. fuesslini*, *E. barrientosi*, *E. montigena*, *E. picta* and *E. balearica*, all other species absent), very massive conductor, laterally folded only at the terminal half with the very distinct shape of the conductor in retrolateral view (Figs. 11 A, E, G), MA expressed as a broad pocket, strongly attached to the tegulum, originating at 7–9 o'clock (as in *E. agrestis* and *E. fuesslini*, in all other species more basal, 5–7 o'clock), basal portion of tegulum almost completely hidden by upper part (embolic division) of tegulum (as in *E. agrestis*, *E. fuesslini*, and to some extent also in *E. sardoa*, in all other species of *Eratigena* **n. gen.** good visible), strongly expressed epigynal “pseudo teeth” (Figs. 12 A, C, E, white arrows), which are missing in all other *Eratigena* **n. gen.** species.

Description

Measurements

Male (n=1): CL 6.78, CW 5.12, STL 3.23, STW 3.05. Leg I (11.12, 2.85, 11.40, 11.31, 4.43), II (8.69, 2.69, 7.93, 9.38, 3.43), III (7.52, 2.30, 6.32, 8.94, 3.36), IV (9.32, 2.49, 8.60, 12.56, 4.21). Pedipalp (3.24, 1.26, 1.42, 2.81), bulbL 1.30.

Female (n=1): CL 5.84, CW 4.10, STL 2.82, STW 2.49, OL 6.27, OW 4.13. Leg I (6.94, 2.28, 6.61, 3.21), II (6.12, 2.03, 5.08, 5.83, 2.85), III (5.60, 1.94, 4.37, 6.05, 2.55), IV (7.10, 1.99, 6.43, 8.67, 2.96). Pedipalp (2.78, 1.10, 1.80, 2.68). EPL 1.19, EPW 1.41, ATL 0.95, ATW 0.60.

Eyes: PME 0.22–0.24, PLE 0.23–0.25, AME 0.25–0.27, ALE 0.26–0.27. Eye distances: PME-PME 1 x PME, PME-AME 0.5 x PME, PME-PLE 1–1.5 x PME, PME-ALE 1–1.5 x PME, AME-AME 0.5 x AME, AME-ALE <0.5 x AME. CLY1 2–2.5 x AME, CLY2 1.5–2 x ALE.

Male palp

RTA with 2 branches, lateral branch simple and pointed, dorsal branch a big knoll with a strongly sclerotised and pointed apophysis. Short dorsal spike on palp tibia present. Embolus base at 10–12 o'clock. Length of embolus 1–1.25 CB, distal tip at 4 o'clock. Conductor massive, distal portion not elongated, folded only at the terminal half. Terminal end consists of 1 strongly sclerotised and elongated point, pointing ventrad. Transversal ridge at the conductor developed as membranous lamella. Connection of conductor to tegulum is membranous. MA wider than long, originating at 7–9 o'clock, moderately protruding with distal sclerit plate like forming a pocket. MA connection to tegulum at least partly sclerotised.

Epigyne and vulva

Epigyne medially with a strongly sclerotised, long rectangular plate, anteriorly of which the symmetric CO are located. Posterior sclerit absent. Epigynal teeth absent, but “pseudo teeth” present. Vulva consists of distinguishable CD, RC and FD. CD short and straight without long appendages. RC irregularly oblong and not constantly sclerotised, enclosing convoluted ducts,

separated by more than 2 times their diameter. FD only represented by small leaf shaped appendages.

Other important characters

Cheliceral promargin with 3, retromargin with 7–9 teeth. Colulus rectangularly shaped with distal margin “w” shaped. PMS with 1 prominent minor ampullate gland spigot and 3–4 cylindrical gland spigots laterally. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 7–10. Denticles at paired claw of leg I 13–14. Leg spination: male palp (2–0–0–0 or 2–1–0–0 or 2–1–1–0, 2–0–0, 1–2p–0–0), female palp (2–0–0–0 or 2–0–1–0 or 2–1–0–0, 2–0–0, 2–2p–0–0), leg femora (2–3–3–0 or 2–3–4–0 or 3–3–2–0 or 3–3–3–0 or 3–3–4–0 or 3–4–4–0, 2–3–2–0 or 2–3–3–0 or 3–3–3–0, 2–2–2–0 or 2–3–2–0, or 2–3–3–0 or 2–3–4–0 or 2–4–2–0, 2–2–1–0 or 2–3–1–0 or 2–3–2–0), patellae (all 2–0–0), tibiae (0–0–0–1p+1+1p or 0–0–0–2p or 0–1–0–1p+1, 0–1–0–2p or 0–2–0–2p or 2–2–0–2p, 2–1–1–1p+2+1p or 2–2–2–1p+1+1p or 2–2–2–2p or 2–2–3–2p, 2–2–2–1p+1+1p+1 or 2–2–2–2p or 2–2–2–3p), metatarsi (0–0–0–1p+2+1p+1 or 0–0–0–4p+1, 0–2–0–4p+1 or 0–3–0–3p+1+2p or 0–3–0–5p, 1+1p–4–3–5p or 2–4–4–5p, 3–4–4–1p+1+1p+2+2p or 3–4–4–5p+1), tarsi (0, 0 or 0–1–0–0 or 0–1–1–0 or 0–1–3–0 or 0–2–2–0, 0–1–3–0 or 0–2–3–0, 0–2–3–0 or 0–2–4–0).

Colouration

Two symmetric longitudinal dark bands dorsally on carapace, sometimes serrated or reduced to triangular dots. Sternum with distinct pattern of pale median band and 3 symmetric pairs of pale dots laterally. Opisthosoma darkened with 1 pale band anteriorly in the middle, laterally with pale dots, continuing to the back in chevrons. Legs not annulated, darkened, sometimes only coxa and proximal part of femora dark spotted. ALS slightly darkened, PLS with both segments dorsally darkened, distal segment moderately paler.

Distribution

Eratigena atrica is known from most West-, Central-, and North European countries. Since this species also lives in man built habitats, it has been introduced to North America (first mentioned sub *Tegenaria praegrans* Fox, 1937). Additionally, there was a specimen from Lebanon in the collection of the SMF, unfortunately with insufficient information written on the related label.

Discussion

As in some other species of the *Tegenaria* and *Eratigena* **n. gen.** *E. atrica* is highly variable in some morphological characters, e.g. the size of different body parts (e.g. E. Simon, 1937: 1003) or the patterns of leg spination. This variation is reflected and discussed in many publication (Barrientos & Ribera, 1988; Blackwall, 1861; Brignoli, 1978a; Crawford & Locket, 1976; Croucher et al., 2007; Croucher, Oxford, & Searle, 2004; Denis, 1959; Denis, 1959; Locket & Millidge, 1951, 1953; Locket, Millidge, & Merrett, 1974; Merrett, 1980; Roth, 1968; Simon, 1937). While some authors consider this variation of intraspecific nature, others use it to recognise three species (*E. atrica*, *E. saeva*, *E. duellica*). Proponents of the former idea are Barrientos & Ribera (Barrientos & Ribera, 1988). Their view is supported as follows:

1. as shown by Croucher (2004), Bolzern et al. (Bolzern et al., accepted) and the present paper, the three species are not recovered with CO1 and NADH1 gene sequences (the genetic distances are very small).
2. as suggested by Barrientos & Ribera (Barrientos & Ribera, 1988), seemingly major morphological differences arise when structures are not observed in the same perspectives. This is particularly relevant if published drawings are compared, as in the case of *T. nervosa* which was synonymised with *T. atrica* by Simon (1937) and later again recognised as valid species by Brignoli (1978) based only on the drawing of Simon (1875).

Member of the British research group around Geoff Oxford (Anderson, Bai, Thomas, & Oxford, 2009; Croucher et al., 2007; Oxford & Plowman, 1991; Oxford & Smith, 1987) suggested that in Great Britain the three species are mostly allopatric with narrow hybrid zones. The major problem with this concept is that it is not applicable to the Continent where transitional morphotypes exist. For solving this problem additional research is necessary.

***Eratigena saeva* (Blackwall, 1844) new combination**

Figs. 11 E–F, 12 C–D, I

Tegenaria saeva Blackwall (1844): 179–182.

T. atrica Blackwall (1861): 165, pl. 11, fig. 106 (misidentification).

T. atrica Simon (1875): 81, pl. 5, fig. 5 (misidentification).

T. saeva Roth (1968): 29, figs. 36–39 (synonymised with *T. gigantea*, rejected by Brignoli (1978a: 273)).

T. saeva Locket (1975): 85–90, figs. 1, 4, 6–11, 13–16.

Type material examined

No type material available from *Tegenaria saeva* in the collection of the MNHN or NHML.

Other material examined

France: Gallia”, 1 \$ (MNHN, 1958; specimen is labelled as “neotype” by de Blauwe; this was never published and is therefore invalide); **Basse-Normandie:** Manche, Carr. du Moulin de Montbray, 1 \$ (MNHN, 1959), 1.X.1944, Dresco; Calvados, Ouistreham, 1 £ (SMF), 24.IX.1992, Jäger; Calvados, Luc-sur-Mer, 2 \$ (SMF), 19.IX.1997, Jäger; Calvados, Courseulles, 1 £ (SMF), 21.IX.1992, Jäger; **Bretagne:** Finistère, Roscoff, 2 £ (MNHN), 3.II.1974; Morbihan, Lorient, Guidel, monastery St.-Maurice, 1 £ (NMB, AB289), 23.IX.2006, Schönhofer; Morbihan, Lorient, Aniberon, 1 \$, 1 £ (NMB, AB286), 19.IX.2005, Schönhofer; **Hautes-Pyrénées:** Val de la Glère, 1 £ (MNHN, 1978), 15.VII.1954, Denis; Gavarnie, 1 £ (MNHN, 1978), 28.VII.1954, Denis; **Hauts-de-Seine:** Paris, Antony, 1 \$, 1 £ (MNHN, 1958, 1959), X.1957, 18.VII.1958; **Esonne:** Puiset, 1 \$ (MNHN, 1959), 21.X.1967, Dresco.

Great Britain: England: Dorset: Monkton, 2 \$ (coll. Blick), 4.IX.2004, Blick; **Cornwall:** Porthpean (\$) and Pentewan (£), 1 \$ 1 £ (MNHN; 1958), Buttler; Porthpean, 2 \$, 1 £ (SMF, 29041-135), Butler; **Greater London:** London, 1 \$, 1 £ (MCSN, 539), Jackson; **Wales: Cardiff:** Cardiff, 1 \$ (NMB, AB915), 2007, Mühlethaler.

Portugal: Lisbon: Sintres, 4 £ (NMB, AB588), 23.X.2006, Huber; **Faro:** Canavial, 1 £ (NMB, AB281), 14.X.2003, Cardoso.

Spain: Est-Pyrenees, 1 \$ (SMF, Roewer 8817); **Basque region:** Sierra de Penagobia, c/o Cueva de Pinedo, 2 £ (NMB, AB, 668, AB670), 30.IV.2007, Huber; **Castilla y León:** Burgos, Hontanas, 1 \$ (MSNB), 8.VIII.2004, Ferrario; **Galicia:** Le Ferrol, 1 £ (MNHN, 1975), Seoane; **Andalucia:** Almeria, 1 \$ (SMF, coll. Wiehle), V.1930.

Diagnosis & Description

See comments at *E. atrica*.

Measurements

Male (n=1): CL 4.87, CW 3.65, STL 2.35, STW 2.12. Leg I (7.66, 1.91, 7.40, 7.79, 3.52), II (6.17, 1.76, 5.42, 6.29, 2.79), III (5.42, 1.62, 4.47, 6.23, 2.48), IV (6.95, 1.69, 6.33, 8.58, 3.19). Pedipalp (2.50, 0.92, 1.10, 2.22), bulbL 1.26.

Distribution

Western Europe (including Great Britain) and North America.

***Eratigena duellica* (Simon, 1875) new combination**

Figs. 11 G–H, 12 E–F

Tegenaria duellica Simon (1875): 83–85, pl. V, fig. 6.

Tegenaria gigantea Chamberlin & Ivie (1935): 31, pl. XIII, fig. 106; synonymised by Brignoli (1978a): 271, 273.

Tegenaria saeva Simon (E. Simon, 1937): 1003, 1039, figs. 1545–1546 (misidentification).

Tegenaria atrica Locket & Millidge (1953): 10, figs. 6A, 7A, 9A, 11B (misidentification).

Tegenaria saeva Locket, Millidge & Merrett (1974): 42, figs. 23A, E.

Tegenaria propinqua Locket (1975): 85–90, figs. 2–3, 5, 17–19; synonymised with *T. gigantea* by Crawford & Locket (1976).

Tegenaria gigantea Merret (1980); Oxford & Smith (1987); Oxford & Plowman (1991); Heimer & Nentwig (1991); Croucher et al. (2004); Croucher et al. (2007); Oxford (2008).

Type material examined

No type material of *Tegenaria duellica* traceable in the collection of the MNHN.

Sub *Tegenaria gigantea*: paratypes. Canada: British Columbia: Vancouver Island, Sidney, 2 \$, 2 £ (AMNH), 16.IX.1935, Chamberlin & Ivie; 4 \$, 4 £ (AMNH), same data as previous; Vancouver Island, South Saanich, 1 \$ (AMNH), 1922.

Other material examined

France: Gard: Mt. Aigoual, 1 £ (MNHN, 1959), 1912, Velmanya.

Great Britain: England: Southern England, Cambridgeshire, 1 \$, 1 £ (sub *Tegenaria propinqua*, MNHN, 1958), Buttler; London, 1 \$ (coll. Blick), IX.1998, Blick; Flatford Mill., 1 \$, 1 £ (SMF, 29040/2-135), 1974, Locket; London, Harvard, 1 \$, 1 £ (NMB), 1935; **Scotland:** Greta Green, 1 \$ (NHMB), 31.VII.2000, Groba.

Spain: Castilla y León: Zamora, Sandin de Carballeda, 3 £ (MHNG, MCSN, 543), VII.1972, Haymoz.

Portugal: Albergaria, 1 £ (ZMUC), 4.VI.2005, Cardoso; Vale da Rasca, 1 £ (ZMUC), 1.VI.2004, Cardoso; Paul de Boquilobo Nature Reserve, 1 £ (NMB, AB280), 22.X.2002, Cardoso.

North America

United States: Montana: Lewis and Clark Pass, 1 £ (NMB, AB888), 2007, Gaver.

Diagnosis & Description

See comments at *E. atrica*.

Distribution

Same distribution pattern as *E. saeva*.

Discussion

As mentioned by Locket (1975) and Brignoli (1978a), no type material is available for *T. duellica*. Here the argumentation of Brignoli (1978a) is followed. The examined type material of *E. gigantea* and the examined specimens sub *E. duellica* are not separable. Therefore, *T. gigantea* Chamberlin & Ivie has to be recognised as a junior synonym of *E. duellica* Simon (sub *Tegenaria*).

***Eratigena balearica* (Brignoli, 1978) new combination**

Figs. 17 C–D, G–H

Malthonica balearica Brignoli (1978a): 278–279, fig. 8, female.

Malthonica balearica Barrientos & Febrer (1986): 123–128, figs. 1–3.

Type material examined

Holotype and paratypes. Spain: Balearic Islands: Majorca, Porto Cristo, „près de Cueva del Drach“, ♀ (MHNG), 1.IV.1968, Hauser; Majorca, „sur route de Palma-Valldemosa“, ♀ (MHNG), 4.IV.1968, Hauser.

Other material examined

Spain: Balearic Islands: Majorca, on the mountain l'Ofre, 3 ♀, 1 ♂ (NMB, AB823), V.2007, Wunderlich; Majorca, W of Soiler, 2 ♀ (NMB, AB977), VI.2008, Wunderlich.

Diagnosis

See diagnosis section at *E. picta*.

Description

Measurements

Measurements of males are provided by Barrientos & Febrer (1986).

Female (n=1): CL 2.1, CW 1.4, STL 1.2, STW 1.0. Leg I (2.1, 0.7, 2.0, 1.7, 1.2), II (1.75, 0.7, 1.5, 1.4, 1.0), III (1.7, 0.6, -, -, -), IV (2.2, 0.8, 2.1, 2.0, 1.1). Pedipalp (0.85, 0.3, 0.55, 0.8).

Eyes: PME 0.095, PLE 0.124, AME 0.105, ALE 0.114. Eye distances: PME-PME 1–1.5 x PME, PME-AME 1–1.5 x PME, PME-PL 1 x PME, PME-ALE 1.5 x PME, AME-AME 0.5–1 x AME, AME-ALE <0.5–0.5 x AME. CLY1 1.5–2 x AME, CLY2 0.5–1 x ALE.

Male palp

RTA with 2 branches, lateral branch very broad, flattened and distally truncated, dorsal branch broad, dorsodistally elongated and bent posteriad. Short dorsal spike on male palp tibia present. Embolus base at 8 o'clock. Length of embolus 1.5–1.75 CB, distal tip at 2–4 o'clock. Conductor oblong oval, distal portion moderately elongated, as long as wide, lateral margin almost completely folded. Terminal end complex, strongly sclerotised and with 2 spirally twisted point. Transversal ridge at conductor developed as membranous lamella. Conductor membranously connected to tegulum. MA originating at 5 o'clock, wider than long with distal plate like sclerite forming a pocket. MA connection to tegulum at least partly strongly sclerotised.

Epigyne and vulva

Epigyne medially with a distinct oval atrial cavity, posteriorly limited by a narrow margin. Epigynal teeth absent. Anteriorly, the CD are visible through the epigynal plate. Vulva consists of distinguishable CD, RC and FD. CD is a convoluted duct, ending in the not constantly sclerotised thickened tube like RC, separated by about 1.5 x their diameter. FD only represented by small leaf shaped appendages.

Other important characters

Cheliceral retromargin with 8–9 teeth. Colulus rectangularly shaped with distal margin “w” shaped. Distal segment of PLS longer than basal segment. PMS with 1 prominent minor ampullate gland spigot and 2 cylindrical gland spigots on both lateral sides. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 5–6. Denticles at paired claw of leg I 16. Leg spination: female palp (2–0–0, 2–0–0, 2–2–0, several), male palp (2–0–0, 2–0–0, 1–2–0, several), leg femora (2–2–0–0, 2–1–0–0 or 2–1–1–0 or 2–2–1–0, 2–1–1–0, 1–1–1–0 or 2–1–1–0), patellae (all 2–0–0), tibiae (0–0–0–2+1p or 0–0–0–2p or 0–0–0–

4, 0-1-0-1+1p or 2-1-0-1+1p, 2-2-1-1+1p or 2-2-2-1+1p or 2-2-2-1+1p+1, 2-2-2-2+1p+1 or 2-2-2-3), metatarsi (0-0-0-3p+1, 0-2-0-3p+1 or 0-3-0-3p+1, 1-3-3-4p+1 or 1-4-3-1p+1+2p+1, 1-4-4-1p+1+2p+1 or 1-4-4-3p+1), tarsi (I and II 0, 0-1-2-0, 0-1-1-0 or 0-1-2-0).

Coloration

Carapace with two symmetric longitudinal dark bands. Sternum with distinct pale median region. Opisthosoma brownish to dark brownish, anteriorly with 3 bands, yellowish, posteriorly continuing in chevrons. Legs weakly but continuously darkened. ALS and both segments of PLS darkened.

Distribution

Endemic to the Balearic Islands.

Discussion

Barrientos & Febrer (1986) suggested that this species is closely related to *E. picta*. The generic assignment of this species was controversial until the restricted definition of *Malthonica* by Barrientos & Cardoso (2007). Their hypothesis, that *E. balearica* does not belong to *Malthonica* and that it is closely related to *E. picta* is fully supported here.

***Eratigena barrientosi* (Bolzern, Crespo & Cardoso, 2009) new combination**

Tegenaria barrientosi Bolzern et al. (2009): 48–52, figs. 1–5, 11–14.

Material examined

All type material and other known specimens had been examined and listed in Bolzern et al. (2009, sub *Tegenaria*).

Diagnosis

E. barrientosi can be separated from other *Eratigena* **n. gen.** species by the presence of dorsal trichobothria on the female and male palp tarsus/cymbium (shared character with *E. feminea*, *E. bucculenta* sensu Machado and *E. incognita*; in all other *Eratigena* **n. gen.** species absent), and the male tibia I shorter or equal the length of carapace (as in *E. feminea*, *E. incognita* and *E. fuesslini*, all other *Eratigena* **n. gen.** species tibia I longer), presence of more than 2 dorsal spines at all metatarsi (as in *E. incognita*, all other *Eratigena* **n. gen.** species without dorsal spines on tibia I and II) and having only 2 cylindrical gland spigots laterally on PMS (as in *E. picta*, *E. balearica*, *E. arganoi*, *E. sardoa* and *E. sicana*, all other species with 3–4 such spigots).

Description and diagnosis (separation of *E. barrientosi* and *E. incognita*) and other information are provided by Bolzern et al. (2009, sub *Tegenaria*).

Distribution

Portugal, only known from two localities in Portugal.

***Eratigena bucculenta* (L. Koch, 1868) new combination**

Figs. 14 C–D, K–M, 15 c–d, i–j

Coelotes bucculentus L. Koch (1868): 36–38, fig. 17, female.

Tegenaria bucculenta Simon (1875): 106–107, male and female.

Tegenaria bucculenta Machado (1941): 36–42, figs. 22–29.

Tegenaria bucculenta Brignoli (1978a): 275–276, fig. 2.

Tegenaria bucculenta Barrientos (1991): 228–231, figs. 2–3, male, contradicting to the male of Machado (1941).

Type material examined

According to Simon (1875: 107) one of the females in his sample 467 represents Koch's type specimen (=syntype) collected in El Escorial (L. Koch, 1868: 38, "Escorial"). Spain: Sierra Nevada, Guadarrama, 2 ♀ (long CD) (MNHN, 1974, 467). The male of sample 467 mentioned by mentioned by Simon (1875: 107) and Machado (1941) could not be found in this tube. According to Machado (1941) this male with the location "Sierra Nevada" represents the "type" of *T. patula* Simon (1870) (cf. *E. feminea*).

Comment

E. bucculenta is morphologically very variable and can be grouped here into three morphotypes:

Morph A

Figs. 14 I–J

Only female. Corresponds to the syntype with long CD.

Material examined

Spain: Madrid: Sierra Guadarrama, Puerto de Paular, 1 ♀ (long CD) (same tube as male of *E. bucculenta* sensu Barrientos, MCSN, 542, 9.V.1967, Osella). They are stored in the collection of Brignoli (\$) and the MCSN (£). Today, these collections are housed together in the same institution (MCSN). Brignoli (1978a: 275) only cites the male, but provides drawings of the female.

Morph B

Figs. 14 C–D, K–L, 15 c–d, i–j

Males and females (vulva with short CD) as presented by Machado (1941).

Material examined

Portugal: Bragança: Freixo de Espada à Cinta, Palão, 5 \$ (sub *Tegenaria feminea*, ZMUC, 00012609), 18.IV.2001, Cardoso; **Guarda:** Fozcôa, 1 \$, 1 ♀ (short CD) (MNHN, 1970), III.1940; **Braga:** PNPG, Albergaria, 1 \$, 1 ♀ (short CD) (sub *Tegenaria feminea*, ZMUC, 00012599), 15.VI.2005, Cardoso.

Spain: Castilla y León: Zamora, Sandin de Carballeda, 1 ♀ (short CD) (MHNG), VII.1975, Haymoz.

Morph C

Figs. 14 E–F, N–O, 15 e–f

Males as presented by Barrientos (1991).

Material examined

Spain: Castilly y León: Salamanca, Puerto de Vallejera, 2 \$, 1 ♀ (NMB, AB1017), 13.VII.1984, Jerardino; Salamanca, Castañar de Béjar, 2 \$, 1 ♀ (NMB, AB1016), 26.VI.1984, Jerardino; **Madrid:** Sierra Guadarrama, Puerto de Paular, 1 \$ (same tube as female of *E. bucculenta* with long CD, MCSN, 542, 9.V.1967, Osella; Los Molinos, 1 \$ (AMNH), 1961, Haller.

Discussion

Morphotype A is represented by the syntype of *E. bucculenta* (MNHN, 1974, 467) with long convoluted CD (Fig. 14 J). The female specimen described by Brignoli (1978a: fig. 2) is morphologically similar, his male, however, corresponds to the male described by Barrientos (morphotype C, Figs. 14 E–F). Morphotype B corresponds to the male and female (vulva with short CD) described by Machado (1941: 38, fig. 26). No other morphological character could be found, separating morphotypes A and B. Morphotype C comprises the male described by Barrientos (1991) and the female which differs from the other two morphotypes (Figs. 14 N–O) by following characters: distinctly pronounced atrium (much shallower in morph A and B), much stronger pronounced and elongated epigynal teeth, differently shaped vulva (RC relatively smaller in respect to the CD) and the absence of dorsal trichobothria on the palpal tarsus/cymbium (trichobothria are present in morphotypes A and B and also in *E. feminea*). Morphotypes A and C are restricted to the “Sistema Central”, a system of mountain ranges on the Iberian Peninsula, whereas morphotype B occurs in an area north-west of the “Sistema Central” without geographical overlap with morphotypes A and C.

The syntype of *T. bucculenta* corresponds to morphotype A which has to bear this name. Morphotype C differs significantly from *T. bucculenta* s.str. and represents a new species (*T. bucculenta* sensu Barrientos (1991)). Morphotype B could be a variation of morphotype A. If this would be the case *T. bucculenta* sensu Machado (1941) (female with short CD) should be called *T. bucculenta*. The available material is insufficient for solving this problem.

Diagnosis for *E. bucculenta* sensu Machado

See diagnosis section at *E. feminea*.

Description

Detailed description with measurements is provided by Machado (1941) for *E. bucculenta* sensu Machado (sub *Tegenaria*) and by Barrientos (1991) for *E. bucculenta* sensu Barrientos (only for the male).

***Eratigena feminea* (Simon, 1870) new combination**

Figs. 14 A–B, G–H, 15 a–b, g–h

Tegenaria feminea Simon (1870): 283–284, male.

Tegenaria cisticola Simon (1870): 286–288, male.

Tegenaria patula Simon (1870): 285–286, male.

Tegenaria maderiana Thorell (1875a): 76–77, **new synonym**.

Tegenaria carpetana Brignoli (1978a): 276–277, fig. 4, female.

Tegenaria feminea Barrientos (1980): 15–20, figs. 1–2.

Type material examined

Probably syntypes. Spain: Malaga, Sevilla, Cepeda, 4 \$, 1 £ (MNHN, 1974, 468), Simon.

Sub *Tegenaria cisticola*, probably syntypes. Spain: Sierra Morena, 1 \$, 3 £ (MNHN, 1974, 477), Simon.

Sub *Tegenaria carpetana*, holotype. Spain: Madrid: Galapagar, 1 £ (MCSN, 100), 10.V.1967, Osella.

Sub *Tegenaria maderiana*, holo- and paratype. Portugal: Madeira, „Insula Madera“, 3 £ (SMNH, Burk 226), Heer.

Other material examined

Portugal: Beja: Serra da Adica, 1 \$ (NMB, AB274), 29.I.2004, Cardoso; PNVG, Pomarão, 2 £ (ZMUC, 00012607), 23.V.2006, Cardoso; Barrancos, 3 \$, 2 £ (ZMUC, 00012606), 12.III.2005, Cardoso; **Bragança:** Miranda do Douro, Vila Chã da Braciosa, 2 \$ (ZMUC, 00012610), 8.III.2001, Cardoso; **Faro:** Algarve, Alte, 1 \$ (NMB, AB587), 22.X.2006, Huber; **Lisbon:** Boticas, 2 \$, 3 £ (one male form *feminea*, one male form *bucculenta* sensu Machado, ZMUC, 00012608), 12.III.2005, Cardoso; **Madeira:** Madeira, 1 £ (sub *Tegenaria domestica*, det. Simon, MNHN, 1973, 18713), Fauvel; **Setubal:** PNA, Vale da Rasca, 1 £ (ZMUC, 00012598), 1.VI.2004, Cardoso.

Spain: 2 £ (SMF, coll. Franz, Slg. Wiehle, Sp. 1001, 1009); “Spanien 14”, 1 \$ (SMF, 21937/1-135), Franz; **Andalusia:** Tarifa, 1 \$, 8 £ (MNHN, 1974, 24833); **Castilla-La Mancha:** Pozuelo de Calatrava, 1 £ (MNHN, 1974, 24522); de la Fuente; Toledo, 2 \$, 1 £ (NMB, AB673–674, AB680), 20.IV.2006, ALARM; **Extremadura:** Caceres, Torrejon el Rubio, Canada Real de la Plata, 1 \$ (SMF, 40946-135), 8.XI.1996, Stengele; **Madrid:** Torrejon de Ardoz, 1 £ (AMNH), 1961, Haller.

Africa

Algeria: Tlemcen: Tlemcen 3 £ (MNHN, 1974), Simon.

Asia

Syria (?): 1 \$ (MNHN, 1974, 469), de la Brûlerie.

Diagnosis

E. feminea can be separated from all other *Eratigena* **n. gen.** species by the reduced RTA and the presence of a two pointed patellar apophysis at the male palp (as in *E. bucculenta* sensu Machado, 1941; all other *Eratigena* **n. gen.** species with RTA and without patellar apophysis), the presence of dorsal trichobothria on the female and male palp tarsus/cymbium (shared character with *E. bucculenta* sensu Machado, *E. barrientosi* and *E. incognita*; in all other *Eratigena* **n. gen.** species absent, also absent *E. bucculenta* sensu Barrientos (1991)) and the male tibia I shorter or equal the length of carapace (as in *E. barrientosi*, *E. incognita* and *E. fuesslini*, all other *Eratigena* **n. gen.** species tibia I longer). From the closely related *E. bucculenta* sensu Machado (1941) it can be separated by the patellar apophysis having well separated two points, the conductor as long as the alveolus and the straight terminal end of the conductor (*E. bucculenta*: three pointed patellar apophysis, close together, conductor shorter than the alveolus with terminal end bent ventrad). Females can be separated by the rectangularly shaped posterior sclerite with CO facing laterally (*E. bucculenta* sensu Machado, triangular posterior sclerite and CO facing anteriorly).

Description

Some measurements are provided by Simon (1870: 283–287, sub *Tegenaria feminea*, *T. patula* and *T. cisticola*) and Brignoli (1978a: 276–277, sub *Tegenaria carpetana*). The examined specimens are in the same range.

Eyes: PME 0.11, PLE 0.15, AME 0.13, ALE 0.13. Eye distances: PME-PME 1.5 x PME, PME-AME 1 x PME, PME-PL 1–1.5 x PME, PME-ALE 1.5–2 x PME, AME-AME 0.5–1 x AME, AME-ALE <0.5 x AME. CLY1 1.5–2 x AME, CLY2 1–1.5 x ALE.

Male palp

Patellar apophysis at male palp present, dorsally large and sclerotised point, lateroventrally smaller point, both well separated. RTA reduced. Short dorsal spike on male palp tibia absent. Embolus base at 9 o'clock. Length of embolus 0.75–1.25 CB, distal tip at 4 o'clock. Conductor with distal portion as long as wide, not reaching over distal margin of alveolus, lateral margin folded only at terminal half. Terminal end simple, long draw out, straight and inconspicuously pointed. Transversal ridge at conductor membranous, lamelliform. Conductor membranously

connected to tegulum. MA only moderately protruding, as long as wide, distal sclerite plate like forming a pocket, membranously connected to tegulum, originating at 5–6 o'clock.

Epigyne and vulva

Epigyne with a distinct posterior sclerite, forming a strongly sclerotised, rectangularly shaped pocket, opening towards posterior. Epigynal teeth present, originating posteriodistally of the posterior sclerite, pointing posteriomediad. CO located laterally of the posterior sclerite, opening laterad. Vulva consists of distinguishable CD, RC and FD. CD long and convoluted, without appendages but expanded region at its beginning (probably homologous to the appendages of *E. bucculenta*). RC oblong, irregularly formed and sclerotised, enclosing convoluted ducts, separated by less or about their diameter. FD only represented by small leaf shaped appendages.

Other important characters

Cheliceral promargin with 3, retromargin with 7–11 teeth. Colulus rectangularly shaped with distal margin “w” shaped. Distal segment of PLS as long as basal segment. PMS with 1 prominent minor ampullate gland spigot and 3–4 cylindrical gland spigots laterally. Tarsal trichobothria at cymbium and palpal tarsus present. 7–9 tarsal trichobothria. Denticles at paired claw of leg I 11–13. Leg spination: male palp (2–0–0–0, 2–0–0, 2–2p–0–0), female palp (2–0–0–0, 2–0–0, 2–2p–0–0), leg femora (1–2–1–0 or 2–2–0–0 or 2–2–1–0 or 3–2–0–0, 2–2–1–0 or 2–3–1–0, 2–1–2–0 or 2–2–2–0 or 2–2–3–0, 1–1–1–0), patellae (all 2–0–0), tibiae (0–0–0–2p or 0–0–0–3p, 0–1–0–3p or 0–2–0–3p, 2–2–2–1+1p or 2–2–2–2+1p or 2–2–2–2p or 2–2–2–3p, 1–2–2–1+2p+1 or 2–2–2–1+3p or 2–2–2–2+1p+1 or 2–2–2–4p), metatarsi (0–0–0–4p+1, 0–2–0–4p+1, 1p–4–3–4p+1, 1p–4–3–4p+1 or 2–4–4–4p+1), tarsi (I & II 0, III & IV 0–2–3–0).

Colouration

Two symmetric longitudinal dark bands dorsally on carapace present, sometimes reduced to only triangular dots. Sternum with a distinct pale median region. Opisthosoma brown-grey-green, dorsoanteriorly with two symmetric longitudinal pale bands continuing posteriorly in chevrons and then in dots. Legs without a pattern or spotted. ALS indistinctly darkened (occasionally only distally), PLS both segments darkened.

Distribution

This species is recorded for the Iberian Peninsula. The specimen from Algeria was already mentioned by Machado (1941). In one tube labeled with the number 469 by Simon (Syria), one male could be determined to *E. feminea*, together with other specimens belonging to other species. Since it is known that Simon did add specimens to some tubes, it remains unsure if the specimen in the tube from Syria refers to that location.

Discussion

Eratigena feminea has very distinct male and female genitalia. The colouration (spotted legs or not, black dots on cephalothorax) and the size are very variable which led to the description of several species which were subsequently synonymised. One synonym, established by Lehtinen (1967: 267) has to be corrected: the specimens of *T. cisticola* preserved in MNHN (Simon's nr. 477) belong, as mentioned by Machado (1941), Barrientos (1980) and Brignoli (1978a), to *Eratigena feminea* and not to *E. bucculenta*.

There is another apparent problem: *E. feminea* seems to be closely related to *E. bucculenta*. In one sample from Portugal (Boticas) both species are present with one male (male of *E. bucculenta* sensu Machado (1941)). For further discussion see *E. bucculenta*.

***Eratigena fuesslini* (Pavesi, 1873) new combination**

Figs. 9 g–i, 13 A–D

Tegenaria fuesslinii Pavesi (1873): 105–107, figure without a number, only female.
Tegenaria pallidula Simon (1875): 95–96, only male.
Tegenaria capra Simon (1875): 97–98, only male.
Tegenaria ericarum Simon (1875): 98–99.
Tegenaria corsica Simon (1937): 1038–1039, figs. 1539–1540; Simon synonymised *T. pallidula*, *T. capra* and *T. ericarum* with *T. corsica* Bremsi-Wolf (also Bremsi-Wolff); the name *T. corsica* is considered a nomen nudum (see Brignoli, 1971a: 84).

Type material examined

No type material available for this study (could not be traced, apparently not represented in the collection of Genova (Giuliano Doria, pers. comm.) and until now not traceable in the collection of the Museo di Storia Naturale dell'Università di Pavia (Michele Abderhalden, pers. comm.)).

Other material examined

France: Pyrénées-Orientales: La Massane, 4 \$, 22 £ (sub *Tegenaria ericarum*, MNHN, 1974), 20.XI.1911; Banyuls, Canigou, la Plata, Mt. Louis, 6 \$ (sub *Tegenaria ericarum*, MNHN, 1979), Simon; Banyuls (Palau del Vidre), 1 \$ (sub *Tegenaria pallidula*, MNHN, 1952); Haut Vallespir, Prats-de-Mollo-la-Preste, 1 \$, 1 £ (NMB, AB553), 10.IX.2006, Huber; **Alpes-Maritimes:** Menton, 1 £ (NMB, 2010), 1934, Schenkel; Menton, S. Remo, 3 \$, 17 £ (MNHN, 1979); **Aude:** Er. de Gatamus, 1 £ (MHNG), 20.V.1952, Comellini; Languedoc-Roussillon, **Lozère:** Aigonal, 2 £ (MNHN, 1979), 13.V.1906, Simon; **Picardie:** St. Gobert, Adine (?), 1 £ (MNHN, 1951), X.1909; **Provence:** Collobrières, 8 \$, 10 £ (MNHN, 1979); **Var:** Toulon, la Crau, 10 \$, 10 £ (MNHN, 1951), 12.XI.1913; Esterel, 1 \$ (NHMW), 5.V.1962, Nemenz; Cuers, 2 \$ (SMF), V.2008, Wunderlich.
Italy: Abruzzo: Teramo, Roseto degli Abruzzi, Mazzarosa, torr. Borsacchio, 5 \$, 12 £ (MSNB), 22.V., 11.VI. and 4.VII.2007, Fabbri; L'Aquila, Ovindoli, Mte. Sirente, 1 £ (NMB, AB756), 7.VI.2007, Bolzern; **Basilicata:** Potenza, Maratea, La Serra c/o Pianeta maratea, 1 £ (MSNB), 22.VI.1998, Pantini; **Campania:** Salerno, Contursi, 1 £ (MCSN, 542), 9.VI.1966, Brignoli; **Emilia Romagna:** Appennino modenese, la Santona, 1 \$ (MCSN, 542), 25.V.1967, Argano; Ravenna, Mezzano, 3 \$, 2 £ (MSNB), 7.V.2006, Fabbri & Pezzi; Provincia di Bologna, Rioveggio, 1 £ (SMF), 5.IV.1996, Jäger; **Lazio:** Viterbo, Monte Cimino, 1 £ (MCSN, 542), 1.V.1966, Brignoli; Viterbo, Gradoli, 1 £, (MCSN, 542), 5.III.1969, Brignoli; Roma, 1 \$ (MHNG), V.1967, Papini; **Lombardia:** Bergamo, Entratico, 1 \$ (MCSN, 542), VI.1957, Bonino; Bergamo, Sorisole, Gres, 1 £ (MSNB), V.1998, Maretti; **Marche:** Macerata, Sarnano, 5 £ (MSNB), 23.VI. and 1.IX.2004, Rismondo & Fabbri; Ascoli Piceno, Serra de'Conti, 3 £ (MSNB), 2.VI. and 17.VI.2003, Rismondo & Taffetani; Ascoli Piceno, Amandola, Vidoni, 4 \$, 7 £ (MSNB), 23.VI. and 1.IX.2004, Rismondo & Fabbri; Macerata, Castelsantangelo sul Nera, Sopra Rapegna, 1 \$ (MSNB), VI.1991, Buttarelli, Ghilardi, Pantini & Valle; **Puglia:** Foggia, Gargano, 2 £ (MCSN, 542), 26.X.1966 and 1.VI.1972, Argano, Carpaneto; Foggia, S. Marco in Lamis, 1 \$ (MSNB), 3.III.1988, Valle; **Umbria:** Perugia, S. Giustino, 1 £ (MSNB), VI.1992, Pantini & Valle; Perugia, Nocera Umbra, 1 £ (MSNB), 14.VI.1992, Buttarelli, Pantini & Valle; Perugia, Sigillo, 1 \$ (MSNB), VI.1991, Buttarelli, Ghilardi, Pantini & Valle; Perugia, S. Giustino, 1 \$ (MSNB), IX.1992, Pantini & Valle.
Spain: Madrid: Guadarrama, Sierra Nevada, 1 £ (sub *Tegenaria ericarum*, MNHN, 1974); **Basque country:** Alava, Vitoria, 2 \$ (NMB, AB1001), 2008, Wunderlich; Orduna, 1 \$, 1 subadult £ (NMB, AB667), 28.IV.2007, Huber; **Catalonia:** Garraf, 28 \$, 2 £ (NMB, AB672, AB675–678, AB682, AB684–685, AB686–687, AB804, AB806–807), 19.IV., 17.V. and 14.VI.2006, ALARM; Girona, Mollo, 1 \$, 1 £ (NMB, AB551), 9.IX.2006, Huber; Barcelona, 5 £ (MHNG), 7.VI.1955, Comellini; Barcelona, Begues, 1 \$, 1 £ (NMB, AB568), 28.IV.2006,

Txasko & Arnedo; MallorcaES, **Balearic Islands:** Majorca, Lluch, 1 \$ (MNHN), 22.IX.1948, Palau; **Castilla y León:** Palencia, Fuentes de Nava, Laguna de la Nava, 1 \$, 1 £ (SMF, 40947-135), 24.VI.1996, Stengele; **Valencia:** Castellon, Peniscola, 2 £ (MHNG), 29.V.1959, Comellini.

Switzerland: Ticino: Centovalli, Lionza, 1 \$, 1 £ (NMB, 2010), 22.V. and 5.VII.1989, Hänggi; Mte. S. Giorgio, Cugnoli, 1 £ (NMB, 2010), 14.VI.1989, Hänggi.

Diagnosis

E. fuesslini can easily be separated from all other *Eratigena* **n. gen.** species by the distinct terminal end of the conductor, and the atrial cavity posteriorly limited by a big bulge. From the closely related species, *E. agrestis*, it can be separated by the body size (*E. fuesslini* much smaller than *E. agrestis*), the less broad conductor (in retrolateral view, broader in *E. agrestis*), the terminal end of the conductor, the posterior bulg at the epigyne protruding to posterior (not protruding in *E. agrestis*), and the CD visible through the epigynal plate (anterior or the atrial cavity).

Description

Measurements

Male (n=2): CL 3.25–4.2, CW 2.35–3.0, STL 1.7–2.05, STW 1.4–1.75, OL 3.75–4.0, OW, 2.3. Leg I (3.4–4.35, 1.2–1.55, 3.2–4.0, 3.3–4.2, 2.0–2.65), II (2.95–3.5, 1.1–1.5, 2.4–2.85, 2.75–3.4, 1.75–2.2), III (2.75–3.3, 1.1–1.3, 2.05–2.5, 2.25–3.5, 1.3–1.9), IV (3.6–4.0, 1.15–1.5, 3.15–3.7, 4.0–4.6, 2.0–2.3). Pedipalp (1.5–1.75, 0.55–0.65, 0.6–0.75, 1.45–1.75), bulbL 1.0–1.25.

Female (n=2): CL 2.25–4.2, CW 1.6–2.7, STL 1.25–2.1, STW 1.05–1.7, OL 2.75–4.9, OW 1.85–3.0. Leg I (1.9–3.5, 0.85–1.5, 1.6–3.1, 1.6–2.95, 1.15–2.0), II (1.65–3.1, 0.75–1.45, 1.2–2.4, 1.45–2.7, 1.0–1.8), III (1.5–3.0, 0.7–1.35, 1.05–2.1, 1.45–2.75, 0.9–1.75), IV (2.05–3.9, 0.8–1.45, 1.8–3.4, 2.1–4.0, 1.05–2.1). Pedipalp (0.85–1.65, 0.45–0.7, 0.5–1.05, 0.6–1.6). EPL 0.48–0.54, EPW 0.62–0.71, ATL 0.07–0.08, ATW 0.29–0.3.

Eyes: PME 0.09–0.143, PLE 0.10–0.152, AME 0.08–0.129, ALE 0.10–0.171. Eye distances: PME-PME 1.5–2 x PME, PME-AME 1 x PME, PME-PLE 1–1.5 x PME, PME-ALE 1.5 x PME, AME-AME 0.5–1 x AME, AME-ALE 0.5 x AME. CLY1 2–2.5 x AME, CLY2 1–1.5 x ALE.

Male palp

RTA with 2 branches, lateral branch simple and pointed, dorsal branch a broad apophysis, distally truncated and variable shaped (from one bigger and several smaller points to almost only two point). Short dorsal spike on palp tibia present. Embolus base at 9–10 o'clock. Length of embolus 1.25–1.5 CB with distal tip at 4–5 o'clock. Conductor massive, not conspicuously broad in retrolateral view, distal portion not elongated, folded only at the terminal half which is twisted ventroprolateral. Terminal end complex, consisting of 2 strongly sclerotised, stepped and elongated points (median 1 additional thorn like point possible, Fig. 2.7 h), ventral point with a strongly sclerotised dark posterior margin and a much thinner plate like anterior part. Conductor retrolaterally moderately furrowed. Transversal at conductor a membranous lamelliform ridge. Conductor membranously connected to tegulum. MA wider than long, originating at 6–8 o'clock, protruding with distal plate like sclerite forming a pocket. MA at least partly strongly sclerotised connected to tegulum.

Epigyne and vulva

Epigyne medially with a distinct atrial cavity, posteriorly limited by a posterior sclerit expressed as a distinct big bulge, strongly fused with the epigynal plate and moderately protruding posteriorly. Epigynal teeth present, originating lateral on the posterior bulge, pointing posteromedially. Anteriorly, CD are visible through the epigynal plate. Vulva consists

of distinguishable CD, RC and FD. CD moderately convoluted, with a kind of a protuberance ventrally (close to the CO). RC irregularly oblong and sclerotised, enclosing convoluted ducts, separated by about 1.5 x their diameter. FD only represented by small leaf shaped appendages.

Other important characters

Cheliceral retromargin with 8–12 teeth. Colulus rectangularly shaped with distal margin “w” shaped. PMS with 1 prominent minor ampullate gland spigot and 3–4 cylindrical gland spigots laterally. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 5–9. Denticles at paired claw of leg I 12–14. Leg spination: male palp (2–0–0–0, 2–0–0, 1–1+1p–0–0 or 1–2–0–0), female palp (2–0–0–0, 2–0–0, 2–2p–0–0), leg femora (2–2–0–0, 1–0–0–0 or 2–2–0–0 or 2–3–1–0 (in small female with only 1 dorsal spine), 1–0–0–0 or 2–2–2–0 or 2–2–3–0 or 2–3–3–0 (in small female with only 1 dorsal spine), 1–0–1–0 (only in small female) or 1–1–1–0 or 2–1–1–0 or 2–2–1–0 or 2–2–2–0), patellae (all 2–0–0), tibiae (0–0–0–1+1p or 0–0–0–1+2p or 0–0–0–2 or 0–0–0–2p or 0–0–0–3p (indistinct dorsal spines possible), 0–1–0–1 or 0–1–0–1p+1+1p or 0–2–0–1p+1+1p, 2–2–1–1 or 2–2–1–2 or 2–2–2–2p or 2–2–2–3p, 2–2–2–1p+1+1p or 2–2–2–2 or 2–2–2–2p), metatarsi (0–0–0–4p+1, 0–0–0–2p+1 or 0–1–0–2p+1 or 0–2–0–4p+1, 0–2–2–1p+1+2p or 0–3–2–1p+1+2p or 1p–4–3–5p or 1p–4–4–5p, 0–4–3–1p+2+2p or 1–4–3–1+4p or 1–4–4–5p or 1p–4–3–4p+1), tarsi (I–II 0, III 0–0–1–0 or 0–2–3–0, IV 0–0–1–1 or 0–2–4–0).

Colouration

Carapace with weakly serrated longitudinal dark symmetric bands, may be reduced to only triangular dots. Sternum with distinct pale median region. Opisthosoma darkened green-brownish, at the cardiac mark yellowish, posteriorly continuing in broad chevrons (~ 5). Legs moderately continuous darkened. ALS and both segments of PLS dorsally darkened.

Distribution

Recorded for central- to south-western- Europe (CH, FR, IT, ES, PT). Some records may be unsure (e.g. YU, DE, UA).

Discussion

As described for the previous species, *E. fuesslini* shows a very high morphological variation in genital characters. This variation led Simon (1875) to describe three species which he subsequently synonymised (Simon, 1937). Some specimens are strikingly smaller and the female and male genitalia differ in some morphological details. This, however, may be due to smaller size. With the evidence at hand it is not possible to decide whether these differences reflect intraspecific or interspecific variation.

***Eratigena herculea* (Fage, 1931) new combination**

Figs. 16 A–B, only female

Tegenaria herculea Fage (1931): 210–211, fig. 47, female.

Pseudotegenaria herculea Lehtinen (1967): 261.

Tegenaria herculea Brignoli (1977c): 69–70, fig. 3, female.

Tegenaria herculea Ribera & Barrientos (1986): 188–191, figs. 1–3, male.

Type material examined

Holotype. Gibraltar: „Cueva de San Miguel“, ♀ (MNHN, 1976, 507), 6.IV.1912.

Other material examined

Gibraltar: St. Michael's cave, 1 ♀ (MHNG), 19.V.1973, Strinati.

Spain: Andalusia: Malaga, Tolox, Lima Jesus, 1 ♂ (aff. *herculea*, det. Bolzern, NMB, AB576), 15.VII.2006, Lopez & Pancorbo; Granada, Guelchos, Cueva Campanas, 1 ♂ (coll. Ribera, Barcelona), 19.IV.1981, Vives; Almeria, Almeria, 3 ♂ (coll. Ribera, Barcelona, 3563, 3598, 3668), Ribera.

Diagnosis

E. herculea, *E. hispanica*, and three species originally described in *Malhonica* (*E. arganoi*, *E. sardoa* and *E. sicana*, the “*arganoi*-group”) have the distal segment of PLS longer than basal segment (as in *E. picta*, *E. balearica* and *E. montigena*; segment as long as basal in other species), short dorsal spike at male palp tibia absent (shared with *E. feminea*, *E. incognita*, *E. inermis* and *E. vomeroi*, all other *Eratigena* **n. gen.** species with spike), conductor with lateral margin entirely folded (as in *E. picta* and *E. balearica*, all other species with folded margin only at the terminal half), terminal end of conductor one simple elongated peak (comparable with *E. atrica* – complex, *E. bucculenta*, *E. feminea*, *E. barrientosi* and *E. incognita*, in all other *Eratigena* **n. gen.** species more complex), MA protruding, longer than wide, spoon like (all other *Eratigena* **n. gen.** species with the length of MA not exceeding its width, pocket like), connection of MA to tegulum membranous (only similar in *E. incognita*), epigyne with a distinct posterior sclerite, forming a strongly sclerotised and protruding pocket-like structure (shared with *E. bucculenta* and *E. feminea*, all other *Eratigena* **n. gen.** species without such structure).

E. herculea and *E. hispanica* can be separated from the “*arganoi* – group” by the length of tibia I (longer than CL, in other species shorter or equal CL), the PMS bearing 3–4 cylindrical gland spigots laterally (others with only 2), the shape of the dorsal branch of the RTA, the conductor and the MA, the very long appendages at the CD (short or absent in other species), and the special form of the RC. From *E. hispanica* it differs by the smaller size (Ribera, 1978; Ribera & Barrientos, 1986) (even though this character is strongly variable in many species of the genus, there are very few other discriminating character mentioned in literature), the shape of the RTA in dorsal view (Ribera & Barrientos, 1986: 190, figs. 3 and 5), the conductor not reaching the distal margin of the alveolus (reaching it in *E. hispanica*), the differently shaped epigynum (larger membranous part anteriorly of distinctly different shaped posterior sclerite in *E. hispanica*), the absence of epigynal teeth (present in *E. hispanica*) and the distally less convoluted appendages at the CD (more elongated and convoluted in *E. hispanica*).

Description

Measurements

Measurements of males are provided by Ribera & Barrientos (1986).

Female (n=2): CL 2.96–3.16, CW 2.11–2.15, STL 1.53–1.56, STW 1.31–1.33, OL 2.55–3.63, OW 1.67–2.65. Leg I (4.46, 1.19, 4.64, 4.77, 2.57), II (3.83–3.99, 1.04–1.16, 3.42–3.51, 3.68–4.09, 1.88–2.2), III (3.6–3.74, 1.02–1.05, 3.1–3.24, 3.98–4.22, 1.72–1.93), IV (4.58–4.85, 1.04–1.07, 4.54–4.57, 5.62–5.91, 1.95–2.2). Pedipalp (1.57–1.59, 0.56–0.59, 1.11–1.17, 1.6–1.69). EPL 0.31, EPW 0.53, ATL 0.18, ATW 0.2.

Eyes (somewhat reduced!): PME 0.04–0.06, PLE 0.05–0.06, AME 0.03–0.05, ALE 0.06–0.08. Eye distances: PME-PME 2 x PME, PME-AME 1.5–2 x PME, PME-PL 1.5–2 x PME, PME-ALE 2–2.5 x PME, AME-AME 1.5–2 x AME, AME-ALE 1.5–2 x AME. CLY1 >3 x AME, CLY2 2–3 x ALE.

Male palp

No male specimen was available for examination. Relevant information is provided by Ribera & Barrientos (1986).

Epigyne and vulva

Epigyne with a distinct posterior sclerite, forming a strongly sclerotised, triangularly shaped and protruding pocket, opening posteriad. Epigynal teeth absent. CO located anteriolaterally

of the posterior sclerit. Vulva consists of distinguishable CD, RC and FD. CD short, with a long, distally somewhat convoluted appendix. RC irregularly formed and sclerotised with several “chambers”, separated by about 1.5 x the diameter. FD only represented by small leave shaped appendages.

Other important characters

Cheliceral promargin with 3–4, retromargin with 7–10 teeth. Colulus rectangularly shaped with distal margin “w” shaped. Distal segment of PLS longer than basal segment. PMS with 1 prominent minor ampullate gland spigot and 3–4 cylindrical gland spigots laterally. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 7–8. Denticles at paired claw of leg I 18. Leg spination: female palp (1–0–0–0, 2–0–0, 2–1+1p–0), leg femora (2–2–1–0 or 2–2–3–0, 1–2–2–0 or 2–3–2–0, 1–2–2–0 or 2–2–2–0 or 2–2–3–0 or 3–2–1–0, 1–1–1–0 or 2–1–1–0 or 2–1–2–0 or 2–2–1–0), patellae (all 2–0–0, one specimen with one retrolateral spine at patella IV), tibiae (0–0–0–1+1p or 0–1–0–1+1p or 2–2–0–1+1p, 0–2–0–1+1p or 2–2–0–1+2p or 2–2–1–2p, 2–2–1–2p+1 or 2–2–2–1+1p or 2–2–2–2 or 2–2–2–2p, 2–2–2–2p+1, or 2–2–2–3p, or 2–2–3–2, or 2–3–2–2), metatarsi (0–0–0–3p+1, 0–1–0–3p+1 or 0–2–0–3p+1, 0–4–3–2p+1 or 0–4–3–3p+1, 0–4–4–1p+1+2p+1 or 1–4–3–1p+1+2p+1), tarsi (I & II 0, III 0 or 0–0–1–0, IV 0–0–1–0 or 0–0–2–0).

Colouration

Carapace not darkened (troglobiont?). Sternum with a weakly expressed pale median region. Opisthosoma brown-yellowish, only cardiac mark darker. Legs without a pattern.

Distribution

Records are known only from southern Spain (mainland and Balearic Island, Ibiza) (Brignoli, 1977c; Fage, 1931; Ribera & Barrientos, 1986).

Discussion

The specimen from Lima Jesus differs slightly from the other material: the conspicuously different run of the copulatory duct, the bigger size and the leg spination. More material is necessary to decide if this specimen represent an other species.

***Eratigena hispanica* (Fage, 1931) new combination**

Figs. 16 F–G, L–M

Tegenaria hispanica Fage (1931): 212–213, fig. 48, only female.

Pseudotegenaria hispanica Lehtinen (1967): 261.

Tegenaria hispanica Ribera (1978): 30–32, figs. 1–5, male.

Type material examined

Holo- and paratype. Spain: Catalonia: Tarragona, Tortosa, Cova d'en Rubi, 1 ♂ (MNHN, 1979, 787), 20.V.1914, Fage. 1931; 1 ♂, same data as holotype.

Other material examined

Spain: Catalonia: Tarragona, Tortosa, Cova Mas Planells, 1 ♂ (coll. Ribera, Barcelona, 1901-77), 29.III.1970; Tortosa, Cova d'en Rubi, 1 ♂ (coll. Ribera, Barcelona, 1363-55), 31.X.1977.

Diagnosis

See the diagnosis section at *E. herculea*.

Description

Measurements

Male (n=1): CL 4.34, CW 3.14, STL 2.14, STW 2.02, OL 2.97, OW 1.65. Leg I (7.33, 1.71, 7.43, 7.71, 3.61), II (6.32, 1.73, 5.78, 7.17, 3.1), III (5.53, 1.36, 4.89, 6.93, 2.86), IV (6.6, 1.43, 6.31, 9.51, 3.64). Pedipalp (2.31, 0.76, 1.34, 1.81), bulbL 0.66.

Female (n=1): CL 5.32, CW 3.54, STL 2.43, STW 2.16, OL 5.01, OW 2.7. Leg I (7.42, 1.98, 7.58, 7.99, 3.53), II (6.77, 1.93, 6.27, 7.56, 3.59), III (6.39, 1.78, 5.73, 7.89, 3.2), IV (7.65, 1.98, 7.51, 10.68, 3.92). Pedipalp (2.74, 0.96, 1.97, 2.84). EPL 0.49, EPW 0.76, ATL 0.33, ATW 0.28.

Eyes (somewhat reduced!): PME 0.13, PLE 0.13–0.17, AME 0.10–0.11, ALE 0.16–0.17. Eye distances: PME-PME 1–1.5 x PME, PME-AME 1 x PME, PME-PLE 1.5–2 x PME, PME-ALE 1.5–2 x PME, AME-AME 1–1.5 x AME, AME-ALE 0.5–1 x AME. CLY1 3–3.5 x AME, CLY2 1.5–2 x ALE.

Male palp

RTA with 2 branches, lateral branch only very slightly protruding, dorsal branch strongly sclerotised and protruding, somewhat lobe like, distally with a short claw like appendix. Short dorsal spike on male palp tibia absent. Embolus base at 7–8 o'clock. Length of embolus 1.75–2 CB, distal tip at 4 o'clock. Conductor long triangular, distal portion moderately elongated, as long as wide, reaching distal margin of alveolus, lateral margin folded. Terminal end simple, long draw out and pointed. Transversal ridge at conductor membranous lamelliform. Conductor membranously connected to tegulum. MA protruding, longer than wide, distally with plate like sclerite forming spoon like structure, membranously connected to the tegulum, originating at 5 o'clock.

Epigyne and vulva

Epigyne with a distinct posterior sclerite, forming a strongly sclerotised, triangularly to rectangularly shaped and protruding pocket, opening posteriad. Epigynal teeth present, originating distally of the posterior sclerite, pointing posteriomediad. CO located anteriolaterally of the posterior sclerite at a rectangularly shaped membranous area (atrium?). Vulva consists of distinguishable CD, RC and FD. CD short, with a long, distally strongly convoluted appendix. RC irregularly formed and sclerotised with several “chambers”, separated by 2 x the diameter. FD only represented by small leaf shaped appendages.

Other important characters

Cheliceral promargin with 3, retromargin with 9–10 teeth. Colulus rectangularly shaped with distal margin more or less straight or moderately “w” shaped. Distal segment of PLS longer than basal segment. PMS with 1 prominent minor ampullate gland spigot and 3–4 cylindrical gland spigots laterally. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 8–9. Denticles at paired claw of leg I 13–14. Leg spination: male palp (2–1–1–0, 2–0–0, 1–1+1p–0–0), female palp (2–1–0–0 or 2–1–1–0, 2–0–0, 2–2p–0–0), leg femora (2–3–3–0 or 2–3–4–0 or 2–4–3–0, 2–3–4–0, 2–2–4–0 or 2–3–4–0, 2–2–2–0 or 2–3–2–0 or 2–3–3–0), patellae (all 2–0–0), tibiae (2–0–0–4p or 2–1–0–4p or 2–2–0–4p (lateral spines only in female), 2–2–0–4p, 2–2–2–1+3p, 2–2–2–1+3p or 2–2–2–4p), metatarsi (0–0–0–4p+1, 0–2–0–4p+1 or 0–2–1–4p+1, 0–5–4–4p+1 or 1–5–4–4p+1, 0–5–4–4p+1 or 1–5–4–4p+1), tarsi (I & II 0, III 0 or 0–0–1–0 or 0–1–2–0, IV 0–2–2–0 or 0–2–3–0).

Colouration

Carapace not darkened (troglobiont?). Sternum with a weakly expressed pale median region. Opisthosoma brown-yellowish, only cardiac mark darker. Legs without a pattern.

Distribution

Recorded from Catalonia and Valencia (Ribera, 1978; Ribera & Barrientos, 1986).

***Eratigena incognita* (Bolzern, Crespo & Cardoso, 2009) new combination**

Tegenaria incognita Bolzern et al. (2009): 52–55, figs. 6–10, 15–18.

Material examined

All type material and other known specimens had been examined and listed in Bolzern et al. (2009, sub *Tegenaria*).

Diagnosis

See diagnosis section at *E. barrientosi*.

Description, diagnosis and other information are provided by Bolzern et al. (2009, sub *Tegenaria*).

Distribution

Portugal, only known from the type locality.

Eratigena inermis (Simon, 1870) new combination

Figs. 18 A–B, E–G, 19 a–b, e–f

Tegenaria inermis Simon (1870): 271–273, pl. 1, figs. 7, 11 (figures not useful for determination).

Type material examined

Syntypes (in the same tube several labels were present, one from the type locality). Spain: León: Brañuelas; Navarra: Alsasua; “Pyr. Raun Bonnes.” (?), 1 \$ (MNHN, 1960, specimen selected and labelled as “neotype” by R. De Blauwe), here designated as lectotype; remaining specimens, 4 \$, 3 £, (MNHN, 1960), paralectotypes.

Comment

For stabilising the nomenclature a lectotype is designated here (ICZN 1999: Art. 74.1).

Other material examined

France: Ariège: „Grotte inférieure du Queire“, 1 \$ (MHNG, Biospeologica No. 199, 870), 13.IX.1979, Hauser; Massat, „Carr. de Fallat nr. 3“, Caubère, 2 £ (MNHN, 1960); „Grotte d'Enlène“, 1 \$, 4 £ (MNHN, 1960), 8.X.1964, Hubert; **Basses-Pyrénées:** „Au pied du Bois d'Orion dans l'affluent de l'Orion qui se jette dans la Petite Nive“, 1 £ (MHNG), VI.1974, Haymoz; Béhérobie, 2 \$ (MHNG), VI.1974, Haymoz; „Forêt d'Orion au bord de l'Orion“, 1 \$, 2 £ (MHNG), 1 \$ (MCSN, 542), VI.1974, Haymoz; **Hautes-Pyrénées:** „Gr. de Gourgue“, 1 £ (MNHN, 1960), 11.VIII.1946; Bagnères de Bigorre, 1 £ (MCSN, 542).

Portugal: Coimbra: Albergaria, 7 £ (ZMUC, ZMUC00012624 and others), 4.VI.2005, Cardoso.

Spain: „Toute de l'Espagne, St. Laurent de Nesto“ (?), 2 \$, 4 £ (MNHN, 1960); “Cueva de las Campanas”, Negre, 10 \$, 10 £ (MNHN, 1960), 23.6.1956, Dresco; **Cantabria:** Santander, Villacarriedo, “C. de la Castañeda”, 1 \$ (MNHN, Zootheque); 1 £ (SMF, coll. Franz, Slg. Wiehle); **Guipúzcoa:** Gipuzkoa, Tolosa, “C. de Hernalde”, 1 £ (MNHN, Zootheque), 10.IX.1917; „Altamira“, 1 £ (SMF, coll. Wunderlich), Wunderlich.

Diagnosis

E. inermis differs from other congeneric species by having distinctly annulated legs (all other *Eratigena* species with other patterns), at least two femora with more than 2 dorsal spines (could also be observed in *E. saeva* n. comb.; all other species with 1 or 2 spines), tibia I with

prolateral spines (could also be observed in *E. herculea*, *E. hispanica* and *E. sicana*; all other species without prolateral spines), massive transversal ridge or bulge at the conductor of the male bulb (Figs. 18 A–B, 19 a–b, distinctly different to all other species), conductor dorsally with a small rounded bulge (as in several *Teegenaria*, but not in *Eratigena* species), conspicuous big and strongly sclerotized MA, epigynal teeth absent and long appendages at CD (Figs. 19 e–f, as in *E. herculea* and *E. hispanica*). From the closely related *E. vomeroi* it can be separated by having the basal part of the median apophysis stronger sclerotized in *E. inermis* than in *E. vomeroi*, the very special massive and prominent transversal ridge at the conductor showing a distinct border line of sclerotization only indistinctly expressed in *E. vomeroi*, the long appendages anteriorly of the CD reaching at least to the top of the RC (or is even larger) in *E. vomeroi* but shorter in *E. inermis* (Figs. 19 e–h).

Description

Measurements

Male (n=1): CL 4.75, CW 3.34, STL 2.11, STW 2.04, OL 5.10, OW 2.92. Leg I (7.4, 2.02, 7.39, 8.21, -), II (6.45, 1.83, 5.83, 6.75, 3.22), III (5.78, 1.64, 4.79, 6.88, 3.04), IV (6.51, 1.66, 6.11, 7.36, -). Pedipalp (2.31, 0.76, 0.92, 2.25), bulbL 1.15.

Female (n=3): CL 5.42–5.68, CW 3.73–3.91, STL 2.17–2.56, STW 2.17–2.43, OL 6.10–8.61, OW 3.70–5.64. Leg I (5.99–7.13, 1.87–2.12, 5.69–6.81, 5.85–7.48, 3.14–3.61), II (5.35–6.39, 1.73–2.00, 4.64–5.86, 5.27–6.94, 2.81–3.14), III (4.9–6.13, 1.64–1.86, 4.02–5.10, 5.38–7.09, 2.17–2.93), IV (6.14–7.51, 1.71–1.96, 5.36–6.67, 7.49–9.37, 3.07–3.66). Pedipalp (2.55–2.56, 0.97–0.98, 1.72–1.77, 2.64–2.89). EPL 0.65–0.73, EPW 0.94–1.19, ATL 0.29–0.42, ATW 0.45–0.58.

Eyes: PME 0.22–0.26, PLE 0.22–0.28, AME 0.17–0.23, ALE 0.23–0.26. Eye distances: PME-PME 1 x PME, PME-AME 0.5–1 x PME, PME-PLE 0.5–1 x PME, PME-ALE 1–1.5 x PME, AME-AME 0.5–1 x AME, AME-ALE <0.5–0.5 x AME. CLY1 2.5–3 x AME, CLY2 1.5–2 x ALE.

Male palp

RTA with 2 branches, lateral branch bulge like, dorsal branch a strongly sclerotized peak. Embolus base at 8–10 o'clock. Length of free apex less than 1 1/4 CB with distal tip at 2–4 o'clock. Conductor reversed drop-shaped, folded only at the terminal half. Terminal end consists of 2 strongly sclerotized points. Dorsally with a small rounded bulge. Transversal ridge at the conductor massive and prominent, with a distinct ventral border between membranous and more sclerotized areas. Connection of conductor to tegulum is membranous. MA wider than long, originating at 5–7 o'clock, only somewhat protruding but very broad, pocket like, connection to tegulum strongly sclerotized.

Epigyne and vulva

Epigyne medially with a big bulge, anteriorly of which the symmetric genital openings are located in a transversally depression. Posterior sclerite absent. Epigynal teeth absent. Vulva consists of distinguishable CD, RC and FD. CD short and straight with long appendages. RC irregularly formed and not constantly sclerotized but not a real duct enclosed. FD only represented by small leaf shaped appendages.

Other important prosomal characters

Cheliceral retromargin with 6–7 teeth. Colulus rectangular with distal margin straight. PMS with 1 elevated minor ampullate gland spigot and 3–4 cylindrical gland spigots laterally. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 8–10. Denticles at paired claw of leg I 12–14. Leg spination: male palp (2–1–0–0, 2–0–0–0, 1–2p–0–0), female palp (2–0–0–0 or 2–1–0–0, 2–0–0, 2–2p–0–0), leg femora (3–3–3–0 or 3–3–4–0 or 3–4–4–0, 3–3–3–0 or 3–3–4–0 or 3–5–4–0 or 4–6–5–0, 2–3–4–0 or 2–4–3–0 or 2–4–4–0 or 3–4–4–0, 2–2–2–0 or 2–3–2–0 or 2–3–3–0 or 2–4–2–0 or 3–2–2–0 or 3–3–3–0), patellae (all 2–0–0), tibiae (0–2–0–1+2p or 0–2–0–4p, 0–2–0–1+3p or 0–2–0–4p or 0–2–1–4p (dorsally on I

& II 2 indistinct spines possible), 2-2-2-1+3p or 2-2-2-3+1p or 2-2-2-4p, 2-2-2-1+3p or 2-2-2-2+2p or 2-2-2-3+1p or 2-2-2-4p), metatarsi (0-0-0-4p+1, 0-2-0-4p+1 or 0-2-1-4p+1, 0-4-4-4p+1 or 0-5-4-4p+1, 0-5-4-4p+1).

Colouration

Two symmetric longitudinal dark bands dorsally on carapace present (sometimes reduced to triangular dots). Distinct sternal pattern of median region and 3 symmetric pale dots laterally, most distal pair fused to the median region (Fig. 18 G). Opisthosoma with three pale bands anteriorly, continuing to the back in chevrons. Legs annulated. ALS somewhat darkened, PLS both segments darkened.

Distribution

Records are known for the northern part of France, Spain and Portugal.

Comments

Useful drawings for the determination of this species are provided by Simon (1937) and Brignoli (1978a).

Eratigena montigena (Simon, 1937) new combination

Figs. 13 E–H

Tegenaria montigena Simon (1937): 1001, 1039, figs. 1541–1542.

Tegenaria lusitanica Schenkel (1938): 11–13, fig. 4, male; synonymized by Bacelar (1940): 107.

Tegenaria feminea Brignoli (1978a): 276, fig. 3, female, misidentification.

Type material examined

Syntypes. Spain: Guadarrama, la Granja, 2 ♂, 9 ♀ (MNHN, 1964), VI.1908, Simon.

Other material examined

Portugal: Aveiro: Esmoriz, 3 ♀ (MNHN), Seguera; **Braga:** Albergaria, 10 ♂, 4 ♀ (ZMUC), 4. and 15.VI.2005, Cardoso; **Leiria:** Vale da Garcia, 1 ♀ (NMB, AB272), 21.V.2002, Cardoso; Barenta, 2 ♂, 2 ♀ (NMB, AB278), 2.VII.2002, Cardoso; **Setúbal:** Vale da Rasca, 3 ♂, 2 ♀ (ZMUC), 1. and 14.VI.2004, Cardoso.

Spain: 4 ♀ (SMF, coll. Franz, Slg. Wiehle); **Aragón:** Balnearis de Panticosa, 1 ♀ (MCSN, 543), 17.V.1967, Osella; **Castilla y León:** Zamora, Sandin de Carballeda, 2 ♂, 3 ♀ (MHNG, 1 ♂ MCSN, 52), V.1973, VII.1975, Haymoz; **Galicia:** Le Ferrol, 4 ♀ (MNHN, 1975), Seoane.

Diagnosis

A. montigena can easily be recognised by the very unique and distinctive terminal end of conductor in lateral view (Fig. 13 F), the shape of the one-branched and protruding RTA, the strongly sclerotised epigynal plate with two symmetrically arranged reniform depressions with its CO and the epigynal teeth and the simply shaped vulva (Figs. 13 G–H).

Description

Measurements

Measurements and detailed description of male is provided by Schenkel (1938: 11–13, sub *Tegenaria lusitanica*).

Female (n=1): CL 4.64, CW 3.14, STL 2.36, STW 2.01, OL 6.42, OW 4.16. Leg I (4.20, 1.77, 3.65, 3.65, 2.27), II (3.65, 1.60, 2.67, 3.14, 1.93), III (3.32, 1.39, 2.34, 3.44, 1.76), IV (4.39,

1.56, 3.81, 4.91, 2.14), Pedipalp (1.85, 0.80, 1.05, 1.85). EPL 0.70, EPW 1.08, ATL 0.36, ATW 0.52.

Eyes: PME 0.18, PLE 0.18, AME 0.14, ALE 0.19. Eye distances: PME-PME 1 x PME, PME-AME 1 x PME, PME-PLA 1 x PME, PME-ALE 1–1.5 x PME, AME-AME 0.5–1 x AME, AME-ALE <0.5 x AME. CLY1 2.5–3 x AME, CLY2 1–1.5 x ALE.

Male palp

RTA with 1 branche, laterally oblong protruding ventrad, lobe like or distally broadly truncated. Short dorsal spike at male palp tibia present. Embolus base at 10 o'clock. Length of embolus 1–1.25 CB, distal tip at 4 o'clock. Conductor with distal portion moderately elongated, shorter or almost as long as wide, not reaching distal margin of alveolus, lateral margin folded along moderately more than terminal half. Terminal end very complex with a simple and curved point ventrally and a strongly protruding and massive outgrowth dorsally, in between those structures a short sharp point. Transversal ridge at conductor membranously lamelliform. Conductor membranously connected to tegulum. MA originating at 7 o'clock, moderately protruding, as long as wide, distally with plate like sclerite forming a pocket. Connection of MA to tegulum moderately sclerotised.

Epigyne and vulva

Epigyne medially with a strongly sclerotised, trapezoidal to oval plate, anteriorly of which the well separated genital openings are located at the anterior end of two symmetrically arranged reniform depressions. Posterior sclerite absent. Epigynal teeth present, originating posteriolateral at the epigynal plate, medially directed. Vulva consists of short and convoluted CD leading into RC, irregularly sclerotised, enclosing convoluted ducts, separated by more than their diameter. FD only represented by small leaf shaped appendages.

Other important characters

Cheliceral promargin with 3, retromargin with 8–9 teeth. Colulus rectangularly shaped with distal margin “w” shaped. Distal segment of PLS longer than basal segment. PMS with 1 prominent minor ampullate gland spigot and 3–4 cylindrical gland spigots laterally. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 7–9. Leg spination: male palp (2–0–0–0, 2–0–0, 1–1+1p–0–0 or 1–2p–0–0), female palp (2–0–0–0, 2–0–0, 2–2p–0–0), leg femora (I: 2–2–0–0. II: 2–2–0–0. III: 2–2–2–0. IV: 1–1–1–0.), patellae (all 2–0–0), tibiae (I: 0–0–0–3p, or 2–0–0–3p (dorsal spines very skinny). II: 0–1–0–3p, or 2–1–0–3p (dorsal spines very skinny). III: 2–2–2–3p. IV: 2–2–2–3p+1+1p), metatarsi (0–0–0–4p+1, 0–2–0–4p+1, 1–4–4–4p+1 or 2–4–3–5p, 2–4–4–2p+1+3p), tarsi (I–II 0, III 0–2–3–0, IV 0–2–4–0).

Colouration

Carapace with longitudinal dark symmetric bands, may be reduced to only triangular dots. Sternum without a pattern or with moderately paler median region. Opisthosoma dark brown-grey-green, at the cardiac mark yellowish, continuing posteriorly in broad chevrons. Legs without a pattern. ALS fairly darkened, PLS both segments darkened.

Distribution

Only recorded from the Iberian Peninsula (Portugal and Spain).

Discussion

Brignoli's concept of *E. montigena* is slightly confusing. He illustrated of the vulva (Brignoli, 1971b) of this species under the name *Tegenaria montigena* and then again later under the name *T. feminea* on the basis on a misidentified specimen from “Zamora, env. Sandin de Carballeda” (Brignoli, 1978a: 276, fig. 3) which was reexamined here.

***Eratigena picta* (Simon, 1870) new combination**

Figs. 17 A–B, E–F, I

Tegenaria picta Simon (1870): 280–282.

Tegenaria minuta Simon (1870): 282–283, male; Simon (1875): 99–100, female.

Tegenaria pusilla Simon (1870): 101, female; Becker (1896): 202, pl. 13, fig. 10, male.

Tegenaria perita Simon, (1870): 102, (juv.?).

Tegenaria malacensis Thorell (1875a): 80–81, male (wrongly cited page number and sex by Roewer (1954) and subsequently also by Platnick (2010)).

Tegenaria berthae Becker (1879): XX–XI, female.

Malthonica picta Guseinov et al. (2005): 164.

Type material examined

The type specimens, representing *picta* and *pusilla*, could not be traced in the MNHN. Several specimens (MNHN) from the type locality of *picta* (Guadarrama) were determined by E. Simon.

Sub *Tegenaria minuta*: probably male holotype. Spain: Guadarrama, 1 \$, 2 £ (MNHN, 1965, 476; also labelled as “*Tegenaria picta minuta*“, det. Simon; additional location-label: “Banyuls”), Simon.

Other material examined

France: „Gallia“, >10 \$, >10 £ (sub *Tegenaria pusilla*, MNHN, 1962), Simon; Moulis, 1 £ (MCSN, 52), Marcuzzi; **Finistère:** Quimperlé, Locunolé, 1 £ (NMB, AB287), 24.IX.2005, Schönhofer; **Hautes-Pyrénées:** Bagnères de Bigoire (?), 10 £ (MNHN, 1965); **Haute-Vienne:** >10 \$, >10 £ (sub *Tegenaria pusilla*, MNHN, 1962); **Landes:** Biscassone, >10 \$, >10 £ (MNHN, 1965), 29.IV.1917, Dalmas; **Manche:** Tatihou, 2 £ (MNHN, 1976); **Pyrénées-Orientales:** Co'ret / la Massane, 1 £ (MNHN, 1976), XI.1911; Mt. Aigoual, 1 £ (MNHN, 1965), VI.1911; Banyules - Vallioque, 2 \$, 1 £ (MNHN, 1976).

Germany: Baden-Württemberg: Offenburg, 1 \$ (SMF, 7439-135), 29.IV.1923, Stellwaag; Neustadt a. d. Hardt, 1 \$ (NMB, 2009); **Nordrhein-Westfalen:** Bonn, 1 \$, 1 £ (SMF, 4827-135), 1883, Bertkau; **Rheinland-Pfalz:** Gönnersdorf, 3 £ (SMF), 2–10.VI.1992, Jäger; Bad Kreuznach, Rheinböllen, Guldenbachtal, 2 £ (SMF, 58131-135), 19.VII.2005, Schönhofer; Kalmit bei Landau, 1 \$, 2 £ (SMF, 26064/3-135), 3.VIII.1964, Volz; Kaltenbrunnental, 1 \$ (SMF, 7440-135), 6.5.1923, Stellwaag.

Portugal: Bragança: Fonte d'Aldeia, 1 \$ (NMB, AB283), 16.V.2001, Cardoso.

Spain: 1 \$ (NHMW, ex. coll. L. Koch); 5 £ (SMF, coll. Franz, Slg. Wiehle); Guadarrama, la Granja, 1 \$ (MNHN, 1977), Magassedo; Guadarrama, la Granja, 11 \$, 25 £ (MNHN, 1977), VI.1908; la Peñalara (la Granja), 1 \$, 1 £ (MNHN), 1908, Simon; **Aragón:** Teruel, Sierra de los Monegros, M. Pegnarroya, 1 \$ (MCSN, 543), 7.V.1967, Osella; Frias de Albarracin, 1 £ (MCSN, 72), 6.V.1967, Osella; Sierra de Albarracin, Terud, 2 £ (SMF, 8945/1-135), 16.IX.1953, Zool. Inst. Univ. Ffm; ?); **Basque Country:** reg. Bilbao, 1 \$ (NMHN, 1976); Sierra de Penagobia, c/o Cueva de Pinedo, 1 \$, 1 subadult £ (NMB, AB669), 30.IV.2007, Huber; **Cantabria:** Laredo, 1 £ (MHNG), 27.VII.1953, Comellini; **Castilla y León:** Medinaceli, 1 £ (MHNG), 10.VI.1953; Zamora, Sandin de Carballeda, 1\$, 7 £ (MHNG), VII.1972, V.1973 and VII.1975, Haymoz; Sierra de Gredos, Cueva del Valle, 1 £ (MCSN, 543), 11.V.1967, Osella.

Switzerland: Jura: Movelier, 1 \$, 1 £ (NMB, 2009), 6.V.1994 and 3.VI.1999, NLU University of Basel; Courfouvre, Les Esserts, 1 \$ (NMB, 2009), 22.IV.1988, UVP Transjurane.

Diagnosis

E. picta and the close related *E. balearica* have the dorsal branche of the RTA distally elongated and bent posteriad (all other species of *Eratigena* n. gen. with differently shaped RTA), a short dorsal spike at male palp tibia (absent in *E. inermis*, *E. vomeroi*, *E. arganoi*, *E. saroda*, *E. sicana*, *E. hispanica*, *E. herculea*, *E. incognita* and *E. feminea*), a moderately to strongly elongated distal portion of conductor (not elongated in *E. inermis*, *E. vomeroi*, *E. atrica* – complex, *E. agrestis* and *E. fuesslini*), the distal margin of conductor entirely folded (shared character with *E. herculea*, *E. hispanica*, *E. arganoi*, *E. saroda* and *E. sicana*) and an epigyne with distinct atrial cavity (shared character with *E. agrestis* and *E. fuesslini*, absent in all other *Eratigena* n. gen. species). Male *E. picta* can easily be separated from the closely related *E. balearica* by having the distal portion of conductor much more elongated, the more convoluted terminal end of conductor and the relatively much shorter male palpal tibia. Females of *E. picta* can be separated from *E. balearica* females by the shape of the transparently visible CD on the epigynal plate and the very differently shaped vulvae.

Description

Redescriptions of *E. picta* are, at least partly, provided by Dahl (1931: 32-33 sub *Tegenaria picta*, 41-42 sub *T. pusilla*) and Jones (1984). Partly good drawings are also provided by Brignoli (1971b).

Distribution

Records are known in all most western European countries. The eastern boundary of distribution may run through western Germany and Switzerland. Records from Hungary, the Balkan region and Russia may be doubtful (see e.g. Deltshv, 2008a).

Discussion

In *E. picta* an incredibly high variation in size can be observed which influence also the genital structures (Figs. 17 A–B). Such a variation is also found in other related species (e.g. Bolzern et al., 2008: 763; Kraus, 1955: 379; Simon, 1937: 1003).

Together with *E. balearica* *E. picta* forms the “*picta*-group”. This is in contrast to previous concepts which are based on that of Simon (1937) who grouped *E. picta* with *Aterigena soriculata* and *A. ligurica* (all sub *Tegenaria*) making it polyphyletic.

***Eratigena saroda* (Brignoli, 1977) new combination**

Figs. 16 I–J, P–Q

Malthonica saroda Brignoli (1977a): 38–39, fig. 19, female.

Malthonica saroda Bolzern et al. (2008): 770–773, figs. 12–14, male.

Type material examined

All type material (5 ♀) and other specimens had been examined and listed in Bolzern et al. (2008).

Other material examined

Italy: Sardinia: Cagliari, Pula, Is Cannoneris, 3 ♀ (MSNB, 002), 1.XII.2006, Rizzante; Sorgono, 1 ♀, 1 ♀ (sub *Tegenaria ericarum*, NHMW), 15.X.1938, Krausse.

Diagnosis

E. saroda can be separated from *E. herculea* and *E. hispanica* by the characters mentioned in the diagnosis section of *E. arganoi*. From *E. arganoi* and *E. sicana* it can be separated by the simple pointed dorsal branch of the RTA (as in *E. sicana*, complex and with 3 points in *E.*

arganoi), the very long drawn out and strongly sclerotised terminal end of conductor (much shorter in the other species), the very long and convoluted CD with attached appendages (as in *E. arganoi*, much shorter and straight in *E. sicana*) and the globular and smoothly sclerotised RC (oblong oval and irregularly sclerotised in *E. arganoi*, with 2 pairs of globular RC in *E. sicana*).

Description and other information are provided by Brignoli (1977a) and Bolzern et al. (2008).

Distribution

Endemic to Sardinia.

***Eratigena sicana* (Brignoli, 1976) new combination**

Figs. 16 E, K

Malthonica sicana Brignoli (1976a): 30–33, figs. 1–2, 4.

Material examined

Some type material (£ holotype, several \$ and £ paratypes) and other specimens had been examined and listed in Bolzern et al. (2008).

Diagnosis

E. sicana can be separated from *E. herculea* and *E. hispanica* by the characters mentioned in the diagnosis section of *E. arganoi*. From *E. arganoi* and *E. sardoa* it can be separated by the simple pointed dorsal branch of the RTA (as in *E. sardoa*, complex and with 3 points in *E. arganoi*), the relative bulb to cymbium length (ratio equal or shorter 0.5, in the other species larger than 0.6), the relatively long male palp tibia (shorter in the other species), short and straight CD and the presence of two pairs (one smaller than the other) globular and smoothly sclerotised RC (long and convoluted CD with attached diverticula and one pair of RC in the other species).

Description and other information are provided by Brignoli (1976a) and Bolzern et al. (2008).

Distribution

Endemic to Sicily (Brignoli, 1976a) and Sardinia (Bolzern et al., 2008).

***Eratigena vomeroi* (Brignoli, 1977) new combination**

Figs. 18 C–D, H–L, 19 c–d, g–h

Tegenaria prope inermis Brignoli (1971a): 88–89, figs. 32–38.

Tegenaria vomeroi Brignoli (1977a): 50–51, figs. 31–33.

Malthonica vomeroi Guseinov et al. (2005): 164.

Type material examined

Holotype and paratypes. Italy: Basilicata: Potenza, Lagonegro, “Grotta del Cervaro”, 2 \$, 1 £ (MCSN, 541), 9.XII.1966, Sbordon; Potenza, Tramutola, Risorgenza dell'Aquila, 3 \$, 1 £ (was prope *inermis*, MHNG, epigyne missing in the tube!, 1 \$ MNHN, 1971), 21.XI.1970, Vomero; same location as previous, 1 \$ (MCSN, 541), 9.IV.1970, Sbordon.

Other material examined

Italy: Calabria: Cosenza, close to Paola, 1 ♂ (NMB, AB739), 29.V.2007, Bolzern, “pine forest, at stones and bark“; **Campania:** Salerno, Sanza, beech grove, Monte Cervati, 3 ♂, 1 juv. (NMB, AB721, AB734, AB829*); 31.V.2007, Bolzern, “at stones in a beech forest”.
*specimen was juvenile when collected, adult at 27th of August.

Diagnosis

See diagnosis section at *E. inermis*.

Description

Measurements

Male (n=1): CL 5.59, CW 3.97, STL 2.58, STW 2.47, OL 6.0, OW 3.6. Leg I (10.20, 2.23, 10.00, 11.00, 4.60), II (8.63, 2.15, 7.28, 10.10, -), III (6.98, 1.88, 6.15, 9.50, 3.58), IV (9.90, 1.92, 7.88, 12.60, 4.31). Pedipalp (2.55, 0.86, 1.12, 2.64), bulbL 1.06.

Female (n=2): CL 5.85–6.56, CW 4.04–4.42, STL 2.56–2.95, STW 2.38–2.73, OL 7.50, OW 3.98. Leg I (7.55–9.00, 2.22–2.30, 7.15–7.88, 7.67–8.55, 3.14–4.00), II (6.89–7.50, 2.07–2.30, 5.97–6.75, 7.19–7.95, 3.16–3.75), III (6.41–7.28, 1.87–2.12, 5.28–6.00, 6.83–7.88, 2.96–3.27), IV (8.26–8.78, 1.91–2.30, 6.67–7.65, 9.75–11.50, 2.82–4.20). Pedipalp (2.68–2.92, 1.00–1.07, 1.79–1.86, 2.81–3.09). EPL 0.80, EPW 1.26, ATL 0.65, ATW 0.80.

Eyes: PME 0.23–0.26, PLE 0.25–0.27, AME 0.21–0.24, ALE 0.25–0.32. Eye distances: PME-PME 1 x PME, PME-AME 0.5–1 x PME, PME-PL 0.5–1 x PME, PME-ALE 1–1.5 x PME, AME-AME 0.5–1 x AME, AME-ALE <0.5–0.5 x AME. CLY1 2.5–3 x AME, CLY2 1.5–2 x ALE.

Male palp

As in *E. inermis* except massive transversal ridge at the conductor with indistinct ventral border between membranous and more sclerotised areas.

Epigyne and vulva

As in *E. inermis*. Since the appearance of the epigyne and vulva seems to be quite variable, no distinct differences between the two species could be found.

Other important characters and colouration

As in *E. inermis* except spination at male and female palp femora 2–1–1–0.

Distribution

Central to Southern Italy.

3.2.5. Genus diagnosis and description: *Tegenaria* Latreille, 1804

Genus: *Tegenaria* Latreille, 1804

„Tapiformes (Vestiaridae)“ Walckenaer, 1802: 215.

Tegenaria Latreille (1804): 134.

Type species: *Tegenaria domestica* (Clerck, 1757), sub *Araneus domesticus*

Diagnosis

Agelenid spiders bearing the combination of following characters: plumous hairs present (absent in *Lycosoides*, *Maimuna* and *Textrix*). AER and PER straight or only slightly pro- or recurved in dorsal view (both rows recurved in *Lycosoides*, *Maimuna* and *Textrix*; both rows procurved in *Agelena*, *Agelescape*, *Allagelena* and *Benoitia*) and moderately procurved in frontal view (AER strongly procurved in *Agelena*, *Agelescape*, *Allagelena*, *Benoitia* and *Malthonica*; AER recurved in *Lycosoides*, *Maimuna* and *Textrix*). Cheliceral retromargin with

3–6 teeth (less than 3 teeth in *Lycosoides*, *Maimuna* and *Textrix*; 6 and more teeth in *Eratigena n. gen.*) approximately equally in size (as is in *Histopona*, all other European genera different pattern). Trochanter straight or slightly curved (notched in *Aterigena*, *Histopona* and *Malthonica*). Patellae with dorsal but no lateral spines (as is in *Eratigena n. gen.*, *Histopona* and *Malthonica*; all other European genera with lateral patellar spines). Absence of ventral spines at all tarsi (as is in *Eratigena n. gen.* and *Malthonica*; all other European genera with ventral spines). Colulus expressed as trapezoidal plate with the distal margin straight or notched medially (in *Eratigena n. gen.* more rectangular or “w”-shaped; colulus strongly reduced in *Hadites* and *Malthonica*; two separated plates in all other European Agelenids). Females with 1–2 minor ampullate gland spigots and 2–3 cylindrical gland spigots, 2–3 spigots conspicuously prominent on PMS (as in *Histopona*, all other European genera with other pattern). Male palp: RTA with a lateroventral ridge (absent in *Eratigena n. gen.*, *Histopona* and *Malthonica*), filiform embolus (sometimes terminally truncated), lamelliform conductor with a mostly simple ventral terminal ending (dorsal part may be more complex; more complex or strongly elongated in *Eratigena n. gen.*, *Allagelena* and *Maimuna*), elongated median apophysis with distal sclerite (absent in *Histopona* and *Textrix*; without sclerite in *Agelena*, *Agelescape* and *Benoitia*). Female: epigyne with a separated median region (strongly fused or absent in *Agelena*, *Agelescape*, *Allagelena*, *Benoitia*, *Eratigena n. gen.*, *Lycosoides* and *Maimuna*). Vulvae very differently shaped but always without diverticula or long appendages at any duct.

Description

Body size medium to large (carapace length between 2 and 6 mm). Margin of carapace narrowly darkened, mostly with 3 crescent shaped spots (for cave living species, pigmentation is absent); two symmetric longitudinal dark bands dorsally on carapace present, serrated or reduced to 3 to 4 pronounced triangles. Sternum slightly longer than wide with a distinct pattern of pale median band and 3–4 lateral spots, sometimes fused together; plumose hairs present on carapace, legs and opisthosoma. Chelicerae with 3–5 promarginal teeth and 3–6 retromarginal teeth, the later all equal in size (sometimes second proximal tooth somewhat smaller or most proximal somewhat bigger). Labium wider as or as wide as long. AER and PER straight or only slightly pro- or recurved in dorsal view and moderately procurved in frontal view. AME, sometimes also PME, somewhat smaller than all other eyes, which are approximately equal in size. All trochanter straight or slightly curved. Leg I or IV longest, III shortest. All legs annulated or no pattern expressed. Palp and leg spination: palpal femora with 1–3 dorsal and sometimes 1 prolateral spines, female palp tibia with 2 dorsal and 2 prolateral spines (exception: *T. ariadnae*, 1 paired + 1 spines), male palp tibia without, 1–2 or 1 pair of prolateral spines; all leg femora with 1–2 dorsal spines and variable lateral spines, patellae with 2 dorsal and no lateral spines, metatarsi without or III and IV sometimes with 1–2 dorsal spines, metatarsus I without or 1 prolateral spine, others variable lateral spines, metatarsi III and IV with 1 pair + 1 ventrodiscal spines, tarsi I and II spineless, III and IV with 0–1 prolateral and 1 to several retrolateral spines, no ventral spines. Spinnerets: colulus developed as trapezoidal plate with the distal margin straight or notched medially. ALS one segmented, distally with a field of several pyriform spigots and medially with 2 major ampullate spigots (present in all Agelenids). PMS as long as or slightly shorter than ALS, bearing 2–3 conspicuously prominent spigots. PMS of females with 1–2 minor ampullate and 2–3 cylindrical spigots (2–3 spigots are prominent medially) and several aciniform gland spigots. PLS longer than all others with distal segment shorter or longer than basal segment. PLS bearing 1 basal and 1 medial cylindrical spigots. Male palp without femoral and patellar apophyses. RTA 2–3 branched, mostly complex (several peaks, bent points, fused branches) and with lateroventral ridge, potentially somewhat reduced. Embolus filiform, getting thinner to apex (may be truncated in some species); sometimes with special formed terminal end.

Conductor mostly lamelliform (in some species very differently expressed), moderately to strongly elongated distal portion, lateral margin folded along the whole length, terminal end (proximal, best viewed from retrolateral) mostly bifid, dividing it in a ventral (functional) and dorsal part (dorsal ending sometimes reduced to rounded bulge). Median apophysis elongated, consisting of membranous base and distal sclerite which is spoon-, thorn- or hook like or more complexly shaped, always membranously connected to the tegulum. Epigynal plate strongly sclerotised with at least moderately distinct median plate with distinct lateral disruptions (lateral margin of median region); median plate may be interrupted transversally, forming a posterior sclerite. Epigynal teeth mostly absent; if present, expressed as “pseudo teeth” (= elongation of lateral margin limiting median region) or denticles originating anteriorly of the genital openings. Vulva consists of 1 or 2 pairs of receptacula or only of a convoluted duct (in some species, a merge of sclerotised parts can be observed); often with a less sclerotised segment at its origin. Fertilisation ducts mostly only represented by the short leaf shaped appendages.

Distribution

Most species are limited to southeastern Europe and western Asia. Some species, e. g. *T. domestica*, are globally distributed, most probably due to introductions by man.

3.2.6. Key to European *Tegenaria* species

In the following key, only European species are included. Following species are excluded as material was unavailable for examination or was in poor state: *T. animata* Kratochvíl & Miller, 1940, *T. bayeri* Kratochvíl, 1934, *T. bosnica* Kratochvíl & Miller, 1940, *T. chumachenkoi* Kovblyuk & Ponomarev, 2008, *T. decolorata* Kratochvíl & Miller, 1940), *T. oribata* Simon, 1916, *T. podoprygorai* (Kovblyuk, 2006), *T. scopifera* Barrientos, Ribera & Pons, 2002 and *T. taurica* Charitonov, 1947.

Due to the absence of available material only the male of *Tegenaria lapicidinarum* Spassky, 1934 and the female of *Tegenaria levantina* Barrientos, 1981 are included in the key.

1	Male.....	2
-	Female	35
2	Row of several dorsal trichobothria present on cymbium.....	3
-	Trichobothria on cymbium absent.....	12
3	Tegular apophysis between tegulum and conductor present (e. g. Figs. 20 I).....	4
-	Tegular apophysis absent	6
4	Tegular apophysis protruding only retrolaterad, ventral branch of RTA with indistinct rim and moderately protruding bulge.....	<i>eleonorae</i>
-	Tegular apophysis protruding also distally, ventral branch of RTA with distinct longitudinal rim.....	5
5	Ventral branch of RTA with long drawn out rim, almost as long as palpal tibia, distal branch of conductor reaching 2/3 of cymbium tip, distal segment of PMS shorter than basal segment	<i>armigera</i>
-	Long drawn out rim of RTA relatively shorter than palpal tibia, distal branch of conductor reaching 1/3 of cymbium tip, distal segment of PMS longer than basal segment.....	<i>tyrrhenica</i>
6	Dorsal branch of RTA with 2–3 elongated spine like points	7
-	Dorsal branch of RTA different	8
7	Distal portion of conductor transversal to cymbium.....	<i>dalmatica</i>

-	Distal portion of conductor parallel to cymbium	<i>ramblae</i>
8	Dorsal branch of RTA strongly protruding and pointed	9
-	Dorsal branch of RTA distally truncated and stepped	10
9	Ventral branch of RTA distally not protruding, terminal end of conductor bifid (retrolateral view)	<i>femorialis</i>
-	Ventral branch of RTA distally tusk like elongated and protruding, terminal end of conductor indistinctly bifid (retrolateral view)	<i>annulata</i>
10	Conductor much shorter than cymbium	<i>parietina</i>
-	Conductor longer than 3/4 cymbium length	11
11	Lateral branch of RTA distinctly truncated, flat, ventral portion of terminal end of conductor truncated	<i>ferruginea</i>
-	Lateral branch of RTA moderately pointed, longer than broad, ventral portion of terminal end of conductor pointed	<i>carensis</i>
12	Median apophysis with distal sclerite plate-, spoon- or pocket like	13
-	Median apophysis with distal sclerite forming a finger shaped, thorn- or hook-like structure (can be in combination with a plate)	21
13	RTA with dorsal and lateral branch equally long, dorsal branch distally truncated (Figs. 21 b, 22 C, 25 J), median apophysis long band-like, distally moderately bent ventrad. 14	
-	RTA and median apophysis differently shaped	15
14	Embolus short and distally truncated, distal portion of conductor only moderately elongated	<i>domestica</i>
-	Embolus longer, filamentous, distal portion of conductor longer than wide, conductor with bifid terminal end with very distinctive formed dorsal part	<i>annae n. sp.</i>
15	Distal portion of conductor almost parallel to cymbium	16
-	Distal portion of conductor transversal to cymbium, elongated posteriad, RTA with a row of small denticles	<i>argaica</i>
16	RTA with lobe, bulge or rim like dorsal branch	17
-	RTA with pointed branche/branches	18
17	RTA with strongly protruding lobe or rim like dorsal branch, very special formed terminal end of conductor, tegular apophysis absent, cymbium inconspicuous	<i>hauseri</i>
-	RTA with bulge like branches, terminal end of conductor inconspicuously pointed, lamelliform tegular apophysis present, cymbium conspicuously modified and distally elongated	<i>ariadnae</i>
18	Lateral branch of RTA shifted posteriad (originating median of the tibia), distant, strongly protruding and pointed	<i>vankeeri n. sp.</i>
-	Lateral branch of RTA different	19
19	Conductor reduced to transparent lamelliform appendage	<i>racovitzae</i>
-	.....	20
20	RTA with two strongly sclerotised points, tegular apophysis absent	<i>hasperi</i>
-	RTA with only one strongly sclerotised point, tegular apophysis expressed as pocket like structure	<i>rhodiensis</i>
21	Ventral part of terminal end of conductor distinctly elongated and pointed (Figs. 28 a, b, d, e), dorsal part complex	22
-	Different	24
22	RTA with massive protruding bulge, good visible in ventral view	<i>circeoensis n. sp.</i>
-	RTA lobe or moderately bulge like, may be distally bent	23
23	RTA distally not bent, dorsal part of terminal end of conductor convex “rounded”	<i>parmenidis</i>
-	RTA distally bent, dorsal part of terminal end of conductor concave or straight	<i>sbordonii</i>

24	Dorsal branch of RTA broadly elongated and protruding, distally bifid (Fig. 26 G)	
	.....	<i>campestris, bozhkovi, montana, rilaensis</i>
-	Dorsal branch of RTA differently shaped or absent	25
25	Lateral branch of RTA broad and strongly protruding, distally with a straight, truncated ventral part and a strongly elongated, finger shaped dorsal protuberance (Fig. 23 F, H), conductor and median apophysis strongly elongated and narrowly pointed, hook like (Fig. 23 F–I)	
	.....	<i>schoenhoferi n. sp.</i>
-	Lateral branch of RTA different, never conductor and median apophysis strongly elongated and narrowly pointed, hook like	26
26	Tegulum medially strongly protruding (Figs. 36 B, F, 37 b–c)	27
-	No distinct protuberance at medially of the tegulum	28
27	Dorsal branch of RTA truncated, median protrusion of tegulum more or less constantly rounded (Fig. 36 B), distal end of distal portion of conductor moderately bent ventrad (lateral viewed)	
	.....	<i>silvestris</i>
-	Dorsal branch of RTA hook like pointed and distally bent ventrad, median protrusion of tegulum distally bent (Fig. 36 F), distal portion of conductor straight (lateral viewed)	
	.....	<i>parvula</i>
28	Embolus relatively short, not exceeding cymbium width or truncated	29
-	Embolus long, filiform	31
29	Terminal end of embolus truncated	
	.....	<i>mirifica</i>
-	Terminal end of embolus pointed	30
30	Conductor with distinctly protruding dorsal portion, terminal end of conductor bifid, RTA with two protruding points	
	.....	<i>mercanturensis</i>
-	Dorsal portion of conductor not protruding, terminal end of conductor with only one point, RTA different	
	.....	<i>percuriosa</i>
31	Conductor parallel to cymbium	32
-	Dorsal portion of conductor transversally orientated to cymbium	
	.....	<i>pagana</i>
32	Distal branch of RTA distinctly leave-shaped	
	.....	<i>regispyrrhi</i>
-	Distal branch of RTA different	33
33	Dorsal branch of RTA hook like, pointing anteriad, distinct rim at conductor present	
	.....	<i>henroti</i>
-	Dorsal branch of RTA pointed, straight or distally bent ventroposteriad	34
34	Dorsal branch of RTA pointed and distally bent ventroposteriad, terminal end of conductor bifid	
	.....	<i>tridentina</i>
-	Dorsal branch of RTA pointed but not bent, terminal end of conductor with one point only	
	.....	<i>lapidicinarum</i>
35	Row of several dorsal trichobothria present on palp tarsus	36
-	Trichobothria on palp tarsus absent	45
36	Epigyne with distinct band or bar like posterior sclerite with anterior margin concave	37
-	Epigyne without posterior sclerite or with sclerite with anterior margin convex	40
37	Posterior sclerite posteriorly protruding along its whole width (Fig. 25 C)	
	.....	<i>carensis</i>
-	Posterior sclerite with straight posterior margin or only medially protruding	38
38	Posterior sclerite medially almost half as long as wide	
	.....	<i>ramblae</i>
-	Posterior sclerite medially much shorter than wide	39
39	Lateral margins of the median region of the epigyne follows distinctly the run of the posterior sclerite (especially anteriorly, Fig. 33 C, white arrow), vulva strongly convoluted (in two spirals), separated by less than 2 duct diameters, more than 3 in <i>T. parietina</i>	
	.....	<i>ferruginea</i>
-	Lateral margins of the median region of the epigyne runs toward the middle of the epigyne (Fig. 33 G, white arrow), vulva less convoluted (especially first spiral), separated by more than 3 duct diameters	
	.....	<i>parietina</i>

40	Epigyne with well separated posterior sclerite, expressed as large plate or bulge.....	41
-	Epigyne without posterior sclerite or with median plate distinctly connected to epigynal plate (anteriorly) or with broad opening posteriorly	43
41	Posterior sclerite expressed a large plate, copulatory openings laterally of this plate (Fig. 31 H).....	<i>leonorae</i>
-	Posterior sclerite bulge like	42
42	Posterior sclerite globular bulge like, copulatory openings laterally, vulva strongly convoluted ducts, almost touching each other	<i>tyrrhenica</i>
-	Posterior sclerite trapezoidal bulge like, copulatory openings anteriorly, vulva distinctly convoluted, well separated	<i>annulata</i>
43	Epigyne with broad posterior opening (Fig. 20 G, white arrow)	<i>armigera</i>
-	Epigyne median plate distinctly connected to epigynal plate (anteriorly).....	44
44	Median plate moderately protruding, suboval, distinctly round or oval copulatory openings anteriorly of median plate	<i>dalmatica</i>
-	Median plate not protruding, subrectangular, pocket like copulatory openings visible anteriorly of median plate	<i>femoralis</i>
45	Very special epigyne, anteriomedially with a narrow rectangular septum, posteriorly with a semicircle shaped pocket, opening anteriorly (Figs. 30 C).....	<i>hauseri</i>
-	Different	46
46	Epigyne with a distinct, strongly sclerotised transversal rim forming a pocket, opening posteriorly, copulatory opening anteriolaterally of this structure (Figs. 38 C, E, G, I)	<i>regispyrrhi</i> (incl. aff. <i>regispyrrhi</i>)
-	Different	47
47	Epigyne with protruding median plate, suboval, anteriolaterally with distinct pockets, opening medioposteriorly, orthogonal in the middle of each of these pockets another pocket originates orthogonally (Figs. 35 C–E, I).....	<i>pagana</i>
-	Different	48
48	Epigyne with a distinct posterior sclerite, expressed as bar-, bulge- or plate like structure	49
-	Posterior sclerite absent or strongly fused with epigynal plate	59
49	Indistinct small epigynal teeth at the anteriolateral margin of median region sometimes present, very complex vulva with 2 receptaculi and convoluted duct (Fig. 20 E–F, 24 a–b).....	<i>argaeica</i>
-	No epigynal teeth or only “pseudo teeth” present, vulva less complex	50
50	Posterior sclerite expressed as plate like structure reaching the anterior margin of median region or bulge like with anterior margin convex, “pseudo teeth” present.....	51
-	Posterior sclerite expressed as a bar like structure with anterior margin straight or concave.....	52
51	Posterior sclerite expressed as plate like structure reaching the anterior margin of median region, “pseudo teeth” absent	<i>henroti</i>
-	Posterior sclerite bulge like with anterior margin convex, large reddish receptaculum visible through epigynal plate, “pseudo teeth” present	<i>racovitzae</i>
52	“Pseudo teeth” present	53
-	“Pseudo teeth” absent.....	54
53	CT longer than 3 mm, vulva as long as wide, sub circularly shaped	<i>domestica</i>
-	CT longer shorter than 2.5 mm, vulva twice as long as wide, sub rectangularly shaped	<i>annae</i> n. sp.
54	Posterior sclerite broad pocket like or narrow semi circularly shaped, protruding posteriorly	55
-	Posterior sclerite broad bar- or bulge like, only inconspicuously protruding	56

55	Posterior sclerite broad pocket like, protruding, vulva globularly shaped.....	<i>achaea</i>
-	Posterior sclerite narrow semi circularly shaped, protruding posteriad, vulva with distinct appendages, visible trough the epigynal plate.....	<i>percuriosa</i>
56	Distal margin of posterior sclerite straight.....	<i>faniapollinis</i>
-	Distal margin of posterior sclerite concave.....	57
57	Distal margin of posterior sclerite only moderately concave, as wide as deep, vulva globularly shaped	<i>pieperi</i>
-	Distal margin of posterior sclerite distinctly concave or anteriorly with a very distinct, tongue like median septum, vulvae without distinguishable RC, duct like	58
58	Distal margin of posterior sclerite distinctly concave, semi circularly shaped (Fig. 34 E)	<i>tridentina</i>
-	Anteriorly of posterior sclerite with a very distinct, tongue like median septum (Fig. 34 I)	<i>levantina</i>
59	Epigyne with distinct epigynal teeth, originating at the posterior margin of the median plate or “pseudo teeth” (distally pointed projections of lateral margin of median region)	60
-	Epigyne without epigynal teeth.....	61
60	Epigynal teeth, originating at the posterior margin of the median plate	<i>rhodiensis</i>
-	“Pseudo teeth” (distally pointed projections of lateral margin of median region) present	<i>pindosiensis</i> n. sp.
61	Epigyne distinctly shaped like a “half-mask” (Fig. 20 M), vulva as in Fig. 20 N–O	<i>montiszasensis</i> n. sp.
-	Character combination different.....	62
62	Epigyne very distinct (Fig. 30 H), distal segment of PLS almost 2 x longer than basal segment.....	<i>schmalfussi</i>
-	Character combination different.....	63
63	Epigynal median region anteriorly continuously separated from the epigynal plate by a distinctly sclerotised rim (Figs. 29 F, white arrow)	64
-	Distinct separation of the median region by a sclerotised rim absent.....	68
64	Median region oval, no pocket expressed, vulva sub rectangular shaped.....	<i>mirifica</i>
-	Median region rectangular or trapezoidal shaped, vulva globular or sub oval shaped ..	65
65	Median region with a distinct pocket in the middle, opening anteriad	66
-	Median region without median pocket.....	67
66	Copulatory openings are located at the lateral sides of the median pocket.....	<i>sbordonii</i>
-	Copulatory openings are much more anteriorly located (Fig. 28 j)	<i>parmenidis</i>
67	Copulatory openings originating distant from the lateral rim, no lateral pockets developed	<i>capolongoi</i>
-	Copulatory openings originating right at the lateral rim, distinct pockets posteriorly of the copulatory openings at the lateral rim present.....	<i>circeoensis</i> n. sp.
68	Distinct median plate, smoothly sclerotised, vulva developed as a strongly convoluted duct.....	69
-	Median plate distinctly or indistinct, mostly irregularly sclerotised, vulva globular or irregularly shaped, never only duct like	71
69	Epigynal median plate almost as long as wide, epigyne and vulva as in Figs. 36, 37 ...	70
-	Epigynal median plate wider than long (Figs. 26 A–B).....	<i>campestris</i> – complex (Deltshev, 1993, 2008b)
70	Epigyne and vulva as in Figs. 36 K–L, genital openings distinct	<i>parvula</i>
-	Epigyne and vulva as in Figs. 36 G–J, 37 d–j	<i>silvestis</i>
71	Median plate strongly and irregularly sclerotised, very large and distinct copulatory openings	<i>mercanturensis</i>
-	Character combination different.....	72

- 72 Strongly sclerotised epigyne, copulatory openings triangular or almond like shaped, vulva sub oval shaped*ariadnae*
- Epigyne less sclerotised without distinct median plate, vulva irregularly formed or with convoluted fertilisation duct..... 73
- 73 Indistinct median region rectangular shaped, copulatory openings at the anterior border of this area, most often plugged, vulva very distinctly shaped (Fig. 20 L).....*hasperi*
- Median region trapezoidal shaped, copulatory opening laterally of this area, ducts and receptaculi well visible through the epigynal plate, vulva with broad copulatory ducts, small globular receptaculum and convoluted fertilisation duct (Fig. 30 K–O).....
.....*croatia n. sp.*

3.2.7. *Tegenaria* species

The species are listed in alphabetic order for each of which taxonomical and nomenclatural relevant references are provided (e.g. first descriptions, synonymies). The species are diagnosed with the key. In some cases additional diagnostic or grouping characters are provided. For additional citations concerning the distribution (see e. g. van Helsdingen, 2009) or published illustrations see Bonnet (1959) and Platnick (2010).

The examined material is listed in following order: **Country: state/region/canton:** commune, locality, number of specimens (comments, Collection code, voucher number), collecting date, collector(s).

Tegenaria achaea Brignoli, 1977

Fig. 20 A–B

Tegenaria achaea Brignoli (1977b): 945, fig. 4, female.

Type material examined

Holo- and paratype. Greece: North Aegean: Ikaria, “grotte Phutra to Nao, dans le massif Messaria près Petropoulion”, 2 ♀ (MHNG, Hel-75/27), 24.IV.1975, Hauser.

Description

General description is provided by Brignoli (1977b). Due to his statement on page 945, “Misura: (in mm, leggermente approssimate):...” (Brignoli, 1977b: 945), the two females are remeasured here:

Female (n=2): CL 2.03–2.60, CW 1.46–1.91, STL 1.01–1.33, STW 1.01–1.15, OL 3.72, OW 2.69. Leg I (3.41, 1.04, 3.22, 3.3, 1.9), II (2.54–2.75, 0.78–0.92, 2.22–2.68, 2.33–3.05, 1.36–1.53), III (2.15, 0.66, 1.89, 2.3, 1.15), IV (2.68–3.56, 0.76–0.96, 2.48–3.26, 3.14–4.08, 1.37–1.57). Palp (0.99–1.31, 0.35–0.51, 0.79–0.92, 0.88–1.19). Eyes: PME 0.08, PLE 0.09, AME 0.06, ALE: 0.09. Eye distances: PME-PME 1.5 x PME, PME-AME 1.5 x PME, PME-PLE 1.5 x PME, PME-ALE 1–1.5 x PME, AME-AME 1 x AME, AME-ALE 1 x AME.

Distribution

The only records known are the type specimens from the island Ikaria, Greece.

Tegenaria animata Kratochvíl & Miller, 1940

Tegenaria animata Kratochvíl & Miller (1940): 196–198, fig. 4, female.

Pseudotegenaria animata Lehtinen (1967): 261; transfer doubted by Brignoli (1971a: 61); rejected by Bolzern et. al (accepted).

No material examined, type material probably lost (see Ruzicka, Kurka, Buchar, & Rezac, 2005).

Description

A very detailed description, including measurements, is provided by Kratochvíl & Miller (1940).

Distribution

The species is recorded from Serbia and Montenegro and Macedonia (Platnick, 2010; van Helsdingen, 2009).

Tegenaria annae new species

Figs. 21 a–d, 22 A–G

Type material

Holo- and paratypes. Greece: Euboea (Evvoia): Monastery „Osios David”, holotype ♂, ♀ (ex coll. van Keer, 2050, NMB, AB1018–1019), 10.V.2001, van Keer & van Keer; Paralia Hiliadou (= Paralia Chiliadou), 2 ♀ (ex coll. van Keer, 2046, RBINS), 9.V.2001, van Keer & van Keer; Oros Dirfis, ♂ (MSNB, 002), 29.V.1998, Giachino & Vailati.

Etymology

The species is named after the youngest sister of Johan and Koen van Keer (Belgium), Ann van Keer. It was the wish of Ann’s brothers to dedicate a new spider species to her as a special gift; genitive singular case, first declension.

Diagnosis

The dorsal part of the bifid terminal end of the conductor and the RTA with its round and plate like ventral branch are two very distinctive character for the determination of *T. annae* n. sp. and not confusable with other known species so far. Females do show a close similarity in genitalia with *T. domestica* but can be separated from this species by the distinctly oval oblong vulva (more irregularly globular in *T. domestica*).

Description

Measurements

Male (n=2): CL 3.40–3.46, CW 2.65–2.81, STL 1.71–1.73, STW 1.63–1.66, OL 4.12–4.42, OW 2.66–3.03. Leg I (3.91–4.18, 1.29–1.38, 3.64–3.82, 3.91–4.29, 2.29–2.50), II (3.74–3.87, 1.26–1.37, 3.07–3.36, 3.54–3.99, 1.98–2.24), III (3.64–3.73, 1.31–1.35, 3.09–3.16, 3.81–3.84, 1.70–1.89), IV (4.37–4.62, 1.08–1.35, 3.84–4.04, 4.85–4.98, 1.91–2.17). Pedipalp (1.32–1.39, 0.51–0.52, 0.50–0.54, 1.45–1.49), bulbL 0.86–0.98.

Female (n=2): CL 2.39–2.99, CW 1.80–2.24, STL 1.17–1.55, STW 1.12–1.38, OL 2.95–3.34, OW 1.94–2.27. Leg I (2.42–3.02, 0.87–1.10, 2.24–2.77, 2.32–2.91, 1.49–1.83), II (2.14–2.78, 0.75–0.99, 1.97–2.39, 2.06–2.60, 1.26–1.56), III (2.06–2.73, 0.66–0.88, 1.75–2.03, 1.95–2.64, 0.89–1.31), IV (2.67–3.38, 0.82–0.86, 2.45–3.15, 2.83–3.57, 1.31–1.50). Pedipalp (0.92–1.21, 0.41–0.54, 0.61–0.82, 0.99–1.27). EPL 0.42, EPW 0.56–0.69, ATL 0.08–0.09, ATW 0.27–0.34.

Eyes: PME 0.12–0.16, PLE 0.14–0.17, AME 0.09–0.14, ALE 0.12–0.16. Eye distances: PME-PME 0.5–1 x PME, PME-AME 0.5–1 x PME, PME-PLE 0.5–1 x PME, PME-ALE 1 x

PME, AME-AME <0.5–1 x AME, AME-ALE <0.5 x AME. CLY1 1.5–2 x AME, CLY2 1–1.5 x ALE.

Male palp

RTA with 3 branches, ventral branch broad round and plate like, lateroventral ridge clearly visible, lateral and dorsal branch equally long elongated, dorsal branch moderately pointed, dorsal branch distally broad truncated. Embolus filiform, originating at 9 o'clock, about 1.5 x CB with terminal end at 2–3 o'clock. Distal portion of conductor distinctly elongated, longer than wide, lateral margin almost completely folded. Terminal end strongly sclerotised and bifid, ventral part simple and pointed, dorsal part with lobe like distinct protrusion, bent ventrad. Connection of conductor to tegulum moderately sclerotised. MA protruding with distal plate like sclerite forming a spoon like structure, membranously connected to tegulum, originating at 6 o'clock.

Epigyne and vulva

Epigyne medially with a pale, membranous area. Posterior sclerite expressed as a sclerotised bar with anterior margin concave, limiting median area posteriorly. GO between and laterally of the membranous median area and the posterior sclerite. Epigynal „pseudo teeth“ present. Vulva consists of distinguishable CD, RC and FD. CD leading into oblong globular, irregularly formed RC which almost touching each other anteriorly. FD only represented by small leaf shaped appendages distally of the RC.

Other important characters

Cheliceral promargin with 4 teeth, retromargin with 4 equally sized teeth. Colulus developed as trapezoidal plate with the distal margin medially notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment as long as basal segment. Tarsal trichobothria at palpal tarsus and cymbium absent. Tarsal trichobothria 6–8. Leg spination: male palp (2–0–0–0 or 2–1–0–0, 2–0–0, 0–2–0–0), female palp (1–0–0–0 or 2–0–0–0, 2–0–0, 2–2–0–0), leg femora (2–2–1–0 or 2–2–2–0 or 2–3–2–0, 2–1–1–0 or 2–1–2–0 or 2–2–2–0 or 2–3–2–0, 2–1–2–0 or 2–2–1–0 or 2–2–2–0, 1–2–1–0 or 2–1–1–0 or 2–2–1–0), patellae (all 2–0–0, except holotype with 2–0–1 at leg IV), tibiae (2–1–0–2p or 2–2–0–2p+1 or 2–2–2–3p, 2–2–0–2+1p or 2–2–2–1p+1+1p or 2–2–2–3p, 2–2–1–1p+1+1p or 2–2–2–1p+1+1p or 2–2–2–3p, 2–2–2–1p+1+1p), metatarsi (0–0–0–3p+1 or 0–1–1–3p+1, 0–1–0–3p+1 or 0–2–0–3p+1 or 0–1–1–3p+1 or 0–2–1–3p+1, 0–3–3–3p+1, 0–3–3–3p+1 or 1–3–3–3p+1), tarsi (all 0 or III and IV 0–1–0–0).

Colouration

Margin of carapace continuously darkened, dorsally with two longitudinal symmetric dark bands. Sternum with distinct pale median band and lateral three symmetric pale dots, most posterior pair may be fused with median band. Opisthosoma dark brownish with yellowish median band (also with indistinct paler lateral bands) and 1–2 symmetric lateral spots, continuing in chevrons posteriad. Legs annulated. ALS darkened, PLS with dark basal and pale distal segment.

Distribution

Only known from two locations in Greece, Evvoia.

***Tegenaria annulata* Kulczynski, 1913 stat. rev.**

Fig. 23 A–E

Tegenaria annulata Kulczynski (1913): 6–10, female.

Tegenaria annulata Kulczynski (1914): 381, pl. 16, figs. 48, 51–52, male.

Malthonica annulata Guseinov et al. (2005): 164.

No typematerial available.

Other material examined

Croatia (?): Lesina, 1 £ (sub *Tegenaria agrestis*, det. Steindachner, „not *T. agrestis*“, det. Gruber, NHMW, 2540), 1861, Steindachner.

Bosnia-Herzegovina: Popovo polje, Cvalijna, Baba Pecina, 1 \$, 2 £ (MHNG), 23.X.1968, Vigna & Vigna; Popovo polje, Cvalijna, Baba Pecina, 2 £ (MCSN, 52), 23.V.1968, Vigna; Popovo polje, Zavala Pecina Vjetenica, 2 \$ (MCSN, 52), 22.X.1969, Vigna; Bjelašnica, Zavala, 1 £ (MNHN, 1979).

Description

Measurements

Male (n=1): CL 3.58, CW 2.62, STL 1.81, STW 1.79. Leg I (6.29, 1.63, 6.32, 6.93, 2.74), II (5.35, 1.51, 5.04, 6.1, 2.24), III (4.64, 1.34, 3.90, 5.49, 1.92), IV (5.69, 1.47, 5.16, 7.23, 2.52), Pedipalp (2.09, 0.69, 0.78, 1.76), bulbL 1.52.

Female (n=1): CL 5.33, CW 3.89, STL 2.51, STW 2.24. Leg I (7.46, 2.27, 6.80, 7.86, 3.20), II (6.68, 1.88, 6.10, 6.62, 2.61), III (5.94, 1.84, 4.75, 6.44, 2.44), IV (9.02, 2.62, 7.85, 8.40, 2.76). Pedipalp (2.35, 0.94, 1.40, 2.37). EPL 0.82, EPW 1.10, ATL 0.42, ATW 0.56.

Eyes: PME 0.18–0.21, PLE 0.19–0.22, AME 0.15–0.19, ALE 0.19–0.24. Eye distances: PME-PME 0.5–1 x PME, PME-AME 1 x PME, PME-PLA 0.5–1 x PME, PME-ALE 1–1.5 x PME, AME-AME 0.5–1 x AME, AME-ALE <0.5 x AME. CLY1 2–2.5 x AME, CLY2 1–1.5 x ALE.

Male palp

RTA with 3 branches, ventral branch distally tusk like elongated, ventrally forming a distinct ridge, reaching almost three-fourths of tibia length, lateral branch short and simple pointed, pale, dorsal branch broad and strongly sclerotised, distally oblique truncated and moderately pointed. Embolus filiform, originating at 6–7 o'clock, longer than 2.5 CB with terminal tip at 4 o'clock. Conductor with distal portion conspicuously narrow and strongly elongated, distally moderately bent, lateral margin completely folded. Terminal end indistinctly bifid, ventral part simple and pointed or moderately truncated, dorsal part only indistinct protuberance. Connection between conductor and tegulum moderately sclerotised, distinctly arch like shaped. MA strongly protruding with hook like shaped distal sclerite, membranously connected to tegulum and originating at 5 o'clock. Basal part of tegulum good visible, undulated.

Epigyne and vulva

Epigyne with distinct median area, posterior sclerite expressed as a trapezoidal sclerotised bulge. CO anteriorly of posterior sclerite, anteriolaterally limited by moderately protruding, distinctly sclerotised massive margin of the epigynal plate. Epigynal „pseudo teeth“ absent. Vulva consists of combined ducts (CBD), strongly convoluted, no distinct RC recognisable. CBD well separated from each other. FD only represented by small leaf shaped appendages terminally of CBD.

Other important characters

Cheliceral promargin with 4, retromargin with 4–5 teeth. Colulus developed as trapezoidal plate with the distal margin straight. Female with 2 minor ampullate and 4 cylindrical gland spigots distally on PMS, 2 medially prominent and 4 laterally (2 on both sides). PLS with distal segment as long as basal segment. Tarsal trichobothria at cymbium and palpal tarsus present. Tarsal trichobothria 7–10. Denticles at paired claw of leg I 15. Leg spination: male palp (2–1–0–0, 2–0–0, 1–2–0–0 or 2–2–0–0), female palp (2–1–1–0, 2–0–0, 2–2–0–0), leg femora (1–3–2–0 or 1–4–2–0 or 1–4–4–0 or 2–3–2–0, 1–3–2–0 or 2–3–2–0, 1–2–2–0 or 1–3–2–0, 1–1–1–0 or 1–2–1–0 or 1–3–2–0), patellae (all 2–0–0), tibiae (0 or 0–0–0–2, 0–1–0–0 or 0–1–0–2 or 0–2–0–2, 2–2–1–3 or 2–2–2–2+1p or 2–2–2–2p, 2–1–1–1+2p or 2–1–1–2+1p or

2–2–1–2+1p), metatarsi (0–0–0–3p or 0–0–0–3p+1, 0–1–0–1p+1+1p+1 or 0–1–0–3p+1, 0–2–2–3p+1 or 0–3–2–3p+1, 0–2–3–1+3p+1), tarsi (I and II 0, III and IV 0–0–1–0).

Colouration

Margin of carapace narrowly darkened with 3 distinctly crescent shaped spots, dorsally with 2 symmetrical longitudinal dark bands. Sternum with distinct pale median band and 3 symmetric pairs of pale dots laterally, moderately fused together. Opisthosoma pale yellowish (may be due to alcohol preservation) with many dark spots, 1 or 2 pairs of symmetric white spots anteriorly, posteriorly with chevrons. Legs annulated. Colulus, ALS and basal segment of PLS darkened, distal segment pale.

Distribution

Records are known from different Balkan countries (Bosnia and Herzegovina and Croatia). Also listed for Serbia and Montenegro (Platnick, 2010).

Discussion

As discussed by Brignoli (1971a) and Bolzern et al. (accepted), this species is closest related to species referred to *Pseudotegenaria* by Lehtinen (1967) and to *T. tridentina* (see Simon, 1937). This relationship is based on morphology and for *T. tridentina* also on DNA.

***Tegenaria argaeica* Nosek, 1905 stat. rev.**

Figs. 20 C–F, 24 a–b

Tegenaria argaeica Nosek (1905): 136–138, pl. IV, figs. 15a–b.

Tegenaria boitanii Brignoli (1978c): 518–519, figs. 94–95, only female (misidentification); the male belongs to *T. percuriosa* Brignoli (1972) (see Gasparo, 2007).

Malthonica argaeica Guseinov et al. (2005): 164.

Type material examined

Syntypes. Turkey: Kayseri: „Asia Minor: Erdschias Dag, Nordseite“, 1 ♂, 1 ♀ (NHMW), V.1902, Penther.

Sub *Tegenaria boitanii*, paratypes. Turkey: Ankara: Kizilcahamam, 2 ♀ (MCSN, 544), 16.VII.1971, Brignoli; Bolu: Abant, 1 ♀ (MHNG), 17.VII.1971, Brignoli.

Other material examined

Turkey: Corum: Mecitözü, 2 ♂ (MCSN, 544, MHNG), 5.VI.1969, Brignoli.

Diagnosis

T. argaeica is closely related to *T. lyncea* (Brignoli, 1978) and *T. pseudolyncea* Guseinov, Marusik & Koponen, 2005. Useful figures of both related species are provided by Guseinov et al. (2005: figs. 57–58, 63–68, 122–123 (*lyncea*), 51, 53–56, 59–62, 100–101, 125 (*pseudolyncea*)). Most important characters for the separation of these species are the small denticles at the dorsal branch of the RTA (absent in the other species), and the much longer and stronger convoluted duct of the vulva (shorter and less convoluted in the other species).

Description

Nosek (1905) provided a very detailed description of this species, including measurements and leg spination patterns. Except the drawing of the epigyne, this description is sufficient. Good pictures of the male palp are e.g. the SEM photographs provided by Seyyar et al. (2008).

Distribution

T. argaeica is described from the central/northern parts of Turkey. Its occurrence in Bulgaria (Drensky, 1942) is doubted, because no reference or newly collected specimens are available (Deltshev, 1993).

Discussion

The original description of *T. argaeica* is very detailed and precise. However, the drawing of the epigyne (Nosek, 1905: plate IV, fig. 15b) does not seem to match the female paratype. Drensky (1942) listed the species from Bulgaria and provided a drawing of the epigyne which may have been copied from Nosek (Brignoli, 1978c). Unfortunately, the specimens from Drensky are not available for examination (see Deltshev, 1993). Seyyar et al. (2008) redescribed *T. argaeica* without referring to this problem.

Based on the examination of fresh material, Gasparo (2007) showed that *T. boitanii* of previous authors was a mixture of species (males not conspecific with females). The holotype of *T. boitanii* being a male he synonymised *T. boitanii* with *T. percuriosa*. He further mentioned that females of *T. boitanii* sensu auct. may represent an undescribed species. The examination of the paratype of *T. argaeica* and the two females of *T. boitanii* of Kizilcahamam showed that they are conspecific. Also the descriptions of female *T. boitanii* and *T. argaeica* are matching (Brignoli, 1978c; Nosek, 1905).

***Tegenaria ariadnae* Brignoli, 1984**

Figs. 21 e–h, 22 H–L

Tegenaria ariadnae Brignoli (1984): 305–306, fig. 28, female.

Tegenaria labyrinthi Brignoli (1984): 306–307, fig. 30, female, **new synonym**.

Description of male.

Type material examined

Holo- and paratype. Greece: Crete: Perama, grotte "Melidoni spilia", 3 ♂ (holo- and paratype, MHNG, Kar 79-17; paratype, MCSN, 542), 14.III.1979, Hauser.

Sub *Tegenaria labyrinthi*: holotype. Greece: Crete: „Heraklion, Risorgenza di Almiros“, Gazi, 1 ♂ (MCSN, 542), 21.VIII.1974, Sbordoni.

Other material examined

Greece: Crete: Rethimno, Melidoni Andron Cave, 4 ♂, 7 ♀ (\$ juv. until X.-XII.2007, 2 ♀ juv. until I.2008, NMB, AB845, 892, 902, 917, 965), 10.X.2007, Bolzern & Ramseyer; „Melidhoni Spileo“, 4 ♂ (MNHN), 26.VI.1926, Wichmann; Rethimno, Zoniana, Sfentoni cave (Zoniana cave), 5 ♂ (2 ♀ juv. until XII.2007 and I.2008, 2 ♀ juv. until X.2008, NMB, AB893, 906, 974), 11.X.2007, Bolzern & Ramseyer.

Description

Measurements

Male (n=1): CL 3.76, CW 2.94, STL 1.92, STW 1.70, OL 4.61, OW 2.78. Leg I (7.33, 1.51, 7.41, 7.49, 3.61), II (6.51, 1.44, 6.37, 7.52, 3.09), III (5.75, 1.42, 5.49, 7.21, 2.6), IV (6.79, 1.33, 6.74, 9.01, 3.15). Pedipalp (3.03, 1.06, 1.35, 1.72), bulbL 0.94.

Female (n=2): CL 4.45–4.64, CW 3.17–3.33, STL 2.16–2.24, STW 1.93–1.97, OL 5.30, OW 3.72. Leg I (7.28–7.55, 1.82–1.84, 7.07–7.44, 7.66–7.85, 3.41–3.63), II (6.76–6.86, 1.81, 6.1–6.37, 6.97–7.04, 3.03–3.10), III (6.15–6.36, 1.58–1.63, 5.46–5.7, 6.99–7.01, 2.55–2.65), IV (6.98–7.22, 1.65–1.78, 6.66–7.29, 7.49–9.32, 2.82–3.09). Pedipalp (2.57–2.74, 0.98–0.99, 1.70–1.80, 2.12–2.17). EPL 0.43–0.5, EPW 0.81–0.82, ATL 0.17–0.30, ATW 0.33–0.55.

Eyes: PME 0.11–0.15, PLE 0.14–0.16, AME 0.11–0.12, ALE 0.16–0.18. Eye distances: PME-PME 1–2 x PME, PME-AME 0.5–1.5 x PME, PME-PLE 1–2 x PME, PME-ALE 0.5–1.5 x PME, AME-AME 0.5–1 x AME, AME-ALE 0.5–1 x AME. CLY1 2–3 x AME, CLY2 1.5–2 x ALE.

Male palp

Cymbium modified, dorsobasally with a depression, distal portion narrowly elongated. RTA with 2 branches, lateral branch basally strongly sclerotised, somewhat fused with the lateroventral ridge, distally membranous, protruding, very close to the dorsal branch which is protruding and strongly sclerotised, distally flattened and broadly rounded. Embolus filiform, originating at 8 o'clock, about 1 CB long, terminal tip at 2 o'clock. Conductor triangularly shaped, distal portion elongated, lateral margin completely folded. Terminal end with moderately protruding dorsal bulge, ventral part short and simply pointed. Tegular apophysis present, lamelliform, protruding basally of conductor. Conductor membranously connected to tegulum. MA strongly protruding with distal plate like sclerite, distally tapered, membranously connected to tegulum, originating at 5 o'clock.

Epigyne and vulva

Epigynal plate strongly sclerotised. Posterior sclerite absent. CO at the anterior border of the median area, triangular or almond like shaped holes, surrounded by a moderately protruding bluge like margin, distinctly sclerotised. Vulva consists of distinguishable CD, RC and FD. CD very short leading into oblong globular and smoothly sclerotised RC, separated by 1.5–2 x their diameter. FD only represented by small leaf shaped appendages distally of the RC.

Other important characters

Cheliceral promargin with 3, retromargin with 3–4 teeth. Colulus developed as trapezoidal plate with the distal margin medially notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment as long as basal segment. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 7–10. Denticles at paired claw of leg I 11–13. Leg spination: male palp (3–1–0–0, 2–0–0, 1–2–0–0), female palp (3–1–0–0, 2–0–0, 2–1p+1–0), leg femora (2–3–2–0 or 2–3–3–0 or 2–5–4–0, 2–4–2–0 or 2–4–3–0 or 2–4–4–0 or 2–5–4–0, 2–2–2–0 or 2–2–3–0 or 2–3–3–0 or 2–3–4–0, 2–1–1–0 or 2–1–2–0), patellae (all 2–0–0), tibiae (0–2–2–2 or 2–2–2–1+1p or 2–2–2–2p, 2–2–2–1+1p or 2–2–2–2p, 2–2–2–1+1p or 2–2–2–1+1p+1 or 2–2–2–2, 2–2–2–1+1p or 2–2–2–2 or 2–2–2–3), metatarsi (0–2–0–4p+1 or 0–1–1–3p+1, 0–1–1–3p+1 or 0–2–1–3p+1, 0–3–2–3p+1 or 0–3–3–3p+1 or 2–3–2–3p+1, 1–3–3–1p+1+2p+1), tarsi (all 0).

Colouration

Carapace lacking distinct patterns, only headregion and femora of leg I and II in males moderately darker sclerotised. Sternum uniform with only slightly pale median region. Opisthosoma bright yellowish, anteriomedian with pale area surrounded by a very weakly pronounced pattern of dark pigments, inconspicuously continuing in broad chevrons posteriad. Legs not annulated. ALS indistinctly darkened, PLS basal segment darkened, distal segment pale or all spinnerets pale.

Distribution

Endemic to the Greece: Crete (in caves).

Discussion

Based on the examination a longer series of recently collected specimens along with types of *T. ariadnae* and *T. labyrinthi* the two are synonymised here. The epigynal characters used by Brignoli (1984) to diagnose the two species fall within the range of variation of the recently collected material. The same conclusion reached also Fulvio Gasparo (pers. comm., 2009) with males which he had collected.

T. ariadnae was only found several meters inside the caves with hardly any light. *T. parietina*, in contrast, was captured at the entrance of both caves. The funnel webs of both species are attached to stones on the ground or to the wall of the caves.

***Tegenaria armigera* Simon, 1873**

Fig. 20 G–J

Tegenaria armigera Simon (1873): 140–141, figs. 82–87, female.

Pseudotegenaria armigera Lehtinen (1967): 261, transfer rejected by Brignoli (1971a).

Type material examined

Syntypes. France: Corsica: 1 ♂, many ♀ (MNHN, 1965, 460), Simon.

Other material examined

France: Corsica: Forêt de Tartagine, 3 ♂, 1 ♀ (MHNG), VI.1984, Müller; same locality as previous, 4 ♂, 2 ♀ (SMF, 35070, 35072–73); IX.1982 and VI.1984, Müller; Asco Valley, 1 ♀ (SMF, 35071), VI.1984, Müller.

Italy: Sardinia: Nuoro, Seni, Grotta "Diavolus", 1 ♀ (MCSN, 542), 11.VIII.1970, Casale; Diaclasi, north of "Punta Corongiu", 1 ♀ (MHNG), 1968, Bassi; same data as previous, 1 ♀ (MCSN, 542).

Description

A detailed redescription is provided by Heimer & Müller (1988).

Distribution

Endemic to the two islands Corsica and Sardinia.

Discussion

As mentioned by Heimer & Müller (1988) the specimen, which had been found by Roewer on Sardinia (Roewer, 1953: 49), with the SMF-Nr. 10696 belongs to *T. pagana*. But in contrast to their statement about Brignoli's drawing and determination (Brignoli, 1971a), the specimens examined from Sardinia really belong to *T. armigera*.

As in other species of the genus, a very high variation in size can be observed (e. g. Fig. 20 H).

***Tegenaria bayeri* Kratochvíl, 1934**

Tegenaria bayeri Kratochvíl (1934): 212–213, fig. 19, female.

Tegenaria bayeri Kratochvíl (1935): 20–21, pl. 2, figs. 21–22, male.

Tegenaria bayeri Kratochvíl & Miller (1940): 200–201, fig. 5.1, male.

Pseudotegenaria bayeri Lehtinen (1967): 261; transfer doubted by Brignoli (1971a: 61); rejected by Bolzern et al. (accepted).

No material examined, female holotype is preserved in the collection of the National Museum, Praha, Czech Republic (Ruzicka et al., 2005).

Diagnosis

This species belongs to the species complex around *T. annulata*.

Description

A detailed description, including measurements, is provided by Kratochvíl (1934, female; 1935, male).

Distribution

This species is listed for two Balkan countries: Bosnia and Herzegovina and Serbia and Montenegro (Platnick, 2010; van Helsdingen, 2009).

***Tegenaria bosnica* Kratochvíl & Miller, 1940**

Tegenaria bosnica Kratochvíl & Miller (1940): 191–196, figs. 2–3.

Pseudotegenaria bosnica Lehtinen (1967): 261; transfer doubted by Brignoli (1971a: 61); rejected by Bolzern et al. (accepted).

No typematerial available, probably lost (see Ruzicka et al., 2005).

Other material examined

Serbia or Albania: Kruja, 1 ♂ (MCSN, 52), IX.1941, Boldori.

Diagnosis

This species belongs to the species complex around *T. annulata*.

Description

A very detailed description, including measurements, is provided by Kratochvíl & Miller (1940).

Distribution

This species is listed for three Balkan countries: Croatia, Bosnia and Herzegovina and Serbia and Montenegro (Platnick, 2010; van Helsdingen, 2009).

***Tegenaria bozhkovi* (Deltshev, 2008) new combination**

Fig. 26 A–C

Malthonica bozhkovi Deltshev (2008b): 38–40, figs. 1–2, 5–8.

No typematerial examined

Other material examined

Greece: Drama: Falakron, 1 ♀ (sub *T. cf. campestris*, coll. Blick, N149 A66), 8.IX.1991, Wolf.

Diagnosis

See Deltshev (2008b).

Description

Detailed description is provided by Deltshev (2008b).

Distribution

Previously recorded from the West Rhodopy Mountains in Bulgaria (Deltshev, 2008b) and, sub *T. cf. campestris*, from the Falakron mountains in Greece (Wolf, 1998).

Discussion

Deltshev (2008b) suggested that *T. bozhkovi* forms together with *T. campestris*, *T. montana*, and *T. rilaensis* a “super species” (cf. discussion under *T. rilaensis*).

***Tegenaria campestris* (C. L. Koch, 1834) stat. rev.**

Figs. 26 D–G

Aranea decemguttata Martini & Goeze, in Lister, 1778: 288 (nomen oblitum).

Aranea campestris C. L. Koch (1834): 124, pl. 20, male.

Tegenaria campestris C. L. Koch (1841): 34–35, figs. 615–616.

Philoica campestris Simon (1864): 202.

Malthonica campestris Guseinov et al. (2005): 164.

No typematerial available.

Other material examined

Austria: Styria: Gleisdorf, 1 ♂ (NMBE), 8.I.1984, Kropf; Bad Gleichenberg, Steinbruch Klausen, 1 ♂ (NMBE), 1991, Kropf; Bad Gleichenberg, Rudorfkogel, 1 ♂ (NMBE), 7.IV.1991, Kropf; Rothleiten, 1 ♂ (NMBE), 1995, Kropf; **Vienna:** Wien, 4 ♂, 1 ♀ (NMB, AB506), 2005; Wien, 12 ♂, 1 ♀ (NHMW), 1973, Kühnelt; Wien, 1 ♂ (NMB, AB681), 5.VI.2006, ALARM; **Burgenland:** Leithagebirge, 2 ♂, 1 ♀ (SMF, 37784), 1960, Gruber; **Niederösterreich:** Purgstall, 2 ♂, 1 ♀ (SMF, 34040), Wunderlich.

Germany: Bayern: Feuchtwangen, 1 ♂, 1 ♀ (NMB, AB939), 1991, Blick; Feuchtwangen, "Am Forst", 5 ♂, 1 ♀ (coll. Blick), 1991, Blick; Bogenberg, Donauleithen, 1 ♀ (coll. Bauchhenss, 323), 16.V.1985, Bauchhenss; Nürnberg, 2 ♂, 2 ♀ (NHMW, ex. coll. L.Koch); München, 1 ♀ (SMNH, 225), Kemp; **Hessen:** Darmstadt, Kelkheim bei Frankfurt, 1 ♂, 2 ♀ (NMB, AB290), 11.IX.2005, Schönhofer.

Hungary: “Sinwytorgjra” (?), 1 ♂, 2 ♀ (SMF, 5432).

Description

Measurements

Male (n=1): CL 3.68, CW 2.93, STL 1.90, STW 1.75, OL 4.02, OW 2.64. Leg I (3.52, 1.46, 3.12, 3.18, 2.00), II (3.41, 1.39, 2.59, 2.82, 1.59), III (3.12, 1.15, 2.20, 2.90, 1.42), IV (3.93, 1.35, 2.98, 3.84, 1.71). Pedipalp (1.59, 0.62, 0.51, 1.78), bulbL 1.49.

Female (n=1): CL 3.65, CW 2.79, STL 1.94, STW 1.77. Leg I (3.59, 1.41, 3.14, 3.02, 1.89), II (3.20, 1.36, 2.45, 2.71, 1.60), III (2.94, 1.16, 2.00, 2.55, 1.22), IV (3.94, 1.37, 3.03, 3.74, 1.71). Pedipalp (1.35, 0.62, 0.77, 1.56). EPL 0.40, EPW 0.65, ATL 0.26, ATW 0.38.

Eyes: PME 0.18, PLE 0.19–0.21, AME 0.14–0.16, ALE 0.20–0.21. Eye distances: PME-PME 0.5–1 x PME, PME-AME 0.5–1 x PME, PME-PLE 0.5–1 x PME, PME-ALE 0.5–1 x PME, AME-AME <0.5 x AME, AME-ALE <<0.5 x AME. CLY1 1.5–2 x AME, CLY2 1 x ALE.

Male palp

RTA with 3 branches, ventral branch extensive lobe like with distinct ridge, distally moderately protruding, lateral branch spur like and strongly sclerotised, dorsal branch broad and strongly protruding, distally with several points and ridges. Embolus filiform, originating at 7–8 o'clock. Embolus 2.5–3 x CB long with distal tip at 4–5 o'clock. Conductor irregularly shaped, in retrolateral view S-shaped, distal portion strongly elongated, lateral margin completely folded. Terminal end bifid, ventral part short and simply pointed, dorsal part plate like, rounded. Connection of conductor to tegulum moderately sclerotised. MA strongly protruding with distal plate like, complex sclerite (short point and a longer hook like ending),

membranously connected to tegulum, originating at 6 o'clock. Basal portion of tegulum visible and undulated.

Epigyne and vulva

Epigyne with distinct median plate, anteriomedially continuously connected to strongly sclerotised epigynal plate. Posterior sclerite absent. CO anterior of median plate, distinctly visible as gaps. Vulva consists of combined ducts (CBD), no distinct RC recognisable. First part (CD) of CBD less sclerotised and only somewhat convoluted, proximate part strongly convoluted and sclerotised. FD only represented by small leaf shaped appendages distally of the CBD.

Other important characters

Cheliceral promargin with 3, retromargin with 3–4 teeth. Colulus developed as trapezoidal plate with distal margin straight or indistinctly notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment shorter than basal segment. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 6–8. Denticles at paired claw of leg I 7–10. Leg spination: male palp (2–0–0–0, 2–0–0, 2–2–0–0), female palp (2–0–0–0, 2–0–0, 2–2–0–0), leg femora (2–2–1–0, 2–2–2–0 or 2–3–2–0, 2–2–1–0 or 2–2–2–0 or 2–3–2–0, 1–1–1–0 or 1–1–2–0 or 2–1–1–0), patellae (all 2–0–0), tibiae (0–0–0–1+2p or 0–0–0–1p+1+1p or 0–0–0–2p or 0–0–0–3p or 2–0–0–1+2p, 0–2–0–1+2p or 0–2–0–2+1p or 2–2–0–1+2p or 2–2–0–2+1p, 2–2–2–1+2p or 2–2–2–2+1p or 2–2–2–3p, 2–2–2–1+2p or 2–2–2–2+1p or 2–2–2–3p), metatarsi (0–0–0–1+2p+1 or 0–0–0–3p+1, 0–2–0–1p+1+2p+1 or 0–2–0–3p+1, 0–3–2–3p+1 or 0–3–3–3p+1, 0–3–3–1+3p+1 or 0–3–3–3p+1 or 0–3–3–4p+1), tarsi (I & II 0, III: 0–0–1–0, IV: 0–0–1–0 or 0–1–1–0).

Colouration

Margin of carapace narrowly darkened with 3–4 crescent shaped spots, dorsally with 2 symmetric longitudinal dark bands. Sternum with distinct pattern of pale median region and 3 pairs of symmetric pale dots laterally, somewhat fused together. Chelicerae with distinct darkened spots. Opisthosoma dark brownish, anteriomedially with yellowish band, continuing in broad chevrons posteriad. Legs annulated. ALS basally darkened, PLS basal segment darkened, distal segment pale.

Distribution

This species is distributed from Central Europe to the east as far as Azerbaijan (Blick et al., 2004; Otto & Dietzold, 2006; van Helsdingen, 2009). The record of *T. campestris* from Portugal (van Helsdingen, 2009) is doubtful and was removed from the Checklist of Portuguese spiders (Cardoso, 2009).

Discussion

Tegenaria campestris is part of a species-complex including *Tegenaria montana*, *T. rilaensis* and the recently described *T. bozhkovi* (Deltshev, 1993, 2008b).

***Tegenaria capolongoi* Brignoli, 1977**

Figs. 27 A–B

Tegenaria capolongoi Brignoli (1977a): 51–52, fig. 36, female.

Type material examined

Holo- and paratypes. Italy: Campania: San Sebastiano al Vesuvio, Grotticella vesuviana, ♀ (MCSN, 543), 19.III.1973, Capolongo & Cantilena; Vico Egoansa, Grotta della Fontanello, ♀ (MHNG), 14.IV.1973, Capolongo & Cantilena.

Other material examined

Italy: Campania: Naples, 1 ♂ (sub *Tegenaria*, det. Simon, MNHN, 25043), 1917, Fage.

Diagnosis

T. capolongoi belongs to a species group together with *T. circeoensis* **n. sp.**, *T. parmenidis* and *T. sbordonii*. Most useful characters for separating these species are the shape of the RTA, the bifid terminal end of the conductor, the presence/absence of pockets at the median plate of the epigyne and the location of the copulatory openings.

Description

The description, including measurements, is provided by Brignoli (1977a).

Distribution

Records are only known from the region around Naples, Campania, Italy.

Discussion

See *T. parmenidis*.

***Tegenaria carensis* Barrientos, 1981**

Figs. 24 c–e, 25 A–D

Tegenaria carensis Barrientos (1981): 16–19, figs. 4–6, female.

new male.

No type material examined.

Other material examined

Spain: Catalonia: Cadi Moixero, 1 ♂ (UB), de Mas; Pedra Paret, Alsina d'Alinya, 1 ♂ (UB, 1869-75), 18.V.1970, Girona.

Description

Measurements

Male (n=1): CL 2.86, CW 2.33, STL 1.50, STW 1.41, OL 3.59, OW 2.33. Leg I (4.00, 1.25, 3.50, 3.75, 2.30), II (3.80, 1.13, 3.20, 3.58, 1.92), III (3.54, 1.05, 2.75, 3.33, 1.62), IV (4.30, 1.14, 3.65, 4.65, 2.08), Pedipalp (1.54, 0.49, 0.61, 1.57), bulbL 1.40.

Female (n=1): CL 3.97, CW 2.94, STL 1.91, STW 1.88, OL 5.65, OW 3.69. Leg I (5.61, 1.66, 5.25, 5.53, 2.73), II (5.46, 1.61, 4.66, 5.24, 2.46), III (4.87, 1.46, 3.75, 5.05, 2.18), IV (5.87, 1.45, 5.26, 6.90, -). Pedipalp (1.86, 0.71, 1.18, 1.88). EPL 0.68, EPW 0.90, ATL 0.19, ATW 0.37.

Eyes: PME 0.16–0.18, PLE 0.16–0.20, AME 0.12–0.13, ALE 0.15–0.18. Eye distances: PME-PME 0.5–1 x PME, PME-AME 1 x PME, PME-PL 0.5–1 x PME, PME-ALE 0.5–1 x PME, AME-AME <0.5–0.5 x AME, AME-ALE <0.5–0.5 x AME. CLY1 1.5–2.5 x AME, CLY2 1–1.5 x ALE.

Male palp

RTA with 3 branches, ventral branch developed as long drawn-out lobe reaching more than two third or tibia length, with distinct lateral ridge, lateral branch strongly sclerotised, as broad as long, distally broadly pointed, dorsal branch broad and strongly sclerotised, distally oblique truncated and stepped. Embolus filiform, originating at 7 o'clock, longer than 3 CB, terminal tip at 4 o'clock. Conductor with distal portion strongly elongated, lateral margin completely folded. Terminal end moderately bifid, ventral part simple and broadly flat

pointed, dorsal part consists of indistinct small peak. Connection between conductor and tegulum moderately sclerotised. MA strongly protruding with distal hook like sclerite, membranously connected to tegulum and originating at 5–6 o'clock. Basal part of tegulum very good visible and undulated.

Epigyne and vulva

Epigyne with a distinct median region separated anteriorly from the epigynal plate by a distinct rim. Median region membranous. Posterior sclerite expressed as a strongly sclerotised semi-circled bar, limiting atrial area posteriorly. CO between and laterally of the membranous median area and the posterior sclerite. Epigynal „pseudo teeth“ absent. Vulva consists of combined ducts (CBD), no distinct RC recognisable. First part (CD) of CBD only moderately sclerotised and convoluted around second part which is strongly sclerotised and strongly convoluted more posterior. FD only represented by small leaf shaped appendages distally of the CBD.

Other important characters

Cheliceral promargin with 4, retromargin with 4 teeth. Colulus developed as trapezoidal plate with the distal margin medially moderately notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment shorter than basal segment. Tarsal trichobothria at cymbium present. Tarsal trichobothria 7–9. Denticles at paired claw of leg I 13. Leg spination: male palp (2–0–0–0, 2–0–0–0, 1–2–0–0), female palp (2–0–0–0, 2–0–0, 2–2–0–0), leg femora (2–2–2–0 or 2–3–2–0, 2–2–2–0, 1–2–2–0 or 2–2–2–0, 1–1–1–0), patellae (all 2–0–0), tibiae (0–0–0–1 or 0–0–0–1p, 0–1–0–2 or 0–2–0–2, 1–2–1–2+1p or 1–2–2–2+1p, 1–2–2–2+1p), metatarsi (0–0–0–3p+1, 0–0–0–2p+1 or 0–1–0–3p+1, 0–3–3–3p+1, 0–3–3–1p+1+2p+1), tarsi (I & II 0, III 0 or 0–0–1–0, IV 0 or 0–0–1–0).

Colouration

Margin of carapace with 3 connected narrow crescent shaped darkened spots, dorsally with 2 symmetric longitudinal dark bands, serrated and not continuous. Sternum with distinct pale median band and 3 symmetric pairs of pale dots laterally. Opisthosoma yellowish with dark spots and indistinct chevrons dorsally. Legs annulated. Colulus and ALS indistinctly darkened, PLS with basal segment darkened, distal segment pale.

Distribution

T. carensis has been reported from two provinces of Catalonia (Tarragona and Gerona) and one province of Castile and León (Burgos), all in north-eastern Spain (Ribera & Barrientos, 1986).

Discussion

The original description of *T. carensis* contains only females. Based on somatic morphology (size relations, spination- and colouration patterns), the geographical location and the resemblance to the closely related *T. levantina* (Barrientos, 1981; Ribera & Barrientos, 1986) the male described here is tentively referred to *T. carensis*.

***Tegenaria chumachenkoi* Kovblyuk & Ponomarev, 2008**

Tegenaria chumachenkoi Kovblyuk & Ponomarev (2008): 147, figs. 18–21, female.

No material examined

Description

A detailed description, including measurements, is provided by Kovblyuk & Ponomarev (2008).

Distribution

Only known from the western Caucasus region (Kovblyuk & Ponomarev, 2008), Russia (Krasnodar province).

Tegenaria circeoensis new species

Figs. 28 a–c, h–I, 29 A–H

Type material examined

Holo- and paratypes. Italy: Lazio: Frosinone, Esperia, holotype ♂ (NMB, AB827), 4.VI.2007, Bolzern & Mühlethaler; same data as for holotype, 1 ♀, 1 ♂ (1 ♂ was juv. until VII.2007, NMB, AB786, 832); Latina, at the street between Grotta delle Circeo and San Felice Circeo, 3 ♀ (NMB, AB463), 20.VII.2006, Bolzern & Ramseyer; same location as previous, 12 ♀ (9 ♀ were juv. until VII. 2007, NMB, 717, 735, 784, 789, 826, 913, 911), 5.VI.2007, Bolzern & Mühlethaler.

Etymology

The species epithet is derived from “Circeo” which is the name of the very beautiful National Park close to San Felice Circeo where the first specimens of this species had been collected.

Diagnosis

T. circeoensis n. sp. belongs to a species group together with *T. capolongoi*, *T. parmenidis* and *T. sbordonii*. Most useful characters for separating these species are the shape of the RTA, the bifid terminal end of the conductor, the presence/absence of pockets at the median plate of the epigyne and the location of the copulatory openings.

Description

Measurements

Male (holotype): CL 4.71, CW 3.88, STL 1.85, STW 1.92, OL 4.80, OW 2.95. Leg I (6.21, 1.63, 6.17, 6.92, 3.30), II (4.38, 1.21, 4.07, 5.15, 2.30), III (5.04, 1.33, 4.17, 5.83, 2.21), IV (6.13, 1.47, 5.89, 7.81, 2.83), Pedipalp (1.93, 0.81, 0.86, 1.54), bulbL 0.95.

Female (n=2, paratypes): CL 3.22–3.53, CW 2.60–2.70, STL 1.64–1.69, STW 1.53–1.63, OL 5.46, OW 4.00. Leg I (4.10–4.43, 1.27–1.36, 3.77–4.05, 3.80–4.20, 2.08–2.24), II (3.69–4.05, 1.17–1.26, 3.10–3.34, 3.33–3.75, 1.71–1.90), III (3.35–3.71, 1.09–1.12, 2.61–2.97, 3.21–3.55, 1.44–1.81), IV (4.21–4.64, 1.24–1.25, 3.46–4.13, 4.23–4.68, 1.71–1.96). Pedipalp (1.36–1.58, 0.57–0.59, 0.89–0.93, 1.42–1.47). EPL 0.68, EPW 1.28, ATL 0.48, ATW 0.19.

Eyes: PME 0.17–0.19, PLE 0.18–0.19, AME 0.15–0.19, ALE 0.18–0.20. Eye distances: PME-PME 0.5–1 x PME, PME-AME 0.5–1 x PME, PME-PL 0.5 x PME, PME-ALE 0.5–1 x PME, AME-AME <0.5 x AME, AME-ALE <<0.5 x AME. CLY1 1.5–2 x AME, CLY2 1–1.5 x ALE.

Male palp

RTA with 2 (possibly fused?) branches, dorsolateral branch very massive, strongly and broad protruding, distally with a distinct, stepped anteroventral orientated ridge, ventral branch indistinct but with a distinct ventral ridge. Embolus filiform, terminal part stronger bent, originating at 8–9 o'clock. Embolus equal CB or moderately longer, with terminal tip at 2 o'clock. Conductor very distinct and complex with distal portion moderately elongated, lateral margin completely folded, with a bulge like structure at the origin of the conductor. Terminal end strongly bifid, ventral part (functional) distally simple and sharp pointed, dorsal part larger than ventral portion with a massive protuberance, elongated ventrad, distally with several small points and knolls. Connection between conductor and tegulum sclerotised. MA

strongly protruding with distal long hook like sclerite, membranously connected to tegulum and originating at 6 o'clock. Basal part of tegulum visible and with undulated margin.

Epigyne and vulva

Epigyne with distinct sub rectangular median region, clearly separated from the epigynal plate by a sclerotised rim. Medially, this atrium is very smoothly sclerotised (a kind of septum visible in a variation found at the same place as the type specimens). Posterior sclerite absent. CO expressed as distinct holes located at the lateral rim. Posteriorly of the CO, a distinct pocket is developed, opening anteriomedially. Epigynal „pseudo teeth“ absent. Vulva consists of distinguishable CD, RC and FD. CD short and straight, leading into globular bean like shaped, smoothly sclerotised RC, separated by more than 2 x their diameter. FD only represented by small leaf shaped appendages distally of the RC.

Other important characters

Cheliceral promargin with 3, retromargin with 4 teeth, in males the second proximal tooth smaller than the others. Colulus developed as trapezoidal plate with the distal margin almost straight. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment as long as basal segment. Trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 6–9. Denticles at paired claw of leg I 10–11. Leg spination: male palp (2–0–0–0, 2–0–0, 1–2–0–0), female palp (2–0–0–0 or 3–0–0–0, 2–0–0, 2–2–0–0), leg femora (1–3–2–0 or 2–2–1–0 or 2–3–2–0 or 2–4–2–0, 1–3–2–0 or 2–2–2–0 or 2–3–2–0, 1–2–2–0 or 2–2–2–0, 1–0–0–0 or 1–1–1–0), patellae (all 2–0–0), tibiae (0 or 2–0–0–0, 0–1–0–0 or 0–1–0–1 or 0–2–0–0, 2–1–0–2 or 2–1–1–0 or 2–1–1–1 or 2–1–2–1 or 2–2–1–1 or 2–2–2–1, 2–0–0–1 or 2–1–1–1 or 2–1–1–2), metatarsi (0–0–0–2p (only in male) or 0–0–0–3p+1, 0–1–0–3p+1, 0–2–2–1p+2+1p+1 or 0–2–2–3p+1, 0–2–2–1p+1+2p+1), tarsi (I & II 0, III & IV 0–1–0–0).

Colouration

Margin of carapace darkened with 3 distinct crescent shaped spots, dorsally with 2 longitudinal symmetric dark bands, distinctly serrated. Chelicerae with extensive dark spots. Sternum with pale median band, reaching only 2/3 of sternum length, and 4 symmetric pairs of pale dots laterally and posteriorly. Opisthosoma anteriorly with reddish-brown median band, laterally with 2 distinct symmetrical white markings, sides dark mottled, posteriorly with chevrons (pale, dark bordered). Legs annulated. ALS indistinctly darkened, PLS with basal segment darkened, distal segment pale.

Distribution

T. circeoensis n. sp. is only known from the two locations in Lazio, Italy. At both sites, the spiders were collected at a shaded rock face, where they had built their funnel webs.

Discussion

The variation of size, spination and epigyne morphology is marked in the new species (Fig. 29 H). The association of the males and females is strongly supported by their sympatry (“close to Esperia”) and the genetic distance.

This is also supported by the following successful breeding experiment: on 19 November 2007 a male from Esperia (AB832) was placed on the web of a female from San Felice Circeo (AB911), both having been kept in captivity since their capture in the field in spring 2007. After a short phase of immobility, the male started courtship behaviour by knocking on the web with the palps and the opisthosoma in a fast cadence followed after a short while by the copulation. The copulation lasted some 30 minutes after which the specimens were separated into different containers. One month later the female produced a cocoon (17.X.2007) and two months later (XII.2007) the spiderlings hatched. First they were kept together with the mother until only about 10 specimens were left when they were split into separate containers and fed

with crickets (1–2 per week). The spiderlings reached maturity after one year (IX–X.2008). The adult offspring, 2 ♂ and 4 ♀, are preserved in the collection of the NMB (AB964).

Tegenaria croatica new species

Figs. 30 K–O

Male unknown.

Type material

Holotype. Croatia: between Trsteno and Banja, 1 ♀ (SMF), 12.V.2006, Schönhofer.

Etymology

The species epithet is derived from the name of the Country where the only known specimen of this species had been collected.

Diagnosis

T. croatica n. sp. has a distinctly developed vulva with a broad and straight CD and a smoothly sclerotised and evenly convoluted FD not confusable with other species.

Description

Measurements

Female (n=1): CL 1.85, CW 1.40, STL 1.03, STW 0.94, OL 2.45, OW 1.60. Leg I (2.01, 0.79, 1.87, 1.78, 1.09), II (1.80, 0.68, 1.50, 1.54, 0.90), III (1.60, 0.60, 1.28, 1.47, 0.68), IV (2.07, 0.69, 1.90, 2.13, 1.05). Pedipalp (0.80, 0.32, 0.49, 0.79). EPL 0.27, EPW 0.55, ATL 0.09, ATW 0.20.

Eyes: PME 0.10, PLE 0.11, AME 0.05, ALE 0.11. Eye distances: PME-PME 0.5–1 x PME, PME-AME 0.5–1 x PME, PME-PLA <0.5 x PME, PME-ALE 0.5–1 x PME, AME-AME 0.5 x AME, AME-ALE <0.5 x AME. CLY1 3–3.5 x AME, CLY2 1 x ALE.

Epigyne and vulva

Epigynal plate moderately sclerotised. Median plate only laterally separated from epigynal plate, medially slightly protruding. Posterior sclerite absent. GO distinct oblong oval or almond shaped, largely filled with a smoothly and strongly sclerotised plate. Vulva consist of distinguishable CD, RC and FD. CD strongly sclerotised, bulky and almost straight. RC globular, smoothly sclerotised, leading in a consistently convoluted FD. FD ending in small leave shaped appendages.

Other important characters

Cheliceral promargin with 3 teeth, retromargin with 5 equally sized teeth. Colulus developed as trapezoidal plate with the distal margin medially notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment as long as or slightly longer than basal segment. Tarsal trichobothria at palpal tarsus and cymbium absent. Tarsal trichobothria 5–6. Denticles at paired claw of leg I 7–8. Leg spination: female palp (2–0–0–0, 2–0–0, 2–2–0–0), leg femora (2–1–0–0, 1–1–0–0, 1–1–0–0, 1–1–1–0), patellae (all 2–0–0), tibiae (2–0–0–1p, 0–1–0–1, 2–2–1–1, 2–2–1–2), metatarsi (0–0–0–3p, 0–0–0–2p+1, 0–1–0–3p+1 or 0–2–0–3p+1, 0–2–2–3p+1), tarsi (all 0).

Colouration

Margin of carapace with dark band, 2 longitudinal symmetric dark bands hardly recognisable, but present (may be due to alcohol preservation). Sternum with pale median region.

Opisthosoma brown-gray-green with pale median band anteriorly continuing in chevrons posteriad. Colulus pale (probably due to alcohol preservation ?), AMS and basal segment of PMS darkened, distal segment pale.

Distribution

Only known from the type locality in Croatia.

***Tegenaria dalmatica* Kulczynski, 1906** stat. rev.

Figs. 1 G–H, 2 H, 3 D, 20 P–T

Tegenaria dalmatica Kulczynski (1906): 162–164, fig. 5, female.

Tegenaria zinzulusensis Dresco (1959): 506–509, figs. 1–6; synonymised by Levy (1996: 103) after Brignoli (1976b: 568–569).

Tegenaria drescoi Brignoli (1971a): 110–112, figs. 67–69; synonymised by Bolzern et al. (2008: 761–763).

Malthonica dalmatica Guseinov et al. (2005): 164.

Malthonica dalmatica Kovblyuk & Nadolny (2007): 19–22, figs. 1–10; redescription.

Type material examined

Syntypes. Dalmacia: Zelenika, 2 ♀ (ex. coll. Kulczynski, MIZ, 212369–70, 404 2), Chyzer.

Sub *Tegenaria drescoi*: holotype. Italy: Sardinia: Sassari, Castelsardo, 1 ♀ (MCSN, 543), 28.IV.1967, Vigna.

Other material examined

Croatia: Rovinj, 1 ♀ (SMF, 10520/1), 6.IV.1956, Kraus; 1 ♀ (SMF, coll. Wunderlich), V., Sauer.

France: „Gallia melid., Corsica“, 14 ♀ (MNHN, 1953, 481); **Alpes-Maritimes:** Menton, 5 ♀ (sub *T. pagana*, det. Dalmas, MNHN, 1975), 22.V.1915, Dalmas; **Corsica:** 1 ♀ (in the typeserie of *T. armigera*, MNHN, 1965, 460), Simon.

Greece: “Nympholiptou, près de Yari, S.E. d’Athènes”, 1 ♂, 1 ♀ (sub *T. zinzulusensis*, MHNG), 27.I.1954, Strinati; **Crete:** Rethimno, Spili, 1 ♀ (coll. van Keer, 1399), 16.V.1994, van Keer; **Lefkada:** „Leucade, Grotte Karoucha près de Sivros”, 3 ♀ (sub *T. zinzulusensis*, MHNG), 10.V.1974, Hauser; **Samos:** Pythagorion, „grotte "Panaghia Spilliani" sur l’aire du monastère Moni Spiliani“, 1 ♀ (MHNG), 25.XI.1991, Hauser.

Italy: **Abruzzo:** 1 ♂, 1 ♀ (SMF, 12217); **Calabria:** Cosenza, Cassano allo Jonio, Grotta di Sant Angelo (?), 1 ♂ (was juv. until 3.X.2006, AB557), 17.VII.2006, Bolzern & Ramseyer; Salerno, 4-5 km E Amalfi, Grotta di Smeraldo, 1 ♀ (NMB, AB434), 13.VII.2006, Bolzern & Ramseyer; **Lazio:** Sperlonga, Grotta dei Moscerini, 1 ♀ (sub *T. zinzulusensis*, MCSN, 539), 28.XI.1968, Sbordon; Circeo, Grotta delle Capre, 1 ♀ (sub *T. zinzulusensis*, MCSN, 539), 29.XI.1968, Sbordon; Latina, San Felice Circeo, Grotta delle Capre, 2 ♂, 9 ♀ (\$ and 3 ♀ juv. until fall 2007, NMB, AB689, 719, 728, 969(SEM)), 5.VI.2007, Bolzern; IT, Lazio, Latina, San Felice Circeo, Grotta delle Capre, Parco Nazionale del Circeo, 3 ♂, 7 ♀ (males juv. until X.2006, NMB, AB462, 556), 20.VII.2006, Bolzern & Ramseyer; Latina, San Vito, Monte San Biagio, 1 ♂, 2 ♀ (\$ juv. until 21.IX.2007, NMB, AB691, 748, 830), 5.VI.2007, Bolzern & Mühlethaler; Frosinone, Esperia, Monte Aurunci, 3 ♀ (NMB, AB744), 4.VI.2007, Bolzern; Frosinone, Aquino, 1 ♂, 2 ♀ (juv. until 24.IX.2007, NMB, AB779, 831), 3.VI.2007, Bolzern & Mühlethaler; Roma, Palatino, 2 ♀ (sub *T. zinzulusensis*, MCSN, 539, 543), III.1965 and 19.III.1966, Brignoli; **Sardinia:** Ogliastra, Baunei, 1 ♀ (sub *T. henroti*, det. Wunderlich, SMF), V., Wunderlich; Sassari, 1 ♂, 3 ♀ (SMF, 8939/4), 6.IV.1952, Schnellbäcker; **Sicily:** Messina, Lago Santori (Lago di Ancipa?), 1 ♂, 1 ♀ (\$ juv. until 10.IX.2007, NMB742, 818), 25.V.2007, Bolzern & Mühlethaler; Palermo, between Gangi and Sperlinga, 2 ♀ (NMB, AB703), 25.V.2007, Bolzern & Mühlethaler; Palermo, Mte. Pelegrino, 1 ♀ (juv. until X.2007, NMB, AB840), 23.V.2007, Bolzern & Mühlethaler; **Toscana:** Grosseto, Orbetello, Grotta

Punta degli Stretti, 1 \$ (sub *T. zinzulusensis*, MCSN, 539), 21.XII.1965, Brignoli; Firenze, 4 £ (NMB), 1892, Stöcklin.

Africa

Algeria: Bejaia, Bougie, 1 £ (MNHN, 12557), Simon; Philippeville (current name is Skikda) 1 £ (MNHN, 1973, 13484), XII.1887, Simon.

Tunesia: Ain Draham, 2 £ (sub *T. zinzulusensis*, MCSN, 539), 1.VI.1980, Brignoli; Jendouba, „strada Babouch-Hammam Bourguiba“, 1 £ (MSNB, 002), 25.IV.2006, Pantini & Sassu.

Asia

Lebanon: Al-Shouf Cedar, Mount Lebanon, Barouk forest, 1 \$ (NMB, AB577), 8.III.2005, Arnedo & Ribera; Mount Lebanon, Niha, 1 £ (NMB, AB578), 8.III.2005, Arnedo & Ribera.

Syria: 1 \$, 2 £ (very uncertain! in the same tube with *T. maronita* Simon, det. Simon, also one male of *T. feminea*, MNHN, 1974, 469), de la Brûlerie.

Turkey: Izmir: Ephesus, Selcuk, 1 £ (SMF, 21905/1), Dobat.

Description

A very detailed redescription, including measurements and spination patterns, is provided by Kovblyuk & Nadolny (2007).

Distribution

The records of *T. dalmatica* display a central- to east Mediterranean distribution.

Discussion

As mentioned in the original description (Kulczynski, 1906: p. 163) the two syntypes greatly differ in size. A similar variation could also be observed in a sample from Lazio (Frosinone, Aquino, 3.VI.2007, Bolzern & Mühlethaler).

***Tegenaria decolorata* Kratochvíl & Miller, 1940**

Tegenaria decolorata Kratochvíl & Miller (1940): 198–201, figs. 5.2, 6.1–2, male.

Pseudotegenaria decolorata Lehtinen (1967): 261; transfer doubted by Brignoli (1971a: 61); rejected by Bolzern et al. (accepted).

No material examined, holotype (without palps) preserved in the collection of the National Museum, Praha, Czech Republic (Ruzicka et al., 2005).

Diagnosis

Female unknown. This species belongs to the species complex around *T. annulata*.

Description

A very detailed description of the male, including measurements, is provided by Kratochvíl & Miller (1940).

Distribution

This species is only listed for the island Krk, Croatia (Platnick, 2010; van Helsdingen, 2009).

***Tegenaria domestica* (Clerck, 1758)**

Figs. 1 A–D, 3 F, 24 f–h, 25 I–L

Araneus domesticus Clerck (1757: 61): 76–79, pl. 2, tab. 9, figs. 1–4, in part. For additional synonyms and published figures, see Platnick (2010).

Tegenaria modesta Keyserling (1878): 594, pl. 14, fig. 17, only male (the female, fig. 18, clearly belongs to *Tegenaria pagana*).

Tegenaria domesticoides Schmidt (1994): 111–112, fig. 21, pl. I, fig. 1, female, **new synonym**.

Type material examined

No typematerial available for *T. domestica* and *T. modesta*.

Sub *Tegenaria domesticoides*: holo- and paratype. Cape Verde: Santa Antao, Ribeira do Paul, £ (SMF, 37531, epigyne lacking!), 12.I.1993, Schmidt; Sao Nicolau, Monte Gordo, £ (SMF, 38579), 20.I.1993, Schmidt.

Other material examined

Europe

Austria: Vienna: Wien, 1 £ (NMB, AB505), 2005; **Styria:** Graz, 1 \$ (NHMB), 1995, PaiWi; Gleisdorf, Sandriegelweg, 1 £ (NHMB), 2.VIII.1985, Kropf.

Belgium: Antwerpen: Antwerpen, Bonapartedok, 1 £ (coll. van Keer), 2.VI.2007, Van Keer; Turnhout, Otterstraat, 1 \$ (coll. van Keer), VII.2007, De Koninck; Antwerpen, City Park, 2 £ (coll. van Keer), 7.IV.2007, Van Keer.

Bulgaria: Lovech: Balkan Range, Veliko Tarnovo, 1 £ (NMB, AB218), 9.VIII.2005, Bolzern.

Czech Republic: Moravskoslezský: Fulnek, 32 \$, 69 £ (sub *T. derhamii*, NHMW), 1886, Koelbel; **Středočeský:** „Böhmen, Neu-Benatek“, 9 £ (sub *Agelena labyrinthica*, det. Koelbel, NHMW), Fiala.

France: Gallia, 15 \$, 8 £ (MNHN, 1968, 491), Simon; **Hautes-Pyrénées:** Sainte Marie de Campan, 1 \$ (MSNB, 003), 20.VIII.2000, Ferrario; **Moselle:** Rombas, 1 £ (MNHN, 1979), Legendre (?); **Yvelines:** Epone, 1 £ (sub „*T. attica* Koch“, det. Lucas, MNHN, 67–96), Lucas; Versailles, 6 \$, 3 £ (MNHN, 1976), III.1909.

Germany: Pfalz, Bühl, 1 £ (SMF, 7433), 6.VII.1918, Stellwaag; **Baden-Württemberg:** Werbach / Tauber, 1 \$ (SMF, 5828), X.1948, Felten; Taunus, Vockenhausen, 2 £ (SMF, 6497), 12.VI.1949, Pape; Odenwald, 3 \$, 6 £ (SMF, 4812), Wider; **Bayern:** Kohlstein, 1 £ (SMF, 10081/1), X.1948, Schnellbäcker; Kaiserstuhl: Löss-Höhlen b. Oberrotweil, 1 £ (SMF, 17447/1), 30.V.1965, Kraus; Mittelfranken, Nürnberg, 4 \$, 1 £ (coll. Bauchhens), 2003, Pankrätius; Nürnberg, 3 \$, 3 £ (NHMW, ex. Coll L.Koch); **Berlin:** Dahlem, 1 \$, 1 £ (SMF, 33953), Wunderlich; Berlin-Köpenick, 1 \$ (NHMB), 6.VIII.1972, Broen; **Bremen:** Bürgerpark, 1 £ (SMF); Bremen, 2 \$, 4 £ (SMF, 1187, 1279); **Hessen:** Darmstadt, Frankfurt am Main, 1 £ (SMF, 5693), VIII.1948, Baumann; Schwanheim a. M., 1 £ (SMF, 10259/1), Schnellbäcker; Offenbach, Neu-Isenburg, 1 £ (SMF, 6104), VII.1915, Müller; Niedernhäusern, 1 £, (SMF, 4814), Knoblauche; Frankfurt, Zoologisches Institut, 1 £ (SMF, 39405), 1985, Dierkes; **Nordrhein-Westfalen:** Rösrath, 1 £ (SMF), 27.VIII.1994, Kloid; Rösrath, 1 \$ (SMF), 7.VII.1993, Jäger; **Rheinland-Pfalz:** Mainz – Bretzenheim, 1 \$, 1 £ (SMF, 15156), 4.V.1954, Braun; **Thüringen:** Jena, 1 \$ (SMF, 1188).

Great Britain: England: 1 \$, 1 £ (MNHN, 1976), 1935, Jackson.

Greece: Attica: Karatea, „Grotta Spilia Tou Panos“, 1 £ (MCSN, 542, Pel 74-24), 13.V.1974, Hauser; **Crete:** Aptaera, 1 £ (SMF); Akrotiri, 1 \$, 1 £ (SMF, RII-11379); **Cyclades:** Naxos, Naxos – Filoti, „Grotte Kaloritsa“, 3 £ (MHNG), 9.V.1985, Hauser.

Italy: Calabria: Gerace, 1 £ (sub *T. pagana*, NHMW), 1906, Paganetti-Humler; **Campania:** Salerno, Controne, Grotta di Castelcivita, 1 \$, 2 £ (NMB, AB439), 14.VII.2006, Bolzern;

Lazio: Isola Ponza, Semaforo, 1 £ (MCSN, 542), 14.V.1966, Brignoli; **Liguria:** Savona,

Altare, 1 £ (MCSN, 542), VII.1967, Bordoni; **Lombardia:** Bergamo, 1 \$ (MSNB, 003), 12.V.–12.VI.2000, ITAS; **Trentino-Alto Adige:** Trento, Varena nell'abitato, 1 \$ (MSNB, 003), 14.VII.1996, Vailati.

Macedonia: „Mission antipaludique“, 3 \$, 5 £ (MNHN, 1968).

Poland: Bialowies, 1 \$, 1 £ (NHMW).

Portugal: Madeira: Estanovinhos, 1 £ (NMB, AB575), 8.X.2003, Arnedo; Lueymadas (?), 1 £ (MNHN, 1973), 30.IV.1957, Ceiffait; **Santarem:** Galeries des Olhos d'Agua, 1 £ (MNHN, Biospéologica, 1002).

Slovakia: Bratislavský: Pressburg/Bratislava, 1 \$, 14 £ (NHMW), 1873.

Spain: „C. de las Cavaleras“, 1 £ (MNHN, Biospéologica, 667), 9.IV.1913; Cueva de las Guixas, 1 £ (MNHN, Biospéologica, 53), 30.VIII.1905; „C. de las Motillas“, 1 £ (MNHN, Biospéologica, 509), 19.IV.1912; **Balearic Island:** Minorca, Mercadal, Cova Na Pulida, 1 £ (coll. Ribera, Barcelona), 30.XII.1987; **Canary Islands:** Gomera, La Lacha, 1 £ (sub *T. pagana*, det. Schmidt, SMF, 29149), IX.1972, Mayer.

Switzerland: Basel, NMB, 1 \$, 1 £ (NMB, AB217, AB398), 4.VII.2005, 20.VI.2006, Bolzern.

Asia

China: Guizhou: Daozhen, Dashahe, Natural Reserve, 1 \$ (SMF, 344), 11.V.2006, Zhang;

Hubei: Houping, 1 \$, 2 £ (SMF, 345), IX.1997, Zhang; Yunnan, Dali, Xiaguan, 5 £ (NMB, AB590), 16.VII.2006, Zhang.

Japan: Nagano (Shinano), Kisofukushima, 1 £ (AMNH), 1927, Sherman; 1 £ (NHMW), Roretz.

Lebanon: 1 \$ (SMF, RII-11964).

South Indian Ocean (?): St. Paul, „Novara-Reise“, 3 £ (sub *T. derhamii*, NHMW), Frauenfeld.

Sri Lanka: Nuwara Eliya, 1 £ (SMF, 37588), 11.XII.1981, Schmidt.

Turkey: Isparta: Isparta, 1 \$ (coll. Bayram), 20.VI.1999, Bayram; **Ankara:** Ankara, 1 \$ (NMB, AB201), 21.IV.2004, Bayram.

Tibet: 1 £ (type (?), sub *T. thibetana* Lucas, MNHN), 1870, David.

Australia

Australia: New South Wales: Sydney, "Novara-Reise 1857-1859“, 1 \$, 1 £ (NHMW), Frauenfeld; **Victoria:** 1 £ (NHMW).

North America

United States: California: Pebble Beach, 1 \$, 1 £ (AMNH), 18.V.1945; **Idaho:** N.E. Fruitland, 1 \$ (AMNH), 25.XI.1942, Ivie; Lincoln Co., Mammoth-Cave, 1 \$ (NMB, AB616), 19.IX.2003, Paquin & Wytrykush; **Nevada:** Reno, 1 £ (AMNH), VI.1940; **New York:** Nassau Co., Old Bethpage, 1 \$ (AMNH), 1987, Sorkin; Manhattan, AMNH, 1 £ (AMNH), I.2006, Sorkin; **Oregon:** Benton Co., Corvallis, 1 \$, 1 £ (SMF, 9564), Roth; John Day, 4 £ (AMNH), 5.IX.1963, Ivie & Ivie; **Washington:** Whitman, Pullman, 1 \$, 1 £ (NMB, AB885, 889), 2007, Gaver.

South America

Argentina: R. A. Rio Negro, Gral. Fernandez Oro, 1 \$, 2 £ (AMNH), I.1976, Coscaron.

Chile: Vina del Mar, 1 £ (AMNH), II.1979, Tobar; Chile (?): „Isola di Pasqua lato S&E da Ahu ad Orango“, 2 \$ (MCSN, 569, 30270), 13.XI.1982, Cottarelli & Brignoli.

Costa Rica: Irazu, 1 \$ (NHMW), 1930, Reimoser.

Ecuador: Rio Blanco, nr Banos, 2 £ (AMNH), XII.1938, Clarke-Macintyre.

Mexico: „45 km E Mexico City“, 1 £ (AMNH), 15.VIII.1957, Aeryckmann & Dspencer;
Chihuahua: Santa Barbara, 1 \$ (AMNH, 17302), 14.V.1947, Braot.

Diagnosis

Tegenaria domestica shows a distinct RTA (similar to *T. annae* **n. sp.**; all other *Tegenaria* species quite different), a truncated, very special formed terminal end of embolus (comparable but distinctly different in *T. mercanturensis* and *T. mirifica*) and the reversed drop shaped, terminally bifid conductor. The epigyne does have a strongly sclerotised posterior sclerite with the anterior margin concave (similar in *T. annae* **n. sp.**, *T. adomestica* Guseinov, Marusik & Koponen, 2005, *T. ferruginea*, *T. parietina*, *T. tridentina*) and the simple, irregularly globular vulva.

Description

Measurements

Male (n=1): CL 4.35, CW 3.25, STL 2.25, STW 2.0, OL 4.5, OW 2.4. Leg I (5.1, 1.7, 4.95, 5.45, 2.65), II (4.6, 1.65, 4.5, 5.05, 2.45), III (4.5, 1.6, 4.0, 5.0, 2.15), IV (5.65, 1.6, 5.35, 6.8, 2.5). Pedipalp (1.85, 0.61, 0.76, 1.27–1.64), bulbL 0.67.

Female (n=3): CL 4.0–4.1, CW 2.8–2.9, STL 2.0, STW 1.75–1.85, OL 4.1–4.5, OW 2.75–2.85. Leg I (3.9–4.0, 1.5, 4.0–4.1, 4.9, 2.35–2.5), II (3.75–4.0, 1.35–1.45, 3.5–3.75, 3.6–3.85, 2.0–2.1), III (3.5–3.8, 1.35–1.4, 3.0–3.2, 3.7–3.75, 1.75), IV (4.5–4.7, 1.45–1.5, 4.0–4.25, 5.0–5.35, 2.0–2.1). Pedipalp (1.92, 0.77, 1.15, 1.81). EPL 0.38–0.4, EPW 0.60–0.70, ATL 0.1, ATW 0.48.

Eyes: PME 0.17, PLE 0.17–0.2, AME 0.13–0.16, ALE 0.16–0.18. Eye distances: PME-PME 1 x PME, PME-AME 1.5 x PME, PME-PLE 1 x PME, PME-ALE 1 x PME, AME-AME 0.5–1 x AME, AME-ALE 0.5 x AME. CLY1 2–2.5 x AME, CLY2 1.5–2 x ALE.

Male palp

RTA with 2 branches, lateral branch tusk like shaped, dorsal branch broad and strongly sclerotised, distally oblique truncated. Lateroventral ridge present, inconspicuously expressed. Embolus broad, terminally truncated, originating at 9 o'clock. Embolus shorter than 3/4 CB with terminal tip at 1–2 o'clock. Conductor reversed drop-shaped with distal portion moderately elongated, lateral margin almost completely folded. Terminal end bifid, ventral part short, simple and pointed, dorsal part plate like. Connection between conductor and tegulum moderately sclerotised. MA strongly protruding with distal plate like sclerite forming a spoon like structure, membranously connected to tegulum and originating at 5–6 o'clock. Basal part of tegulum barely visible.

Epigyne and vulva

Epigyne medially with a pale, membranous area. Posterior sclerite expressed as a sclerotised bar with anterior margin concave, limiting atrial area posteriorly. CO between and laterally of the membranous median area and the posterior sclerite. Epigynal „pseudo teeth“ present. Vulva consists of distinguishable CD, RC and FD. CD very short leading into globular, irregularly formed RC, separated by about their diameter. FD only represented by small leaf shaped appendages distally of the RC.

Other important characters

Cheliceral promargin with 3, retromargin with 3–4 teeth. Colulus developed as trapezoidal plate with the distal margin medially notched. Female with 4–5 minor ampullate and cylindrical gland spigots distally on PMS, 3 medially prominent and 2 laterally. PLS with distal segment as long as basal segment. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 7–8. Denticles at paired claw of leg I 11–12. Leg spination: male palp (2–0–0–0, 2–0–0, 1–2–0–0 or 2–2–0–0), female palp (2–0–0–0, 2–0–0, 2–2–0), leg femora (2–2–1–0 or 2–2–2–0 or 2–2–3–0 or 2–3–2–0, 2–1–2–0 or 2–2–2–0 or 2–3–2–0, 2–2–2–0, 1–2–1–0 or 2–2–1–0), patellae (all 2–0–0), tibiae (2–0–0–2p or 2–1–0–2p+1 or 2–2–1–

3p (dorsal spine inconspicuously), 0–2–0–2+1p or 0–2–2–1p+1+1p or 2–1–0–3 or 2–2–0–2 or 2–2–0–3, 2–2–2–1+1p or 2–2–2–2 or 2–2–2–2p, 2–2–2–1p+1+1p or 2–2–2–1p+2 or 2–2–2–2+1p or 2–2–2–3), metatarsi (0–0–0–3p+1 or 0–1–1–3p+1, 0–1–0–3p+1 (lateral spines only in males), 0–3–3–3p or 0–3–3–3p+1, 0–3–3–3p+1), tarsi (all 0).

Colouration

Margin of carapace continuously darkened, dorsally with 2 symmetric longitudinal dark bands. Sternum with distinct pale median band and 3 symmetric pairs of pale dots laterally. Opisthosoma dark brownish, anterior with yellowish median band, continuing in broad chevrons posteriad. Legs annulated, sometimes only coxa and proximal part of femora with dark dots. ALS indistinctly darkened, PLS with basal segment darkened, distal segment pale.

Distribution

This species is globally distributed (probably dispersed by man).

Discussion

This species has a complex and confusing taxonomical history. Simon (1875: 75) mentioned that *T. domestica* has been misinterpreted and confused with other species (cf. synonyms in Platnick, 2010). This may have been caused by Clerck (1757) who associated the female of *T. ferruginea* with his *T. domestica*. Most subsequent authors confused the two (and other species, e.g. *T. parietina*) and used *Tegenaria derhamii* (Scopoli) for this species (e.g. Chyzer & Kulczynski, 1897).

***Tegenaria eleonora* Brignoli, 1974 stat. rev.**

Figs. 31 A–B, H–I

Tegenaria henroti Brignoli (1971a): 68–72, figs. 8–12, missidentified.

Tegenaria eleonora Brignoli (1974): 390–391.

Malthonica eleonora Guseinov et al. (2005): 164.

Type material examined

Holo- and paratype. Italy: Sardinia: Cagliari, Domusnovas, Grotta di S. Giovanni, 1 ♂ (holotype), 1 ♀ (MCSN, 543), 6.X.1968, Pilia & Usai; same locality as previous, 1 ♀ (MCSN, 543), 8.IX.1968, Pirodda, Latte & Pinna; same locality as previous, 1 ♀ (MCSN, 543), 28.II.1971, Vigna; same locality as previous, 1 ♀ (MHNG), 28.II.1971, Vigna.

Other material examined

Italy: Sardinia: same locality as type material, 2 ♀ (NMB, 2792a), 9.VII.2006, Bolzern & Ramseyer; Cagliari, Iglesias, Grotta I di M. Figù, 2 ♀ (MCSN, 52), 20.V.1973, Puddu; Cagliari, Domusnovas, grotta di S. Giovanni, M. Acque, 1 ♂ (MCSN, 52), 5.III.1972, Puddu; Cagliari, Domusnovas, „Grotta sa Fossa e su Fenutrainu“ (?), 1 ♀ (MCSN, 52), 2.IV.1972, Lecis & Pote; „Grotta is Angurtidorgius, su Pranu (Perdasdegogu)“, 2 ♀ (MCSN, 52), 4.XI.1973, Puddu.

Description

Diagnosis, redescription and discussion are provided by Bolzern et al. (2008).

***Tegenaria faniapollinis* Brignoli, 1978**

Fig. 30 E

Tegenaria faniapollinis Brignoli (1978b): 50–51, fig. 13.

Tegenaria paragamiani Deltshv (2008b): 40–43, figs. 9–16, **new synonym**.

Material examined

Holo- and paratypes. Turkey: Antakya, Grotta di Harbiye, 5 ♂ (MCSN, 100, 542), 26.VI.1971 and 26.VII.1971, Boitani, Brignoli & Osella.

Description

Descriptions, including measurements, are provided by Brignoli (1978b) and Deltshv (2008b; sub *Tegenaria paragamiani*).

Distribution

Recorded from Turkey (Brignoli, 1978b) and from Greece (East Rhodopy Mts, Maronia) (Deltshv, 2008b; sub *T. paragamiani*).

Discussion

The shapes of the eypigyne and vulva of *T. faniapollinis* and of *T. paragamiani* (based on drawings by (Deltshv, 2008b: 42, figs. 15–16)) are indistinguishable and they are, therefore, synonymised (Christo Deltshv, pers. comm., 2009).

***Tegenaria femoralis* Simon, 1873**

Figs. 32 A–D

Tegenaria femoralis Simon (1873): 137–139, pl. I, fig. 17.

Tegenaria femoralis Kraus (1955): 378–379, figs. 16–19.

Type material examined

Syntype. France: Corsica: 1 ♂ (MNHN, 1978, 486), Simon.

Other material examined

France: Corsica: „Höhle v. Castiglione“, 2 ♂, 5 ♀ (SMF, 8940/1, 8856/2, 8859/4), 20.IV.1954, Kahman; Col de Vizzarona, 1 ♂, 2 ♀ (SMF, 8855/2, 8857/2), 2.IX.1953, Kahman; Col de Vizzarona, 2 ♀ (small form, SMF, 8946–47/1), 2.IX.1953, Kahman.

Italy: Toscana: Isola Montecristo, Grotta, 1 ♀ (MCSN, 543), 6.V.1976, Sbordonni.

Description

A short redescription is provided by Kraus (1955: 378–379, figs. 16–19).

Measurements

Male (n=1): CL 4.68, CW 3.81, STL 2.32, STW 2.16. Leg I (7.13, 1.89, 6.36, 7.69, 2.53), II (6.78, 1.87, 6.27, 7.29, 2.86), III (6.21, 1.69, 5.39, 7.04, 2.31), IV (6.98, -, -, -, -). Pedipalp (2.20, 0.78, 0.79, 2.21), bulbL 1.70.

Female (n=1): CL 4.28, CW 3.15, STL 2.11, STW 2.00. Leg I (5.41, 1.64, 5.71, 6.10, 2.49), II (5.00, 1.55, 4.79, 5.72, 2.21), III (4.84, 1.42, 4.23, 5.55, 1.99), IV (5.15, 1.55, 5.29, 7.03, 2.22). Pedipalp (1.87, 0.76, 1.19, 1.98). EPL 0.66, EPW 1.18, ATL 0.25, ATW 0.49.

Eyes: PME 0.20–0.21, PLE 0.21–0.22, AME 0.15–0.17, ALE 0.21–0.23. Eye distances: PME-PME 0.5 x PME or somewhat more, PME-AME 0.5–1 x PME, PME-PLE 0.5–1 x PME, PME-ALE 0.5–1 x PME, AME-AME <0.5 x AME, AME-ALE <0.5 x AME. CLY1 2–3 x AME, CLY2 1–1.5 x ALE.

Male palp

RTA with 3 branches, ventral branch lobe like, reaching more than three-fourths of tibia length, forming a distinct ridge, distally protruding, proximal arcuated. Lateral and dorsal branch forming strongly sclerotised and protruding lobes. Embolus filiform, originating at 7 o'clock. Embolus 2–2.5 x CB long with distal tip at 3 o'clock. Conductor moderately hammerhead shaped with distal portion elongated and tapered, lateral margin completely folded. Terminal end bifid, ventral part short and cone shaped, dorsal part plate like. Connection of conductor to tegulum moderately sclerotised. MA strongly protruding with hook like distal sclerite, membranously connection to tegulum, originating at 4–5 o'clock. Basal part of tegulum visible and undulated.

Epigyne and vulva

Epigynal median plate anteriorly connected with strongly sclerotised epigynal plate. CO anteriorly of the median plate, very distinctly expressed as holes with a strongly sclerotised anterior margin. Vulva consists of combined ducts (CBD), no distinct RC recognisable. First half (CD) of CBD only moderately sclerotised and convoluted around second half, which is strongly sclerotised. FD only represented by small leaf shaped appendages distally of the CBD.

Other important characters

Cheliceral promargin with 4, retromargin with 4–5 teeth. Colulus developed as trapezoidal plate with distal margin medially notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment as long as basal segment. Tarsal trichobothria at cymbium and palpal tarsus present. Tarsal trichobothria 7–9. Denticles at paired claw of leg I 12–14. Leg spination: male palp (2–0–0–0, 2–0–0, 1–2–0–0 or 2–2–0–0), female palp (2–0–0–0, 2–0–0, 2–2–0–0), leg femora (2–2–2–0 or 2–3–2–0 or 2–3–3–0, 2–3–2–0, 2–2–2–0, 2–2–1–0 or 2–2–2–0), patellae (all 2–0–0), tibiae (0–0–0–2p or 0–0–0–2p+1, 0–2–0–1p+2 or 0–2–0–2+1p or 0–2–0–3p (very indistinct dorsal spines possible), 1–2–2–1+2p or 1–2–2–3p, 1–2–2–3p), metatarsi (0–0–0–3p+1, 0–1–0–3p+1, 0–3–3–3p+1, 0–3–3–1+3p+1), tarsi (all 0).

Colouration

Carapace without a colour pattern (may be due to alcohol preservation). Sternum with distinct pattern of pale median region and 3 pairs of symmetric pale dots laterally, somewhat fused together. Legs only ventrally inconspicuously annulated. ALS and basal segment of PLS moderately darkened, distal segment pale.

Distribution

Endemic to the two islands Corsica and Sardinia.

Discussion

Contrary to the information provided by Platnick (2010) and Kraus (1955) Simon (Simon, 1873: 139) not only described the male but also the female of *T. femoralis*, though without any drawings. He mentioned several specimens in the original description (Simon, 1873: 139, 4th paragraph) but only one male could be found in the MNHN.

Kraus (1955) described also two specimens (females), which were significantly smaller than the others. He concluded that, since these specimens share the same morphology and differ only in size, they must belong to the same species. Brignoli, in contrast, argued that this “forma nana” is not conspecific with *T. femoralis* and constitutes an undescribed species (Brignoli, 1979a: 41). More material is required to solve this problem.

***Tegenaria ferruginea* (Panzer, 1804) stat. rev.**

Fig. 33 A–D

Araneus domesticus Clerck (1757): 76–79, pl. 2, tab. 9, fig. 1, only female in part (see discussion for *T. domestica*).

Aranea ferruginea Panzer (1804(?)): pl. 227, fig. 2.

Aranea subpilosa Panzer (1804(?)): pl. 227, fig. 3.

Aranea stabularia C. L. Koch (1834): 125, pl. 13, male.

Tegenaria stabularia C. L. Koch (1841): 32–34, fig. 614, female.

Tegenaria petrensis C. L. Koch (1841): 27–28, fig. 609, female.

Tegenaria ferruginea Simon (1875): 65–67, pl. 6, fig. 7.

Tegenaria heteropalpa Lebert (1877): 209–210, pl. 6, fig. 41 male; **new synonym**.

Tegenaria ferruginea Oxford & Merrett (2000): 331–333, figs. 1–3.

Malthonica ferruginea Guseinov et al. (2005): 164.

Comments

Tegenaria heteropalpa Lebert was synonymised with *T. pagana* (de Lessert, 1910: 455). Types of *T. heteropalpa* are lost, however the description of Lebert (1877) and in particular his illustration is sufficiently diagnostic to suggest that *T. heteropalpa* is conspecific with *T. ferruginea*. *T. heteropalpa* is a new synonym of *T. ferruginea* rather than one of *T. pagana* as suggested by de Lessert (1910). The new synonymy is supported by the structure of the RTA, the shape of the MA, the relations of bulb to cymbium (Lebert, 1877: pl. 6, fig. 41), the overall size and the number of teeth on the chelicerae. Moreover, *T. pagana* is mostly restricted to mediterranean areas south of the Alps whereas *T. ferruginea* occurs on both sides of the Alps.

No type material available.

Other material examined

Albanien: Ljubotin (?), 1 £ (NHMW), Penther.

Austria: Carinthia: Lesachtal, Maria Luggau-Guggenberg, 1 £ (SMF), 6.VI.2004, Nässig & Weyh; **Salzburg:** Salzburg, Schloss Hellbrunn, 2 £ (NMB, AB266), 12.IX.2005, Bergthaler;

Styria: Admont, 1 £ (SMF, 21886/1), 13.IV.1949; Selzthal, 1 \$ (SMF, 21887/1), 19.III.1946;

Vienna: Hetzendorf, 1 £ (NHMW), 5.I.2005, Hoyos; Wien, 1 £ (NHMW), 1.VII.1953.

Belgium: Liège: Wallerode, Sankt-Vith, 1 \$ (coll. van Keer), 1.XII.2007, De Koninck.

Bulgaria: Lovech: Balkan Range, Shipka, Sokolsky Monastery, 1 £ (NMB, AB255), 9.VIII.2005, Bolzern; Balkan Range, 10 km N Shipka, 1 £ (NMB, AB260), 8.VIII.2005, Bolzern; **Sofiya:** Rila Mt., Rila Monastery, 2 £ (NMB, AB254, AB261), 6.VIII.2005, Bolzern.

Croatia: „Dalmatien“, 1 £ (NHMW), Mann.

France: „Gallia“, 10 \$, 10 £ (MNHN, 1969), Simon; Marly (?), 2 \$, 5 £ (MNHN, 1969), VII.1909; **Haut-Rhin:** Petite Camarque Alsacienne, 1 £ (NMB, AB293), 27.VII.2005,

Bolzern; **Picardie:** Poix-de-Picardie, 1 £ (MNHN, 1975); **Rhône-Alpes:** Isère, Le-Sappey-en-Chartreuse, 2 \$ 1 £ (NMB, AB987), 31.VIII.2008, Schönhofer.

Germany: Baden-Württemberg: Gersbach, 1 \$ (NMB, AB257), 4.X.2005, Bolzern & Ramseyer; Werbach / Tauber, 1 \$ (SMF, 5833), X.1948, Felten; Odenwald, 3 \$, 6 £ (SMF, 4818), 1824, Wider; **Bayern:** Oberwerrn, Wern, 1 £ (coll. Bauchhenss, 318), 2001, Bauchhenss; Ostallgäu, Bad Wörishofen, 2 £ (SMF, 572), 10. –16.IX.2005, Jäger; Nürnberg, 1 \$, 2 £ (NHMW, ex. coll. L.Koch); **Berlin:** Berlin, 2 \$, 1 £ (SMF, 24021/3), Wunderlich; **Brandenburg:** Lossow, 1 \$ 1 £ (NMB, AB555), 16.X.2005, Schönhofer; Potsdam, 1 £ (SMF, 40175), 28.IX.2003, Müller; **Bremen:** 1 £ (SMF, Roewer 9453); 2 \$ (SMF, 2580); **Hessen:** Odenwald (?) Hoxhohl, 2 £ (SMF, 5786), IX.1948, Felten; Darmstadt, Taunus, Neuenhain, 1 £ (SMF, 6248), 18.IV.1949, Hesse; Darmstadt, Schwanheim a. M., 1 \$, 1 £ (SMF, 5934, 6004-134), IX.1914 and XII.1915; Taunus, Falkenstein, 2 £ (SMF, 5912), 15.IX.1948;

Darmstadt, Wächtersbach, 1 £ (SMF, 6360), VII.1949, Zilch; Biebergemünd, Bieber, Lochmühle, 1 \$ (SMF, 57456), 18.IX.1984, SNG-Schüler; Wetterau, Nieder Weisel, 1 \$, 1 £ (SMF, 7536), 3.XII.1949, Kraus; **Mecklenburg-Vorpommern:** Neustrelitz, Mirow (NMB, AB808), 18.VII.2007, Bolzern; Greifswald, Kirchdorf, 1 \$ (NMB, AB501), 30.X.2005, Alberti; **Nordrhein-Westfalen:** Rösrath, 1 \$, 2 £ (SMF, 40395), 9.IX.1994 and 10.II.1995, Jäger; **Rheinland-Pfalz:** Rheinböllen, Guldenbachtal, 7 \$, 6 £ (NMB), 8.IX.2005, Schönhofer; Mainz – Bretzenheim, 1 \$ (SMF, 15264), 29.V.1956, Braun; Spessart, 1 \$ (SMF, 12431/1), 13.III.1962, Kraus; **Sachsen:** Kipsdorf, 2 £ (SMF, 21895/2), V.1953; **Sachsen-Anhalt:** Dessau, 1 \$ (SMF, 21904/1), IX.1934, Wiehle.

Greece: Crete: Rethimno, Chora Sfakion, 3 £ (very problematic specimens! They may be hybrids of *T. ferruginea* and *T. parietina*. More detailed investigation needed. NMB, AB894 and 897), 9.X.2007, Bolzern & Ramseyer

Italy: Lazio: L'Aquila, Fonte Cerreto, 1 £ (NMB, AB726), 9.VI.2007, Bolzern; Frosinone, Collepardo, 2 \$, 1£ (NMB, AB, 474 and 537), 22.VII.2006, Bolzern & Ramseyer; **Trentino-Alto Adige:** Bolzano, Renon, Collalbo, Val Passiria, 1 £ (MCSN, 543), 15.VIII.1966, Hartig; "Reinbachwasserfall", 1 £ (SMF), 21.VIII.1996, Jäger.

Poland: „Süd-Polen, Leopoldis“, 1 \$ (SMF, 1190).

Slovenia: „Slowenien/Istrien: St. Canzian“ (probably Škocjan ?), 1 \$, 2 £ (NHMW), 1903.

Switzerland: Basel-Land: Laufental, Grellingen, 1 \$, 1 £ (NMB, AB256, AB258), 15.V.2005, Bolzern & Ramseyer; Rünenberg, 1 \$ (NMB, AB573), 25.X.2006, Ramseyer; Münchenstein, 1 \$, 1 £ (NMB, AB259, AB348), 14.IV.2005, 21.V.2006, Ramseyer; **Basel-Stadt:** Lange Erlen, 1 \$, 1 £ (NMB, AB596), 9.VI.2006, Bolzern; **Jura:** St-Brais, 1 £ (NMB, AB782), 5.VII.2007, Hänggi; **Solothurn:** Dornach, 1 £ (NMB, AB655), 5.IV.2007, Bolzern & Ramseyer; **Geneva:** Réserve de Mategnin, 1 \$ (MCSN, 539), Comellini.

Unknown: 2 £ (GMNH), Lindberg.

South America

Venezuela: San Timoteo, 1 \$ (SMF, RII-13388), no additional data.

Diagnosis

T. ferruginea females can be separated from *T. parietina* by the lateral margins of the median region of the epigyne following distinctly the run of the posterior sclerit (especially anteriorly, Fig. 33 C, white arrows, in *T. parietina* this margin runs towards the middle of the epigyne, Fig. 33 G, white arrow), the differently shaped posterior sclerit and the vulva much stronger convoluted (especially the first spiral) and less separated (less than 2 duct diameters, more than 3 in *T. parietina*). Other characters are presented in detail by Oxford & Merrett (2000). Males of *T. ferruginea* do have a relatively short cymbium (much longer, in relation to the bulb, in *T. parietina*), a distinctly longer and curved distal portion of the conductor (short and almost straight in *T. parietina*) and a differently shaped ventral porten of the terminal end of the conductor.

Description

A short redescription, including information about the variation, is provided by Oxford & Merrett (2000).

Measurements

Male (n=1): CL 6.40, CW 5.00, STL 3.00, STW 2.85, OL 7.35, OW 5.03. Leg I (7.85, 2.60, 6.95, 8.00, 3.60), II (7.35, 2.55, 6.05, 7.10, 3.25), III (6.50, 2.25, 5.25, 6.50, 2.55), IV (7.90, 2.45, 6.70, 8.55, 3.20), Pedipalp (3.20, 1.00, 1.35, 3.27), bulbL 2.57.

Female (n=1): CL 6.12, CW 4.90, STL 3.45, STW 2.88, OL 8.25, OW 5.93. Leg I (7.01, 2.40, 6.08, 7.13, 3.34), II (6.60, 2.40, 5.40, 6.38, 2.78), III (5.94, 2.10, 4.32, 6.00, 2.50), IV (7.30,

2.35, 6.12, 7.90, 3.03). Pedipalp (2.69, 1.04, 1.54, 2.96). EPL 1.00, EPW 1.52, ATL 0.37, ATW 0.74.

Eyes: PME 0.22–0.26, PLE 0.25–0.30, AME 0.26–0.28, ALE 0.26–0.30. Eye distances: PME-PME 1–1.5 x PME, PME-AME 1–1.5 x PME, PME-PLA 1–1.5 x PME, PME-ALE 1.5 x PME, AME-AME <0.5 x AME, AME-ALE <<0.5 x AME. CLY1 1.5–2 x AME, CLY2 1.5–2 x ALE.

Male palp

RTA with 3 branches, ventral branch broad lobe like, distally moderately protruding, distinct ridge. Lateral branch broad and flat protruding, distally broad truncated. Dorsal branch strongly sclerotised, protruding, as long as wide, distally obtusely and oblique pointed, anteriorly with a stepped small point. Embolus filiform, originating at 7–8 o'clock. Embolus longer than 2.5 CB with terminal tip at 4 o'clock, conspicuously formed. Conductor with distal portion strongly elongated and curved, lateral margin completely folded. Terminal end bifid, ventral part short, simple and truncated with a very small point, dorsal part plate like, shorter than ventral part. Connection between conductor and tegulum moderately sclerotised. MA strongly protruding with hook like distal sclerite, membranously connected to tegulum and originating at 6 o'clock. Basal part of tegulum good visible and with undulated margin.

Epigyne and vulva

Epigyne medially with a small pale, membranous area. Posterior sclerite expressed as an extensive sclerotised bar with anterior margin concave (semi-circled) and medially moderately protruding. CO between and laterally of the membranous median area and the posterior sclerite. Epigynal „pseudo teeth“ absent. Vulva consists of combined ducts (CBD), no distinct RC recognisable. Only very first part (CD) of CBD moderately sclerotised, largest part strongly sclerotised and convoluted, forming connected smaller anterior and a larger posterior spiral regions. Ducts are separated by less than their duct diameters. FD only represented by small leaf shaped appendages distally of the CBD.

Other important characters

Cheliceral pro- and retromargin with 4 teeth. Colulus developed as trapezoidal plate with the distal margin almost straight or medially moderately notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment shorter than basal segment. Tarsal trichobothria at cymbium and palpal tarsus present. Tarsal trichobothria 7–8. Denticles at paired claw of leg I 11–12. Leg spination: male palp (2–0–0–0, 2–0–0, 1–2–0–0 or 2–2–0–0), female palp (2–0–0–0 or 3–0–0, 2–0–0, 2–2–0–0), leg femora (2–3–1–0 or 2–3–2–0 or 2–4–2–0, 2–2–2–0 or 2–3–2–0, 2–2–2–0, 1–2–2–0 or 2–2–1–0), patellae (all 2–0–0), tibiae (0–0–0–2p+1 or 0–1–0–2p+1 or 0–2–0–3p or 2–0–0–3p (dorsal spines very small), 0–2–0–2+1p or 0–2–0–3p or 2–2–0–2+1p (dorsal spines very small), 2–2–2–3p, 2–2–2–1+2p or 2–2–2–1p+1+1p+1 or 2–2–2–1p+1+2p), metatarsi (0–0–0–3p+1, 0–1–0–3p+1, 0–2–3–3p+1 or 0–3–3–3p+1, 0–3–3–1+1p+1+3p or 0–3–3–1p+1+3p or 0–3–3–5p or 0–4–3–1+3p+1), tarsi (I & II 0, III & IV 0–0–1–0).

Colouration

Margin of carapace with 3 broad crescent shaped darkened spots, dorsally with 2 symmetric longitudinal dark bands, serrated and not continuous. Chelicerae sometimes medially with darkened spot. Sternum with distinct pale median band, posteriorly very narrow or fused (sometimes with small dark spot in the middle of the posterior half of the pale median band), and 3 symmetric pairs of pale dots laterally. Opisthosoma dark brownish, laterally moderately yellowish mottled, dorsally with a distinct reddish median band. Anteriolaterally of red median band with short black bands and more laterally yellowish. More posteriodorsally with 1 or 2 symmetrical white spots and 4–5 indistinct chevrons more posteriad. Legs serrated annulated, borders of bands darker than medially. Colulus partly darkened, ALS ventrally indistinctly darkened, dorsally black, PLS with basal segment black, distal segment pale.

Distribution

Records are known from most European countries. Probably absent from northeast Europe. The specimen from Venezuela would be the first record outside of the Palaearctic region. If the label is correct, *T. ferruginea*, or at least one specimen of this species, has been introduced in South America.

Discussion

The identity of this species has been misinterpreted by some authors. The examination of Brignoli material showed that he misidentified female *Tegenaria tridentina* as *T. ferruginea* (see also Brignoli, 1971a: 92, fig. 40). One female in his collection, which is in fact true *T. ferruginea*, is labelled “prope *rhaetica*” (IT: Alto Adige, Bolzano, Collalbo, Renon, 15/20.VIII.1966, leg. Hartig) and is also mentioned and illustrated under this name (Brignoli, 1971a: 102, figs. 53, 55–56). Platnick (2010) listed “prope *rhaetica*” as synonym of *T. agrestis*.

Tegenaria hasperi Chyzer, 1897

Fig. 20 K–L

Tegenaria hasperi Chyzer & Kulczynski (1897): 167–168, tab. 7, fig. 1, female.

Tegenaria nemorosa Simon (1916): 210–211, figs. 82–87, **new synonym**.

Malthonica nemorosa Guseinov et al. (2005): 164.

Type material examined

Syntype. Croatia: Crkvenica (=Crikvenica ?), ♀ (HNHM, Araneae-4), VII., Chyzer.

Sub *Tegenaria nemorosa*: syntypes. France: Alpes-Maritimes: Cagnes, 2 ♀ (MNHN, 1968), Berland.

Other material examined

Bulgaria: Plovdiv: Rhodopen, Trigrad Gorge, 1 ♀ (NMB, AB241), 7.VIII.2005, Bolzern;

Sofiya: Blagoevgrad, Pirin Mt., Monastery, near Melnik, 9 ♀ (NMB, AB242), 3.VIII.2005, Bolzern.

Croatia: „Istrien, Umgebung Pala”, 1 ♀ (sub *T. feminea*, MHNG), 10.VII.1982, Heimer; Biograd, 1 ♂ (NHMW); Rovinj, 1 ♀ (SMF, 10523/1), 16.VIII.1956, Braun.

France: Alpes-Maritimes: Menton, 1 ♀ (sub *T. pagana*, det. Dalmas, MNHN, 1975, V333), 22.V.1915, Dalmas.

Italy: Abruzzo: Teramo, Roseto degli Abruzzi, Parco della tenuta Mazzarosa, 1 ♂, 2 ♀ (MSNB, 002), 4.VII.2007, Fabbri; Teramo, Roseto degli Abruzzi, Mazzarosa, torr.

Borsacchio, 3 ♂ (MSNB, 002), 11.VI.2007, Fabbri; L'Aquila, Capestrano, Gran Sasso, Forca di Penne, 1 ♂ (MSNB, 002), 31.VIII.2002, Marotta & Di Marco; **Calabria:** Cosenza, Sybaris,

1 ♀ (NMB, AB487), 16.VII.2006, Bolzern & Ramseyer; Cosenza, Paola, 1 ♀ (juv. until VII.2007, NMB, AB788), 29.V.2007, Bolzern; **Campania:** Salerno, between Morigerati and Caselte in Pittari, 1 ♀ (juv. until VII.2007, NMB, AB785), 1.VI.2007, Bolzern; Salerno,

Controne, Grotta di Castelcivita, 1 ♀ (NMB, AB443), 14.VII.2006, Bolzern & Ramseyer; Salerno, Contursi, 1 suba. ♂ (MCSN, 539), 9.VI.1966, Sbordonì;

Emilia-Romagna: Parma, Bazzano, 1 ♀ (MCSN, 539), 27.VIII.1950, Pasquali; **Lazio:** Frosinone, Pastena, Grotte di Pastena, 5 ♀ (NMB, AB466, 469), 21.VII.2006, Bolzern & Ramseyer; **Liguria:** Imperia, San

Lorenzo al Mare, Valle torrente Inferno, 1 ♀ (MSNB, 004), 2.VI.2004, Fabbri; **Marche:** Ascoli Piceno, Serra de'Conti, Bacino Spescia, 1 ♂, 2 ♀ (MSNB, 001), 2. and 17.VI.2003,

Rismondo & Raffetani; Ancona, San Vittore delle Chiuse, Grotte di Frasassi, 4 ♀ (NMB, AB481), 25.VII.2006, Bolzern & Ramseyer; **Molise:** Campobasso, Trivento, 1 ♀ (MCSN,

539), 27.VIII.1968, Brignoli; **Piemonte**: E of Alessandria and N of Genova, 4 £ (NMB, AB412, 414), 3.VII.2006, Bolzern & Ramseyer; **Sicily**: Messina, Lago Santori (Lago di Ancipa?), 1 £ (NMB, AB692), 25.V.2007, Bolzern & Mühlethaler; **Toscana**: Arezzo, Lippiano, 2 £ (MSNB, 003), 12.VIII.1983, Bianchi & Moretti; **Veneto**: Colli Euganei, Alonte, 1 £ (MCSN, 539), 6.VIII.1972, Osella; Verona, Soave, 1 \$ (MCSN, 539), 26.VI.1970, Osella.

Asia

Turkey: Adana: 25 km north of Kozan, 1 £ (NMB, AB791), 5.VI.2007, Huber; **Birecik**: 3 km NNW Birecik, Waldrapp-Station, 1 £ (sub *T. sp.*, det. Deltshev, SMF), 7.VIII.1988, Zoologie THD; **Hatay**: Iskenderun, River side, 1 £ (coll. Bayram, 202), 17.VIII.1994, Bayram; **Istanbul**: 1 \$ (coll. Bayram, 200), 7.VII.2005, Ulasoglu; **Antakya**: “Grotta di Harbiye”, 3 \$, 1 £ (MCSN, 100), 26.VI.1971, Osella.

Description

Good drawings of male are provided by Brignoli (1971a), SEM photographs by Seyyar et al. (2008), drawings of females by Deltshev (1993). Some additional information is provided here.

Female (n=2): CL 2.97–4.85, CW 2.24–3.55.

Eye distances: PME-PME 0.5–1 x PME, PME-AME 1 x PME, PME-PLA 0.5–1 x PME, PME-ALE 1 x PME, AME-AME <0.5 x AME, AME-ALE <0.5 x AME. CLY1 2 x AME, CLY2 1 x ALE.

Epigyne and vulva

Epigyne throughout sclerotised, distinct rectangularly shaped median plate. Posterior sclerite absent. CO at the anterior border of the median plate, developed as holes (very often filled with a “plug”). Epigynal „pseudo teeth“ absent. Vulva consists of distinguishable CD, RC and FD. CD short, leading into globular, irregularly but distinctly formed and smoothly sclerotised RC with well separated chambers. FD only represented by small leaf shaped appendages distally of the RC.

Other important characters

Cheliceral promargin with 3–4, retromargin with 4 teeth. Colulus developed as trapezoidal plate with the distal margin medially notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment as long as basal segment. Tarsal trichobothria at palpal tarsus absent. Tarsal trichobothria 6–9. Denticles at paired claw of leg I 8–10. Leg spination: female palp (2–0–0–0 or 3–0–0–0, 2–0–0, 2–2–0–0), leg femora (0–2–0–0 or 1–2–2–0 or 1–3–2–0, 1–1–2–0 or 1–2–1–0 or 1–2–2–0 or 1–3–2–0 or 2–2–2–0, 1–1–1–0 or 1–2–2–0, 1–1–1–0), patellae (all 2–0–0), tibiae (0 or 0–0–0–1 or 0–0–0–1p, 0–1–0–1 or 0–1–0–1+1p or 0–1–0–2 or 0–1–0–2p, 2–1–1–1p or 2–1–1–2+1p or 2–2–1–1+1p or 2–2–1–1p, 2–2–2–2+1p or 2–2–2–3+1p), metatarsi (0–0–0–3 or 0–0–0–3p+1, 0–1–0–3p+1, 0–2–2–3p+1 or 0–3–3–3p+1, 0–3–3–1+3p+1 or 1–3–3–1+3p+1), tarsi (I & II 0, III & IV 0–0–1–0).

Colouration

Margin of carapace with 3 narrow crescent shaped darkened spots, sometimes connected, dorsally with 2 symmetric longitudinal dark bands. Sternum with distinct pale median band and 3 symmetric pairs of pale spots laterally. Opisthosoma dark brownish, anteriorly with 3 yellowish bands, laterally with 1–2 pairs of white spots, continuing in broad chevrons posteriad. Legs annulated. Colulus partly darkened, ALS indistinctly darkened, PLS with basal segment darkened, distal segment pale.

Distribution

Records known from Croatia (Chyzer & Kulczynski, 1897), France (Simon, 1916, 1937), Italy (Brignoli, 1971a; Simon, 1937), Bulgaria (Deltshev, 1993) and Turkey (Brignoli, 1978c).

Discussion

Almost all examined females had the copulatory openings plugged with a dark hardened substance. The examination of one female syntype of *Tegenaria hasperi* from "Crkvenica" and two syntypes of Simons *T. nemorosa* showed that the latter is a junior synonym of *T. hasperi*.

***Tegenaria hauseri* Brignoli, 1979**

Figs. 30 A–D

Tegenaria hauseri Brignoli (1979b): 192–194, figs. 24–26.

Type material examined

Holo- and paratypes. Greece: Kythira: Mylopotamos, „Grotte Aghia Sophia“, 1 ♂, 1 ♀ (female paratype is juvenile (!), MHNG), 17.IV.1977, Hauser; same locality as holotype, 1 ♀ (MCSN, 542), 17.IV.1977, Hauser.

Description

Description, including measurements, is provided by Brignoli (1979b).

Distribution

Only known from the type locality in Greece.

***Tegenaria henroti* Dresco, 1956**

Figs. 31 C–G

Tegenaria henroti Dresco (1956): 115–118, male.

Tegenaria henroti Bolzern et al. (2008): 763–768, figs. 4–7.

No type material available.

Other material examined

Italy: Sardinia: Ogliastra, Baunei, 1 ♂ (SMF, ex. coll Wunderlich), V., Wunderlich; Nuoro, Cala Gonone, Grotta di Gonone, 1 ♂ (MHNG), 20.III.1971, Strinati & Aellen; Nuoro, Cala Gonone, “Grotta NNE of Cala Gonone”, 1 ♂, 1 ♀ (NMB, 2791a, b), 5.VII.2006, Bolzern & Ramseyer; Nuoro, Cala Gonone, Cala Luna, 1 ♀ (NMB, 2791c), 6.VII.2006, Bolzern & Ramseyer; Nuoro, Oliena, Valle di Lanaito, small cave above "Grotte Sa Oche", 4 ♀ (MHNG, AB425), 7.VII.2006, Bolzern & Ramseyer; Buo Marino, 1 ♂, 1 ♀ (SMF, 11399), Patrizi.

Description

A redescription and discussion are provided by Bolzern et al. (2008).

Distribution

Endemic to the island Sardinia, Italy.

***Tegenaria lapicidinarum* Spassky, 1934**

Tegenaria lapicidinarum Spassk (1934): 2–4, pl. 1, figs. 3–5.

Tegenaria spasskyi Guryanova (1992): 13, figs. 1.1–2, 2.1–2; synonymized by Kovblyuk (2004).

Type material examined

Lectotype. Russia: Rostov Oblast, Novocherkassk, 1 ♂, VII.1914, Spasskaja. Designated as Lectotype by Kovblyuk (2004).

Description

A detailed description, including measurements, is provided by Kovblyuk (2004).

Distribution

Eastern Europe.

Discussion

Recently, a detailed redescription of this species was provided by Kovblyuk (2004) with drawings of male and female genitalia. Kovblyuk showed that the body measurements, including the size of legs and male palp, vary a lot. In comparing this species with *T. mirifica* Thaler, 1987 and *T. taurica* Charitonov, 1947 he stated that the spination-pattern of legs is insufficient to distinguish *Tegenaria* species.

***Tegenaria levantina* Barrientos, 1981**

Figs. 34 I–J

Tegenaria levantina Barrientos (1981): 13–16, figs. 1–3, female.

Tegenaria levantina Ribera & Barrientos (1986): 193–195, figs. 8–9, male.

No type material examined.

Other material examined

Spain: Cabanes, Castelló, 1 ♂ (UB, 1873–75), 11.I.1964.

Description

Detailed descriptions, including measurements, are provided by Barrientos (1981) and Ribera & Barrientos (1986).

Distribution

Records for *T. levantina* are known from Spain (Catalonia: Tarragona, Castellon).

***Tegenaria mercanturensis* Bolzern & Hervé 2010**

Tegenaria mercanturensis Bolzern & Hervé (2010): 21–26, figs. 1–11.

Comments

All relevant information is provided by Bolzern & Hervé (2010)

Distribution

Only known from the Mercantour National Park.

***Tegenaria mirifica* Thaler, 1987**

Figs. 34 C–D, G–H

Tegenaria mirifica Thaler (1987): 391–394, figs. 1–8.

Type material examined

Holo- and paratype. Austria: Tyrol: Piburg, 1 \$ (NHMW), 15.IX.1989, Pfister; Pfunds, Stubental, 1 £ (NHMW), 2.V.1987, Thaler.

Other material examined

Austria: Tyrol: Nauders, 1 \$ (coll. Harms, AB1002), 18.VII.2006, Harms; Nauders, „Sesvenna-Gruppe bei Nauders“, 1 £ (coll. Harms, AB1003), 11.VII.2006, Harms.

Italy: Lombardia: Bergamo, Parre, c/o Baita di Leten, 4 \$ (MSNB, 004), 22.VII.2003 and 29.IX.2004, Valle; Bergamo, Valbondione, verso Monte Cimone, 1 \$, 1 £ (MSNB, 004), 21.VII.1988, Valle; Bergamo, Rovetta, Baite, 1 £ (MSNB, 004), VII.1984, Valle; Bergamo, Oneta, Monte Campelli, 1 £ (MSNB, 004), 18.VII.1988, Valle; Lecco, Pagnona, street to Alpe Vesina, 1 £ (MSNB, 004), 9.VI.1999.

Switzerland: Grisons: Engadin, Ramosch, Platta Mala, 6 £ (NMB, AB367), 3.VI.2006, Bolzern & Ramseyer; Engadin, Ramosch, Rna Serviezel, 1 £ (NMB, AB373), 3.VI.2006, Bolzern & Ramseyer; Bergell, 1 \$ (SMF, coll. Wunderlich), IX, Wunderlich.

Description

A detailed description, including measurements, is provided by Thaler (1987).

Distribution

Occuring in the Central and the Southeastern Alps. The species is listed for Italy (Pesarini, 1994) though without exact locality data (Bolzern, 2007). Here, detailed locality records are presented for the first time (MSNB).

***Tegenaria montana* Deltshev, 1993** stat. rev.

Tegenaria montana Deltshev (1993): 168–171, figs. 9–13.

Malthonica montana Guseinov et al. (2005): 164.

Type material examined

Paratypes. Bulgaria: Pirin Mountains, Vasilachliezera, 1 \$, 1 £ (NHMW), 25.VII.1985, Deltshev.

Diagnosis

T. montana belongs, together with *T. bozhkovi*, *T. campestris* and *T. rilaensis* to the “super species” described by Deltshev (2008b).

Description

Several details and measurements are provided by Deltshev (1993). All examined characters mentioned for *T. campestris* were identical with this species except slight differences in genital morphology.

Distribution

Endemic to the Pirin mountains in Bulgaria (Deltshev, 1993).

Discussion

See discussion under *T. rilaensis*.

Tegenaria montizasensis new species

Fig. 20 M–O

Male unknown.

Type material examined

Holotype. Greece: Cyclades, Naxos, „au-dessus de Filoti, au pied du mont Zeus, grotte *spilia Aria* ou *Zeus*“, 1 ♂ (MHNG), 14.V.1985, Hauser.

Etymology

The species epithet is derived from “Mount Zas” which is the name of the mountain where the specimen had been collected. According to a story in Greek mythology, the young Zeus was raised in a cave on “Mount Zas” on Naxos.

Diagnosis

T. montizasensis **n. sp.** can easily be recognised by the distinctly “half-mask” shaped epigyne and the shape of the vulva.

Description

Measurements

Female (n=1): CL 3.70, CW 2.88, STL 1.86, STW 1.78, OL 5.50, OW 3.40. Leg I (6.10, 1.49, 6.02, 6.36, 3.00), II (5.40, 1.43, 5.00, 5.98, 2.40), III (5.10, 1.38, 4.51, 5.76, 2.13), IV (6.10, 1.39, 5.75, 7.44, 2.74). Pedipalp (2.12, 0.78, 1.42, 1.90). EPL 0.56, EPW 0.91, ATL 0.22, ATW 0.55.

Eyes (slightly reduced!): PME 0.10, PLE 0.11, AME 0.06, ALE 0.10. Eye distances: PME-PME 1.5–2 x PME, PME-AME 1.5 x PME, PME-PLE 2 x PME, PME-ALE 1.5–2 x PME, AME-AME 1.5 x AME, AME-ALE 2 x AME. CLY1 4.5 x AME, CLY2 2.5–3 x ALE.

Epigyne and vulva

Epigyne distinctly shaped like a “half-mask”. Median plate strongly sclerotised and only laterally separated from epigynal plate. Posterior sclerite absent. GO distinct almond-shaped holes. Vulva consists of distinguishable CD, RC and FD. CD less sclerotised and straight. RC very special formed, smoothly sclerotised. FD only represented by small leaf shaped appendages distally of the RC.

Other important characters

Cheliceral promargin with 3 teeth, retromargin with 5 equally sized teeth. Colulus developed as trapezoidal plate with the distal margin medially notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment longer than basal segment. Tarsal trichobothria at palpal tarsus and cymbium absent. Tarsal trichobothria 8–10. Leg spination: female palp (2–0–0–0, 2–0–0, 1–2–0–0 or 2–0–0–0), leg femora (2–3–2–0, 2–3–2–0, 2–2–2–0, 2–2–1–0), patellae (all 2–0–0), tibiae (2–2–1–1+1p, 2–1–1–1+1p or 2–2–1–2p, 2–2–2–1+2p or 2–2–2–3p, 2–2–2–1+2p), metatarsi (0–0–0–3p+1 or 0–1–0–3p+1, 0–1–0–3p+1, 0–3–3–3p+1, 1–3–3–1p+1+1p+1+1p+1 or 1–3–3–1p+1+2p+1), tarsi (all 0).

Colouration

No colour pattern visible on carapace (may be due to alcohol preservation). Sternum with indistinct pale median region. Opisthosoma yellowish. Colulus and spinnerets pale.

Distribution

Only known from the type locality.

***Tegenaria oribata* Simon, 1916**

Tegenaria oribata Simon (1916): 211.

Tegenaria oribata Simon (1937): 993–994, 1037, figs. 1524–1525.

Pseudotegenaria oribata Lehtinen (1967): 261, figs. 228, 232; transfer rejected by Brignoli (1978a): 269.

Type material examined

Probably syntypes. France: Pyrénées-Orientales: Forêt du Canigou, 8 ♀ (MNHN, 1965), Simon; Forêt du Canigou, 1 ♂, 1 ♀ (MNHN, 1965, 6386), Simon; Prades, Villefranche-de-Conflent, Grotte de Villefranche, 5 ♀ (MNHN, 1965, 581), Simon.

Other material examined

France: Pyrénées-Orientales: “Massane b. Banyuls”, 1 ♂ (SMF, 16570/1), VII.1961, Volz; Collioure, 2 ♂, 1 ♀ (MNHN, 1965); Céret, Prats-de-Mollo-la-Preste, La Preste, 1 ♀ (MNHN, 1965, 4593), Simon; Amélie-les-Bains-Palalda, “Amélie l. bains” (?), 1 ♀ (MNHN, 1965), Berland.

Discussion

Due to the poor condition of the examined specimens some of the diagnostically relevant characters could not be recorded. Nevertheless we follow the opinion of Brignoli (1978a) and treat it under *Tegenaria*.

***Tegenaria pagana* C. L. Koch, 1840** stat. rev.

35 A–N

Tegenaria pagana C. L. Koch (1841): 31–32, pl. 262, figs. 612–613.

Tegenaria subtilis Simon (1870): 275–277; Simon (1873): 170, pl. 1, figs. 9–10, male; Thorell (1875a): 77.

Tegenaria testacea Simon (1870): 278–280, male; female belongs to *T. domestica* (see Machado, 1941).

Tegenaria proxima O. P.-Cambridge (1873): 217–218, male.

Tegenaria variata Thorell (1875c): 74–75, female.

Tegenaria urbana Simon (1875): 67–69.

Tegenaria bidentata Keyserling (1878): 597–599, pl. 14, fig. 19, male.

Tegenaria modesta Keyserling (1878): 594–597, pl. 14, fig. 18, female (male, fig. 17, is a synonym of to *T. domestica*), **new synonym**.

Tegenaria obscura Banks (1898): 230, pl. 14, fig. 26; synonymised by Roth (1956: 176).

Tegenaria pagana cavernicola Simon (1907): 547–548.

Tegenaria pagana proxima Strand (1909): 585–586.

Tegenaria antrias Crosby (1936): 2, pl. 1, fig. 3, female; synonymised by Roth (1956: 176).

Tegenaria simplex Bryant (1936): 90–91, pl. 3, fig. 9, female.

Tegenaria pagana urbana Simon (1937): 1010, 1041, **new synonym**.

Tegenaria castro Chamberlin & Ivie (1942): 21–22, pl. 3, figs. 27–29.

Philoicides pallidus de Mello-Leitão (1944): 335, fig. 21, female; Roth (1967): 314, pl. 51, fig. 3; synonymized by Ramirez et al. (2004).

Tegenaria antrias Roth (1952): 284–285, synonymised by Roth (1956): 176.

Tegenaria cerrutii Roewer (1960): 91–93, figs. 2a–f, female; Brignoli (1971a): 119–120, figs. 78–79, **new synonym**.

Tegenaria marinae Brignoli (1971a): 120–121, figs. 80–81, female; Brignoli (1977a): 50, figs. 29–30, **new synonym**.

Tegenaria baronii Brignoli (1977a): 47–50, figs. 25–26, female, **new synonym**.

Malthonica pagana Guseinov et al. (2005): 164.

Type material examined

No typematerial available for *T. pagana*.

Sub *Tegenaria castro*: paratypes. United States: California: Los Angeles, 1 \$, 1 £ (AMNH), 3.V.1936, Grant; Friant, 1 £ (AMNH), 1.III.1913.

Sub *Tegenaria cerrutii*: holotype. Italy: Sicily: Palermo, Mt. Pelegrino, Grotta Addaure (Adura?), 1 £ (SMF, 13374), Cerruti.

Sub *Tegenaria marinae*: holotype. Italy: Lazio: Latina, Grotta Valmarino, 1 £ (MCSN, 543), 31.III.1970, Sbordonì.

Sub *Tegenaria baronii*: holotype. Italy: Marche: Fabriano, Grotta Frasassi, 1 £ (MCSN, 102), IX.1964, Baroni.

Sub *Tegenaria pagana urbana*: possibly syntypes. France: Gallia, 9 \$, 16 £ (MNHN, 1982).

Other material examined

Croatia: Biograd, 1 £ (NHMW); San Filippo, 1 £ (NHMW), 1891, Sturany.

France: Gallia, 1 \$ (MNHN, 1968, 491), Simon; “Gallia melid., Corsica“, 1 \$, 4 £ (MNHN, 1953, 481); **Alpes-Maritimes:** Cagnes, 1 £ (MNHN, 1976); Menton, 1 £ (MNHN, 1975, V333), 22.V.1915, Dalmas; **Bouches-du-Rhône:** „Feengrotte bei Les Baux“, 3 £ (SMF, 21882/13), 17.IV.1962.

Greece: Crete: Iraklio, Kaloni, 2 £ (juv. until XII.2007, NMB, AB901), 2.X.2007, Bolzern & Ramseyer; Aspalo-Spileo (?), 2 £ (SMF, 1840); Mendeli (cave?), 2 £ (MNHN, 31, 42), 1926, Wichmann; Hania, Akrotiri, „Mon. Governeto, Gr. Arkondas“, 1 £ (MCSN, 536), 10.VIII.1974, Narzolla; „Grotta Vigla, presso Ano Viannos“, 1 \$ (MCSN, 536), 16.V.1977, Pieper.

Italy: Campania: Salerno, Controne, Grotta di Castelcivita, 4 £ (NMB, AB440), 14.VII.2006, Bolzern & Ramseyer; Salerno, Polla, Grotta de Polla, 1 £ (MCSN, 536), 15.IV.1974, Sbordonì; Naples, 1 £ (NMB, NMB 388e), 1949, Schenkel; **Lazio:** Isola Ponza, Ponza paese, 1 £ (MCSN, 536), 23.I.1966, Brignoli; Isola Palmarola, Capo Mazzella, 3 £ (MCSN, 536), 3.IV.1966, Consiglio & Cottarelli; **Puglia:** Foggia, Vieste, Gargano, “necropoli di Marino”, 3 £ (MCSN, 536), 10.VIII.1972, Vomero; Bari, Massafra, Cripta della Candelora, 1 £ (MCSN, 536), 1972; **Sardinia:** Sassari, Laerru, Grotta su Coloru, 1 \$, 1 £ (MCSN, 536), 28.IV.1967, 1.XI.1975, Sbordonì; Cagliari, Sant'Elice, Grotta Marina, 1 \$ (MCSN, 544), 23.I.1971, Puddu; Villasimius, 2 £ (MCSN, 536), 8. and 13.V.1967, Utzeri; Scala di Giocca, Grotta di Diabolo, 4 \$, 10 £ (SMF, 9274/6, 9277/2), 31.III.1955, Kahman; “Grotta Su-Lodoni.-Zuessu.“ (?), 1 \$ (SMF, 10696), Patrizi; **Sicily:** Montagna, Faregnana, 1 £ (sub *T. cerrutii*, no epigyne in the tube (!), MCSN, 73), 12.III.1969; Palermo, Carini, Grotta al Puntale, 1 \$, 11 £ (MCSN, 536), 30.IV.1974, Vigna; **Toscana:** Firenze, 5 £ (NMB, 388b), 1892, Stöcklin; Livorno, Porto Azzurro, Isola Elba, Grotta dell'Orso, 2 £ (MCSN, 536), 5.V. and 24.XI.1976, Sbordonì; Pisa, Barbaricina, 1 \$, 1 £ (MSNB, 002), Tongiorgi; Pisa, Istituto Biologia, 1 £ (MSNB, 002), 10.VI.1963, Tongiorgi; Luca, Viareggio, 1 £ (MSNB, 002), 27.III.1973, Tongiorgi.

Malta: Ghar Dalam, 1 £ (MHNG), 30.IV.1976, Strinati & Aellen; Hassan's cave, 2 £ (MHNG), 30.IV.1976, Strinati & Aellen.

Portugal: Azores: Sao Miguel, Furnas, 1 \$, 1 £ (MHNG), 11.III.1990, Haymoz; **Baja:** Mértola, 1 £ (NMB, AB270), 6.I.2004, Cardoso; **Faro:** Alte, Pena da Rocha, 1 £ (NMB, AB586), 22.X.2006, Huber; **Porto:** Porto, 7 £ (MNHN, 1977, 14171), Seguera.
Spain: Aragón: Saragossa, 1 £ (ex. coll. L.Koch, NHMW); **Canary Islands:** 1 £ (sub *T. cf. marinae*, det. Hänggi, NMB, 2521), 1895, Stehlin; 2 \$, 6 £ (NMB, 388c, d), 1895, Stehlin; 1 £ (sub *T. parietina*, NMB), 1895, Stehlin; Gran Canaria, 1 £ (MNHN), 12.XI.1977; Fuerteventura, 1 £ (MNHN); Gran Canaria, La Palma, Los Tilos, 1 £ (SMF, 29470), 22.III.1975, Schmidt; Gran Canaria, Los Barrazales, 1 \$ (SMF, 25871/1), Schmidt; Tenerife, Cumbres de la Victoria, 2 £ (coll. van Keer, 2363), 3.V.2004, van Keer; Tenerife, Anaga, 1 \$, 1 £ (coll. van Keer, 2350), 30.IV.2004, van Keer; Tenerife, Santa Cruz de Tenerife, "Municipality, Mercedes Forest, ca. 1 km S of Taganana", 1 £ (SMF), 5.VIII.1993, Jäger; Tenerife, Adeje Municipality, Barranco del Inferno, 1 £ (SMF, 40197), 9.VIII.1993, Jäger; **Galicia:** Le Ferrol, 2 £ (MNHN, 1975), Seoane; **Valencia:** Alicante, „Grotte m. Alicante“, 1 \$ (MNHN, 1976, 22629, mentioned by Fage (1931: "Cueva sans nom")).
Switzerland: Ticino: Chiasso, 1 £ (NMB, 388a).

Africa

Algeria: "Algérie", 1 £ (sub *T. longipalpis*, det. Lucas, MNHN); "Alger", 2 \$, 12 £ (MNHN, 1977, 6078, 14335), Simon; **Annaba:** Bône, Edough, 2 £ (MNHN, 1977, 13889), Simon; **Oran:** 1 \$ (MNHN, 1977, 12617), Simon; „Gr. de Misserghin“, 1 £ (MNHN, Biospéologica, 329), 17.XI.1909; **Tlemcen:** Tlemcen, 1 \$, 1 £ (MNHN, 1976, 13304), Simon (?).
Cape Verde: Fogo: Cun al Grande, 1 \$, 1 £ (MNHN, 1968), VIII.1934, VIII.1964, Chevalier.
Egypt: Alexandria: „Alexandrie“, 3 \$, 13 £ (MNHN, 1976, 5963), Simon; „Alexandrie“, 2 £ (MNHN, 1977, 2283), Simon; **Cairo:** Cairo, 1 £ (ex. coll. L.Koch, NHMW).
Libya: Bengasi, Sahchiz (?), BuKazme (?), 1 £ (MSNB, 003), 5.I.1968, Bianchi & Valle.
Morocco: "grotte El Hadjeb, entre Mernes et Azron"(?), 1 \$ (MNHN, 1976); Ifri el Kef., 2 £ (MNHN, Biospéologica, 332), 28.XI.1909; „Grotte du Caed, Aetmohammed“, 1 \$, 1 £ (MCSN, 536), 4.V.1974, Thibaud & Strinati.
Tunisia: Gabès, 2 \$, 2 £ (MNHN, 1977, 13222).

Asia

Syria: 1 \$, 1 £ (MNHN, 1976, 478), de la Brûlerie; Djéroud (?), 1 £ (MNHN), 1911, Gadeau de Kerville; **Al-Lathqiyah:** Latakia, 1 £ (MNHN); "road from Latakia to Tartus, Qal'at al-Marqab", 1 £ (SMF), 7.III.1980, Kinzelbach.

South America

Chile: Octava Region Del Bio Bio: Nuble, Chillan, 4 £ (AMNH), 8.XI.1976, Moréno; **Region Metropolitana:** Santiago, Quilicura, 6 \$, 2 £ (AMNH), III., V. and VIII.1979, Pena.

North America

United States: New Mexico: Carlsbad, 1 \$, 1 £ (MCSN, 536), 17.XII.1976, Strinati.

Description

Several descriptions under different taxon names, partly including measurements, are provided by Roth (1952), Brignoli (1971a, 1977a) and Levy (1996). Some additional information are provided here.

Measurements

Female (n=1): CL 3.41, CW 2.66, STL 1.76, STW 1.59. Leg I (3.97, 1.38, 3.63, 3.72, 2.17), II (3.48, 1.29, 2.85, 3.29, 1.62), III (3.17, 1.10, 2.38, 3.12, 1.42), IV (4.09, 1.29, 3.64, 4.44, 1.68). Pedipalp (1.48, 0.62, 0.88, 1.36). EPL 0.22, EPW 0.54, ATL 0.14, ATW 0.39.

Eyes: PME 0.17, PLE 0.18, AME 0.14, ALE 0.19. Eye distances: PME-PME 0.5–1 x PME, PME-AME 1 x PME, PME-PLE 0.5–1 x PME, PME-ALE 0.5–1 x PME, AME-AME <0.5 x AME, AME-ALE <0.5 x AME. CLY1 1.5–2 x AME, CLY2 0.5–1 x ALE.

Male palp

RTA with 2 branches, lateral branch leaf shaped and distinctly stepped, distally protruding, dorsal branch strongly sclerotised and distally broad pointed. Embolus filiform, originating at 8 o'clock. Embolus shorter than 2 CB with terminal tip at 3 o'clock. Conductor almost orthogonal to cymbium with distal portion elongated and bent posteriad, lateral margin completely folded. Terminal end bifid, ventral part massive pointed, dorsal part indistinctly pointed. Connection between conductor and tegulum moderately sclerotised. MA strongly protruding with distal plate like sclerite finger shaped, distally moderately spoon like, membranously connected to tegulum and originating at 4–5 o'clock. Basal part of tegulum visible, with a strongly sclerotised band like structure.

Epigyne and vulva

Epigynal plate strongly sclerotised and oval or kidney shaped protruding. Posterior sclerite absent. Laterally with crescent shaped pockets. CO are situated in this pockets inside of which an additional orthogonal pocket originates. Epigynal teeth absent (indistinct denticles present in the holotypes of *T. marinae* and *T. baronii*). Vulva consists of combined ducts (CBD), no distinct RC recognisable. First half (CD) of CBD convoluted around second half, both parts strongly sclerotised. FD only represented by small leaf shaped appendages distally of the CBD. Ducts separated by 1.5 x their diameter.

Other important characters

Cheliceral promargin with 4, retromargin with 4–7 teeth (!). Colulus developed as trapezoidal plate with the distal margin medially notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment as long as basal segment. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 6–9. Denticles at paired claw of leg I 9–11. Leg spination: male palp (2–0–0–0 or 3–0–0–0, 2–0–0, 1–2–0–0), female palp (3–0–0–0, 2–0–0, 2–2–0–0), leg femora (2–2–2–0 or 2–3–1–0 or 2–3–2–0 or 2–4–3–0 or 2–5–3–0 or 2–5–4–0, 2–2–1–0 or 2–2–2–0 or 2–3–2–0 or 2–3–3–0 or 2–4–2–0, 1–1–1–0 or 1–1–2–0 or 2–1–1–0 or 2–2–2–0 or 2–3–2–0, 1–1–1–0 or 2–1–1–0), patellae (all 2–0–0), tibiae (0–2–0–2p or 0–2–0–2p+1 or 0–2–1–2p or 0–2–1–3p or 0–2–2–3p or 0–2–1–2p+1 (indistinct dorsal spines possible), 0–2–0–1p or 0–2–1–1+1p+1 or 0–2–2–1+1p+1 or 0–2–2–1+2p or 0–2–2–1p+1 or 0–2–2–3p (indistinct dorsal spines possible), 2–2–1–1 or 2–2–2–1+1p or 2–2–2–2+1p or 2–2–2–3 or 2–2–2–3p, 2–2–2–2 or 2–2–2–2+1p or 2–2–2–1+2p), metatarsi (0–0–0–3p+1, 0–1–0–3p+1 or 0–1–1–3p+1 or 0–2–1–3p+1, 0–3–2–3p+1 or 0–3–3–3p+1, 0–3–3–3p+1), tarsi (all 0).

Colouration

Margin of carapace indistinctly narrow continuously darkened, dorsally with indistinct 2 symmetric longitudinal bands, head region stronger darkened. Sternum with distinct pale median band and 3 symmetric pairs of pale dots laterally, the last pair strongly fused with the median band. Opisthosoma brown-yellowish, anterior with pale median band, continuing in broad chevrons posteriad, laterally with dark band or moderately mottled. Legs moderately annulated (in the type specimens of *T. baronii* and *T. marinae* not visible, may be due to alcohol preservation). ALS indistinctly darkened or pale, PLS with basal segment darkened, distal segment pale.

Distribution

T. pagana is known in southern, central and western Europe. Also it is known from most Mediterranean countries and has probably been introduced into several countries around the globe.

Discussion

As in other *Tegenaria* species, *T. pagana* shows a large variation in somatic and genital characters (e. g. Figs. 35 C–J) which is reflected in the long list of synonyms. This phenomenon was well illustrated by Levy (1996: p. 97–98, figs. 45–48). He mentioned there that the *pagana*-complex of Brignoli (1971a, 1977a) may represent this variation. The small posterior denticles on the epigyne of *T. marinae* are also found in some specimens of "typical" *T. pagana* and may be part of this variation. Here, we follow Levy's considerations and regard *Tegenaria cerrutii* Brignoli, 1971, *T. marinae* Brignoli, 1971 and *T. barronii* Brignoli, 1977, as junior synonyms of *Tegenaria pagana* C.L.Koch, 1940.

***Tegenaria parietina* (Fourcroy, 1785)**

Fig. 1 E–F, 33 E–I

Aranea parietina Fourcroy (1785): 533.

Aranea phalangiodes Fourcroy (1785): 535.

Tegenaria domestica Walckenaer (1805): 49, pl. 6, figs. 53–54 (uncertain); Blackwall (1861): 163–165, pl. 11, fig. 105 (misidentification).

Tegenaria murina Walckenaer (1805): 50 (uncertain); Walckenaer (1842): 6, male.

Tegenaria domestica Audouin (1826): publication not available to the authors.

Tegenaria saxatilis C. L. Koch (1834): 125, pl. 20, male.

Trichopus libratus "C. M." (1834): 10; synonymised by Murphy & Merrett (2000): 7.

Tegenaria guyonii Guérin-Méneville (1829-1844): pl. 2, fig. 1 (pl. 2 is missing in the publication available to the authors); Walckenaer (1842): 5, male; Lucas (1846): 241–242.

Tegenaria intricata C. L. Koch (1841): 29–30, figs. 610–611.

Tegenaria parietina Simon (1875): 59–61, pl. 5, fig. 4.

No type material available.

Other material examined

Albania: Skutari, 1 \$ (NHMW), 1894.

Belgium: Antwerpen: Antwerpen, Oude Beurs, 1 \$ (coll. van Keer), 13.IX.2007, Van Keer; Antwerpen, Lange Leemstraat, 1 \$ (coll. van Keer), 11.IX.2007, Van Keer; Antwerpen, Lange Kongostraat, 2 \$ (coll. van Keer), 13.VII. and 13.IX.2007, Van Keer; Antwerpen, 1 \$ (coll. van Keer, 2665), 20.IX.2006, van Keer; Oosthoven-Oud-Turnhout, Dode Dreef, 1 \$ (coll. van Keer), 15.VIII.2007, De Koninck; **Hainaut:** Enghien, 1 \$ (MNHN, 1975), 20.VIII.1973; **Liege:** 1 \$ (SMF, 40070), 9.VIII.2004, Perez-Gonzales.

Bulgaria: Plovdiv: Bachkovo, Bachkovski Monastery, 3 \$ (NMB, AB244), 8.VIII.2005, Bolzern.

Croatia: Rovinj, 2 \$ (SMF, 10499/1 and 10527/1), 1955, Braun; Pola, 1 \$, 3 £ (NHMW), Schletterer; Split (Spalato), 1 £ (NHMW), 1862, Mann.

France: Alpes-Maritimes: St.-Martin-Vesubie, 1 \$ (SMF), 21.IX.2005, Altmann; **Calvados:** Luc-sur-Mer, 1 \$ (SMF), 19.IX.1992, Jäger; **Corsica:** Bonifacio, 1 £ (SMF, 8304/1), 6.IV.1953, Kahman; **Paris:** Paris, Jardin des Plantes, 1 \$ (MNHN); **Gard:** Gr. du Sapêtre de Corconne Quissac, 1 £ (MNHN), 2.I.1914; **Hérault:** 1 £ (MNHN, 1974), IV.1909.

Germany: Hessen: Frankfurt a. M., Rödelheim, 1 \$ (SMF, 5939), 12.IX.1928, Borges;

Nordrhein-Westfalen: Aachen-Walheim, 1 \$ (NMB, AB611), 1.X.2005, Kirchner;

Rheinland-Pfalz: Landau, 1 \$ (SMF, 15181), 4.IX.1957.

Great Britain: England: Appleton Berks, 1 \$ (AMNH), VIII.1970, Berg.

Greece: "Tetalas", 1 £ (sub *T. pagana*, det. Roewer, SMF, 13888), Roewer; 9.V.1985,

Hauser; **Chios:** 1 \$ (SMF, 4899), Pauli; **Corfu:** 1 £ (NHMW), I.1925, Paganetti; **Crete:**

Iraklio, close to Kaloni, 1 £ (NMB, AB905), 2.X.2007, Bolzern & Ramseyer; Arcalo Spileo, 1 £ (MNHN), VI.1926, Wichmann; Rethimno, Melidoni Andron Cave, 2 \$, 1 £ (NMB, AB856, 873, 904), 10.X.2007, Bolzern & Ramseyer; Iraklio, Skotino, "Skotino Cave", 3 £ (NMB, AB864, 898), 1.X.2007, Bolzern & Ramseyer; Iraklio, Skotino-Cave, 1 \$ (SMF), 26.XII.2005, Eikamp; Rethimno, Chora Sfakion, Cave at the shore W of Chora Sfakion, 2 £ (NMB, AB907, 972), 9.X.2007, Bolzern & Ramseyer; Melidhoni Spileo, 1 £ (MNHN), 26.VI.1926, Wichmann; Rethimno, at the street from Zoniana to Iraklio, 1 £ (NMB, AB876), 11.X.2007, Bolzern & Ramseyer; Lasithi, Milatos, Milatos Cave, 2 \$, 2 £ (NMB, AB866–867), 1.X.2007, Bolzern & Ramseyer; Rethimno, Komitades, Imbros-Gorge, 1 \$, 1 £ (£ was juv. until X. 2008, NMB, AB858, 971), 9.X.2007, Bolzern & Ramseyer; Lasithi, Kavousi, caves close to Kavousi, 1 \$ (NMB, AB871), 4.X.2007, Bolzern & Ramseyer; Iraklio, Kaloni, 1 £ (NMB, AB869), 2.X.2007, Bolzern & Ramseyer; Deliana, 1 £ (NMB, AB822), 25.III.2007, Schönhofer; Rethimno, Gerani, 1 £ (was juv. until X. 2008, NMB, AB), 10.X.2007, Bolzern & Ramseyer; Lasithi, Sitanos, 1 \$ (was juv. until X. 2008, NMB, AB967), 5.X.2007, Bolzern & Ramseyer; Rethimno, Patsos, Antonios Gorge, 2 \$, 2 £ (was juv. until X. 2008, NMB, AB970), 8.X.2007, Bolzern & Ramseyer; **Cyclades:** Santorin, Merovigli, 1 £ (coll. Wunderlich), IV.1978, Schmalfus; Naxos, 1 £ (MHNG).

Italy: Abruzzo: L'Aquila, Village close to Ovindoli, 1 \$ (was juv. until IX.2007, NMB, AB835), 31.V.2007, Bolzern & Mühlethaler; L'Aquila, Stiffe, Grotta di Stiffe, 3 £ (NMB, AB729, 755, 772), 9.VI.2007, Bolzern; L'Aquila, Street between Carsoli and Sante Marie, 1 £ (was juv. until X.2007, NMB, AB839), 11.VI.2007, Bolzern & Mühlethaler; **Calabria:** Cosenza, Cassano allo Jonio, Grotta di Sant Angelo, 1 £ (NMB, AB455), 17.VII.2006, Bolzern & Ramseyer; **Campania:** Salerno, Pertosa, Grotta di Pertosa, 2 \$, 3 £ (NMB, AB457), 19.VII.2006, Bolzern & Ramseyer; Salerno, Maiori, 1 £ (NMB, AB438), 13.VII.2006, Bolzern & Ramseyer; Salerno, Sant' Angelo a Fasanella, 1 £ (NMB, AB447), 14.VII.2006, Bolzern & Ramseyer; **Emilia-Romagna:** Parma, Bazzano, 1 \$ (MSNB, 001), 25.VIII.1950, Pasquali; Ferrara, Emilia, Argenta Filo, 1 \$ (MSNB, 003), 23.VIII.2004, Fabbri; **Lampedusa:** Jnod (?), 3 £ (sub *T. silvestris*, det. Roewer, SMF, 12259), Roewer; **Lazio:** Isola Ponza, 1 £ (MCSN, 539), II.1966, D'Atri; Frosinone, Collepardo, 2 £ (NMB, AB470, 476), 21–22.VII.2006, Bolzern & Ramseyer; Frosinone, Pastena, Grotte di Pastena, 1 \$ (NMB, AB567), 21.VII.2006, Bolzern & Ramseyer; Frosinone, Esperia, Monte Aurunci, 1 £ (NMB; AB777), 4.VI.2007, Bolzern; **Liguria:** Savona, Altare, 1 £ (MCSN, 539), 1.VII.1962, Bordoni; **Lombardia:** Brescia, 2 \$, 2 £ (MSNB, 001 and 002), 23.V.1979, 21.VII.1986, 30.VII.1997, Vailati; Brescia, Nave, Valle Listrèa, 2 £ (MSNB, 001 and 002), 15.IV.1984, Vailati; Brescia, Sonico, Rino, 2 \$ (MSNB, 003), 1991, Berzletti; Brescia, Concesio, Val Condigolo, 1 £ (MSNB, 003), 24.IX.1995, Vailati; Bergamo, Sorisole, 2 \$ (MSNB, 003), Buttarelli; Bergamo, Ardesio, Valcanale, 1 \$ (MSNB, 002), 10.VIII.2008, Zucchelli; Bergamo, 1 \$ (MSNB, 003), 13.VIII.1996; Bergamo, Alzone Lombardo, 1 \$ (MSNB, 003), 26.IX.2008, Marchese; Pigra, 1 \$, 3 £ (\$ was juv. until VIII.2005, NMB, AB245–246), 12.VI.2005, Bolzern; **Marche:** Ancona, San Vittore delle Chiuse, Grotte di Frasassi, 2 £ (NMB, AB484), 25.VII.2006, Bolzern & Ramseyer; **Piemonte:** Cuneo, Nava(?), 1 \$ (NMB, AB994), 7.IX.2008, Schönhofer; **Sardinia:** Iglesias, Corongiu de Mari, "Grotta n.4 o del Pozzo, iniz. 8", 1 £ (MCSN, 544), 4.XI.1970, Puddu; Nuoro, 1 £ (NMB, AB574), 8.VII.2006, Bolzern & Ramseyer; Tempio, 1 £ (SMF, 8941/1), 19.IV.1952, Schnellbäcker; Sorgono, 1 £ (NHMW), Krausse; Sassari, 1 £ (NMB, AB426), 8.VII.2006, Bolzern & Ramseyer; Cagliari, Santadi, "Grotta is Zeddas", 1\$, 2 £ (NMB, AB430–431), 11.VII.2006, Bolzern & Ramseyer; Cagliari, Santadi, 2 £ (NMB, AB432), 11.VII.2006, Bolzern & Ramseyer; Cagliari, Domusnovas, Grotta di San Giovanni, 7 £ (NMB, AB427), 9.VII.2006, Bolzern & Ramseyer; Nuoro, Posada, Castillo di Fava bei Posada, 1 £ (NMB, AB420), 5.VII.2006, Bolzern & Ramseyer; **Sicily:** Palermo, between Gangi and Sperlinga, 1 £ (was juv. until I.2008, NMB, AB918), 25.V.2007, Bolzern & Mühlethaler; Catania, Randazzo, N-

slope of Mte. Etna, 1 £ (NMB, AB699), 26.V.2007, Bolzern & Mühlethaler; Catania, Grotta dei Ladroni, 2 \$ (NMB, AB816, 833), 28.V.2007, Bolzern & Mühlethaler; Messina, Lago Santori (Lago di Ancipa?), 1 \$ (NMB, AB825), 25.V.2007, Bolzern & Mühlethaler; **Toscana:** Firenze, Marradi, Badia Valle, 1 £ (MSNB, 003), 30.VI.2003, Usvelli; Siena, San Filippo, 1 £ (SMF), 6.IV.1996, Jäger; **Trentino-Alto Adige:** Meran, 1 \$, 3 £ (NHMW, ex. coll. L.Koch); **Veneto:** Giulia, Udine, 2 £ (MSNB, 003), 17.IX.1996, Pantini & Valle; Padova, 1 £ (MSNB, 003), 22.III.2003, Vanin.

Malta: Gozo: Calypso's cave, 1 £ (MHNG), 1.V.1976, Strinati & Aellen.

Portugal: 1 £ (NMB, AB282), 11.VI.1999, Cardoso.

Spain: Basque country: Vizcaya, Urkiola, 2 £ (NMB, AB666, 766), 27.IV.2007, Huber; Vizcaya, Zubialde, Ermitabarri, 1 £ (NMB, AB665), 29.IV.2007, Huber; **Canary Islands:** Gran Canaria, Palma, 1 £ (MNHN, 1975), Simon; 5 £ (NMB, 392 a), 1895, Stehlin; Tenerife, Icod, 1 \$ (SMF, 25852/1), X.1961, Schmidt; Tenerife, 5 \$, 1 £ (NHMW), 1888, Simony (?); **Catalonia:** Gerona, Bañolas, 1 \$ (SMF, 4825), 15.IX.1914, Haas; Tarragona, Flix, 1 \$ (SMF, 4826), 1915, Haas.

Switzerland: Ticino: Arogno, 1 \$, 2 £ (SMF, 21938/3), VIII.1930, Wiehle; Ascona, 1 \$ (SMF, RII-13396).

Africa

Algeria: 1 \$, 2 £ (MNHN), Lucas.

Egypt: Alexandria, 1 \$, 2 £ (MNHN, 1976), Simon.

South Africa: Cape Town, 1 \$ (NMHN, 1974).

Tunisia: Ben Gardane, 1 \$ (AMNH), 7.10.1948, Malkin, B.

Asia

Israel: Jerusalem, 4 \$, 2 £ (NHMW), Reiter.

Lebanon: Beirut, 5 £ (NHMW), Leuthner.

Syria: Latakia (?), 1 \$ (MNHN, 1975).

Turkey: „Nisib, Anatolien“, 1 \$ (SMF, 4823), 1840, Fischer; „Kleinasien: Jum Burnu (E vom Bosphorus)“, 1 \$ (NHMW), 1909, Fahringer; **Istanbul:** Üsküdar, Vaniköy, 1 £ (coll.

Ulasoglu, 213), XI.2005, Ulasoglu; **Neveshir:** Göreme, 1 \$, 1 £ (SMF, 21880/2 and 21881/1), 16.9.1962, Dobat.

North America

Caribbean Islands: „Westindien“, 1 \$ (NHMW).

South America

Paraguay: Netopil (?), 1 \$ (SMF), 30.X.1996, Hagen.

Diagnosis

See the diagnosis section at *T. ferruginea*. See also Oxford & Merrett (2000).

Description

Information about the variation is provided by Oxford & Merrett (2000). Good drawings of male and female are also provided by Locket & Millidge (1953), Roberts (1985) and Levy (1996). Some additional information is provided here.

Measurements

Female (n=1): CL 5.32, CW 3.92, STL 2.44, STW 2.29, OL 5.92, OW 4.01. Leg I (7.30, 2.11, 6.90, 7.58, 3.06), II (6.59, 1.93, 6.07, 6.75, 2.76), III (5.62, 1.59, 4.61, 5.70, 2.17), IV (7.09, 1.99, 6.28, 8.45, 2.61). Pedipalp (2.28, 0.89, 1.39, 2.22). EPL 0.56, EPW 1.29, ATL 0.30, ATW 0.73.

Eyes: PME 0.20, PLE 0.22, AME 0.18, ALE 0.23. Eye distances: PME-PME 1 x PME, PME-AME 1 x PME, PME-PLA 1 x PME, PME-ALE 1 x PME, AME-AME 0.5–1 x AME, AME-ALE <0.5 x AME. CLY1 2.5–3 x AME, CLY2 1.5 x ALE.

Male palp

RTA with 3 branches, ventral branch broad lobe like, distally moderately protruding, distinct ridge. Lateral branch broad and flat protruding, distally oblique truncated. Dorsal branch strongly sclerotised, protruding, as long as wide, distally obtusely and oblique pointed, anteriorly with a stepped small point. Embolus filiform, originating at 8 o'clock. Embolus about 2.5 CB with terminal tip at 3 o'clock. Conductor with distal portion strongly elongated and moderately curved or straight, lateral margin completely folded. Terminal end bifid, ventral part short, simple rounded plate, dorsal part plate like, shorter than ventral part. Connection between conductor and tegulum moderately sclerotised. MA strongly protruding with hook like distal sclerite, membranously connected to tegulum and originating at 6 o'clock. Basal part of tegulum good visible and with undulated margin.

Epigyne and vulva

Epigyne medially with a small pale, membranous area. Posterior sclerite expressed as an extensive sclerotised bar with anterior margin concave (semi-circled). CO between and laterally of the membranous median area and the posterior sclerite. Epigynal „pseudo teeth“ absent. Vulva consists of combined ducts (CBD), no distinct RC recognisable. Only very first part (CD) of CBD moderately sclerotised, largest part strongly sclerotised and convoluted, forming connected smaller anterior (not really a spiral) and a larger posterior spiral regions. Ducts are separated by more than 3 duct diameters. FD only represented by small leaf shaped appendages distally of the CBD.

Other important characters

Cheliceral pro- and retromargin with 4 teeth. Colulus developed as trapezoidal plate with the distal margin medially notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment as long as basal segment. Tarsal trichobothria at cymbium and palpal tarsus present. Tarsal trichobothria 8–10. Denticles at paired claw of leg I 13–14. Leg spination: leg femora (1–3–2–0 or 1–3–3–0, 1–3–2–0, 1–3–2–0, 1–1–2–0), patellae (all 2–0–0), tibiae (0, 0–1–0–1 or 0–2–0–1, 2–2–1–2, 2–1–1–2 or 2–2–2–2), tarsi (I–IV 0, sometimes IV 0–0–1–0).

Colouration

Margin of carapace with 3 crescent shaped darkened spots, dorsally with 2 symmetric longitudinal dark bands, strongly serrated, sometimes not continuous. Sternum with distinct pale median band, posteriorly very narrow or fused (sometimes with small dark spot in the middle of the posterior half of the pale median band), and 3 symmetric pairs of pale dots laterally. Opisthosoma dark brownish, laterally moderately yellowish mottled, dorsally with a redish median band, in some specimens strongly expressed, in others absent. Anteriolaterally of red median band short black bands and more laterally yellowish. More posterior dorsally with 1 or 2 symmetrical white spots and 4–5 indistinct chevrons more posteriad. Legs annulated, very differently strong expressed. Colulus partly darkened, ALS moderately darkened, PLS with basal segment darkened, distal segment pale.

Distribution

Similar distribution pattern as for *T. ferruginea*. The species is very common and abundant in southern Europe and has been introduced into many other countries around the world.

Discussion

T. parietina is the largest spider of the group. It is very abundant in southern Europe and can be found at the entrances of caves (never deep inside of the caves) or in buildings. Specimens

of this species show a high variation in size and in the intensity of the colour pattern (from almost grey and without annulations to very distinct patterns and annulations).

***Tegenaria parmenidis* Brignoli, 1971**

Figs. 27 C–K, 28 d–e, j–k

Tegenaria parmenidis Brignoli (1971a): 115–117, f. 74–75, female.

Tegenaria parmenidis Brignoli (1977a): 52, fig. 34.

new male.

Type material examined

Holotype. Italy: Campania: Salerno, Novi Velia, 1 ♂ (MCSN, 543), 2.X.1967, Brignoli.

Other material examined

Italy: Calabria: Cosenza, close to Paola, 1 ♀, 1 ♂ (MHNG, AB725), 29.V.2007, Bolzern; same data as previous, 1 ♀, 2 ♂ (♂ were juv. until X.2007, NMB, AB750, 838), 29.V.2007, Bolzern; Cosenza, between Belvedere Marittimo and Sant'Agate di Esaro, 4 ♀, 2 ♂ (2 ♀ were juv. until IX.2007, NMB, AB718, 724, 732, 820, 836), 30.V.2007, Bolzern & Mühlethaler; same location as previous, 2 ♂ (NMB, AB452), 15.VII.2006, Ramseyer; Cosenza, Parco Naz. del Pollino, 2 ♀ (1 ♀ was juv. until VIII.2008, NMB, AB727, 941), 30.V.2007, Bolzern & Mühlethaler; Cosenza, Montagna, 1 ♀ (was juv. until IX.2007, NMB, AB837), 30.V.2007, Bolzern & Mühlethaler; Cosenza, Praia a Mare, Isola di Dino, 6 ♂ (NMB, AB450), 15.VII.2006, Bolzern & Ramseyer; **Campania:** Salerno, Grotta d. Bussento close to Morigerati, 4 ♀, 4 ♂ (3 ♀ were juv. until X.2007, NMB, AB751, 787), 1.VI.2007, Bolzern; Salerno, Novi Velia, 3 ♀, 8 ♂ (♀ and one 1 ♂ were juv. until IX–XII.2007, NMB, AB811, 828, 834, 900, 914), 2.VI.2007, Bolzern & Mühlethaler; Salerno, street between Morigerati and Caselte in Pittari, 2 ♂ (was juv. until IX.–XII.2007, NMB, AB899, 903), 1.VI.2007, Bolzern & Mühlethaler; Salerno, Sanza, Monte Cervati, 7 ♂ (NMB, AB723, 736), 31.V.2007, Bolzern & Mühlethaler; **Sicily:** Catania, street to Grotta dei Ladroni, 1 ♂ (NMB, AB709), 28.V.2007, Bolzern & Mühlethaler; Catania, street after Grotta dei Ladroni, 2 ♂ (NMB, AB690, 693), 28.V.2007, Bolzern & Mühlethaler; Palermo, Monastery close to Piano Zucchi, 1 ♀, 1 ♂ (♀ was juv. until VIII.2008, NMB, AB716, 940), 24.V.2007, Bolzern & Mühlethaler; Catania, Randazzo, N-slope of Mte. Etna, 1 ♂ (NMB, AB759), 26.V.2007, Bolzern & Mühlethaler.

Diagnosis

T. parmenidis belongs to a species group together with *T. circeoensis* **n. sp.**, *T. capolongoi* and *T. sbordonii*. Most useful characters for separating these species are the shape of the RTA, the bifid terminal end of the conductor, the presence/absence of pockets at the median plate of the epigyne and the location of the copulatory openings.

Description

Measurements

Male (n=1): CL 3.75, CW 3.05, STL 1.84, STW 1.81, OL 4.39, OW 2.91. Leg I (5.54, 1.40, 5.04, 5.98, 2.67), II (5.05, 1.33, 4.21, 5.33, 2.34), III (4.56, 1.31, 3.76, 5.10, 2.38), IV (5.44, 1.25, 4.98, 6.60, 2.46), Pedipalp (2.29, 0.74, 1.15, 1.60), bulbL 1.34.

Female (n=1): CL 3.16, CW 2.53, STL 1.59, STW 1.54, OL 5.13, OW 3.60. Leg I (4.10, 1.26, 3.83, 3.94, 2.27), II (3.80, 1.17, 3.24, 3.62, 1.93), III (3.47, 1.12, 2.72, 3.53, 1.64), IV (4.31, 1.28, 3.85, 4.73, 1.87). Pedipalp (1.59, 0.62, 0.95, 1.37). EPL 0.56, EPW 1.11, ATL 0.26, ATW 0.44.

Eyes: PME 0.17–0.19, PLE 0.18–0.20, AME 0.13–0.20, ALE 0.18–0.21. Eye distances: PME-PME 0.5–1 x PME, PME-AME 0.5–1 x PME, PME-PLE 0.5–1 x PME, PME-ALE 0.5–1 x PME, AME-AME <0.5 x AME, AME-ALE <0.5 x AME. CLY1 1.5–2 x AME, CLY2 1 x ALE.

Male palp

RTA with 3 branches, lateral and dorsal branch basally fused, distally lobe or bulge like, ventral branch indistinct but with a distinct ventral ridge, distally moderately pointed. Embolus filiform, terminal part stronger bent, originating at 8 o'clock. Embolus equal CB with terminal tip at 2 o'clock. Conductor very distinct and complex with distal portion elongated and moderately curved, lateral margin completely folded, with a bulge like structure at the origin of the conductor. Terminal end strongly bifid, ventral part (functional) distally simple and sharp pointed, dorsal part ventrally with a massive claw like appendage and dorsally broadly flattened. Connection between conductor and tegulum membranous. MA strongly protruding with distal hook like sclerite, membranously connected to tegulum and originating at 6 o'clock. Basal part of tegulum good visible and with undulated margin.

Epigyne and vulva

Epigyne with distinct trapezoidal atrial region, clearly separated from the epigynal plate by a sclerotised ridge. Medially of this atrium a distinct pocket, opening anteriorly. Posterior sclerite absent. CO expressed as distinct holes, directly anteriorly of the pocket, opening anteriorly. Epigynal „pseudo teeth“ absent. Vulva consists of distinguishable CD, RC and FD. CD short and straight, leading into globular, smoothly sclerotised RC, separated by about their diameter. FD only represented by small leaf shaped appendages distally of the RC.

Other important characters

Cheliceral promargin with 3, retromargin with 4 teeth. Colulus developed as trapezoidal plate with the distal margin medially notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment as long as basal segment. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 7–8. Denticles at paired claw of leg I 11–12. Leg spination: male palp (2–0–0–0 or 3–0–0–0, 2–0–0, 1–2–0–0 or 2–2–0–0), female palp (2–0–0–0 or 3–0–0–0, 2–0–0, 2–2–0–0), leg femora (2–3–2–0, 2–3–3–0 or 3–2–1–0, 2–2–2–0, 1–1–1–0), patellae (all 2–0–0), tibiae (0 or 0–0–0–1p or 2–0–0–0 or 2–0–0–1p (dorsal spines indistinct), 0, 2–1–1–1, 2–1–1–1.), metatarsi (0–0–0–3p+1, 0–1–0–3p+1, 0–2–2–3p+1, 0–2–2–1p+1+2p+1 or 0–2–3–1p+1+2p+1 or 0–3–2–1p+1+2p+1), tarsi (I & II 0, III & IV 0–0–1–0).

Colouration

Margin of carapace with 3 broad crescent shaped darkened spots, dorsally with 2 symmetric longitudinal dark bands, serrated and continuous. Chelicerae medially with darkened spot. Sternum anteriorly with distinct pale median band, reaching only the middle, 4 symmetric pairs of pale dots laterally and posteriorly, moderately fused. Opisthosoma brownish-yellowish mottled, dorsally with a distinct yellowish median band (most anteriorly darkened) with 2 pairs of white spots laterally, 4 indistinct chevrons more posteriorly. Legs annulated. Colulus partly darkened, ALS ventrally and dorsally darkened, PLS with basal segment black, distal segment pale.

Distribution

This species is endemic to Italy. Previously *T. parmenidis* was only mentioned from the type locality in Campania. The data presented here expand the known range southwards to Calabria and Sicily.

Discussion

T. parmenidis together with *T. capolongoi*, *T. sbordonii* and *T. circeoensis* **n. sp.** form a morphologically well-defined species group, endemic to southern Italy.

***Tegenaria parvula* Thorell, 1875** stat. rev.

Figs. 36 E–F, K–L

Tegenaria parvula Thorell (1875b): 94, female.

Tegenaria parvula Thorell (1875a): 78, female.

Tegenaria velox Chyzer & Kuzczynski (1897): 168–169, pl. 6, fig. 28, female, **new synonym**.

Tetrilus strandi Caporiacco (1936): 355–356, fig. 5, male.

Tetrilus strandi Caporiacco (1938): 39, fig. 2, female.

Tegenaria strandi Lehtinen (1967): 267; synonymized by Brignoli (1977a): 45.

Tegenaria parvula Brignoli (1971a): 97–101, figs. 46–50.

Malthonica parvula Guseinov et al. (2005): 164.

Type material examined

No type material examined. Female type had been examined and drawn by Brignoli (1971a).

Sub *Tegenaria velox*: holotype. Romania: Caras-Severin, Herkulesfürdő (Polyana Stana Pogara, Rablobarlang), ♀ (HNHM, Araneae-5), IV., Chyzer.

Other material examined

Italy: Abruzzo: Lanciano, La Majelletta, 1 ♂ (MSNB, 004), 9.VI.1977, Brandmayr; Teramo, Monti della Laga, 1 ♀ (MSNB, 002), 25.VII.2001, Marotta & Zuppa. **Lazio:** Roma, Zagarolo, 1 ♀ (MCSN, 542), V.1967, Papini; Viterbo, Monte Cimino, 1 ♂, 2 ♀ (MCSN, 542), 13.IV.1969, Brignoli; Supino, Abisso Patrizi, 1 ♂ (MCSN, 542), 10.XII.1967, Sbordon; Marino, 1 ♀ (MHNG), 18.XII.1966, Sbordon; Roma, Zagarolo, 1 ♀ (MHNG), V.1967, Papini; Viterbo, Lago di Vico, 1 ♂ (MHNG), 12.II.1967, Bruno; Frosinone, Esperia, 1 ♂, 1 ♀ (were juv. until IX.2007, NMB, AB819), 4.VI.2007, Bolzern & Mühlethaler; Roma, Vallepietra, Pozzo Cornetta, 1 ♀ (MCSN, 542), 2.VI.1971, Sbordon; ; Monti Lucretili, 1 ♀ (MSNB, 004), 17.V.2003, Sbordon; Roma, “street from Cave to Valmontone”, 1 ♀ (SMF), 10.IV.2006, Schönhofer; **Marche:** Macerata, Castelsantangelo sul Nera, Gualdo, 1 ♀ (MSNB, 003), XI.1991, Buttarelli, Ghilardi, Pantini & Valle; Ascoli Piceno, Montemonaco, Isola S. Biagio, 1 ♂ (MSNB, 001), 23.VI.2004, Rismondo & Fabbri; **Toscana:** Lucca, S. Martino in Freddana, 1 ♀ (MCSN, 542), 5.XI.1967, Brignoli; Grosseto, Roccastrada, 1 ♂ (MCSN, 542), 28.XII.1976, Sammuri & Borri; Pisa, between Volterra and Poggibonsi, 1 ♀ (SMF, AB361), 6.IV.1996, Jäger.

Diagnosis

T. parvula is very closely related to *T. silvestris*. Females can easily be separated by the distinctly different epigyne. Males are more difficult to separate but most useful characters are the dorsal branch of RTA, the median protrusion of tegulum and the distal portion of conductor.

Description

Measurements

Male (n=2): CL 3.31–3.90, CW 2.54–3.07, STL 1.57–1.89, STW 1.58–1.92. Leg I (3.51–4.47, 1.29–1.45, 3.35–4.18, 3.53–4.57, 2.15–2.40), II (3.17–4.00, 1.17–1.38, 2.79–3.54, 3.13–3.53, 1.80–1.84), III (2.50–2.90, 0.86–1.05, 2.21–2.26, 2.21–2.84, 1.12–1.47), IV (3.78–4.55, 1.21–1.38, 3.21–3.91, 3.98–4.97, 1.82–2.21). Pedipalp (1.72, 0.55–0.63, 0.49–0.51, 2.20–2.25), bulbL 1.90–1.96.

Female (n=1): CL 3.46, CW 2.70, STL 1.74, STW 1.75. Leg I (3.76, 1.24, 3.32, 3.66, 2.04), II (3.22, 1.18, 2.72, 2.96, 1.63), III (3.14, 1.19, 2.37, 3.07, 1.55), IV (3.99, 1.27, 3.36, 4.28, 1.84). Pedipalp (1.49, 0.63, 0.91, 1.48). EPL 0.51, EPW 0.85, ATL 0.24, ATW 0.26.

Eyes: PME 0.18, PLE 0.19–0.20, AME 0.14–0.19, ALE 0.19–0.21. Eye distances: PME-PME 0.5–1 x PME, PME-AME 0.5–1 x PME, PME-PLE <0.5–0.5 x PME, PME-ALE 1 x PME, AME-AME <0.5 x AME, AME-ALE <<0.5 x AME. CLY1 1.5 x AME, CLY2 0.5–1 x ALE.

Other morphological characters

All other morphological characters (except some details in genital morphology) examined do lie within the variation presented for *T. silvestris*.

Distribution

Italy (central Italy to the north), Romania.

Discussion

Brignoli (1971a) suggested that most citations of *T. silvestris* L. Koch from Italy may refer to *T. parvula*. The present study does not support this as both forms occur in different parts of Italy.

The synonymy of *T. velox* Chyzer is based on the examination of the female holotype of *T. velox*. No additional material and in particular no males are presently known of this taxon from Romania. No differences could be found between the holotype of *T. velox* and Italian material of *T. parvula* and the two are, therefore, synonymised here. Males from Romania will be necessary to confirm this synonymy.

***Tegenaria percuriosa* Brignoli, 1972**

Fig. 30 J (holotype of *T. bithyniae*)

Tegenaria percuriosa Brignoli (1972): 176–177, figs. 18, 21, female.

Tegenaria percuriosa Brignoli (1978b): 44, fig. 11 (grouping information).

Tegenaria boitanii Brignoli (1978c): 518–519 (only male; see Gasparo (2007), figs. 100–101.

Tegenaria bithyniae Brignoli (1978c): 515, fig. 97, female, **new synonym**.

Type material examined

Holo- and paratypes. Turkey: Isparta: Anamas, “Grotta Zindan Magarasi”, 3 ♀ (MCSN, 543), 11.VIII.1967, Brignoli & Sbordonì.

Sub *T. boitanii*: holotype. Turkey: Bolu: Abant, 1 ♀ (female paratype is *T. argaieca*, MHNG), 17.VII.1971, Brignoli & Vigna.

Sub *T. bithyniae*: holo- and paratypes. Turkey: Bolu: Abant, 4 ♀ (holotype: MHNG; paratypes: MCSN, 100, 544), 24.VI.1971, 17.VII.1971, Brignoli & Osella.

Other material examined

Turkey: Bursa: Ulu Dag, 1 ♀, 3 ♀ (sub *T. bithyniae*, det. Pantini, MSNB), 26.VI.1990, Cavazzuti; **Isparta:** Anamas, Grotta Zindan Magarasi, 14 ♀ (MCSN, 543), 17.IV.1973, Vigna, Brignoli, Sbordonì & Di Rao; Barla, Grotta di Barla, 1 ♀ (MCSN, 543), 18.IV.1973, Sbordonì; **Konya:** Lago di Beysehir, “Haci Magarasi” (?), 1 ♀ (MCSN, 543), 23.IV.1973, Brignoli; Sinop, “Dragana Jesidi” (?), 1 ♀ (sub *T. bithyniae*, MCSN, 544), 1.VI.1969, Brignoli; **Tokat:** Gamlibal Jesidir, 1 ♀ (sub *T. boitanii*, det. Brignoli, MCSN, 544), 6.VI.1969, Brignoli.

Description

A redescription with all relevant information is provided by Gasparo (2007).

Distribution

This species is known from Turkey (Bolu, Isparta, Konya, Sinop and Tokat). It is also listed for Bulgaria (Blagoev et al., 2002; Deltshv, 1993; see also Gasparo, 2007), but without detailed locality data.

Discussion

The taxonomy of *T. percuriosa*, *T. boitanii* and *T. bithyniae* is confused. Based on recently collected specimens from the type locality of *T. percuriosa*, Gasparo (2007) assigned the male holotype of *T. boitanii* to *T. percuriosa*.

The examination of the type material of *T. percuriosa* and *T. bithyniae* further showed that the latter species is a junior synonym of *T. percuriosa*. The drawings of *T. bithyniae* in the literature (Brignoli, 1978c: p. 517, fig. 97; Deltshv, 1993: p. 169, fig. 1) show the transparent epigynes in an antero-ventral view. Applying an exact dorsal or ventral view these structures will resemble the drawings of Brignoli (1972: p. 172, fig. 18) and Gasparo (2007: p. 101, figs. 7–8).

***Tegenaria pieperi* Brignoli, 1979**

Figs. 30 F–G

Tegenaria pieperi Brignoli (1979b): 194, fig. 27, female.

Type material examined

Holotype. Greece: Crete: Sitia, Megalo Katahgi, Ag. Georgios, 1 ♀ (MCSN, 542), 21.V.1977, Pieper.

Other material examined

Greece: Crete: Kavoussi, Grotte "Thergiospilios", 4 ♀ (MHNG), 5.IV.1978, Hauser.

Description

Description, including measurements, is provided by Brignoli (1979b). Additional Drawings also provided by Brignoli (1984: 308, fig. 29).

Distribution

Only known from the type locality on Crete, Greece.

***Tegenaria pindosiensis* new species**

Figs. 38 K–N, 39 a–b

Male unknown.

Type material examined

Holotype. Greece: Epirus, Pindos-Mountains, street between Karpenisi and Agrinio, 1 ♀ (SMF), 28.II.2006, Schönhofer.

Etymology

The species epithet is derived from the name of the mountain range in northern Greece and southern Albania where the only known specimen of this species had been collected.

Diagnosis

T. pindosiensis n. sp. is most similar to *T. regispyrrhi* but differs by the epigyne with a uniformly shaped median plate without transversal rim (strongly sclerotised transversal rim present in *T. regispyrrhi*), the distally pointed projections of lateral margin of median region (“pseudo teeth”) and the run of the first part of the CD strongly convoluted.

Description

Measurements

Female (n=1): CL 1.86, CW 1.36, STL 0.99, STW 0.95, OL 3.33, OW 2.19. Leg I (1.69, 0.67, 1.45, 1.49, 1.03), II (1.53, 0.67, 1.18, 1.35, 0.84), III (1.47, 0.55, 1.07, 1.30, 0.74), IV (2.38, 0.87, 2.10, 2.42, 1.02). Pedipalp (0.73, 0.33, 0.46, 0.78). EPL 0.36, EPW 0.48, ATL 0.14, ATW 0.35.

Eyes: PME 0.10, PLE 0.11, AME 0.07, ALE 0.13. Eye distances: PME-PME 0.5–1 x PME, PME-AME 0.5–1 x PME, PME-PL 0.5 x PME, PME-ALE 0.5 x PME, AME-AME <0.5 x AME, AME-ALE << 0.5 x AME. CLY1 2–2.5 x AME, CLY2 0.5–1 x ALE.

Epigyne and vulva

Epigyne medially with a paler area, all strongly sclerotised, only laterally separated from epigynal plate. “Pseudo teeth” present. Posterior sclerite absent. GO lateral of atrial area. Vulva consists of distinguishable CD, RC and FD. CD very hard detectable, only slightly sclerotised. RC globular and together with FD enclosed in a sclerotised structure. RC separated by 0.5 x their diameter anteriorly. RC and FD distinctly and conspicuously visible through epigynal plate.

Other important characters

Cheliceral promargin with 3 teeth, retromargin with 4 equally sized teeth. Colulus developed as trapezoidal plate with the distal margin medially notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment shorter than basal segment. Tarsal trichobothria at palpal tarsus and cymbium absent. Tarsal trichobothria 5–6. Denticles at paired claw of leg I 9. Leg spination: female palp (2–0–0–0, 2–0–0, 2–2–0–0), leg femora (2–2–0–0, 2–1–1–0, 2–1–1–0, 1–1–1–0), patellae (all 2–0–0), tibiae (1–0–0–1+1p, 2–1–0–1, 2–2–1–1 or 2–2–2–1, 2–2–2–2p+1 or 2–2–2–3+1p), metatarsi (0–0–0–3p+1, 0–1–0–3p+1, 0–2–2–3p+1, 0–3–3–3p+1), tarsi (all 0).

Colouration

Margin of carapace narrowly darkened with 3 crescent shaped spots, dorsally with 2 longitudinal symmetric dark bands, moderately serrated. Sternum with distinct pale median band and lateral 3 symmetric pale dots, most posterior pair moderately fused with median band. Opisthosoma dark brownish with yellowish median band and dots (mottled, may partly be caused by alcohol preservation) forming chevrons more posterior. Legs annulated. Colulus darkened. ALS darkened, PLS with dark basal and pale distal segment.

Distribution

Only known from the type locality.

***Tegenaria podopryorai* (Kovblyuk, 2006) new combination**

Malthonica podopryorai Kovblyuk (2006): 24–26, figs. 1–10.

No material examined

Description

A detailed description is provided by Kovblyuk (2006).

Distribution

Only known from Ukraine.

Discussion

The presence of a colulus, the number of cheliceral teeth and the genital characters place this species clearly into *Tegenaria*.

Tegenaria racovitzai Simon, 1907

Figs. 26 H–L

Tegenaria racovitzai Simon (1907): 548–549, fig. 3b, male.

Tegenaria antrorum Simon (1916): 211, female, **new synonym**.

Tegenaria racovitzai Ribera & Barrientos (1986): 191–193, figs. 6–7, female.

Type material examined

Holotype. Spain: Aragon: Huesca, Hoya de Huesca, Fanlo, „Cueva abaho de los Gloces“, 1 ♂, 1 juv. (MNHN, 1965, 45, 23627), 20.VIII.1905, Racovitza & Janel.

Sub *Tegenaria antrorum*: syntypes. France: Pyrénées-Orientales: Prades, Villefranche-de-Conflent, „Grotte de Villefranche“, 2 ♀ (MNHN, 1965, 581), Simon.

Other material examined

Spain: Aragon: Huesca, Hoya de Huesca, „Cueva del Paco de Naya“, 1 ♂ (MNHN, Biospéologica 459), 28.VI.1911; **Catalonia:** Barcelona, Montserrat, Collbató, „Cv. Freda“, 1 ♂ (UB), 16.IV.1972; Barcelona, Montserrat, „Avec dels Pouetons“ (?), 1 ♂ (MNHN), 21.II.1971, Sirera.

Diagnosis

T. racovitzai can easily be recognised by the very special reduced conductor and the distinct epigyne with sharply pointed “pseudo-teeth” and with a posterior sclerite having a convex anterior margin.

Description

Measurements

A description of female, including some measurements, is provided by Ribera & Barrientos (1986).

Male (n=1): CL 4.22, CW 2.98, STL 2.16, STW 1.81, OL 4.70, OW 2.78. Leg I (5.24, 1.66, 5.26, 5.55, 3.01), II (5.05, 1.60, 4.82, 5.56, 2.78), III (4.79, 1.49, 4.40, 5.75, 2.60), IV (6.01, 1.84, 5.38, 7.00, 3.40), Pedipalp (1.84, 0.66, 0.92, 1.77), bulbL 1.01.

Female (n=1): CL 3.66, CW 2.65, STL 1.92, STW 1.68. Leg I (4.41, 1.28, 3.90, 4.40, 2.36), II (4.25, 1.35, 3.79, 4.27, 2.24), III (3.86, 1.23, 3.36, 4.31, 1.85), IV (4.83, 1.26, 4.39, 5.76, 1.78). Pedipalp (1.51, 0.60, 0.98, 1.61). EPL 0.72, EPW 1.11, ATL 0.22, ATW 0.39.

Eyes: PME 0.14–0.15, PLE 0.15–0.16, AME 0.10–0.11, ALE 0.16–0.17. Eye distances: PME-PME 1–1.5 x PME, PME-AME 1 x PME, PME-PLE 1–1.5 x PME, PME-ALE 0.5–1 x PME, AME-AME 0.5–1 x AME, AME-ALE 0.5–1 x AME. CLY1 2.5 x AME, CLY2 1–1.5 x ALE.

Male palp

RTA with 3 branches, dorsal branch strongly sclerotised, broad protruding, moderately longer than wide, distally broad truncated, lateral branch much smaller, protruding and distally pointed, ventral branch long drawn-out bulge with distinct ventral rim. Embolus filiform, originating at 8–9 o'clock. Embolus approximately 1.5 CB with terminal tip at 2 o'clock.

Conductor reduced to transparent lamelliform appendage with lateral margin moderately folded. Terminal simple and moderately pointed. Connection between conductor and tegulum membranous or moderately sclerotised. MA moderately protruding with distal plate like sclerite forming a spoon like structure, membranously connected to tegulum and originating at 4–5 o'clock. Basal part of tegulum good visible and with a continuous margin.

Epigyne and vulva

Epigyne medially with a pale, membranous area. Posterior sclerite expressed as a sclerotised bulge with anterior margin convex, limiting atrial area posteriorly. CO between and laterally of the membranous median area and the posterior sclerite. Epigynal „pseudo teeth“ present and sharp pointed. Vulva consists of distinguishable CD, RC and FD. CD very short leading into globular, smoothly sclerotised RC, almost touching each other. An additional small globular structure (second pair of RC) attached to the large RC, which are distinctly visible through the epigynal plate. FD only represented by small leaf shaped appendages distally of the RC.

Other important characters

Cheliceral promargin with 3, retromargin with 4–5 teeth. Colulus developed as trapezoidal plate with the distal margin medially notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment shorter than basal segment. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 7–9. Leg spination: male palp (2–0–0–0 or 3–0–0, 2–0–0, 1–0–2–0), female palp (2–1–0–0 or 3–0–0–0, 2–0–0, 2–2–0–0), leg femora (2–2–2–0 or 2–3–2–0, 2–2–2–0, 2–2–2–0, 2–1–1–0 or 2–2–1–0), patellae (all 2–0–0), tibiae (1–2–0–2p+1 or 1–2–2–2p+1 or 1–2–0–3p, 1–2–2–1+2p or 1–2–2–3p, 1–2–2–2+1p or 1–2–2–3p, 1–2–2–2+1p or 1–2–2–3p), metatarsi (0–2–2–3p+1, 0–3–2–3p+1, 2–3–3–3p+1, 2–3–3–3p+1), tarsi (I & II 0, III & IV 0–0–1–0).

Colouration

No colouration pattern visible at the specimens examined.

Distribution

Records are known from northeast Spain and southwest France (regions around the Pyrenees).

Discussion

Simon (1907) assigned *T. racovitzae* to his *domestica*-group. Later he described *T. antrorum* (Simon, 1916) which he placed near *T. racovitzae*, and the two into his *armigera*-group. Fage (1931) agreed with this placement, in contrast to Brignoli (1977c) who mentioned that *T. racovitzae* does not show close affinities to the *domestica*, *atrica* or *armigera/oribata*-group.

***Tegenaria ramblae* Barrientos, 1978 stat. rev.**

Figs. 25 E–H

Tegenaria ramblae Barrientos (1978): 217–220, figs. 1–3, female.

Tegenaria ramblae Barrientos & Ribera (1992): 122–127, figs. 1, 2a–b, male.

Malthonica ramblae Deltshv (2008b): 43.

No typematerial examined

Other material examined

France: Pyrénées-Orientales: Céret, Forêt de Ceret, 2 ♀ (sub *T. aff. silvestris*, det. Machado, MNHN, 1971, 471).

Portugal: Aveiro: Esmoriz, Lisbon (?), 2 ♀ (sub *Tegenaria*, det. Simon, MNHN, 1977, 14174), Seguera; **Coimbra:** Coimbra, Botânico, 3 ♀ (NMB, AB928), 15.IV.2008, Crespo;

Leira: Porto de Mós, Serro Ventoso, 2 ♀, 1 ♀ (NMB, AB271, 275), 4.VI.2002 and

16.VII.2005, Cardoso; **Lisbon:** 20 km west of Lisbon, Sintra, 1 \$ (NMB, AB589), 23.X.2006, Huber; **Porto:** Porto, 2 \$, 10 £ (sub *Tegenaria*, det. Simon, MNHN, 1977, 14173), Seguera; **Santarém:** Albergaria, 6 \$, 2£ (ZMUC, 00012611–17), 4.VI.2005 and 15.VI.2005, Cardoso.

Description

Detailed descriptions, including measurements, are provided by Barrientos (1978, female) and Barrientos & Ribera (1992, male).

Distribution

Portugal, Spain (central to west).

Tegenaria regispyrri Brignoli, 1976 sensu lato

Among material referred to *T. regispyrri* four female morphotypes can be recognised. Only for one morphotype males are available which include the holotype of *T. regispyrri*. Here the three morphotypes are distinguished but not formally described as males are wanting.

Tegenaria regispyrri Brignoli (1976b): 569–571, figs. 54, 56, 58.
Figs. 38 A–D

Type material examined

Holo- and paratype. Greece: Trikala: Malakasi, 1 \$, 2 £ (MCSN, 544), 28.IX.1966, Brignoli; Ioannina: Metsovon, 1 £ (MCSN, 100), 22.VII.1971, Osella; “3 km après Karies: en direction de Elati”, 1 £ (MHNG), 26.IV.1973, Mahnert.

Other material examined

Greece: Ioannina: “Passo Katava”, 1 \$ (MSNB), 4.VI.1991, Giachino; “E Ioannina, near E92“, 1 £ (SMF), 2.IV.2006, Schönhofer; **Kefallonia:** 1 £ (SMF, coll. Roewer, 5972); **Trikala:** “street E92 btw. Panagia and Metsovo“, 1 \$, 1 £ (SMF), 2.IV.2006, Schönhofer.

Tegenaria aff. *regispyrri* (1)

Figs. 38 E–F

Greece: Kefallonia: Sami, “d'entrée de la grotte Drogarati”, 1 £ (*T. regispyrri*, det. Brignoli, MHNG), 6.IV.1970, Hauser.

Comments

Moderately smaller than the examined *T. regispyrri* specimens (CL 1.73, CW 1.29). Colouration pattern not examinable (very pale specimen, may be due to alcohol preservation). Differs from *T. regispyrri* by moderately different spination patterns (e.g. no spines at tarsi) and the epigyne and vulva.

Tegenaria aff. *regispyrri* (2)

Figs. 38 G–H

Greece: Corfu: Ipsos, „pâturages avec oliviers près de l'hôtel Ipsos Beach“, 1 £ (*T. regispyrri*, det. Brignoli, MHNG), 9.IV.1972, Hauser.

Comments

Lies in the same size range (CL 2.83, CW 2.16) as the examined *T. regispyrri* specimens. Colouration pattern similar. Differs from *T. regispyrri* by moderately different spination patterns (e.g. no spines at tarsi) and the epigyne and vulva.

Tegenaria aff. *regispyrrhi* (3)

Figs. 38 I–J

Greece: Peloponnesos: Achaia, Peristera, 1 ♂ (coll. van Keer: 1967), 13.IV.2000, van Keer & van Keer; Arkadia, Ano Karyes, Oros Likeo, 2 ♂ (coll. van Keer: 1840), 29.V.1998, van Keer & van Keer.

Description (*T. regispyrrhi* sensu stricto)

Measurements

Male (n=1): CL 2.84, CW 2.14, STL 1.45, STW 1.37. Leg I (2.87, 1.08, 2.67, 2.74, 1.81), II (2.74, 0.99, 2.27, 2.50, 1.62), III (2.59, 0.93, 1.98, 2.54, 1.38), IV (3.21, 1.03, 2.78, 3.46, 1.74), Pedipalp (1.58, 0.58, 0.56, 1.35), bulbL 0.98.

Female (n=2): CL 2.11–3.20, CW 1.54–2.22, STL 1.17–1.59, STW 1.08–1.45. Leg I (2.07–2.75, 0.83–1.01, 1.80–2.41, 1.75–2.47, 1.24–1.48), II (1.92–2.67, 0.76–1.08, 1.49–2.11, 1.61–2.34, 1.02–1.45), III (1.82–2.44, 0.68–1.01, 1.31–1.89, 1.57–2.35, 0.97–1.26), IV (2.23–3.22, 0.71–1.11, 1.80–2.78, 2.28–3.31, 1.13–1.51). Pedipalp (0.87–1.30, 0.41–0.56, 0.58–0.78, 0.88–1.21). EPL 0.32–0.45, EPW 0.52–0.70, ATL 0.14–0.25, ATW 0.36–0.51.

Eyes: PME 0.11–0.14, PLE 0.11–0.17, AME 0.07–0.09, ALE 0.12–0.14. Eye distances: PME–PME 0.5–1 x PME, PME–AME 0.5–1 x PME, PME–PLE <0.5–0.5 x PME, PME–ALE 0.5–1 x PME, AME–AME <0.5–0.5 x AME, AME–ALE <<0.5 x AME. CLY1 2.5–3 x AME, CLY2 1 x ALE.

Male palp

RTA with 3 branches, dorsal branch large, leave shaped and strongly protruding, bent and distally pointed, lateral branch strong and straight protruding, thorn like, ventral branch indistinct flat long drawn-out bulge with distinct ventral rim. Embolus filiform, originating at 8–9 o'clock. Embolus approximately 1.5 CB with terminal tip at 4 o'clock. Conductor irregularly shaped with distal portion strongly elongated and moderately bent, lateral margin completely folded. Terminal end not bifid, indistinctly pointed. Connection between conductor and tegulum membranous. MA strongly protruding with bifid plate like distal sclerite, one part hook like elongated and the other part broadly pointed, membranously connected to tegulum, originating at 5–6 o'clock. Basal part of tegulum good visible and moderately undulated.

Epigyne and vulva

Epigyne with a distinct atrium (eventhough the CO are not placed in this atrium), anteriorly separated from the epigynal plate by a prominent triangularly or trapezoidally shaped ridge. Posterior sclerite absent. CO anterolaterally of the prominent ridge distinctly visible as gaps. Epigynal „pseudo teeth“ absent. Vulva consists of distinguishable CD, RC and FD, all structures are fused together into a strongly sclerotised structure. CD long and straight (difficult to observe), leading into globular RC, separated by about their diameter. FD long and convoluted, terminally leading into small leave shaped appendages.

Other important characters

Cheliceral promargin with 3, retromargin with 3–4 teeth. Colulus developed as trapezoidal plate with the distal margin medially notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment shorter than basal segment. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 5–7. Denticles at paired claw of leg I 9–10. Leg spination: male palp (2–0–0–0, 2–0–0, 0–2–0–0 (not clear if those are dorsal or prolateral spines), female palp (2–0–0–0, 2–0–0, 2–1–1–0 or 2–2–0–0), leg femora (2–2–0–0 or 2–2–1–0, 2–1–2–0 or 2–2–0–0, 2–1–1–0 or 2–2–2–0, 1–1–1–0 or 2–1–1–0 or 2–2–1–0), patellae (all 2–0–0), tibiae (0 or 2–0–0–1+1p or 2–0–0–3p or 2–1–0–3p or 2–2–0–3p, 2–1–0–2+1p or 2–1–0–3p or 2–2–0–1+1p or 2–2–0–2+1p, 2–2–2–2+1p

or 2-2-2-3p, 2-2-2-2+1p or 2-2-2-3p), metatarsi (0-0-0-3p+1, 0-1-0-3p+1, 0-3-3-3p+1 or 1-3-3-3p+1, 1-3-3-3p+1), tarsi (I & II 0, III & IV 0-0-1-0).

Colouration

Margin of carapace with 3 narrow crescent shaped darkened spots, sometimes connected, dorsally with 2 symmetric longitudinal dark bands, serrated. Sternum with distinct pale median band and 3 symmetric pairs of pale spots laterally. Opisthosoma dark brownish, laterally with yellowish spots, dorsally with indistinct yellowish chevrons. Legs annulated. Colulus partly darkened, ALS darkened, PLS with basal segment darkened (pale in other specimens, may be due to alcohol preservation), distal segment pale.

Distribution

Only known from Greece.

Discussion

The four morphotypes of *T. regispyrri* s. l. differ in size, spination patterns and genital structures (e.g. shape of the prominent rim on the epigynal plate, the length of the FD). The four morphotypes are also geographically separated (Map 1), except for one specimen collected by Roewer in Kefallonia, which matches the description of *T. regispyrri* s. str.

***Tegenaria rhodiensis* Caporiacco, 1948**

Tegenaria rhodiensis Caporiacco (1948): 40–41, fig. 2, male.

Tegenaria rhodiensis Brignoli (1978c): 513–514, figs. 90–93, redescription with female.

No typematerial available.

Other material examined

Turkey: Isparta: Igridir, 1 ♂ (MCSN, 542), 18.IV.1973, Brignoli; **Konya:** “Isola Haci Akif, Lago di Bzyschir”, 3 ♂, 3 ♀ (MHNG), 22.IV.1973, Brignoli.

Description

Based on the mentioned specimens, Brignoli provided a redescription of this species (1978c).

Distribution

Originally, Di Caporiacco collected one male of this species on Rhodes (Greece). Brignoli (1978c) found “his” *Tegenaria rhodiensis* in two provinces in central Turkey (Isparta, Konya).

Discussion

Type material is not traceable and Di Caporiacco's (1948) description is not diagnostic. For this reason Brignoli's concept (Brignoli, 1978c: sub *Tegenaria* (?) *rhodiensis*) has to be adopted here.

***Tegenaria rilaensis* Deltshv, 1993 stat. rev.**

Tegenaria rilaensis Deltshv (1993): 171–173, figs. 19–23.

Malthonica rilaensis Guseinov et al. (2005): 164.

Type material examined

Paratypes. Bulgaria: Rila Mountains, Zavrachitsa, 1 ♂, 1 ♀ (NHMW), 2.VIII.1993, Deltshv.

Other material examined

Bulgaria: Sofiya: Rila Mountains, Rila Monastery, 1 ♀ (NMB, AB243), 6.VIII.2005, Jäger & Kunz.

Diagnosis

T. rilaensis belongs, together with *T. campestris*, *T. montana*, and *T. bozhkovi* to the “super species” described by Deltshev (2008b).

Description

Several details and measurements are provided by Deltshev (1993). All examined characters mentioned for *T. campestris* were identical with this species except slight differences in genital morphology.

Distribution

Endemic to the Rila Mountains in Bulgaria (Deltshev, 1993).

Discussion

Deltshev (1993: 170–171; 2008b) mentioned, that *T. bozhkovi*, *T. montana* and *T. rilaensis* are closely related to *T. campestris*. As characters separating them, he used 1) the size of the palpal organ, the smallest being that of *T. montana*; 2) the shape of the “tegular apophysis” (conductor); 3) the shape of the epigyne and vulva. Based on the material at hand it is difficult to relate to this grouping. For this reason, the identification of the female from the Rila Monastery is tentative. In the genetic analyses, the genetic distance between *T. campestris* and *T. rilaensis* are distinct and the species are clearly separable. Additional material and analyses are necessary to clarify this problem.

***Tegenaria sbordonii* Brignoli, 1971** stat. rev.

Fig. 28 f–g

Tegenaria sbordonii Brignoli (1971a): 112–115, figs. 70–73.

Tegenaria sbordonii Brignoli (1977a): 52, fig. 35.

Malthonica sbordonii Guseinov, Marusik & Koponen, 2005: 164.

Type material examined

Holo- and paratypes. Italy: Lazio: Frosinone, Esperia, Grotta dei Serini, 1 ♂ (MCSN, 543), 13.XII.1970, Sbordonii; same data as holotype, 1 ♀ (MCSN, 543); same location as holotype, 1 ♀ (MCSN, 543), 17.V.1970, Sbordonii; same locality as holotype, 1 ♀ (MCSN, 543), 17.I.1971, C.S.R..

Diagnosis

T. sbordonii belongs to a species group together with *T. circeoensis* **n. sp.**, *T. capolongoi* and *T. parmenidis*. Most useful characters for separating these species are the shape of the RTA, the bifid terminal end of the conductor, the presence/absence of pockets at the median plate of the epigyne and the location of the copulatory openings.

Description

The description, including measurements, is provided by Brignoli (1971a). Some additional information is provided here.

Other important characters

Cheliceral promargin with 3, retromargin with 4 teeth. Colulus developed as trapezoidal plate with the distal margin medially notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment as long as basal segment. Tarsal trichobothria at cymbium and palpal tarsus absent.

Distribution

T. sbordonii is only known from the type serie collected in the “Grotta dei Serini” in Lazio, Italy.

Discussion

During the field work conducted during May and June 2007, A. Bolzern and R. Mühlethaler did not find the “Grotta dei Serini” nor any specimens of *T. sbordonii* in the region of Esperia. The species may be entirely restricted to caves.

***Tegenaria schmalfussi* Brignoli, 1976**

Figs. 30 G–H

Tegenaria schmalfussi Brignoli (1976b): 571–572, fig. 57, female.

Type material examined

Holotype. Greece: Crete: Milatos, “Grotta di Milatos”, 1 ♀ (MCSN, 544), 23.VIII.1972, Schmalfuss.

Diagnosis

T. schmalfussi does have moderately reduced eyes, distal segment of PMS almost 2 x longer than the basal segment and the very distinctly formed epigyne and vulva (Figs. 30 G–H).

Description

Description of the only specimen known is provided by Brignoli (1976b).

Distribution

Only known by one specimen from the type locality (Milatos cave, Crete, Greece).

Discussion

In 2007, A. Bolzern visited the type locality of this species. Unfortunately, only specimens belonging to *T. parietina* could be found. At present this species remains represented only by one female specimen.

***Tegenaria schoenhoferi* new species**

Figs. 23 F–J

Female unknown.

Type material

Holotype. Greece: Corfu, between Acharavi and Portes, 1 ♂ (SMF), 25.III.2006, Schönhofer. 3 subadult ♀ and 1 subadult ♂ are preserved in the same tube.

Etymology

The species is named in honour of the arachnologist Axel Schönhofer (Germany) who has collected many spiders and provided them for this study; genitive singular case.

Diagnosis

T. schoenhoferi can be separated from all other known species by the distinctive RTA and the very strongly elongated, hook like MA and the special shaped conductor.

Description

Measurements

Male (n=2): CL 2.79, CW 2.13, STL 1.46, STW 1.37, OL 2.93, OW 1.89. Leg I (3.32, 1.11, 3.19, 3.08, 1.58), II (2.85, 0.99, 2.61, 2.68, 1.45), III (2.74, 0.85, 2.09, 2.55, 1.23), IV (3.33, 0.98, 3.00, 3.54, 1.55). Pedipalp (1.38, 0.53, 0.43, 1.14), bulbL 0.91.

Eyes: PME 0.13, PLE 0.14, AME 0.08, ALE 0.14. Eye distances: PME-PME 0.5–1 x PME, PME-AME 0.5–1 x PME, PME-PLE 0.5–1 x PME, PME-ALE 0.5–1 x PME, AME-AME 0.5 x AME, AME-ALE <0.5 x AME. CLY1 2.5–3 x AME, CLY2 1–1.5 x ALE.

Male palp

RTA with 2 distinct branches, lateral branch broad and strongly protruding, distally with a straight, truncated ventral part and a strongly elongated, finger shaped dorsal protuberance, ventral branch forming a longitudinal ridge reaching three-fourth of tibia length. Embolus filiform, originating at 8–9 o'clock, about 2–2.5 x CB, with terminal end at 4–5 o'clock. Distal portion of conductor distinctly elongated, longer than wide, distally strongly bent and moderately acuminate, lateral margin completely folded. Terminal end distinctly elongated, strongly sclerotised and narrowly pointed. Connection of conductor to tegulum only partly sclerotised. MA very strongly protruding with distal plate forming an elongated, narrow hook like sclerite, membranously connected to tegulum, originating at 5 o'clock.

Other important characters

Cheliceral promargin with 3 teeth, retromargin with 6 equally sized teeth. Colulus developed as trapezoidal plate with the distal margin medially notched. PLS with distal segment as long as basal segment. Tarsal trichobothria at palpal tarsus and cymbium absent. Distinctly long trichobothria dorsally on palp tibia. Tarsal trichobothria 6–8. Denticles at paired claw of leg I 7–8. Leg spination: male palp (2–0–0–0, 2–0–0, 1–0–2–0), leg femora (2–2–0–0, 2–1–1–0 or 2–2–0–0, 2–2–2–0, 2–1–1–0), patellae (all 2–0–0), tibiae (2–0–0–2p, 0–0–0–2 or 2–1–0–3, 2–2–1–1p+1+1p or 2–2–1–3p, 2–2–2–1p+1+1p or 2–2–2–3p), metatarsi (0–0–0–1p or 0–0–0–3p+1, 0–1–0–3p+1 (one leg with a chaotic pattern of several spines), 0–3–2–3p+1, 1–3–3–3p+1), tarsi (I and II 0, III and IV 0–0–1–0).

Colouration

Margin of carapace 4 narrow symmetric dark spots, dorsally with 2 longitudinal symmetric serrated dark bands, head region with narrow dark median strip. Chelicerae with extensive dark spots. Sternum with distinct pale median band and with 3 symmetric pale dots laterally. Opisthosoma dark brownish with pale median band and 7–8 chevrons posteriad. Legs annulated. Colulus darkened. ALS darkened (ventrally more pronounced), PLS with basal segment darkened (dorsally more pronounced), distal segment pale. The subadult females do show the same colour patterns.

Distribution

Only known from the type location: Greece, Corfu.

***Tegenaria scopifera* Barrientos, Ribera & Pons, 2002**

Tegenaria scopifera Barrientos, Ribera & Pons (2002): 86–90, figs. 1A–B, 2A–B, 3A–B.

No material examined

Description

A detailed description, including measurements and good drawings, is provided by Barrientos et al. (2002).

Distribution

T. scopifera is endemic to the Balearic Islands. There, it is known from three islands (Mallorca, Cabrera, Tagomago).

***Tegenaria silvestris* L. Koch, 1872** stat. rev.

Figs. 36 A–B, G–H, variation C–D, I–J; 37 a, d–e, j, variation b–c, f–i

Tegenaria silvestris L. Koch (1872): 288–292.

Tegenaria sylvestris Müller & Schenkel (1895): 753, pl. 13, fig. 3.

Tegenaria silvestris Chyzer & Kulczynski (1897): 167, pl. 6, figs. 24, 27a–b.

Malthonica silvestris Guseinov et al. (2005): 164.

Type material examined

Probably syntypes. Italy: Trentino-Alto Adige: Schlern, 2 \$, 1 £ (ex. coll. L.Koch, NHMW); Germany: “Fränkischer Jura”, 2 £ (ex. coll. L.Koch, NHMW).

Other material examined

Austria: Carinthia: „Lienzer Dolomiten“, 1 £ (SMF, 1826); „Linzer Dolomiten“, Tristach-See, 1 £ (ex. coll. Roewer, 3788, SMF, 24682/1), 8.I.1927; **Tyrol:** „Ahrnkopf bei Innsbruck“, 1 \$ (NHMW), 1984, Steinberger; St. Jodok, 1 £ (SMF, 21902/1), 4.VIII.1941; Brixlegg, 2 \$, 2 £ (SMF, 2579, 2582); “Innsbruck Umgebung“, Sillschlucht, 1 \$, 2 £ (SMF, 29919), 13.VI.1963, Thaler; **Upper Austria:** Sauwald, 2 £ (NHMW), 25.VIII. and 24.IX.1957, Gruber.

Bulgaria: Lovech: Balkan Range, Shipka, Sokolsky Monast., ca. 9 km N Shipka, 1 £ (NMB, AB247), 9.VIII.2005, Bolzern.

France: Alpes-Maritimes: Menton, 4 £ (MNHN, 1975), 22.V.1915, Dalmas, Cagnes, 1 £ (MNHN, 1976); Dry valley between Villars-sur-Var and tunnel of Mescla, 3 £ (NMB, AB984), 2.IX.2008, Schönhofer; Grotte de Maima, 1 \$ (NMB, AB985), 4.IX.2008, Schönhofer & Tordjman; Castérine, 1 £ (NMB, 814), 15.VII.1986, Maurer & Thaler; Sospel, „N Col de Türini“, 1 \$, 1 £ (SMF, coll. Wunderlich, AB980), V.2008, Wunderlich; Foret de Peira Cava, 3 £ (MCSN, 537), 12.VIII.1972, Vigna; **Aube:** Chamoy, 1 £ (SMF,), 3.IV.1972, Jäger; **Haute-Savoie:** les Contamines, 1 \$, 4 £ (MNHN, 1971), VIII.1913; **Haute-Vienne:** Foret de Vayrec, 2 \$, 2 £ (MNHN, 1971); **Morbihan:** Lorient, Guidel Plages, 1 £ (NMB, AB288), 19.IX.2005, Schönhofer; **Pyrenees-Orientales:** Céret, 1 £ (MNHN, 1974), 25.XI.1911; Céret, 10 \$, 10 £ (MNHN, 1971); **Var:** Callian, 1 £ (MNHN).

Germany: Horsbach, 1 £ (SMF, 15160), 17.XI.1948, Hesse; **Baden-Württemberg:** Odenwald, 2 £ (SMF, 4828/6), Wider; Kaiserstuhl, Niederrotweil, 1 \$ (SMF, 17641/1), 27.IV.1965, Arach; Kaiserstuhl, Niederrotweil, 1 £ (SMF, 28680), 8.VI.1968, Wiehle; **Bayern:** Lillach, Frankenjura, 1 £ (coll. Bauchhenss, 321), 2004, Mägdefrau; Fränkische Schweiz, Veldensteiner Forst, 6 £ (coll. Bauchhenss, 324–325), 1983 and 1996, Bauchhenss; Oberbayern, Murnau-Moor, 1 £ (SMF, 33093), 1978, Löser; **Hessen:** Altkönig (Taunus), 1 £ (SMF, 15966), 18.VII.1963, Braun; Darmstadt, Lorchhausen, Naturschutzgebiet Engweger Kopf, 1 \$, 1 £ (NMB, AB549), 24.IX.2006, Bolzern; Taunus: Falkenstein, 1 £ (SMF, 15125), 26.V.1949; Taufstein (Vogelsberg), 1 \$ (SMF, 15781), 9.VIII.1964, Martens; Brandoberndorf, 7 \$ (SMF, 32065), 1983, Müller; **Niedersachsen:** Harz, Bärenhöhle, 1 £

(SMF, 20667/1), 9.III.1963; **Nordrhein-Westfalen:** Westfalen, Klosterhöhle, 1 £ (SMF, 5681); „Siebengebirge bei Bonn am Rhein“, 1 \$ 1 £ (SMF, 4807), 1883, Bertkau; **Rheinland-Pfalz:** Gönnersdorf, 1 \$, 1 £ (SMF), 14.IX.1992, Jäger; **Sachsen:** Pörsdorf, 1 \$ (SMF, 56957), 13.X.2005, Schönhofer; Neustadt, 1 £ (SMF, 7450), 6.V.1923, Stellwaag; **Sachsen-Anhalt:** Harz, Wedefurt, 1 \$ (SMF, 21915/1), 22.IX.1949, Wiehle.

Italy: Emilia Romagna: Modena, Pavullo, Grotta Sassoguidano, 1 £ (MCSN, 537), II.1975, Moscardini; Modena, Fanano, Monte Cimone, 5 £ (MSNB, 003), 12.VII.1992, Pantini & Valle; **Friuli-Venezia Giulia:** Grotta di Gabrovizza, 1 £ (MCSN, 537), 20.III.1974, Sbordon; Pordenone, Polcenigo, 1 \$ (MSNB, 003), 18.X.1996, Pantini & Valle; Pordenone, Glaut, 2 \$ (MSNB, 003), 5.VII.1996, Pantini & Valle; N Udine, 1 £ (SMF), 12.IV.2006, Schönhofer; **Liguria:** Savona, Magliolo, 1 \$ (MCSN, 537), 22.IX.1974, Briganti & Gardini; Aurigo, Poggialto, 1 £ (MCSN, 537), 1.V.1972, Bonzano; Savona, Dego, Girini, 1 £ (MCSN, 537), 19.IV.1970, Vigna; Imperia, Cosio d'Arroscia, 1 \$ (MCSN, 537), 26.IV.1975, Bonzano; La Spezia, Grotta del Ginepro, 2 £ (MCSN, 537), 5.III.1969, Brignoli; Imperia, Col di Nava, Grotta Rio di Nava, 5 \$, 1 £ (MCSN, 537), 7.III.1966, Bologna & Bonzano; Imperia, Grotta Strassasacchi, Rocchetta Nervina, 1 \$ (MCSN, 537), 15.XII.1974, Bonzano; Imperia, Triora, 1 £ (MSNB, 003), 19.VII.2001, Museo Bergamo; La Spezia, Varese Ligure, Passo Cento Croci, 3 \$ (MSNB, 003), 4.1991, Cerbino & Valle; **Lombardia:** Barni, Grotta del Fò di Barni, 1 £ (MCSN, 537), 7.III.1971, Bini; Bergamo, Parre, Grotta di Ca-Fastezzo, 1 \$ (MSNB, 001), 27.III.1990; Scaria, 1 \$, 2 £ (NMB, AB248, 250), 11.VI.2005, Bolzern; Pigra, 1 £ (NMB, AB249), 11–12.VI.2005, Bolzern; **Piemonte:** Cuneo, Rossana, Grotta dei Partigiani, 6 \$, 1 £ (MCSN, 537), 20.II.1972 and 2.XI.1974, Morisi; Cuneo, Rossana, Grotta delle Fornaci, 1 £ (MCSN, 537), 28.IV.1963, Vigna; Cuneo, Sotterranei presso Vernante, 1 £ (MCSN, 537), 10.II.1973, Morisi; Viozene, Alpi Liguri, 1 \$ (MCSN, 537), 22.VIII.1968, Vigna; Cuneo, Col di Tenda, Buco di Napoleone, 1 £ (MCSN, 537), IX.1972, Morisi; Cuneo, Valgrane, 1 £ (MCSN, 537), 31.X.1972, Morisi; Ponte Nizza, 1 £ (NMB, AB418), 4.VII.2006, Bolzern & Ramseyer; **Toscana:** Lucca, Fornovolasco, 1 \$, 1 £ (\$ juv. until 15.IX.2006, NMB, AB486, 536), 26.VII.2006, Bolzern & Ramseyer; Lucca, between Gallicano and Fornovolasco, 1 £ (NMB, AB485), 26.VII.2006, Bolzern & Ramseyer; **Trentino-Alto Adige:** Drena, M. Stivo vers. N, 1 \$ (MSNB, 003), 14.X.1998, Vailati; Varena, Le Palù, 1 \$ (MSNB, 003), 31.VIII.1997, Vailati; Carano, 5 £ (MSNB, 003), 10.VII.1997, Vailati; Mühlen in Taufers, 1 £ (SMF,), 2.VIII.1992, Jäger; Muehlwald, Neves Stausee, 1 \$, 2 £ (SMF), 19.VIII.1996, Jäger; **Valle d'Aosta:** Gressoney-Saint-Jean, 2 £ (NMB, AB990), 13.IX.2008, Schönhofer; **Veneto:** Treviso, Montello, 1 \$, 1 £ (MCSN, 537), 26.XII.1966 and 5.III.1967, Minelli; Cison di V., 1 £ (MCSN, 537), 10.III.1968, Minelli; Cansiglio, 1 £ (MCSN, 537), 5.VI.1970, Marcuzzi; Vicenza, Lumignano, Covolo di Guerra, 1 £ (MCSN, 537), 2.IV.1978, Sbordon; Vicenza, Prealpi Venete Vermechi, M. Summano, 4 \$ (MSNB, 003), 9.V.1998, Fontana; Padova, Colli Euganei, 1 £ (MSNB, 003), 14.IV.1995, Zanaica; Padova, Teolo, 2 \$, 1 £ (MSNB, 003), 27.III.2003, Museo Bergamo; Veneto, Vicenza, Schio, 1 \$ (MSNB, 003), 27.III.2003, Museo Bergamo; Belluno, Cesiomaggiore, Val Canzoi, 1 \$, 1 £ (MSNB, 003), 14.X.2002 and 27.III.2003, Museo Bergamo; Vicenza, Arcugnano, 1 \$ (MSNB, 003), 8.X.2002, Museo Bergamo.

Poland: Swietokrzyski NP, Swiety Krzyz, 1 £ (SMF, 35837), 17.V.1982, Starega.

Romania: Bihor: Meziad, Pesterea din valea Toplitei, 1 £ (MNHN).

Slovenia: Markovscina Dimnize Jama, 3 £ (MCSN, 537), 24.IV.1968, Argano & Sbordon; Grotta Dimnica, 1 \$ (MCSN, 537), 2.X.1972, Sbordon.

Serbia: Vojvodina: Fruska Gora National Park near Novi Sad, Taragovo, S of Sremski Kamenika, 1 \$ (SMF), 14.IV.2006, Schönhofer.

Switzerland: Baselland: Laufental, Brislach, 1 £ (NMB, AB688), 3.V.2007, Bolzern; Laufental, Grellingen, 2 £ (NMB, AB127, 146), 14.VI.2003, Bolzern; Laufental, Liesberg, 1 £ (NMB, AB358), 24.V.2006, Bolzern; Reinach, Reinacher Heide, 1 \$ (NMB, AB821),

17.VI.2007, Bolzern; Münchenstein, 4 £ (NMB, AB952, 955), 21.IX.2008, Bolzern; **Bern:** Bern, 1 \$ (NMB, AB805), 3.VII.2006, ALARM; **Grisons:** Engadin, Ramosch, 2 \$, 11 £ (NMB, AB366, 372, 379, 384), 3.VI.2006, Bolzern & Ramseyer; Engadin, Tarasp, Vulpera, 2 £ (NMB, AB376), 3.VI.2006, Bolzern & Ramseyer; Engadin, Scuol, Clemgia Schlucht, 1 \$, 2 £ (NMB, AB374), 3.VI.2006, Bolzern & Ramseyer; **Nidwalden:** Ennetbürgen, Bürgenstock, Franzosenhöhle, 3 £ (NMB, AB660–661, 663–664), 31.III.2007 and 1.V.2007, Bolzern & Trüssel; **Solothurn:** Leimental, Hofstetten, Chälegrabenschlucht, 1 \$ (NMB, AB347), 21.V.2006, Ramseyer; Witterswil, 1 \$ (NMB, AB349), 21.V.2006, Ramseyer; **Ticino:** Verzasca Tal, Frasco, Valdasc, 1 £ (NMB, AB1014), 30.VI.2009, Bolzern; **Valais:** Randa at Zermatt, 1 \$ (SMF), 16.IX.2005, Altmann.

Tegenaria cf. silvestris (all sub *T. silvestris*, det. Gruber)

Austria: Lower Austria: Jägerbachtal, ca. 3/4 km SSW of Steinegg, 1 £ (NHMW), 1.VIII.1996, Gruber; Wiener Wald, Hinter Weidling, 1 \$, 6 £ (NHMW), 13.IX.1981, 10.X.1982, Gruber; **Vienna:** Vienna XIX, Wiener Wald, W of Sievering / ENE of Neuberg, 1 \$ (NHMW), 20.XII.1980, Gruber; Vienna XIV, Wiener Wald, Kolbeterberg, 1 \$, 1 £ (NHMW), 12.III.1978, Gruber.

Italy: Trentino-Alto Adige: Albeins/Brixen, 1 \$, 1 £ (sub *T. silvestris*, det. Thaler, NHMW), 1985, Noflatscher.

Description

Measurements

Male (n=1): CL 3.79, CW 3.08, STL 2.01, STW 1.91, OL 4.56, OW 2.84. Leg I (4.71, 1.57, 4.59, 4.87, 2.69), II (4.40, 1.50, 3.91, 4.29, 2.34), III (4.06, 1.37, 3.16, 4.11, 2.11), IV (5.02, 1.48, 4.42, 5.39, 2.17). Pedipalp (2.16, 0.68, 0.60, 2.32), bulbL 1.79.

Female (n=1): CL 3.66, CW 2.75, STL 1.91, STW 1.79. Leg I (4.15, 1.42, 3.98, 4.17, 2.41), II (3.83, 1.37, 3.30, 3.73, 2.12), III (3.51, 1.25, 2.77, 3.70, 1.78), IV (4.51, 1.40, 3.96, 4.70, 1.99). Pedipalp (1.55, 0.68, 0.86, 1.80). EPL 0.56, EPW 0.92, ATL 0.40, ATW 0.42.

Eyes: PME 0.17–0.19, PLE 0.18, AME 0.15–0.17, ALE 0.18–0.20. Eye distances: PME-PME 0.5–1 x PME, PME-AME 0.5–1 x PME, PME-PLE 0.5 x PME, PME-ALE 0.5–1 x PME, AME-AME <0.5 x AME, AME-ALE <<0.5 x AME. CLY1 1.5–2 x AME, CLY2 1 x ALE.

Male palp

RTA with 3 branches, ventral branch extensive lobe like with distinct ridge, distally moderately protruding. Lateral and dorsal branch strongly sclerotised and robust apophyses, basally fused together, dorsal branch larger than lateral one and distally moderately pointed. Embolus filiform, originating at 7–8 o'clock, about 3.5–4 x CB long with distal tip at 4 o'clock. Conductor strongly sclerotised, lamelliform, distal portion strongly elongated and arcuated, lateral margin completely folded. Terminal end bifid, ventral part short and with a rounded plate like structure (or hook like in aff. *silvestris*), dorsal part small bulge like. Connection of conductor to tegulum distinctly stepped, forming a protruding bulge like tegular apophysis. MA strongly protruding with claw like shaped distal sclerite, membranously connected to tegulum, originating at 5–6 o'clock. Basal part of tegulum good visible and with discontinuous margin.

Epigyne and vulva

Epigyne with distinct median plate, anteriomedially continuously connected to strongly sclerotised epigynal plate. Posterior sclerite absent. CO anterior of median plate, distinct gaps. Epigynal „pseudo teeth“ absent. Vulva consists of combined ducts (CBD), no distinct RC recognisable. First part (CD) of CBD less sclerotised and moderately convoluted, proximate part strongly convoluted (strong variation in length and convolution, e.g. cf. *silvestris*). FD only represented by small leaf shaped appendages terminally of CBD.

Other important characters

Cheliceral promargin with 4, retromargin with 4–5 teeth. Colulus developed as trapezoidal plate with the distal margin medially slightly notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment shorter than basal segment. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 7–8. Denticles at paired claw of leg I 11. Leg spination: male palp (2–0–0–0, 2–0–0, 1–2–0–0 or 2–2–0–0), female palp (2–0–0–0, 2–0–0, 2–1p+1–0 or 2–2–0–0), leg femora (2–2–1–0 or 2–2–2–0, 2–2–1–0 or 2–2–2–0, 2–2–2–0, 1–1–1–0), patellae (all 2–0–0), tibiae (0–0–0–1+1p or 0–0–0–3p (2 small dorsal spines possible), 2–1–0–1+2p or 2–1–0–2 or 2–1–0–3 or 2–2–0–2 or 2–2–0–3, 2–2–2–1p+1+1p or 2–2–2–2+1p or 2–2–2–3p, 2–2–2–1p+1+1p or 2–2–2–2+1p or 2–2–2–3p), metatarsi (0–0–0–3p+1, 0–1–0–3p+1, 0–3–3–3p+1, 0–3–3–1+3p+1 or 0–3–3–1p+1+2p+1), tarsi (I–II 0, III–IV 0–0–1–0).

Colouration

Margin of carapace narrowly darkened (3 indistinct crescent shaped spots), dorsally with 2 symmetrical longitudinal dark band, moderately reduced to triangular dots. Sternum with distinct pattern of narrow pale median band and 3 pairs of symmetric pale dots laterally. Opisthosoma dark brownish, anteriorly with 3 pale bands, continuing in narrow chevrons posteriad. Legs annulated. ALS basally darkened, basal segment of PLS darkened, distal segment pale.

Distribution

Nearly whole Europe (Blick et al., 2004; van Helsdingen, 2009).

Discussion

In the collection of the NHMW several specimens collected around Vienna and one specimen from Italy differ slightly in genital morphology. Most conspicuous differences are the length and convolution of the CBD and the hook like shaped dorsal part of the terminal end of the conductor (Figs. 36 C–D, I–J; 37 b–c, f–i). More material and analyses are required to decide whether these specimens represent aberrant specimens of *T. silvestris* or a separate species.

***Tegenaria taurica* Charitinov, 1947**

Tegenaria taurica Charitonov (1947): 47, figs. 4–5.

Tegenaria taurica Esyunin & Farzalieva (2001): 261–263, figs. 1–5, redescription.

No material examined.

Description

A detailed description, including measurements and spination patterns, is provided by Esyunin & Farzalieva (2001). Information concerning the relationship of this species with *T. lapicidinarum* is provided by Kovblyuk (2004).

Distribution

Only known from five caves, all mentioned by Esyunin & Farzalieva (2001), in the Ukraine (Autonomous Republic of Crimea).

***Tegenaria tridentina* L. Koch, 1872**

Figs. 34 A–B, E–F

Tegenaria cubicularis C. L. Koch, 1834: 125, pl. 12; nomen oblitum (Simon, 1897–1903: 251).

Tegenaria tridentina L. Koch (1872): 292–295, male.
Tegenaria breinii Pavesi (1875): 269–270, male.
Tegenaria tridentina L. Koch (1876): 301–302, female.
Tegenaria austriaca Kulczynski (1898): 100, pl. 2, fig. 78, female; synonymized by Kulczynski (1914) and recognized by Thaler (1963).

Type material examined

Syntypes. Italy: Trentino-Alto Adige: „Trient.“, 1 ♂, 1 ♀ (NHMW, ex. coll. L. Koch).

Other material examined

Austria: Tyrol: „Umgebung Innsbruck“, Martinswand, 1 ♀ (MHNG), 7.VI.1963, Thaler; Ahrnkopf at Innsbruck, 1 ♂ (NHMW), 1983, Steinberger; St. Jodok, 1 ♂ (SMF, 21914/1), 20.VII.1941.

France: Drôme: Châtillon-en-Diois, Gr. de Pélebit, 1 ♀ (sub *T. domestica*, det. Fage, MNHN, Biospéologica 530); **Haute-Savoie:** Collonges / Salève, Grotte de l'Ours, 1 ♀ (MHNG), 18.I.1975, Haymoz.

Italy: “N. Italie”, 1 ♂ (MNHN, 1978), 1903, Virà (?); **Friuli-Venezia Giulia:** Pradis di Sotto, Grotta della Madonna, 2 ♀ (MCSN, 543), 12.II.1975, Di Rao; Pradis di Sotto, Grotta Mainaria del Point I, 1 ♀ (MCSN, 539), 13.II.1975, Sbordon; Pradis di Sotto, Grotta La Val, 5 ♀ (MCSN, 543), 12.II.1975, Sbordon; Udine, Paularo, Rio Mafinfier, 1 ♀ (MSNB, 003), 18.IX.1996, Pantini & Valle; **Lombardia:** Griante, 1 ♀ (MCSN, 539), 27.II.1972, Ferrari; Brescia, Vione, Val Canè, “cave sopra Rifugio Cortebona”, 1 ♀ (MSNB, 004), 21.IX.1982, Bonacina & Valle; Sondrio, Valmasino, Filorera, 1 ♀ (MSNB, 004), 25.VII.1982, Valle; **Trentino-Alto Adige:** Trento, Arco, “M. Biaina vers. W sopra loc. Gorghi”, 1 ♀ (MSNB, 003), 13.VII.1998, Vailati; Provincia di Bolzano, Taufers im Muenstertal, 1 ♀ (SMF, 363), 23.VIII.1996, Jäger; Prettau, Lahner Alm, 1 ♀ (SMF, 362), 30.VII.1992, Jäger; Grigno, Grotta Bigonda, 1 ♀ (MCSN, 102), X.1971, Corradi; **Veneto:** Verona, Nogarole di Breonio, Grotta dei Partigiani, 1 ♀ (MCSN, 66), 4.V.1969, Ciresola; Verona, Breonio, Nogarole, Grotta dei Partigiani, 1 ♀ (MCSN, 539), 4.V.1969, Ciresola; Vicenza, Lumignano, Covolo di Guerra, 1 ♀ (MCSN, 539), 2.IV.1978, Sbordon; Ponte di Vaja, Grotta Grande di Vaja, 1 ♂ (MCSN, 542), 2.X.1969, Osella, Zanetti & Tezza; Belluno, Cesiomaggiore, Val Canzoi, 1 ♀ (MSNB, 003), 27.III.2003, MSNB; Belluno, Sospirolo, 1 ♀ (MSNB, 002), 7.VIII.2002, MSNB.

Slovenia: Bohinj, 1 ♂, 1 ♀ (SMF, 20669/2), 26.VII.1963.

Switzerland: Appenzell Inner Rhoden: Gartenalphöhle, Schwende, 1 ♀ (sub *T. domestica*, det. Rohner, NHMB), 15.VIII.1994, Rohner; **Bern:** Gadmen, 1 ♀ (NMB, 391), 1932,

Schenkel; **Grisons:** Bergün, 1 ♂, 1 ♀ (NMB, 391), VIII, Knecht; Engadin, Scuol, Clemgia gorge, 2 ♀ (NMB, AB375), 3.VI.2006, Bolzern & Ramseyer; Ragatz, 4 ♀ (MHNG), 1905; Flimsler Stein, Uaul Socola-Trins, 1 ♂, 1 ♀ (NMB, 391), VII., Schenkel; **Nidwalden:**

Ennetbürgen, Rappersfluehöhle, 1 ♀ (sub *T. ferruginea*, det. Rohner, NHMB), 5.III.1993,

Boller; **Obwalden:** Sachseln, Wengenhöhle, 1 ♂, 2 ♀ (NMB, AB950, 997), 31.VII.2008 and 16.I.2009, Trüssel; **Schwyz:** Muotathal, „Kleinhöhle beim Schiltloch“, 1 ♀ (sub *T. domestica*,

det. Rohner, NHMB), 6.IX.1996, Rohner; Muotathal, Peters Buddelhöhle, 1 ♀ (sub *T.*

domestica, det. Rohner, NHMB), 19.XI.1996, auf der Mauer; **Valais:** Zermatt, 1 ♀ (MHNG), VII.1909.

Description

Measurements

Male (n=1): CL 3.48, CW 2.49, STL 1.64, STW 1.65. Leg I (4.85, 1.45, 5.02, 5.27, 2.40), II (4.54, 1.41, 4.36, 4.82, 2.15), III (3.95, 1.20, 3.53, 4.32, 1.89), IV (4.90, -, -, -, -), Pedipalp (1.72, 0.59, 0.75, 1.46), bulbL 1.04.

Female (n=1): CL 3.78, CW 2.94, STL 2.00, STW 1.86. Leg I (4.72, 1.61, 4.59, 4.80, 2.34), II (4.51, 1.55, 4.02, 4.35, 2.08), III (4.10, 1.29, 3.34, 3.83, 1.49), IV (5.05, 1.50, 4.51, 5.50, 1.99). Pedipalp (1.71, 0.68, 1.15, 1.61). EPL 0.53, EPW 0.85, ATL 0.27, ATW 0.39. Eyes: PME 0.15–0.17, PLE 0.14–0.19, AME 0.11–0.12, ALE 0.15–0.20. Eye distances: PME-PME 1 x PME, PME-AME 1 x PME, PME-PLE 0.5–1 x PME, PME-ALE 1 x PME, AME-AME 0.5–1 x AME, AME-ALE <0.5–0.5 x AME. CLY1 2.5 x AME, CLY2 1–1.5 x ALE.

Male palp

RTA with 3 branches, ventral branch leave like shaped, distally and ventrally with distinctly protruding ridge, distally moderately bent retrolaterad, lateral branch strongly sclerotised, as long as wide, distally broad pointed or rounded, dorsal branch broad and strongly sclerotised, distally with strongly posteriad bent point. Embolus filiform, originating at 8 o'clock, about 1.5–1.75 CB with conspicuously formed terminal tip at 4 o'clock. Conductor with distal portion distinctly elongated, lateral margin completely folded. Terminal end bifid, ventral part simple, pointed, dorsal part obtuse (retrolateral view) and with a bent point (ventral view). Connection between conductor and tegulum moderately sclerotised. MA strongly protruding with distal hook or claw like sclerite, distally pointed, membranously connected to tegulum and originating at 5–6 o'clock. Basal part of tegulum good visible and with undulated margin.

Epigyne and vulva

Epigyne medially with a small pale, membranous area. Posterior sclerite expressed as an extensive sclerotised bar or plate with anterior margin concave (semi-circled). CO between and laterally of the membranous median area and the posterior sclerite. Epigynal „pseudo teeth“ absent. Vulva consists of combined ducts (CBD), no distinct RC recognisable. First half (CD) of CBD only moderately sclerotised and convoluted, second half is strongly sclerotised and moderately convoluted. Ducts are well separated. FD only represented by small leave shaped appendages distally of the CBD.

Other important characters

Cheliceral promargin with 4, retromargin with 5 teeth. Colulus developed as trapezoidal plate with the distal margin medially moderately notched. Same pattern of distal spigots on PMS (in females) as described for the type species. PLS with distal segment shorter than basal segment. Tarsal trichobothria at cymbium and palpal tarsus absent. Tarsal trichobothria 7–8. Denticles at paired claw of leg I 13. Leg spination: male palp (2–0–0–0 or 3–0–0–0, 2–0–0, 1–2–0–0), female palp (2–0–0–0, 2–0–0, 2–2–0–0), leg femora (1–2–2–0 or 1–3–2–0, 1–2–2–0 or 1–3–2–0, 1–2–2–0 or 1–3–2–0, 1–1–1–0.), patellae (all 2–0–0), tibiae (0 or 0–0–0–1 or 0–0–0–2, 0–1–0–3, 2–2–1–1+1p or 2–2–1–1p, 2–2–2–2+1p), metatarsi (0–0–0–3p+1, 0–1–0–3p+1, 0–3–2–3p+1 or 0–3–3–3p+1, 0–3–3–1+3p+1), tarsi (I & II 0, III & IV 0–0–1–0).

Colouration

Margin of carapace narrow continuously darkened, dorsally with 2 indistinct symmetric longitudinal dark bands, reduced to triangular dots. Sternum with distinct pale median band and 3 symmetric pairs of pale dots laterally or median band only reaching 2/3 of STL, posteriorly with indistinctly separated 4th pair of dots. Opisthosoma brownish, with indistinct yellowish median band, anteriolaterally with symmetric pale dots, posteriorly with chevrons. Legs annulated, more pronounced ventrally. Colulus basally darkened, ALS and basal segment of PLS darkened, distal segment also with dark pigments, but brighter.

Distribution

Endemic to the Alps. From all six countries, containing parts of this mountain massive (Austria, France, Germany, Italy, Slovenia and Switzerland), records of *T. tridentina* are known.

Discussion

As mentioned in the discussion section of *T. ferruginea* Brignoli confused the females of *T. tridentina* with *T. ferruginea*. All female specimens of the species *T. ferruginea* examined in the collection of the natural history museum in Verona (including the Brignoli collection) were misidentified *T. tridentina* females. Therefore, all records of females published by Brignoli under *T. ferruginea* probably refer to *T. tridentina*. Brignoli's drawing (Brignoli, 1971a: 92, fig. 40) shows the vulva of *T. tridentina* (see Wiehle, 1964) and not *T. ferruginea*. As mentioned by Thaler (1987: 394) Brignoli's drawings referred to *T. campestris* (Brignoli, 1971a: 102, figs. 52, 54) concern most likely *T. tridentina*. As the corresponding specimen could not be traced in the MCSN, this cannot be confirmed. For all three specimens originally labelled as *T. campestris*, no further informations about locality or date are provided. In Brignoli's collection, only one specimen could be found which was determined as *T. campestris* and in 1984 redetermined by Thaler to *T. tridentina*. Males were correctly determined by Brignoli.

***Tegenaria tyrrhenica* Dalmas, 1922** stat. rev.

Figs. 32 E–I

Tegenaria tyrrhenica Dalmas (1922): 94, without any figures.

Tegenaria tyrrhenica Brignoli (1971a): 68, figs. 5–7.

Tegenaria tyrrhenica Dresco & Célérier (1976): 223–228, figs. 1–9.

Malthonica tyrrhenica Guseinov et al. (2005): 164.

No type material available.

Other material examined

Italy: Liguria: Tanna de Scaggia, 1 ♂, 1 ♀ (MCSN, 541), 23.XI.1967, Vigna; Genova, Grotta della Volpe, 2 ♂, 4 ♀ (MCSN, 541), 1 ♀ (MHNG), 23.XI.1967, Vigna & Cottarelli; **Toscana:** Grotta Tana della Buggina, 1 ♂, 1 ♀ (MCSN, 541), 7.X.1967, Castellini; Grosseto, Roccastrada, Grotta di Rio delle Vene, 1 ♂ (MCSN, 541), 30.XII.1975, Sammuri & Borri; Grosseto, Roccastrada, Tomba del Belagaio, 1 ♀ (MCSN, 541), 20.III.1977, Sammuri; same locality as previous, 1 ♂ (MCSN, 541), 12.II.1976, Bianco; Grosseto, Roccastrada, Buca del Belagaio, 1 ♂, 4 ♀ (MCSN, 541), 13.II.1976, 9.XI.1976, Carchini, Sbordonni, Sammuri & Tosto; Pistoia, Popilio, Tana a Termini, 1 ♀ (MCSN, 541), 4.XI.1967, Vigna; Massa-Carrara, Bedizzano, Bedizzano, Grotta della Martana, 1 ♀ (MHNG), 30.V.1971, Sbordonni; Massa, Buca dei Pipistrelli in Rassara, M. Brugiana, 1 ♀ (MCSN, 541), VIII.1968, Ceccarelli; Livorno, Marciana, Isola Elba, Grotta del muro a secco, 1 ♀ (MCSN, 541), 24.XI.1976, Sbordonni.

Description

A detailed redescription is provided by Dresco & Célérier (1976). In the same work, the authors presented interesting data about the variation in numbers of cheliceral teeth.

Distribution

Records of *T. tyrrhenica* are known from two Italian regions; Liguria and Toscana.

Discussion

Dalmas placed this species into Simon's *picta*-group. Due to the lack of a good description with drawings, some years later, this species was synonymised with *Aterigena ligurica* (sub *Tegenaria*) by Simon (1937). Later Brignoli (1971a: 68, figs. 5–7) highly doubted this synonymy and provided drawings of his interpretation of *T. tyrrhenica*. Dresco & Célérier

(1976) agreed with Brignoli. They provided a very detailed redescription of this species and suggested a close affinity to *Tegenaria henroti* and *T. decolorata* (at least in the male palp). The type specimen examined by Dresco & Célérier (1976: 224, 1 ♀) could not be traced in the spider collection at the MNHN.

***Tegenaria vankeeri* new species**

Figs. 39 c–d, 40 A–F

female unknown

Type material

Holotype. Greece: Rhodos: Aghia Nikolaos Fountoukli, “crevices in caves”, 1 ♀ (coll. van Keer: 2617), 9.V.2006, van Keer & van Keer.

Etymology

The species is named in honour of Johan and Koen van Keer who are well known arachnologist from Belgium and who have collected the only known specimen of this species and provided it, also with many other specimens, for examination; genitive singular case.

Diagnosis

The RTA of *T. vankeeri* n. sp. is morphologically similar to *Tegenaria lenkoranica* Guseinov, Marusik & Koponen, 2005 n. comb. (Guseinov et al., 2005: 162, fig. 48). *T. vankeeri* differs significantly from *T. lenkoranica* n. comb. by a relatively short palp tibia (much longer in *T. lenkoranica*) and the shape of the embolus and conductor.

Description

Measurements

Male (n=1): CL 6.00, CW 4.15, STL 2.6, STW 2.3, OL 6.5, OW 3.9. Leg I (-), II (9.0, 2.2, 8.1, 9.9, 2.9), III (7.3, 2.0, 6.4, 9.1, 2.7), IV (8.7, 2.0, 8.2, 11.7, 3.1). Pedipalp (2.8, 0.9, 1.1, 2.3), bulbL 1.3.

Eyes: PME 0.22, PLE 0.24, AME 0.23, ALE 0.27. Eye distances: PME-PME 1 x PME, PME-AME 1 x PME, PME-PLE somewhat less than 1 x PME, PME-ALE 1–1.5 x PME, AME-AME <0.5 x AME, AME-ALE <0.5 x AME. CLY1 2 x AME, CLY2 1–1.5 x ALE.

Male palp

RTA with 2 branches, ventral branch distally broad lobe like, strongly sclerotised, lateroventral ridge clearly visible, lateral branch very strongly protruding, originating in the middle of the palpal tibia, finger shaped and distally pointed, with an additional short spike originating at the dorsal side of the apophysis. Embolus filiform, originating at 10 o'clock, length about 0.75–1 x CB with distal tip at 1–2 o'clock. Conductor reversed drop-shaped, distal portion of conductor only moderately elongated, lateral margin almost completely folded. Terminal end of conductor strongly sclerotised and pointed, moderately elongated and bent ventrad. Connection of conductor to tegulum is sclerotised. MA protruding with distal plate like sclerite forming a spoon like structure, membranously connected to tegulum, originating at 4–5 o'clock. Basal portion of tegulum, in prolateral view, conspicuously bulky.

Other important characters

Cheliceral promargin with 4, retromargin with 5 teeth, second most proximal smaller and most proximal tooth bigger. Colulus developed as trapezoidal bulky plate with the distal margin medially notched. PLS with distal segment longer than basal segment. Tarsal trichobothria at cymbium absent. Tarsal trichobothria 9–10. Leg spination: male palp (3–0–0–0, 2–0–0, 2–2–0–0), leg femora (-, 1–3–2–0, 1–2–2–0, 1–2–1–0), patellae (-, III–IV with 2–0–

0), tibiae (-, 0-1-0-2, 1-1-1-1+1p, 1-1-1-1+1p), metatarsi (-, 0-0-0-3p+1 or 0-1-0-3p+1, 0-2-2-1p+1+2p+1, 0-2-3-1p+1+2p+1), tarsi (all 0).

Colouration

The carapace doesn't show a pattern of coloration (this may be due to the alcohol preservation). Sternum with distinct and very special pattern of darkened median area with a bright and narrow median band. Opisthosoma dark brownish with yellowish median band and 2-3 symmetric lateral spots of white pigmentation anteriorly, continuing in broad chevrons posteriad. Legs not annulated, only coxa and proximal part of femora with darkened spots. ALS and PLS with basal and distal segment darkened.

Distribution

Only known by the mentioned specimen from Greece (Rhodos).

3.2.8. Taxa incertae sedis and nomen dubium

***Malthonica daedeli* Brignoli, 1980** incertae sedis

Malthonica daedeli Brignoli (1980): 80-81, fig. 13, female.

Type material examined

Holotype. Greece: Crete, 10 km south of Heraklion, 1 ♀ (MSNB), 27.V.1964, Valle & Bianchi.

Description

Detailed description is provided by Brignoli (1980).

Discussion

Brignoli (1980: 81) stated that „... the generic position of this species is very puzzling; ...“. He assigned it to *Malthonica* for want of a better place: „... The absence of „teeth“ on the epigyne and the small number of cheliceral teeth would not suggest relations with *Malthonica*, but a certain general similarity with *M. minoa* (Brignoli, 1976) and the impossibility of placing it elsewhere make it preferable to place it provisionally in this genus...“. The holotype remains the only known specimen to date. Based on the genera definitions given, the generic affiliation of this species remains incertae sedis.

***Malthonica minoa* (Brignoli, 1976)** incertae sedis

Cicurina minoa Brignoli (1976b): 565, fig. 44, female.

Malthonica minoa Brignoli (1976a): 31.

Type material examined

Holotype. Greece: Crete: Omalos, 1 ♀ (MSNB, 004), 16.IV.1965, Valle & Bianchi.

Other material examined

Greece: Crete: Chania, Georgioupoli, 1 ♀ (coll. van Keer: 2112), 11.IV.2002, van Keer & van Keer; Hrissos Kalitissas, 2 ♀ (SMF), 24.III.2007, Schönhofer.

Discussion

Malthonica minoa, together with *M. paraschiae* and *M. spinipalpis*, does not match the genus definition of *Malthonica* provided by Barrientos & Cardoso (2007). Therefore these species are not *Malthonica* species. All species are morphologically similar, and they do show an

affinity to *Tegenaria*. But the very distinct epigynal teeth, the vulva, the shape of several sclerites at the male palp and also the RTA are distinctively different. Therefore, they do not match the here published genera definition. Thus, these species can not be placed for the moment. A revision of this special group is needed to clarify this situation.

***Malthonica paraschiae* Brignoli, 1984** incertae sedis

Malthonica paraschiae Brignoli (1984): 303, fig. 27, female.

Type material examined

Holotype. Greece: Naxos, 1 ♂ (MCSN, 62), 4.V.1982, Paraschi.

Other material examined

Greece: Cyclades: Paros, 1 ♂ (coll. van Keer), 19.III.1994, Guck & Steinmetz.

Malthonica aff. *paraschiae*

Crete: Meskla, 3 ♂ (SMF, neu / Europa), 27.III.2007, Schönhofer.

Discussion

See relevant section at *M. minoa*.

***Malthonica spinipalpis* Deltshv, 1990** incertae sedis

Malthonica spinipalpis Deltshv & Paraschi (1990): 11, figs. 19-22.

No material examined.

Discussion

See relevant section at *M. minoa*.

***Tegenaria advena* (C. L. Koch, 1841)**

Philoica advena C. L. Koch (1841): 57–58, pl. 268, fig. 633, female.

Clubiona advena Walckenaer (1847): 440.

Tegenaria advena Simon (1937): 1039.

nomen dubium

No material available.

Discussion

T. advena (C. L. Koch, 1841; sub *Philoica advena*) is almost exclusively described by the colouration patterns of different body parts. Additionally, this description is based on a specimen preserved in alcohol: "... Die hier gegebene Abbildung ist von einem in Weingeist aufbewahrten Exemplare entnommen. ...“ (C. L. Koch, 1841: 58). Simon mentioned in a footnote (1937: 1039) that the relevant specimen may be a juvenile of *E. atrica* (C. L. Koch, 1843; sub *Tegenaria*). Trotta mentioned in a footnote (2005: 74), based on a personal communication of K. Thaler, that *T. advena* is a species inquirenda. No type material of this species could be traced in several important spider collections. The species *T. advena* (C. L. Koch, 1841) remains not sufficiently characterised and is therefore not diagnosable. Therefore we do regard the relevant taxon as nomen dubium.

***Tegenaria dentifera* Kulczynski, 1908** incertae sedis
Tegenaria dentifera Kulczynski (1908): 78–79, pl. 2, fig. 18, female.

No material available

Discussion

Kulczynski's description of *T. dentifera* is detailed but does not provide enough information about the epigyne and no information about the vulva. The provided figure of the epigyne is not of good quality. Unfortunately, no type material could be found. This situation does not allow picturing this species clearly. It is needed to collect and examine *Tegenaria* specimen from the type locality, Cyprus, to clarify this problem. Therefore, for now, this species can not be placed.

3.2.9. Nomenclatural changes for related taxa outside Europe

All taxonomical changes are summarised in the Appendix 4. Most species are transferred back to or newly placed into *Tegenaria*. Species which are, based on published descriptions and figures, clearly not referable *Tegenaria* or *Malthonica* and/or lack diagnostic descriptions and type material are treated here as “incertae sedis”. In the last column of Appendix 4, the reasons for the changes are given.

All species endemic to North America are not treated here and, therefore, no changes concerning these species are proposed here.

4. Discussion

Phylogenetic relationship within Agelenidae

The results of both, the morphological and molecular analyses strongly support the genera *Aterigena*, *Eratigena*, *Malthonica* and *Tegenaria* but the relationships between the genera is not resolved. The four Ageleninae tribes proposed by Lehtinen (1967) are only partly supported. Tetricini constitutes most probably a monophyletic clade, supported by several autapomorphies (e. g. eye arrangement, special hairs, cheliceral teeth and spination of metatarsi) in the morphological analysis and well-supported in the molecular analyses. The support of the tribe Agelenini is not as robust as that for Tetricini. In the morphological analysis, including only *Agelena labyrinthica* and *Allagelena gracilens*, this clade is supported by three synapomorphies (e. g. the special spikes on the anal tubus). But, as shown in the tree based on 28S sequences (Fig. 7), *Agelena canariensis* is outside this clade. There, Agelenini is paraphyletic and can become monophyletic only when also including *Agelenopsis aperta* and *Hololena* sp. 2, two species belonging to Lehtinen's tribe Agelenopsini. The last and for this study the most important tribe Tegenarinii is most probably not monophyletic. While the tree resulting from the single CO1 gene analysis (Bolzern et al., accepted) and the consensus tree of the morphological analysis (excluding *Malthonica*; two synapomorphies: spigots on the PLS and shape of colulus; clade with no jackknife support) supported the monophyly of Tegenarinii but all more inclusive analyses did not. E. g. the combined mitochondrial genes revealed a tree where *Tegenaria* forms the basic clade, sister to all other included taxa. Or the tree based on 28S sequences just showed a polytomy at the relevant node. The present analyses suggest that the Tegenarinii is not monophyletic.

Lehtinen (1967) placed the subfamily Coelotinae (currently referred to Amaurobiidae) into the family Agelenidae. This classification is supported by our analyses which are comparable to those of Spanga & Gillespie (2008).

Nomenclatural consequences

The redefinition of the four genera *Aterigena*, *Eratigena*, *Malthonica* and *Tegenaria* necessitates numerous nomenclatorial changes (Appendix 4). There are no rules for common names but it may be useful to replace the name “European House Spider” which is used for a polyphyletic group with names denoting monophyletic taxa.

Phylogenetic relationship within Malthonica, Eratigena n. gen. and Tegenaria

After the rearrangement of taxa, *Malthonica* does only comprise two species. Four other *Malthonica* species are considered “incertae sedis” (see section 3.2.8) and one species *Malthonica africana* Simon & Fage, 1922 (from Africa) is not treated here. In all our analyses, this genus is well supported though with uncertain relationships to the others. *Eratigena n. gen.* comprises a group of spider supported by two morphological synapomorphies (chelicerel teeth and sclerotised connection of the MA to the tegulum, reduced in some species) and recovered in all molecular analyses. Within *Eratigena n. gen.* three species groups are detectable: 1) *E. vomeroi* and *E. inermis* are closely related and form a clade of two geographically isolated species; 2) five species, several of which originally described as *Malthonica* with elongate MA and particularly shaped female genitalia; 3) the species complex around the well-known *E. atrica* together with *E. agrestis* and *E. fuesslini*. These groups are morphologically and molecularly supported. The phylogenetic relationships between the remaining species and the species groups are not resolved. *E. atrica* may be closest related to *E. agrestis* which is important in the context of the medical importance of the latter. The most problematic genus is *Tegenaria*. Even though the morphological and the molecular results suggest the monophyly of this clade, it is not supported by a single morphological autapomorphy. At present the genus is diagnosed by the unique combination of characters. Characters used for the definition of *Tegenaria* and *Malthonica* by Guseinov et al. (2005), e. g. the short and thick embolus originating at the subapical part of the tegulum for *Tegenaria*, are highly homoplastic and therefore not useful for phylogenetic reconstructions. Another character, the presence of trichobothria on the cymbium of the female palp tarsus proved to be informative, at least for the taxonomy. The phylogenetic information of this character remains unclear. *Tegenaria* includes numerous species with a very high variability in character expression, also in genital structures. For this variability and the lack of other characters, the relationships between *Tegenaria* species remain largely unresolved. For a better resolution, more characters are needed in the morphological analysis and more taxa should be included in the molecular analyses. In this study, we could detect five species groups: 1) four species endemic to Italy, *T. capolongoi*, *T. circeoensis n. sp.*, *T. parmenidis* and *T. sbordonii*. Members of this group show a very unusual genital morphology. 2) *T. campestris* and three Bulgarian species constitute a group defined by Deltchev (2008b). 3) *T. annulata* and four species. The reason why Lehtinen (1967) transferred four of them to *Pseudotegenaria* is not understandable. 4) *Tegenaria ferruginea* and *T. parietina*. 5) *T. silvestris* and *T. parvula*. Groupings formed on the basis of the resemblance of a particular genital character in only one sex may be often contradicted by the characters in the other sex and thus leading to artificial classifications. Further investigations are necessary to elucidate the phylogenetic relationships within the genus *Tegenaria*. This is particularly true for many Asiatic or Turkish species.

Biogeography

Eratigena n. gen. and *Tegenaria* have different centres of distribution. Whereas most *Eratigena n. gen.* species occur in south-western to central Europe, the species diversity of *Tegenaria* is much higher in south-eastern Europe. This observation is supported by the findings outside of Europe, e. g. in Turkey (Brignoli, 1978b, 1978c), Azerbaijan (Guseinov et al., 2005) or the West Caucasus region (Kovblyuk & Ponomarev, 2008). This difference in geographical distribution of the two genera is an additional observation supporting the hypothesis of two distinct evolutionary origins of the two genera.

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Appendix 1: Specimens used for molecular analysis with GenBank Accession number and storing information. (COMMENT: The Accession # for NADHI are already transmitted, the numbers for 28S is in work; Accession # have to be available at the time of publication)

Taxon name	28S	Accession #		Specimen origin	Voucher specimen	Comments / Reference
		NADHI	COI			
<i>Agelena canariensis</i>	XX	XX	FN554798	ES: Gran Canaria	Departament de Biologia Animal, Universitat de Barcelona: NTxTeg1	(Bolzern et al., accepted)
<i>Agelena labyrinthica</i>	XX	XX	FN554797	IT: Sardinia	NMB: AB 424	(Bolzern et al., accepted)
<i>Agelena orientalis</i>	XX	XX	-	GR: Crete	NMB: AB 877	(Spagna and Gillespie, 2008)
<i>Agelenopsis aperta</i>	FJ607517	-	DQ628604	-	-	(Spagna and Gillespie, 2008)
<i>Allagelena gracilens</i>	-	-	DQ628606	-	-	(Spagna and Gillespie, 2008)
<i>Amaurobius fenestralis</i>	XX	XX	FN554820	CH: Solothurn	NMB: AB 1006	(Bolzern et al., accepted)
<i>Amaurobius ferox</i>	XX	XX	FN554819	CH: Basel-Land	NMB: AB 959	(Bolzern et al., accepted)
<i>Amaurobius similis</i>	-	-	DQ628608	-	-	(Spagna and Gillespie, 2008)
<i>Aterigena aculeata</i>	XX	XX	FN554790	CN: Guizhou	NMB: AB 591	(Bolzern et al., accepted)
<i>Aterigena aliquoi</i>	XX	-	FN554791	IT: Sicily	NMB: AB 720	(Bolzern et al., accepted)
<i>Aterigena ligurica</i>	XX	XX	FN554789	IT: Calabria	NMB: AB 812	(Bolzern et al., accepted)
<i>Barronopsis barrowsi</i>	-	-	DQ628609	-	-	(Spagna and Gillespie, 2008)
<i>Callobius sp.</i>	FJ607524	-	-	US: California	-	(Blackledge et al., 2009)
<i>Calilena stylophora</i>	-	XX	-	-	NMB: AB 614	(Spagna and Gillespie, 2008)
<i>Calymmaria sp. 1</i>	-	-	DQ628611	-	-	(Spagna and Gillespie, 2008)
<i>Coelotes terrestris</i>	-	-	DQ628627	-	-	(Bolzern et al., accepted)
<i>Cybaeus sp.</i>	XX	-	FN554818	US: Oregon	NMB: AB 615	(Bi et al., 2005)
<i>Draconarius brunneus</i>	AY633855	-	-	DE: Baden-Württemberg	NMB: AB 252	(Bolzern et al., accepted); COI identical haplotype as a specimen from CZ; 28S identical haplotype as specimen from DE (Schleswig-Holstein); NADHI identical haplotypes as specimens from DE (Schleswig-Holstein), CZ and US
<i>Eratigena agrestis</i>	XX	XX	FN554804	-	-	(Bolzern et al., accepted); COI identical haplotype as a specimen from CZ; 28S identical haplotype as specimen from DE (Schleswig-Holstein); NADHI identical haplotypes as specimens from DE (Schleswig-Holstein), CZ and US
<i>Eratigena agrestis</i>	s. comm.	s. comm.	XX	DE: Schleswig-Holstein	NMB: AB 251	(Bolzern et al., accepted); COI identical haplotype as a specimen from DE (Schleswig-Holstein)
<i>Eratigena agrestis</i>	-	s. comm.	XX	CZ: Central Bohemian Region	NMB: AB 558	Female variation (Fig. XX)
<i>Eratigena agrestis</i>	-	s. comm.	FN554816	US: Washington	NMB: AB 880	(Bolzern et al., accepted); COI identical haplotype as a specimen from DE (Schleswig-Holstein)
<i>Eratigena agrestis</i>	-	XX	-	FR: Alpes Maritimes	NMB: AB 824	(Bolzern et al., accepted); COI identical haplotype as specimen from DE (Schleswig-Holstein)
<i>Eratigena arganoi</i>	-	XX	-	IT: Abruzzi	NMB: AB 770	(Bolzern et al., accepted); COI identical haplotype as specimen from CH and DE; NADHI identical haplotypes as specimens from BE, CH, DE, AT and IT
<i>Eratigena atrica</i>	s. comm.	XX	FN554801	ES: Catalonia	NMB: AB 570	(Bolzern et al., accepted); 28S identical haplotype as specimen E. saeva from ES
<i>Eratigena atrica</i>	-	XX	FN554805	SE: Uppsala	NMB: AB 610	(Bolzern et al., accepted); COI identical haplotype as specimen from CH and DE; NADHI identical haplotypes as specimens from BE, CH, DE, AT and IT

<i>Eratigena atrica</i>	XX	XX	-	PT: Algarve	NMB: AB 656	
<i>Eratigena atrica</i>	-	XX	-	FR: Pyrénées-Orientales	NMB: AB 552	
<i>Eratigena atrica</i>	-	s. comm.	XX	CH: Basel-Land	NMB: AB 508	
<i>Eratigena atrica</i>	-	s. comm.	XX	DE: Hessen	NMB: AB 253	
<i>Eratigena atrica</i>	-	s. comm.	-	BE: Brussels	NMB: AB 198	
<i>Eratigena atrica</i>	-	s. comm.	-	AT: Salzburg	NMB: AB 265	
<i>Eratigena atrica</i>	-	s. comm.	-	IT: Lazio	NMB: AB 566	
<i>Eratigena balearica</i>	-	XX	-	ES: Mallorca	NMB: AB 823	
<i>Eratigena duellica</i>	XX	XX	-	US: Montana	NMB: AB 888	
<i>Eratigena feminea</i>	XX	XX	FN554783	PT: Algarve	NMB: AB 587	(Bolzern et al., accepted)
<i>Eratigena fuesslini</i>	-	XX	-	ES: Catalonia	NMB: AB 551	
<i>Eratigena fuesslini</i>	-	XX	-	FR: Pyrénées-Orientales	NMB: AB 553	
<i>Eratigena aff. herculea</i>	-	XX	FN554788	ES: Andalusia	NMB: AB 576	(Bolzern et al., accepted)
<i>Eratigena incognita</i>	-	XX-	FN554784	PT: Lisbon	NMB: NMB-2805c	(Bolzern et al., accepted)
<i>Eratigena montigena</i>	-	XX	-	PT: Leiria	NMB: AB 278	
<i>Eratigena picta</i>	-	XX	FN554785	ES: Basque Country	NMB: AB 669	(Bolzern et al., accepted)
<i>Eratigena picta</i>	XX	XX	-	FR: Finistère	NMB: AB 287	
<i>Eratigena saeva</i>	-	XX	FN554782	FR: Morbihan	NMB: AB 289	(Bolzern et al., accepted)
<i>Eratigena saeva</i>	XX	XX	FN554813	ES: Basque Country	NMB: AB 668	(Bolzern et al., accepted); 28S identical haplotype as specimen E. atrica from ES
<i>Eratigena saeva</i>	-	XX	-	PT: Lisbon	NMB: AB 588	
<i>Eratigena sardoa</i>	XX	XX	FN554786	IT: Sardinia	NMB: AB 580	(Bolzern et al., accepted)
<i>Eratigena sicana</i>	XX	XX	FN554787	IT: Sardinia	NMB: AB 841	(Bolzern et al., accepted)
<i>Eratigena vomeroi</i>	XX	XX	FN554814	IT: Campania	NMB: AB 734	28S and CO1 identical haplotypes as specimen from Calabria
<i>Eratigena vomeroi</i>	s. comm.	XX	XX	IT: Calabria	NNB: AB 739	
<i>Eurocoelotes inermis</i>	-	-	DQ628628	-	-	(Spagna and Gillespie, 2008)
<i>Histopona hauseri</i>	-	XX	-	GR: Corfu	SMF: leg. Schönhofer, 2006	
<i>Histopona torpida</i>	XX	XX	FN554793	CH: Basel-Land	NMB: AB 212	(Bolzern et al., accepted)
<i>Hololena sp. 1</i>	-	XX	FN554799	US: California	NMB: AB 613	(Bolzern et al., accepted)
<i>Hololena sp. 2</i>	XX	XX	FN554800	US: Washington	NMB: AB 883	(Bolzern et al., accepted)
<i>Lycosoides coarctata</i>	XX	s. comm.	XX	IT: Campania	NMB: AB 435	
<i>Lycosoides coarctata</i>	-	XX	FN554815	PT: Algarve	NMB: AB 766	(Bolzern et al., accepted); CO1 and NADH identical haplotype as a specimen from IT
<i>Maimuna cretica</i>	-	XX	FN554795	GR: Crete	NMB: AB 855	(Bolzern et al., accepted)
<i>Maimuna vestita</i>	-	XX	-	GR: Crete	SMF: leg. Schönhofer, 2007	
<i>Maimuna sp.</i>	-	XX	-	TR: Mersin	NMB: AB 796	
<i>Malthonica lusitanica</i>	XX	XX	-	PT: Coimbra	NMB: AB 924	
<i>Malthonica oceanica</i>	XX	XX	FN554792	PT: Lisbon	NMB: AB 933	(Bolzern et al., accepted)

<i>Novalena intermedia</i>	-	-	DQ628618	-	-	(Spagna and Gillespie, 2008)
<i>Tegenaria ariadnae</i>	XX	XX	FN554769	GR: Crete	NMB: AB 845	(Bolzem et al., accepted); 28S identical haplotypes within all specimens of this species (Bolzem et al., accepted)
<i>Tegenaria ariadnae</i>	s. comm.	XX	FN554821	GR: Crete	NMB: AB 974	
<i>Tegenaria averni</i>	XX	-	-	TR: Mersin	NMB: AB 793	
<i>Tegenaria campestris</i>	XX	XX	FN554770	DE: Hessen	NMB: AB 290	
<i>Tegenaria circeoensis</i>	XX	-	-	IT: Lazio	NMB: AB 786	(Bolzem et al., accepted) 28S haplotype identical within all other specimens of the same species and also with aff. <i>circeoensis</i>
<i>Tegenaria circeoensis</i>	s. comm.	XX	-	IT: Lazio	NMB: AB 832	
<i>Tegenaria circeoensis</i>	-	XX	-	IT: Lazio	NMB: AB 463	
<i>Tegenaria aff. circeoensis</i>	s. comm.	XX	-	IT: Lazio	NMB: AB 747	
<i>Tegenaria dalmatica</i>	-	XX	FN554781	LB: Mount Lebanon	NMB: AB 577	(Bolzem et al., accepted)
<i>Tegenaria dalmatica</i>	-	XX	FN554806	IT: Campania	NMB: AB 434	(Bolzem et al., accepted)
<i>Tegenaria dalmatica</i>	-	XX	-	IT: Lazio	NMB: AB 556	
<i>Tegenaria dalmatica</i>	-	-	FN554811	IT: Sicily	NMB: AB 840	(Bolzem et al., accepted)
<i>Tegenaria domestica</i>	XX	-	FN554817	US: Washington	NMB: AB 885	(Bolzem et al., accepted); 28S identical haplotype as specimens from CN and PT
<i>Tegenaria domestica</i>	-	-	FN554808	CH: Basel	NMB: AB 217	(Bolzem et al., accepted); identical haplotype as specimens from CN, PT and US
<i>Tegenaria domestica</i>	s. comm.	XX	XX	CN: Yunnan	NMB: AB 590	
<i>Tegenaria domestica</i>	s. comm.	-	XX	PT: Madeira	NMB: AB 575	
<i>Tegenaria eleonorae</i>	-	XX	FN554772	IT: Sardinia	NMB: AB 428	(Bolzem et al., accepted)
<i>Tegenaria ferruginea</i>	s. comm.	-	FN554777	GR: Crete	NMB: AB 894	(Bolzem et al., accepted); 28S same haplotype as <i>T. parietina</i> from Sicily
<i>Tegenaria ferruginea</i>	XX	XX	FN554802	FR: Alsace	NMB: AB 293	(Bolzem et al., accepted); CO1 identical haplotype as a specimen from CH; 28S identical haplotype as a specimen from AT; NADH1 identical haplotypes as specimens from CH, BG, DE and AT
<i>Tegenaria ferruginea</i>	XX	s. comm.	-	DE: Mecklenburg-Vorpommern	NMB: AB 501	
<i>Tegenaria ferruginea</i>	XX	XX	-	IT: Lazio	NMB: AB 537	
<i>Tegenaria ferruginea</i>	-	XX	-	DE: Brandenburg	NMB: AB 555	
<i>Tegenaria ferruginea</i>	-	s. comm.	XX	CH: Basel-Land	NMB: AB 573	
<i>Tegenaria ferruginea</i>	s. comm.	s. comm.	-	AT: Salzburg	NMB: AB 266	
<i>Tegenaria ferruginea</i>	-	s. comm.	-	BG: Lovech	NMB: AB 260	
<i>Tegenaria ferruginea</i>	-	s. comm.	-	DE: Bayern	SMF: AB 572	
<i>Tegenaria hasperi</i>	XX	-	FN554780	BG: Sofia	NMB: AB 242	(Bolzem et al., accepted)
<i>Tegenaria hasperi</i>	-	XX	-	IT: Campania	NMB: AB 443	
<i>Tegenaria henroti</i>	XX	-	FN554771	IT: Sardinia	NMB: AB 584	(Bolzem et al., accepted)
<i>Tegenaria maronita</i>	XX	-	-	CY	Coll. Russell-Smith	
<i>Tegenaria mirifica</i>	XX	-	FN554775	CH: Grisons	NMB: AB 367	(Bolzem et al., accepted)
<i>Tegenaria pagana</i>	XX	-	-	GR: Crete	NMB: AB 901	
<i>Tegenaria pagana</i>	-	XX	-	PT: Algarve	NMB: AB 586	

Tegenaria parietina	-	XX	-	IT: Sardinia	NMB: AB 574	identical haplotypes as specimens from BG and FR
Tegenaria parietina	-	XX	XX	DE: Nordrhein-Westfalen	NMB: AB 611	NADH1 with identical haplotype as specimens from IT and BE
Tegenaria parietina	XX	XX	FN554778	GR: Crete	NMB: AB 864	(Bolzern et al., accepted)
Tegenaria parietina	XX	-	FN554807	IT: Sicily	NMB: AB 816	(Bolzern et al., accepted) identical haplotype as a specimen from DE
Tegenaria parietina	-	s. comm..	-	BG: Plovdiv	NMB: AB 244	
Tegenaria parietina	-	s. comm..	-	FR: Alpes-Maritimes	SMF	
Tegenaria parietina	-	s. comm..	-	IT: Marche	NMB: AB 484	
Tegenaria parietina	-	s. comm..	-	BE: Antwerpen	Coll. van Keer: 2665	
Tegenaria parmenidis	XX	XX	FN554773	IT: Calabria	NMB: AB 820	(Bolzern et al., accepted)
Tegenaria parmenidis	XX	XX	FN554809	IT: Campania	NMB: AB 811	(Bolzern et al., accepted)
Tegenaria parmenidis	-	XX	-	IT: Calabria	NMB: AB 450	
Tegenaria parmenidis	-	XX	FN554810	IT: Calabria	NMB: AB 732	(Bolzern et al., accepted)
Tegenaria parmenidis	-	XX	FN554812	IT: Campania	NMB: AB 834	(Bolzern et al., accepted)
Tegenaria parvula	XX	XX	-	IT: Lazio	NMB: AB 819	28S with identical haplotype as <i>T. silvestris</i> from IT, Toscana
Tegenaria ramblae	XX	-	FN554774	PT: Lisbon	NMB: AB 589	(Bolzern et al., accepted)
Tegenaria rilaisensis	XX	XX	-	BG: Sofiya	NMB: AB 243	
Tegenaria silvestris	XX	XX	-	DE: Hessen	NMB: AB 549	NADH1 identical haplotype as a specimen from CH; 28S identical haplotype as specimens form CH (Grisons and Basel-Land)
Tegenaria silvestris	XX	-	-	IT: Lombardia	NMB: AB 249	
Tegenaria silvestris	s. comm.	XX	-	CH: Grisons	NMB: AB 372	
Tegenaria silvestris	s. comm.	s. comm..	-	CH: Basel-Land	NMB: AB 358	
Tegenaria silvestris	s. comm.	-	-	IT: Toscana	NMB: AB 536	Identical haplotype as <i>T. parvula</i>
Tegenaria vankeeri n. sp.	-	XX	FN554779	GR: Rhodes	Coll. van Keer: 2617	(Bolzern et al., accepted)
Tegenaria tridentina	XX	XX	FN554776	CH: Grisons	NMB: AB 375	(Bolzern et al., accepted)
Tamgrinia palpator	AY633848	-	-	-	-	(Bi et al., 2005)
Textrix caudata	XX	-	FN554803	IT: Lazio	NMB: AB 749	(Bolzern et al., accepted)
Textrix caudata	XX	XX	-	IT: Sicily	NMB: AB 743	
Textrix caudata	-	XX	-	IT: Calabria	NMB: AB 488	
Textrix cf. caudata	s. comm.	XX	FN554796	IT: Lazio	NMB: AB 467	(Bolzern et al., accepted); 28S identical haplotype as specimen NMB: AB749
Textrix denticulata	-	XX	-	IT: Lombardia	NMB: AB 214	
Textrix denticulata	-	-	FN554794	CH: Basel-Land	NMB: AB 216	(Bolzern et al., accepted)
Wadotes dixiensis	-	-	DQ628623	-	-	(Spagna and Gillespie, 2008)

Appendix 2: Branch support of large clades under different methods and weighting scheme (posterior probability in % for Bayesian analyses (Bay), jackknife support values for parsimony analyses (Pars), K value applied during traditional tree search in TNT (0=equal weight of all characters), Bremer support (BS)).

Character matrix	method	K value	Agelenidae	Agelenaria	Agelenaria	Agelena	Agelena (excluding A. canariensis)	Textricini (Textrix, Maimuna, Lycosoides)	Agelenini+Agelenopsini (Agelena, Hololena, Agelenopsis, including Agelena canariensis)	Agelenini+Agelenopsini (Agelena, Hololena, Agelenopsis (only in 28S), excluding Agelena canariensis)	Lycosoides+Maimuna+T. denticulata	Tegenaria+Agelenaria+Histopona+Textricini+Agelenini+Eragena (all sister to Malthonica)	Malthonica+Tegenaria	Aterigena+Histopona+Textricini+Agelenini+Eragena	Aterigena+Histopona+Textricini+Agelenini+Eragena	Aterigena+Histopona+Textricini+Agelenini+Eragena+Malthonica	Histopona+Textricini+Agelenini+Eragena	Histopona+Textricini+Agelenini	Eragena+Textricini+Agelenini	Eragena+Textricini	Eragena+Agelena (ohne A. canariensis)	Textricini+Agelenini			
All	Bay	0	100	100	100	100	100	100	100	100	100	94	-	89	89	-	-	-	-	-	-	-	51		
	Pars	0	100	100	100	100	100	100	100	100	100	70	-	70	70	-	-	-	-	-	-	-	-		
	BS	>20	>20	100	100	100	100	100	100	100	100	100	6	-	6	6	-	-	-	-	-	-	-	-	
		1	100	99	100	100	100	100	100	100	100	100	65	-	65	65	-	-	-	-	-	-	-	-	
		3	100	99	100	100	100	100	100	100	100	100	66	-	66	66	-	-	-	-	-	-	-	-	
		4	100	99	100	100	100	100	100	100	100	100	67	-	67	67	-	-	-	-	-	-	-	-	
		5	100	99	100	100	100	100	100	100	100	100	69	-	69	69	-	-	-	-	-	-	-	-	
		6	100	100	100	100	100	100	100	100	100	100	71	-	71	71	-	-	-	-	-	-	-	-	
		10	100	100	100	100	100	100	100	100	100	100	73	-	73	73	-	-	-	-	-	-	-	-	
		15	100	100	100	100	100	100	100	100	100	100	72	-	72	72	-	-	-	-	-	-	-	-	
		20	100	99	100	100	100	100	100	100	100	100	73	-	73	73	-	-	-	-	-	-	-	-	
		50	100	100	100	100	100	100	100	100	100	100	99	-	99	99	-	-	-	-	-	-	-	97	
		DNA	Bay	0	100	97	100	100	100	100	100	100	100	87	-	87	87	-	-	-	-	-	-	-	-
			Pars	1	100	99	100	100	100	100	100	100	100	87	-	87	87	-	-	-	-	-	-	-	-
			3	100	99	100	100	100	100	100	100	100	83	-	83	83	-	-	-	-	-	-	-	-	-
			4	100	98	100	100	100	100	100	100	100	81	-	81	81	-	-	-	-	-	-	-	-	-
			5	100	98	100	100	100	100	100	100	100	77	-	77	77	-	-	-	-	-	-	-	-	-
			6	100	98	100	100	100	100	100	100	100	74	-	74	74	-	-	-	-	-	-	-	-	-
			10	100	98	100	100	100	100	100	100	100	75	-	75	75	-	-	-	-	-	-	-	-	-
			15	100	98	100	100	100	100	100	100	100	63	-	63	63	-	-	-	-	-	-	-	-	-
20	100		97	100	100	100	100	100	100	100	58	-	58	58	-	-	-	-	-	-	-	-	-		
50	100		96	100	100	100	100	100	100	100	55	-	55	55	-	-	-	-	-	-	-	-	-		
Mito	Bay		0	100	100	100	100	100	100	100	100	100	100	94	58	96	96	87	87	87	87	87	87	87	
	Pars		1	100	91	100	93	100	92	92	92	86	71	71	71	71	71	61	61	61	61	61	61	61	
	3	100	96	100	99	100	95	95	95	72	72	72	72	72	72	69	69	69	69	69	69	69	69		
	4	100	96	100	98	100	97	97	97	75	75	75	75	75	75	55	55	55	55	55	55	55	55		

Appendix 3: Branch support of sub-clades within *Eratigena* and *Tegenaria* under different methods and few selected weighting scheme (posterior probability in % for Bayesian analyses (Bay), jackknife support values for parsimony analyses (Pars), K value applied during traditional tree search in TNT (0=equal weight of all characters), Bremer support (BS)).

Character matrix	method	K value	atrica-group	atrica-group + agrestis-group	Picta + atrica/agrestis-group	picta + atrica-group	picta + feminea + atrica/agrestis-group	feminea + atrica/agrestis-group	All <i>Eratigena</i> except sarda/sicana-group (incl herculean)	sarda/herculea-group	sarda-group	picta + balearica	picta + feminea	hispanica + herculea	ferruginea/partitina-group	domestica/ariadnae-group (incl avemi)	hasperi + pagana (+ dalmatica)	silvestris + tridentina + pagana-group	silvestris + tridentina	campestris + ramblae	parmenidis + rilaensis + circeensis	parmenidis + rilaensis + circeensis + campestris + eleonora	eleonora + parmenidis-group	parmenidis + circeensis-group	silvestris + tridentina + campestris + rilaensis + parmenidis + eleonora	domestica + pagana + dalmatica	domestica/ariadnae sister of all other Tegenaria	tridentina + campestris + ferruginea-group	vankeeri + domestica group	rialaensis + campestris				
All	Bay	0	?	100	-	-	-	-	100	?	?	?	71	100	100	?	?	?	?	?	?	?	?	?	?	?	100	99	?	?				
	Pars	0	?	96	-	83	-	-	90	?	?	?	55	99	98	?	?	?	?	?	?	?	?	?	?	91	-	-	?					
	BS	0	?	8	-	5	-	-	6	?	?	?	4	15	12	?	?	?	?	?	?	?	?	?	?	9	-	-	?					
		1	?	88	-	91	-	-	93	?	?	?	-	99	85	?	?	?	?	?	?	?	?	?	?	94	86	-	-	?				
		3	?	99	-	94	-	-	96	?	?	?	-	100	98	?	?	?	?	?	?	?	?	?	?	96	71	-	-	?				
		6	?	99	-	94	-	-	96	?	?	?	-	100	99	?	?	?	?	?	?	?	?	?	?	56	-	-	-	?				
		15												52																				
		20												54																				
		50												57																				
	DNA	Bay	0	?	100	-	100	-	-	100	?	?	?	-	100	100	?	?	?	?	?	?	?	?	?	?	?	100	100	?	?			
Pars		0	?	90	-	-	-	-	77	-	-	-	-	99	98	?	?	?	?	?	?	?	?	?	?	-	-	-	?					
		3	?	84	-	-	-	-	-	64	-	-	-	100	97	?	?	?	?	?	?	?	?	?	?	-	-	-	-	?				
		5	?	92	-	-	-	-	66	-	-	-	-	100	99	?	?	?	?	?	?	?	?	?	?	-	-	-	-	?				
		6	?	93	-	-	-	-	66	-	-	-	-	100	99	?	?	?	?	?	?	?	?	?	?	-	-	-	-	?				
		20	?	95	-	-	-	-	78	-	-	-	-	100	99	?	?	?	?	?	?	?	?	?	?	-	-	-	-	?				
		0																																
		5																																
		20																																
28S	Bay	0	-	-	-	-	-	-	99	?	-	?	-	100	100	?	?	?	?	?	?	?	?	?	?	?	67	69	?	-				
	Pars	0	-	-	-	-	-	-	99	?	-	-	-	99	54	?	?	?	?	?	?	?	?	?	?	67	69	?	-	?				
		5	-	-	-	-	-	-	100	-	-	-	-	100	-	?	?	?	?	?	?	?	?	?	?	56	-	-	-	?				
		20	-	-	-	-	-	-	71	-	-	-	-	99	71	?	?	?	?	?	?	?	?	?	?	70	-	-	-	?				
		50	-	-	-	-	-	-	100	?	-	-	-	100	100	?	?	?	?	?	?	?	?	?	?	67	69	?	-	?				
		0	-	-	-	-	-	-	99	?	-	-	-	100	100	?	?	?	?	?	?	?	?	?	?	67	69	?	-	?				
		5	-	-	-	-	-	-	81	78	89	84	89	81	78	100	100	100	100	96	100	100	100	100	100	61	61	67	?	?				
		5	-	-	-	-	-	-	87	92	84	87	84	87	92	84	84	84	84	84	84	84	84	84	84	75	75	75	?	?				
		6	-	-	-	-	-	-	86	92	85	86	92	85	86	92	85	85	85	85	85	85	85	85	85	73	73	73	?	?				
NADH	Bay	0	100	100	-	91	-	-	59	59	99	100	-	100	100	?	?	?	?	?	?	?	?	?	?	65	65	-	-	?	100			
	Pars	0	99	71	-	-	-	-	62	62	65	58	-	99	99	?	?	?	?	?	?	?	?	?	?	65	65	-	-	?	100			
		4	98	92	-	-	-	-	63	63	79	75	-	100	100	?	?	?	?	?	?	?	?	?	?	65	65	-	-	?	100			
		10	99	92	-	-	-	-	59	59	83	82	-	99	99	?	?	?	?	?	?	?	?	?	?	65	65	-	-	?	100			
		50	100	83	-	-	-	-	59	59	69	69	-	99	99	?	?	?	?	?	?	?	?	?	?	65	65	-	-	?	100			
		0	99	71	-	-	-	-	62	62	65	58	-	99	99	?	?	?	?	?	?	?	?	?	?	?	65	65	-	-	?	100		
		4	98	92	-	-	-	-	63	63	79	75	-	100	100	?	?	?	?	?	?	?	?	?	?	65	65	-	-	?	100			
		10	99	92	-	-	-	-	59	59	83	82	-	99	99	?	?	?	?	?	?	?	?	?	?	65	65	-	-	?	100			
		50	100	83	-	-	-	-	59	59	69	69	-	99	99	?	?	?	?	?	?	?	?	?	?	65	65	-	-	?	100			
Morph	Bay	0	94	-	-	-	-	-	90	90	82	-	82	99	99	?	?	?	?	?	?	?	?	?	?	60	60	-	-	?	96			
	Pars	0	94	-	-	-	-	-	90	90	82	-	82	99	99	?	?	?	?	?	?	?	?	?	?	60	60	-	-	?	96			
	BS	0	94	-	-	-	-	-	90	90	82	-	82	99	99	?	?	?	?	?	?	?	?	?	?	60	60	-	-	?	96			

Appendix 4: All described *Tegenaria* and *Malthonica* species listed in the catalogue of Platnick (2010, V. 10.5) and the proposed nomenclatural changes resulting from this work, including new genera and species. Taxa are arranged based on their geographic distribution and then in alphabetic order, new species are given at the end of the table.

Current name (Platnick, 2010)	Changes	New name	Comments
European taxa			
<i>Malthonica aliquoi</i> (Brignoli, 1971)	-	<i>Aterigena aliquoi</i> (Brignoli, 1971)	(Bolzern, et al., accepted)
<i>Malthonica annulata</i> (Kulczyn'ski, 1913)	rev. stat.	<i>Tegenaria annulata</i> Kulczyn'ski, 1913	
<i>Malthonica argaica</i> (Nosek, 1905)	rev. stat.	<i>Tegenaria argaica</i> Nosek, 1905	
<i>Malthonica arganoi</i> (Brignoli, 1971)	n. comb.	<i>Eratigena arganoi</i> (Brignoli, 1971)	
<i>Malthonica balearica</i> Brignoli, 1978	n. comb.	<i>Eratigena balearica</i> (Brignoli, 1978)	
<i>Malthonica bozhkovi</i> Deltshv, 2008	n. comb.	<i>Tegenaria bozhkovi</i> (Deltshv, 2008)	
<i>Malthonica campestris</i> (C. L. Koch, 1834)	rev. stat.	<i>Tegenaria campestris</i> (C. L. Koch, 1834)	only female described; holotype ♀ examined
<i>Malthonica daedali</i> Brignoli, 1980	inc. sed.		
<i>Malthonica dalmatica</i> (Kulczyn'ski, 1906)	rev. stat.	<i>Tegenaria dalmatica</i> Kulczyn'ski, 1906	
<i>Malthonica eleonora</i> (Brignoli, 1974)	rev. stat.	<i>Tegenaria eleonora</i> Brignoli, 1974	
<i>Malthonica ferruginea</i> (Panzer, 1804)	rev. stat.	<i>Tegenaria ferruginea</i> (Panzer, 1804)	
<i>Malthonica lusitanica</i> Simon, 1898	-	<i>Malthonica lusitanica</i> Simon, 1898	
<i>Malthonica minoa</i> (Brignoli, 1976)	inc. sed.		only female described; holotype ♀ and 3 ♀ examined; affiliation highly doubtful; may belong to an separate group (see also <i>M. paraschiae</i> Brignoli, 1984 and <i>M. spinipalpis</i> Deltshv & Paraschi, 1990)
<i>Malthonica montana</i> (Deltshv, 1993)	rev. stat.	<i>Tegenaria montana</i> Deltshv, 1993	
<i>Malthonica nemorosa</i> (Simon, 1916)	n. syn.	<i>Tegenaria hasperi</i> Chyzer, 1897	
<i>Malthonica oceanica</i> Barrientos & Cardoso, 2007	-	<i>Malthonica oceanica</i> Barrientos & Cardoso, 2007	several specimens examined
<i>Malthonica pagana</i> (C. L. Koch, 1840)	rev. stat.	<i>Tegenaria pagana</i> C. L. Koch, 1840	
<i>Malthonica pagana urbana</i> (Simon, 1875)	n. syn.	<i>Tegenaria pagana</i> C. L. Koch, 1840	
<i>Malthonica paraschiae</i> Brignoli, 1984	inc. sed.		only female described; holotype ♀ and 1 ♂, 1 ♀ examined; affiliation highly doubtful; may belong to an separate group (see also <i>M. minoa</i> (Brignoli, 1976) and <i>M. spinipalpis</i> Deltshv & Paraschi, 1990)
<i>Malthonica parvula</i> (Thorell, 1875)	rev. stat.	<i>Tegenaria parvula</i> Thorell, 1875	
<i>Malthonica picta</i> (Simon, 1870)	n. comb.	<i>Eratigena picta</i> (Simon, 1870)	
<i>Malthonica podopygorai</i> Kovblyuk, 2006	n. comb.	<i>Tegenaria podopygorai</i> (Kovblyuk, 2006)	revision based on published figures
<i>Malthonica ramblae</i> (Barrientos, 1978)	rev. stat.	<i>Tegenaria ramblae</i> Barrientos, 1978	
<i>Malthonica rilensis</i> (Deltshv, 1993)	rev. stat.	<i>Tegenaria rilensis</i> Deltshv, 1993	
<i>Malthonica sardo</i> Brignoli, 1977	n. comb.	<i>Eratigena sardo</i> (Brignoli, 1977)	
<i>Malthonica sbordonii</i> (Brignoli, 1971)	rev. stat.	<i>Tegenaria sbordonii</i> Brignoli, 1971	
<i>Malthonica sicana</i> Brignoli, 1976	n. comb.	<i>Eratigena sicana</i> (Brignoli, 1976)	

<i>Malthonica silvestris</i> (L. Koch, 1872)	rev. stat.	<i>Tegenaria silvestris</i> L. Koch, 1872	(Bolzern, et al., accepted)
<i>Malthonica soriculata</i> (Simon, 1873)	-	<i>Aterigena soriculata</i> (Simon, 1873)	no specimen examined; affiliation highly doubtful; may belong to an separate group (see also <i>M. minoa</i> (Brignoli, 1976) and <i>M. paraschiae</i> Brignoli, 1984)
<i>Malthonica spinipalpis</i> Deltshv, 1990	inc. sed.		
<i>Malthonica tyrrenica</i> (Dalmas, 1922)	rev. stat.	<i>Tegenaria tyrrenica</i> Dalmas, 1922	
<i>Malthonica vomeroi</i> (Brignoli, 1977)	n. comb.	<i>Eratigena vomeroi</i> (Brignoli, 1977)	(Bolzern, et al., accepted)
<i>Pseudotegenaria animata</i> (Kratohvil & Miller, 1940)	-	<i>Tegenaria animata</i> Kratochvil & Miller, 1940	(Bolzern, et al., accepted)
<i>Pseudotegenaria bayeri</i> (Kratohvil, 1934)	-	<i>Tegenaria bayeri</i> Kratochvil, 1934	(Bolzern, et al., accepted)
<i>Pseudotegenaria bosnica</i> (Kratohvil & Miller, 1940)	-	<i>Tegenaria bosnica</i> Kratochvil & Miller, 1940	(Bolzern, et al., accepted)
<i>Pseudotegenaria decolorata</i> (Kratohvil & Miller, 1940)	-	<i>Tegenaria decolorata</i> Kratochvil & Miller, 1940	(Bolzern, et al., accepted)
<i>Tegenaria achaea</i> Brignoli, 1977	-	<i>Tegenaria achaea</i> Brignoli, 1977	only female described
<i>Tegenaria advena</i> (C. L. Koch, 1841)	nomen dubium	nomen dubium	only female described
<i>Tegenaria agrestis</i> (Walckenaer, 1802)	n. comb.	<i>Eratigena agrestis</i> (Walckenaer, 1802)	
<i>Tegenaria antrorum</i> Simon, 1916	n. syn.	<i>Tegenaria racovitzai</i> Simon, 1907	
<i>Tegenaria artiadae</i> Brignoli, 1984	-	<i>Tegenaria artiadae</i> Brignoli, 1984	new male
<i>Tegenaria armigera</i> Simon, 1873	-	<i>Tegenaria armigera</i> Simon, 1873	
<i>Tegenaria atrica</i> C. L. Koch, 1843	n. comb.	<i>Eratigena atrica</i> (C. L. Koch, 1843)	
<i>Tegenaria baronii</i> Brignoli, 1977	n. syn.	<i>Tegenaria pagana</i> C. L. Koch, 1840	
<i>Tegenaria barrientosi</i> Bolzern et al., 2009	n. comb.	<i>Eratigena barrientosi</i> (Bolzern et al., 2009)	
<i>Tegenaria bithyniae</i> Brignoli, 1978	n. syn.	<i>Tegenaria percurosa</i> Brignoli, 1972	problematic group (see at other place sub <i>T. aff. bucculenta</i>)
<i>Tegenaria bucculenta</i> (L. Koch, 1868)	n. comb.	<i>Eratigena bucculenta</i> (L. Koch, 1868)	
<i>Tegenaria capalongoi</i> Brignoli, 1977	-	<i>Tegenaria capalongoi</i> Brignoli, 1977	only female described
<i>Tegenaria carensis</i> Barrientos, 1981	-	<i>Tegenaria carensis</i> Barrientos, 1981	new male
<i>Tegenaria cerrutii</i> Roewer, 1960	n. syn.	<i>Tegenaria pagana</i> C. L. Koch, 1840	
<i>Tegenaria chumachenkoi</i> Kovblyuk & Ponomarev, 2008	-	<i>Tegenaria chumachenkoi</i> Kovblyuk & Ponomarev, 2008	no specimen examined
<i>Tegenaria dentifera</i> Kulczynski, 1908	inc. sed.	<i>Tegenaria dentifera</i> Kulczynski, 1908	only female described
<i>Tegenaria domestica</i> (Clerck, 1757)	-	<i>Tegenaria domestica</i> (Clerck, 1757)	
<i>Tegenaria domesticoides</i> Schmidt & Piepho, 1994	n. syn.	<i>Tegenaria domestica</i> (Clerck, 1757)	
<i>Tegenaria duellica</i> Simon, 1875	n. comb.	<i>Eratigena duellica</i> (Simon, 1875)	problematic group (see at other place sub <i>Eratigena atrica</i> -complex)
<i>Tegenaria famiapollinis</i> Brignoli, 1978	-	<i>Tegenaria famiapollinis</i> Brignoli, 1978	new to Europe (Bulgaria, sub <i>Tegenaria paragamiani</i> Deltshv, 2008)
<i>Tegenaria feminea</i> Simon, 1870	n. comb.	<i>Eratigena feminea</i> (Simon, 1870)	
<i>Tegenaria femoralis</i> Simon, 1873	-	<i>Tegenaria femoralis</i> Simon, 1873	
<i>Tegenaria fuesslini</i> Pavese, 1873	n. comb.	<i>Eratigena fuesslini</i> (Pavese, 1873)	

<i>Tegenaria hasperi</i> Chyzer, 1897	-	<i>Tegenaria hasperi</i> Chyzer, 1897	
<i>Tegenaria hauseri</i> Brignoli, 1979	-	<i>Tegenaria hauseri</i> Brignoli, 1979	
<i>Tegenaria henroti</i> Dresco, 1956	-	<i>Tegenaria henroti</i> Dresco, 1956	
<i>Tegenaria herculea</i> Fage, 1931	n. comb.	<i>Eratigena herculea</i> (Fage, 1931)	
<i>Tegenaria hispanica</i> Fage, 1931	n. comb.	<i>Eratigena hispanica</i> (Fage, 1931)	
<i>Tegenaria incognita</i> Bolzern et al., 2009	n. comb.	<i>Eratigena incognita</i> (Bolzern et al., 2009)	
<i>Tegenaria inermis</i> Simon, 1870	n. comb.	<i>Eratigena inermis</i> (Simon, 1870)	
<i>Tegenaria labyrinthi</i> Brignoli, 1984	n. syn.	<i>Tegenaria ariadnae</i> Brignoli, 1984	
<i>Tegenaria lapicidinarum</i> Spassky, 1934	-	<i>Tegenaria lapicidinarum</i> Spassky, 1934	
<i>Tegenaria levantina</i> Barrientos, 1981	-	<i>Tegenaria levantina</i> Barrientos, 1981	
<i>Tegenaria ligurica</i> Simon, 1916	-	<i>Aterigena ligurica</i> (Simon, 1916)	(Bolzern, et al., accepted)
<i>Tegenaria maderiana</i> Thorell, 1875	n. syn.	<i>Eratigena feminea</i> (Simon, 1870)	
<i>Tegenaria marinae</i> Brignoli, 1971	n. syn.	<i>Tegenaria pagana</i> C. L. Koch, 1840	
<i>Tegenaria mirifica</i> Thaler, 1987	-	<i>Tegenaria mirifica</i> Thaler, 1987	
<i>Tegenaria montigena</i> Simon, 1937	n. comb.	<i>Eratigena montigena</i> (Simon, 1937)	
<i>Tegenaria nervosa</i> Simon, 1870	n. syn.	<i>Eratigena atrica</i> (C. L. Koch, 1843)	
<i>Tegenaria oribata</i> Simon, 1916	-	<i>Tegenaria oribata</i> Simon, 1916	
<i>Tegenaria osellai</i> Brignoli, 1971	n. syn.	<i>Eratigena agrestis</i> (Walckenaer, 1802)	
<i>Tegenaria paragamicani</i> Deltshhev, 2008	n. syn.	<i>Tegenaria faniapollinis</i> Brignoli, 1978	
<i>Tegenaria partitina</i> (Fourcroy, 1785)	-	<i>Tegenaria parietina</i> (Fourcroy, 1785)	new male
<i>Tegenaria parmenidis</i> Brignoli, 1971	-	<i>Tegenaria parmenidis</i> Brignoli, 1971	
<i>Tegenaria percurtosa</i> Brignoli, 1972	-	<i>Tegenaria percurtosa</i> Brignoli, 1972	
<i>Tegenaria pieperi</i> Brignoli, 1979	-	<i>Tegenaria pieperi</i> Brignoli, 1979	only female described
<i>Tegenaria racovitzai</i> Simon, 1907	-	<i>Tegenaria racovitzai</i> Simon, 1907	
<i>Tegenaria regispyrri</i> Brignoli, 1976	-	<i>Tegenaria regispyrri</i> Brignoli, 1976	problematic complex (see relevant paragraph as interpreted by Brignoli (1978c))
<i>Tegenaria rhodiensis</i> Caporiacco, 1948	-	<i>Tegenaria rhodiensis</i> Caporiacco, 1948	problematic group (see at other place sub <i>Eratigena atrica</i> -complex)
<i>Tegenaria saeva</i> Blackwall, 1844	-	<i>Eratigena saeva</i> (Blackwall, 1844)	only female described
<i>Tegenaria schmalfussi</i> Brignoli, 1976	-	<i>Tegenaria schmalfussi</i> Brignoli, 1976	
<i>Tegenaria scopifera</i> Barrientos, Ribera & Pons, 2002	-	<i>Tegenaria scopifera</i> Barrientos, Ribera & Pons, 2002	
<i>Tegenaria taurica</i> Charitonov, 1947	-	<i>Tegenaria taurica</i> Charitonov, 1947	
<i>Tegenaria tridentina</i> L. Koch, 1872	-	<i>Tegenaria tridentina</i> L. Koch, 1872	
<i>Tegenaria trinacriae</i> Brignoli, 1971	n. syn.	<i>Eratigena agrestis</i> (Walckenaer, 1802)	
<i>Tegenaria velox</i> Chyzer, 1897	n. syn.	<i>Tegenaria hasperi</i> Chyzer, 1897	
Asian taxa (incl. Turkey and Cyprus)			
<i>Malthonica anhela</i> (Brignoli, 1972)	rev. stat.	<i>Tegenaria anhela</i> Brignoli, 1972	holotype and 1 ♂, 1 ♀ examined
<i>Malthonica epacris</i> (Levy, 1996)	rev. stat.	<i>Tegenaria epacris</i> Levy, 1996	revision based on published figures
<i>Malthonica lehtineni</i> Guseinov et al., 2005	n. comb.	<i>Tegenaria lehtineni</i> (Guseinov et al., 2005)	only male described; revision based on published figures

<i>Malthonica lenkoranica</i> Guseinov et al., 2005	n. comb.	<i>Tegenaria lenkoranica</i> (Guseinov et al., 2005)	revision based on published figures
<i>Malthonica lyncea</i> (Brignoli, 1978)	rev. stat.	<i>Tegenaria lyncea</i> Brignoli, 1978	holotype ♂ and paratypes (1♂, 1♀) examined
<i>Malthonica maronita</i> (Simon, 1873)	rev. stat.	<i>Tegenaria maronita</i> Simon, 1873	holotype ♂ and 1 ♀, 2 ♀ examined, new record for Cyprus
<i>Malthonica mediterranea</i> (Levy, 1996)	rev. stat.	<i>Tegenaria mediterranea</i> Levy, 1996	2 ♂ from Syria (MNHN); the affiliation of male and female is doubted since these 2 ♂ were together with 10 ♀ belonging most probably to <i>T. angustipalpis</i> Levy, 1996
<i>Malthonica nakhchivanica</i> Guseinov et al., 2005	n. comb.	<i>Tegenaria nakhchivanica</i> Guseinov et al., 2005	revision based on published figures
<i>Malthonica pasquinii</i> (Brignoli, 1978)	rev. stat.	<i>Tegenaria pasquinii</i> Brignoli, 1978	holotype ♂ and all paratypes examined
<i>Malthonica pseudolyncea</i> Guseinov et al., 2005	n. comb.	<i>Tegenaria pseudolyncea</i> (Guseinov et al., 2005)	revision based on published figures
<i>Tegenaria abchasica</i> Charitonov, 1941	-	<i>Tegenaria abchasica</i> Charitonov, 1941	no specimen examined
<i>Tegenaria aculeata</i> Wang, 1992	-	<i>Aterigena aculeata</i> (Wang, 1992)	(Bolzern, et al., accepted)
<i>Tegenaria adomesica</i> Guseinov et al., 2005	-	<i>Tegenaria adomesica</i> Guseinov et al., 2005	only female described; revision based on published figures
<i>Tegenaria agnolettii</i> Brignoli, 1978	-	<i>Tegenaria agnolettii</i> Brignoli, 1978	only female described; holotype ♀ examined
<i>Tegenaria angustipalpis</i> Levy, 1996	-	<i>Tegenaria angustipalpis</i> Levy, 1996	10 ♀ from Syria (MNHN, Nr. 7876); the affiliation of male and female is doubted (see <i>T. mediterranea</i> Levy, 1996); 1 ♀ aff. <i>angustipalpis</i> from Spain (!) (MNHN, 467)
<i>Tegenaria averni</i> Brignoli, 1978	-	<i>Tegenaria averni</i> Brignoli, 1978	only female described; holotype ♀ and 1 ♀ (NMB, AB793) examined
<i>Tegenaria chebana</i> Thorell, 1897	inc. sed.		only female described; typ material not available; no published figures; species is not sufficiently characterised
<i>Tegenaria commena</i> Brignoli, 1978	-	<i>Tegenaria commena</i> Brignoli, 1978	only female described; holotype ♀ and paratypes (3 ♀) examined
<i>Tegenaria comstocki</i> Gajbe, 2004	inc. sed.		based on the provided drawings (Gajbe, 2004) this species does not belong to <i>Tegenaria</i> or <i>Malthonica</i>
<i>Tegenaria concolor</i> Simon, 1873	-	<i>Tegenaria concolor</i> Simon, 1873	1 ♀ examined (MNHN, 478A)
<i>Tegenaria cottarellii</i> Brignoli, 1978	-	<i>Tegenaria cottarellii</i> Brignoli, 1978	only female described; holotype ♀ and paratypes (2 ♀) examined
<i>Tegenaria elysii</i> Brignoli, 1978	-	<i>Tegenaria elysii</i> Brignoli, 1978	only female described; holotype ♀ and paratypes (10 ♀) examined
<i>Tegenaria forestieroi</i> Brignoli, 1978	-	<i>Tegenaria forestieroi</i> Brignoli, 1978	only female described; holotype ♀ and paratypes (3 ♀) examined
<i>Tegenaria halidi</i> Guseinov et al., 2005	-	<i>Tegenaria halidi</i> Guseinov et al., 2005	no specimen examined
<i>Tegenaria hamid</i> Brignoli, 1978	-	<i>Tegenaria hamid</i> Brignoli, 1978	only female described; holotype ♀ examined; very problematic since the specimen is a subadult female (eventhough the vulva is developed)
<i>Tegenaria hemanginae</i> Reddy & Patel, 1992	inc. sed.		based on the published drawings (Reddy & Patel, 1992), this species does not belong to <i>Tegenaria</i> or <i>Malthonica</i> . They stated that this species is similar to <i>Tamgrinia chhanguensis</i> Tikader, 1970 (sub <i>Tegenaria</i>)
<i>Tegenaria ismailiensis</i> Guseinov et al., 2005	-	<i>Tegenaria ismailiensis</i> Guseinov et al., 2005	only female described; no specimen examined
<i>Tegenaria karaman</i> Brignoli, 1978	-	<i>Tegenaria karaman</i> Brignoli, 1978	only female described; holotype ♀ examined
<i>Tegenaria longimana</i> Simon, 1898	-	<i>Tegenaria longimana</i> Simon, 1898	holotype ♂ and 2 ♀, 4 ♀ examined (MCSN, MHNG)
<i>Tegenaria lunakensis</i> Tikader, 1964	inc. sed.	<i>Tegenaria lunakensis</i> Tikader, 1964	only female described; the description provided by Tikader is not diagnostic. The relevant specimens have to be revised.
<i>Tegenaria mamikonian</i> Brignoli, 1978	-	<i>Tegenaria mamikonian</i> Brignoli, 1978	only female described; holotype ♀ examined

<i>Tegenaria melbae</i> Brignoli, 1972	-	<i>Tegenaria melbae</i> Brignoli, 1972	only female described; holotype £ and 1 £ and probably new \$ examined (unpublished)
<i>Tegenaria michae</i> Brignoli, 1978	-	<i>Tegenaria michae</i> Brignoli, 1978	only female described; holotype £ and paratypes (2 £) examined
<i>Tegenaria pontica</i> Charitonov, 1947	-	<i>Tegenaria pontica</i> Charitonov, 1947	only female described; no specimen examined
<i>Tegenaria shillongensis</i> Barman, 1979	inc. sed.		based on the published drawings (Barman, 1979), this species does not belong to <i>Tegenaria</i> or <i>Malthonica</i>
<i>Tegenaria talyschica</i> Guseinov et al., 2005	-	<i>Tegenaria talyschica</i> Guseinov et al., 2005	only female described; no specimen examined
<i>Tegenaria taprobanica</i> Strand, 1907	n. syn.	<i>Tegenaria parietina</i> (Fourcroy, 1785)	type specimen probably lost; based on the very short description without figures (Strand, 1907), the described specimen would match to a very large <i>T. parietina</i> specimen.
<i>Tegenaria tekke</i> Brignoli, 1978	-	<i>Tegenaria tekke</i> Brignoli, 1978	only female described; holotype £ examined
<i>Tegenaria vignai</i> Brignoli, 1978	-	<i>Tegenaria vignai</i> Brignoli, 1978	holotype \$ and paratype £ examined; very close to <i>T. longimana</i> Simon, 1898
<i>Tegenaria xenophontis</i> Brignoli, 1978	n. syn.	<i>Tegenaria cottarellii</i> Brignoli, 1978	only female described; holotype £ and paratypes (5 £) examined
<i>Tegenaria zagatalensis</i> Guseinov et al., 2005	-	<i>Tegenaria zagatalensis</i> Guseinov et al., 2005	only female described; no specimen examined
African taxa			
<i>Malthonica africana</i> Simon & Fage, 1922	-	<i>Malthonica africana</i> Simon & Fage, 1922	only female described; no specimen examined
<i>Tegenaria africana</i> Lucas, 1846	-	<i>Tegenaria africana</i> Lucas, 1846	only female described; 1 £ examined (MNHN)
<i>Tegenaria maroccana</i> Denis, 1956	-	<i>Tegenaria maroccana</i> Denis, 1956	only female described; types not traceable in the collection of the MNHN
<i>Malthonica vallei</i> (Brignoli, 1972)	rev. stat.	<i>Tegenaria vallei</i> Brignoli, 1972	holotype \$ and paratypes (1 \$, 1£) examined
<i>Tegenaria wittmeri</i> Brignoli, 1978	inc. sed.		holotype and paratypes (1 \$, 1 £) examined; species does not belong to <i>Tegenaria</i> or <i>Malthonica</i> .
North American taxa			
<i>Tegenaria blanda</i> Gertsch, 1971	not treated	<i>Tegenaria blanda</i> Gertsch, 1971	only female described; no specimens examined; no published figures
<i>Tegenaria caverna</i> Gertsch, 1971	not treated	<i>Tegenaria caverna</i> Gertsch, 1971	no specimens examined
<i>Tegenaria chiricalhuae</i> Roth, 1968	not treated	<i>Tegenaria chiricalhuae</i> Roth, 1968	no specimens examined
<i>Tegenaria decora</i> Gertsch, 1971	not treated	<i>Tegenaria decora</i> Gertsch, 1971	several £ examined
<i>Tegenaria flexuosa</i> F. O. P.-Cambridge, 1902	not treated	<i>Tegenaria flexuosa</i> F. O. P.-Cambridge, 1902	only male described; no specimens examined
<i>Tegenaria florea</i> Brignoli, 1974	not treated	<i>Tegenaria florea</i> Brignoli, 1974	only female described; holotype £ and 2 £ examined
<i>Tegenaria gertschi</i> Roth, 1968	not treated	<i>Tegenaria gertschi</i> Roth, 1968	only male described; no specimen examined
<i>Tegenaria mexicana</i> Roth, 1968	not treated	<i>Tegenaria mexicana</i> Roth, 1968	paratypes (4 \$) and 7 £ examined
<i>Tegenaria rothi</i> Gertsch, 1971	not treated	<i>Tegenaria rothi</i> Gertsch, 1971	3 \$, 3 £ examined (AMNH)
<i>Tegenaria selva</i> Roth, 1968	not treated	<i>Tegenaria selva</i> Roth, 1968	1 \$, 3 £ examined (AMNH)
<i>Tegenaria tlaxcala</i> Roth, 1968	not treated	<i>Tegenaria tlaxcala</i> Roth, 1968	paratypes (1 \$, 3 £) examined

Taxa not in the catalogue of Platnick (2010)

<i>Tegenaria boitanii</i> Brignoli, 1978 (only female)	n. syn.	<i>Tegenaria argaieica</i> Nosek, 1905	male belongs to <i>T. percuriosa</i> Brignoi, 1978 (synonymised by Gasparo, 2007)
not yet in the catalogue		<i>Aterigena aspromontensis</i> Bolzern et al., 2010	(Bolzern, et al., accepted)
not yet in the catalogue		<i>Tegenaria mercanturensis</i> Bolzern & Hervé, 2010	(Bolzern & Hervé, 2010)
	n. sp.	<i>Tegenaria annae</i>	
	n. sp.	<i>Tegenaria circeoensis</i>	only female described
	n. sp.	<i>Tegenaria croatica</i>	only female described
	n. sp.	<i>Tegenaria montiszasensis</i>	only female described
	n. sp.	<i>Tegenaria pindosiensis</i>	only male described
	n. sp.	<i>Tegenaria schoenhoferi</i>	only male described
	n. sp.	<i>Tegenaria vankeeri</i>	only male described

Table 1: Important values used and observed during phylogenetic analyses.

locus	# taxa	# characters	partitions	# pars. inf. characters	Generations (millions)	temperature	dropping & remaining under 0.01	sampling	burnin	# trees retained
28S	52	913	2	257	5	0.15	3.424	1000	750 (15%)	8502
CO1	62	471	3	191	see Bolzern et al. (accepted)					
NADH1	75	591	3	331	7	0.15	4.948	1000	700 (10%)	12602
Mitochondrial DNA	41	1063	6	483	7	0.20	5.486	1000	700 (10%)	12602
DNA	26	1940	8	646	1	0.20	0.502	1000	100 (10%)	1802
Morph	69	88	1	88	10	0.15	6.798	1000	1000 (10%)	18002
DNA & Morph	20	2028	9	605	3	0.20	1.140	1000	300 (10%)	5402

Table 2: Important values and statistics from the selected parsimony trees.

Character matrix	Weighting	Length of shortest tree(s)	# of shortest trees	# of hits of shortest trees (1000 replications)	Consistency index of strict consensus tree	Retention index of strict consensus tree
All data	0	2923	1	783	0.449	0.411
All data	K=6	2925	1	839	0.448	0.410
DNA	K=3	3234	1	712	0.396	0.451
DNA	K=6	3233	1	367	0.397	0.451
Mito	Equal	3433	1	110	0.273	0.476
Mito	K=5	3443	1	374	0.272	0.474
Mito	K=20	3435	1	464	0.273	0.475
28S	0;	1033	40	538	0.533	0.719
	collapsing rule 1					
28S	K=5	1040	10	239	0.533	0.719
28S	K=6	1038	20	60	0.533	0.719
28S	K=20	1033	200	43	0.535	0.722
NADH1	0	3349	21	88	0.191	0.565
NADH1	K=4	3389	1	164	0.192	0.566
NADH1	K=10	3369	1	345	0.193	0.569
NADH1	K=50	3353	1	32	0.194	0.572
Morph	0	561	8	510	0.320	0.744

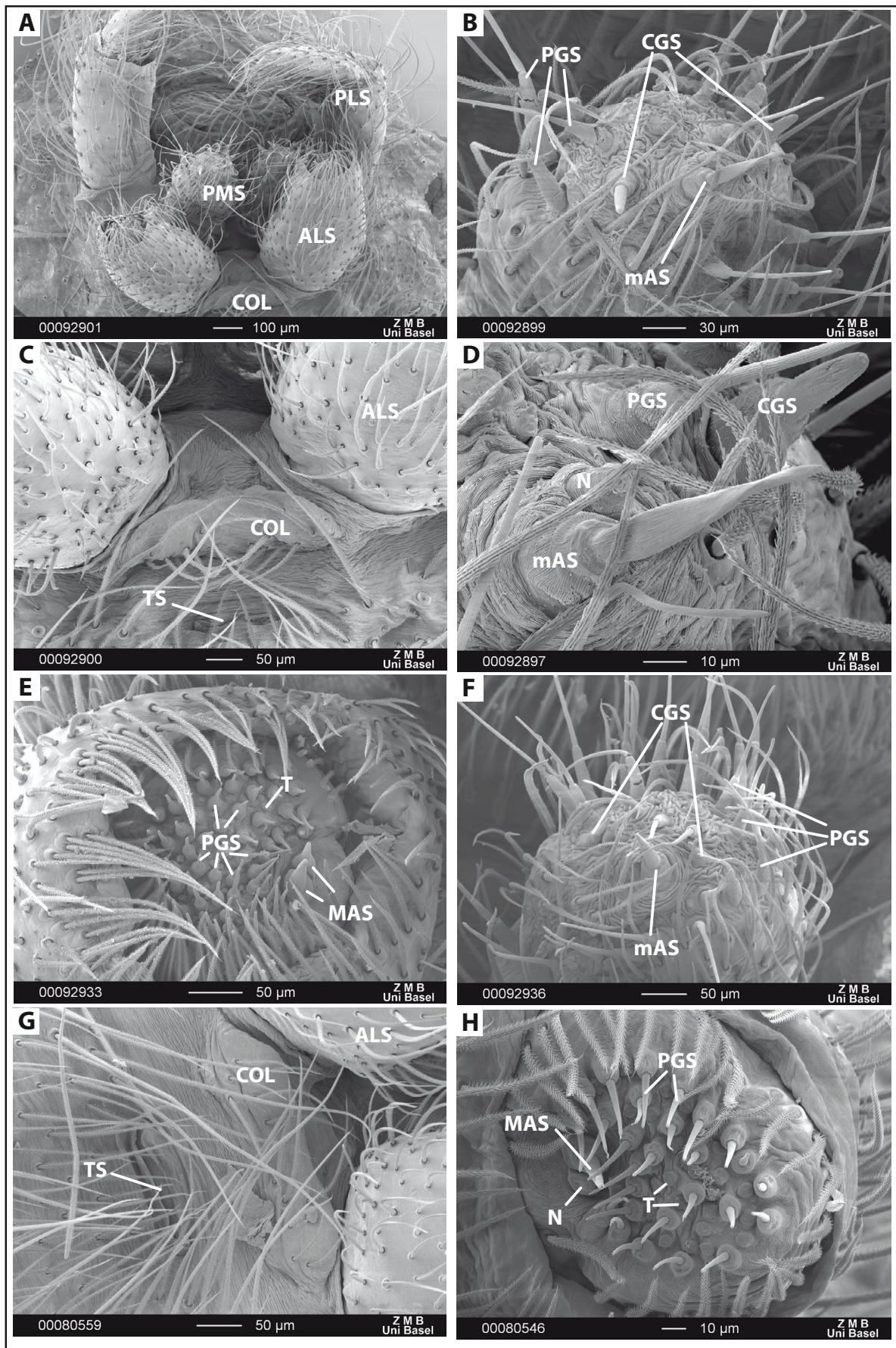


Figure 1: SEM pictures of spinnerets of female *Tegenaria domestica* (A -D) *T. parietina* (E -F) and *T. dalmatica* (G -H). Overview (A); PMS (B, D, F); ALS (E, H); colulus (C, G). CGS: cylindrical gland spigot; COL: colulus; mAS: minor ampullate gland spigot; MAS: major ampullate gland spigot; N: nubbin; PGS: piriform gland spigots; T: tartipore; TS: tracheal stigma.

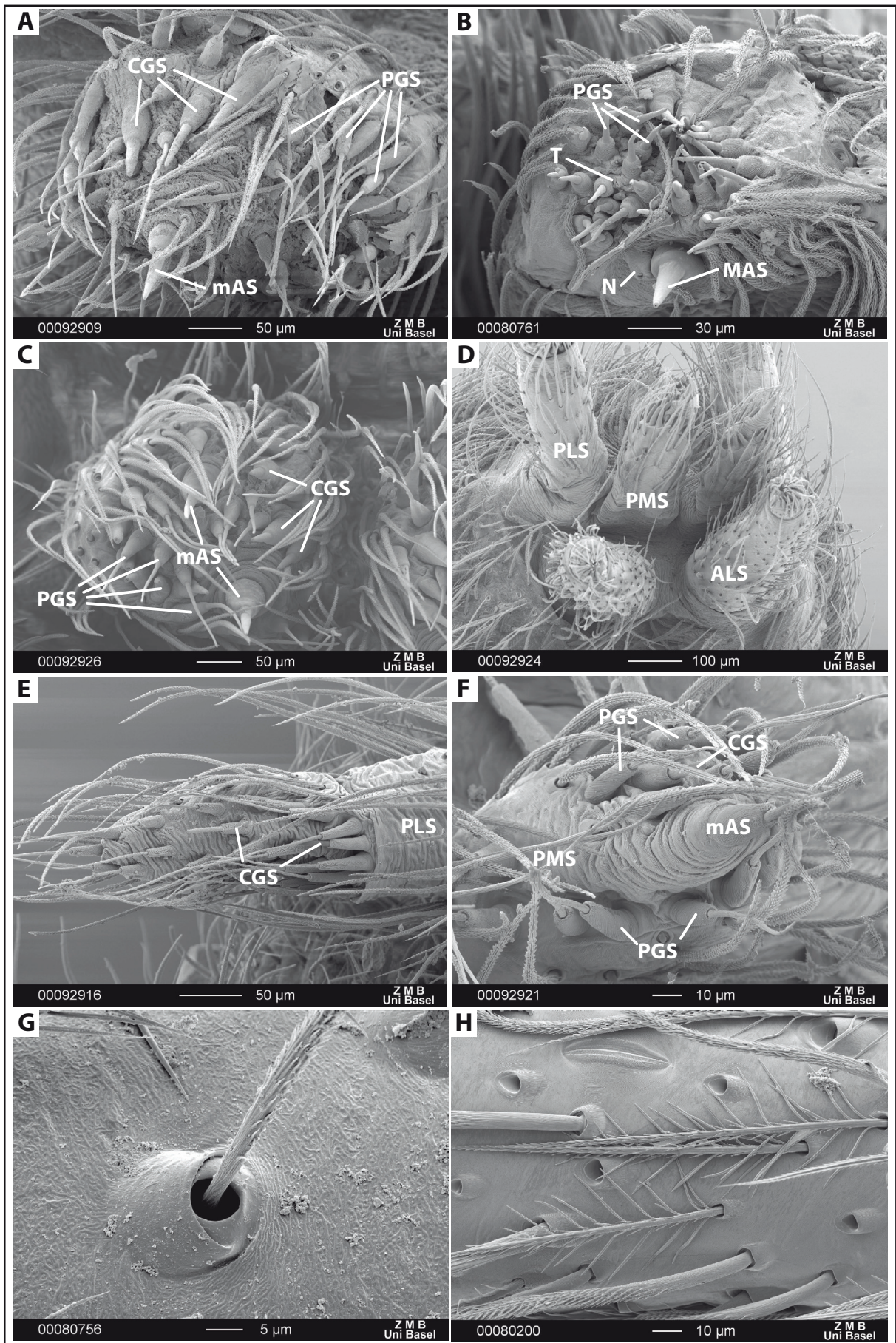


Figure 2: SEM pictures of the spinnerets (from females) and other structures. PMS of *Eratigena agrestis* (A), *Aterigena ligurica* (C) and *Malthonica lusithanica* (F); ALS of *E. atrica* (B); distal segment of PLS (E) and overview of spinnerets of *Malthonica lusithanica* (D); tarsal trichobothrium of *Allagelena gracilis* (G); plumose hairs on tarsus I of *Tegenaria dalmatica* (H). CGS: cylindrical gland spigot; mAS: minor ampullate gland spigot; MAS: major ampullate gland spigot; N: nubbin; PGS: piriform gland spigots; T: tartipore; TS: tracheal stigma.

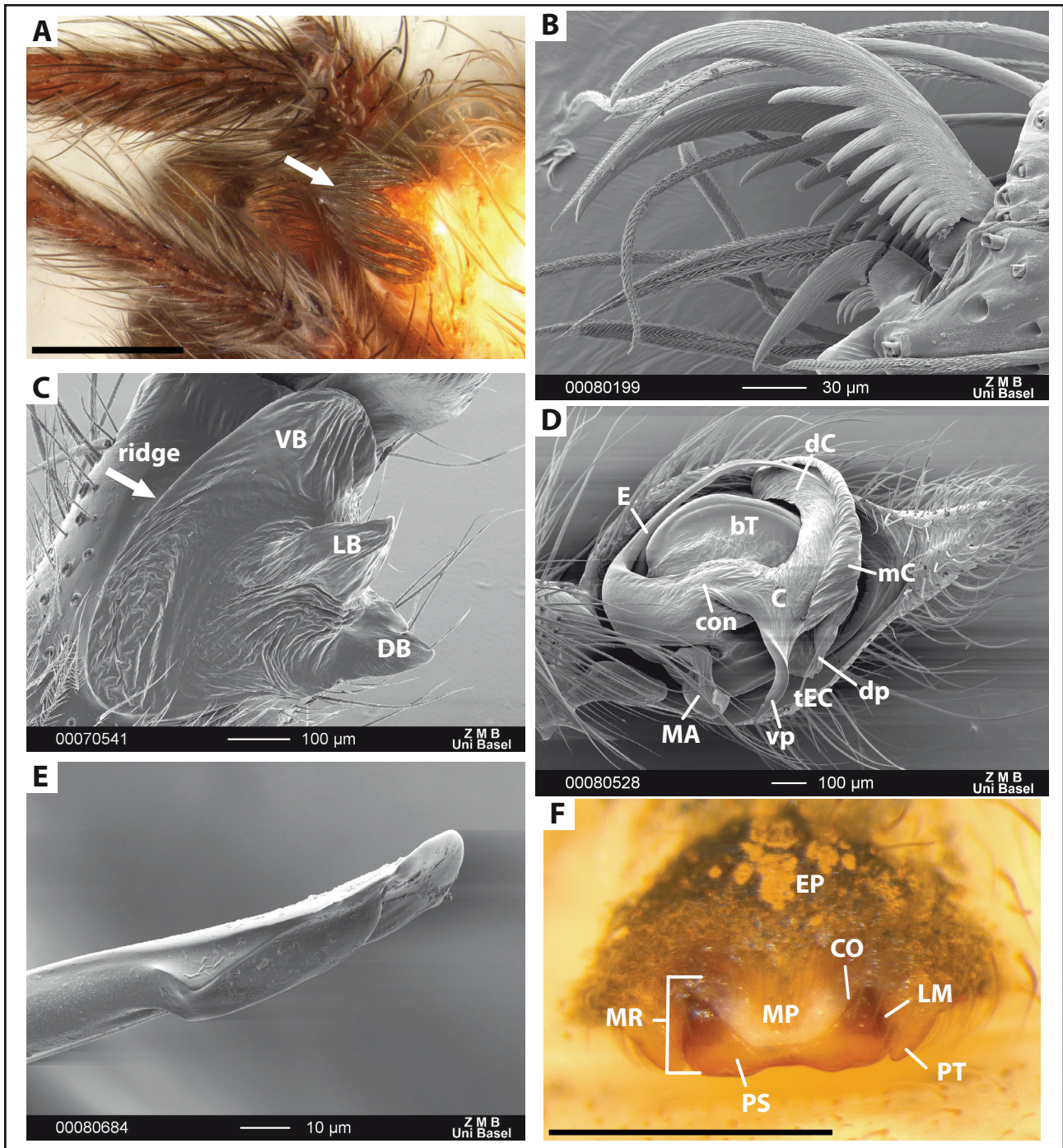
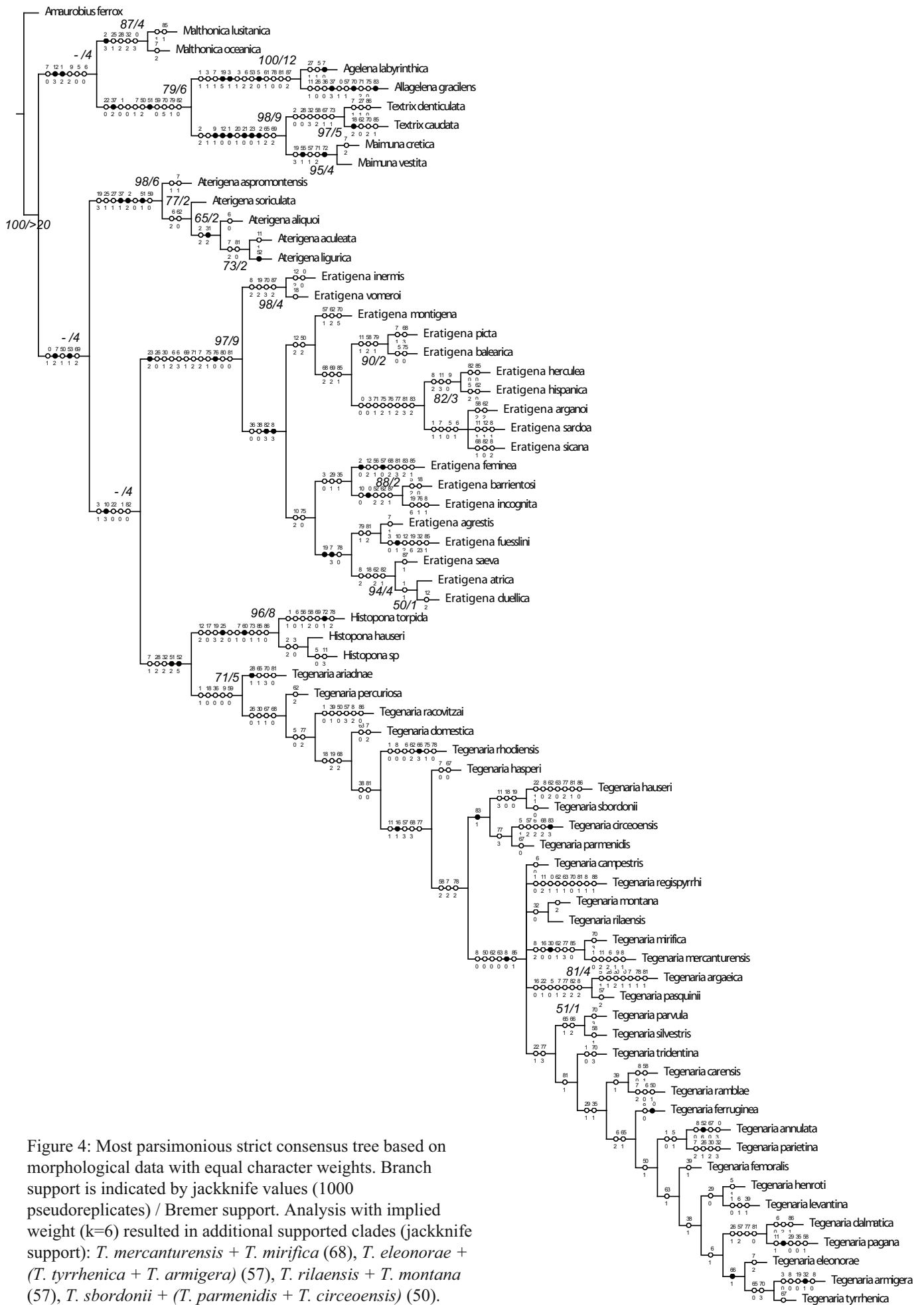


Figure 3: Microscope and SEM pictures of character details. Special spikes at the analtubus of *Agelena labyrinthica* (A); three claws of tarsus I of *Tegenaria dalmatica* (B); RTA in retrolateral view of *Tegenaria ferruginea* (C); male palp of *Tegenaria dalmatica* in ventroretrolateral view (D); embolus tip of *Tegenaria ferruginea* (E); epigyne in ventral view of *Tegenaria domestica* (F). bT: basal portion of tegulum; C: conductor; CO: copulatory opening; con: connection of tegulum and conductor; DB: dorsal branch; dC: distal portion of conductor; dp: dorsal part of terminal end of conductor; E: embolus; EP: epigynal plate; LB: lateral branch; LM: lateral margin of median region; MA: median apophysis; mC: lateral margin of conductor (here entirely folded); MP: median plate; MR: median region; PS: posterior sclerite (here bar- or band like); PT: “pseudo teeth”; tEC: terminal end of conductor (here bifid); VB: ventral branch; vp: ventral part of terminal end of conductor. Scale for A and F = 0.5 mm.



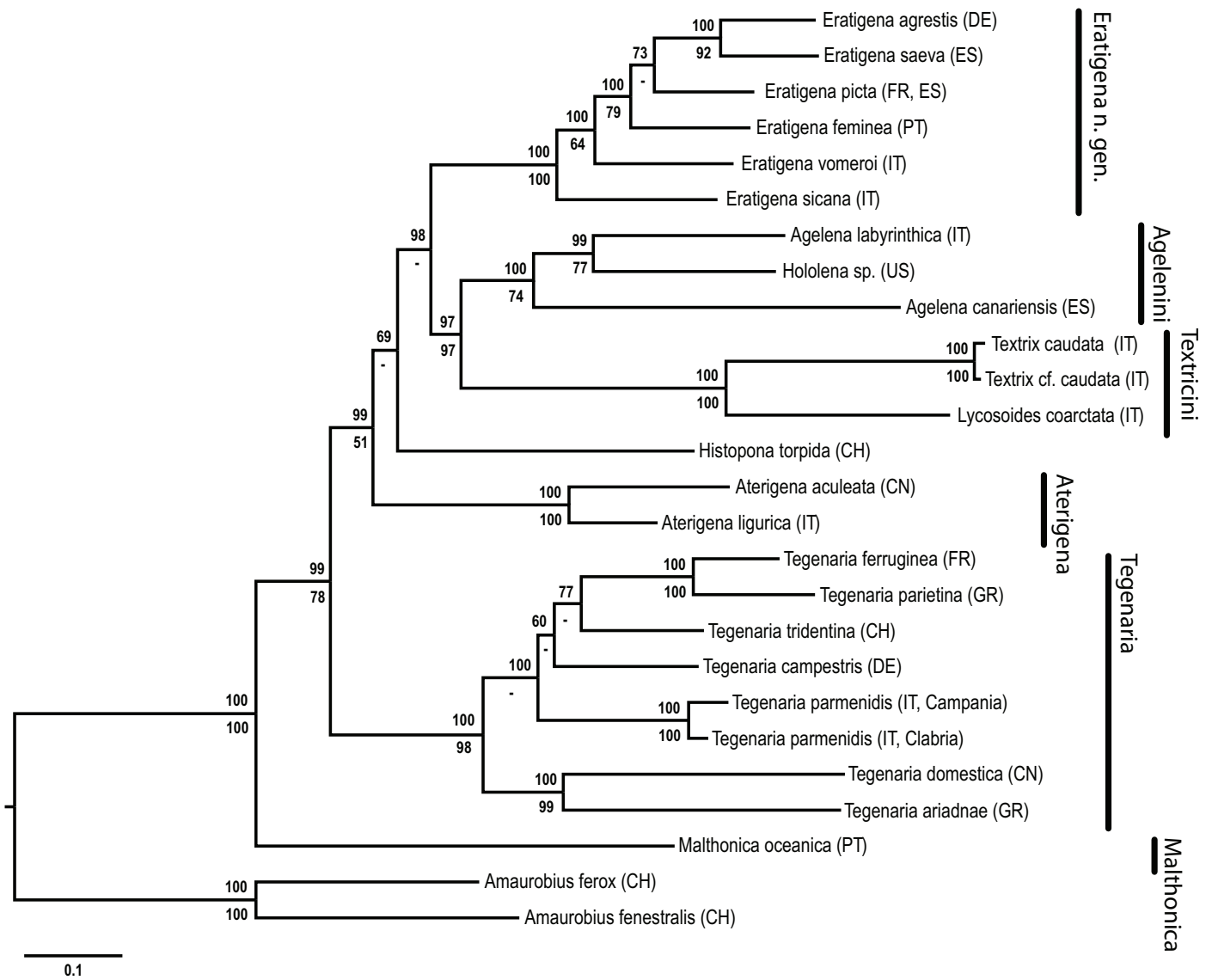


Figure 5: Combined DNA data (CO1, NADH1 and 28S) Bayesian tree. Posterior probability of clades expressed in percentage and written above branches. Clade support (>50) from resampling method (jackknife, 1000 replications) based on parsimony analysis with implied weighting (K=5) is given below the branches.

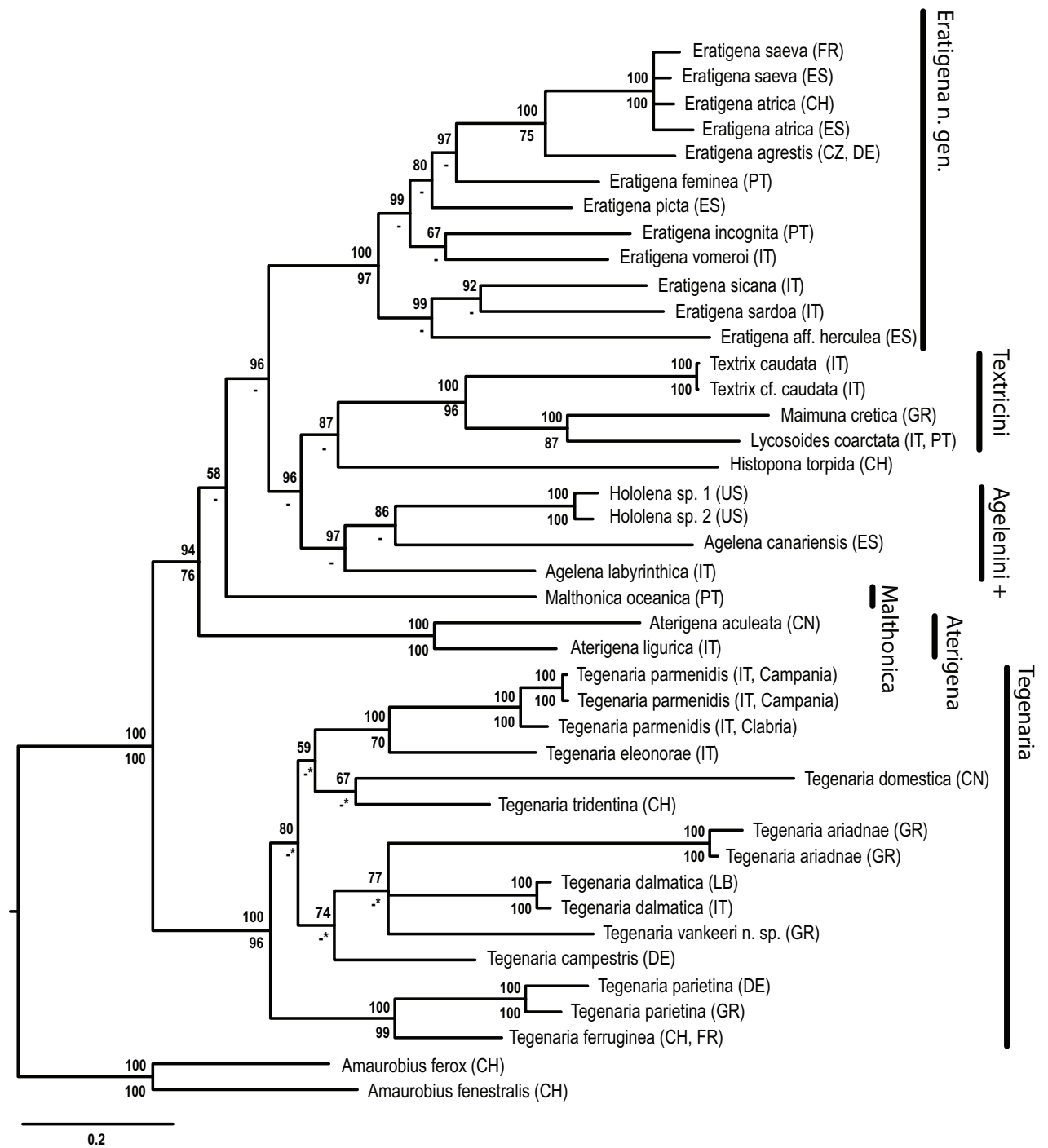


Figure 6: Combined mitochondrial DNA data (CO1, NADH1) Bayesian tree. Posterior probability of clades expressed in percentage and written above branches. Clade support (>50) from resampling method (jackknife, 1000 replications) based on parsimony analysis with implied weighting (K=20) is given under the branches. * this clades do not exist in the most parsimonious tree. Insted: (((*T. ariadnae* + *T. ariadnae*) 100, + *T. domestica*) 71, + *T. vankeeri n. sp.*) 69, + (*T. dalmatica* + *T. dalmatica*) 100).

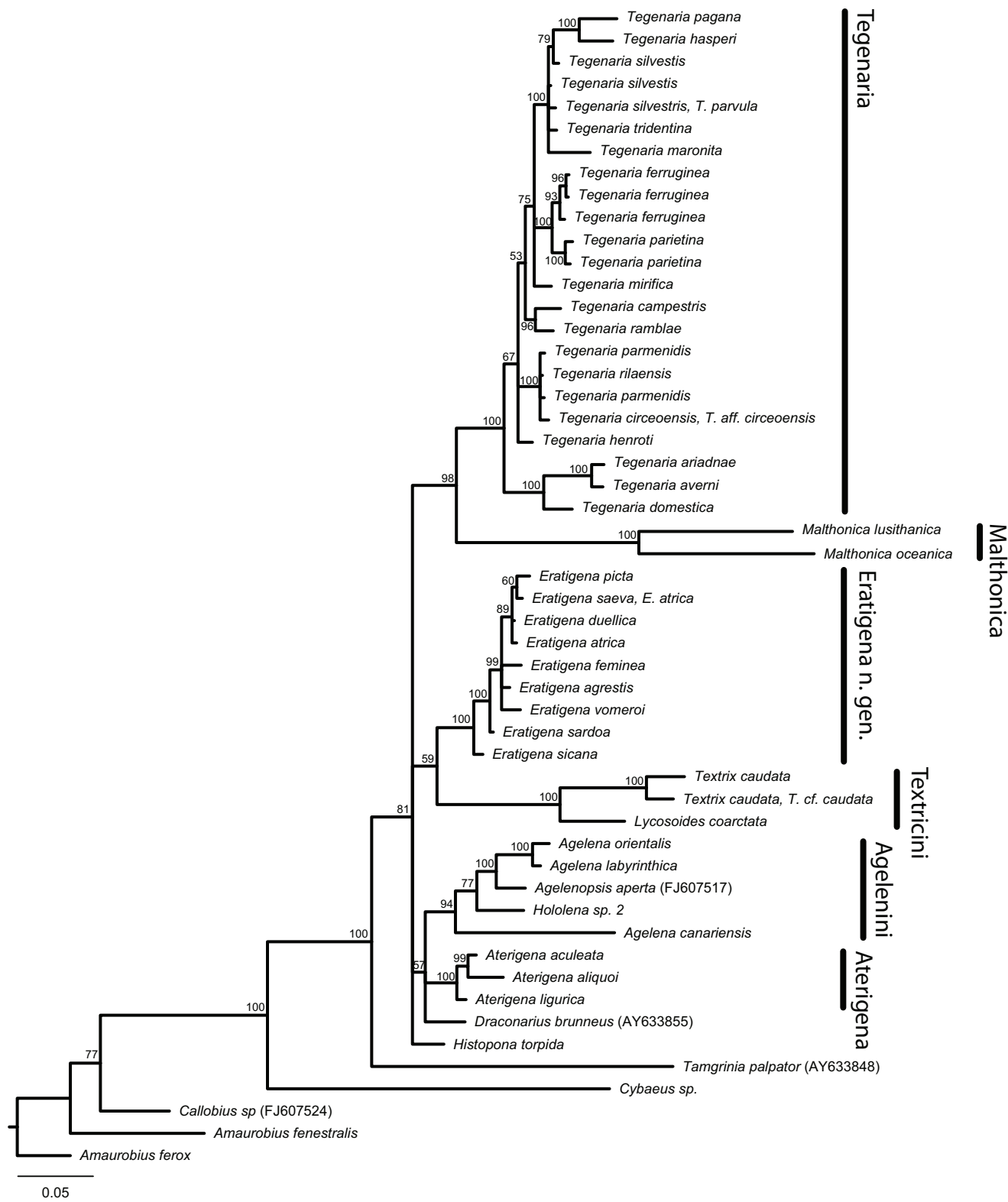


Figure 7: Bayesian tree of single analysis of 28S. Posterior probability as clade support is expressed in percentage and written above branches.

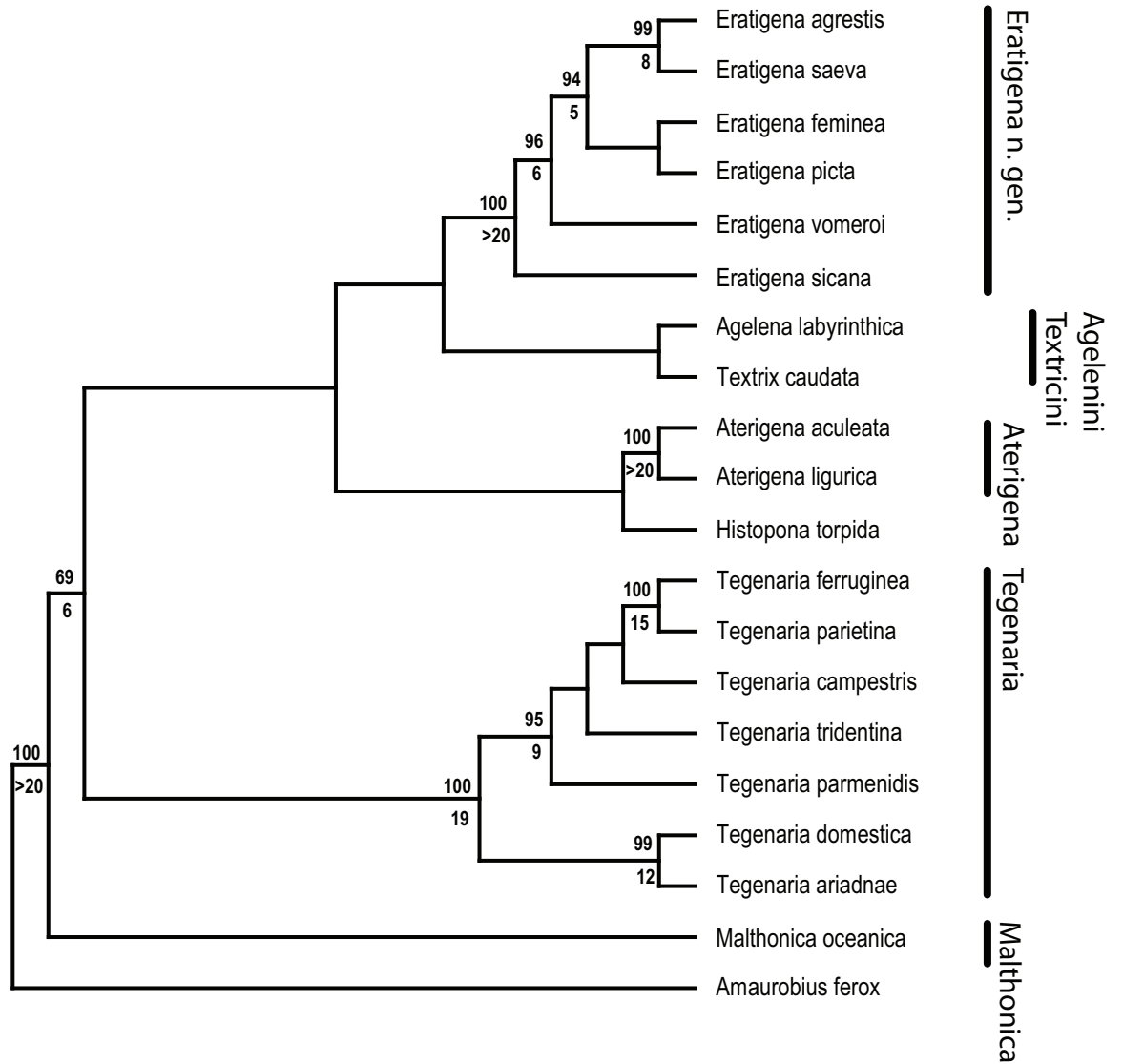


Fig. 8: Combined DNA and morphological data (CO1, NADH1, 28S and morphological data) most parsimonious tree (implied weighting, K=6). Clade support (>50) from resampling method (jackknife, 1000 replications) is given above branches, Bremer support (>4) is given below branches.

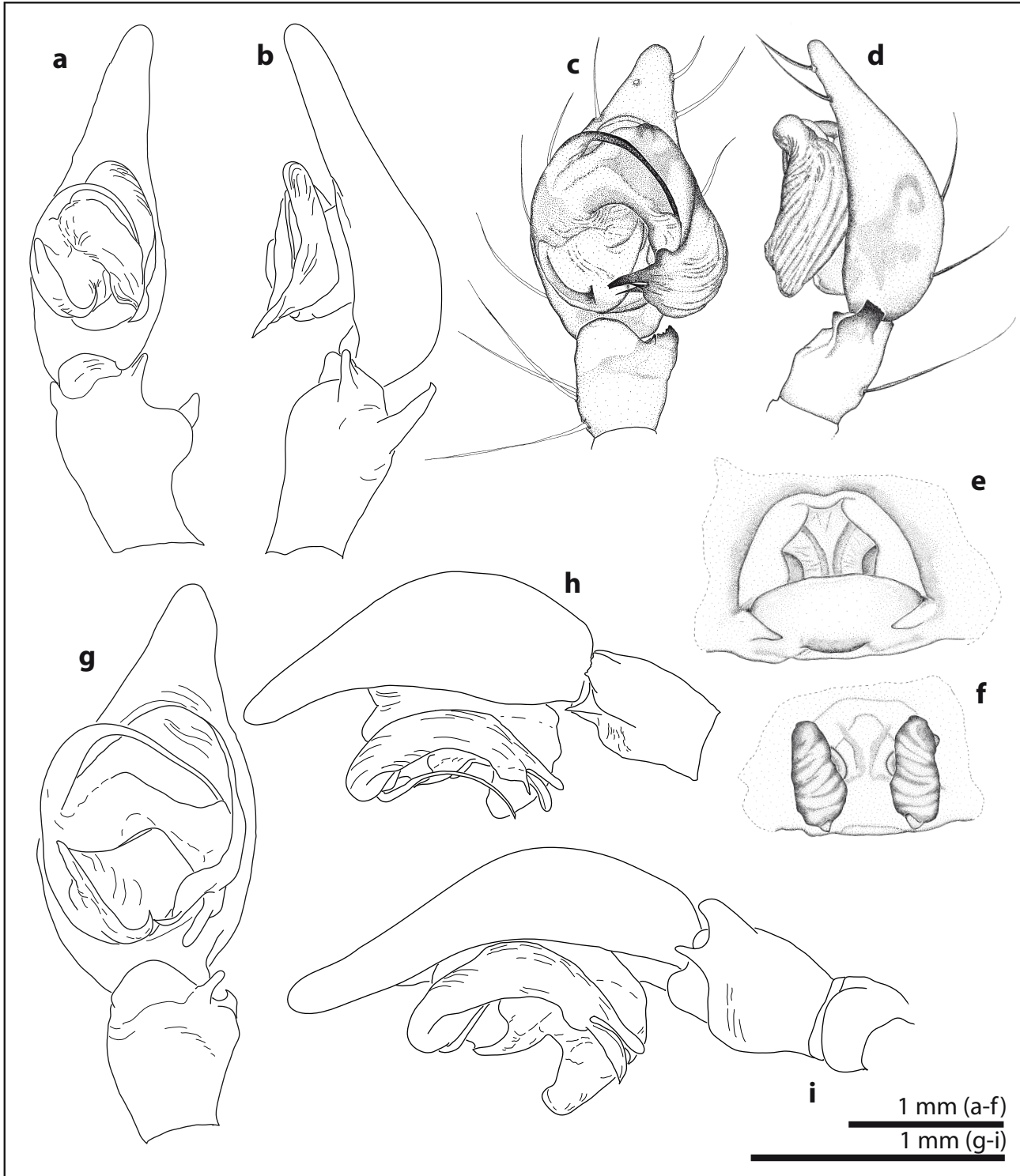


Figure 9: *Eratigena atrica* (a -b), *Eratigena agrestis* (c -f), *Eratigena fuesslini* (g -i). Male palp in ventral (a, c, g) and retrolateral view (b, d, h -i); epigyne, ventral (e); vulva, dorsal (f).

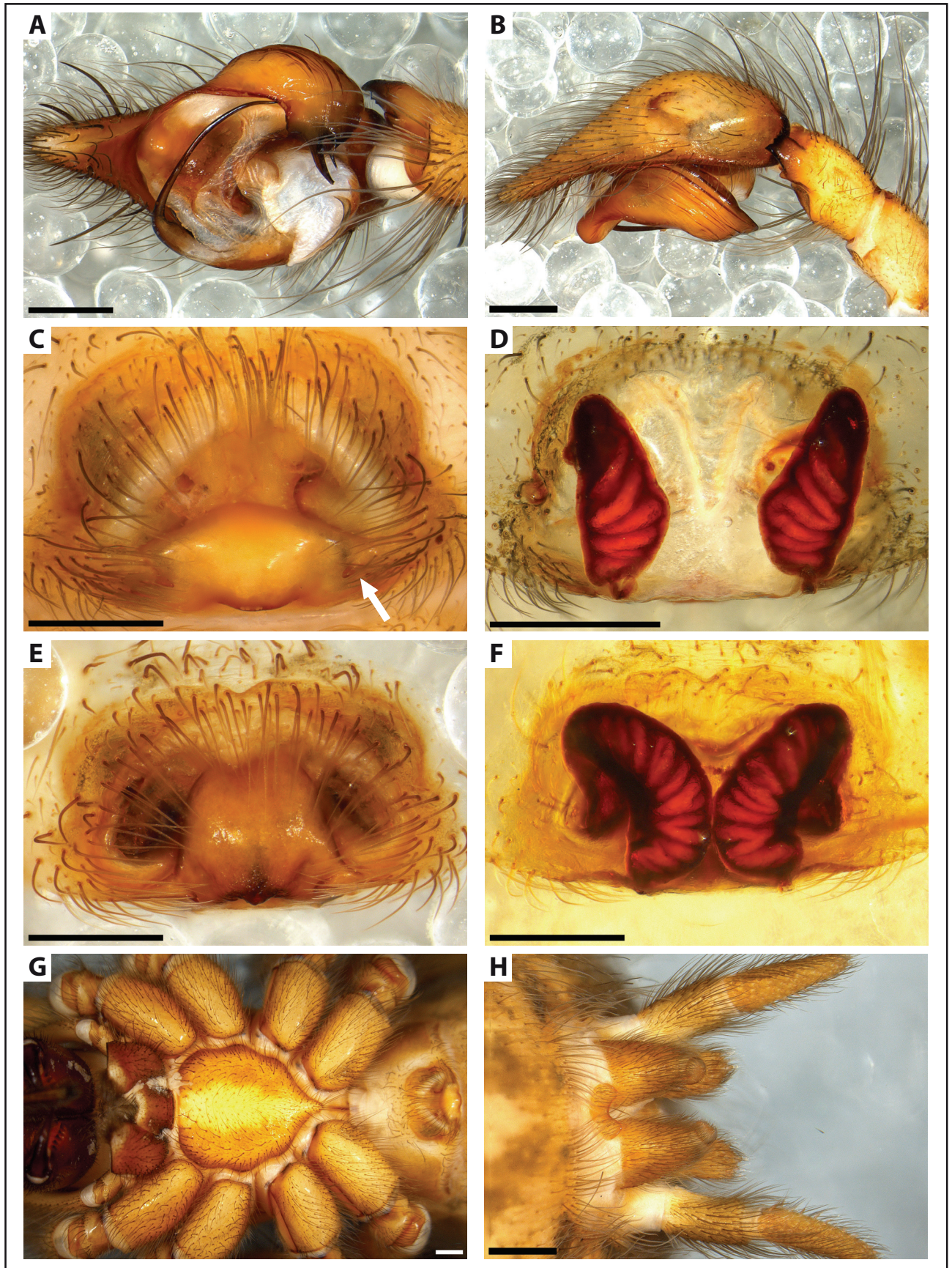


Figure 10: *Eratigena agrestis* (A -H). Male palp in ventral (A) and retrolateral view (B); epigyne in ventral (C, white arrow pointing to a epigynal teeth) and vulva in dorsal view (D); variation of epigyne in ventral (E) and vulva in dorsal view (F); sternum, ventral (G); spinnerets, ventral (H). Scale = 0.5 mm.

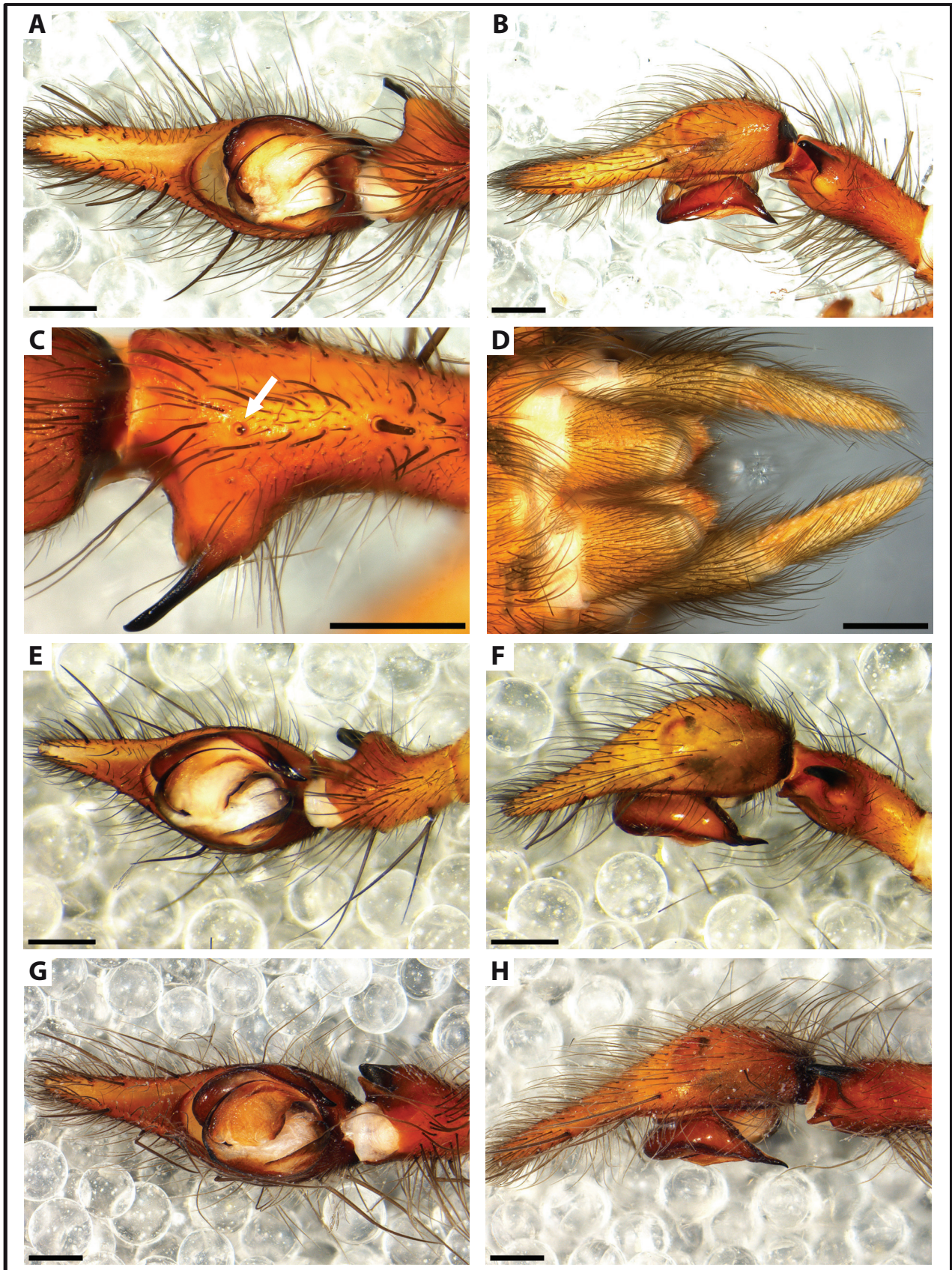


Figure 11: Males of the *Eratigena atrica* - complex. *Eratigena atrica* (A -D), *Eratigena saeva* (E -F) and *Eratigena duellica* (G -H). Left male palps in ventral (A, E, G) and retrolateral view (B, F, H); tibia in dorsal view (C) with short dorsal spike (white arrow); spinnerets, ventral view (D). ALS: anterior lateral spinnerets; BS: basal segment of PLS; COL: colulus; DS: distal segments of PLS; PLS: posterior lateral spinnerets; PMS: posterior median spinnerets. Scale = 0.5 mm.

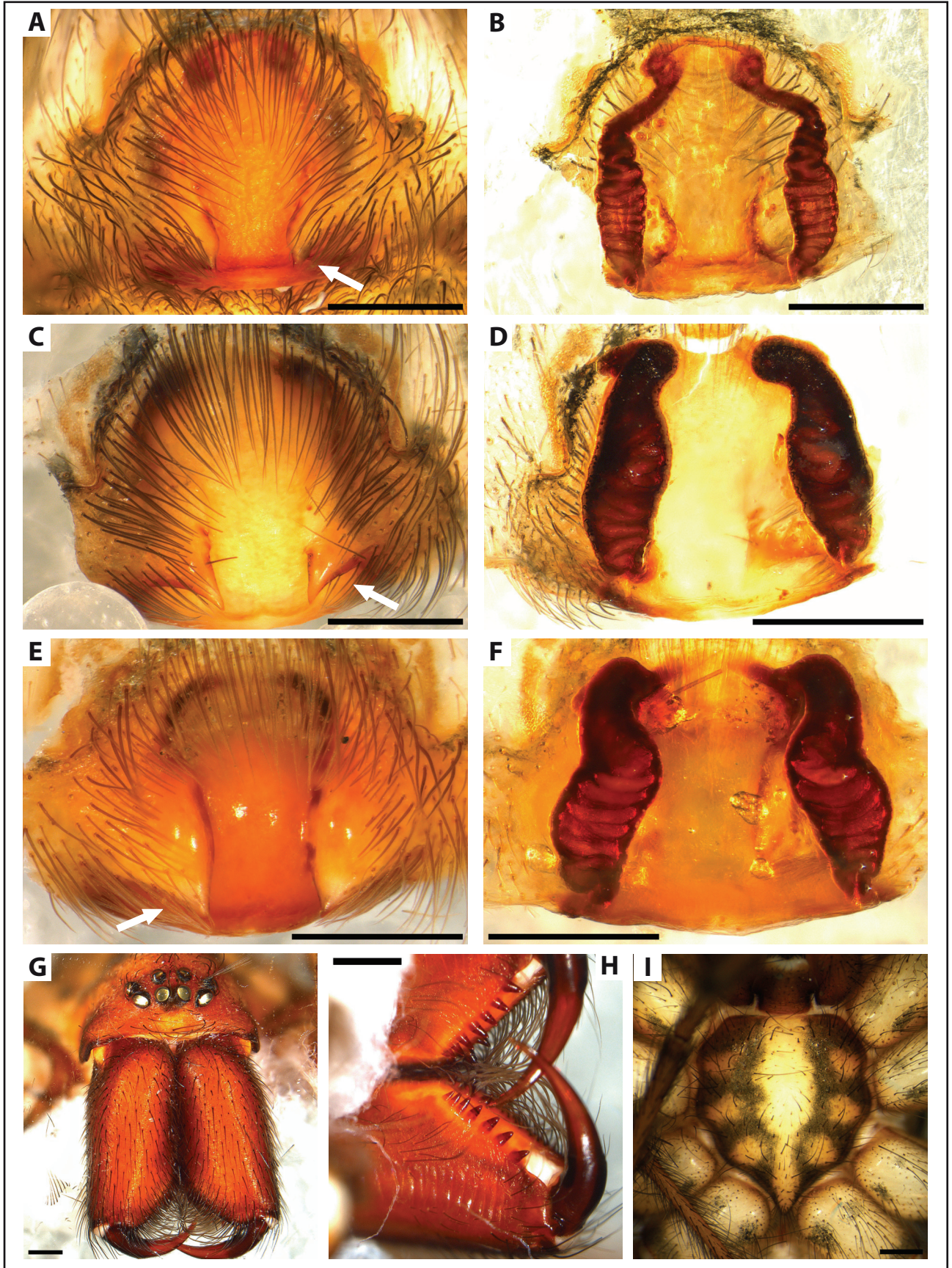


Figure 12: Females of the *Eratigena atrica* - complex. *Eratigena atrica* (A -B, G -H), *Eratigena saeva* (C -D, I) and *Eratigena duellica* (E -F). Epigynes in ventral view (A, C, E) with “pseudo teeth” (white arrows); vulvae, dorsal view (B, D, F); face and chelicerae, frontal view (G); cheliceral margins with teeth, ventral view (H); sternum, ventral view (I). Scale = 0.5 mm.

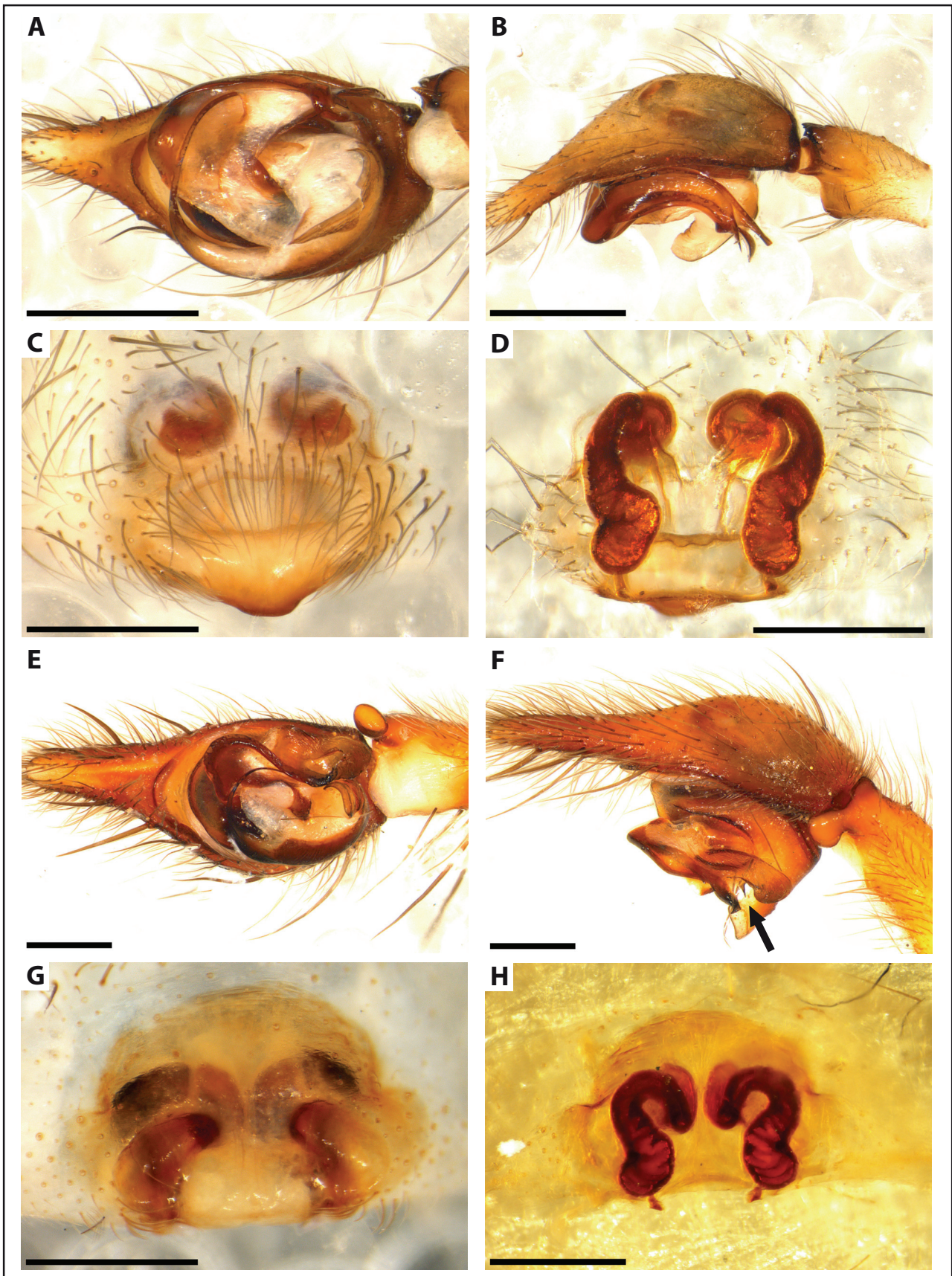


Figure 13: *Eratigena fuesslini* (A -D) and *Eratigena montigena* (E -H). Male left palp in ventral (A, E) and retrolateral view (B, F); epigyne in ventral (C, G) and vulva in dorsal view (D, H). Scale = 0.5 mm.

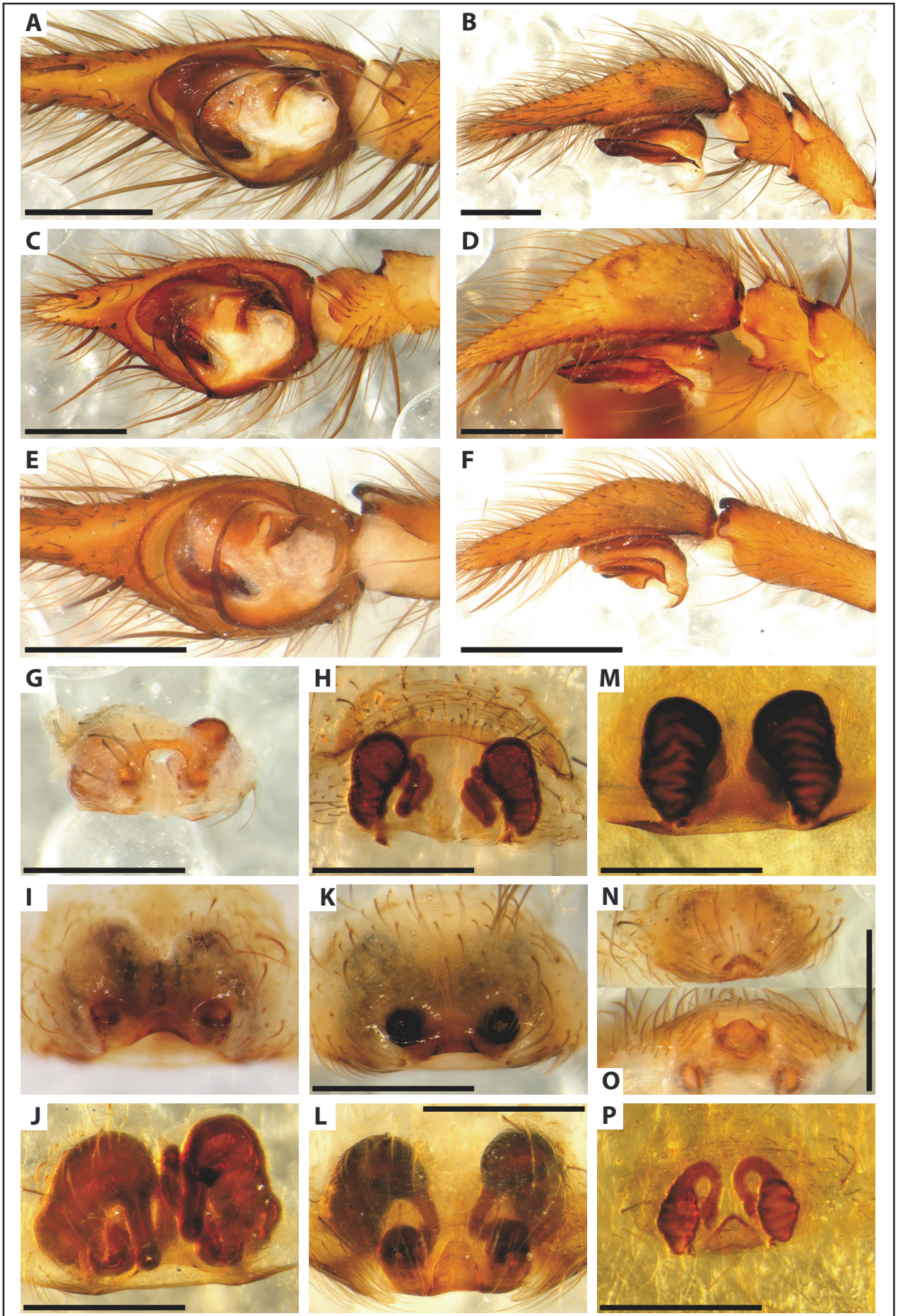


Figure 14: *Eratigena feminea* (A -B, G -H) and *Eratigena bucculenta sensu lato* (C -F, I -P). Left male palps in ventral (A, C, E) and retrolateral view (B, D, F); epigynes in ventral (G, I, K, N) and posterior view (O); vulvae in ventral (J, L) or dorsal view (H, M, P). Scale = 0.5 mm (scale for I is missing).

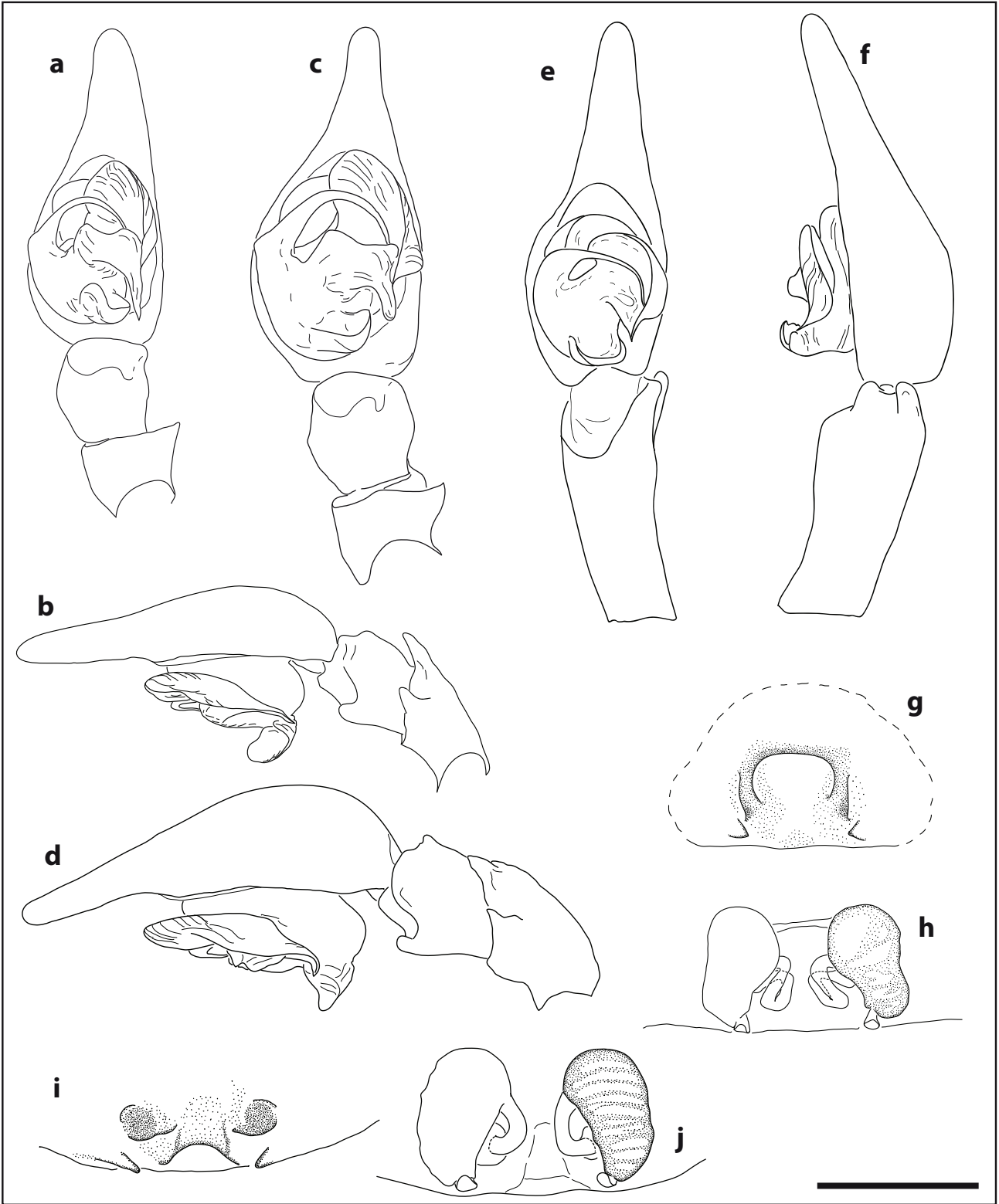


Figure 15: *Eratigena feminea* (a -b, g -h) and *Eratigena bucculenta sensu lato* (c -f, i -l). Left male palps in ventral (a, c, e) and retrolateral view (b, d, f); epigynes, ventral view (g, i, k); vulvae, dorsal view (h, j, l). Scale = 0.5 mm.

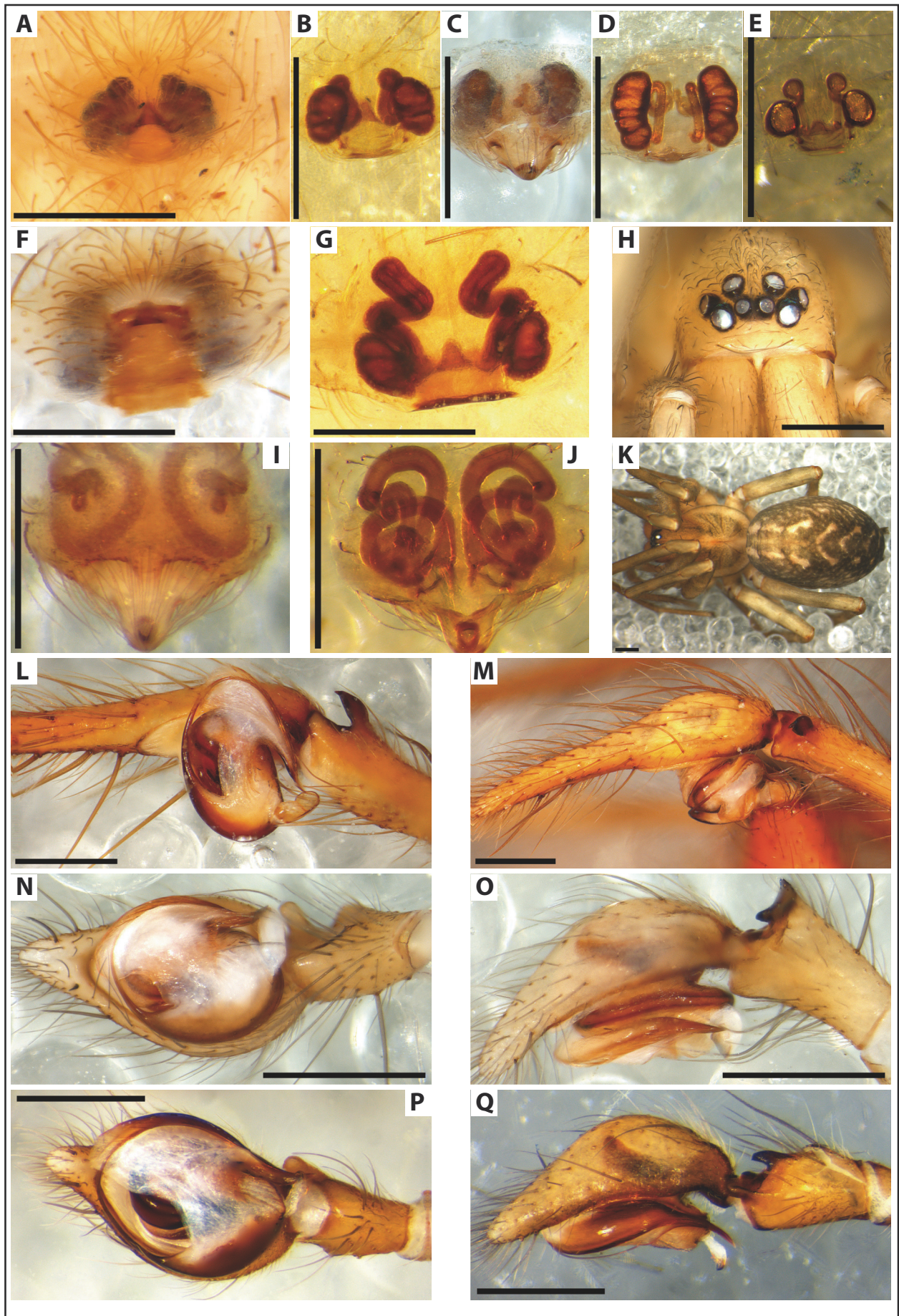


Figure 16: *Eratigena herculea* (A -B), *E. hispanica* (F -G, L -M), *E. arganoi* (C -D, H, N -O), *E. sardoa* (I -J, P -Q) and *E. sicana* (E, K). Female epigyne in ventral (A, C, F, I) and vulva in dorsal view (B, D -E, G, J); male left palp in ventral (L, N, P) and retrolateral view (M, O, Q); frontal face of male *E. arganoi* (H); habitus of female *E. sicana* (K). Scale = 0.5 mm.

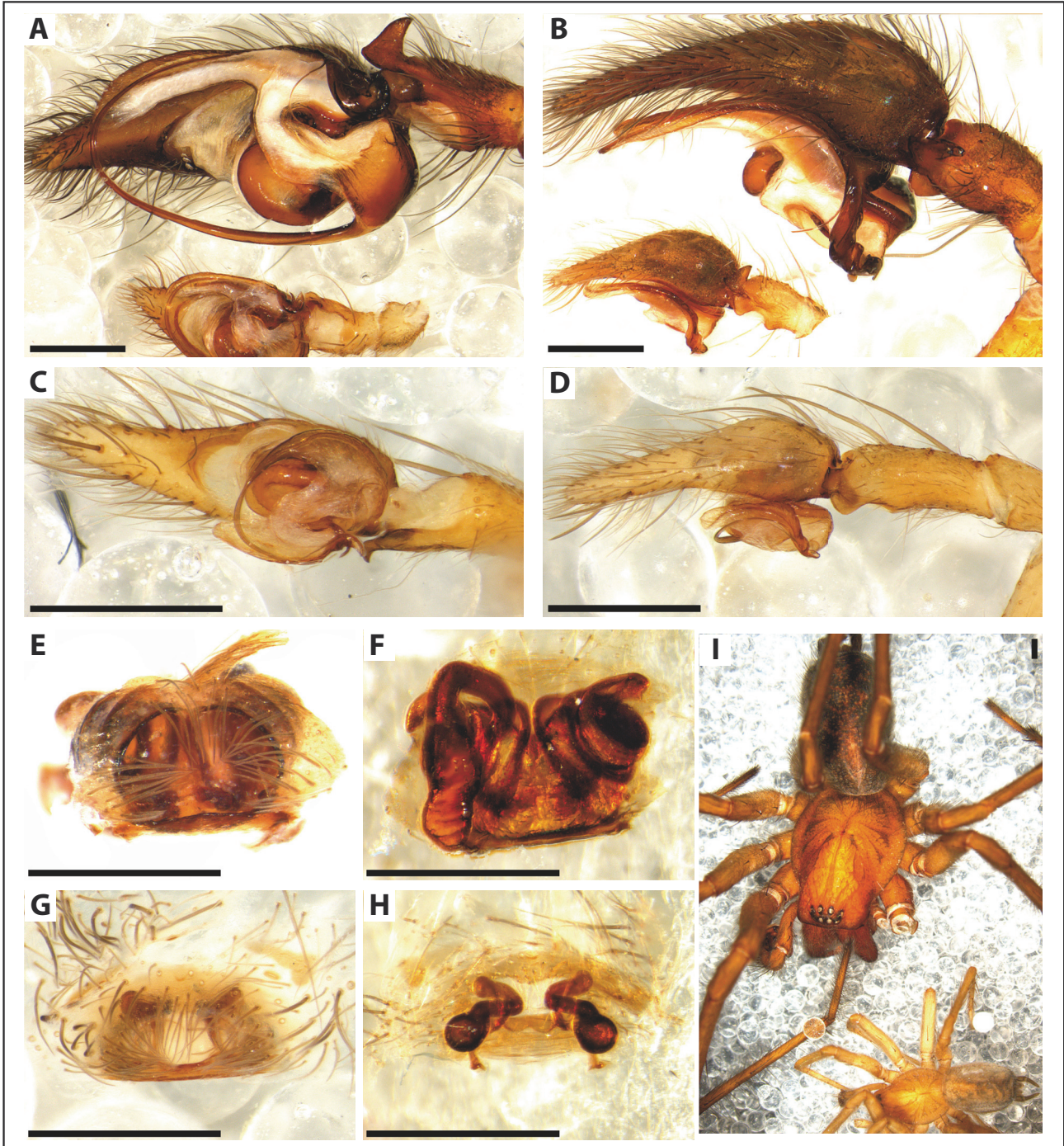


Figure 17: *Eratigena picta* (A -B, E -F, I) and *E. balearica* (C -D, G -H). Male left palp in ventral (A, C) and retrolateral view (B, D); epigyne in ventral (E, G) and vulva in dorsal view (F, H); habitus of two male of *E. picta* (size variation!). Scale = 0.5 mm.

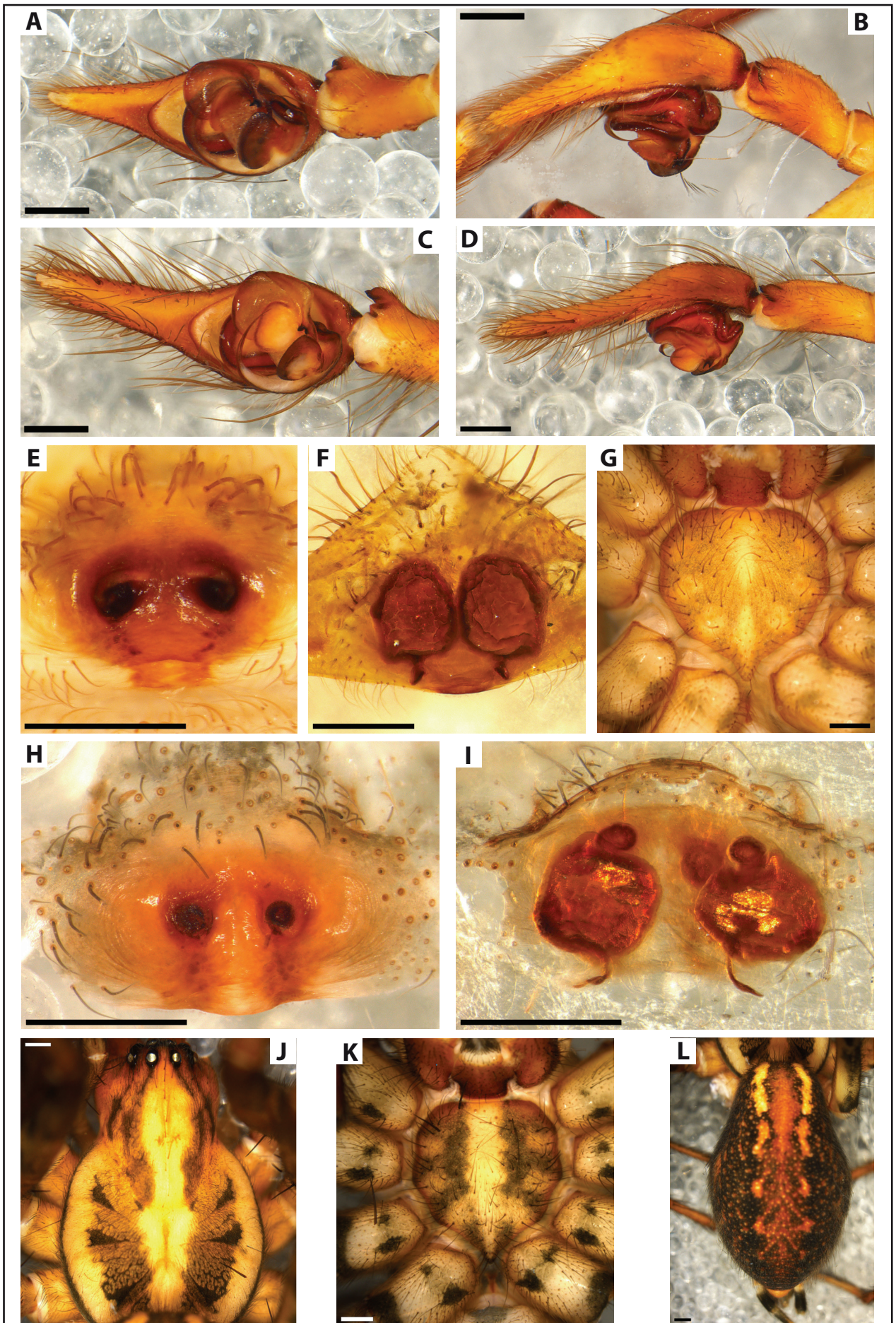


Figure 18: *Eratigena inermis* (A -B, E -G) and *Eratigena vomeroi* (C -D, H -L). Left male palps in ventral (A, C) and retrolateral view (B, D); epigynes, ventral view (E, H); cleared vulvae, dorsal view (F, I); sterna, ventral view (G, K); carapace (J) and opisthosoma (L), dorsal view. Scale = 0.5 mm.

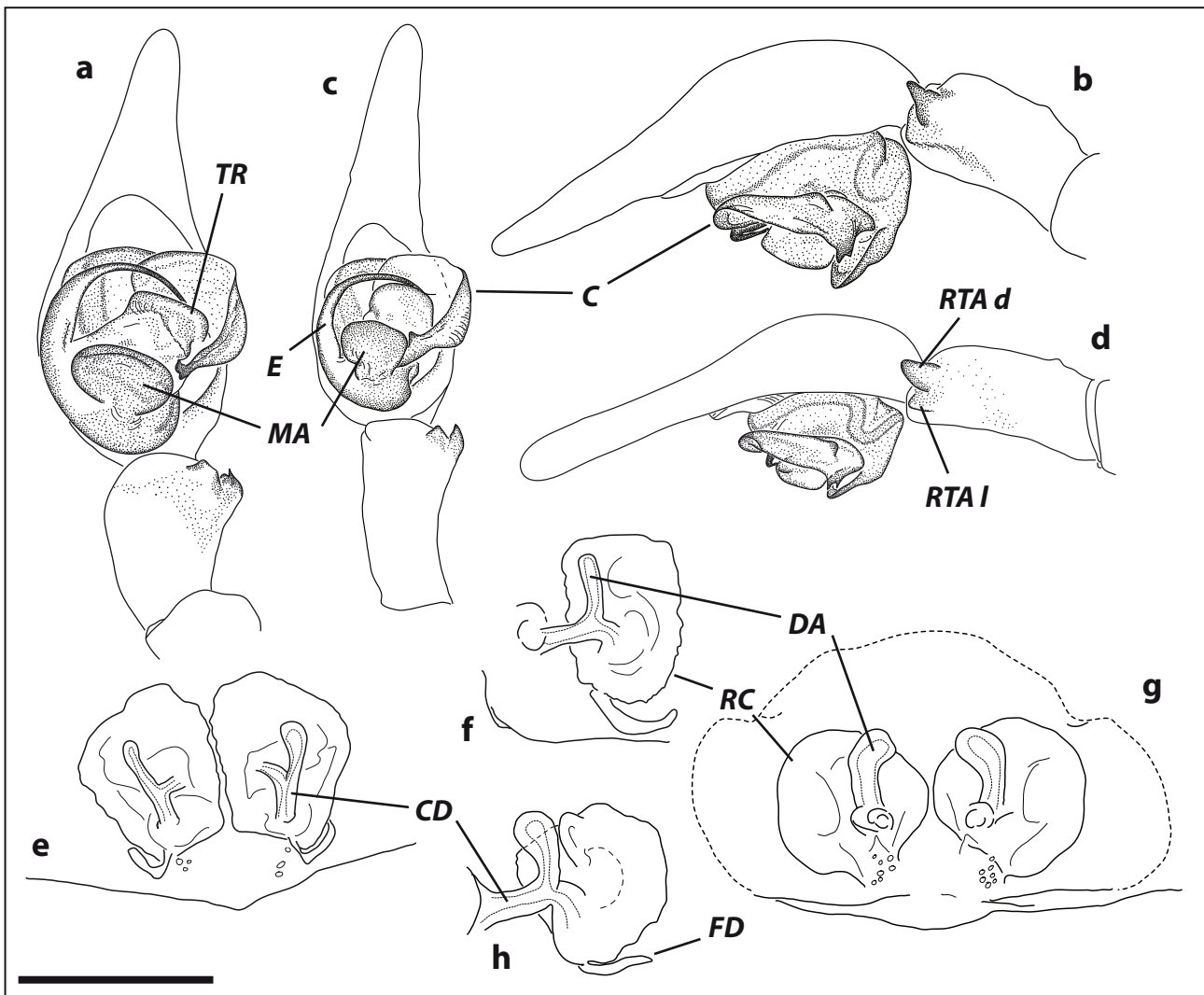


Figure 19: *Eratigena inermis* (a -b, e -f) and *Eratigena vomeroi* (c -d, g -h). Left male palps in ventral (a, c) and retrolateral view (b, d); vulvae in ventral (e, g) and lateral view (f, h). E: embolus; C: conductor; CD: copulatory duct; DA: dorsal appendages on CD; FD: fertilisation duct; MA: median apophysis; RC: receptaculum; RTA d: dorsal branch of retrolateral tibia apophysis; RTA l: lateral branch of retrolateral tibia apophysis; TR: transversal ridge; Scale = 1 mm (a -d) or 0.5 mm (e -h).

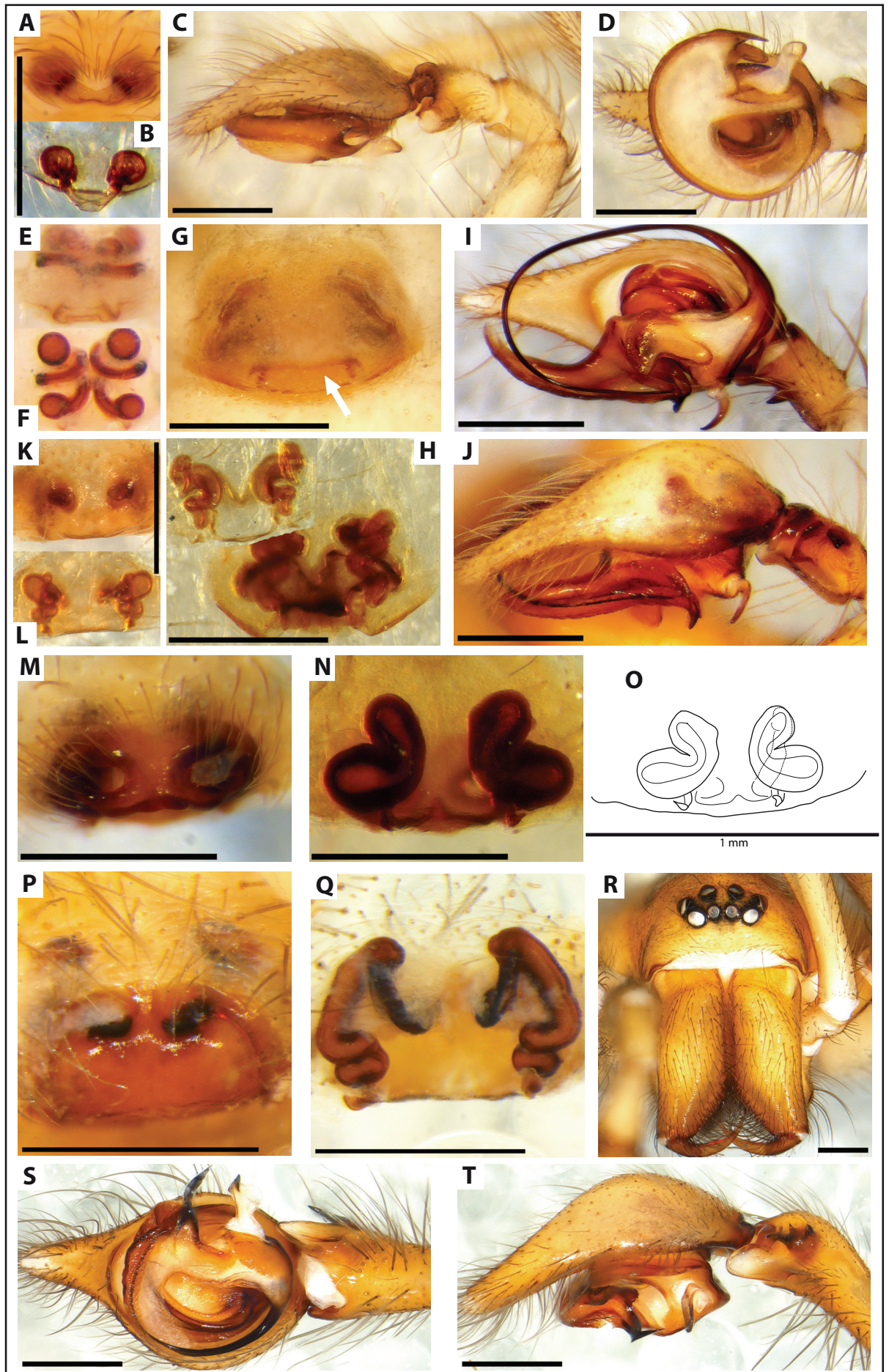


Figure 20: *Tegenaria achaea* (A -B), *T. argaieca* (C -F), *T. armigera* (G -J), *T. hasperi* (K -L) and *T. montiszasensis* n. sp. (M -O); *T. dalmatica* (P -T). Male left palp in lateral (C, J, S), and ventral view (D, I, T); epigyne in ventral (A, E, G, K, M, P) and vulva in dorsal view (B, F, H, L, N, Q); comparison of vulvae of small and large “forms” of *T. armigera* (H); schematic drawing of vulva of *T. montiszasensis* n. sp.. Scale = 0.5 mm (epigyne and vulva of *T. argaieca*, E -F) without scale, photos from syntype taken with digital camera through the oculars).

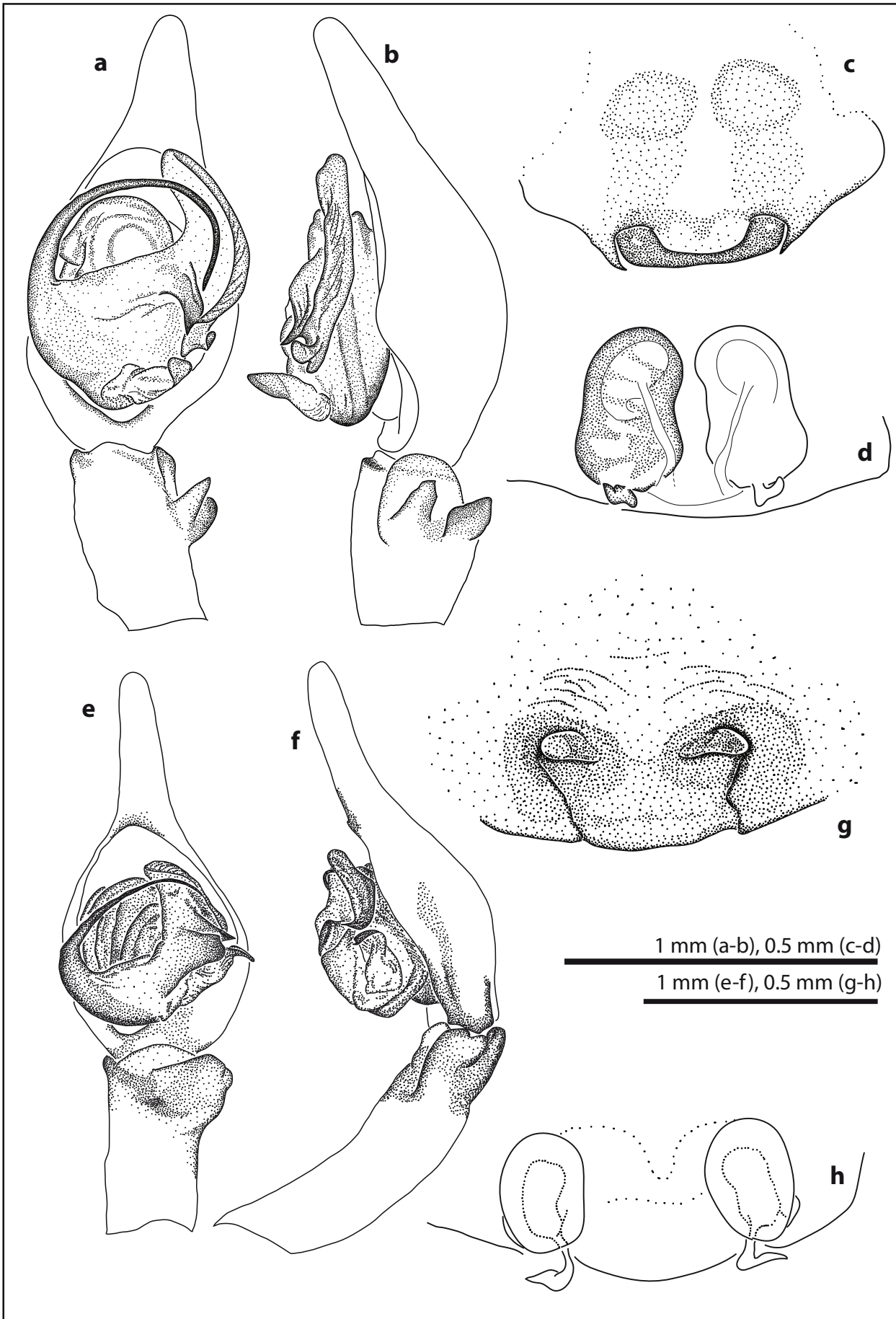


Figure 21: *Tegenaria annae* n. sp. (a-d) and *Tegenaria ariadnae* (e-h). Male left palp in ventral (a, e) and retrolateral view (b, f); epigyne in ventral (c, g), vulva in dorsal view (d, h). Scale = 0.5 mm (b-c, g-h), 1 mm (a-b,

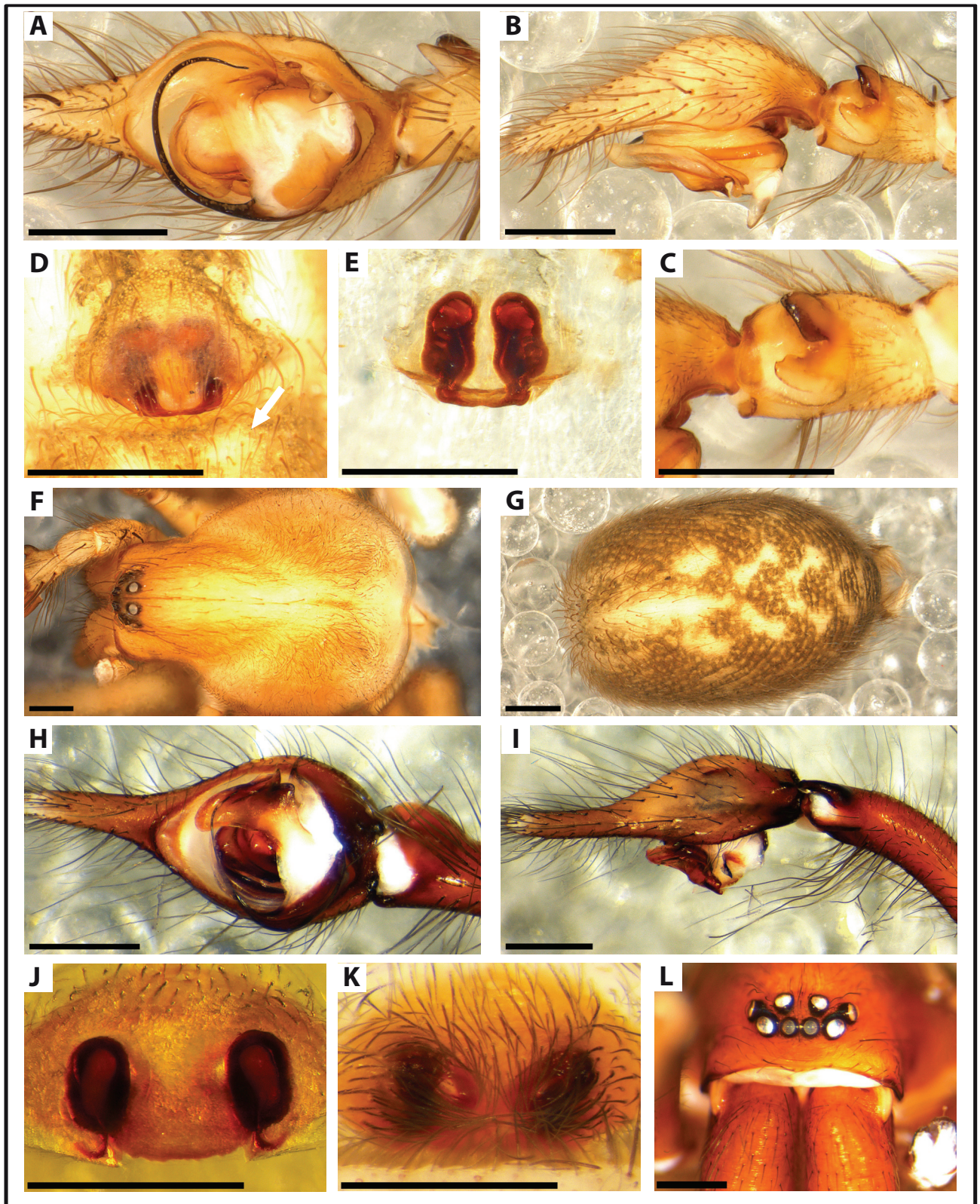


Figure 22: *Tegenaria annae* n. sp. (A -G) and *Tegenaria ariadnae* (H -L). Male left palp in ventral (A, H) and retrolateral view (B, I); RTA in retrolateral view (C); epigyne in ventral (D -J), vulva in dorsal view (E -K); cephalothorax (F) and opisthosoma (G) in dorsal view; face of male in frontal view (L). Scale = 0.5 mm.

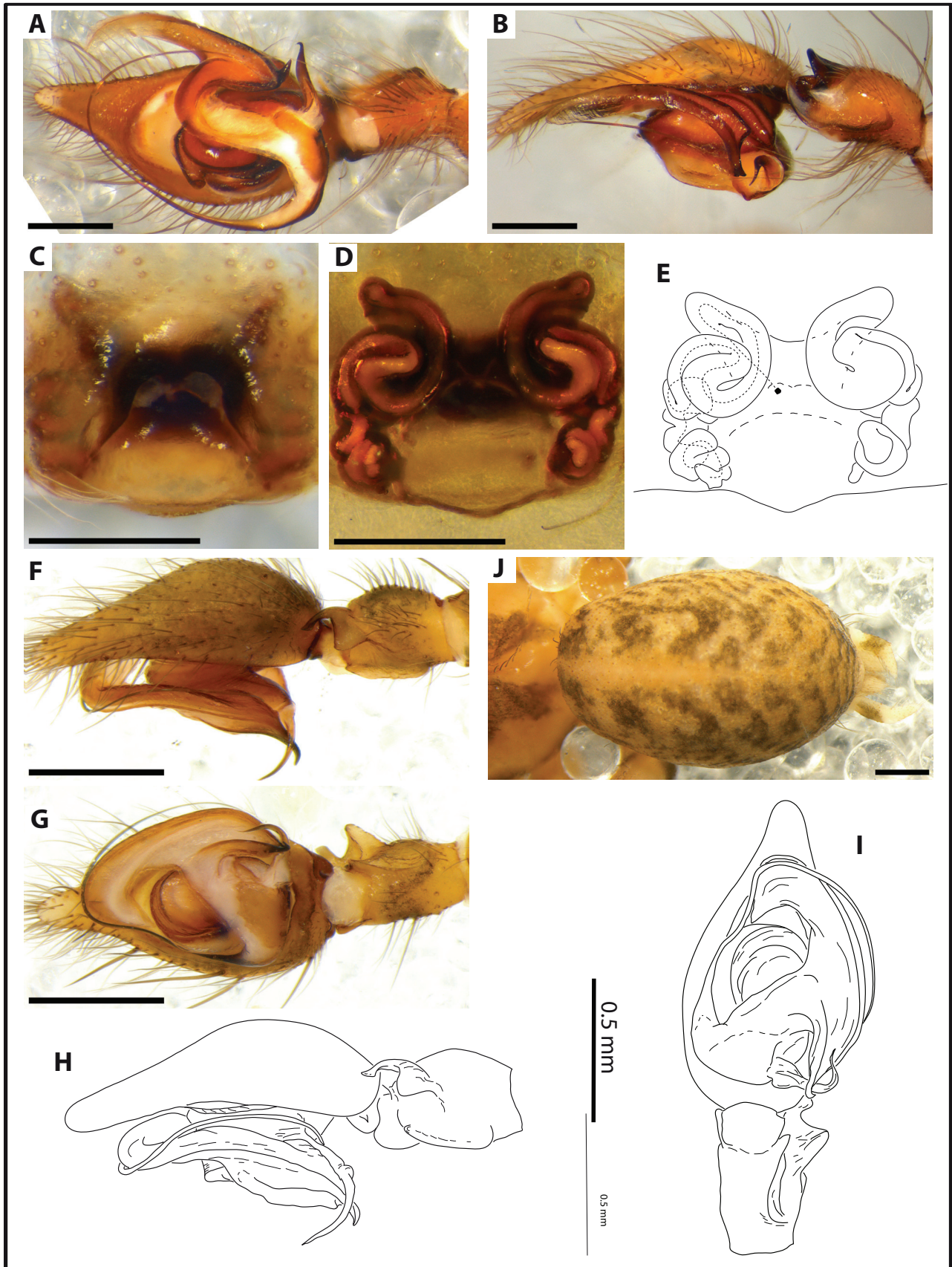


Figure 23: *Tegenaria annulata* (A -E) and *Tegenaria schoenhoferi* n. sp. (F -J). Male left palp in ventral (A, G, I) and retrolateral view (B, F, H); epigyne in ventral (C), vulva in dorsal (D) and schematic view (E); opisthosoma, dorsal view (J). Scale = 0.5 mm.

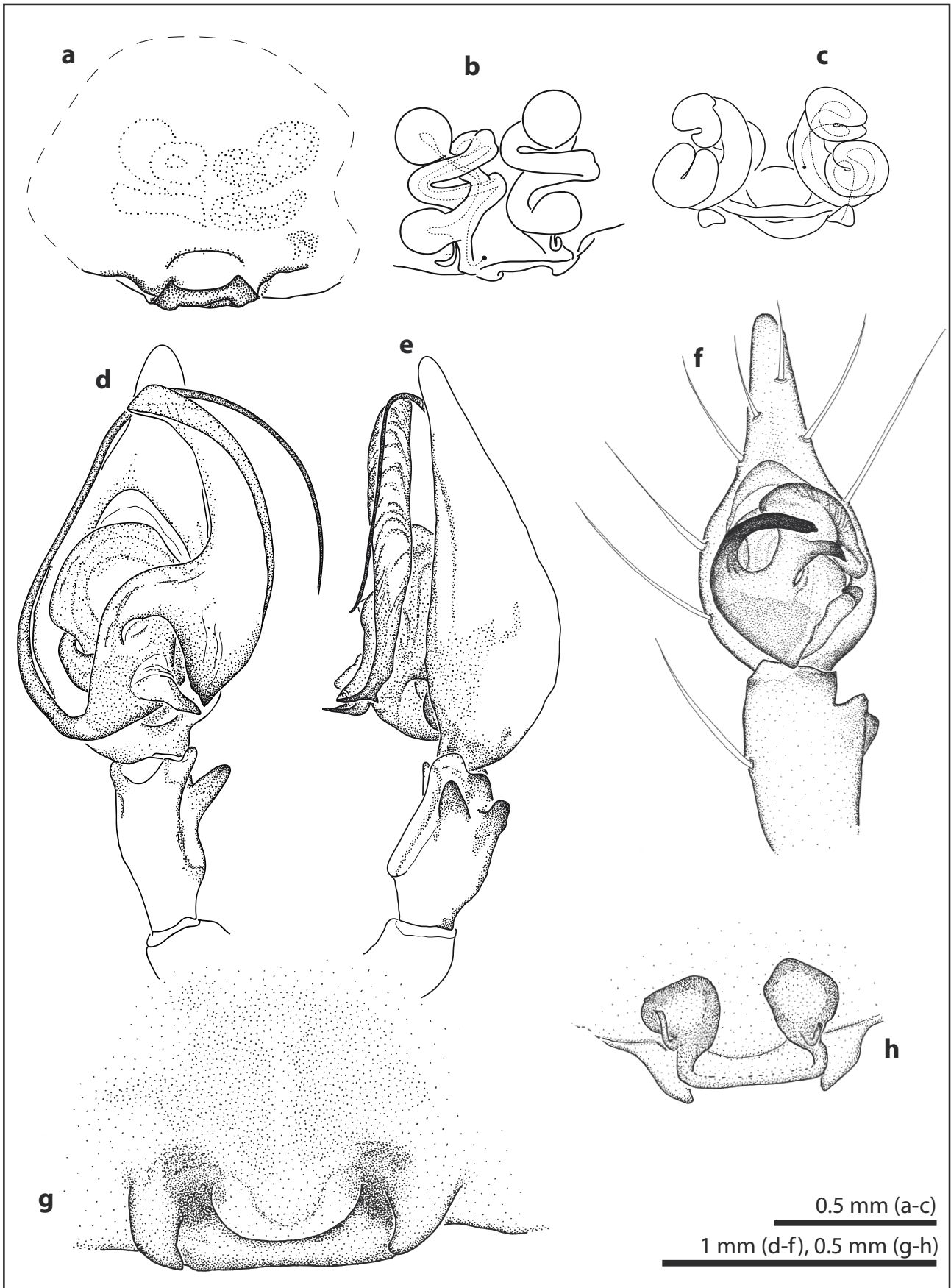


Figure 24: *Tegenaria argaica* (female paratype, a -b), *Tegenaria carensis* (c -e) and *Tegenaria domestica* (f -h); epigyne in ventral (a, g), vulva in dorsal view (b -c, h); left male palp in ventral (d, f) and retrolateral view (e).

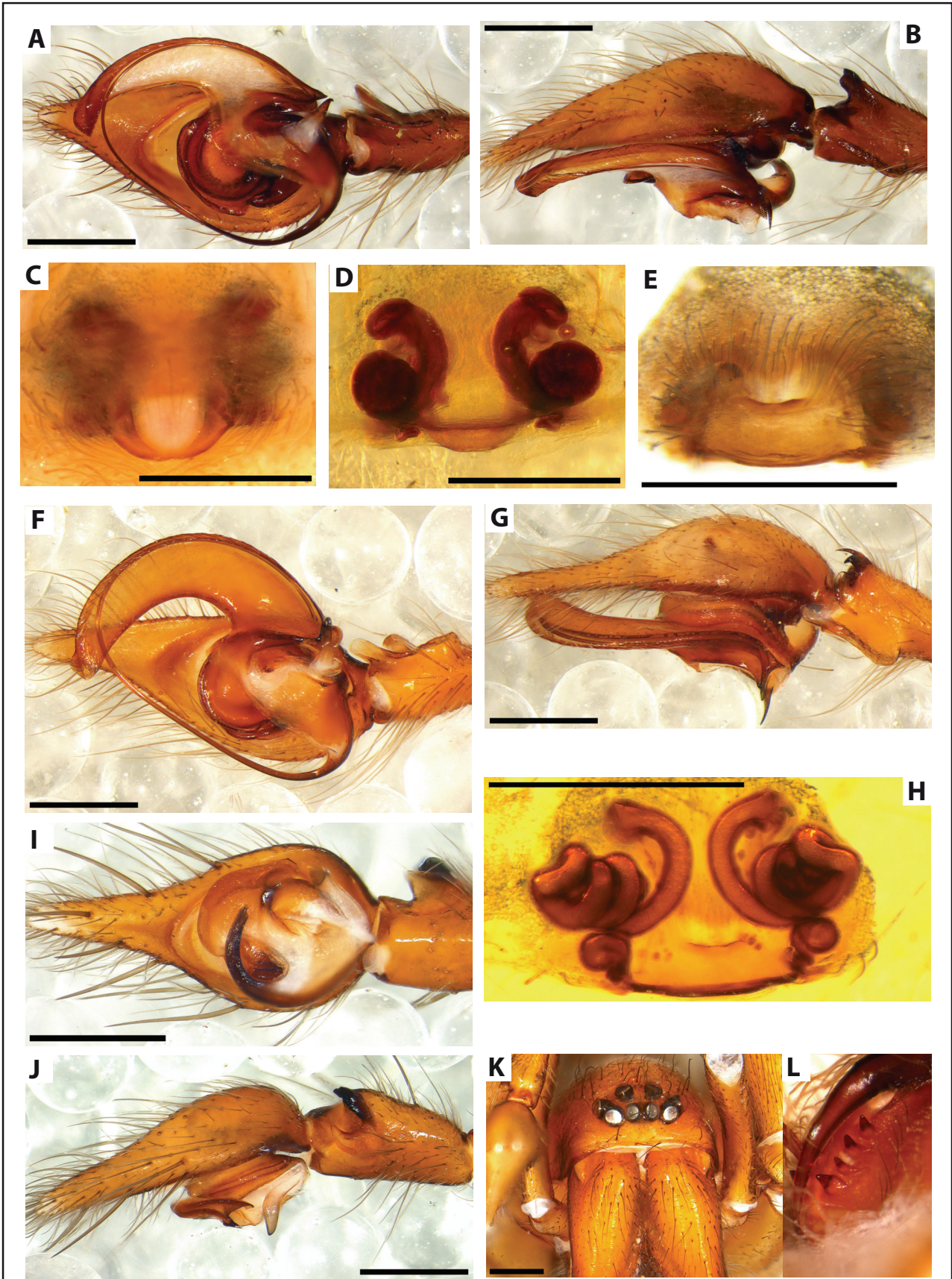


Figure 25: *Tegenaria carensis* (A -D) *Tegenaria ramblae* (E -H) and *Tegenaria domestica* (I -L). Male left palp in ventral (A, F, I) and retrolateral view (B, G, J); epigyne in ventral (C, E) and vulva in dorsal view (D, H); face (K), frontal, and chelicerae (L), ventral, of *Tegenaria domestica* male. Scale = 0.5 mm.

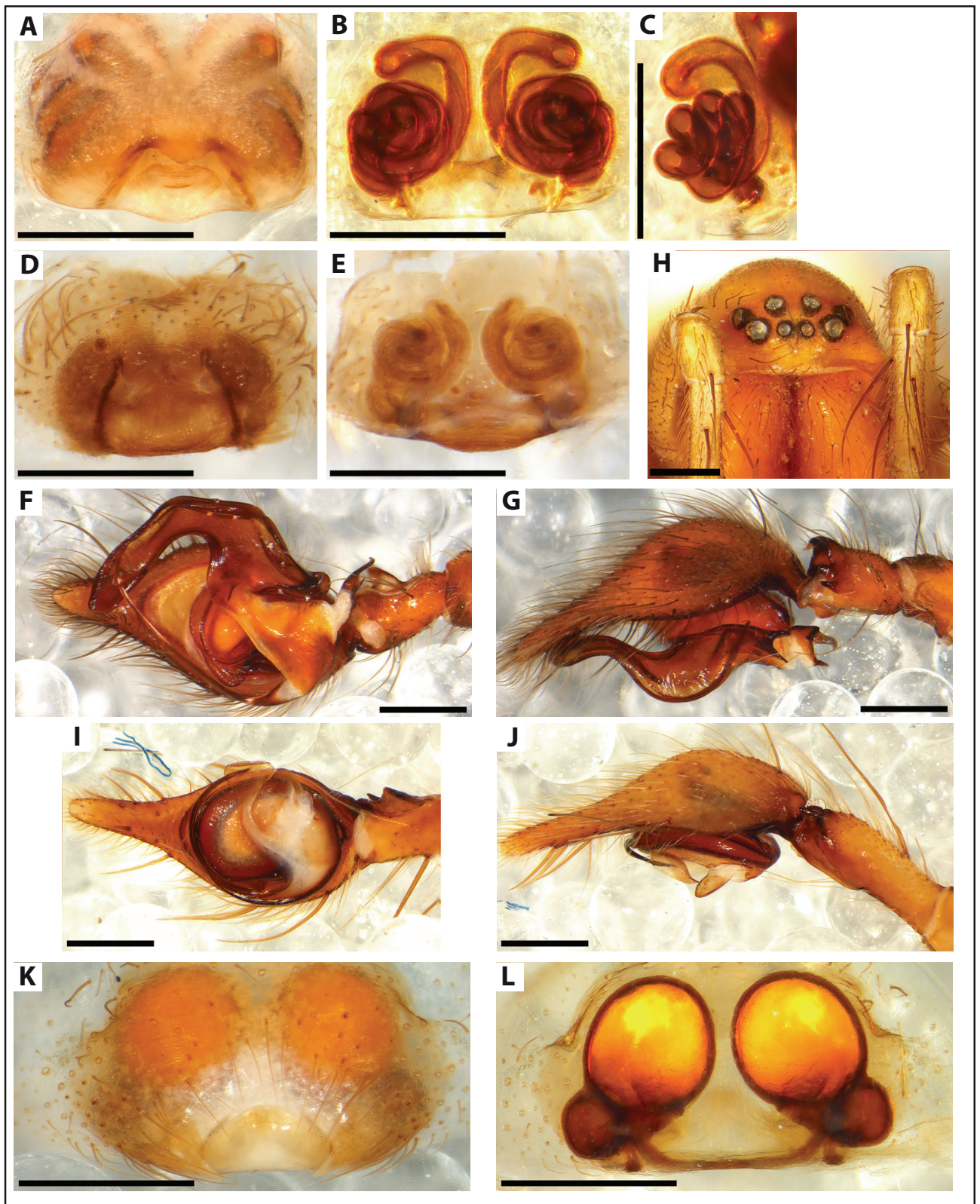


Figure 26: *Tegenaria bozhkovi* (A -C) and *Tegenaria campestris* (D -G), *Tegenaria racovitzai* (H -L). Male left palp in ventral (F, I) and retrolateral view (G, J); epigyne in ventral (A, D, K), vulva in dorsal (B, E, L) and lateral view (C); face of female *T. racovitzai* (H). Scale = 0.5 mm.

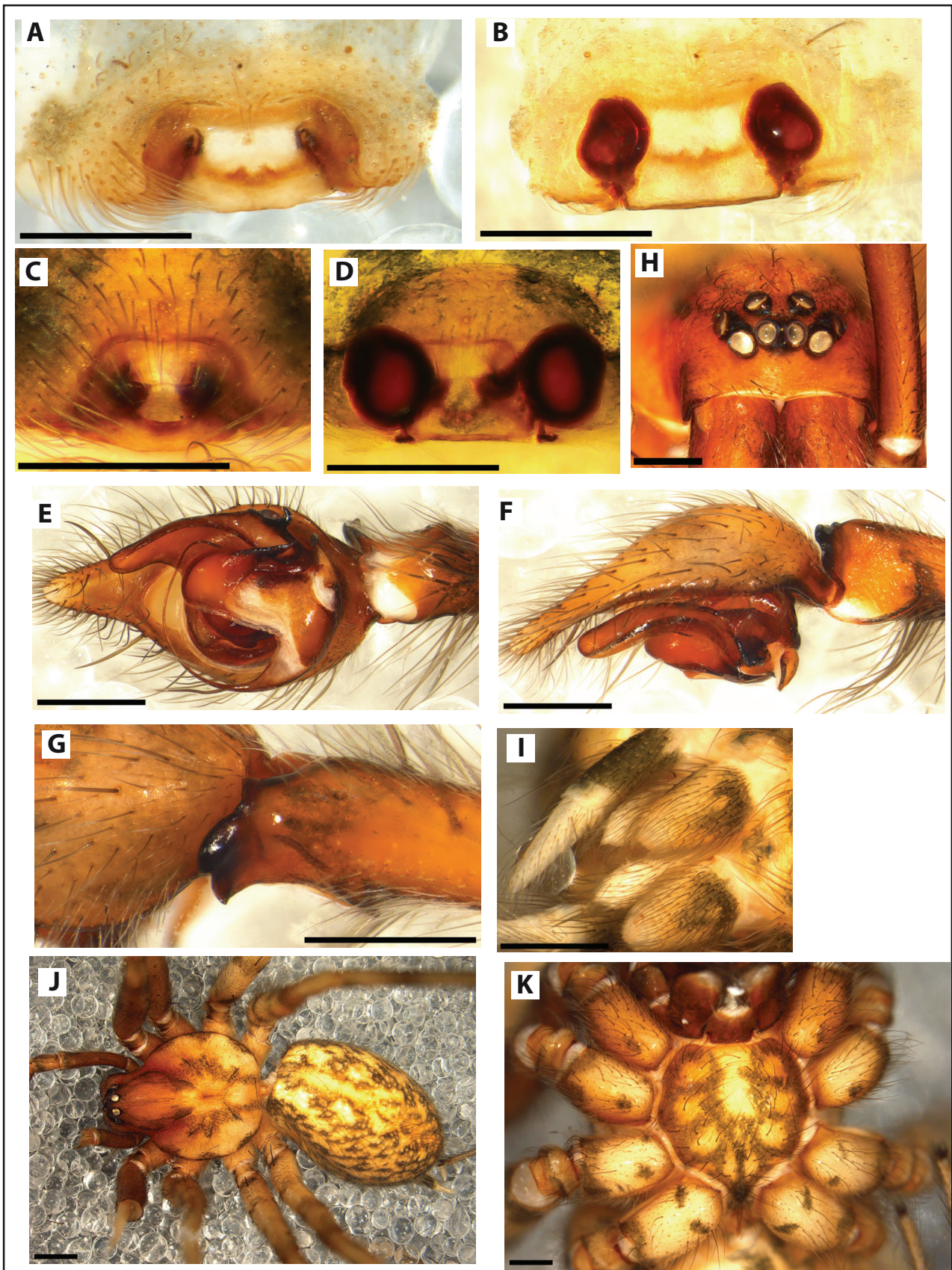


Figure 27: *Tegenaria capolongoi* (A -B) and *Tegenaria parmenidis* (C -K). Male left palp in ventral (E), retrolateral (F) and dorsal (only tibia with RTA, G) view; epigyne in ventral (A, C), vulva in dorsal view (B, D); face of male *T. parmenidis*, frontal (H); spinnerets, ventral view (I); habitus (J) of male *T. parmenidis*, dorsal view, and sternum (K), ventral view. Scale = 0.5 mm, except for J scale = 1 mm.

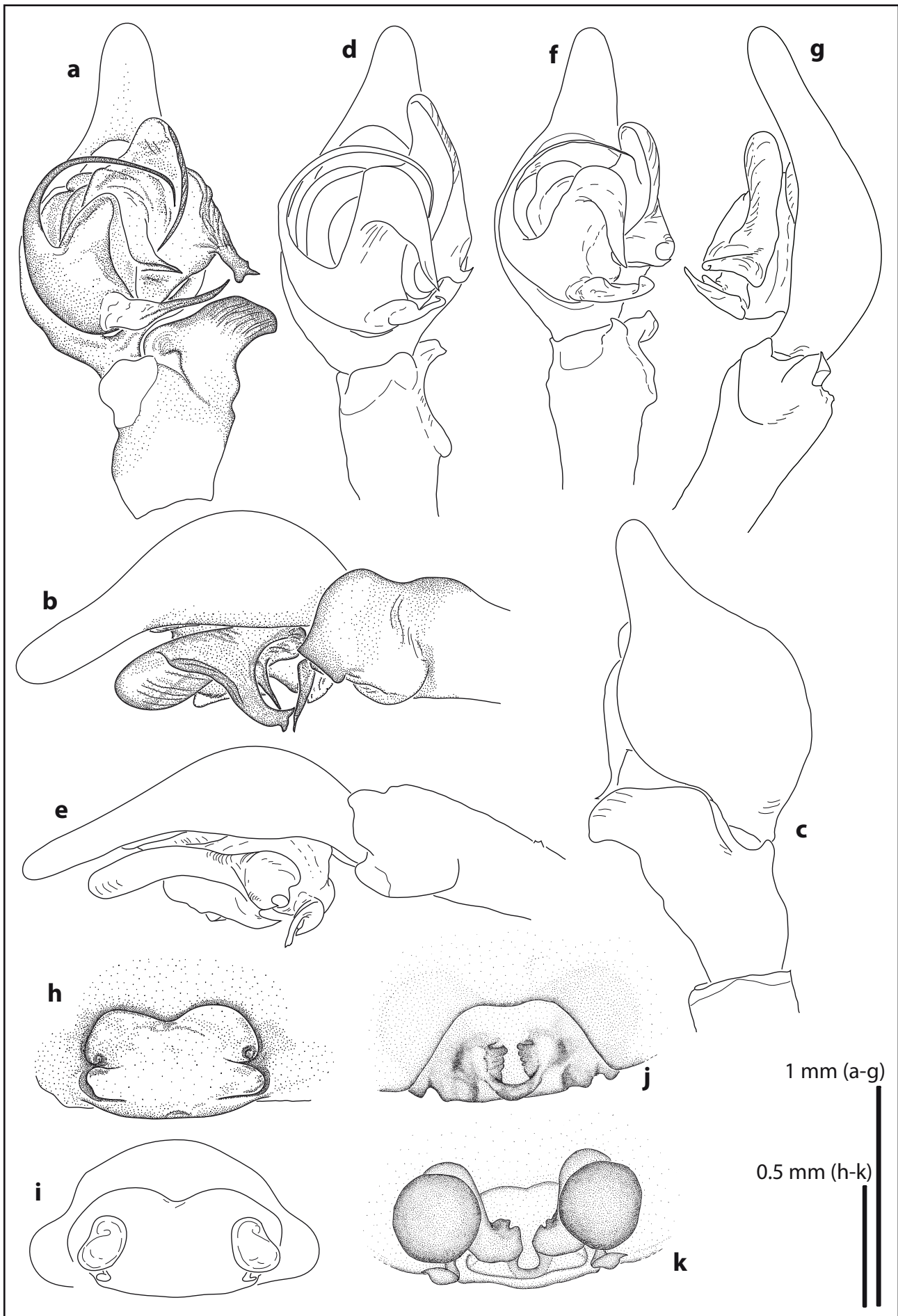


Figure 28: *Tegenaria circeoensis* n. sp. (a -c, h -i), *Tegenaria parmenidis* (d -e, j -k) and *Tegenaria sbordonii* (f -g). Male left palp in ventral (a, d, f), lateral (b, e, g), and dorsal (c) view; epigyne in ventral (h, j), vulva in dorsal view (i, k).

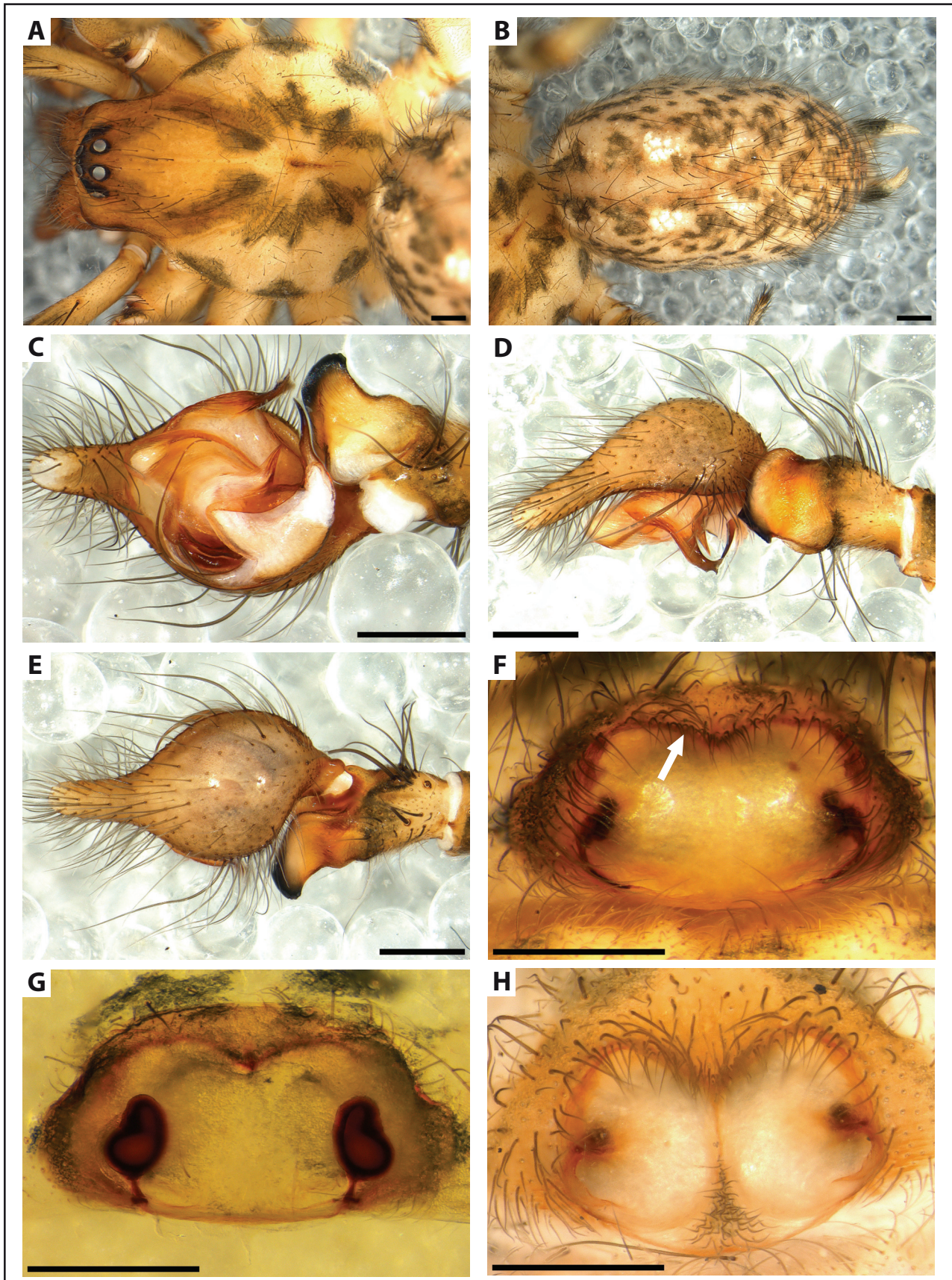


Figure 29: *Tegenaria circeoensis* n. sp. (A -H). Male cephalothorax (A) and opisthosoma (B); male palpus in ventral (C), retrolateral (D) and dorsal view (E); epigyne in ventral (F) and vulva in dorsal view (G); variation of epigyne in ventral view (H). Scale = 0.5 mm.

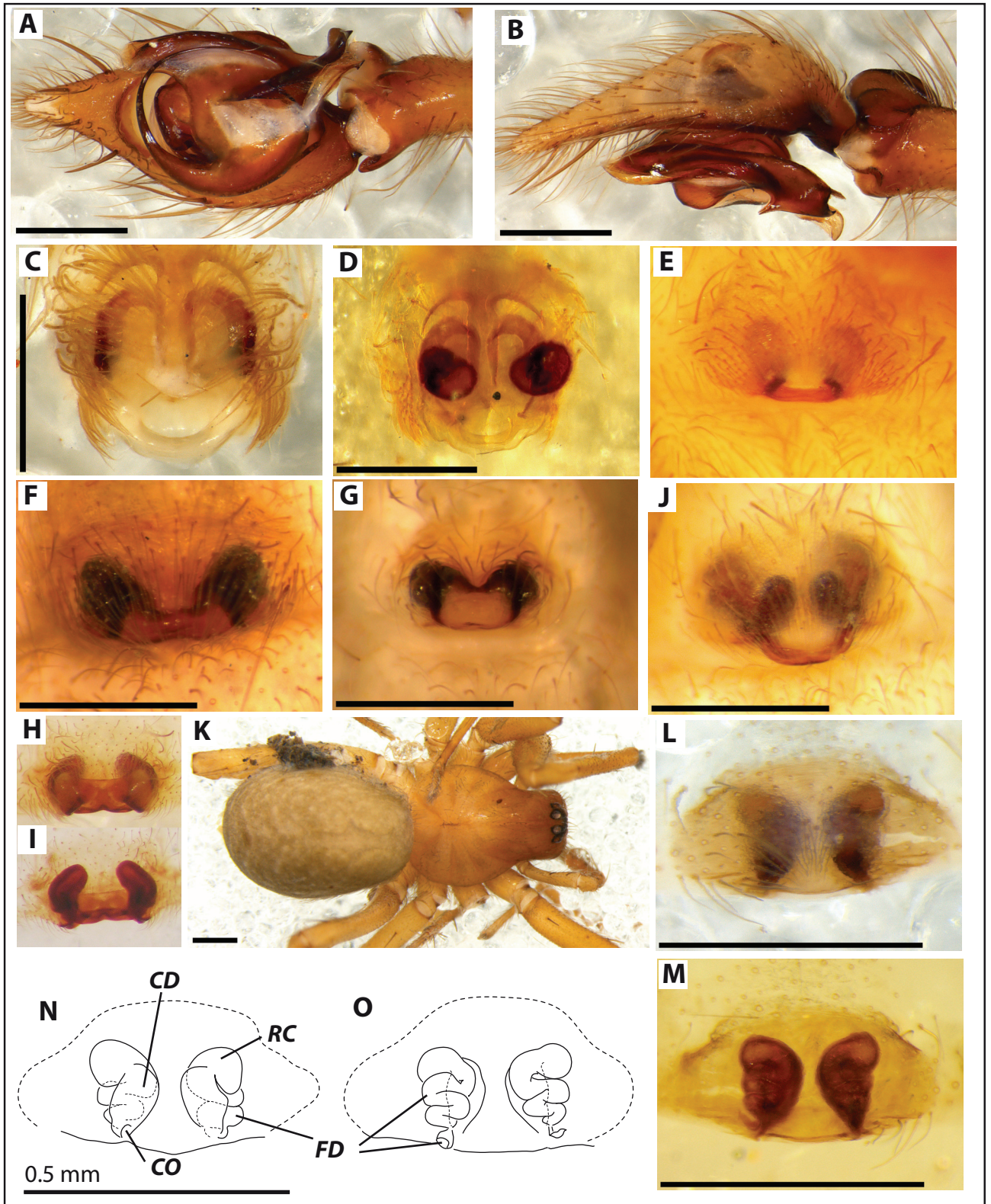


Figure 30: *Tegenaria hauseri* (A -D), *Tegenaria faniapollinis* (E), *Tegenaria pieperi* (F -G), *Tegenaria schmalfussi* (H - I), *Tegenaria percuriosa* (holotype of *T. bithyniae*, J), *Tegenaria croatica* **n. sp.** (K -O). Male left palp in ventral (A) and retrolateral view (B); female epigyne in ventral (C, E, F, H, J, L) or ventroposterior (G), vulva in dorsal view (D, I, M); habitus, dorsal view (K); schematic drawings of the vulva of *T. croatica* **n. sp.** in ventral (N) and dorsal view (O). CD: copulatory duct; CO: copulatory opening; FD: fertilisation duct; RC: receptaculum. Scale = 0.5 mm (no scale for *T. faniapollinis*, E, and *T. schmalfussi*, H -I) if not differently indicated.

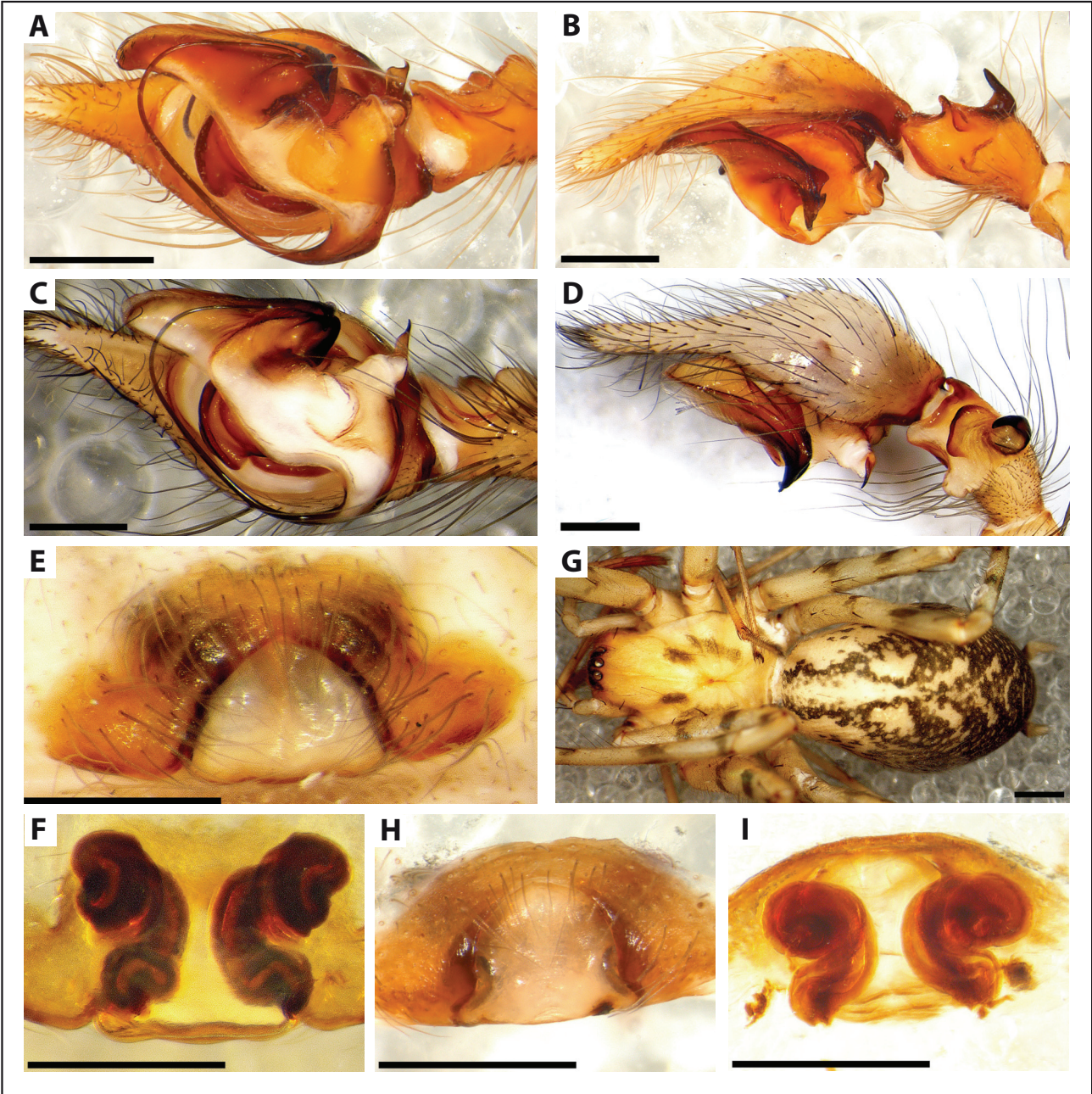


Figure 31: *Tegenaria eleonorae* (A -B, H -I) and *Tegenaria henroti* (C -G). Male left palp in ventral (A, C) and retrolateral view (B, D); female epigyne in ventral (E, H), vulva in dorsal view (I, F); habitus of female *T. henroti* (G). Scale = 0.5 mm (A -F, H -I) and 1 mm (G).

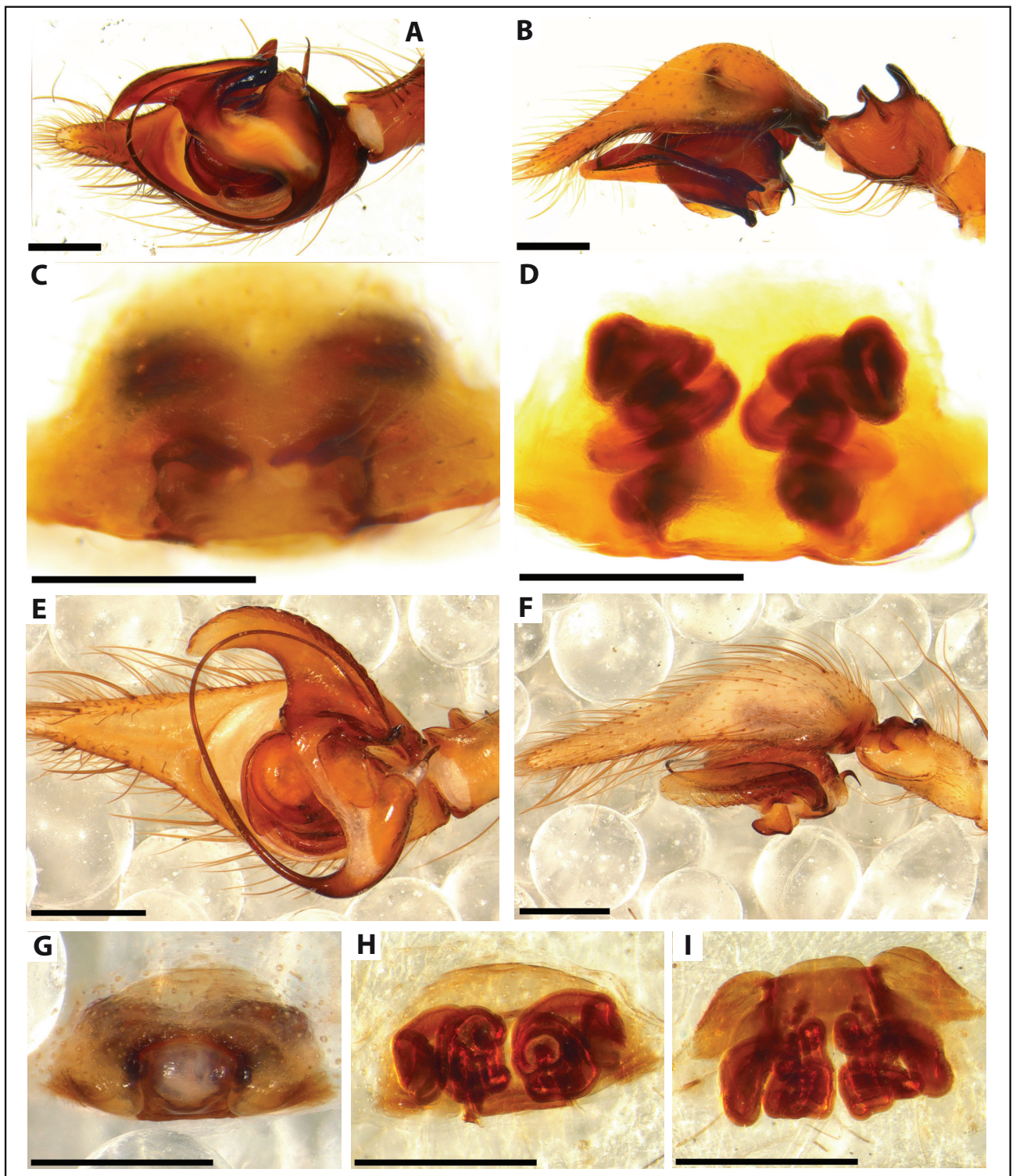


Figure 32: *Tegenaria femoralis* (A -D), *Tegenaria tyrrhenica* (E -I). Male left palp in ventral (A, E) and retrolateral view (B, F); female epigyne in ventral (C, G), vulva in dorsal (D, H) and anterior view (I). Scale = 0.5 mm.

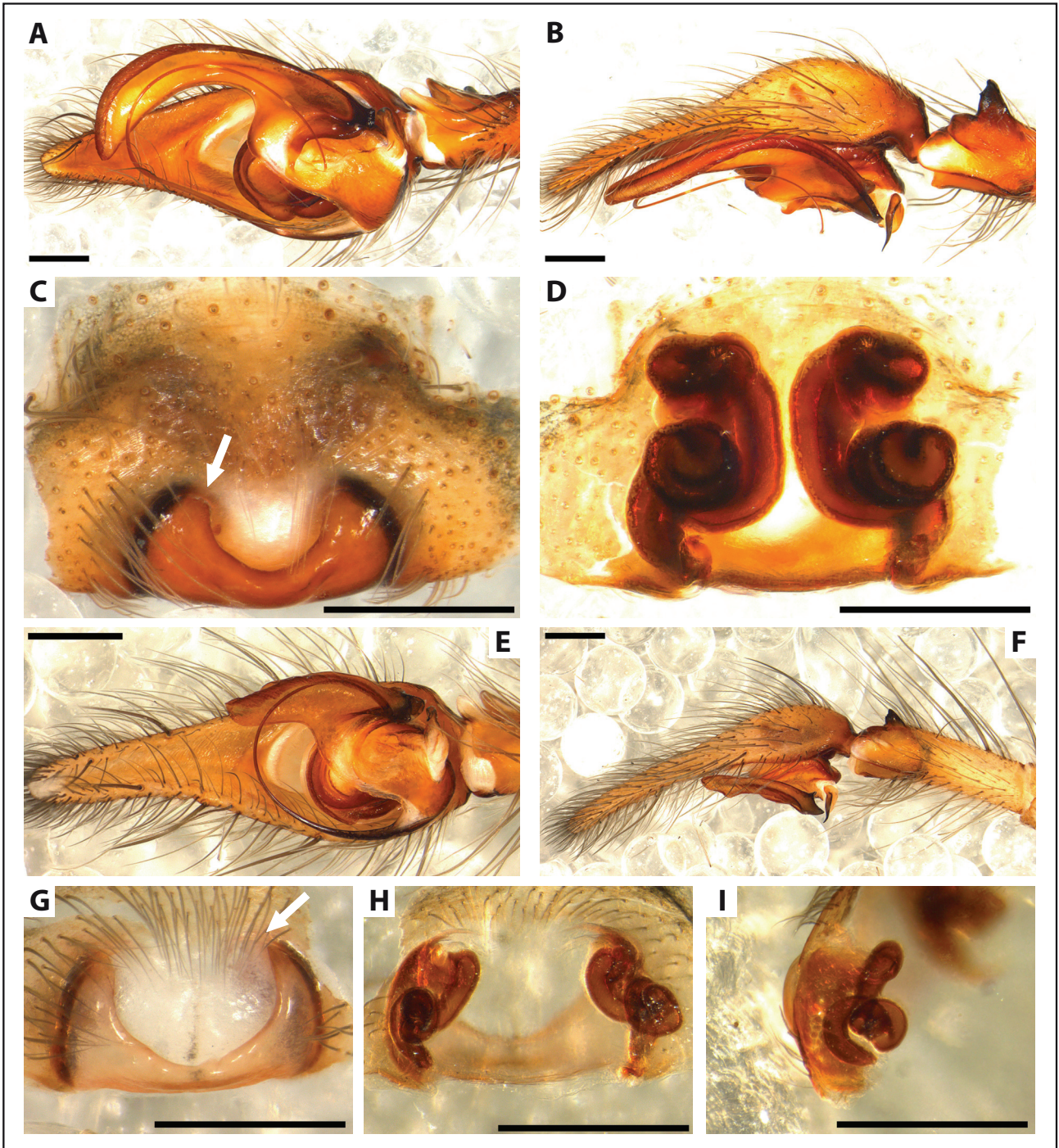


Figure 33: *Tegenaria ferruginea* (A -D) and *Tegenaria parietina* (E -I). Male left palp in ventral (A, E) and retrolateral view (B, F); epigyne in ventral (C, G) and vulva in dorsal (D, H) or lateral view (I). Scale = 0.5 mm.

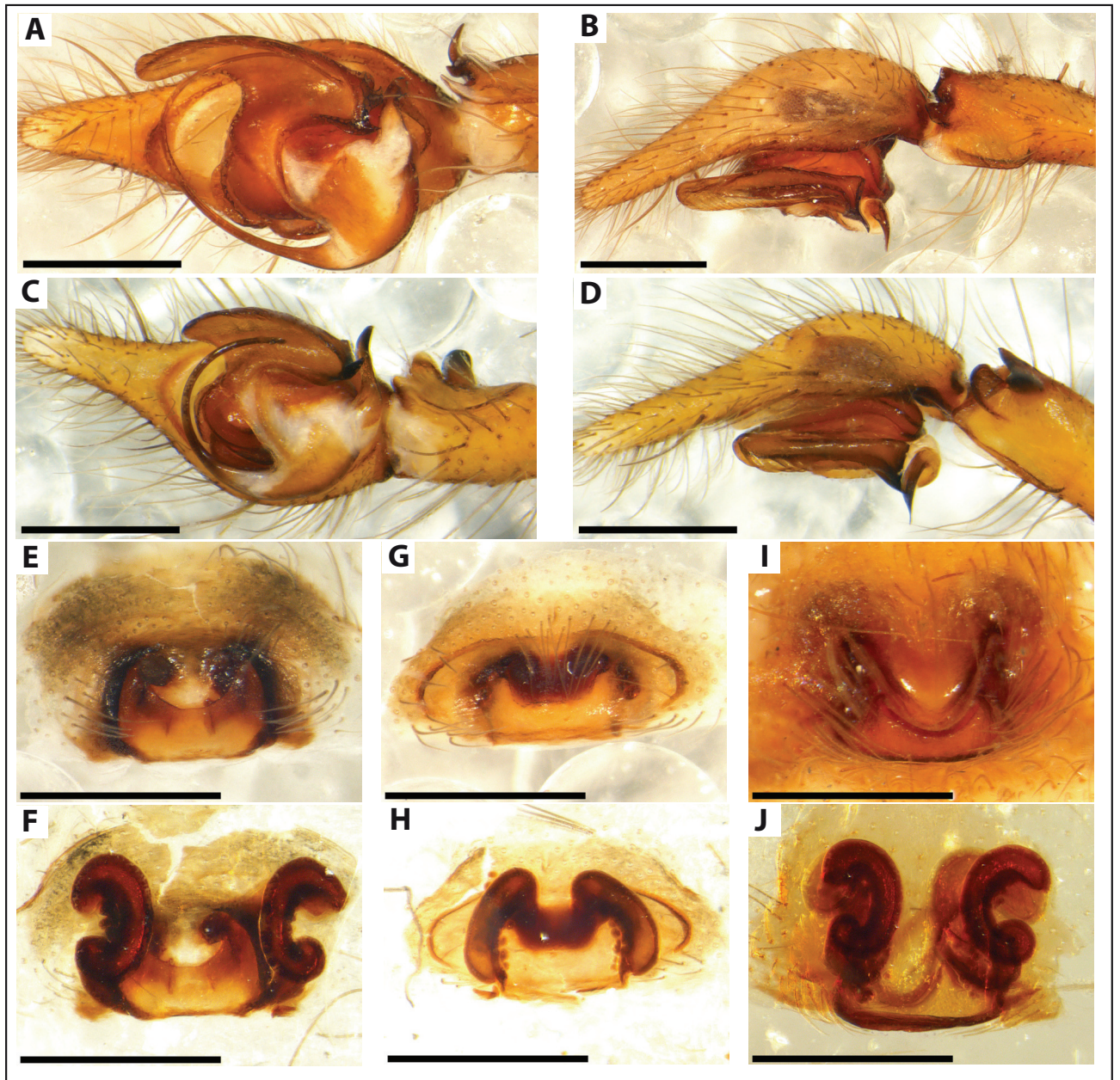


Figure 34: *Tegenaria tridentina* (A -B, E -F), *Tegenaria mirifica* (C -D, G -H) and *Tegenaria levantina* (I -J). Male left palp in ventral (A, C) and retrolateral view (B, D); female epigyne in ventral (E, G, I), vulvae in dorsal view (F, H, J). Scale = 0.5 mm.

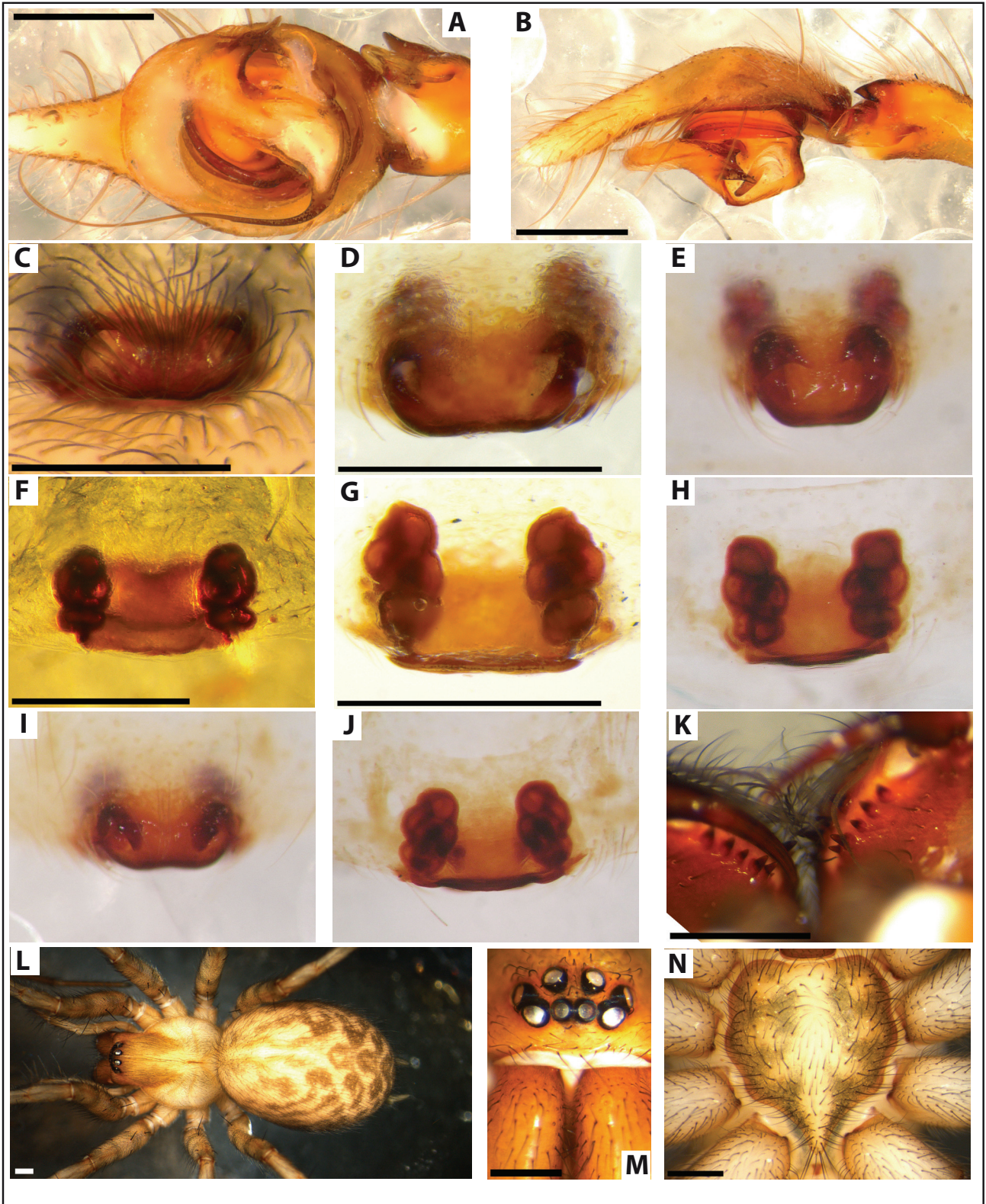


Figure 35: *Tegenaria pagana* (A -N), including the type specimens of *T. cerrutii* (D, G), *T. baronii* (I -J) and *T. marinae* (E, H). Male left palp in ventral (A) and retrolateral view (B); female epigyne in ventral (C -E, I), vulva in dorsal view (F -H, J); chelicerae, ventral view (K); habitus of female in dorsal (L), face in frontal (M) and sternum in ventral view (N). Scale = 0.5 mm (E, H, I -J without scale).

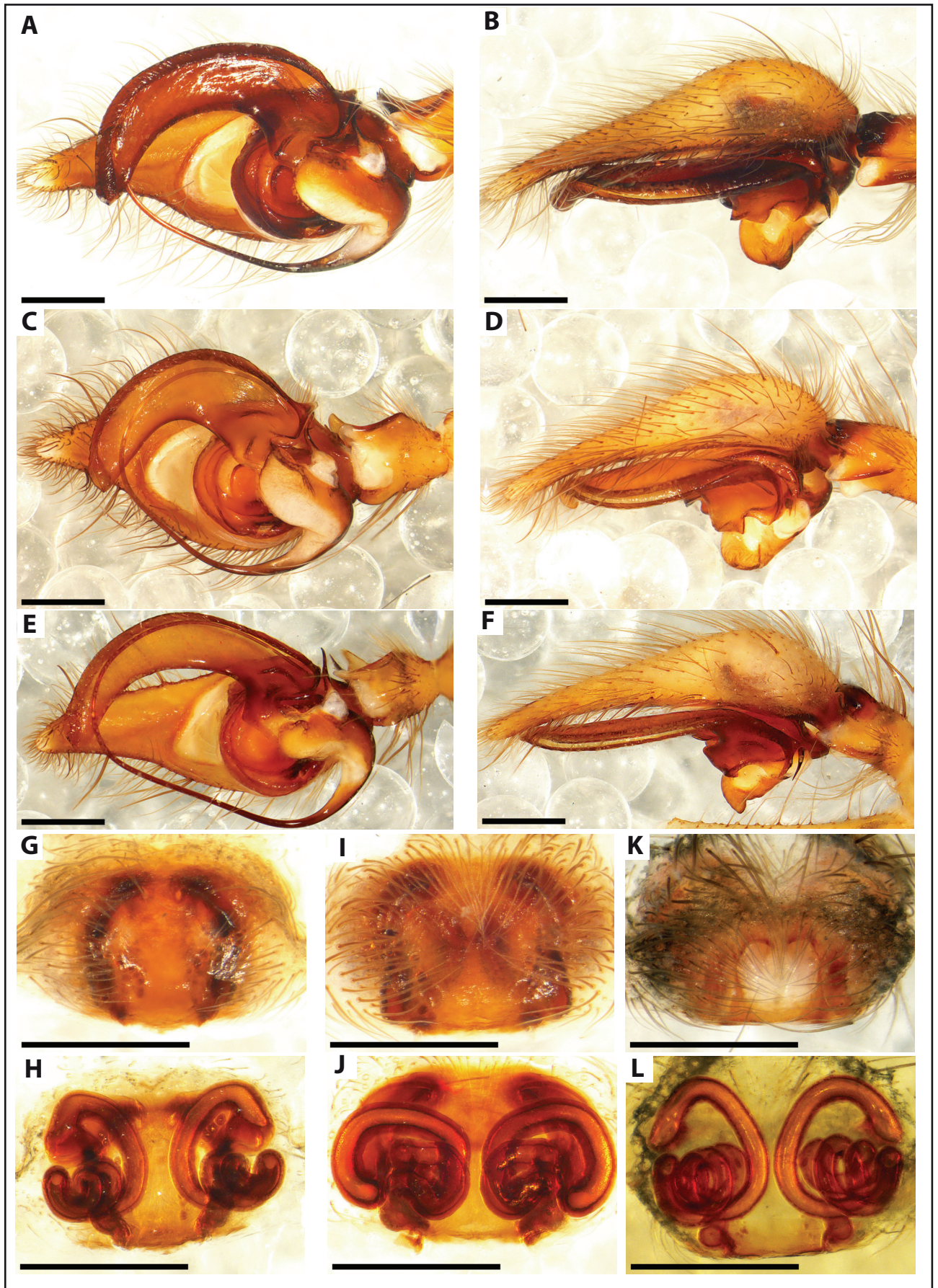


Figure 36: *Tegenaria silvestris* (A -B, G -H, variation, C -D, I -J), *Tegenaria parvula* (E -F, K -L). Male left palp in ventral (A, C, E) and retrolateral view (B, D, F); female epigyne in ventral (G, I, K), vulva in dorsal (H, J, L). Scale = 0.5 mm.

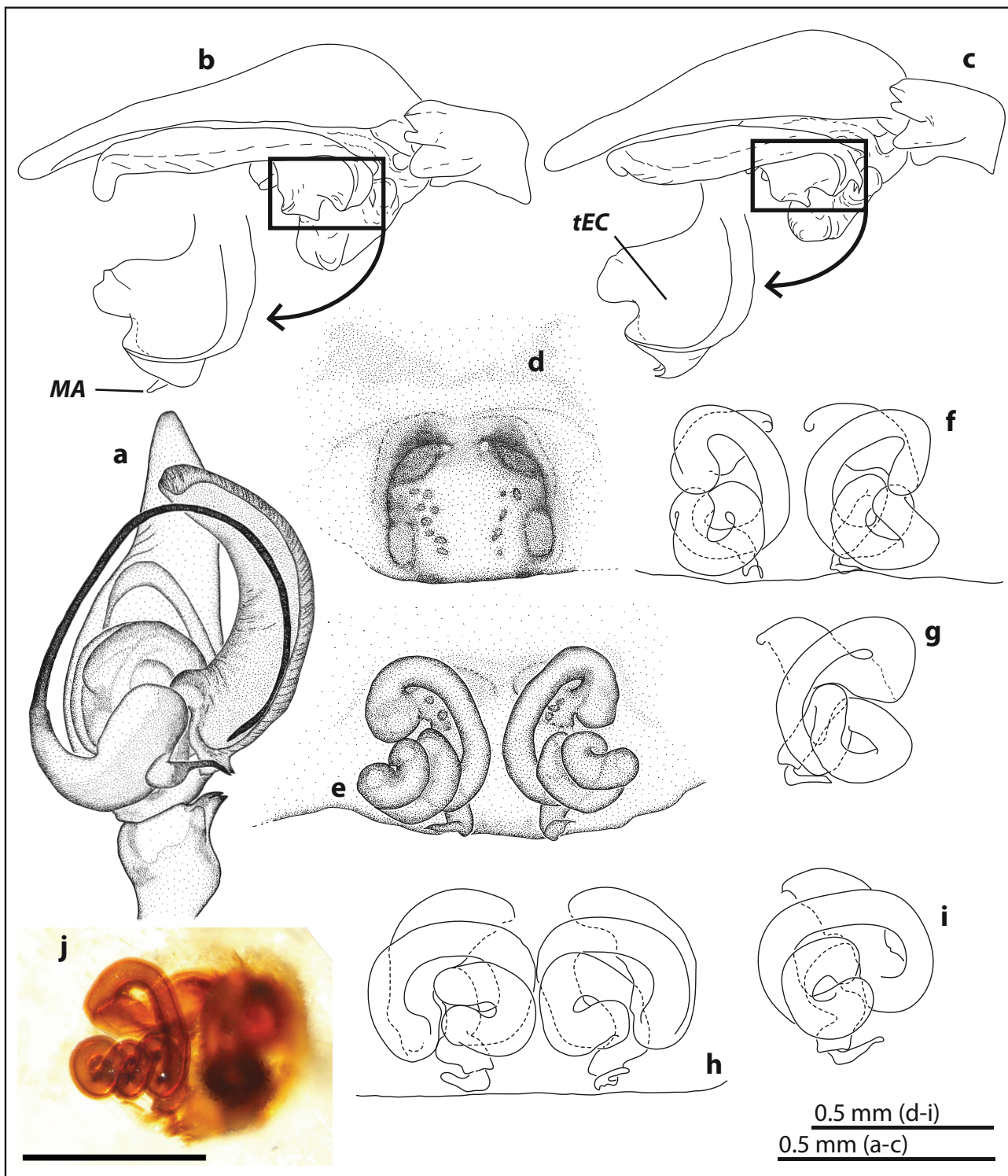


Figure 37: *Tegenaria silvestris* (a, d -e, j), variation in males and females (b -c, f -i). Male left palp in ventral (a) and retrolateral view (b, c), with detailed drawing of variation of the terminal end of conductor (tEC); female epigyne, ventral view (d); vulvae in dorsal (e -f, h) and lateral view (g, i -j). Scale for j = 0.5 mm.

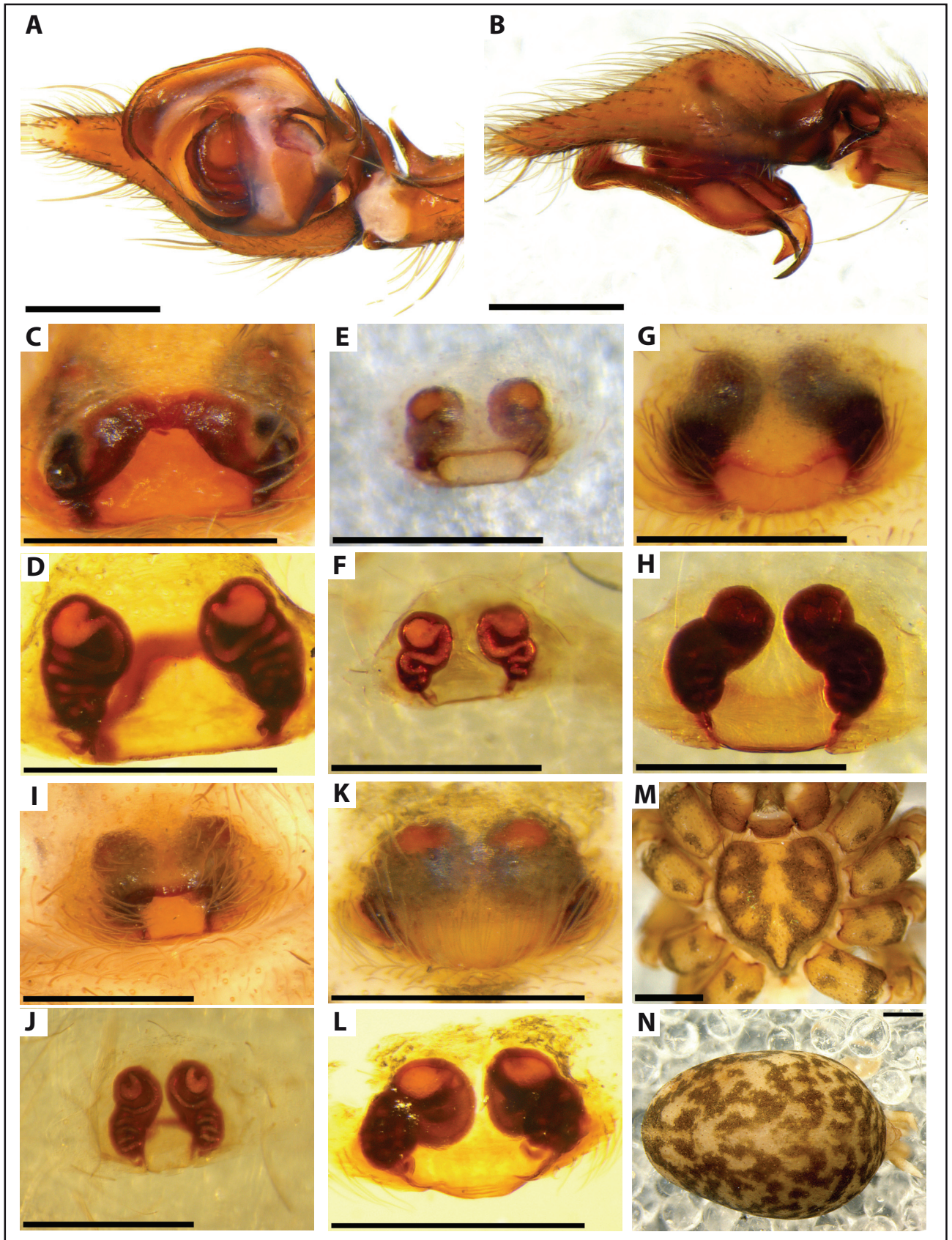


Figure 38: *Tegenaria regispyrri* (A -D), *Tegenaria* aff. *regispyrri* 1 (E -F), *Tegenaria* aff. *regispyrri* 2 (G -H), *Tegenaria* aff. *regispyrri* 3 (I -J), *Tegenaria pindosiensis* n. sp. (K -N). Male left palp in ventral (A) and retrolateral view (B); female epigyne in ventral (C, E, G, I, K), vulvae in dorsal view (D, F, H, J, L); sternum, ventral view (M) and opisthosoma, dorsal view (N) of *T. pindosiensis* n. sp.. Scale = 0.5 mm.

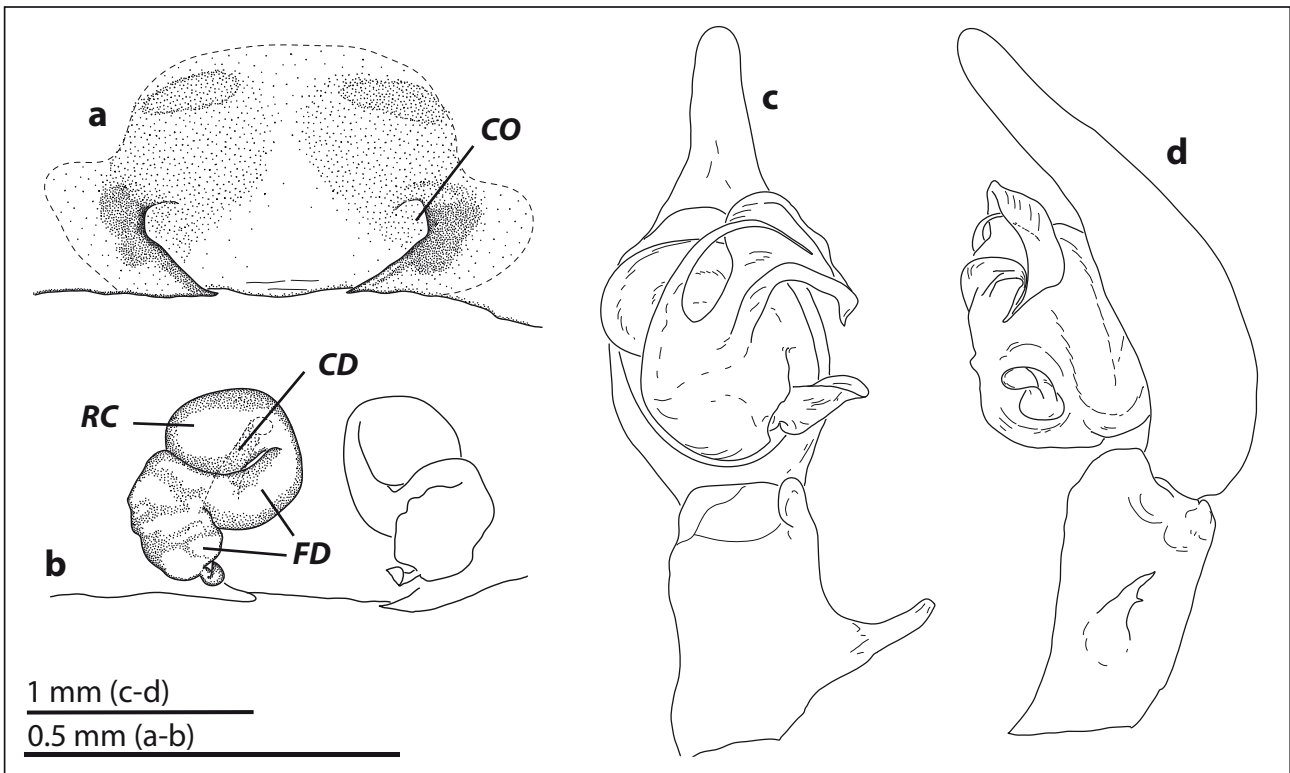


Figure 39: *Tegenaria pindosiensis* **n. sp.** (a -b), *Tegenaria vankeeri* **n. sp.** (c -d). Male left palp in ventral (c) and retrolateral view (d); female epigyne in ventral (a), vulvae in dorsal view (b). CD: copulatory duct; CO: copulatory opening; FD: fertilisation duct; RC: receptaculum.

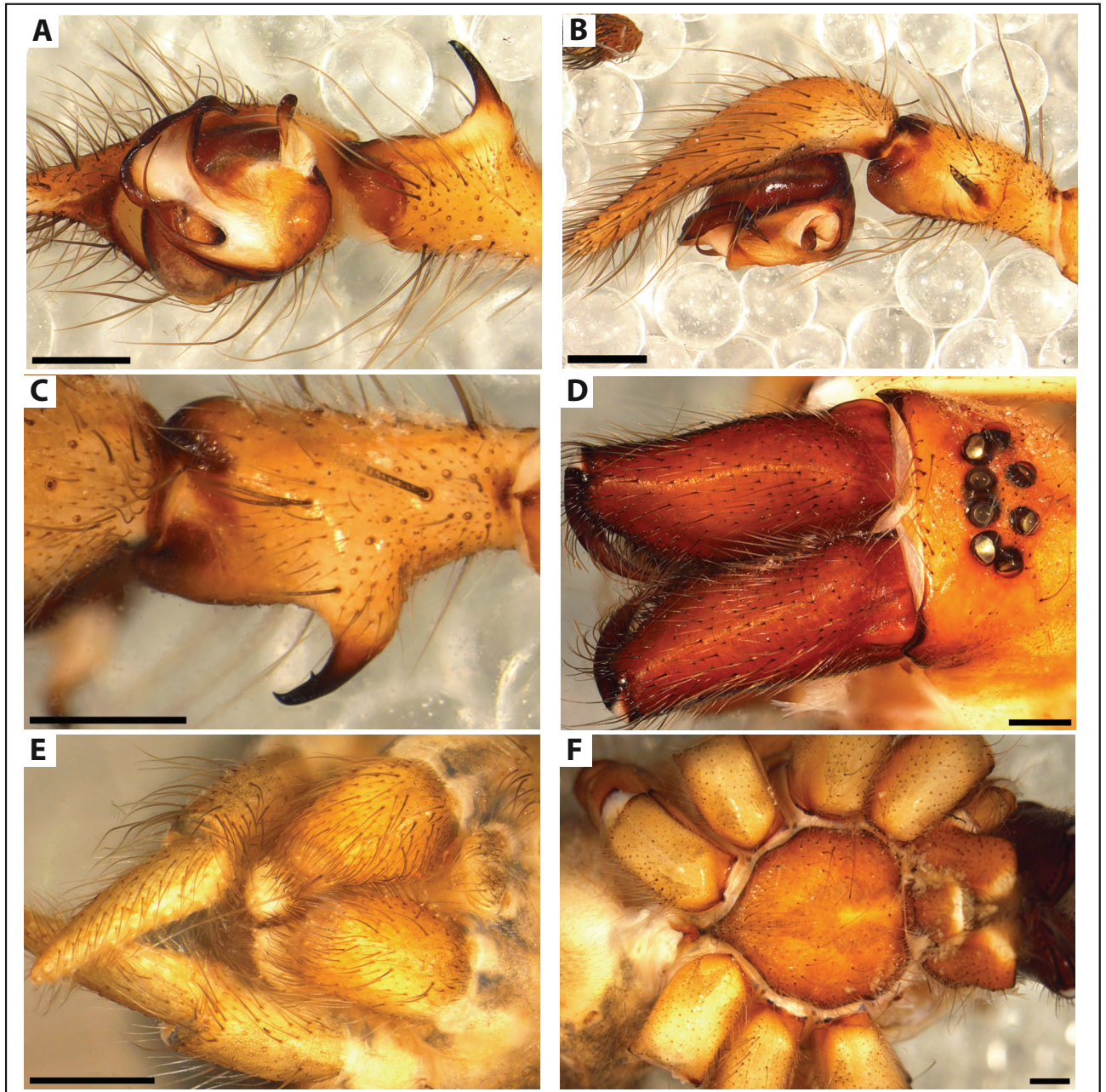
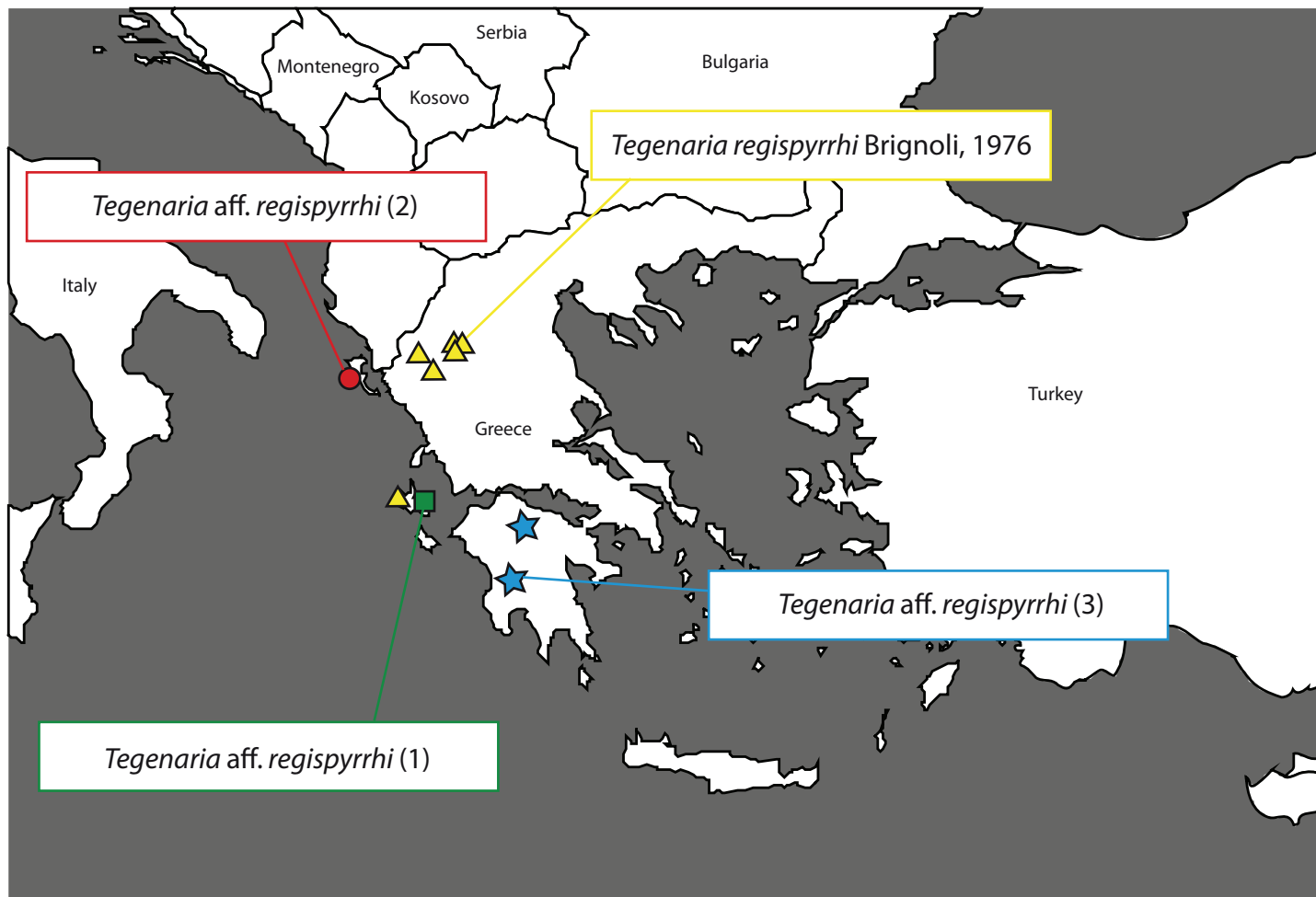


Figure 40: *Tegenaria vankeeri* n. sp. (A -F). Male left palp in ventral (A) and retrolateral view (B); RTA of left male palp in dorsal view (C); face, frontal view (D); spinnerets, ventral view (E); sternum, ventral view (F). Scale = 0.5 mm.



Map 1: Finding locations of *Tegenaria regispyrri* sensu lato. Digital map provided by <http://histgeo.ac-aix-marseille.fr>.

***Aterigena*, a new genus of funnel-web spider, shedding some light on the *Tegenaria-Malthonica* problem (Araneae, Agelenidae)**

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Running head: BOLZERN ET AL. — NEW GENUS OF PALEARCTIC AGELENIDAE

Replace everywhere:
\$ by male and £ by female symbols

Abstract. *Aterigena* n. gen. is erected for four Palearctic species of funnel-web spiders previously associated with *Tegenaria* Latreille, 1804 or *Malthonica* Simon, 1898 (Agelenidae, Tegenariini) and *A. aspromontensis* n. sp., an Italian species described here. The following new combinations are proposed: *Aterigena aculeata* (Wang, 1992), *A. ligurica* (Simon, 1916), n. comb. (from *Tegenaria*), as well as *A. aliquoi* (Brignoli, 1971) and *A. soriculata* (Simon, 1873), n. comb. (from *Malthonica*). The latter two species have been originally described in *Tegenaria*. The new genus is diagnosed by the unique combination of several morphological character states (e.g. notched trochanters III and IV, lateral spines on patellae, shape of vulvae). The monophyly of the new genus is also supported by a molecular analysis based on CO1 sequences of several taxa. Keys are provided for the identification of the recognized genera of Tegenariini and the species of *Aterigena* n. gen.. Several species of *Pseudotegenaria* Caporiacco, 1934, originally described in *Tegenaria*, are morphologically close to *Tegenaria tridentina* L. Koch, 1872, a species which is grouped in the cladistic analysis using CO1 in the monophyletic taxon “*Tegenaria* clade 1”. The species are therefore transferred back to *Tegenaria* as *Tegenaria animata* Kratochvíl & Miller, 1940, stat. rev., *T. bayeri* Kratochvíl, 1934, stat. rev., *T. bosnica* Kratochvíl & Miller, 1940, stat. rev. and *T. decolorata* Kratochvíl & Miller, 1940, stat. rev..

Aterigena n. gen. has an interesting geographical distribution: it is widely disjunct in the Palearctic. Four species occur in the Mediterranean and one in China respectively. *A. ligurica* is relatively widely distributed in mainland Italy and adjacent Southern France with a single specimen known each from Spain and Egypt (Alexandria), respectively. The latter may be the result of accidental introduction. The other three European species are endemic to Sicily, Corsica (perhaps also Sardinia) and Calabria, respectively.

Keywords: *Tegenaria*, *Malthonica*, taxonomy, new taxa, biogeography, Palearctic, disjunct distribution, endemism.

Some representatives of the araneomorph funnel-web spiders (Agelenidae) are well-known even to the general public: i. e. the very large and longlegged European House Spiders (*Tegenaria atrica* C. L. Koch, 1843, *T. duellica* Simon, 1875 and *T. domestica* (Clerck, 1757)) or the notorious hobo spider (*T. agrestis* (Walckenaer, 1802)). The last has been introduced into North America where it is blamed for biting humans and causing necrotic wounds (Akre & Myhre, 1991; Baird & Stoltz, 2002; Binford, 2001; Vest, 1987; Vetter et al., 2003; Vetter & Swanson, 2004). Despite this publicity the taxonomic and phylogenetic relationships within the Agelenidae are still poorly understood (see e. g. Zhang et al., 2006).

Currently the Agelenidae consists of 42 genera and 514 described species (Platnick, 2010). There is an ongoing discussion about the definition of Agelenidae and, in particular, whether the subfamily Coelotinae belongs to the Agelenidae or the Amaurobiidae (Bi et al., 2005; Griswold et al., 1999; Lehtinen, 1967; Spagna & Gillespie, 2008; Wunderlich, 1986) and whether the Australian genera currently affiliated with Agelenidae are phylogenetically closely related with it (Spagna & Gillespie, 2008; Miller, pers. comm.). Within the subfamily Ageleninae Lehtinen (1967) recognizes four tribes: Agelenopsini (Nearctic and Neotropical), Agelenini (Holarctic and Afrotropical), Tetricini and Tegenariini (mainly Palearctic). The European tribes Agelenini, Tetricini and Tegenariini, of relevance here, can be recognised with the table published by Lehtinen (1967: p. 344, Table 23; but see also Table 2).

According to Lehtinen (1967) the Tegenariini comprises following nominal genera: *Hadites* Keyserling, 1862, *Histopona* Thorell, 1869, *Malthonica* Simon, 1898, *Pseudotegenaria* Caporiacco, 1934 and *Tegenaria* Latreille, 1804. Most species have been associated with *Tegenaria* and *Malthonica*. The original definitions of the two genera are vague. In its present composition, *Tegenaria* is probably not monophyletic (e.g. Levy, 1996).

The transfer of many *Teegenaria* species to *Malthonica* by Guseinov et al. (2005) did not render the genera more natural but rather added more taxonomic confusion: apparently closely related species based on morphological and molecular characters do now belong to two different genera (e.g. *Teegenaria parietina*, (Fourcroy, 1785) and *Malthonica ferruginea*, (Panzer, 1804) or *Teegenaria henroti* Dresco, 1956 and *Malthonica eleonorae*, (Brignoli, 1974), see Bolzern et al., 2008). Guseinov et al. (2005) erected a new genus, *Azerithonica*, which seems to be closely related to *Teegenaria* and *Malthonica*, also belonging to the tribe Teegenariini. Barrientos & Cardoso (2007) redefined *Malthonica*, but this was not followed by Deltshv (2008) and Seyyar et al. (2008).

Dankittipakul & Zhang (2008) erected the genus *Acutipetala* which they compared to *Agelena* and *Teegenaria*. They did not assign it to a particular tribe. The strongly procurved eye-rows (in frontal and dorsal view), the spination of the patellae in combination with the devided colulus, mentioned in their description, suggest that it is a member of Agelenini.

The aim of the present work is to improve the taxonomy of *Teegenaria*, *Malthonica* and relatives.

MATERIAL AND METHODS

The specimens examined in this work are preserved in 75 % ethanol at the Naturhistorisches Museum Basel (NMB), the Muséum d'histoire naturelle Genève (MHNG), the Senckenberg Forschungsinstitut und Naturmuseum Frankfurt a. M. (SMF), the Naturhistorisches Museum Wien (NHMW), the Muséum national d'Histoire naturelle Paris (MNHN), the Museo Civico di Storia Naturale Verona, (MCSN), the Brignoli Collection housed in the Museo Civico di Storia Naturale Verona (PMBC), the Museo Civico di Scienze Naturli "E. Caffi" Bergamo (MSNB) and the private collections of Z. Zhang, China (ZZ) and K. van Keer, Belgium (KK).

For the morphological examination and the preparation of drawings a Leica stereomicroscope MZ12 (up to 110 x magnification) and MZ Apo with drawing tube were used. Most measurements were taken from digital pictures made with a Leica DFC320 camera and calculated with the program ImageJ 1.38x (<http://rsb.info.nih.gov/ij/>). Photographs were stacked using the program CombineZM (<http://hadleyweb.pwp.blueyonder.co.uk/CZM/News.htm>) and processed with Adobe Photoshop and Illustrator. For clearing the vulva, the removed epigynum was placed into clove oil for several minutes. The descriptions of the bulb are given from a ventral view. The spines on the male palp are not illustrated as they are considered of minor taxonomic significance. Leg measurements were taken from the dorsal side. All measurements are given in millimetres. The color description is based on ethanol preserved specimens. The nomenclature of morphological structures follows Jocqué & Dippenaar-Schoeman (2006) and Bolzern et al. (2008). The following abbreviations are used: AER = anterior eye row; ALE = anterior lateral eyes; AME = anterior median eyes; ALS = anterior lateral spinnerets; PMS = posterior median spinnerets; PER = posterior eye row; PLA = posterior lateral eyes; PME = posterior median eyes; PLS = posterior lateral spinnerets; RTA = retrolateral tibial apophysis (used here as the sum of all structures in retrolateral position of the tibia of the male pedipalp).

For the DNA extraction, 1 leg from freshly sampled specimens was removed and stored in pure ethanol. For removing the ethanol, the legs were then placed into a vacuum centrifuge for 30 min by 40 °C. Then the legs were processed according the protocol for the purification of total DNA from animal tissues (Spin-Column Protocol) of the "DNeasy Blood & Tissue Kit" (Qiagen). The DNA concentration of the resulting solution was measured by using a NanoDrop equipment. A 471-bp sequence of the cytochrome oxidase 1 gene (CO1) was amplified using primers C1-J-1718 and C1-N-2191 (Simon et al., 1994). For the PCR illustra

PuReTaq Ready-To-Go PCR Beads (GE Healthcare) were used. The following thermocycling conditions were applied: initial denaturation step of 93 °C for 3 min, followed by 35 cycles of 95°C for 30 sec, an annealing temperature of 55 °C for 30 sec, and an extension temperature of 72 °C for 45 sec. This was then followed by an additional extension of 72 °C for 7 min. To eliminate incorporated dNTP and primers, the PCR products were treated with ExoSAP-IT® (GE-Healthcare). Then, the fragments were sequenced in both directions using ABI PRISM® BigDye™ Terminator Cycle Sequencing Ready Reaction Kit (Applied Biosystems). Sequences were then analysed using an ABI Prism 3100 Genetic Analyzer and edited with the software Sequence Navigator (Applied Biosystems).

The complementary sequences (5' and 3' directions) of each specimen were aligned using ClustalW2 (Larkin et al., 2007) and checked manually. All processed sequences and additional sequences from the GenBank (Table 5) were aligned using ClustalW2. The aligned sequences were then translated into amino acids to check for any inappropriately placed stop codons and the triplet positions.

Bayesian analysis was applied using MrBayes 3.1.2 (Huelsenbeck & Ronquist, 2001; Ronquist & Huelsenbeck, 2003). For the selection of best-fit models of nucleotide substitution for the present alignment the software jModelTest 0.1.1 (Psoda, 2008; Guindon & Gascuel, 2003) was used. Since the underlying sequences are coding for a protein, the analyses were performed with respect to the codon-position, allowing MrBayes to use different substitution models with independent rates for each partition (one partition for each codon position). The statistically chosen models under the Akaike information criterion with correction for small samples (AICc) were: K80+G (1st), JC+I (2nd) and HKY+G (3rd). Two parallel and independent analyses, each with four chains (three heated, one cold MCMC chains) were run for 5 million generations, sampling trees every 1000 generations. At the end of the analysis, the first quarter of the collected trees was discarded as “burnin”. Of the remaining trees, a consensus tree was calculated (50% majority rule).

Maximum parsimony analysis was performed using PAUP* (Swofford, 2003). Transversions were weighted twice transitions. Additionally, the 1st, 2nd and 3rd positions of the codons were weighted 3:6:1, an approximation of the inversed observed relative frequency of substitution. Full heuristic search was performed with random addition of sequences (1000 replications). The branch-swapping algorithm tree-bisection-reconnection (TBR) on best trees was applied to escape local optima. Bootstrap support values were calculated in PAUP* based on 1000 replicate searches each with 1000 replications of random taxon addition. The analyses were carried out on the freely available Bioportal (www.bioportal.uio.no).

Trees were drawn using FigTree v1.2.2 (Freeware from Andrew Rambaut, Institute of Evolutionary Biology, University of Edinburgh; available at: <http://tree.bio.ed.ac.uk/software/figtree/>) and edited in Adobe Illustrator.

RESULTS

PHYLOGENY

The Bayesian analysis reached convergence after 2'936'000 generations and after that the deviation of split frequencies remained below 0.01. The tree presented in Fig. 57 was calculated using the last 7'502 trees (5'001 were sampled from each run and the first 25% discarded as “burnin”). The tree was rooted with the *Amaurobius* spp. clade. The topology and the posterior probability values suggest that *Aterigena* n. gen. is the sister clade of *Malthonica+Histopona* which together form the clade of the two monophyletic *Tegenaria*-clades. In this tree: 1) the only possibility for a monophyletic Agelenidae is to include the subfamily Coelotinae, 2) the relationships between most genera and the tribes *Tegenariini*,

Agelenini, *Agelenopsini* are not completely resolved, and 3) the genera *Agelena* and *Textrix* are not monophyletic.

The Maximum Parsimony Analysis resulted in two shortest trees. In the strict consensus tree, most clades at genus rank were identical to those from the Bayesian analysis (indicated in Fig. 57 with a +). However, the relationship between the genera and/or the subgenera could not be resolved and shows a polytomy (Fig. 57). The bootstrap values, are generally very low. Relative to the support of the other genera, that of the genus *Aterigena* n. gen. is with 83% comparatively high.

TAXONOMY

Family Agelenidae C. L. Koch 1837

Tribe Tegenariini Lehtinen, 1967

The tribe Tegenariini comprises the genera *Azerithonica* Guseinov et al., 2005, *Hadites*, *Histopona* and the taxonomically problematic *Malthonica-Tegenaria* complex, including *Pseudotegenaria*. Guseinov et al. (2005) transferred several species from *Tegenaria* to *Malthonica* using characters of doubtful phylogenetic significance (Jäger, 2006, see also Bolzern et al., 2008; Bolzern et al., 2009). These transfers are not followed here, instead we adopt the narrow definition of *Malthonica* by Barrientos & Cardoso (2007) which includes only the type species, *Malthonica lusitanica* Simon, 1898, along with *M. oceanica* Barrientos & Cardoso, 2007.

Pseudotegenaria was established by Caporiacco (1934). His description is not diagnostic. *Pseudotegenaria* allegedly differs from *Tegenaria* in the anterior eye row which is strongly, and the posterior row which is weakly recurved (Caporiacco, 1934: p. 140). This character is variable in *Tegenaria* sensu lato. In the original description, the drawing of the vulva of the type species, *Pseudotegenaria parva* Caporiacco, 1934 (only female known) is uninformative. We follow here, therefore, Brignoli (1971a: pp. 60–61) rather than Lehtinen (1967) who added 4 species to *Pseudotegenaria*. Apart from *P. parva*, for which no material was available for examination and whose original description is not diagnostic, all species currently included in *Pseudotegenaria* show a striking morphological similarity to *Tegenaria annulata* Kulczyński, 1913 and *T. tridentina* L. Koch, 1872 (Brignoli, 1971a; Kratochvíl & Miller, 1940). Here we transfer these species from *Pseudotegenaria* back to *Tegenaria*: *T. animata* Kratochvíl & Miller, 1940, stat. rev., *T. bayeri* Kratochvíl, 1934, stat. rev., *T. bosnica* Kratochvíl & Miller, 1940, stat. rev. and *T. decolorata* Kratochvíl & Miller, 1940, stat. rev.

Based on the examination of extensive material a monophyletic group of species, described here as new genus, is recognised within *Tegenaria* s.l. which is supported by morphological and molecular characters (Fig. 57, Table 4; see also following key). The remainder of *Tegenaria* species studied (mostly European species) form two monophyletic clades (Fig. 57, *Tegenaria* Clade 1 and *Tegenaria* Clade 2). Apart from *Azerithonica*, for which no specimens were available for examination, the genera of Tegenariini, can be recognized by following key:

KEY TO THE GENERA OF TEGENARIINI

- 1 Trochanters III and IV notched 2
- All trochanters straight or only slightly curved..... 5
- 2 Dorsal and lateral spines present on patellae III and IV, 1–2 ventral spines present on tarsus IV *Aterigena* n. gen.
- Only dorsal spines present on all patellae, tarsus IV ventrally lacking spine 3

- 3 Colulus reduced, only hairs present, patellar apophysis on male palps absent, median apophysis present 4
- Colulus developed as two separated plates, patellar apophysis on male palps sometimes present, median apophysis absent *Histopona*
- 4 Eyes fully developed, tarsi with less than 7 dorsal trichobothria.....*Malthonica*
- Eyes very small or lacking, tarsi with 7 or more dorsal trichobothria*Hadites*
- 5 Conductor lamelliform, terminal end often bifid, distal apex of conductor longer than its width, median apophysis strongly protruding, RTA mostly with three branches, vulva forming only convoluted duct or with more or less evenly sclerotized, globular receptacula..... *Tegenaria*-Clade 1
- Conductor massive, terminal end of conductor simple or ending in several points, distal apex of conductor smaller than its width (exceptions possible), RTA mostly with two branches, vulva irregularly sclerotized enclosing convoluted ducts, and/or with diverticulae attached to the copulatory duct..... *Tegenaria*-Clade 2

Genus *Aterigena* new genus

Type species.— *Tegenaria ligurica* Simon, 1916, by present designation.

Diagnosis.— Agelenid spiders bearing the combination of following characters: presence of notched trochanter on legs III and IV (present also in *Hadites*, *Histopona* and *Malthonica* but absent in other European agelenids) (Fig. 3); presence of lateral spines on patellae I–IV (absent in other Tegenariini but present in Agelenini and Textricini) (Fig. 1); presence of ventral spines on tarsus IV (absent in other Tegenariini but present in several genera of other tribes); both eye rows straight in dorsal view (anterior row can be slightly recurved) and straight or slightly procurved in frontal view (Figs. 5, 7, 9, 11, 48); most proximal teeth at the retromargin of chelicerae biggest (Fig. 2); colulus distinctly trapezoidal or rectangular (present also in *Tegenaria sensu lato*, other genera with reduced or divided colulus) (Fig. 4); male palp with lamelliform and laterally folded conductor, terminal end simply pointed (Figs. 13–20); median apophysis with membranous base and distally with thin and curved plate-like sclerite; vulva consisting of a straight and short copulatory duct, smoothly sclerotized globular receptacula and convoluted fertilization ducts (Figs. 30, 32, 34, 36, 38–39).

Etymology.— Anagram of *Tegenaria*, gender feminine.

Description.— Body size medium to large (carapace length between 3 and 7 mm). Margin of carapace narrowly and continuously darkened; two symmetric longitudinal dark bands dorsally on carapace present (sometimes intensified by white and black plumose hairs). Sternum longer than wide with an indistinct pattern of bright median band; plumose hairs present on carapace, legs and opisthosoma. Four promarginal teeth, second from proximal is biggest; 4–6 retromarginal teeth, most proximal tooth biggest. Trochanter III and IV notched. Colulus developed as rectangular plate, distal margin more or less straight. PLS longer than all others with distal segment as long as or slightly longer than basal segment. In dorsal view both eye rows straight or slightly recurved; in frontal view PER procurved and AER straight or slightly procurved. Smallest eyes are AME or PME. Male palp without femoral and patellar apophyses; RTA with big dorsal branch, distally more or less obtuse and strongly sclerotized; lateral branch expressed as sclerotized, elongate process; ventrally with weakly developed rounded ridge. Embolus filiform, getting thinner to apex. Conductor elongate distally (parallel to cymbium) and folded along the whole length laterally, terminal end (proximal) forming sclerotized peak; median apophysis consisting of membranous base and thin and broad sclerotized distal plate, base as broad as or slightly smaller than length of median apophysis. Other tegular apophyses absent. Epigynal plate strongly sclerotised with distinct atrium; receptacula visible through plate; copulatory duct short and straight; one pair of smooth, sclerotized receptacula, medium to large in size, oval to globular; fertilization

ducts long and mostly strongly convoluted. Constructing horizontal funnel web in which they live (characteristic for family).

Distribution.— Disjunct in the Palearctic with four species in the Mediterranean Basin and one species in China.

Phylogenetic relationships.— The eye arrangement, the pattern of cheliceral teeth, the notched trochanter on legs III–IV and the distinct trapezoidal colulus place *Aterigena* n. gen. in the tribe Tegenariini. However, *Aterigena* n. gen. bears lateral spines on patellae III and IV and ventral tarsal spines, which are absent in other Tegenariini but usually present in the other tribes (Tab. 2). This shows that the last two characters are not diagnostic for agelenid tribes. In removing *Aterigena* n. gen. from *Tegenaria* s.l. the latter becomes morphologically more homogeneous. In addition to the morphological characters the monophyly of *Aterigena* n. gen. is also supported by molecular characters (Fig. 57). Three apomorphic amino acid substitutions are present in a very short sequence section of the mitochondrial CO1 gene (Tab. 4).

Comments.— *Aterigena* n. gen. comprises five species (Tab. 1), four transferred from *Tegenaria* and one described here as new.

KEY TO THE SPECIES OF *ATERIGENA*

- 1 Carapace longer than 5.2, cymbium longer than 2.0, dorsal branch of RTA more or less conical (in retrolateral view), embolus longer than twice cymbium width, epigynal plate wider than 0.8; atrium of epigynum rectangular or trapezoidal; if transversally divided, posterior part much shorter than anterior part 2
- Carapace smaller than 5.2, cymbium shorter than 2.0 mm, tip of dorsal branch of RTA skewed ventrad (in retrolateral view), embolus shorter than twice cymbium width, epigynal plate smaller than 0.8; atrium of the epigynum oval; transversally subdivided into subequal parts 4
- 2 Lateral branch of RTA relatively long, distal apex of conductor only weakly bent, ratio bulb length to cymbium length smaller than 0.7, atrium of the epigynum transversally divided, forming membranous oval part anteriorly, and sclerotized semicircular bar posteriorly..... *aliquoi*
- Combination of characters different 3
- 3 Ratio of palpal tibia length to cymbium length smaller than 0.43, dorsal branch of RTA originating approximately in the middle of tibia, copulatory openings well visible, lateral margins of epigynal atrium converging posteriad, each vertex forming strongly elongated process *ligurica*
- Ratio of palpal tibia length to cymbium length larger than 0.43, dorsal branch of RTA originating in distal half of tibia, lateral margin of epigynal atrium diverging posteriad, each vertex forming at most blunt tubercle *aculeata*
- 4 Ratio bulb length (laterally from cymbium base to conductor tip) to cymbium length smaller than 0.7; ratio tibia length to cymbium length smaller than 0.6; distal apex of conductor longer than wide; transverse separation of epigynal atrium more or less straight; receptacula globular, round; fertilization ducts strongly convoluted .. *soriculata*
- Ratio bulb length to cymbium length larger than 0.7; ratio tibia length to cymbium length larger 0.6; distal apex of conductor as long as or shorter than wide; transverse separation of epigynal atrium in the middle slightly curved posteriad; receptacula oval; fertilization ducts weakly convoluted *aspromontensis* n. sp.

Aterigena ligurica (Simon, 1916) new combination

Figs. 5–6, 13–14, 23–24, 29–30, 40–41

Tegenaria ligurica Simon, 1916: 210, male and female; Platnick, 2009.

Type material.— FRANCE: Alpes-Maritimes: Menton, le Moulinet: lectotype ♂, paralectotype ♀, 1915, Dalmas (MNHN), present designation.

Other material examined.— FRANCE: *Alpes-Maritimes*: 1 ♀, 4 ♂, April 1905, E. Simon (MNHN, Nr. 614); Lantosque, NE exp. slope close to village (43.97416 N / 7.31104 E, 484 m): 1 ♀, 3 September 2008, Schönhofer (NMB); dry valley between Villars-sur-Var and tunnel of Mescla (43.93119 N / 7.13273 E, 231 m): 3 ♂, 1 juvenile, 2 September 2008, Schönhofer (NMB); Vallon de Cervagne at Roquebillière (44.01562 N / 7.29831 E, 685 m): 1 ♀, 2 September 2008, Schönhofer (NMB); Mercantour National Park, Paganin Gorge (44.02833 N / 7.57712 E, 500 m): 1 ♀, 4 September 2008, Schönhofer (NMB); Les Mèces, Mercantour National Park: 2 ♀, 2 ♂, 16 July 1986, Maurer & Thaler (NMB, MHNG). — ITALY: *Liguria*: Savona, Bormida, km 17 on provincial road 15: 1 ♀, 11 October 2001, Pantini (MSNB); Savona, Calizzano, Colla Melogno (920 m): 1 ♂, 1 juv., 17 July 2001, Mus. Bergamo (MSNB); *Piemonte*: Cuneo, Val Pesio, Pian delle Gorre: 1 ♀, 15 August 1983, Giachino (MSNB); Cuneo, Garessio: 1 ♂, 2 ♂, 3 October 2004, Isaia & Beikes (MSNB); Cuneo, National Park Alpi Marittime, Bousset-Valley, Ponte di Porcera (44.20097 N / 7.44126 E, 1117 m): 1 ♂, 11 September 2008, Schönhofer (NMB); Cuneo, Nava (44.1 N / 7.87 E, 890 m): 1 ♀, 8 September 2008, Schönhofer (NMB); *Marche*: Ascoli Piceno, Montemonaco, Isola S. Biagio (990 m): 1 ♀, 1 September 2004, Rismondo & Fabbri (MSNB); *Abruzzo*: Teramo, Isola del Gran Sasso d'Italia, Gran Sasso, towards lake Pagliara (900 m): 5 ♀, 2 ♂, 3 October 2002, 1 ♀, 28 August 2003, 3 ♀, 7 October 2003, Marotta & Carissimi (MSNB); Teramo, Monti della Laga, Valle Castellana, 1 km next to Ceraso (750 m): 1 ♀, 7 August 2003, Marotta (MSNB); Teramo, Monti della Laga, towards valley Castellana, 2 km next to Ceraso (655 m): 1 ♀, 1 ♂, 28 October 2001, Marotta (MSNB); Teramo, Tossicia, Tozzanella, towards Colle Petato, Gran Sasso (1050 m): 1 ♂, 18 November 2001, 1 ♀, 27 August 2002, 5 ♀, 2 ♂, 3 October 2002, 1 ♂, 26 October 2002, Marotta, Marin, Di Marco & Carissimi (MSNB); *Basilicata*: Potenza, Viggianello, Torno (650 m): 2 ♂, June 1989, Valle (MSNB); Potenza, San Severino Lucano, close to Santuario (1500 m): 1 ♀, June–August 1989, Valle (MSNB); Potenza, San Severino Lucano, below Santuario Madonna del Pollino: 1 ♂, 27 August 2008, Valle (MSNB); *Campania*: Avellino, Pietrastornina, M. Parteni, Acqua Vene (1200 m): 3 ♀, 12 August 1981, Boffa, Giachino & Verna (MSNB); *Calabria*: Cosenza, SE of Paola (39.33306 N / 16.06083 E, 564 m): 1 ♀, 29 May 2007, Bolzern & Mühlethaler (NMB, was juvenile till end of August). — SPAIN: 1 ♂, no further information (MNHN, Nr. 12602). — EGYPT: *Alexandria*: 1 ♂, E. Simon (sub *T. domestica*) (MNHN, Nr. 1976, 5960).

Description.— *Measurements and ratios of male (n=1)*: carapace 6.82 long, 4.52 wide. Head region 2.65 wide; PER 1.4 wide. Chelicerae 2.94 long, 1.31 wide. Labium as long as wide. Gnathocoxa ratio width to length: 0.6. Sternum 3.11 long, 2.53 wide. Opisthosoma 6.37 long, 3.8 wide. Ratio bulb length (laterally from cymbium base to conductor tip) to cymbium length: 0.72. Leg measurements:

	fe	pa	ti	mt	ta	total
palp	2.31	0.94	1.07	-	2.67	6.99
I	5.71	2.28	4.67	5.77	3.78	22.21
II	5.63	2.29	4.38	5.72	3.41	21.43
III	5.28	2.24	4.20	6.01	3.34	21.07
IV	6.62	2.27	5.45	8.44	4.02	26.80

Measurements of females (n=3): carapace 5.63–6.58 long, 3.77–4.49 wide. Head region 2.43–2.9 wide; PER 1.25–1.44 wide. Chelicerae 2.28–3.04 long, 1.17–1.54 wide. Labium as long as wide. Gnathocoxa ratio width to length: 0.6–0.7. Sternum 2.65–3.40 long, 2.20–2.79

wide. Opisthosoma 6.47–9.43 long, 4.10–6.62 wide. Epigynal plate 1.12 long, 1.3 wide; atrium 0.27–0.29 long, 0.37–0.41 wide. Receptacula 0.50–0.62 wide. Leg measurements:

	fe	pa	ti	mt	ta	total
Palp	1.79–2.17	0.87–1.09	1.09–1.35	-	2.03–2.46	5.78–7.07
I	4.16–4.93	1.98–2.27	3.19–3.89	3.64–4.52	2.26–2.96	15.23–18.57
II	4.00–4.90	1.98–2.25	2.93–3.59	3.52–4.35	2.26–2.90	14.69–17.99
III	3.11–4.95	1.47–2.14	2.46–3.56	3.25–4.77	1.88–2.45	12.17–17.87
IV	4.88–5.71	1.84–2.32	4.04–4.61	5.74–6.36	2.67–3.14	19.17–22.14

Eyes: in dorsal view both eyerows straight or slightly recurved; in frontal view PER procurved and AER straight or slightly procurved (Fig. 5). Diameters: PME: 0.21–0.23; PLE: 0.20–0.24; AME: 0.18–0.21; ALE: 0.21–0.24. Distances: PME–PME less or equal diameter of PME; PME–AME less than diameter of PME; PME–PLE about diameter of PME; PME–ALE about diameter of PME or slightly more; AME–AME 0.5–1.0 times diameter of AME; AME–ALE about half diameter of AME. Clypeus height (measured under AME) less than or equal to 3 times diameter of AME; (measured under ALE) about twice diameter of ALE or slightly more.

Coloration: carapace with narrow, continuous dark margin; two longitudinal symmetrical darkened bands present on carapace, interrupted and sometimes reduced to triangular dots. Sternum with brighter median band, sometimes very weak. Opisthosoma with red-brown median band, anterolaterally with two bright bands, continuing posteriorly as dots (Fig. 6). Legs weakly annulated best expressed ventrally on femora.

Additional somatic characters: distal margin of labium weakly concave. Plumose hairs present on carapace, legs and opisthosoma. Four promarginal teeth, the second one from proximal biggest; 4–5 retromarginal teeth, most proximal tooth biggest. Trochanter III and IV notched. Tarsi I and II with 7–8 dorsal trichobothria and 8–9 on tarsi III and IV. Colulus forming rectangular plate, distal margin straight, only partly colored. PLS longer than all others with distal segment as long as or slightly longer than basal segment, both darkened. PMS as long as ALS. ALS slightly darkened. The formulae of leg spination are listed in Table 3.

Male palp (Figs. 13–14, 23–24): RTA with a big dorsal branch, distally pointed and strongly sclerotized; lateral branch forming sclerotized finger-shaped appendix; ventrally bearing a weakly developed rounded ridge. Embolus originating (free apex) at 7 o'clock position; length (only the free apex) slightly more than twice cymbium width; distal tip between 3 and 4 o'clock position. Conductor lamella-like, distally elongated (parallel to cymbium), arcuated and laterally folded along the whole length; as long as alveolus, distally reaching beyond alveolus margin; terminal end forming sclerotized peak, pointing ventrally (in lateral view). Connection of conductor and tegulum membranous. Median apophysis consisting of membranous base and thin and broad sclerotized distal plate, pocket-like; originating at 5 o'clock position; protruding ventrally; basis as wide as median apophysis length. Tegular apophysis absent.

Epigynum and vulva (Figs. 29–30, 40–41): epigynal plate strongly sclerotized, trapezoidal, with distinct atrium; atrium posteriorly reaching epigastral furrow. Ground plate of atrium strongly sclerotized, anterior distinctly connected with epigynal plate, undivided reversed trapezoidal shaped. Lateral margins of atrium converging posteriad, strongly elongated vertices present. Receptacula visible through plate. Copulatory openings well-visible as holes, located at anterior border of atrium. Copulatory duct short and straight. Receptacula big, oval to globular, almost touching each other; fertilization ducts long and strongly convoluted.

Comparison to other species.— The description of the male of *A. aculeata* provided by Wang (1992: 287, figs 1–3) suggests that it is closely related to *A. ligurica*. No male material of *A. aculeata* was available for study and our conclusions are based on the literature only.

Based on the original description (Wang, 1992) the female holotype and the male allotype of *A. aculeata* are similar in size to *A. ligurica*. In contrast, the relative height of the clypeus is larger in *A. ligurica* than in *A. aculeata* (Figs. 5, 7). The male of *A. ligurica* apparently has a relatively smaller ratio of palpal tibia length to cymbium length than *A. aculeata* (Figs. 13–14, 21–22). Furthermore, the RTA originates approximately in the middle on the tibia in *A. ligurica* but more distally in *A. aculeata*. From the other *Aterigena* n. gen. species the male of *A. ligurica* can be separated by the conical shape of the dorsal RTA branch (distally skewed ventrad in *A. soriculata* and *A. aspromontensis* n. sp.), the relatively short lateral branch of the RTA (in relation to the dorsal branch, this lateral branch is longer in *A. aliquoi*) and the size of the cymbium (much larger than in *A. soriculata* and *A. aspromontensis* n. sp.) (Figs. 13–14, 23–25). The female of *A. ligurica* can be separated from all other species of the genus by the presence of the well-visible copulatory openings anteriorly on the epigynal atrium (absent in *A. aliquoi*, *A. soriculata* and *A. aspromontensis* n. sp.), the undivided and anteriorly connected ground plate of the atrium with diverging lateral margins (converging in *A. aculeata*) and the strongly developed and elongated vertices (tubercular in *A. aculeata*, Figs. 29, 40–41). Additionally, the vulva is distinct in shape and larger than in all other species of the genus (Fig. 30).

Natural history.— Specimens of *Aterigena ligurica* were found in different types of Mediterranean forests with rocky or stony ground layer. There the spiders live in funnel webs, characteristic for the whole family Agelenidae. The spiders, collected by A. Bolzern, had been caught on and under stones and on the bark of pine trees. Maurer & Thaler (1988) caught many specimens in pitfall traps. The available data are insufficient for drawing any conclusions on the phenology of *A. ligurica*. The specimens listed here have been caught from April to October.

Distribution.— *Aterigena ligurica* was previously known only from the Maritime Alps and questionably from southern Italy (Brignoli, 1971b; Dresco & Célérier, 1976; Maurer & Thaler, 1988; Pesarini, 1994). The revision of the MSNB collection yielded many additional stations from Italy (Fig. 56). Two samples from the MNHN containing a single female each are from outside this range: they are labeled “Hispania” and “Alexandria”, respectively. The latter specimens may have been accidentally introduced; the data for the former are too vague for any interpretation. Additional field work is required to solve this puzzle.

Comment.— In accordance to article 74.1 of the Code (ICZN, 1999) the female syntype is designated here as lectotype for stabilizing the nomenclature. As the morphology of the epigyne is a good distinctive character for separating the species from its closest relatives, the female has been chosen as lectotype. The male syntype becomes paralectotype.

Aterigena aculeata (Wang, 1992) new combination

Figs. 7–8, 21–22, 31–32, 42–43

Tegenaria aculeata Wang, 1992: 286, figs 1–5, male and female; Platnick, 2009.

Material examined.— CHINA: *Guizhou*: Daozhen, Natural Reserve Dashahe (27.8333 N / 106.8333 E): 6 ♀, Zhang, 24–25 August 2004 (3 ♀ ZZ, 3 ♀ NMB).

Description.— As *A. ligurica* but differing in the following characters.

Measurements of females (n=3): carapace 5.50–6.10 long, 3.70–4.25 wide. Head region 2.0 wide; PER 1.15 wide. Chelicerae 2.40–2.75 long, 1.00–1.30 wide. Gnathocoxa ratio width to length: 0.6. Sternum 2.60–3.10 long, 2.15–2.35 wide. Opisthosoma length: 7.25–7.75 long, 4.00–4.90 wide. Epigynal plate 0.7–0.9 long, 0.9–1.0 wide; atrium 0.22 long, 0.33 wide.

Receptacula 0.38 wide. Leg measurements:

	fe	pa	ti	mt	ta	total
Palp	1.95	0.88	1.22		1.95	6.00
I	4.90–5.55	2.00–2.25	4.65–5.25	4.55–5.50	2.85–3.15	18.95–21.70
II	4.50–5.50	2.00–2.15	3.90–4.50	4.25–4.75	2.25–2.75	16.90–19.65

III	4.35–5.05	1.65–1.95	3.60–4.50	4.25–5.00	2.25–2.50	16.10–19.00
IV	5.50–6.25	1.50–2.20	4.75–5.50	6.00–7.00	2.80–3.10	20.55–24.05

Eyes: in dorsal view both eye rows straight (frontal view: Fig. 7). Diameters: PME: 0.26; PLE: 0.28; AME: 0.25; ALE: 0.29. Distances: PME–PME equal diameter of PME; PME–AME less than or equal diameter of PME; PME–PLE about diameter of PME or slightly more. Clypeus height (measured under AME) less than or equal to twice diameter of AME; (measured under ALE) about 1.5 times diameter of ALE or less.

Coloration: two longitudinal symmetrical darkened bands present on carapace, interrupted and sometimes reduced to only triangular dots, intensified by white and black plumose hairs. Anterolateral bright bands on opithosoma smaller than in *A. ligurica* (Fig. 8).

Additional somatic characters: chelicerae with five to six retromarginal teeth, all equal or most proximal tooth biggest. Tarsi I–III with 7–8 dorsal trichobothria, tarsus IV with 8. The formulae of leg spination are listed in Table 3.

Male palp (Figs. 21–22): no males were available for examination; for description see Wang (1992: 286–290, figs. 1–3).

Epigynum and vulva (Figs. 31–32, 42–43): ground plate of atrium strongly sclerotized, undivided and trapezoidal. Lateral margin of atrium without elongate vertices. Copulatory openings indistinctly visible as gaps, located at anterior border of atrium. Receptacula big, globular.

Comparison to other species.— Based on the original description *A. aculeata* is probably closest related to *A. ligurica* but males are required to confirm this. The characters separating males of *A. aculeata* and *A. ligurica* are detailed under the latter. Female *A. aculeata* can be separated from *A. ligurica* by the much smaller and less visible copulatory opening (very distinct in *A. ligurica*), the trapezoidal shape of the atrium (rectangular in *A. ligurica*), the outline of the lateral margin of the atrium (vertices not elongated in *A. aculeata* but in *A. ligurica*) (Fig. 31), the dimensions of the vulva and the shape of the fertilization ducts (Fig. 32).

Natural history.— No information is available on the habitat of *A. aculeata*. All known specimens were collected in summer (August).

Distribution.— Known from southern China (provinces Hunan, Guangxi and Guizhou) (Wang, 1992).

Comment.— The type material of *A. aculeata* is probably lost (Xiang Xu, Hunan Normal University, China, pers. comm.) and no males were available for this study.

Aterigena aliquoi (Brignoli, 1971) new combination

Figs. 9–10, 15–16, 25–26, 33–34, 44–45

Tegenaria aliquoi Brignoli, 1971a: 86–88, figs. 31–34, male; Brignoli, 1977: 47, fig. 23, female.

Malthonica aliquoi (Brignoli); Guseinov et al., 2005: 164; Platnick, 2009.

Type material.— ITALY: *Sicily*: Palermo, Parco Regionale delle Madonie, Piano della Battaglia: holotype ♂, 28 July 1968, Aliquo (MCSN).

Other material.— ITALY: *Sicily*: Portella di Femminamorta, Monte dei Nebrodi: 1 ♂, 26 March 1967 (MCSN, PMBC); Palermo, Parco Regionale delle Madonie, Piano della Battaglia (37.875 N / 14.023 E, 1574 m): 1 ♂, 1 ♀, 24 May 2007, Bolzern & Mühlethaler (NMB); Palermo, Parco Regionale delle Madonie, Monastery close to Piano Zucchi (37.987 N / 14.021 E, 792 m): 1 ♂, 24 May 2007, Bolzern & Mühlethaler (NMB); Siracusa, Noto (360 m): 1 ♀, 27 July 1995, Pantini & Valle (MSNB).

The males collected in May 2007 were juvenile and reached maturity in July 2007 and July 2008.

Description.— As *A. ligurica* but differing in the following characters.

Measurements of male: carapace 6.78 long, 5.0 wide. Head region 2.62 wide; PER 1.58 wide. Chelicerae 2.82 long, 1.27 wide. Labium as long as wide or slightly longer than wide. Sternum 3.27 long, 2.61 wide. Opisthosoma 5.82 long, 3.54 wide. Ratio bulb length (laterally from cymbium base to conductor tip) to cymbium length: 0.66. Leg measurements:

	fe	pa	ti	mt	ta	total
palp	2.33	0.92	1.06	-	2.71	7.02
I	6.12	2.40	5.46	6.75	3.85	24.58
II	6.18	2.52	5.60	7.30	3.75	25.35
III	6.12	2.46	4.95	7.20	3.60	24.33
IV	7.90	2.36	6.53	10.10	4.10	30.99

Measurements of female: carapace 5.3 long, 3.65 wide. Head region 2.25 wide; PER 1.30 wide. Chelicerae 2.24 long, 1.10 wide. Labium as long as wide or somewhat longer than wide. Gnathocoxa ratio width to length: 0.6. Sternum 2.61 long, 2.12 wide. Opisthosoma 6.0 long, 3.6 wide. Epigynal plate 0.84 long, 1.05 wide; atrium 0.26 long, 0.22 wide. Receptacula 0.33 wide. Leg measurements:

	fe	pa	ti	mt	ta	total
palp	1.71	0.81	1.06	-	1.85	5.43
I	4.27	1.81	3.38	3.85	2.23	15.54
II	4.15	1.79	3.09	3.81	2.21	15.05
III	4.00	1.70	2.97	3.96	2.00	14.63
IV	5.00	1.90	4.20	5.75	2.50	19.35

Eyes: in frontal view PER procurved and AER slightly procurved (Fig. 9). Diameters: PME: 0.19–0.23; PLE: 0.21–0.31; AME: 0.19–0.29; ALE: 0.29. Distances: PME–PME equal to diameter of PME; PME–PLE more than diameter of PME; PME–ALE about 1.5 diameter of PME. Clypeus height (measured under AME) less than 2.5 times diameter of AME; (measured under ALE) about 1.5 times diameter of ALE.

Coloration: two longitudinal symmetric darkened bands on carapace, interrupted and sometimes reduced to triangular dots, intensified by white and black plumose hairs. Opisthosoma with red-brown median band, slightly paler than in *A. ligurica* (Fig. 10).

Additional somatic characters: distal segment of PLS slightly longer than basal segment, both very weakly darkened. The formulae of leg spination are listed in Table 3.

Male palp (Figs. 15–16, 25–26): embolus originating (free apex) between 7 and 8 o'clock position. Conductor as long as the alveolus. Median apophysis originating between 4 and 5 o'clock position.

Epigynum and vulva (Figs. 33–34, 44–45): epigynal plate sclerotized with a distinct atrium, reversed trapezoid in shape; anterior margin of atrium continuous change from sclerotized epigynal plate to membranous white skin. Ground plate of the atrium transversally divided: anterior part membranous and oval; posterior part forming strongly sclerotized semicircular bar. Receptacula visible through plate. Copulatory openings barely visible as gaps, located medial of atrium. Receptacula big, globular, touching each other; fertilization ducts very long and strongly convoluted.

Comparison to other species.— The male of *A. aliquoi* can be separated from *A. ligurica* by the relation of bulb length to cymbium length (cymbium tip from alveolus to distal end is relatively shorter in *A. ligurica*), the relatively straight distal apex of conductor (distinctly bent in *A. ligurica*), the more slender dorsal branch of the RTA (broader in *A. ligurica*) and the slightly longer lateral branch of RTA (Figs. 15–16, 25–26). The female can easily be separated from all other species by the divided ground plate of the atrium in a pale larger oval anterior part and a semicircular posterior bar (not divided in *A. ligurica* and *A. aculeata*; anterior part semicircular in *A. soriculata* and *A. aspromontensis* n. sp.) and the shape of the fertilization ducts (Fig. 33–34, 44–45).

Natural history.— The specimens collected by A. Bolzern were caught out of their typical funnel webs attached to stones in a beech forest and a mixed deciduous forest. Adult specimens were collected during summertime (end of May until August).

Distribution.— Only known from Sicily, Italy (Fig. 56).

Remarks.— In the original description, Brignoli (1971a) placed this species close to *Tegenaria atrica* C. L. Koch, 1843 and *Tegenaria nervosa* Simon, 1870. Later, Brignoli (1977) mentioned that this species, or at least the epigynum, shows morphological similarities to *Aterigena soriculata* (Simon, 1937) (sub *Tegenaria soriculata*). The holotype is much smaller than the measured male caught in 2007.

Aterigena soriculata (Simon, 1873) new combination

Figs. 11–12, 17–18, 27–28, 35–36, 46–47

Tegenaria soriculata Simon, 1873: 144–146, pl. 1, fig. 20, male and female.

Tegenaria cyrnea Brignoli, 1974: 392–393, male and female, synonymized by Dresco & Célérier, 1979: 230.

Malthonica soriculata (Simon): Guseinov et al., 2005: 164; Platnick, 2009.

Type material.— In the collection of the MNHN several specimens could be found in the jar labeled “1967” containing several unlabeled vials. According to Dresco & Célérier (1979) these represent Simon’s syntypes. The samples contain 1 ♂ and several females with dissected and removed epigynes which were not traceable. Sub *Tegenaria cyrnea* Brignoli: FRANCE: Corsica: Poggiolo: Holotype ♂, summer 1922 (MHNG); 1 ♂, 2 ♀, paratypes, same locality and collecting data as holotype (MHNG).

Other material.— FRANCE: Corsica: Forêt de Valdo Niello: 5 ♀, 7 juv., 22 May 1974 (NHMW); Haute-Corse, Corte, Gorge de la Restonica (42.3 N / 9.1333 E): 1 ♀, 1 June 1999, van Keer (KK, Nr. 1917); Col de Vizzavona: 1 ♀, 2 September 1953, Kahman (SMF, Nr. 8937/1-135); Mt. S. Pietro at Morosaglia: 1 ♀, 22 September 1953, Kahman (SMF, Nr. 8938/1-135); Mt. d'Oro: 2 ♀, 3 September 1953, Kahman (SMF, Nr. 8936/2-135); Vizzavona: 1 ♂, 1 ♀, 29 April 1928, Wiehle (SMF, Nr. 20668/2-135).

Description.— As *A. ligurica* but differing in the following characters.

Measurements of male: carapace 4.47 long, 3.23 wide. Head region 1.91 wide; PER 1.0 wide. Chelicerae 2.06 long, 0.91 wide. Labium wider than long. Sternum 2.24 long, 1.86 wide. Opisthosoma 3.42 long, 1.88 wide. Ratio bulb length (laterally from cymbium base to conductor tip) to cymbium length: 0.64. Leg measurements:

	fe	pa	ti	mt	ta	total
palp	1.64	0.66	0.74	-	1.37	4.41
I	3.63	1.68	3.11	3.46	2.09	13.97
II	3.49	1.53	2.72	3.12	2.10	12.96
III	3.49	1.50	2.60	3.64	1.99	13.22
IV	3.92	1.63	3.52	4.79	2.31	16.17

Measurements of females (n=2): carapace 4.14–5.07 long, 2.93–3.48 wide. Head region 1.56–2.16 wide; PER 0.93–1.0 wide. Chelicerae 2.02–2.22 long, 0.97–1.05 wide. Gnathocoxa ratio width to length: 0.6. Sternum 2.29–2.57 long, 1.81–2.02 wide. Opisthosoma 5.99 long, 3.71 wide. Epigynal plate 0.36–0.39 long, 0.56–0.59 wide; atrium 0.16–0.18 long, 0.23–0.27 wide. Receptacula 0.17 wide. Leg measurements:

	fe	pa	ti	mt	ta	total
palp	1.48–1.73	0.71–0.86	0.88–1.00		1.53–1.75	4.60–5.34
I	2.87–3.39	1.38–1.67	2.44–2.78	2.57–2.98	1.82–1.98	11.08–12.8
II	3.03–3.28	1.42–1.57	2.21–2.4	2.45–2.95	1.56–1.85	10.67–12.05
III	3.07–3.31	1.39–1.62	2.1–2.33	2.46–3.37	1.64–1.73	10.66–12.36
IV	3.63–3.93	1.64	3.00–3.17	3.91–4.57	1.89–2.26	14.07–13.93

Eyes (Fig. 11): diameters: PME: 0.17–0.18; PLE: 0.18–0.21; AME: 0.13–0.18; ALE: 0.19–0.21. Distances: PME–PME less than diameter of PME; PME–AME less than or equal to diameter of PME; PME–PLE less than or equal to diameter of PME; PME–ALE less than 1.5 diameter of PME; AME–AME about 0.5 diameter of AME. Clypeus height (measured under AME) less than 2.5 times diameter of AME; (measured under ALE) about 1.5 times diameter of ALE.

Coloration: two longitudinal symmetrical dark bands present on carapace, interrupted, sometimes reduced to triangular dots, intensified by white and black plumose hairs. Opisthosoma dark green-brownish, at the cardiac mark yellowish with dots on the sides, continuing in broad chevrons (~ 5) posteriorly (Fig. 12). Legs not annulated.

Additional somatic characters: tarsus I with 7–8 dorsal trichobothria, tarsi II–IV with 7. Colulus dark, sometimes only partially. Both segments of PLS very weakly darkened. PMS slightly smaller than ALS. The formulae of leg spination are listed in Table 3.

Male palp (Figs. 17–18, 27–28): RTA with big dorsal branch, distally truncated and strongly sclerotized; lateral branch developed as a weakly sclerotized point. Embolus originating (free apex) between 7 and 8 o'clock position; length (only free apex) less than 1.75 times cymbium width; distal tip between 2 and 3 o'clock position. Median apophysis originating between 4 and 5 o'clock position.

Epigynum and vulva (Figs. 35–36, 46–47): epigynal plate sclerotized with distinct atrium, transversely oval in shape; anterior margin of atrium sclerotized at epigynal plate gradually becoming membranous. Ground plate of atrium transversally subdivided by straight groove: anterior part membranous or weakly sclerotized, semicircular in shape; posterior part sclerotized, forming semicircular bar. Copulatory openings barely visible, located medially of atrium. Receptacula small, globular.

Comparison to other species.— *A. soriculata* differs from the other congeners in the smaller dimensions of carapace and cymbium, in the ventral margin of dorsal branch of RTA which is slightly bent ventrally (straight in *A. ligurica*, *A. aculeata* and *A. aliquoi*), in the distal plate of median apophysis (simpler and relatively narrower than in *A. ligurica* and *A. aliquoi*), in the embolus which is shorter than twice cymbium width (more than twice cymbium width in *A. ligurica*, *A. aculeata* and *A. aliquoi*), in the relatively short male palpal tibia (much longer in *A. aspromontensis* n. sp.) (Figs. 17–18, 27–28), in the transversally divided atrium (by straight groove, but curved in *A. aspromontensis* n. sp.) with semicircular anterior part and relatively small and globular receptacula (relatively large in *A. ligurica*, *A. aculeata* and *A. aliquoi*, also small but oval in *A. aspromontensis* n. sp.) (Figs. 35–36, 46–47).

Natural history.— Adult specimens were collected from May to October. Little information is available on habitat requirements. One specimen was collected under stones in a pine forest.

Distribution (Fig. 56).— Corsica (France) (Dresco & Célérier, 1979; Simon, 1873). The species was also reported from Sardinia (Italy) (Garneri, 1902; Kraus, 1955). The record by Garneri (1902: 72) was unavailable for study. Material by Kraus (1955: 379, SMF-Nr. 9110) concerns *T. parietina* (cf. Bolzern et al., 2008).

Aterigena aspromontensis new species
Figs. 19–20, 37–39, 48–55

Type material.— ITALY: *Calabria*: Reggio Calabria, Santo Stefano d'Aspromonte, above Gambarie (1600 m): holotype ♀, 5 ♂ paratypes, 18 August 1978, Bianchi (MSNB).

Other material.— ITALY: *Calabria*: Reggio Calabria, Santo Stefano d'Aspromonte, between Gambarie and Montalto (1500 m): 3 ♀, June 1990 – June 1991, Buttarelli, Ghilardi, Pantini & Valle (MSNB).

Etymology.— The new species is named after the mountain massif Aspromonte in the province of Reggio Calabria where the known specimens have been found.

Description.— *Measurements of male holotype:* carapace 3.27 long, 2.27 wide. Head region 1.45 wide; PER 0.75 wide. Chelicerae 1.69 long, 0.71 wide. Labium as wide as long. Gnathocoxa ratio width to length: 0.6. Sternum 1.65 long, 1.44 wide. Opisthosoma 3.03 long, 1.91 wide. Ratio bulb length (laterally from cymbium base to conductor tip) to cymbium length: 0.73. Leg measurements:

	fe	pa	ti	Mt	ta	total
palp	1.63	0.67	0.92	-	1.06	4.28
I	2.52	1.15	2.12	2.48	1.64	9.91
II	2.48	1.09	1.91	2.42	1.51	9.41
III	2.52	1.03	1.94	2.73	1.49	9.71
IV	3.03	1.09	2.64	3.64	1.82	12.22

Measurements of female paratypes (n=5): carapace 3.13–4.26 long, 2.10–2.76 wide. Head region 1.50–1.95 wide; PER 0.75–0.95 wide. Chelicerae 1.6–2.0 long, 0.7–1.0 wide. Labium as long as wide. Gnathocoxa ratio width to length: 0.6–0.7. Sternum 1.75–2.20 long, 1.55–1.95 wide. Opisthosoma 4.75–5.00 long, 3.1–3.4 wide. Epigynal plate 0.49–0.57 long, 0.61–0.73 wide; atrium 0.16–0.17 long, 0.18–0.19 wide. Receptacula 0.24 wide. Leg measurements:

	fe	pa	ti	Mt	ta	total
palp	1.27–1.51	0.60–0.70	0.77–1.00	-	1.33–1.52	3.97–4.73
I	2.50–2.94	1.13–1.40	1.88–2.33	2.00–2.58	1.42–1.76	6.93–8.43
II	2.27–2.85	1.06–1.24	1.61–2.06	1.82–2.49	1.45–1.58	6.39–7.73
III	2.21–2.76	1.00–1.27	1.58–1.91	2.24–2.72	1.30–1.55	6.09–7.49
IV	2.79–3.48	1.12–1.39	2.33–2.91	3.12–3.88	1.64–1.91	7.88–9.69

Eyes: in dorsal view both eye rows straight or slightly recurved; in frontal view PER procurved and AER straight or slightly procurved (Fig. 48). Diameters: PME: 0.124–0.143; PLE: 0.143–0.162; AME: 0.095–0.133; ALE: 0.143–0.162. Distances: PME–PME less than diameter of PME; PME–AME less than diameter of PME; PME–PLE equal to diameter of PME; PME–ALE less than 1.5 diameter of PME; AME–AME about 0.5 times diameter of AME or slightly more; AME–ALE about 0.5 times diameter of AME. Clypeus height (measured under AME) less than 2.5 times diameter of AME; (measured under ALE) less than 1.5 times diameter of ALE.

Coloration: margin of carapace narrowly and continuously dark; two longitudinal symmetrical dark bands on carapace, interrupted and sometimes reduced to triangular dots. Sternum with indistinct light median band (Fig. 50). Opisthosoma dark green-greyish, anteriorly with two light and partially fused bands, continuing in fused chevrons posteriorly (Fig. 49). Legs weakly annulated, hardly visible on femora ventrally.

Additional somatic characters: distal margin of labium weakly concave. Plumose hairs present on carapace, legs and opisthosoma. Promargin with 4 teeth, second one from proximal biggest; retromargin with 4–5, most proximal tooth biggest. Trochanter III and IV notched. Tarsus I with 5–8 dorsal trichobothria, tarsi II–IV with 6–8. Colulus forming rectangular plate, pale, distal margin straight. PLS longer than all others with distal segment shorter than or as long as basal segment, both darkened. PMS as long as ALS. ALS not darkened. The formulae of leg spination are listed in Table 3.

Male palp (Figs. 19–20, 51–52): RTA with big dorsal branch, distally truncated and strongly sclerotized; lateral branch developed as weakly sclerotized digitiform appendix; ventral branch forming weakly developed rounded ridge. Embolus originating (free apex) between 8 and 9 o'clock position; length (only free apex) less than 1.75 times width of cymbium; distal tip at 2 o'clock position. Conductor lamella-like, distally only weakly elongate (parallel to cymbium), very weakly arched and laterally folded along entire length;

shorter than alveolus; distally not reaching beyond distal margin of alveolus; terminal end forming sclerotized peak, pointing ventrally (in retrolateral view). Connection of conductor and tegulum membranous. Median apophysis consisting of membranous base and thin, broad sclerotized distal plate, spoon-like, originating between 4 and 5 o'clock position; protruding ventrodistally (the MA on left palp of holotype slightly retracted, probably due to desiccation, see Figs. 19–20); basi slightly smaller than median apophysis long.

Epigynum and vulva (Figs. 37–39, 53–54): epigynal plate sclerotized with distinct atrium, transversely oval in shape; anterior margin of atrium gradually changing from sclerotized epigynal plate to membranous structure; atrium reaching posteriorly epigastral furrow. Ground plate of atrium transversally subdivided (slightly concave medially): anterior part membranous or weakly sclerotized, semicircular in shape; posterior part stronger sclerotized forming semicircular band. Lateral margin of atrium with elongated vertices. Receptacula visible through plate. Copulatory openings indistinct, located medially of atrium. Copulatory duct short, straight; receptacula small, oval or globular; fertilization ducts short, weakly convoluted.

Comparison to other species.— *A. aspromontensis* differs from other *A.* spp. as indicated in the key (see also discussion of *A. soriculata*). Male *A. aspromontensis* n. sp. can be separated from those of *A. soriculata* by the shorter and smaller distal apex of the conductor and the relatively long palpal tibia (much shorter in *A. soriculata*) (Figs. 19–20, 51–52). The females can be separated from *A. soriculata* by the transverse dividing groove of atrium being slightly concave (straight in *A. soriculata*), the oval-shaped receptacula and the only weakly convoluted and short fertilization ducts (stronger convoluted and longer in *A. soriculata*) (Figs. 37–39, 53–54).

Natural history.— No information available.

Distribution.— Calabria (Italy) (Fig. 56).

DISCUSSION

The tribe Tegenariini currently comprises six nominal genera in addition to *Aterigena* n. gen., which is described here. *Aterigena* n. gen. resembles *Hadites*, *Histopona* and *Malthonica* in the notched trochanters III and IV. It differs from them in the presence of dorsal and lateral spines on patellae III and IV as well as 1–2 ventral spines on tarsus IV. In erecting *Aterigena* n. gen. and hereby removing some species from *Tegenaria*, the latter becomes morphologically more homogeneous. In addition, the narrow definition of *Malthonica* by Barrientos & Cardoso (2007) and the concept of *Pseudotegenaria* by Brignoli (1971a) rather than that of Lehtinen (1967) are adopted here. With these actions the genera become morphologically compact and, above all, diagnosable. Morphological and molecular data support the monophyly of these taxa (see also key to genera and Fig. 57).

The phylogenetic relationships between the genera of Tegenariini, in contrast, remain unclear. For resolving the intrageneric relationships additional morphological characters and genes should be analyzed (Bolzern et al., in prep.).

Aterigena n. gen. includes five species which have a widely disjunct distribution in the Palearctic region (4 spp. in the Mediterranean Basin and 1 sp. in China). *A. ligurica* is relatively widely distributed in continental Italy and adjacent areas of Southern France, possibly also in Spain, *A. aliquoi* is endemic to Sicily, *A. soriculata* to Corsica (maybe also Sardinia) and *A. aspromontensis* n. sp. to Calabria (Fig. 56). Two female specimens of *A. ligurica* are reported from outside Italy and France. One specimen is recorded from Spain without further information. Additional collecting is necessary to confirm its occurrence in Spain. The second specimen is reported from Alexandria (Egypt) which may be the result of inadvertent human introduction.

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Table 1.— Checklist of *Aterigena* n. gen. species with known geographic distributions.

Taxon name	Original genus	Distribution
<i>Aterigena aculeata</i> (Wang, 1992)	<i>Tegenaria</i>	southern China
<i>Aterigena aliquoi</i> (Brignoli, 1971)	<i>Tegenaria</i>	Sicily
<i>Aterigena aspromontensis</i> n. sp.		Calabria (Italy)
<i>Aterigena ligurica</i> (Simon, 1916)	<i>Tegenaria</i>	Italy, southern France, Spain, Egypt (possibly introduced)
<i>Aterigena soriculata</i> (Simon, 1873)	<i>Tegenaria</i>	Corsica, Sardinia?

Table 2.— Character table based on Lehtinen (1967) supplemented with additional characters. <: smaller than; >: bigger than; =: equal. Characters supporting the tribe are shaded.

	Agelenini	Tegenariini	Textricini
Eye-rows (frontal)	strongly procurved	straight or procurved	straight or recurved
Eye-rows (dorsal)	procurved	straight	strongly recurved
Biggest Eyes	not PME	not PME	PME
Cheliceral teeth (pro- /retromargin)	3–4/2–4	3–5/3–12	3/2–4
Sternal pattern	central bright area or none	distinct or none	central bright area or none
Special feathery hairs at legs and carapace	present	present	absent or different
Patellar apophysis	present	present or none	present or none
Embolus shape	broad, membranous or filiform	filiform, sometimes truncated	broad, membranous or filiform
Conductor shape	strong or spiral helical	lamelliform or massive	lamelliform or massive
Median apophysis	present	present or absent	present or absent
Trochanter IV notched	absent	present or absent	absent
Colulus	2 separated plates	absent or trapezoidal	2 separated plates
PLS, distal to basal segment length	(=) >	< = >	>
Special dark and strong hairs at analtubus	present	absent	absent
Lateral patellar spines	present	absent (present*)	present
Ventral tarsal spines (IV)	present / absent	absent (present*)	present
MA with sclerit	absent	present	present

*Present only in *Aterigena* n. gen.

Table 3.— Spination of legs of *Aterigena ligurica* (Simon, 1916), *A. aculeata* (Wang, 1992), *A. aliquoi* (Brignoli, 1971), *A. soriculata* (Simon, 1873) and *A. aspromontensis* n. sp.. The formula gives the number of spines as follows: dorsal - prolateral - retrolateral - ventral. A “p” indicates that at this position the spine is paired (1p = 2 spines at almost the same longitudinal position). A “(s)” indicates very short but strong spines. A superscript “-“ or “+” indicates less or more spines than indicated have been observed at this position.

Leg	Species	Femur	Patella	Tibia	Metatarsus	Tarsus
palp	<i>A. ligurica</i>	3-0-0	2-1-0	1 ⁺ -2p-0	-	-
	<i>A. aculeata</i>	3-0-0	2-1-0	2-2p-0	-	-
	<i>A. aliquoi</i>	3 ⁺ -0-0	2-1-0	1 ⁺ -2p-0	-	-
	<i>A. soriculata</i>	3-0-0	2-0 ⁺ -0	1 ⁺ -2p-0	-	-
	<i>A. aspromontensis</i>	3-0-0	2-0 ⁺ -0	1 ⁺ -2p-0	-	-
I	<i>A. ligurica</i>	3-3 ⁻ -3 ^{-/+} -0	2-1-0 ⁺	2-2 ⁺ -0 ⁺⁺ -3p	0-2-2-1+2p+1 0-2-2-1p+1+1p+1 0-2-2-3p+1 0-2-2-3p+1+1(s)	0
	<i>A. aculeata</i>	3 ⁺ -4 ^{-/+} -3 ⁻ -0	2-1-0	2-2-0-3+1p 2-3-0-3p	0-2-0 ⁺ -3p+1	0
	<i>A. aliquoi</i>	3-2 ⁺ -2-0	2-1-0	2-3 ⁻ -0 ⁺⁺ -3p 2-3-2-2p+1	0-2 ⁺ -2 ⁺ -3p+1	0
	<i>A. soriculata</i>	3-2-1 ⁺ -0	2-1-0	2 ⁻ -2 ⁻ -0-3p	0-2-2-3p+1	0
	<i>A. aspromontensis</i>	3-1-1 ⁺ -0	2-1-0	2-2 ⁺ -0-3p	0-2-1 ⁺ -3p+1	0
II	<i>A. ligurica</i>	3-3 ⁺⁺ -3 ⁺ -0	2-1-0 ⁺	2-2-0-1+2p 2-2-0 ⁺⁺ -3p	0-3-2-3p+1p(s)+1 1-3-3-1+2p+1p(s)+1	0
	<i>A. aculeata</i>	3-2 ⁺⁺ -2 ⁺ -0	2-1-0	2-2-0-1+2p 2-2-0-2+1p	0-2 ⁺ -1 ⁺ -3p+1	0
	<i>A. aliquoi</i>	3-2 ⁺ -2-0	2-1-0 ⁺	2-2-0-3p	0 ⁺ -3-2 ⁺ -3p+1p(s)+1	0
	<i>A. soriculata</i>	3-2-2-0	2-1-0	2-2-0-1+2p 2-2-0-3p	0 ⁺ -3-2-3p+1p(s)+1	0
	<i>A. aspromontensis</i>	3-2-2-0	2-1-0	2-2-0-1+2p	0-3-2-3p+1+1(s) 0-3-2-3p+1p(s)+1	0
III	<i>A. ligurica</i>	3-3 ⁺ -2 ⁺⁺ -0	2-1-1	2-2 ⁺ -2-3p	1+1p-3-4-3p+1p(s)+1 1+1p-4-3-1p+1+2p+1p(s)+1 1p-4-3-1p+1+2p+1p(s)+1 3-4-4-1p+1+2p+1p(s)+1	0-2 ⁺ -1-1 ⁺
	<i>A. aculeata</i>	3-2-2-0	2-1-1	2-2-2-1p+1+2p 2-2-2-2+1p	1-3-3-3p+1+1(s) 1p-3-3-3p+1	0-2 ^{-/+} -1-1 ⁺
	<i>A. aliquoi</i>	3-2 ⁺⁺ -2-0	2-1-1	2-2-2-1+2p 2-2-2-2p ⁺	1-3-3-3p+1p(s)+1 1+1p-3-3-3p+1p(s)+1 2-3 ⁺ -3-3p+1p(s)+1	0-2 ⁺ -1-0
	<i>A. soriculata</i>	3-2-2-0	2-1-1	2-2-2-1 ⁺ +2p- 2-2-2-3p	1-3-3-3p+1p(s)+1 1p-3-3-3p+1p(s)+1	0-2 ⁻ -1-1 ⁻
	<i>A. aspromontensis</i>	3-2-2-0	2-1-1	2-2-2-1 ⁺ +2p-	1-3-3-3p+1p(s)+1 1p-3-3-3p+1p(s)+1 2-3-3-3p+1+1(s)	0-2-1-1
IV	<i>A. ligurica</i>	3-4 ⁺ -1 ⁺ +0	2-1-1	2-2-2-1+2p 2-2-2-3p 2-2-3-1p+2+1p	1+1p-4-3-2p+3+1p+1(s)+1 1+2p-4-3-1p+1+2p+1(s)+1 1+1p+1-4-3-4+2p+1	0-2 ⁺ -2 ⁺ -2
	<i>A. aculeata</i>	3-2 ^{-/+} -1 ⁺ -0	2-1-1	2-2-2-2 ^{-/+} +1p ⁺	1-4-3-1+3p+1 1-4-3-1p+1+2p+1+1(s) 2-4-3-1p+1+2p+1	0-2-2-2
	<i>A. aliquoi</i>	3-2 ⁺⁺ -1+0	2-1-1	2-2-2-3p	2-3-3-1p+1+2p+1+1(s) 2-3-3-3+2p+1+1(s)	0-2-2-1 ⁺
	<i>A. soriculata</i>	3-2-1 ⁺ -0	2-1-1	2-2-2-1p+2 ⁺ +1p	2-3-3-1+3p+1+1(s) 2-3-3-1p+1+2p+1+1(s)	0-2-2-2
	<i>A. aspromontensis</i>	3-2-1-0	2-1-1	2-2-2-1+2p	2-3-3-1p+1+2p+1+1(s)	0-2-2-2

Table 4.— Apomorphic amino acid substitutions of *Aterigena* n. gen. detected within a small sequence of the mitochondrial CO1 gene. Numbers refer to the *Drosophila yakuba* gene presented by Clary & Wolsenholme (1985).

Triplet #	622			623			624			625			626			627			628			629			630			631					
Nucleotide position	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	8	8	8	9	9	9	9
	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3			
<i>Amaurobius fenestralis</i> (Ström, 1768)	G	C	T	T	C	T	A	T	A	A	T	A	G	G	G	C	A	T	T	C	A	G	G	A	A	G	A	G	C	T			
<i>Textrix denticulata</i> (Olivier, 1789)	.	.	.	.	.	C	.	C	T	.	.	.	.	C	.	.	.	.	A	G	T	.	.	.	.	.	.	T	.	.
<i>Tegenaria domestica</i> (Clerck, 1757)	.	.	.	.	.	.	T	C	T	.	.	G	.	.	A	.	.	.	A	T	.	.	.	G	.	.	.	.	.	.
<i>Tegenaria atrica</i> C. L. Koch, 1843	.	.	.	.	.	.	T	C	T	.	.	T	.	.	T	.	.	.	.	T	T	.	.	T	.	A	.	T	.	.
<i>Histopona torpida</i> (C. L. Koch, 1837)	.	.	.	.	.	.	T	C	T	.	.	T	.	.	A	.	.	.	A	T	.	.	.	T	.	.	.	T	.	.
<i>Malthonica oceanica</i> Barrientos & Cardoso, 2007	.	.	.	.	.	.	T	C	T	G	.	T	.	.	A	.	.	.	G	.	G	.	.	T	.	.	.	T	.	.
<i>Aterigena ligurica</i> (Simon, 1916)	T	.	.	.	.	.	T	.	T	.	.	T	.	.	C	.	.	.	G	.	T	.	A	T	.	.	.	A	G	A
<i>Aterigena aliquoi</i> (Brignoli, 1971)	T	.	.	.	.	.	T	.	T	.	.	.	.	.	T	.	.	.	G	.	T	.	A	T	.	.	.	A	G	C
<i>Aterigena aculeata</i> (Wang, 1992)	T	.	.	.	.	.	T	.	T	.	.	T	.	.	A	.	.	.	G	.	T	A	A	T	.	.	.	A	G	A
synapomorphic amino acid subst.	A →S			-			M,I,S →F			-			-			-			-			G,S →D,N			-			-					

Table 5.— Genbank Accession Numbers of all included CO1 sequences. Sequences which were already published have been alligned with the new ones to a length of 471 nucleotides.

Taxon name	Accession #	Specimen origin	Voucher specimen	Comments / Reference
<i>Agelena canariensis</i> Lucas, 1838	FN554798	ES: Gran Canaria	Departament de Biologia Animal, Universitat de Barcelona: NTxTeg1 NMB: AB 424	
<i>Agelena labyrinthica</i> (Clerck, 1757)	FN554797	IT: Sardinia		
<i>Agelenopsis aperta</i> (Gertsch, 1934)	DQ628604	-		Spagna & Gillespie (2008)
<i>Allagelena gracilens</i> (C. L. Koch, 1841)	DQ628606	-		Spagna & Gillespie (2008)
<i>Amaurobius fenestralis</i> (Ström, 1768)	FN554820	CH: Solothurn	NMB: AB 1006	
<i>Amaurobius ferox</i> (Walchenaer, 1830)	FN554819	CH: Basel-Land	NMB: AB 959	
<i>Amaurobius similis</i> (Blackwall, 1861)	DQ628608	-		Spagna & Gillespie (2008)
<i>Aterigena aculeata</i> (Wang, 1992)	FN554790	CN: Guizhou	NMB: AB 591	
<i>Aterigena aliquoi</i> (Brignoli, 1971)	FN554791	IT: Sicily	NMB: AB 720	
<i>Aterigena ligurica</i> (Simon, 1916)	FN554789	IT: Calabria	NMB: AB 812	
<i>Barronopsis barrowsi</i> (Gertsch, 1934)	DQ628609	-		Spagna & Gillespie (2008)
<i>Calymmaria sp. 1</i>	DQ628611	-		Spagna & Gillespie (2008)
<i>Coelotes terrestris</i> (Wider, 1834)	DQ628627	-		Spagna & Gillespie (2008)
<i>Cybaeus sp.</i>	FN554818	US: Oregon	NMB: AB 615	
<i>Eurocoelotes inermis</i> (L. Koch, 1855)	DQ628628	-		Spagna & Gillespie (2008)
<i>Histopona torpida</i> (C. L. Koch, 1837)	FN554793	CH: Basel-Land	NMB: AB 212	
<i>Hololena sp. 1</i>	FN554799	US: California	NMB: AB 613	
<i>Hololena sp. 2</i>	FN554800	US: Washington	NMB: AB 883	
<i>Lycosoides coarctata</i> (Dufour, 1831)	FN554815	PT: Algarve	NMB: AB 766	
<i>Maimuna cretica</i>	FN554795	GR: Crete	NMB: AB 855	identical haplotype as a specimen from IT

(Kulczyn'ski, 1903)	FN554770	DE: Hessen	NMB: AB 290
<i>Malthonica campestris</i> (C. L. Koch, 1834)	FN554781	LB: Mount Lebanon	NMB: AB 577
<i>Malthonica dalmatica</i> (Kulczyn'ski, 1906)	FN554806	IT: Campania	NMB: AB 434
<i>Malthonica dalmatica</i> (Kulczyn'ski, 1906)	FN554811	IT: Sicily	NMB: AB 840
<i>Malthonica dalmatica</i> (Kulczyn'ski, 1906)	FN554772	IT: Sardinia	NMB: AB 428
<i>Malthonica eleonorae</i> (Brignoli, 1974)	FN554777	GR: Crete	NMB: AB 894
<i>Malthonica ferruginea</i> (Panzer, 1804)	FN554802	FR: Alsace	NMB: AB 293
<i>Malthonica ferruginea</i> (Panzer, 1804)	FN554780	BG: Sofia	NMB: AB 242
<i>Malthonica nemorosa</i> (Simon, 1906)	FN554792	PT: Lisbon	NMB: AB 933
<i>Malthonica oceanica</i> Barrientos & Cardoso, 2007	FN554785	ES: Pais	NMB: AB 669
<i>Malthonica picta</i> (Simon, 1870)	FN554774	PT: Lisbon	NMB: AB 589
<i>Malthonica ramblae</i> (Barrientos, 1978)	FN554786	IT: Sardinia	NMB: AB 580
<i>Malthonica sardoa</i> Brignoli, 1977	FN554787	IT: Sardinia	NMB: AB 841
<i>Malthonica sicana</i> Brignoli, 1976	FN554814	IT: Campania	NMB: AB 734
<i>Malthonica vomeroi</i> (Brignoli, 1977)	DQ628618	-	-
<i>Novalena intermedia</i> (Chamberlin & Gertsch, 1930)	FN554769	GR: Crete	NMB: AB 845
<i>Tegenaria ariadnae</i> Brignoli, 1984	FN554821	GR: Crete	NMB: AB 974
<i>Tegenaria ariadnae</i> Brignoli, 1984	FN554804	DE: Baden-Württemberg	NMB: AB 252
<i>Tegenaria agrestis</i> (Walckenaer, 1802)			

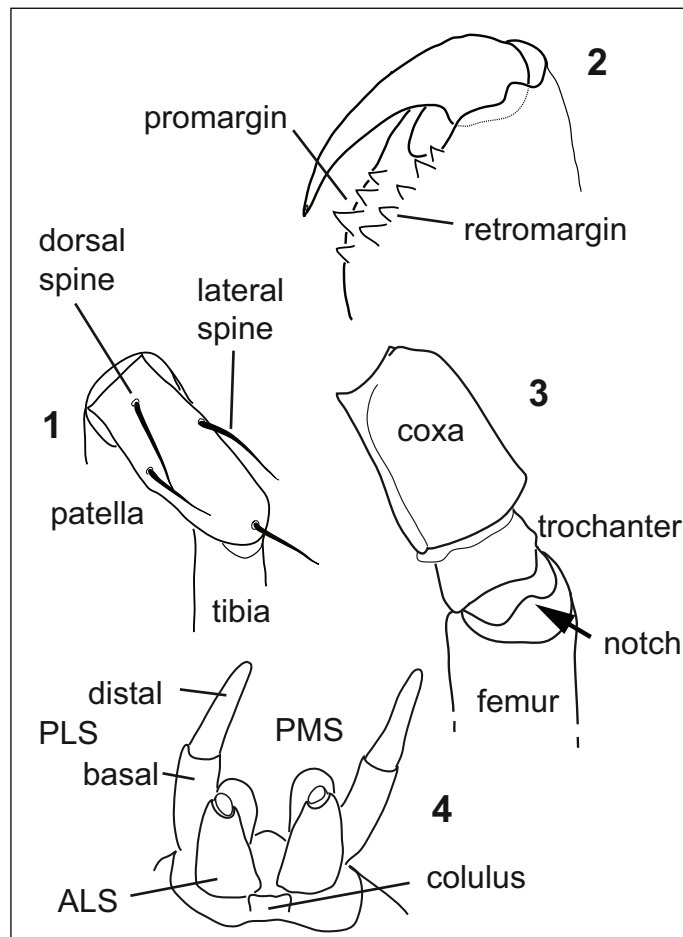
identical haplotype as a specimen from CH

Spagna & Gillespie (2008)

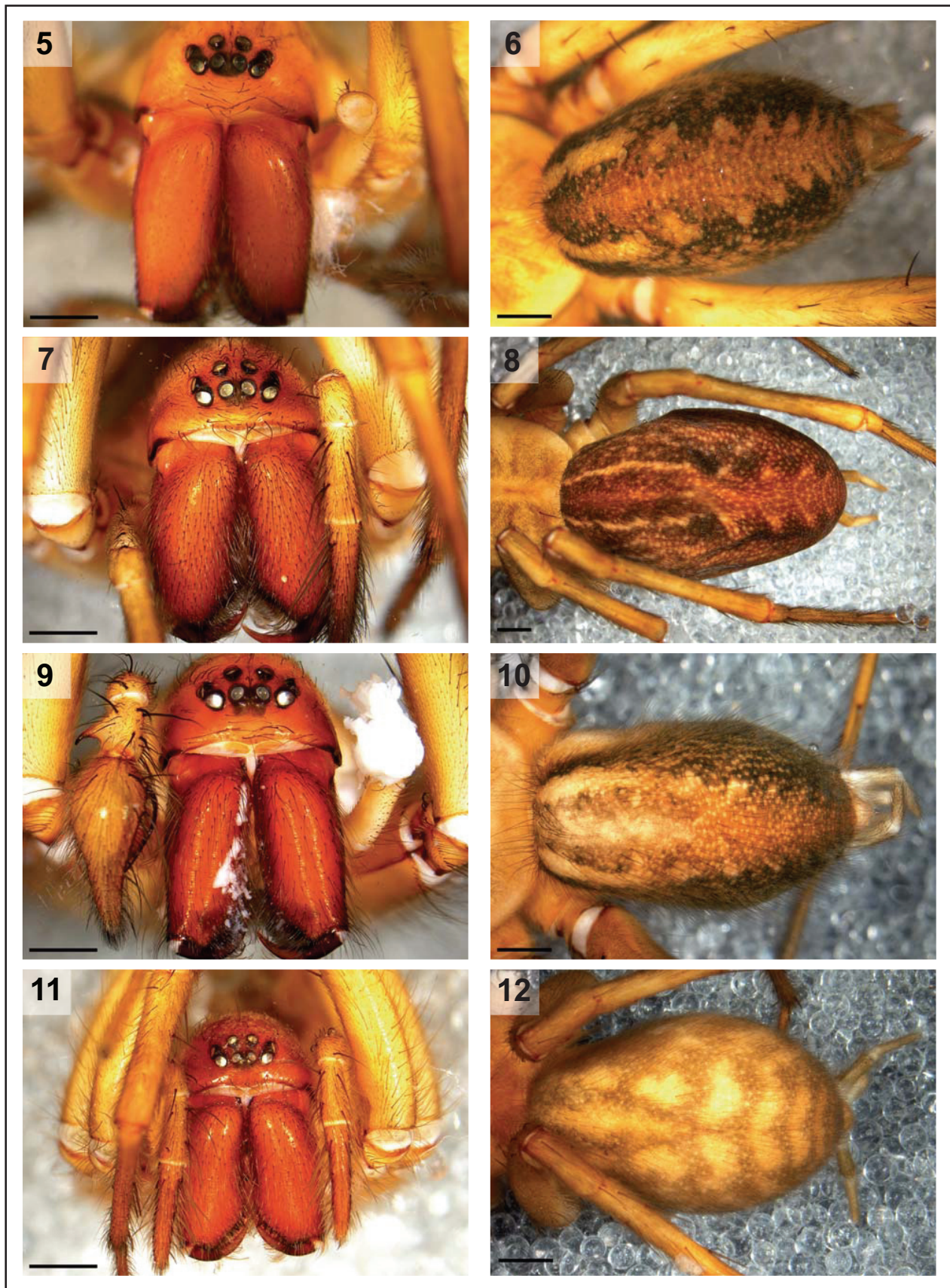
identical haplotype as a specimen from CZ

<i>Tegenaria agrestis</i> (Walckenaer, 1802)	FN554816	US: Washington	NMB: AB 880	identical haplotype as a specimen from DE
<i>Tegenaria atrica</i> C. L. Koch, 1843	FN554801	ES: Catalonia	NMB: AB 570	
<i>Tegenaria atrica</i> C. L. Koch, 1843	FN554805	SE: Uppsala	NMB: AB 610	identical haplotype as specimens from CH and DE
<i>Tegenaria domestica</i> (Clerck, 1757)	FN554817	US: Washington	NMB: AB 885	
<i>Tegenaria domestica</i> (Clerck, 1757)	FN554808	CH: Basel	NMB: AB 217	identical haplotype as specimens from CN, PT and US
<i>Tegenaria feminea</i> Simon, 1870	FN554783	PT: Algarve	NMB: AB 587	
<i>Tegenaria henroti</i> Dresco, 1956	FN554771	IT: Sardinia	NMB: AB 584	
<i>Tegenaria herculea</i> Fage, 1931	FN554788	ES: Andalusia	NMB: AB 576	
<i>Tegenaria incognita</i> Bolzern, Crespo & Cardoso, 2009	FN554784	PT: Lisbon	NMB: NMB-2805c	
<i>Tegenaria mirifica</i> Thaler, 1987	FN554775	CH: Grisons	NMB: AB 367	
<i>Tegenaria parietina</i> (Fourcroy, 1785)	FN554778	GR: Crete	NMB: AB 864	
<i>Tegenaria parietina</i> (Fourcroy, 1785)	FN554807	IT: Sicily	NMB: AB 816	identical haplotype as a specimen from DE
<i>Tegenaria parmenidis</i> Brignoli, 1971	FN554773	IT: Calabria	NMB: AB 820	
<i>Tegenaria parmenidis</i> Brignoli, 1971	FN554809	IT: Campania	NMB: AB 811	
<i>Tegenaria parmenidis</i> Brignoli, 1971	FN554810	IT: Calabria	NMB: AB 732	
<i>Tegenaria parmenidis</i> Brignoli, 1971	FN554812	IT: Campania	NMB: AB 834	
<i>Tegenaria saeva</i> Blackwall, 1844	FN554782	FR: Morbihan	NMB: AB 289	
<i>Tegenaria saeva</i> Blackwall, 1844	FN554813	ES: Pais	NMB: AB 668	
<i>Tegenaria</i> sp.	FN554779	GR: Rhodes	Coll.van Keer: 2617	
<i>Tegenaria tridentina</i> L.	FN554776	CH: Grisons	NMB: AB 375	

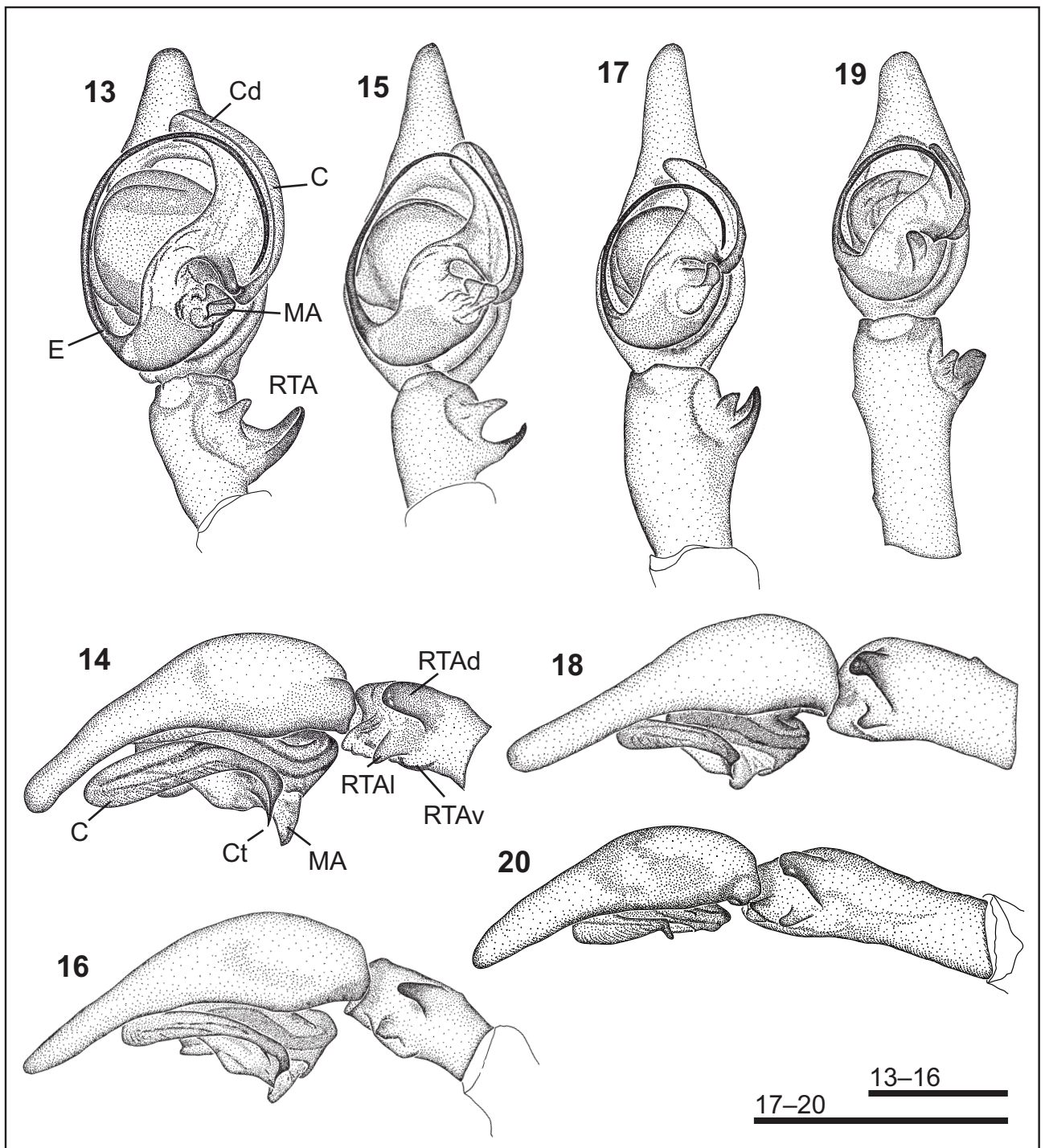
Koch, 1872					
<i>Textrix caudate</i> L. Koch,	FN554803	IT: Lazio	NMB: AB 749		
1872					
<i>Textrix cf. caudata</i>	FN554796	IT: Lazio	NMB: AB 467		
<i>Textrix denticulata</i>	FN554794	CHI: Basel-Land	NMB: AB 216		
(Olivier, 1789)					
<i>Wadotes dixiensis</i>	DQ628623	-	-		Spagna & Gillespie (2008)
Chamberlin, 1925					



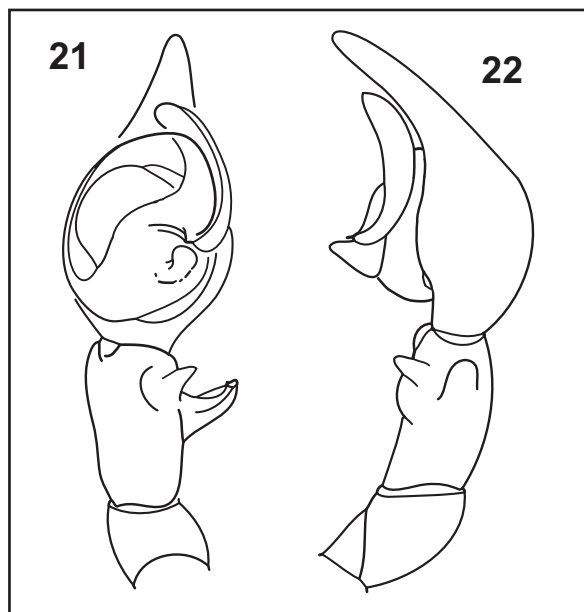
Figures 1 -4. -- Diagnostic characters of *Aterigena* n. gen. (schematic). 1, patella IV with dorsal and lateral spines; 2, left chelicera with dentition of pro- and retromargin; 3, trochanter of leg IV, ventral view; 4, colulus and spinnerets in ventral view.



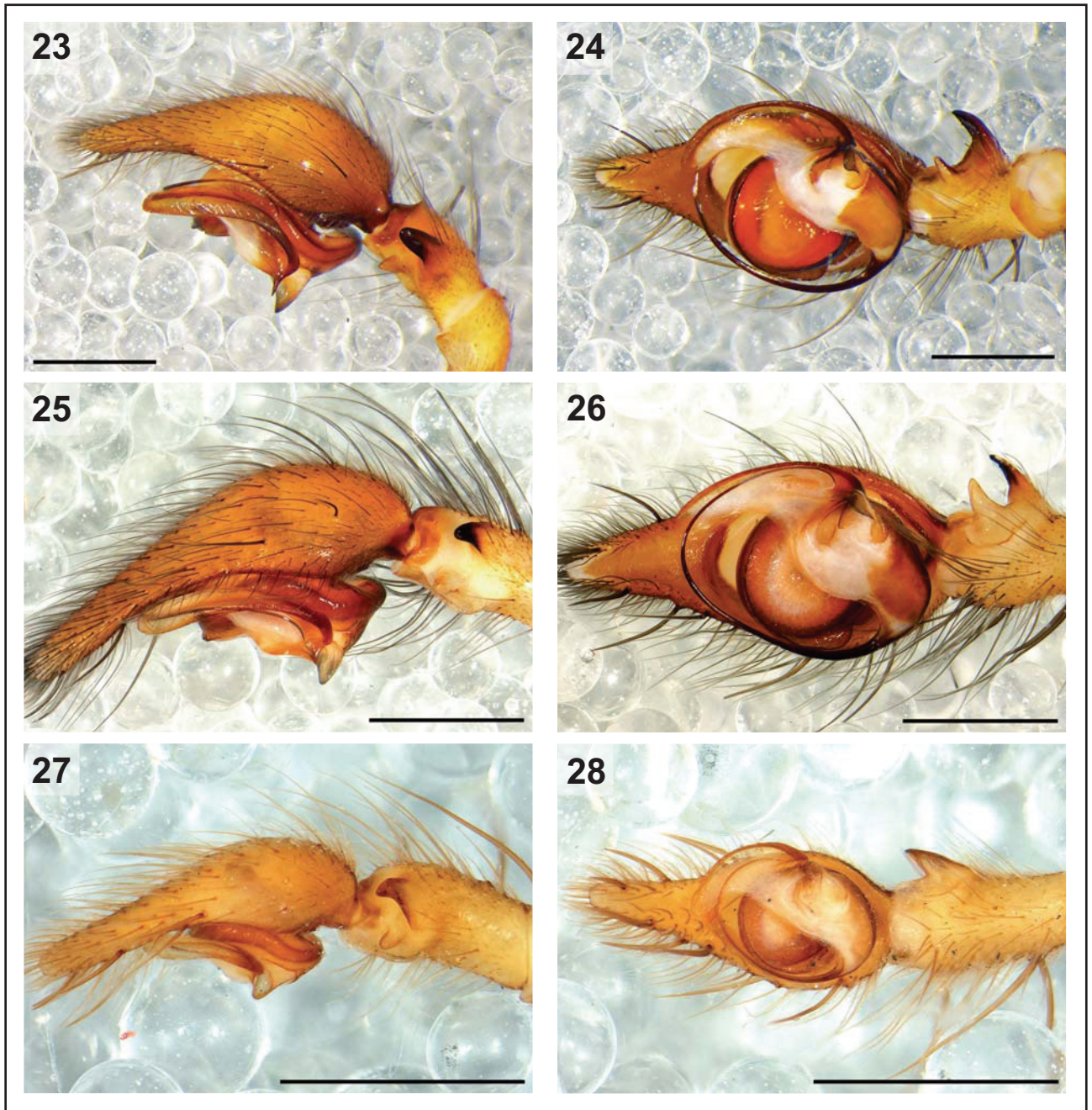
Figures 5 -12. -- Face and opisthosoma. 5 -6, *Aterigena ligurica*, male; 7 -8; *A. aculeata*, female; 9 -10, *A. aliquoi*, male; 11 -12, *A. soriculata*, female. Scale = 1.0 mm.



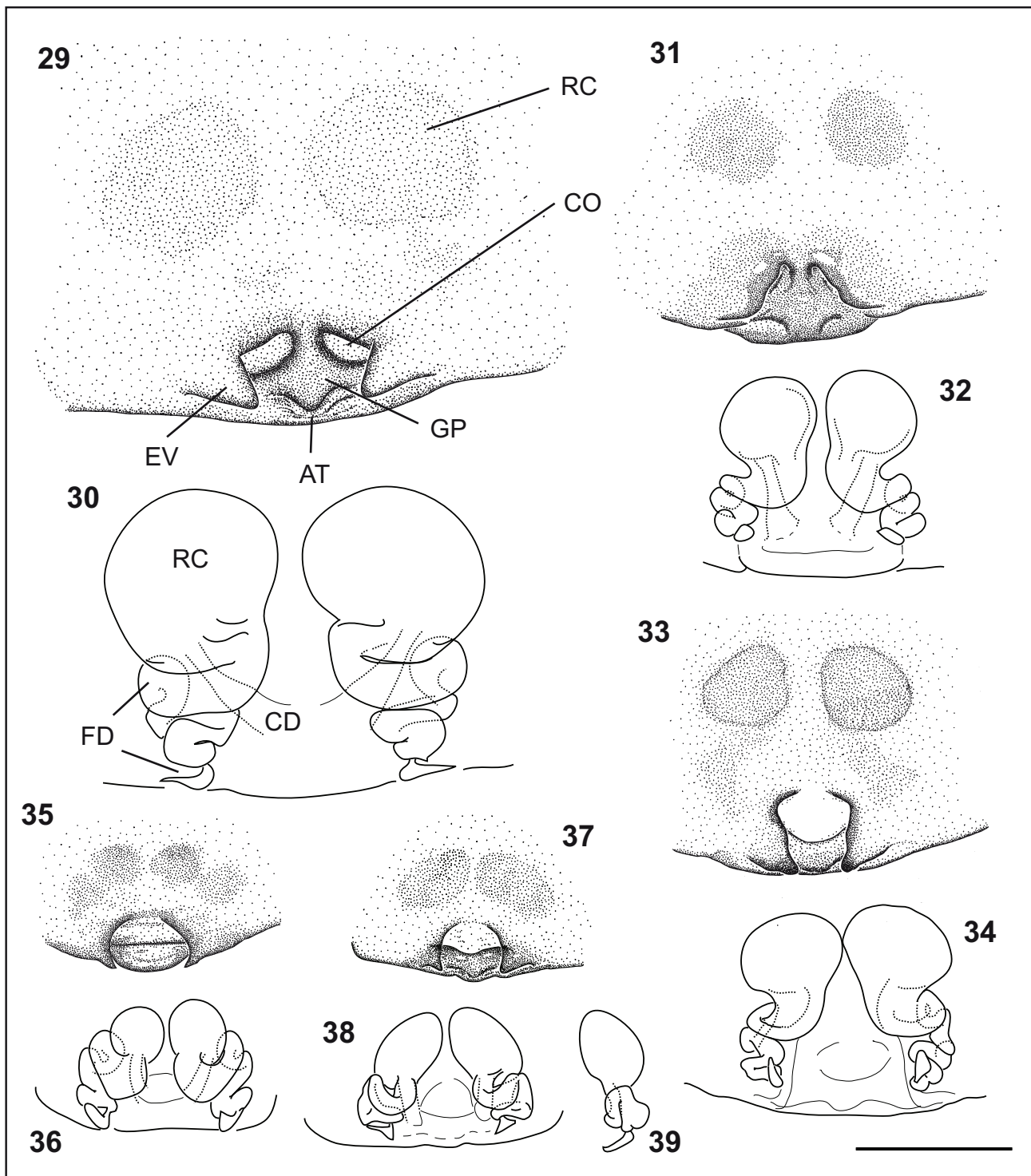
Figures 13 -20. -- Left male palp in ventral and retrolateral view. 13 -14, *Aterigena ligurica*; 15 -16, *A. aliquoi*; 17 -18, *A. soriculata*; 19 -20, *A. aspromontensis* n. sp. C: conductor; Cd: distal apex of C; Ct: terminal end of C; E: embolus; MA: median apophysis; RTA: retrolateral tibial apophyses; RTAd: dorsal branch of RTA; RTAl: lateral branch of RTA; RTAv: ventral branch of RTA. Scale = 1.0 mm.



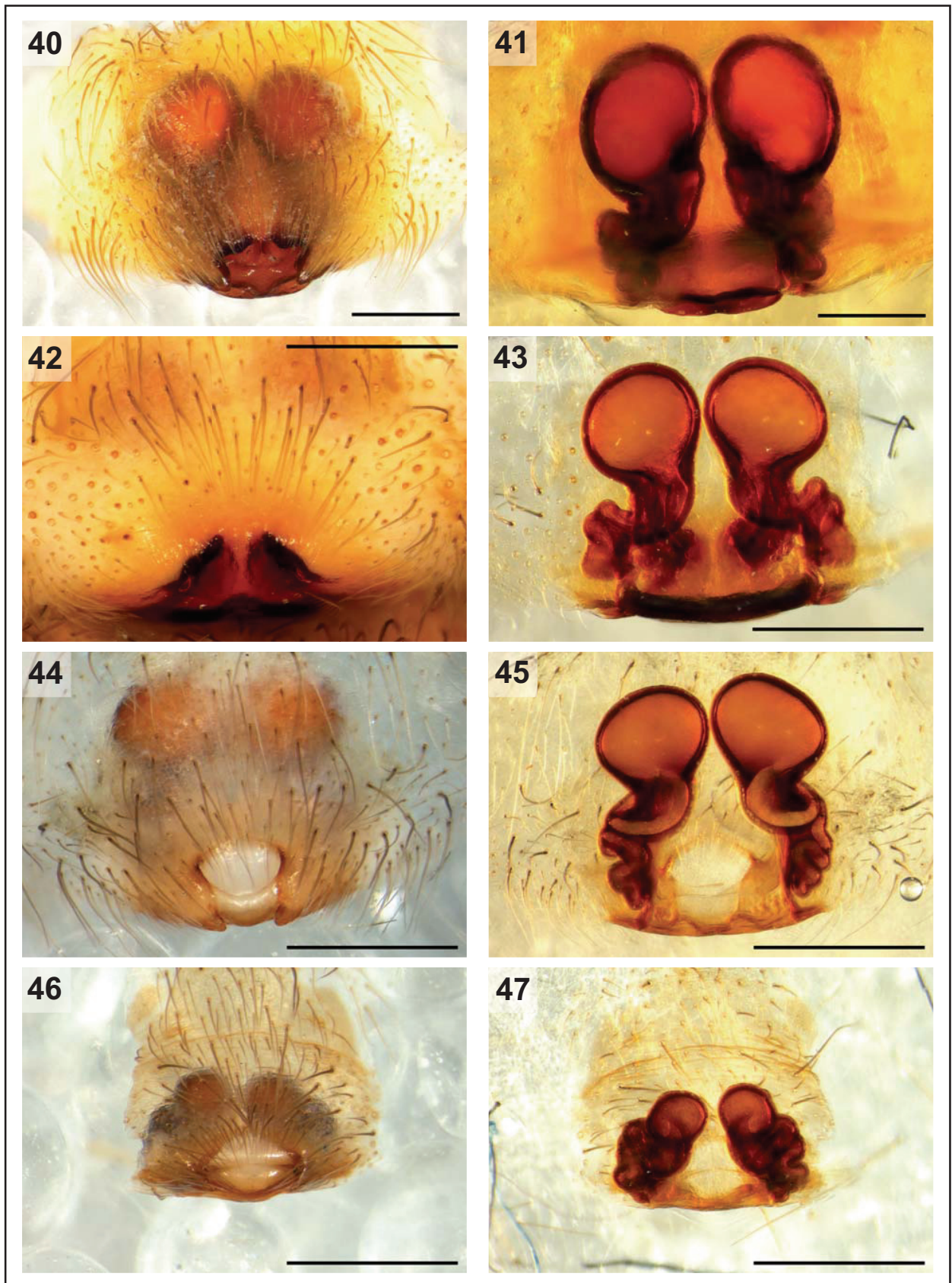
Figures 21 -22. -- Left male palp of *Aterigena aculeata*, modified from Wang, 1992: p. 287, figs 2 -3.



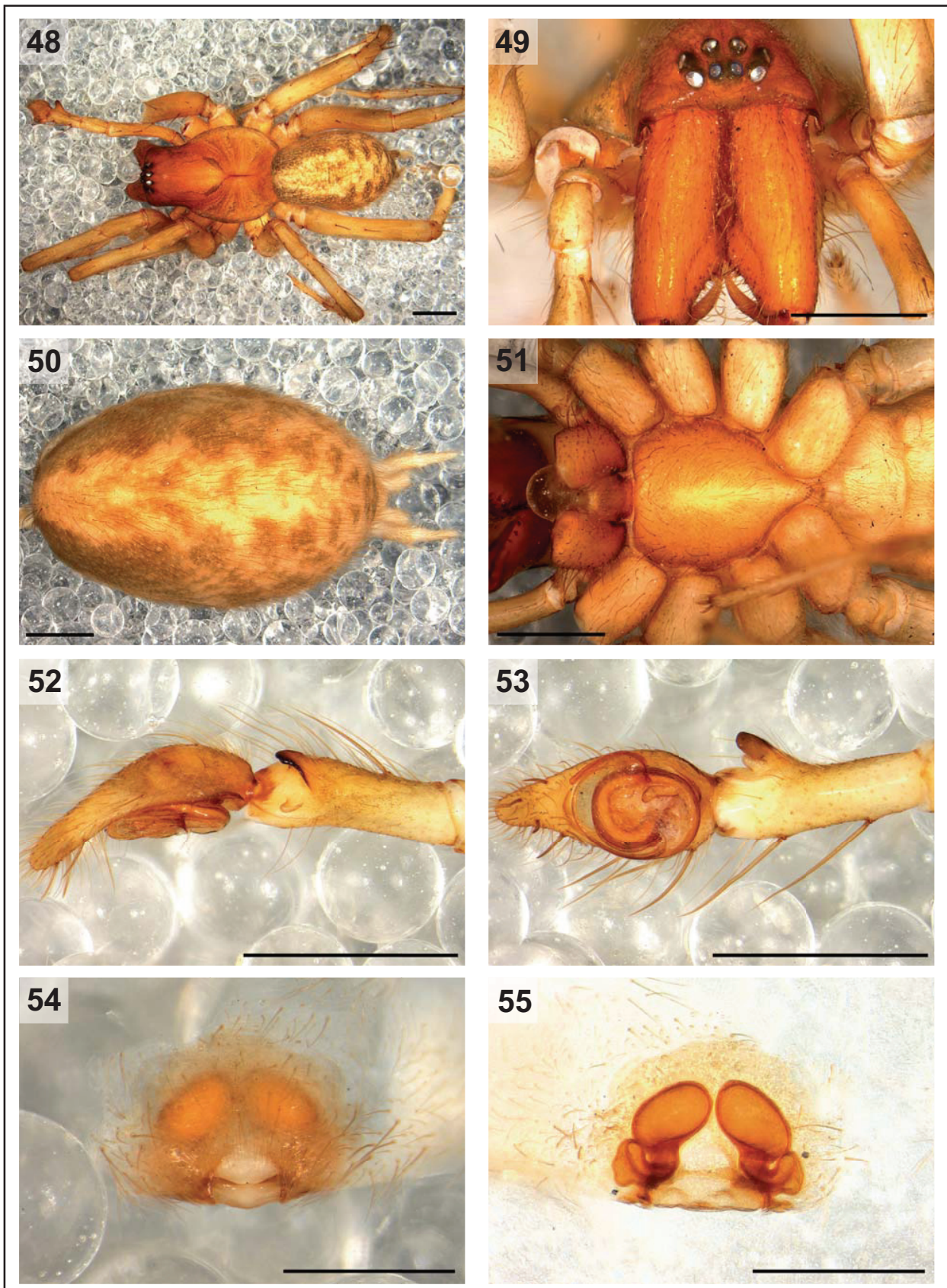
Figures 23 -28. -- Male palp in retrolateral and ventral view. 23 -24, *Aterigena ligurica*; 25 -26, *A. aliquoi*; 27 -28, *A. soriculata*. Scale = 1.0 mm.



Figures 29 -39. -- Female epigynum in ventral and vulva in dorsal view. 29 -30, *Aterigena ligurica*; 31 -32, *A. aculeata*; 33 -34, *A. aliquoi*; 35 -36, *A. soriculata*; 37 -39, *A. aspromontensis* n. sp.; 39, vulva in lateral view. AT: atrium; CD: copulatory duct; CO: copulatory opening; FD: fertilization duct; GP: ground plate of the atrium; EV: epigynal vertices projection of lateral margin of the atrium; RC: receptacula. Scale = 0.5 mm.



Figures 40 -47. -- Female epigynum and vulva in ventral and dorsal view. 40 -41, *Aterigena ligurica*; 42 -43, *A. aculeata*; 44 -45, *A. aliquoi*; 46 -47, *A. soriculata*. Scale = 0.5 mm.



Figures 48 -55. -- *Aterigena aspromontensis* n. sp. 48; habitus, male holotype; 49, face, male holotype; 50, opisthosoma, female paratype; 51, sternum, male holotype; 52, left male palp, retrolateral view; 53, left male palp, ventral view; 54, epigynum, ventral view; 55, vulva, dorsal view. Scales: 48 -53 = 1.0 mm, 54 -55 = 0.5 mm.

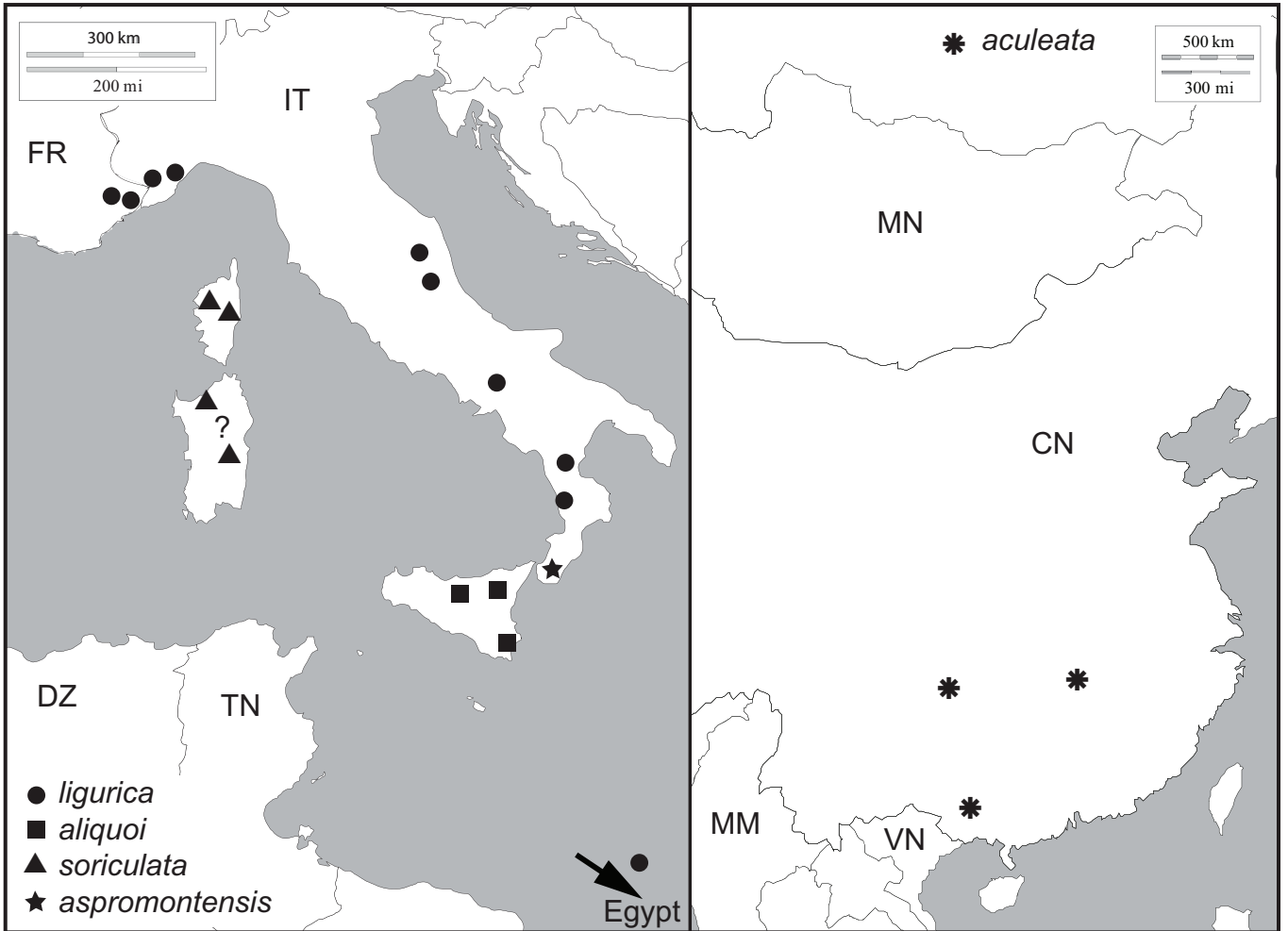
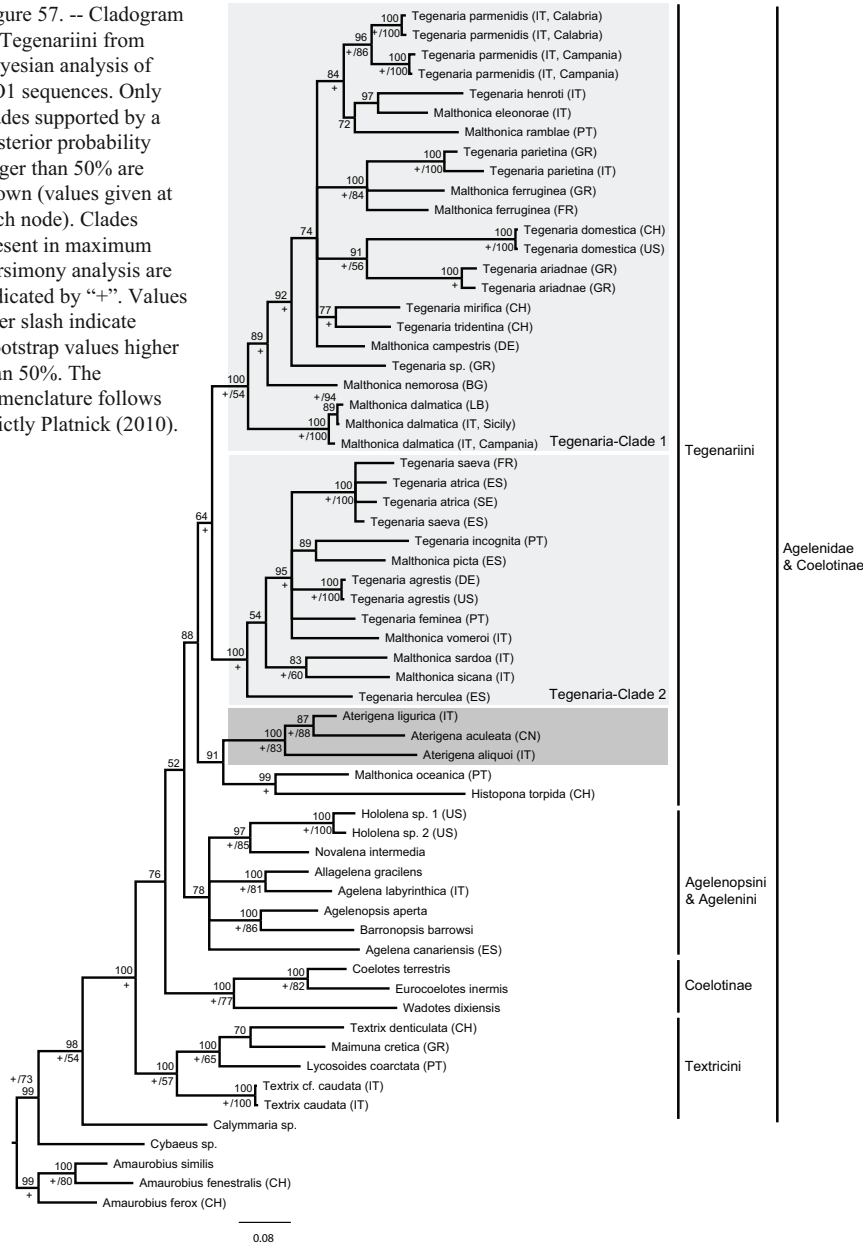


Figure 56. -- Known sites of *Aterigena* n. gen.. *A. ligurica* also mentioned from "Hispania". Digital map provided by <http://histgeo.ac-aix-marseille.fr>.

Figure 57. -- Cladogram of Tegenariini from Bayesian analysis of CO1 sequences. Only clades supported by a posterior probability larger than 50% are shown (values given at each node). Clades present in maximum parsimony analysis are indicated by "+". Values after slash indicate Bootstrap values higher than 50%. The nomenclature follows strictly Platnick (2010).



A new funnel-web spider species (Araneae: Agelenidae, *Teegenaria*) from Mercantour National Park, France

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Summary

During a survey of the spider fauna of the Mercantour National Park in the French Alps, several interesting and new taxa were found. One of these new taxa, *Teegenaria mercanturensis* n. sp. (Agelenidae) is described here. The new species shows distinct morphological characters which allow easy separation from all other *Teegenaria* or *Malthonica* species. The most important characters in males are the short, truncated embolus (a character shared with *T. domestica*, the type species of *Teegenaria*, and *T. mirifica*), the broad, curved hammerhead-shaped conductor and the RTA. Distinct characters in females are the atrium with wide spiral copulatory openings anterior to an anchor-shaped sclerotised ground plate, the strongly sclerotised and irregularly formed “shield” around the tubular-shaped spermathecae, and the conspicuous anterolateral lentiform areas of the spermathecae, covered only by membrane.

Introduction

The Mercantour National Park (MNP) is one of seven National Parks in France and was designated in 1979. The Park is situated in the most south-western part of the Alps along the Italian border (Map 1). The core area of the Park occupies 68,500 ha, mainly from 1,600 to 2,800 m a.s.l., entirely protected under a “Natura 2000” directive. This area is surrounded by a peripheral zone of about 146,300 ha from 490 to over 3,000 m a.s.l., not covered by specific legislation. Owing to its location, the Park is under Provençal, Alpine, Ligurian and Mediterranean climatic influences, providing a great variety of habitats. The Park is also characterised by the presence of over 200 lakes, as a result of the quaternary glaciation history of this part of the Alps. All these characteristics provide an exceptional biodiversity for plants and invertebrate fauna, including a large number of endemic species. While the flora and fauna of the MNP have been the subject of considerable taxonomic interest in several groups, until now no exhaustive work has been specifically devoted to spiders. Indeed, since the “*Arachnides de France*” of Simon (1937), only two works have provided some taxonomic information about spiders of this area. The first concerned a small annotated list of

about 11 species collected at the “Col de la Cayolle” (Berland, 1935). The second was a taxonomic work about some interesting species, including endemics, occurring in this part of the Alps (Maurer & Thaler, 1988).

During a taxonomic survey between the years 2004 and 2006, C. Hervé and collaborators identified more than 300 spider species. As expected, several problematic taxonomic groups were encountered within this collection. For example, two species of Gnaphosidae had to be newly described: *Drassodes thaleri* Hervé (Hervé & Rollard, 2009) and *Drassodex simoni* (Hervé, Roberts & Murphy, 2009). Here, we describe another new species from the MNP, belonging to the family Agelenidae.

Material and methods

The specimens described here are deposited in the collections of the Muséum national d'Histoire naturelle, Paris (MNHN) and the Naturhistorisches Museum Basel (NMB). The newly collected specimens (in 2005) were caught by hand and transferred to 70% ethanol by C. Hervé.

Drawings were made using a Leica stereomicroscope MZ12 (up to 110× magnification) with a drawing tube. Measurements were taken from digital pictures made with a Leica DFC320 camera and calculated with the programme ImageJ 1.38× (freeware available on the internet at URL: <http://rsb.info.nih.gov/ij/>). All measurements are given in mm. The photographs were taken with the same camera and processed with Adobe Photoshop CS3. For clearing the vulva, the removed epigynum was placed in clove oil for several minutes. The descriptions of the palpal bulb are given from a ventral view. The spines on the male palp are not illustrated as they are of minor taxonomic significance.

Abbreviations used: AER=anterior eye row; ALE=anterior lateral eyes; AME=anterior median eyes;



Map 1: Outline map showing location of the Mercantour National Park in southeastern France. The star indicates the locus typicus of *Teegenaria mercanturensis* n. sp. Digital map of Europe provided by <http://histgeo.ac-aix-marseille.fr>.

ALS=anterior lateral spinnerets; AT=atrium of epigynum; C=conductor; CD=copulatory duct; CO=copulatory opening; FD=fertilisation duct; MA=median apophysis; PMS=posterior median spinnerets; PA=patellar apophysis; PER=posterior eye row; PLA=posterior lateral eyes; PME=posterior median eyes; PLS=posterior lateral spinnerets; RTA=retrolateral tibial apophysis (used here as the sum of all structures in retrolateral position on the male palp); ST=spermathecae.

Taxonomy

Family AGELENIDAE C. L. Koch, 1837
Genus *TEGENARIA* Latreille, 1804

Type species: Tegenaria domestica (Clerck, 1757), sub *Araneus domesticus*.

Remarks: *Tegenaria* Latreille represents a species-rich genus of agelenid spiders. It is predominantly Palaearctic in distribution. Currently 102 *Tegenaria* species are listed in the catalogue of Platnick (2009). The genus is notorious for its taxonomic problems: (1) lack of good diagnoses of the genus; (2) confusion with the closely related genus *Malthonica* Simon; (3) information available only for one sex in many species; and (4) unknown internal phylogenetic relationships. To some extent, these problems have been discussed in recent papers (Barrientos & Cardoso, 2007; Bolzern *et al.*, 2008, 2009; Guseinov *et al.*, 2005; Levy, 1996) and will be further investigated by the PhD thesis of the first author. After the examination of agelenids, in particular of the genus *Tegenaria*, in the collections of Simon and Dresco (MNHN), Roewer (Senckenberg Forschungsinstitut und Naturmuseum, Frankfurt am Main), Brignoli (Museo Civico di Storia Naturale, Verona) and various other collections (natural history museums of Basel, Bergamo, Bern, Geneva and Vienna), the present specimens have to be considered as a new species. The generic affiliation of the new species is based on the original description of the genus by Latreille (1804) and that provided earlier by Walckenaer (1802). Additionally, several important works have been checked for the group affiliation of the new species (e.g. Brignoli, 1971; Lehtinen, 1967; Maurer, 1992a, b; Simon, 1937). Since the grouping of the *Tegenaria-Malthonica* complex is not based on a widely accepted phylogeny, a revision of this complex could result in a revised placement of the new species.

Tegenaria mercanturensis sp. n. (Figs. 1–11)

Types: Holotype ♂, 2♀ paratypes, 6 juv. (holotype MNHN, AR 14603, 1♀ paratype and all juv. MNHN, AR 14604, 1♀ paratype NMB), France, Mercantour National Park, Alpes-Maritimes, La Bollène-Vésubie, Malagratta (44°00'02"N, 7°22'16"E, 1030 m), leg. C. Hervé, 27 September 2005.

Other material examined: 1♀ (MNHN, AR 14605, Dalmas collection V333; sub *T. pagana*), France, Alpes-Maritimes, Menton, leg. R. Dalmas, 22 May 1915.

Etymology: The specific epithet is derived from "Mercantour", the name of the National Park where the type specimens of the new species were found.

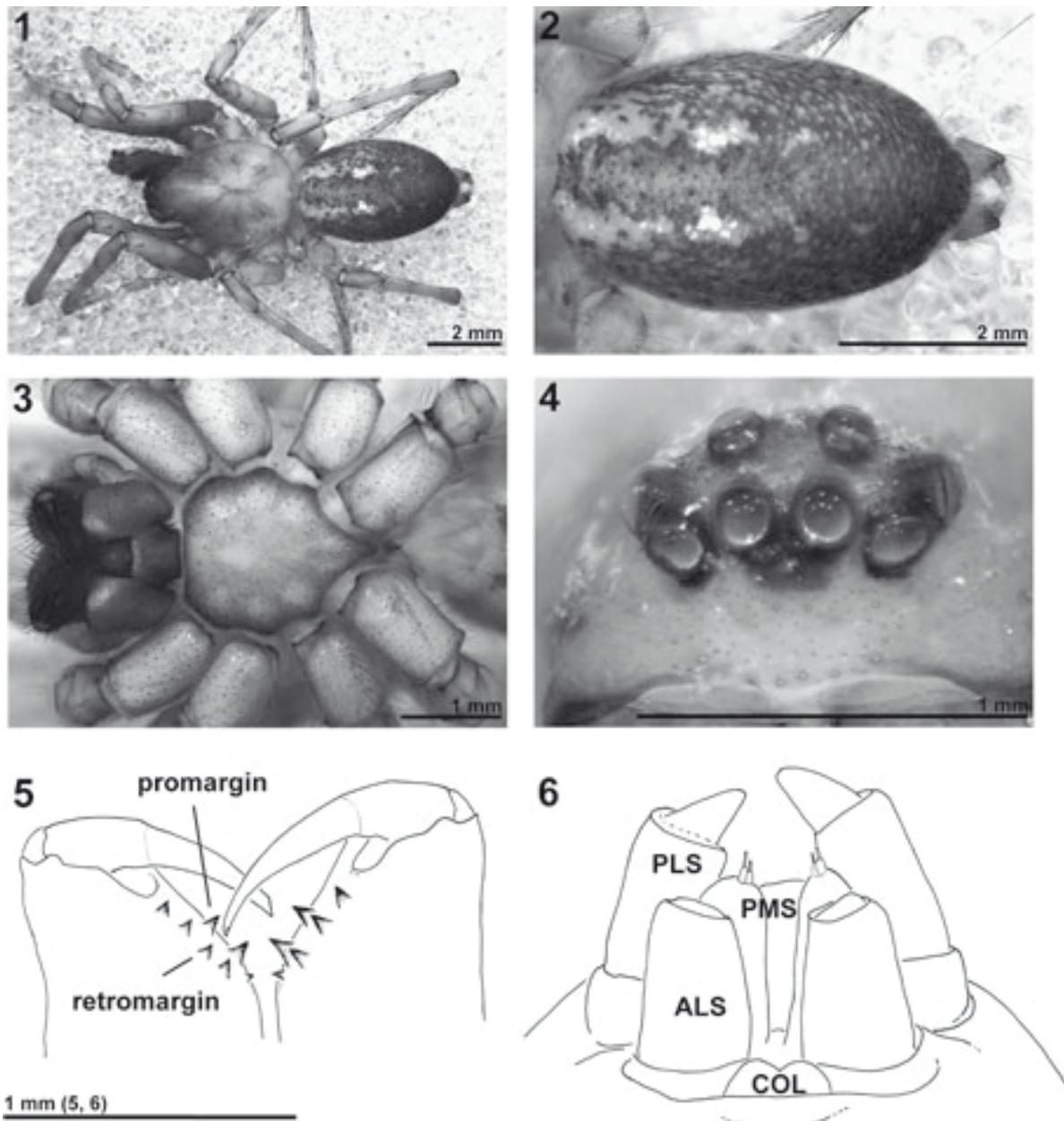
Diagnosis: The short, truncated embolus, the broad, curved hammerhead-shaped conductor and the RTA are the characters most useful for delimiting *T. mercanturensis* n. sp. from all other *Tegenaria* and *Malthonica* species (Figs. 7–8). The epigynum and vulva of *T. mercanturensis* (Figs. 9–10) are very distinct and not confusable with any other known *Tegenaria* or *Malthonica* species. Particularly remarkable is the irregularly sclerotised and anchor-shaped groundplate of the atrium, anteriorly with wide spiral copulatory openings (Fig. 9). Additionally, the strongly sclerotised and irregularly formed "shield" around the tubular-shaped spermathecae is very distinct (Figs. 10–11); these plates also show conspicuous anterolateral lentiform areas, covered only by membrane.

After Simon (1937), *T. mercanturensis* n. sp. would most likely belong to the *ferruginea*-group. Owing to several characteristics, in particular the female genitalia (Figs. 9–10), the new species cannot strictly be assigned to one group only. The similarly alpine-endemic species *T. mirifica* Thaler, 1987 is morphologically related to the new species. The male of *T. mercanturensis* can be differentiated from *T. mirifica* by the overall form and proximal end of the conductor, the shorter median apophysis, the clearly differently shaped and more pronounced RTA, as well as the length of the palpal tibia being much shorter than the cymbium (Figs. 7–8, cf. Thaler, 1987: 392, figs. 1–5). Additionally, the specimens of *T. mercanturensis* are larger than those of *T. mirifica* and the colour patterns of the sternum and opisthosoma are different (for *T. mirifica* see Bolzern, 2007: 26, figs. 2a–b). The RTA of *T. mercanturensis* also shows affinities to species from Corsica and Sardinia (*T. femoralis* Simon, 1873, *T. henroti* Dresco, 1956 and *Malthonica eleonora* (Brignoli, 1971)) or some species of the *campestris*-complex (Bolzern *et al.*, 2008; Brignoli, 1974; Dresco, 1956; Kraus, 1955; Simon, 1873; Wunderlich, 1995). However, none of these species has a short, truncated embolus as present in the male of the new species. Only *T. domestica*, *T. mirifica* and some species from Eastern Europe and Asia (*T. longimana* Simon, 1898, *T. percuriosa* Brignoli, 1978, *T. vignai* Brignoli, 1978, *T. angustipalpis* Levy, 1996 and *T. halidi* Guseinov *et al.*, 2005) have a similarly short embolus comparable with that of *T. mercanturensis*, but they differ in the shape of the conductor (somewhat reduced in the Asian species, not broad, curved hammerhead-shaped in *T. domestica* and *T. mirifica*).

Description: *Cephalothorax:* Male (holotype): 4.31 long, 3.17 wide; head-region 1.58 wide; PER 0.99 wide. Female (paratypes, *n*=2): 3.28–3.95 long, 2.22–3.02 wide; head-region 1.14–1.59 wide; PER 0.79–0.95 wide. Plumose hairs present on carapace. Border of carapace not darkened, dorsally with two longitudinal darkened bands, reduced to triangular dots, continuing to head-region as symmetrical darkened stripes (Fig. 1). *Eyes and clypeus:* Dorsal view: AER recurved, PER straight. Frontal view: both rows slightly procurved (Fig. 4).

Measurements and ratios of holotype and paratypes: PME 0.15–0.17, PLE 0.15–0.21, AME 0.12–0.16, ALE 0.15–0.18; PME–PME, PME–AME and PME–PLE=diameter of PME; PME–ALE=1.5× diameter of PME or slightly less; AME–AME *c.* 0.5× diameter of AME; AME–ALE <0.5× diameter of AME. Clypeus height (measured under AME) 2–2.5× diameter of AME; clypeus height (measured under ALE) 1–1.5× diameter of ALE (Fig. 4). *Chelicerae and mouth parts*: Male (holotype): chelicerae 1.91 long, 0.76 wide. Female (paratypes): chelicerae 1.44–1.81 long, 0.65–0.76 wide. Labium wider than long; gnathocoxa 2× longer than wide. Promargin of chelicerae with 3 teeth, most proximal one smaller than others; retromargin of chelicerae with 3–4 teeth, almost equal in size (surprisingly, in all 4 specimens there were 4 on right and 3 on left chelicerae) (Fig. 5). Chelicerae uniform brown without pattern,

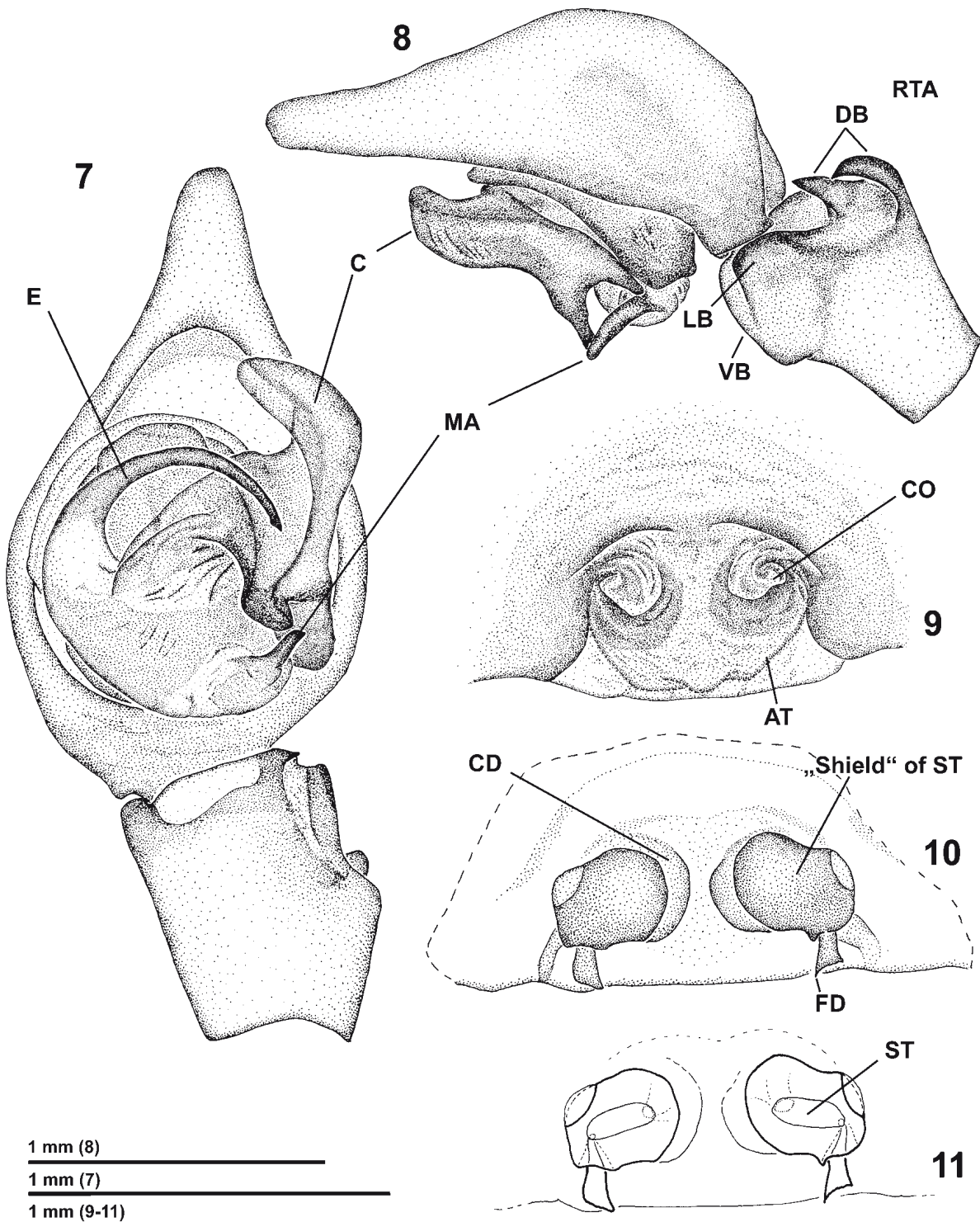
fangs normally developed. *Sternum*: Male (holotype): 2.1 long, 1.95 wide. Female (paratypes): 1.59–2.11 long, 1.43–1.85 wide. Distinct but weakly expressed pattern: irregular pale median band and symmetrical spots laterally, somewhat fused together (Fig. 3). *Legs*: Annulated. Plumose hairs present. Trochanters straight or slightly concave. Tarsal trichobothria on legs I–III: 6–8, on leg IV: 6–9. Number of teeth on paired claw of leg I: 13, on unpaired claw: 3. Leg and palp measurements and all observed spination-formulae in Table 1. *Opisthosoma*: Male (holotype): 4.88 long, 3.09 wide. Female: 3.62–5.54 long, 2.37–3.31 wide. Plumose hairs present. Ground colour ash-grey. Anteriorly 1–3 pairs of white pigmented spots. Dorsolaterally on anterior half two light bands, continuing posteriorly as weakly pronounced chevrons and more posteriorly as dots (Fig. 2). *Spinnerets*: Colulus a trapezoidal plate with deep median notch on



Figs. 1–6: *Tegenaria mercanturensis* n. sp., somatic characters. **1** Habitus of male holotype; **2** Opisthosoma of male holotype; **3** Sternum and coxae of female paratype; **4** Eyes of male holotype, frontal view; **5** Chelicerae of male holotype, posterior view; **6** Spinnerets of male holotype. ALS=anterior lateral spinnerets; COL=colulus; PLS=posterior lateral spinnerets; PMS=posterior median spinnerets.

posterior margin (Fig. 6), basally darkened. PLS longer than all others, two-segmented; distal segment shorter than basal; both segments darkened (especially dorsally); PLS separated by 1–2 diameters. PMS as long as ALS. ALS somewhat darkened, separated by less than their diameter (Fig. 6). *Male palp* (holotype) (Figs. 7–8): Without pigmentation. Patellar apophysis absent. RTA with 3 branches; dorsal branch ending in 2 acute, strongly sclerotised points, more proximal one more

robust and double width of distal one; lateral branch forms transverse ridge on distal part of tibia; ventral branch forms long extended bulge. Additionally, tibia with large broad dorso-prolateral swelling distally. Cymbial modifications absent. Ratio bulb length to cymbium length 0.63. Embolus strong and broad, truncated at end (in both palps; since no fracture was detectable, it is unlikely that the end was broken off), shorter than cymbium width and coiling approximately



Figs. 7–11: *Tegenaria mercanturensis* n. sp., genitalia. **7** Left male palp of holotype, ventral view; **8** Ditto, retrolateral view; **9** Epigynum of female paratype, ventral view; **10** Vulva of female paratype, dorsal view; **11** Vulva of female paratype, cleared. AT=atrium; C=conductor; CD=copulatory duct; CO=copulatory opening; DB=dorsal branch; E=embolus; FD=fertilisation duct; LB=lateral branch; MA=median apophysis; RTA=retrolateral tibial apophysis; ST=spermatheca; VB=ventral branch.

Leg		Male (holotype)	Female (paratypes, n=2)	Spination
Palp	Femur	1.97	1.31–1.77	1–0–0–0
	Patella	0.71	0.57–0.74	2–0–0–0
	Tibia	0.83	0.81–1.07	1–2–0–0, 2–2–0–0
	Cymbium	1.69	1.27–1.77	–
	Bulb	1.07	–	–
	Total	5.20	3.96–5.35	–
I	Coxa	1.33	0.91–1.21	0
	Femur	5.58	3.76–5.20	1–2–1–0, 1–2–2–0, 1–3–1–0, 1–3–2–0
	Patella	1.76	1.29–1.69	2–0–0–0
	Tibia	5.46	3.58–5.17	0, 0–0–0–1, 0–0–0–1p, 0–0–0–1+1p
	Metatarsus	5.70	3.66–5.24	0–0–0–3p+1
	Tarsus	2.56	1.77–2.28	0
	Total	22.39	14.97–20.79	–
II	Coxa	1.23	0.87–1.07	0
	Femur	5.13	3.40–4.68	1–2–2–0, 1–3–2–0
	Patella	1.66	1.17–1.53	2–0–0–0
	Tibia	4.68	2.90–4.18	0–1–0–1, 0–1–0–2
	Metatarsus	5.04	3.08–4.50	0–1–0–3p+1
	Tarsus	2.14	1.37–1.94	0
Total	19.88	12.79–17.90	–	
III	Coxa	1.18	0.84–1.14	0
	Femur	4.65	3.01–4.13	1–2–2–0, 1–3–2–0
	Patella	1.46	1.05–1.41	2–0–0–0
	Tibia	3.90	2.33–3.36	0, 2–2–1–0
	Metatarsus	4.77	2.89–4.09	0–2–2–3p+1
	Tarsus	1.95	1.23–1.57	0
Total	17.91	11.35–15.70	–	
IV	Coxa	1.30	0.98–1.25	0
	Femur	5.61	3.90–5.36	0–1–1–0, 1–1–1–0, 1–2–1–0
	Patella	1.59	1.17–1.54	2–0–0–0
	Tibia	5.20	3.33–4.80	0, 2–2–1–3, 2–2–2–2, 2–2–2–3
	Metatarsus	5.80	3.91–5.59	0–2–3–1p+1+2p+1, 0–3–3–1p+1+2p+1
	Tarsus	2.26	1.53–1.99	0, 0–0–1–0
Total	21.76	14.82–20.53	–	
Formula		I>IV>II>III	I=IV>II>III	–

Table 1: Leg and palp measurements (range, in mm) and spination of male holotype and female paratypes of *Tegenaria mercanturiensis* n. sp. Number of spines given as follows: dorsal–prolateral–retrolateral–ventral. A “p” indicates that at this position the spine is paired (1p=2 spines at almost the same longitudinal position). All observed formulae are presented. More than one entry indicates variation. Left tibia III and IV in holotype male are without spines.

135°. Embolus base of left palp at 9 o'clock position, distal tip between 2–3 o'clock position, somewhat arrowhead-shaped (in lateral view). Median apophysis consists of membranous base, elongated at 5 o'clock position, and finger-shaped, strongly sclerotised distal part. Connection between median apophysis and tegulum membranous, smaller than length of apophysis. Conductor broad, curved hammerhead-shaped, parallel to cymbium, shorter than alveolus and laterally folded along its entire length. Proximal end consists of two strongly sclerotised plates. Connection between conductor and tegulum membranous with narrow longitudinal, somewhat sclerotised ridge. Distal apex of conductor longer than wide and visible dorsally. Other tegular apophysis absent. *Epigynum and vulva* (Figs. 9–11): Epigynal plate 0.58–0.64 long, 0.98–1.21 wide; atrium 0.38–0.44 long, 0.64–0.81 wide. Epigynal plate and groundplate of atrium strongly sclerotised. Groundplate of atrium with well delimited, more sclerotised and anchor-shaped plate-like area, anteriorly limited by

strongly sclerotised margin, posteriorly almost reaching epigastric furrow. Copulatory openings clearly visible as holes, entrances large and spiral-shaped, located at anterior margin of atrium. Pair of posterior epigynal teeth absent. Ducts and spermathecae not visible through plate. Vulva consists of distinguishable copulatory ducts, spermathecae and fertilisation ducts. Copulatory ducts very short. Spermathecae covered by strongly and irregularly sclerotised shield, antero-laterally with conspicuous lentiform areas, covered only by membrane. Shield of spermatheca 0.24 wide. Spermathecae tubular. Distance between shields of spermathecae smaller than their diameter. Fertilisation ducts short and broad.

Natural history: All the specimens collected in the MNP were caught by hand from their small funnel-webs, along the artificial rock face created by the gravel road crossing the deciduous forest (dominated by hornbeam *Carpinus betulus* Linnaeus) of the Malagratta valley (Plate 1). It is interesting to note that the



Plate 1: Photograph of exact location of the type specimens of *T. mercanturensis* n. sp., showing the rock face (arrow) to which the funnel webs were attached.

specimens show the same general coloration, ash-grey, as the rocky substratum. The only two records known indicate that adults of this species can be found between May and the end of September.

Distribution: The species is known only from the type locality and further south, from Menton (Map 1).

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Two new *Tegenaria* species (Araneae: Agelenidae) from Portugal

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Abstract

The genera complex *Tegenaria/Malthonica* is a problematic spider group of the family Agelenidae. Besides taxonomical problems, new European species are described on a regular basis. Here two species from Portugal, *Tegenaria barrientosi* **sp. n.** and *Tegenaria incognita* **sp. n.**, are described. Both species show a significant similarity to *T. bucculenta*, *T. feminea* and *T. montigena*, a species group restricted to the Iberian Peninsula. *T. barrientosi* **sp. n.** can be separated by the pyramidal shaped ventral branch of the conductor, the shape and arrangement of the RTA and the proportion of the bulb-length to the cymbium-length, the run and shortness of the copulatory ducts with the diverticulae originating laterally and the irregularly sclerotized egg-shaped spermathecae, which are touching each other anteriorly. *T. incognita* **sp. n.** can be separated by the very broad lateral branch and the almost completely hidden lateroventral branch of the RTA, the shape of the conductor with the terminal end pointing towards posterior, the inwards directed epigynal teeth, the run and shortness of the copulatory ducts with the anteriorly originating diverticulae.

Key words: Iberian Peninsula, *Malthonica*, new species, Spain, taxonomy

Introduction

With a total of 83 described species, *Tegenaria* Latreille, 1804 and *Malthonica* Simon, 1898 are the most diverse genera of Agelenidae in Europe (Platnick, 2008). Currently there are 14 *Tegenaria* and 2 *Malthonica* species listed for Portugal (Cardoso, 2008). Of those species, *Tegenaria bucculenta* (L. Koch, 1868), *T. feminea* Simon, 1870, *T. montigena* Simon, 1937, *T. ramblae* Barrientos, 1978, *Malthonica lusitanica* Simon, 1898 and *M. oceanica* Barrientos & Cardoso, 2007 are endemic to the Iberian Peninsula. Both genera are well known for their taxonomical problems reflected by a long list of synonyms and rearrangements (Bolzern, et al., 2008; Gasparo, 2007; Guseinov, et al., 2005). Furthermore, many species are known by a single sex and several new species have been described recently (Barrientos & Cardoso, 2007; Deltshv, 2008). A major taxonomical problem in Agelenidae is that the genera delimitations are not sufficiently precise. This has caused problems in assigning species to the correct genus (see comments in Barrientos & Cardoso, 2007; Bolzern, et al., 2008). Due to this lack of agreement, the change in genus affiliation of the two newly described species is possible. A comprehensive revision of the European representatives of the genus *Tegenaria* based on monophyletic groups is in preparation by the first author. Nevertheless, it is important to describe newly detected forms. These forms do add new morphological information and, thus, enhance the understanding of the evolution of the taxon-group in focus.

Material and methods

The specimens examined for this work were collected with standardized pitfall trap sampling by P. Cardoso (Cardoso, 2004) and by L. Crespo and colleagues by hand and also pitfall traps.

Drawings were made using a Leica MZ12 stereomicroscope (with up to 110 x magnification) with a drawing tube. Most measurements were taken from digital pictures made with a Leica DFC320 camera and processed with the programme ImageJ 1.38x (free software available on the internet at <http://rsb.info.nih.gov/ij/>). Some specimens were measured with an ocular scale bar. Measurements are taken from the dorsal side of the palps and legs. The measurements of the holotype are given in brackets. Eye rows are straight, pro- or recurved according to the definition given in Jocqué & Dippenaar-Schoeman (2006), Ubick *et al.* (2005) and Bolzern *et al.* (2008). In frontal view, the eye row is called “procurved” when the centres of the median eyes are situated more dorsally than the lateral eyes. The number and arrangement of spines on femur, tibia and tarsus are presented in a spine formula. For each leg segment this formula gives the number in the following order: Dorsal - prolateral - retrolateral - ventral. A “p” indicates that at this position a pair of spines is present. E.g., the formula 2-2-2-1p+1+1p+1 stands for 2 dorsal, 2 prolateral, 2 retrolateral and 1 pair (2 spines at the same level close together) plus 1 plus 1 pair plus 1 ventral spine/spines (from proximal to distal) (see Bolzern *et al.*, 2008). For clearing the vulva, the dissected epigynum has been placed into clove oil for several minutes. The descriptions of the palpal bulbs refer to the ventral view. The spines on the male palp are not illustrated, as they are of minor taxonomical significance.

The following abbreviations are used: AER = anterior eye row; ALE = anterior lateral eyes; AME = anterior median eyes; ALS = anterior lateral spinnerets; C = conductor; CD = copulatory duct; CO = copulatory opening; DV = small diverticulum on the copulatory duct; E = embolus; EP = epigynum; ET = epigynal teeth; FD = fertilisation duct; MA = median apophysis; PMS = posterior median spinnerets; PER = posterior eye row; PLA = posterior lateral eyes; PME = posterior median eyes; PLS = posterior lateral spinnerets; RTA = retrolateral tibia apophyses (used here for all structures in a retrolateral position on the male palp, therefore consisting of one, two or three branches); ST = spermathecae; T = tegulum; VC = ventral branch of conductor.

Voucher specimens are deposited, as indicated, in the Natural History Museum of Basel (NMB) and the Zoological Museum, University of Copenhagen (ZMUC).

Taxonomy

Agelenidae C. L. Koch 1837

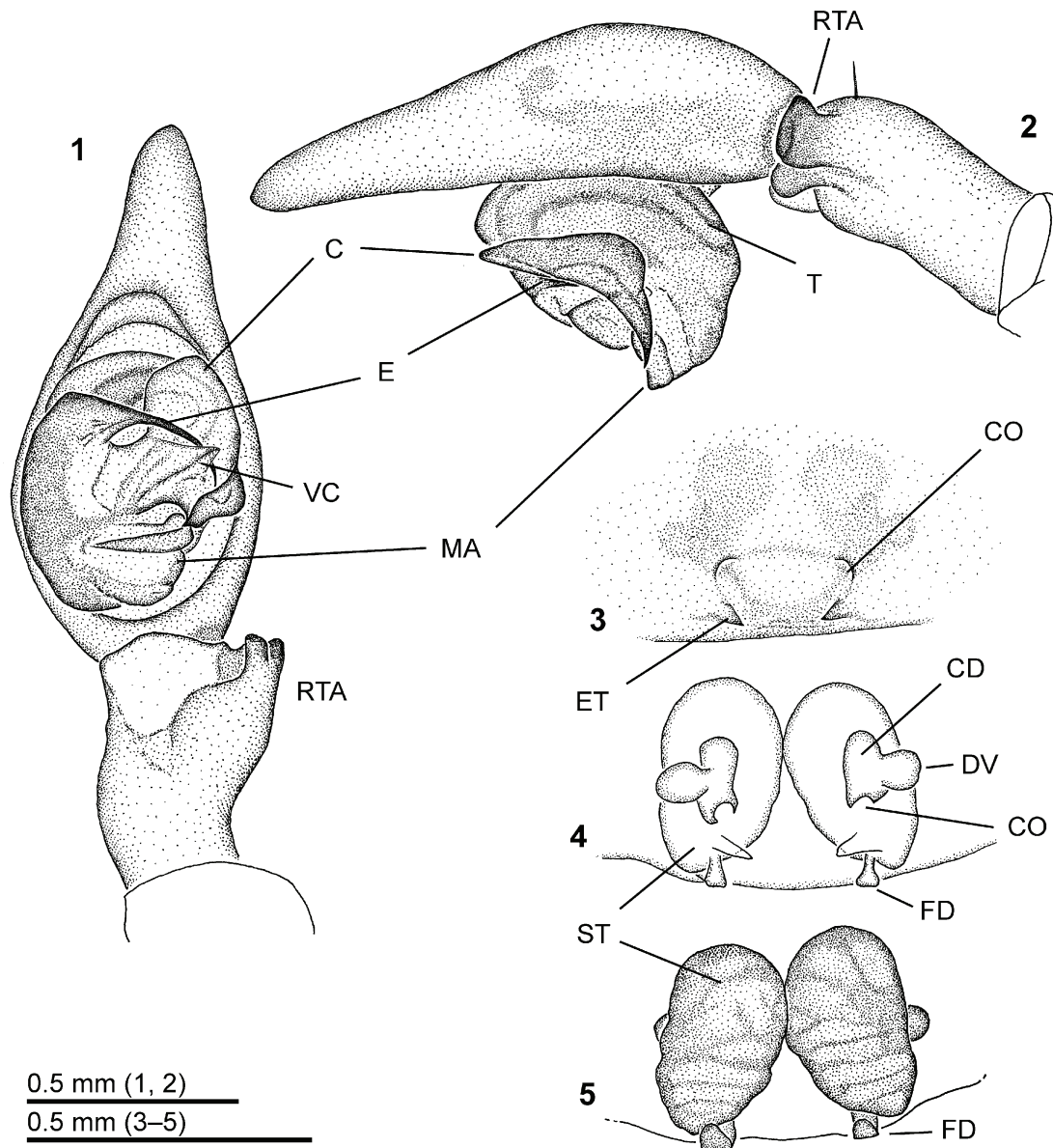
Tegenaria Latreille 1804

Type species: *Tegenaria domestica* (Clerck, 1757)

Tegenaria barrientosi sp. n.

(Figs. 1–5, 11–14)

Type material. Holotype ♂ (deposited at NMB, Nr.: 2804a, Figs 11–14, collected by “modified Schoenly trap”); Portugal, Coimbra, Coimbra, “Jardim Botânico da Universidade de Coimbra” (40°12', 8°25'W); leg. C. Prado e Castro, 2004. 4 ♂, 1 ♀, paratypes (deposited at NMB, Nr.: 2804b and 2804c, Figs 3–5, collected by “modified Schoenly trap”); same locality and collecting details as holotype. 2 ♂, paratypes (deposited at the NMB, Nr.: 2804d, Figs 1–2); Portugal, Santarém, Ourém, Bairro (39°34'N, 8°37'W); leg. P. Cardoso, 18. June 2002. 1 ♂, paratype (ZMUC, Nr.: ZMUC00012596, collected by pitfall trap); Portugal, Santarém, Ourém, Bairro (39°34'N, 8°37'W); leg. P. Cardoso, 23. April 2002.



FIGURES 1–5. Drawings of the reproductive organs of *Tegenaria barrientosi* **sp. n.** 1—left male palp in ventral view; 2—left male palp in retrolateral view; 3—epigynum in ventral view; 4—vulva in ventral view; 5—vulva in dorsal view. C = conductor; CD = copulatory duct; CO = copulatory opening; DV = DV = small diverticulum on the CD; E = embolus; ET = epigynal teeth; FD = fertilisation duct; MA = median apophysis; RTA = retrolateral tibia apophysis; S = spermathecae; T = tegulum; VC = ventral branch of conductor.

Further material examined. 2 ♀ (deposition at NMB, Nr.: 2804e, collected by pitfall traps. Specimens are in very bad condition; only epigynum of one female determinable), same locality; leg. L. Crespo, 6. June 2005.

Diagnosis. *T. barrientosi* **sp. n.** is closely related to *T. incognita* **sp. n.**, *T. bucculenta* (L. Koch, 1868), *T. feminea* (Simon, 1870) and *T. montigena* (Simon, 1937). It can be separated from the later three species by the absence of a patellar apophysis (present in *T. feminea*, Barrientos 1980: fig. 1A), the broad and flat lateral tibial apophysis (fig. 2; absent in *T. feminea*; much smaller in *T. bucculenta*, Barrientos 1991: fig. 3; protruding ventrodistally in *T. montigena*, Simon 1937: fig. 1541) and the presence of small diverticulae at the copulatory ducts (fig. 4). *T. barrientosi* **sp. n.** can be separated from *T. incognita* **sp. n.** by the pyramidal shaped ventral branch of the conductor (fig. 1; absent in *T. incognita* **sp. n.**, fig. 6), the terminal end of the

conductor pointing orthogonally away from the cymbium (fig. 2; pointing towards dorsal in *T. incognita* sp. n., fig. 7), the small diverticulae originating laterally and the irregularly sclerotized egg-shaped spermathecae which are touching each other anteriorly (fig. 3–4; diverticulae originating dorsally and smoothly sclerotized globular spermathecae which are clearly separated in *T. incognita* sp. n., figs 9–10).

TABLE 1. Leg and pedipalp measurements of males of *Tegenaria barrientosi* sp. n.. The measurements are given as the range (in mm) of all examined specimens (n=7). The measurements of the holotype are given in parenthesis.

	femur	patella	tibia	metatarsus	tarsus	total
Pedipalp	0.95–1.38 (1.27)	0.46–0.61 (0.61)	0.47–0.64 (0.64)	-	1.00–1.42 (1.42)	2.88–3.94 (3.94)
Leg I	2.39–3.55 (3.55)	0.87–1.3 (1.30)	2.15–3.37 (3.37)	2.11–3.27 (3.27)	1.36–2.09 (2.09)	8.88–13.58 (13.58)
Leg II	2.15–2.95 (2.95)	0.82–1.20 (1.20)	1.69–2.52 (2.52)	1.88–2.90 (2.90)	1.23–1.81 (1.81)	7.76–11.37 (11.37)
Leg III	1.95–2.91 (2.91)	0.76–1.09 (1.09)	1.45–2.17 (2.17)	2.05–3.08 (3.08)	1.16–1.73 (1.73)	7.37–10.97 (10.97)
Leg IV	2.57–3.79 (3.79)	0.83–1.34 (1.20)	2.25–3.36 (3.36)	2.92–4.49 (4.49)	1.28–2.04 (1.92)	9.84–14.76 (14.76)

TABLE 2. Leg and pedipalp measurements of females of *Tegenaria barrientosi* sp. n.. The measurements are given as the range (in mm) of all examined specimens (n=2). Leg II was only available from one specimen.

	femur	patella	tibia	metatarsus	tarsus	total
Pedipalp	1.19–1.73	0.48–0.67	0.77–1.07	-	1.19–1.65	3.63–5.12
Leg I	2.49–3.65	1.02–1.42	2.15–3.15	2.02–3.04	1.34–1.77	9.02–13.03
Leg II	2.22	0.98	1.73	1.90	1.20	8.03
Leg III	2.07–3.00	0.88–1.23	1.54–2.27	2.12–3.03	1.17–1.67	7.78–11.20
Leg IV	2.76–4.00	1.00–1.42	2.42–3.42	3.06–4.38	1.24–1.98	10.48–15.20

Etymology. The species is named in honour of Dr. José Antonio Barrientos, who has been working on Agelenids of the Iberian Peninsula for the last 30 years; genitive case.

Description. *Prosoma*: carapace: 2.32–3.32 (3.06) mm long, 1.64–2.41 (2.41) mm wide in males (n=7); 2.82–3.85 mm long, 2.0–2.68 mm wide in females (n=2). Fovea length to carapace length: 0.146–0.20 (0.177). Yellowish brown coloured without longitudinal darkened bands, border not darkened (Fig. 11). Plumose hairs present. Head region: 0.96–1.39 (1.39) mm wide in males, 1.27–1.83 mm wide in females. Somewhat darker and separated from the thoracic region by a distinct sclerotized line. PER 0.49–0.66 (0.64) mm wide in males, 0.64–0.88 mm wide in females. Diameter of PME: 0.06–0.10 (0.09) mm; PLE: 0.08–0.13 (0.13) mm; AME: 0.06–0.08 (0.08) mm; ALE: 0.09–0.13 (0.13) mm. Eye formula (Fig. 13): ALE=PLE>PME>AME. PME separated by 1.5 times their diameter. PME and AME separated by the diameter of PME or slightly more. PME and PLE separated by the diameter of PME or slightly more. PME and ALE separated by the diameter of PME or slightly more. AME separated by their diameter or slightly more. AME and ALE separated by 0.5–1 diameter of AME. Clypeus height (measured under AME): about 2.5–3.5 times the diameter of AME; clypeus height (measured under ALE): about 1–1.5 times the diameter of ALE. Both eye rows straight, or AER slightly recurved in dorsal view (Fig. 11). AER slightly procurved or straight, PER strongly procurved in frontal view (Fig. 13). Chelicerae: 1.05–1.66 (1.66) mm long, 0.44–0.75 (0.71) mm wide in males; 1.38–2.12 mm long, 0.75–1.08 mm wide in females. 3 teeth at the pro-margin (on one chelicerae of male paratype 4 teeth present), median tooth biggest. 7–12 teeth at the retro-margin, the proximal ones smaller. Gnathocoxa width to length: 0.456–0.524 (0.471). Labium width to length: 0.86–1.10

(0.945). Distal margin of labium concave. Sternum (Fig. 12): 1.18–1.65 (1.63) mm long, 1.07–1.50 (1.48) mm wide in males; 1.40–2.15 mm long, 1.25–1.67 mm wide in females. Sternum with no colour pattern.

TABLE 3. Spination of legs and pedipalps of *Tegenaria barrientosi* **sp. n.** and *T. incognita* **sp. n.**. The formula gives the number of spines in the following order: Dorsal - prolateral - retrolateral - ventral. A “p” indicates that at this position a pair of spines is present (1p = 2 spines at almost the same length). More than one spine formula per taxon and leg segment indicates variation. A “**” indicates the occurrence only in males, “***” only in females.

	species	femur	patella	tibia	metatarsus	tarsus
Palp	<i>T. barrientosi</i> sp. n.	2-0-0-0	2-0-0-0	2-2p-0-0 1+1-0-2p-0*	-	many
	<i>T. incognita</i> sp. n.	2-0-0-0	2-0-0-0	2-2p-0-0	-	many
Leg I	<i>T. barrientosi</i> sp. n.	2-2-0-0 2-3-0-0	2-0-0-0	0-0-0-3p** 0-0-0-4p 2-0-0-4p	0-0-0-4p+1	0
	<i>T. incognita</i> sp. n.	2-1-0-0 2-2-0-0	2-0-0-0	0-0-0-1p+1* 0-0-0-1+1p* 0-0-0-1p+1+1p 0-0-0-1p+1+1p+1 0-0-0-2p+1 2-0-0-1p+1+1p 2-0-0-2p+1	0-0-0-1p+1+2p+1 0-0-0-4p+1*	0
Leg II	<i>T. barrientosi</i> sp. n.	2-2-0-0 2-2-1-0 2-2-2-0 2-3-1-0 2-3-2-0	2-0-0-0	0-2-0-2p** 0-2-0-4p 2-2-0-4p	0-1-0-3p+1** 0-2-0-4p+1	0
	<i>T. incognita</i> sp. n.	2-1-0-0 2-2-0-0	2-0-0-0	0-1-0-1p+1+2p 0-1-0-1p+2 0-1-0-2 0-1-0-3 2-2-0-1+1p 2-2-0-4	0-1-0-1p+1+1p+1 0-1-0-1p+1+2p+1 0-1-0-4p+1	0
Leg III	<i>T. barrientosi</i> sp. n.	2-2-2-0 2-2-3-0 2-3-2-0	2-0-0-0	2-2-2-1p+1+2p 2-2-2-2p** 2-2-2-3p 2-2-2-4p	1+1p-3-2-4p+1 2p-3-2-4p+1	0-2-2-0** 0-2-3-0
	<i>T. incognita</i> sp. n.	2-1-1-0 2-2-1-0 2-3-1-0	2-0-0-0	2-2-1-1+1p+1 2-2-1-3 2-2-2-1+1p 2-2-2-1+1p+1 2-2-2-3p	1+1p-2-2-3p+1 1+1p-2-1-3p+1 2p-3-2-1p+1+2p+1 2p-3-2-4p+1	0-1-0-0 0-1-1-0 0-1-2-0
Leg IV	<i>T. barrientosi</i> sp. n.	1-1-1-0 1-2-1-0 2-2-1-0	2-0-0-0	2-2-2-4p	2p-3-2-4p+1	0-2-3-0
	<i>T. incognita</i> sp. n.	1-1-1-0	2-0-0-0	2-2-2-1p+1+2p 2-2-2-3p+1 2-2-2-4p	1+2p-3-2-4p+1 1p+1+1p-3-2-4p+1 2p-3-2-4p+1	0-1-1-0 0-2-2-0 0-2-4-0

Legs and palps: plumose hairs present. Yellowish-brown without pattern. Trochanter straight or slightly curved, not notched (Fig. 12). Number of dorsal trichobothria at tarsus I and IV: 7–8; at tarsus II and III: 6–7.

Leg measurements are listed in tables 1–2. For spine formulae see table 3.

Opisthosoma: 2.18–3.04 (3.04) mm long, 1.41–1.89 (1.89) mm width in males; 3.85–4.04 mm long, 2.27–2.5 mm width in females. Colour is light yellowish brown-gray, no distinct pattern expressed (Fig. 11). Plumose hairs present. Spinnerets (Fig. 14): colulus rectangular shaped plate, pale. PLS longer than all others. PMS as long as ALS. ALS not darkened. Both segments of PLS pale. Distal segment of PLS as long as basal. Distance between PLS 1–2 times their diameter. Distance between ALS smaller than 0.5 their diameter.

Male palp (Figs 1–2): femoral and patellar apophyses absent. RTA with 2 branches: lateral branch simple, robust and broad; lateroventral branch a long drawn-out lobe. Dorsally at palpal-tibia a short but robust spine present. Bulb length to cymbium length: 0.47–0.57. Embolus filiform, increasingly slender distally, less than $\frac{3}{4}$ of the cymbium width, curved through 90°. Embolus origin (free apex) on the left palp at 10½ o'clock position, terminal end at 3 o'clock position. Tegulum antero-laterally not constantly curved, angular curve expressed close to embolus origin. Median apophysis pocket-like, consisting of a membranous basal part and terminally of a thin and broad sclerotized plate. Origin of median apophysis proximal at tegulum (between 5 and 7 o'clock position). Connection of median apophysis to tegulum basally sclerotized and fixed, more distally membranous. Conductor rectangular shaped, almost parallel to cymbium margin and shorter than the alveolus. Conductor folded only at the terminal end which is strongly sclerotized and pointing away from cymbium orthogonally. Additional pyramidal apophysis present (ventral branch of conductor) at the connection of tegulum and conductor. Connection of conductor to tegulum is membranous.

Epigynum and vulva (Figs 3–5): whole epigynal plate 0.40–0.44 mm long, 0.71–0.72 mm wide, sclerotized. Atrium 0.16–0.22 mm long, 0.25–0.30 mm wide. Atrium only an indistinct, strongly sclerotized trapezoidal depression. Anterior margin of atrium visible as a continuous, little pronounced ridge. Posterior margin of the atrium reaches the epigastric furrow. Pair of posterior teeth present. Ducts and spermathecae barely visible through the plate. Copulatory openings visible as gaps, located at the anterior lateral margin of the atrium. Openings posterior and inwards directed. Copulatory duct short. Small laterally originating diverticula at the copulatory duct. Spermathecae strongly and irregularly sclerotized (some parts are stronger and bolder sclerotized than others) egg-shaped, touching each other anteriorly (Fig. 5). Fertilisation ducts small.

Natural history. The species seems to prefer closed canopy forests, with a damp microclimate. Several adult specimens were captured between April and September, when the species seems to be most active.

Distribution. Only known from the two mentioned sites in the provinces of Santarém and Coimbra, Portugal (Fig. 19).

Tegenaria incognita sp. n.

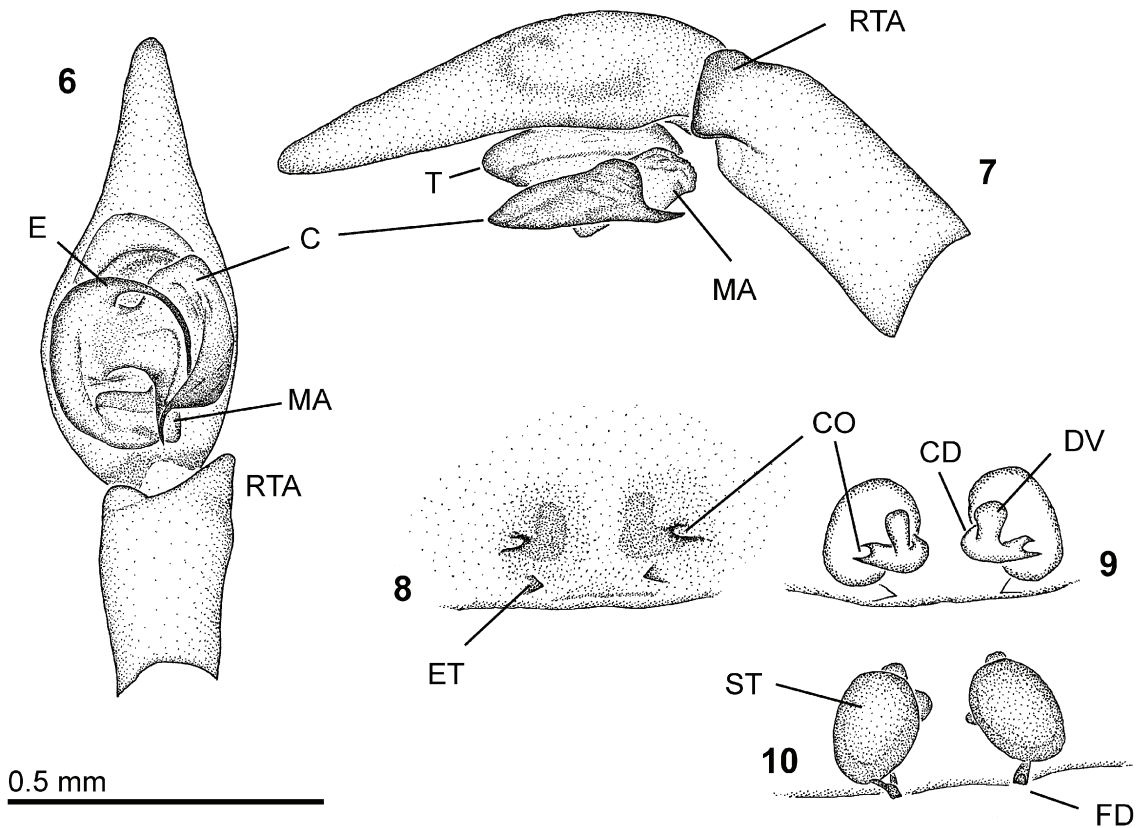
(Figs. 6–10, 15–18)

Type material. Holotype ♂ (deposited at the NMB, Nr.: 2805a, Figs 6–7, collected by pitfall trap); Portugal, Lisbon, “Parque Florestal de Monsanto” (38°43'N, 9°11'W); leg. A. Rebelo, 9. November 2004. 1 ♂, paratype (deposited at the NMB, Nr.: 2805b); same locality and collecting details as holotype. 2 ♀, paratypes (deposited at the NMB, Nr.: 2805c, Figs 8–10, 15–18, collected by hand), same locality as holotype; leg. L. Crespo, 13. April 2008.

Further material examined. 101 ♂, 5 ♀ same locality as holotype (deposited at the NMB, Nr.: 2805d and 2805e, collected by pitfall traps); leg. L. Crespo, 16. October - 1. November 2008. 2 ♂, 2 ♀ (deposited in the personal collection of Luís Crespo, Portugal); same locality and collecting details as previous.

Diagnosis. *T. incognita* sp. n. is closely related to *T. barrientosi* sp. n., *T. bucculenta* (L. Koch, 1868), *T. feminea* (Simon, 1870) and *T. montigena* (Simon, 1937). It can be separated from the later three species by the absence of a patellar apophysis (present in *T. feminea*, Barrientos 1980: fig. 1A), the broad and flat lateral tibial apophysis (fig. 7; absent in *T. feminea*; much smaller in *T. bucculenta*, Barrientos 1991: fig. 3; protruding ventrodistally in *T. montigena*, Simon 1937: fig. 1541) and the presence of small diverticulae at the

copulatory ducts (fig. 9). *T. incognita* sp. n. can be separated from *T. barrientosi* sp. n. by the characters mentioned in the diagnosis section of the description of *T. barrientosi* sp. n (see above).



FIGURES 6–10. Drawings of the reproductive organs of *Tegenaria incognita* sp. n.. 6—left male palp in ventral view; 7—left male palp in retrolateral view; 8—epigynum in ventral view; 9—vulva in ventral view; 10—vulva in dorsal view. C = conductor; CD = copulatory duct; CO = copulatory opening; DV = DV = small diverticulum on the CD; E = embolus; ET = epigynal teeth; FD = fertilisation duct; MA = median apophysis; RTA = retrolateral tibia apophysis; S = spermathecae; T = tégulum; VC = ventral branch of conductor.

Etymology. The name refers to the fact that this species has not been described until now even though the only known finding site lies in a forest among the largest Portuguese city. The name is derived from the Latin adjective “incognitus” and is female in gender.

Description. *Prosoma*: carapace: 1.82–3.95 (2.04) mm long, 1.39–3.00 (1.46) mm wide in males (n=4); 2.83–3.16 mm long, 1.99–2.21 mm wide in females (n=2). Fovea-length to carapace-length: 0.147–0.209 (0.181). Yellowish brown coloured with two longitudinal bands of darkened triangular dots (in the male specimens pigmentation very weakly visible, probably due to alcohol preservation or pitfall solution). Border of carapace continuously darkened (Fig. 15). Plumose hairs present. Head-region: 0.86–1.95 mm wide in males, 1.43–1.52 mm wide in females. Head-region only somewhat darker. PER 0.47–0.88 (0.48) mm wide in males, 0.72–0.73 mm wide in females. Diameter of PME: 0.06–0.10 mm; PLE: 0.08–0.14 mm; AME: 0.05–0.10 mm; ALE: 0.08–0.15 mm. Eye-formula (Fig. 17): ALE>PLE>PME=AME in males, ALE=PLE>PME>AME in females. PME separated by 1.5 times their diameter. PME and AME separated by the diameter of PME. PME and PLE separated by 1.5 times the diameter of PME. PME and ALE separated by 1–1.5 times the diameter of PME. AME separated by slightly less or about their diameter. AME and ALE separated by 0.5 time the diameter of AME or slightly more. Clypeus height (measured under AME): about 1.5–2 times the diameter of AME; clypeus height (measured under ALE): about 0.5–1 time the diameter of ALE. AER slightly recurved, PER straight in dorsal view (Fig. 15). Both eye-rows slightly procurved or AER

straight in frontal view (Fig. 17). Chelicerae: 0.85–2.21 (0.97) mm long, 0.41–1.06 (0.48) mm wide in males; 1.46–1.56 mm long, 0.75–0.80 mm wide in females. Chelicerae protruding, visible in dorsal view. 3 teeth at the pro-margin, median tooth biggest. 8–10 teeth at the retro-margin, most proximal tooth very small. Gnathocoxa width to length: 0.510–0.543 (0.510). Labium width to length: 0.857–1.009 (1.009). Distal margin of labium concave. Sternum (Fig. 16): 1.12–2.18 (1.17) mm long, 0.92–1.67 (0.97) mm wide in males; 1.57–1.68 mm long, 1.23–1.35 mm wide in females. Somewhat lighter median band, but no other colour-pattern.

Legs and palps: plumose hairs present. Yellowish-brown without pattern. Trochanter straight or slightly curved, not notched (Fig. 16). Number of dorsal trichobothria at tarsus I and IV: 6–7; at tarsus II and III: 5–6. Leg measurements are listed in tables 4–5. For spine formulae see table 3.

Opisthosoma: 1.83–3.69 (1.98) mm long, 0.97–2.42 (0.97) mm wide in males; 3.70–4.59 mm long, 2.21–2.95 mm wide in females. Colour dark gray-green, dorsally in the anterior half a narrow bright median band, not very distinct; more posteriorly shading into 3–5 chevrons (in male specimens these patterns are not visible due to preservation or capture liquid) (Fig. 15). Plumose hairs present. Spinnerets (Fig. 18): colulus is a rectangular plate, pale (distally slightly more sclerotized), distal margin strongly concave. PLS longer than all others. PMS as long as ALS. ALS not darkened. Both segments of PLS pale or distal segment dorsally somewhat darkened. Distal segment of PLS as long as basal segment. PLS separated by more than 2 times their diameter. Distance between ALS smaller than 0.5 their diameter.

Male palp (Figs 6–7): femoral and patellar apophyses absent. RTA with 2 branches: lateral branch simple, very broad, lamella-like; lateroventral branch almost completely hidden by the lateral branch, a long drawn-out lobe. Dorsally at palpal-tibia short spine absent. Bulb length to cymbium length: 0.41–0.47. Embolus filiform, becoming more slender distally, shorter than cymbium width, curved through 90°. Embolus origin (free apex) on the left palp at 11½ o'clock position, terminal end at 4½ o'clock position. Tegulum anterior-laterally constantly curved. Median apophysis pocket-like, consisting of a membranous basal part and terminally of a thin and broad sclerotized plate. Origin of median apophysis proximal at tegulum (between 5 and 7 o'clock position). Connection of median apophysis to tegulum membranous. Conductor droplet-shaped, parallel to cymbium margin and shorter than the alveolus. Conductor folded only at the terminal half. Terminal end is a strongly sclerotized and pointed peak, pointing towards posterior. Membranous ridge present from terminal end of conductor towards connection of the conductor to the tegulum (ventral branch of conductor). Connection of conductor to tegulum is membranous.

TABLE 4. Leg and pedipalp measurements of males of *Tegenaria incognita* sp. n.. The measurements are given as the range (in mm) of all examined specimens (n=4). The measurements of the holotype are given in parenthesis.

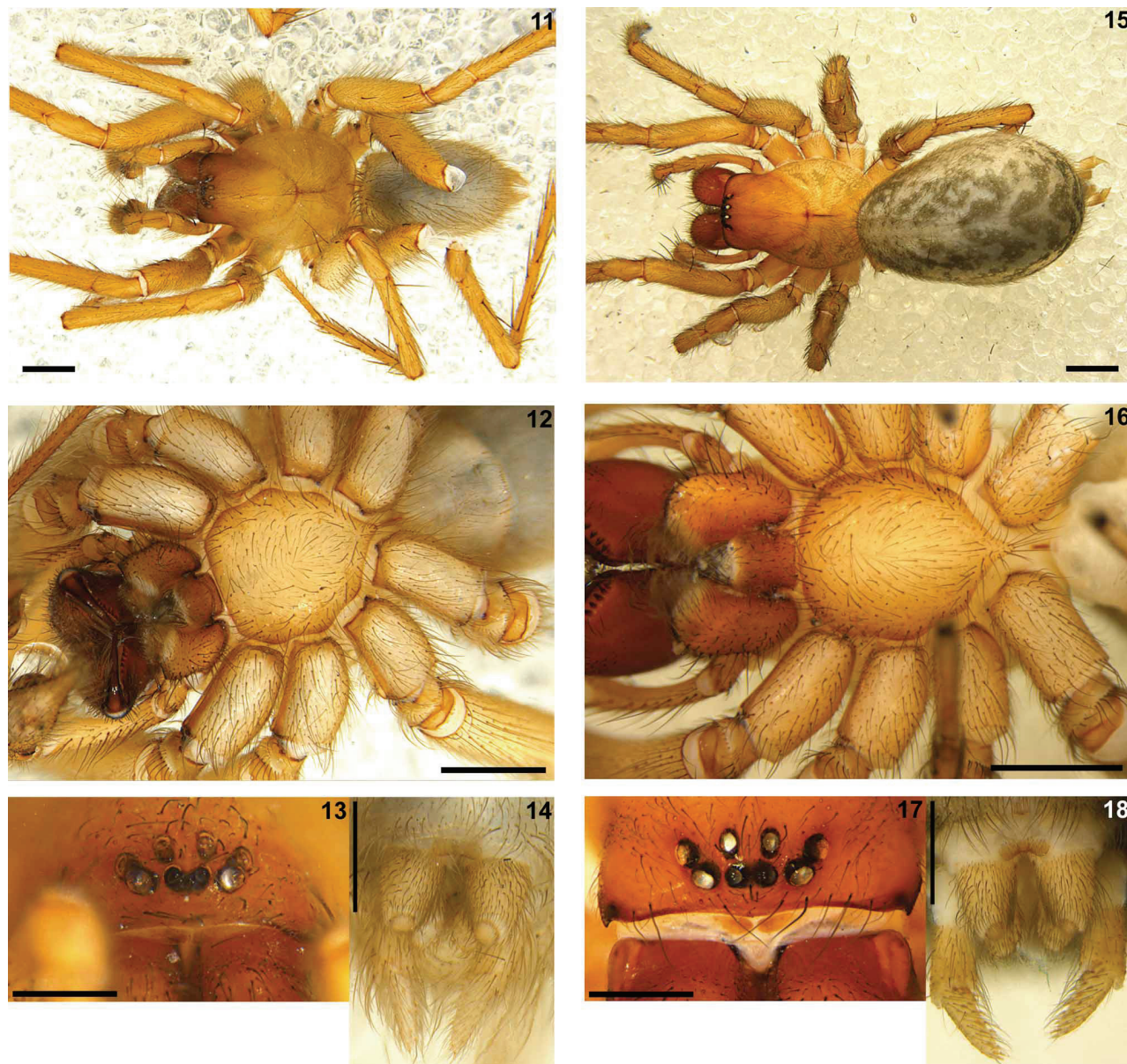
	femur	patella	tibia	metatarsus	tarsus	total
Pedipalp	0.79–1.79 (0.87)	0.37–0.77 (0.39)	0.43–0.94 (0.45)	–	0.68–1.34 (0.75)	2.27–4.84 (2.46)
Leg I	1.75–3.6 (1.83)	0.71–1.58 (0.76)	1.60–3.12 (1.73)	1.44–3.06 (1.64)	0.91–1.64 (0.91)	6.46–13.00 (6.87)
Leg II	1.54–2.85 (1.60)	0.68–1.35 (0.76)	1.17–2.50 (1.31)	1.31–2.50 (1.46)	0.85–1.39 (0.92)	5.55–10.59 (6.04)
Leg III	1.43–2.76 (1.45)	0.62–1.33 (0.62)	1.03–2.09 (1.12)	1.40–2.79 (1.54)	0.82–1.36 (0.82)	5.30–10.33 (5.55)
Leg IV	1.83–3.54 (1.91)	0.71–1.50 (0.73)	1.69–3.38 (1.85)	2.00–4.12 (2.31)	1.02–1.76 (1.04)	7.25–14.30 (7.85)

Epigynum and vulva (Figs 8–10): whole epigynal plate 0.34 mm long, 0.58–0.67 mm wide, sclerotized. Atrium 0.22 mm long, 0.34–0.38 mm wide. Atrium only an indistinct, strongly sclerotized trapezoidal depression. Anterior margin of atrium indistinct. Posteriorly the atrium reaches the epigastric furrow. Pair of

posterior teeth present, pointing inwards. Ducts and spermathecae barely visible through the plate. Copulatory openings visible as gaps, outward directed (Figs 8–9). Copulatory ducts short. Small anteriorly originating diverticulae at the copulatory duct present (Fig. 9). Spermathecae expressed as smooth and strongly sclerotized globular structures, separated by less than their diameter (Fig. 10). Fertilisation ducts small.

Natural history. The specimens were captured in mixed woodland, with both pine and cork oak trees. Adult specimens were caught in spring and autumn.

Distribution. Only known from the mentioned forest in Lisbon, Portugal (Fig. 19).



FIGURES 11–18. Photographs of a male *Tegenaria barrientosi* (11–14) and a female *Tegenaria incognita* (15–18). 11, 15—habitus in dorsal view; 12, 16—prosoma in ventral view; 13, 17—eyes in frontal view; 14, 18—spinnerets in ventral view. Scale bars are 1.0 mm in 11–12, 15–16, and 0.5 mm in 13–14, 17–18.



FIGURE 19. Map of the collection localities of *Tegenaria barrientosi* **sp. n.** (black dots) and *Tegenaria incognita* **sp. n.** (black square) in Portugal.

TABLE 5. Leg and pedipalp measurements of females of *Tegenaria incognita* **sp. n.**. The measurements are given as the range (in mm) of all examined specimens (n=2). Leg IV was only available from one specimen.

	femur	patella	tibia	metatarsus	tarsus	total
Pedipalp	1.15–1.28	0.53–0.55	0.70–0.74	-	1.00–1.06	3.39–3.61
Leg I	2.18–2.29	1.00–1.02	1.82–1.99	1.74–1.83	1.10–1.17	7.85–8.29
Leg II	1.99–2.12	0.99–1.03	1.47–1.58	1.59–1.71	1.00–1.04	7.04–7.48
Leg III	1.91–2.05	0.90–0.96	1.29–1.37	1.74–1.87	0.93–1.00	6.77–7.24
Leg IV	2.52	1.05	2.21	2.56	1.12	9.46

Discussion

Based on morphological similarity, the two new species seem to be closely related to *Tegenaria bucculenta*, *T. feminea* and *T. montigena*, all endemic to the Iberian Peninsula. Especially the male of *T. barrientosi* **sp. n.** shows a striking similarity to *T. bucculenta* (see drawings in Barrientos, 1991; p. 230, Figs 2–3) but is clearly different by the characters mentioned above. As mentioned by Barrientos (1991), the relation between these three spider species is difficult and has caused confusion in the literature for several times (Brignoli, 1978; Machado, 1941). Here, we would like to correct a citation: the drawing of *T. feminea* in the work of Brignoli (1978; p. 272, Fig. 3) does refer to *T. montigena*. Brignoli mentioned that he was not very sure about his determination of the corresponding specimen (1 ♀, leg. Haymoz, VII. 1975, “Espagne, Zamora, env. Sandin de Carballeda”, at the collection of the Muséum d'histoire naturelle de la Ville de Genève). This specimen has been re-examined by the first author. It clearly belongs to *T. montigena*.

In addition to the *Tegenaria* species endemic to the Iberian Peninsula, there are several widely distributed species mentioned for Portugal: *Tegenaria inermis* Simon, 1870, *Tegenaria saeva* Blackwall, 1844 and *Tegenaria duellica* Simon, 1875 mainly show a West-European distribution; *Tegenaria agrestis* (Walckenaer, 1802), *Tegenaria atrica* C. L. Koch, 1843 and *Tegenaria picta* Simon, 1870 (newly listed under *Malthonica picta* by Guseinov et al., 2005) are predominantly distributed in Europe; *Tegenaria domestica* (Clerck, 1757), *Tegenaria parietina* (Fourcroy, 1785) and *Tegenaria pagana* C. L. Koch, 1840 (newly listed under *Malthonica pagana*) show an almost cosmopolitan distribution; *Tegenaria ferruginea* (Panzer, 1804) (newly listed under *Malthonica ferruginea*) shows a predominantly Central- to East-European distribution. The later species has been mentioned for Portugal by Vieira (1893; listed in Bonnet, 1959) and Bacelar (1928). As this species was not collected since then and no record could be found in several museum collections, its occurrence in Portugal is dubious.

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Funnel web spiders from Sardinia: Taxonomical notes on some *Tegenaria* and *Malthonica* spp. (Araneae: Agelenidae)

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Funnel web spiders from Sardinia: Taxonomical notes on some *Tegenaria* and *Malthonica* spp. (Araneae: Agelenidae). - Based on specimens collected by hand during several field trips to Sardinia and on specimens examined in several collections, the female of *Tegenaria henroti* Dresco and the male of *Malthonica sardoa* Brignoli are described for the first time. *Malthonica eleonora* (Brignoli) is redescribed. It can be distinguished from *T. henroti*, which we regard as its sister species without yet proposing a new combination, by the number of teeth on the upper margin of the cheliceral groove and by the spine formulae of all leg tibiae. Additionally, the rim of the atrium, the form of the spermathecae, as well as the shape of the regular apophysis and the ridge on the male bulb are important characters for separating these species. The female described under *T. henroti* by Wunderlich actually belongs to *M. dalmatica* (Kulczynski). The latter species would be new to Sardinia but has been recorded before on this island under the name *T. drescoi* Brignoli, which we consider as a new junior synonym of *M. dalmatica*. In addition, *Malthonica sicana* Brignoli is recorded for the first time from Sardinia, and the species is redescribed here. Males of the three species, *M. sardoa*, *M. sicana* and *M. arganoi* (Brignoli), can be distinguished by the shape of their retrolateral tibia apophysis, the shape of the terminal end of the conductor and the shape of the median apophysis.

Keywords: New male - new female - new synonym - taxonomy - species description.

INTRODUCTION

Malthonica Simon and *Tegenaria* Latreille represent two species-rich genera of agelenid spiders. They are predominantly Palaearctic in distribution. Currently 41 valid species and one subspecies are listed in *Malthonica* and 101 species in *Tegenaria* (Platnick, 2008). These two genera are notorious for causing taxonomic problems: Lack of diagnoses, doubtful generic assignment of species, information available only for one sex in many species, unknown internal phylogenetic relationships between the species.

Tegenaria was erected by Latreille (1804) to include the species listed by Walckenaer (1802) under "Tapiformes": *T. domestica* (Clerck), *T. civilis* (Walckenaer) (= *T. domestica*), *T. agrestis* (Walckenaer) and *T. murina* (Walckenaer) (= *T. parietina* (Fourcroy)). The characters originally defining *Tegenaria* are the arrangement and size of the eyes, the almost square labium, the shape of the gnathocoxa, the leg formula, the elongated posterior spinnerets and the typical funnel web. Many species were added subsequently until Simon (1898) described *Maltonica* for a single species on the basis of procurved eye rows with small anterior median eyes, a narrow clypeus, a big tooth followed by several smaller teeth on the posterior margin of the cheliceral groove and segmented posterior spinnerets with the apical segment shorter than the basal (Simon, 1898; see also: Barrientos & Cardoso, 2007). *Malthonica* remained a genus with few species until Brignoli (1971, 1976a, b, 1978, 1980, 1984) added several species mostly on the basis of general similarity and small size, and hereby created taxonomic chaos. Guseinov *et al.* (2005) used the embolus length to separate *Tegenaria* from *Malthonica*. Apart from describing some new species from Azerbaijan they transferred several other species from *Tegenaria* to *Malthonica*. Jäger (2006) convincingly showed that this character, at least in Sparassidae, is unsuitable for phylogenetic evaluation. Furthermore Guseinov *et al.* (2005) omitted many described species from their list. In short, they added to the already existing confusion. Barrientos & Cardoso (2007) addressed this problem when describing a new species from Portugal. They redefined *Malthonica* for the Iberian species based on the original description of Simon (1898) and on a systematic evaluation by Lehtinen (1967). The current situation, presented in the catalogue of Platnick (2008), is extremely unsatisfactory as several pairs of apparently closely related species are assigned to different genera (e.g. *Malthonica eleonorae* and the supposed sister species *Tegenaria henroti*). Another problem in dealing with species of the *Tegenaria-Malthonica*-complex is the fact that many species are known from one sex only (59 species = 41 %).

The purpose of the present paper is to improve the taxonomic knowledge of some species from Sardinia by providing descriptions of the previously unknown sex, one new synonymy and a new record. A phylogenetic analysis of the two genera is in progress (Bolzern in prep.) and is not the subject of the present paper. In order to avoid additional synonyms or new combinations, no generic rearrangements are made at this stage and the combinations used in the catalogue of Platnick (2008) are adopted here throughout.

MATERIAL AND METHODS

Material was examined from the Muséum d'histoire naturelle, Genève (MHNG), Muséum national d'Histoire naturelle, Paris (MNHN), Museo Civico di Storia Naturale, Verona (MSNV, holding P.M. Brignoli's collection), Senckenberg Forschungsinstitut und Naturmuseum, Frankfurt am Main (SFM, holding the collection of J. Wunderlich (JW)). Additional hand collected material comes from M. A. Arnedo and colleagues (Universitat de Barcelona, Spain), as well as S. Ramseyer and A. Bolzern, and is deposited at the Naturhistorisches Museum Basel (NMB), the MHNG and MSNV.

Drawings were made using a Leica MZ12 stereomicroscope (with up to 110 x magnification) with a drawing tube. Most measurements were taken from digital pictures made with a Leica DFC320 camera and calculated with the programme ImageJ 1.38x (free software available on the internet at <http://rsb.info.nih.gov/ij/>). A few specimens were measured with an ocular scale bar. Measurements are taken from the dorsal side of the palps and legs. Eye-rows are straight, pro- or recurved according to the definition given in Jocqué & Dippenaar-Schoeman (2006) and Ubick *et al.* (2005). In frontal view, the eye-row is called “procurved” when the median eyes are situated more dorsally than the lateral eyes (Fig. 2). The number and arrangement of spines on femur, tibia and tarsus are presented in a spine formula. For each leg segment this formula gives the number in the following order: Dorsal - prolateral - retrolateral - ventral. A “p” indicates that at this position a pair of spines is present. E.g., the formula 2-2-2-1p+1+1p+1 stands for 2 dorsal, 2 prolateral, 2 retrolateral and 1 pair (2 spines at the same level close together) plus 1 plus 1 pair plus 1 ventral spine/spines (from proximal to distal; see Fig. 3). For clearing the vulva, the dissected epigynum has been placed into clove oil for several minutes. The descriptions of the palpal bulbs refer to the ventral view. The spines on the male palp (drawn in Fig. 13) are mostly not illustrated, as they are of no taxonomical significance.

The following abbreviations are used in the morphological sections (see also Figs 1-3): AER = anterior eye row; ALE = anterior lateral eyes; AME = anterior median eyes; AME-AME = distance between AME, expressed in eye diameters; AS = anterior spinnerets; AT = atrium of epigynum; BL/CL = ratio of bulb length / cymbium length; C = conductor; CD = copulatory duct; CHA = anterior (upper) margin of cheliceral groove; CHP = posterior (lower) margin of cheliceral groove; CLY1 = clypeus height measured below the AME; CLY2 = clypeus height measured below the ALE; CO = copulatory opening; DV = small diverticulum on the CD; E = length of apex of embolus; EP = epigynum; ET = epigynal teeth; FD = fertilisation duct; GNA = width/length ratio of gnathocoxa; MA = median apophysis; MS = median spinnerets; PA = patellar apophysis; PER = posterior eye row; PLA = posterior lateral eyes; PME = posterior median eyes; PME-AME = distance between PME and AME, expressed in eye diameters; PME-PME = distance between PME, expressed in eye diameters; PS = posterior spinnerets; R = distal ridge on tegulum of bulb; RTA = retrolateral tibia apophyses (used here for all structures in a retrolateral position on the male palp, therefore consisting of one, two or three branches); ST = spermathecae; TEA = tegular apophysis; TTN = tarsal trichobothria number (dorsally). Some measurements and characters, clypeus height and spine formula are illustrated in Figs 1-3.

TAXONOMY

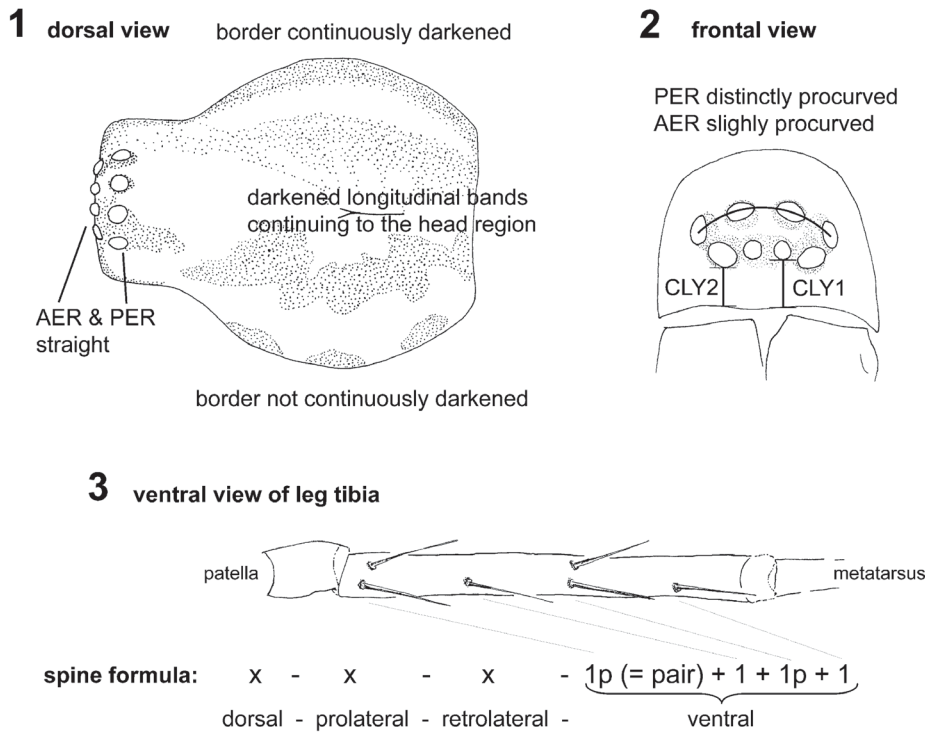
Malthonica dalmatica (Kulczynski, 1906)

Tegenaria dalmatica Kulczynski, 1906: 162-164.

Tegenaria zinzulusensis Dresco, 1959: 506-509; synonymised by Levy (1996: 103) after Brignoli (1976b: 568-569).

Tegenaria drescoi Brignoli, 1971: 110-112; **syn. n.**

Malthonica dalmatica (Kulczynski). – Guseinov *et al.* (2005: 164).



FIGS 1-3

Schematic drawings of carapace and tibia of a *Tegenaria* specimen. (1) Dorsal view of carapace with two different colour patterns. (2) Frontal view of carapace. (3) Ventral view of a leg tibia with a possible spine pattern. AER = anterior eye row, CLY1 = clypeus height measured under the anterior median eyes, CLY2 = clypeus height measured under the anterior lateral eyes, PER = posterior eye row. "p" (= paired) in the spine formula indicates that a pair of spines is situated at the same level on the tibia.

TYPE MATERIAL EXAMINED: ♀ holotype of *T. drescoi* (MSNV, vas. 543); Castelsardo, Sassari, Sardinia, IT; leg. A. Vigna, 28.4.1967; det. P. M. Brignoli.

OTHER MATERIAL EXAMINED: 1 ♀ (JW, described under *T. henroti* by Wunderlich (1994)); "NSG oberhalb Baunei", Ogliastra, Sardinia, IT; leg. J. Wunderlich, "in V"; det. J. Wunderlich. – 1 ♂, 3 ♀ (SFM, nr. 8939/4-135, published under *T. pagana* (C.L. Koch) by Kraus (1955)); "Höhle bei Sassari", Sardinia, IT; leg. K. Schnellbäcker, 6.4.1952; det. A. Bolzern. – 14 ♀ (MNHN, nr. 1953, loc. 481, specimens were in a tube with specimens of *T. pagana*, det. E. Simon); "Gallia merid., Cors.", FR; leg. E. Simon; det. A. Bolzern. – 1 ♀ (MNHN, nr. 1965, loc. 460, specimen was in the type series of *T. armigera* Simon); Corsica, FR; leg. E. Simon; det. A. Bolzern.

DESCRIPTION: Descriptions and figures of both sexes were published by Kulczynski (1906), Dresco (1959), Brignoli (1971), Levy (1996), Dimitrov (1999), Ledoux (2004) and Kovblyuk & Nadolny (2007).

DISTRIBUTION: Reported from Montenegro (Kulczynski, 1906), Italy including Sardinia and Sicily (Dresco, 1959; Brignoli, 1971; Wunderlich, 1994, female under *T. henroti*), Greece and Cyprus (Brignoli, 1976b; 1979b), Bulgaria (Deltshev, 1995),

Israel (Levy, 1996), mainland France (department Var) (Ledoux, 2004) and Corsica (Simon, 1873, one female under *T. armigera*). *M. dalmatica* was not previously known from Corsica. The species occurs also in Croatia, Lebanon and Tunisia (unpublished data, JW, NMB and MSNV under *T. zinzulusensis*).

COMMENTS: The examination of numerous specimens of *M. dalmatica*, including material from France, Greece, Lebanon and Italy, showed a high degree of variation in the arrangement of the ST and in the dimensions of the CT. The holotype of *T. drescoi* lies within this range of variation and the name is therefore synonymised with *T. dalmatica*. Brignoli (1971) mentioned that the holotype of *T. drescoi* is morphologically close to *T. zinzulusensis*, and the latter similar to *T. dalmatica* (see Brignoli, 1976b), which led Levy (1996) to synonymise *T. zinzulusensis* with *T. dalmatica*.

***Tegenaria henroti* Dresco, 1956**

Figs 4-7

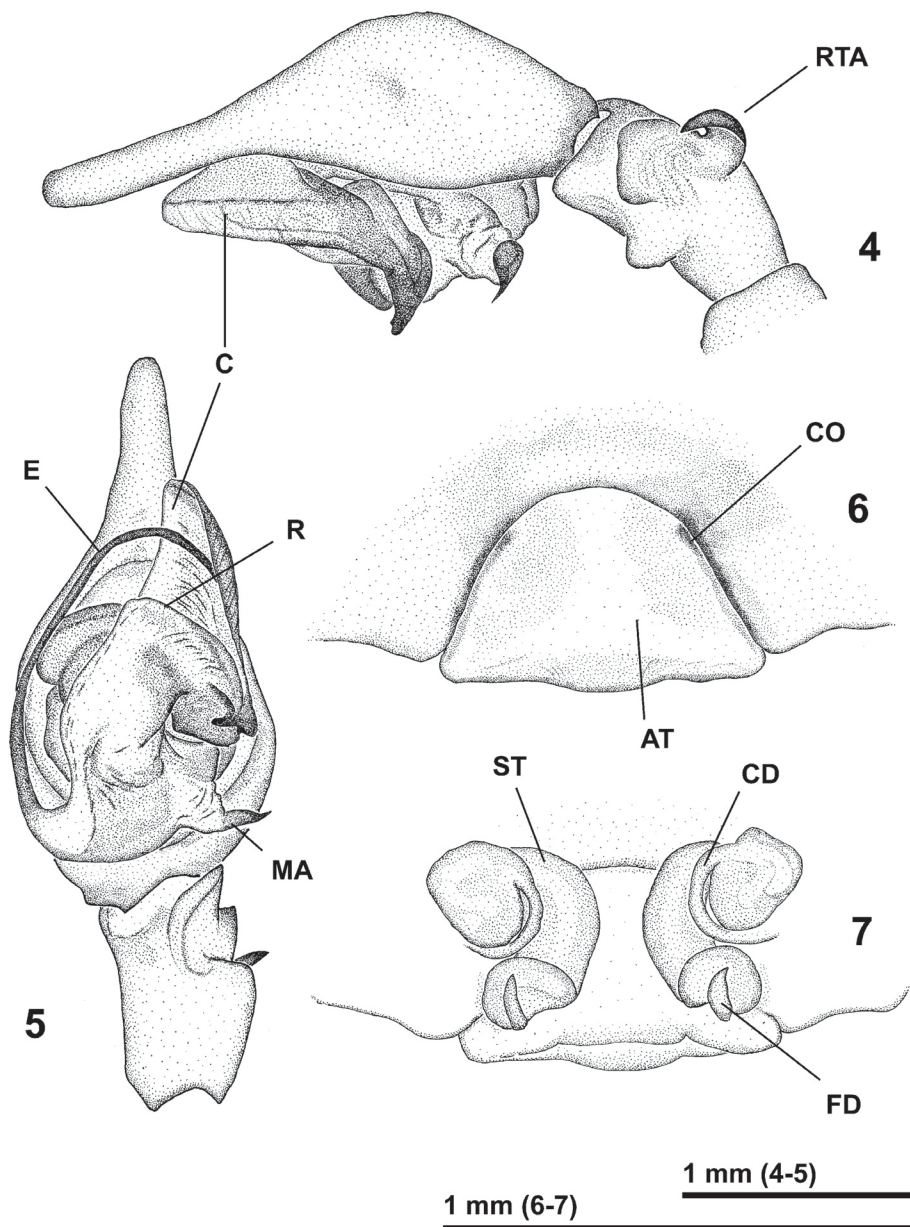
Tegenaria henroti Dresco, 1956: 115-118.

MATERIAL EXAMINED: 1 ♂ (MHNG); "Grotta di Gonone", Cala Gonone, Nuoro, Sardinia, IT; leg. P. Strinati & V. Aellen, 20.3.1971; det. P. M. Brignoli (Brignoli, 1974). – 1 ♂ (JW); "NSG oberhalb Baunei", Ogliastra, Sardinia, IT; leg. J. Wunderlich, "in V"; det. J. Wunderlich. – 1 ♂, 1 ♀ (SFM, nr. 11299-135, under *T. domestica*); "Höhle Buo Marino", Sardinia, IT; leg. Patrizi; det. A. Bolzern. – 1 ♂ (Figs 4-5), 1 ♀ (Figs 6-7) (NMB, 2791a, b); Cave NNE of Cala Gonone, Cala Gonone, Nuoro, Sardinia, IT (40°17'39"N / 9°38'50"E, altitude: 3 m); leg. A. Bolzern & S. Ramseyer, 5.7.2006 (then juv.); det. A. Bolzern. – 1 ♀, 16 juv. (NMB, 2791c); Cave at Cala Luna, Cala Gonone, Nuoro, Sardinia, IT (40°13'37"N / 9°37'37"E, altitude: 5 m); leg. A. Bolzern & S. Ramseyer, 6.7.2006; det. A. Bolzern. – 4 ♀, 4 juv. (MHNG); small cave above "Grotte Sa Oche", Valle di Lanaito, Oliena, Nuoro, Sardinia, IT (40°15'23"N / 9°29'10"E); leg. A. Bolzern & S. Ramseyer, 7.7.2006; det. A. Bolzern.

The female from the "Cave NNE of Cala Gonone, 5.7.2006" was juvenile when collected and was reared in the laboratory at the NMB. It reached maturity in November 2006. The depository of the type material is unknown.

DESCRIPTION OF FEMALE (the ♀ described by Wunderlich (1994) under *T. henroti* actually belongs to *T. dalmatica*): Prosoma: Carapace: Plumose hairs present. 5.05 mm long, 4.01 mm wide in male (n=1); 3.66-5.91 mm long, 2.71-4.4 mm wide in females (n=4). Ratio fovea/carapace length: 0.115-0.167. Border not continuously darkened, two longitudinal darkened bands present, strongest pigmentation close to head region, sometimes very weakly pronounced. Head region without a pattern. AER slightly recurved and PER straight in dorsal view; AER slightly procurved and PER strongly procurved in frontal view. AME smallest, other eyes equal in size. PME-PME longer than half their diameter; PME-AME equal to the diameter of PME; AME-AME equal to half their diameter or slightly longer. CLY1 2-3 x the diameter of AME; CLY2 equal to or slightly higher than the diameter of ALE. Chelicerae: 2.22 mm long, 0.88 mm wide in male; 1.64-2.75 mm long, 0.78-1.15 mm wide in female. CHA: 4 teeth; CHP: 4-6 teeth. Chelicerae uniformly brownish. Labium: As long as wide or slightly wider than long. GNA: 0.497-0.576. Sternum: 2.56 mm long, 2.28 mm wide in male; 1.77-2.82 mm long, 1.71-2.58 mm wide in female. Pale median band and 3 pale dots on each side, not clearly delimited and sometimes fused together.

Legs: Plumose hairs present. Annulated, especially on femora and tibiae. Trochanter straight. TTN on legs I-IV: 8-9. For leg measurements see Tables 1 and 2



FIGS 4-7

Tegenaria henroti Dresco. (4) Left male palp, retrolateral view. (5) Same, ventral view. (6) Epigynum, ventral view. (7) Vulva, dorsal view. AT = atrium, C = conductor, CD = copulatory duct, CO = copulatory opening, E = embolus, FD = fertilisation duct, MA = median apophysis, R = ridge on tegulum, RTA = retrolateral tibia apophysis, ST = spermatheca.

TABLE 1: Leg measurements (in mm) and leg formula of males of *Tegenaria henroti*, *Malthonica eleonora*, *M. sardoa* and *M. sicana* (*specimen from Sicily).

		<i>T. henroti</i> (n=1)	<i>M. eleonora</i> (n=1)	<i>M. sardoa</i> (n=3)	<i>M. sicana</i> (n=1*)
Palp	Femur	2.05	1.82	0.94-1.15	1.25
	Patella	0.85	0.62	0.35-0.42	0.46
	Tibia	1.07	0.80	0.38-0.46	0.66
	Cymbium (Bulb)	2.40 (1.67)	1.83 (1.29)	0.93-1.12 (0.67-0.92)	0.91 (0.42)
	Total	6.37	5.07	2.60-3.15	3.28
Leg I	Femur	8.00	5.94	2.43-3.22	3.92
	Patella	2.05	1.59	0.76-0.94	1.00
	Tibia	8.65	5.76	2.16-3.24	3.85
	Metatarsus	9.22	6.3	2.10-3.16	3.55
	Tarsus	3.65	3.07	1.33-1.58	1.82
	Total	31.57	22.66	8.78-12.14	14.14
Leg II	Femur	8.11	5.90	2.12-2.53	2.92
	Patella	1.90	1.60	0.74-0.77	0.91
	Tibia	7.48	5.35	1.64-2.09	2.57
	Metatarsus	8.45	6.00	1.80-2.25	2.70
	Tarsus	3.00	2.77	1.16-1.36	1.53
	Total	28.94	21.62	7.46-9.00	10.63
Leg III	Femur	7.18	5.25	1.99-2.35	2.62
	Patella	1.84	1.39	0.71-0.82	0.94
	Tibia	6.42	4.42	1.51-1.83	2.00
	Metatarsus	8.33	5.95	1.86-2.38	2.66
	Tarsus	2.88	2.33	1.04-1.16	1.18
	Total	26.65	19.34	7.11-8.54	9.40
Leg IV	Femur	7.98	6.12	2.67-3.15	2.52
	Patella	1.91	1.49	0.76-0.89	0.86
	Tibia	6.95	5.75	2.44-2.86	2.16
	Metatarsus	10.19	7.35	2.75-3.38	2.70
	Tarsus	3.10	2.73	1.29-1.56	1.34
	Total	30.13	23.44	9.91-11.84	9.58
Formula		I > IV > II > III	IV > I > II > III	IV = I > II > III	I > II > IV > III

(one female from the "Grotte Sa Oche" was much bigger than the others and had only legs 1 and 2 left). For spine formulae see Table 3.

Opisthosoma: 6.71 mm long, 4.74 mm wide in male; 4.57-5.24 mm long, 3.34-3.52 mm wide in females. Plumose hairs present. Anterior part with pale median band and big pale dots on both sides, mottled; pale dots continuing to posterior part in chevrons, posterior part with dark ground colour. Spinnerets: PS longer than all others; distal segment as long as or longer than the basal one, basal segment slightly darkened or both segments pale. MS as long as AS. Colulus forming a more or less rectangular plate, wider than long.

Male palp (Figs 4-5): PA absent. RTA with lateral, dorsal and ventral branch; lateral branch lamella-like; dorsal branch strongly sclerotized, horn-like; ventral apophysis developed as a big not strongly sclerotized bulge. Cymbial modifications absent. BL/CL 0.7. Alveolus length 1.31 mm. Embolus filiform, becoming more

TABLE 2: Leg measurements (in mm) and leg formula of females of *Tegenaria henroti*, *Malthonica eleonorae*, *M. sardoa* and *M. sicana*. The values in parentheses for *M. sicana* are measurements of an extremely large paratype specimen (in MHNG) from Sicily. Leg I of one of the two *M. sardoa* females examined is missing.

		<i>T. henroti</i> (n=4)	<i>M. eleonorae</i> (n=3)	<i>M. sardoa</i> (n=2)	<i>M. sicana</i> (n=4 + paratype)
Palp	Femur	1.79-2.86	1.54-1.90	0.81-0.96	0.90-0.99 (1.3)
	Patella	0.70-1.02	0.66-0.79	0.35-0.38	0.40-0.44 (0.5)
	Tibia	1.16-1.82	1.00-1.22	0.51-0.59	0.58-0.63 (1.0)
	Tarsus	1.85-2.97	1.65-2.04	0.83-0.92	0.75-0.92 (1.2)
	Total	5.50-8.67	4.85-5.95	2.50-2.85	2.63-2.98 (4.0)
Leg I	Femur	5.52-9.02	4.79-5.96	1.85	2.03-2.22 (3.3)
	Patella	1.51-2.35	1.54-1.67	0.70	0.72-0.84 (1.0)
	Tibia	5.06-8.80	4.60-6.31	1.61	1.90-2.01 (3.3)
	Metatarsus	5.33-9.41	4.89-6.44	1.48	1.77-1.89 (3.0)
	Tarsus	2.49-3.80	2.39-2.95	1.09	1.13-1.24
	Total	19.91-33.38	18.21-23.33	6.73	7.55-8.2
Leg II	Femur	4.86-8.46	4.44-5.73	1.63-1.90	1.76-1.89 (2.8)
	Patella	1.45-2.32	1.40-1.74	0.64-0.75	0.71-0.79 (1.1)
	Tibia	4.31-7.76	3.96-5.22	1.26-1.47	1.33-1.41 (2.5)
	Metatarsus	5.04-8.92	4.48-5.98	1.25-1.56	1.47-1.53 (2.4)
	Tarsus	2.05-3.45	2.15-2.58	0.87-0.92	0.92-1.00 (1.5)
	Total	17.71-30.91	16.43-21.25	5.65-6.6	6.19-6.62 (10.3)
Leg III	Femur	4.50-4.95	5.04-5.36	1.52-1.75	1.65-1.79 (2.7)
	Patella	1.30-1.44	1.41-1.53	0.61-0.71	0.67-0.74 (0.9)
	Tibia	3.79-4.28	4.35-4.42	1.16-1.39	1.22-1.29 (2.2)
	Metatarsus	4.68-5.25	5.13-5.52	1.37-1.74	1.56-1.68 (2.7)
	Tarsus	1.78-1.91	2.20-2.33	0.80-0.93	0.86-0.91 (1.4)
	Total	16.05-17.83	18.13-19.16	5.46-6.52	5.96-6.41 (9.9)
Leg IV	Femur	5.07-5.55	6.03-6.38	2.06-2.46	2.28-2.45 (3.5)
	Patella	1.37-1.49	1.59-1.71	0.66-0.73	0.68-0.83 (1.0)
	Tibia	4.81-5.18	5.54-5.81	1.78-2.23	2.06-2.21 (3.3)
	Metatarsus	6.25-6.89	7.40-7.47	1.99-2.53	2.35-2.51 (3.8)
	Tarsus	2.14-2.39	2.59-2.59	0.91-1.28	1.08-1.21 (1.8)
	Total	19.64-21.5	23.15-23.96	7.40-9.23	8.45-9.21 (13.4)
Formula		IV = I > II > III	IV > I > II > III	IV > I > II > III	IV > I > II > III

slender distally, shorter than 2 x cymbium width, curved through approximately 180°. Embolus base on left palp at 7-8 o'clock position. Median apophysis thorn-like, spirally elongated at 5 o'clock position. Connection between median apophysis and tegulum membranous. Conductor as long as alveolus, triangular, parallel to cymbium and folded along its entire length. Terminal end of conductor developed as a strongly sclerotized peak. Sharp boundary present between conductor and tegulum, clearly visible as a ridge (R). Subtegulum mostly hidden by tegulum and conductor.

Epigynum and vulva (Figs 6-7): EP: 0.52-0.63 mm long, 1.06-1.48 mm wide. Atrium: 0.33-0.40 mm long, 0.49-0.65 mm wide, forming a membranous triangular or trapezoid plate (Fig. 6). Anterior and lateral margin of atrium developed as a strongly sclerotized border. EP not salient. Spermathecae and/or copulatory ducts barely visible through plate. Epigynal teeth absent. Copulatory openings only visible as more

TABLE 3: Spination of legs of *Tegenaria henroti*, *Malthonica eleonorae*, *M. sardoa* and *M. sicana*. The formula gives the number of spines in the following order: Dorsal - prolateral - retro-lateral - ventral. A "p" indicates that at this position a pair of spines is present (1p = 2 spines at almost the same height). All observed spine formulas are presented; only obviously abnormal (teratological?) spinations were ignored. More than one spine formula per taxon and leg segment indicates variation.

	Species	Femur	Tibia	Tarsus	
Leg I	<i>T. henroti</i>	2-3-1-0	0-1-0-0	0	
		2-3-2-0	2-1-0-0		
	<i>M. eleonorae</i>	2-3-3-0	2-0-0-1p	0	
		2-3-2-0	2-0-0-1+1p		
		2-4-3-0	2-1-0-1+1p		
	<i>M. sardoa</i>	2-1-0-0	0-0-0-2	0	
		2-2-0-0	0-0-0-1+1p		
		2-2-1-0			
	<i>M. sicana</i>	2-1-0-0	0-0-0-2	0	
		2-2-0-0	0-0-0-1+1p		
			0-1-0-2p		
	Leg II	<i>T. henroti</i>	2-3-2-0	0-1-0-0	0
			2-1-0-0		
<i>M. eleonorae</i>		2-2-2-0	2-1-0-2	0	
		2-3-2-0	2-2-0-2		
		2-4-2-0			
<i>M. sardoa</i>		2-1-0-0	0-1-0-2	0	
		2-1-1-0	0-1-0-1+1p		
<i>M. sicana</i>		2-1-0-0	0-1-0-2	0	
		2-1-1-0	2-1-0-1+1p		
Leg III		<i>T. henroti</i>	2-2-2-0	2-1-1-0	0-0-1-0
		<i>M. eleonorae</i>	2-2-2-0	2-2-2-1	0-0-1-0
			2-2-2-1p+1		
	<i>M. sardoa</i>	1-1-1-0	2-1-1-2	0	
		2-1-1-0	2-2-1-2		
	<i>M. sicana</i>	1-1-1-0	2-2-1-2	0	
		2-1-1-0	2-2-1-3	0-0-1-0	
			2-2-2-2		
			2-2-2-1+1p		
			2-2-2-2p		
	Leg IV	<i>T. henroti</i>	1-1-1-0	1-1-1-0	0-0-1-0
2-1-1-0			2-1-1-1		
2-2-1-0					
<i>M. eleonorae</i>		2-1-1-0	2-2-2-1	0-0-1-0	
			2-2-2-2		
<i>M. sardoa</i>		1-1-1-0	2-2-2-3	0	
			2-2-2-1+1p		
			2-2-2-2+1p		
<i>M. sicana</i>		1-1-1-0	2-2-2-3	0-0-1-0	
			2-2-2-1p+1+1p+1	0-1-1-0	

strongly sclerotized regions on both sides of atrium. Vulva (Fig. 7): Copulatory ducts narrow; spermathecae developed as tube-like ducts, in the anterior and posterior part slightly convoluted. Fertilisation ducts short.

DISTRIBUTION: This species is only known from the east coast of Sardinia. It has been found in caves of Nuoro Province (Brignoli, 1974; Dresco, 1956; present study) and in the province of Ogliastra (Wunderlich, 1994).

COMMENTS: The references to *T. henroti* by Brignoli (1971), including the drawings of epigynum and vulva (p. 72, Figs 11-12), refer to *M. eleonorae* (see Brignoli, 1974, 1977). One female described here (Figs 6-7) was collected in the same cave as a male of *T. henroti*. The conspecificity of male and female is supported by the teeth on the margins of the cheliceral groove, the leg spine formula and many other somatic characters. Additionally, the female from this location, though similar to females of *M. eleonorae*, clearly differs from them morphologically.

Wunderlich (1994) described a female, which he had found together with a male of *T. henroti*. This specimen was wrongly associated with *T. henroti*; our re-examination showed that it belongs to *Malthonica dalmatica* (see above).

Malthonica eleonorae (Brignoli, 1974)

Figs 8-11

Tegenaria eleonorae Brignoli, 1974: 390-391.

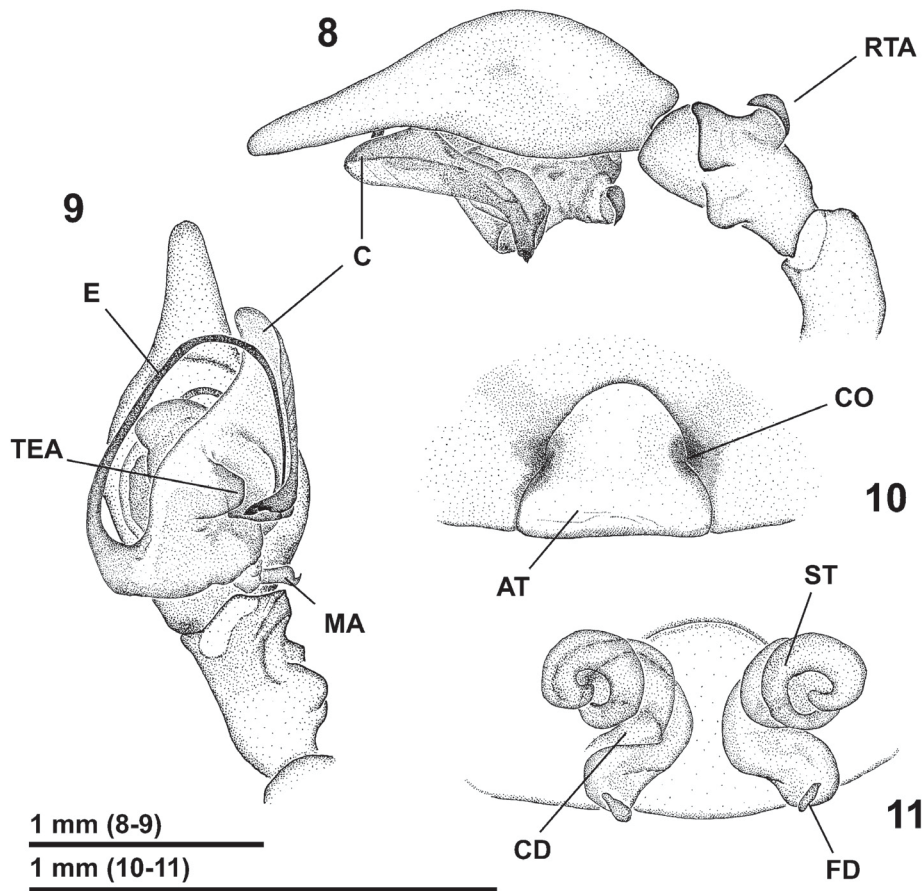
Malthonica eleonorae (Brignoli). – Guseinov *et al.* (2005: 164).

TYPE MATERIAL EXAMINED: ♂ holotype, 1 ♀ paratype (MSNV, vas. 543); “Grotta di S. Giovanni”, Domusnovas, Cagliari, Sardinia, IT; leg. R. Pilia & G. Usai, 6.10.1968; det. P. M. Brignoli. – 1 ♀ paratype (MSNV, vas. 543); from the type locality; leg. G. Pirodda, M. Latte & M. Pinna, 8.9.1968; det. P. M. Brignoli. – 1 ♀ paratype (MSNV, vas. 543); from the type locality; leg. A. Vigna, 28.2.1971; det. P. M. Brignoli. – 1 ♀ paratype (MHNG); from the type locality; leg. A. Vigna.

OTHER MATERIAL EXAMINED: 2 ♀ (MSNV, vas. 52); “Grotta I di Monte Figù”, Iglesias, Cagliari, Sardinia, IT; leg. S. Puddu, 20.5.1973; det. P. M. Brignoli. – 1 ♂ (Figs 8-9, MSNV, vas. 52); “Grotta di S. Giovanni, M. Acque”, Domusnovas, Cagliari, Sardinia, IT; leg. S. Puddu, 5.3.1972; det. P. M. Brignoli. – 1 ♀ (MSNV, vas. 52); “Grotta sa Fossa e Su Fenutrainu”, Domusnovas, Cagliari, Sardinia, IT; leg. A. Lecis & M. Pote, 2.4.1972; det. P. M. Brignoli. – 2 ♀ (MSNV, vas. 52); “Grotta is Angurtidorgius, su Pranu (Perdasdegogu)”, Sardinia, IT; leg. S. Puddu, 4.11.1973; det. P. M. Brignoli. – 2 ♀ (Figs 10-11, NMB, 2792a); “Grotta di S. Giovanni”, Domusnovas, Sardinia, IT (39°19'56"N / 8°37'4"E); leg. A. Bolzern & S. Ramseyer, 9.7.2006; det. A. Bolzern.

DESCRIPTION: Prosoma: Carapace: Plumose hairs present. 3.8 mm long, 3.1 mm wide in male (n=1); 3.57-4.43 mm long, 2.7-3.39 mm wide in female (n=3). Ratio fovea/carapace length: 0.113-0.169. Colouration as in *T. henroti*. Eyes and clypeus same pattern as in *T. henroti*. Chelicerae: 1.6 mm long, 0.7 mm wide in male; 1.66-2.15 mm long, 0.75-0.93 mm wide in females. CHA: 3 teeth; CHP: 4-5 teeth. Colouration as in *T. henroti*. Labium as long as wide or slightly wider than long. GNA: 0.525-0.622. Sternum: 1.9 mm long, 1.8 mm wide in male; 1.78-2.15 mm long, 1.65-2.1 mm wide in female. Colouration as in *T. henroti*.

Legs: Plumose hairs present. Annulated, especially on femora and tibiae (in the paratypes probably bleached due to alcohol preservation). Trochanter straight. TTN on legs I-III: 8; leg IV: 8-9. For leg measurements see Tables 1 and 2. For spine formulas see Table 3.



FIGS 8-11

Malthonica eleonora (Brignoli). (8) Left male palp, retrolateral view. (9) Same, ventral view. (10) Epigynum, ventral view. (11) Vulva, dorsal view. AT = atrium, C = conductor, CD = copulatory duct, CO = copulatory opening, E = embolus, FD = fertilisation duct, MA = median apophysis, RTA = retrolateral tibia apophysis, ST = spermatheca; TEA = tegular apophysis.

Opisthosoma: 4.28-5.67 mm long, 3.05-4.32 mm wide in females. Plumose hairs present. Colouration as in *T. henroti*, but less pigmented. Spinnerets: PS longer than all others; pale distal segment as long as the darkened basal one. MS as long as or slightly shorter than AS. Colulus forming a more or less rectangular plate, wider than long.

Male palp (Figs 8-9): PA absent. RTA with lateral, dorsal and ventral branch; lateral branch lamella-like; dorsal branch strongly sclerotized, horn-like; ventral apophysis forming a big, weakly sclerotized bulge. Cymbial modifications absent. BL/CL: 0.7. Alveolus length 1.01 mm. Embolus filiform, becoming more slender distally, shorter than 2 x cymbium width, curved through approximately 200°. Embolus base on

left palp at 7 o'clock position. Median apophysis thorn-like and spirally elongated at 5 o'clock position. Connection between median apophysis and tegulum membranous. Conductor as long as alveolus, triangular, parallel to cymbium and folded along its entire length. Terminal end of conductor developed as a strongly sclerotized peak. Boundary between conductor and tegulum not continuous. Tegular apophysis flat, much more protruding than in *T. henroti*. Subtegulum mostly hidden by tegulum and conductor.

Epigynum and vulva (Figs 10-11): EP: 0.47-0.48 mm long, 0.82-0.97 mm wide. Atrium: 0.30-0.36 mm long, 0.38-0.46 mm wide, in the shape of a membranous triangular or trapezoidal plate (Fig. 10). Anterior and lateral margin of atrium forming strongly sclerotized rim, not continuous. EP not salient. Spermathecae and/or copulatory duct hardly visible through plate. Epigynal teeth absent. Copulatory openings only visible as more strongly sclerotized regions on both sides of atrium. Vulva (Fig. 11): Copulatory ducts broad. Spermathecae developed as tube-like ducts, anteriorly weakly spiral, posteriorly only moderately convoluted. Fertilisation ducts short. Due to a slightly different position of the two ducts, the vulva may not be perfectly symmetrical (Fig. 11).

DISTRIBUTION: This species is only known from the south of Sardinia. It has been found in two caves in Carbonia-Iglesias Province (Brignoli, 1974; Brignoli, 1977) and in one cave in the south of Ogliastra Province. Up to now, no overlap in the ranges of *M. eleonora* and *T. henroti* were observed.

COMMENTS: The suggestion of Wunderlich (1994) that *M. eleonora* may be a junior synonym of *T. femoralis* Simon is not supported here. The two species clearly differ in morphology and distribution (Brignoli, 1979a; Kraus, 1955).

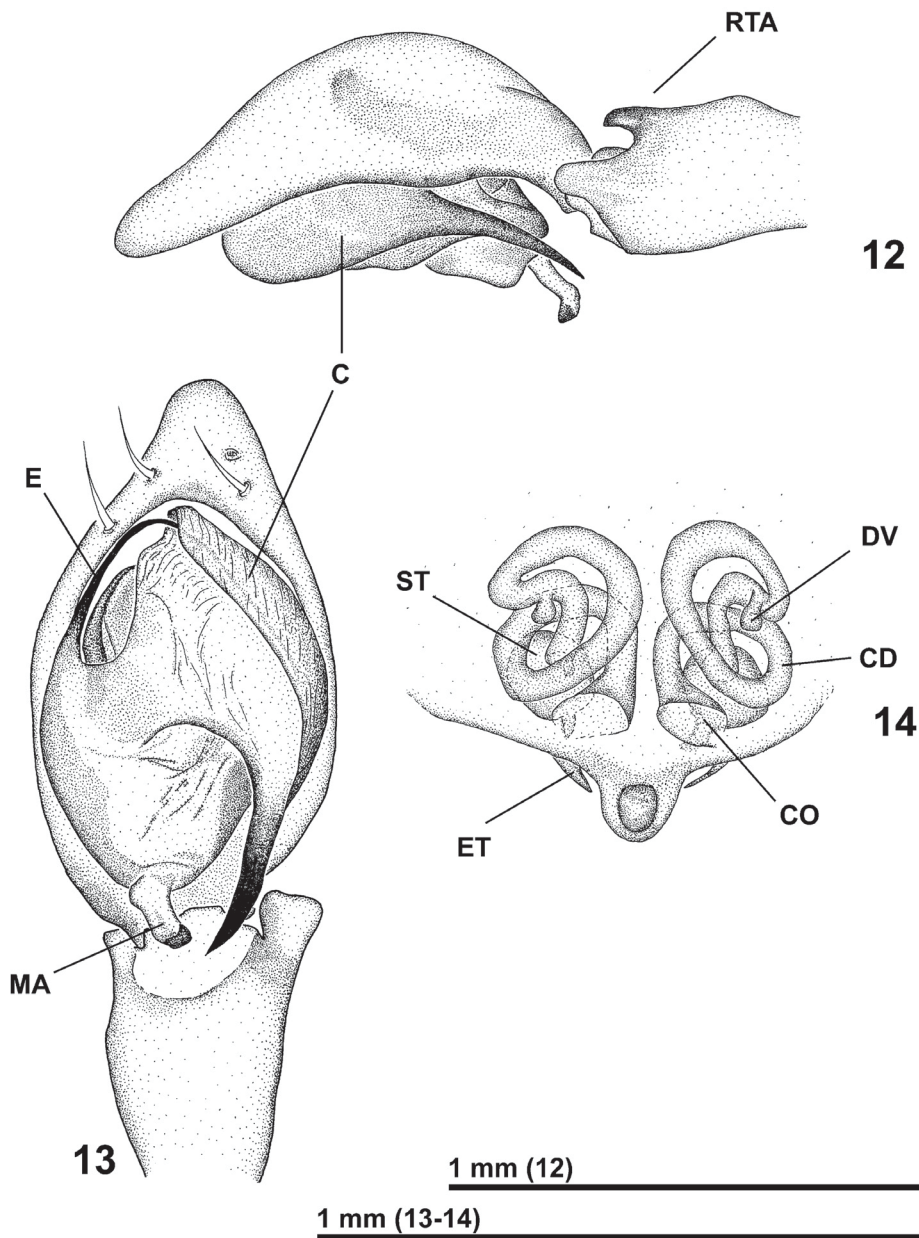
M. eleonora can be separated from *T. henroti* by the number of teeth on the upper margin of cheliceral groove and by the spine formula of all leg tibiae (Table 2). *M. eleonora* always has ventral spines on tibiae I-III, which are absent in *T. henroti*. Females can be distinguished by the almost straight borders on both sides of the genital atrium in *T. henroti* (Fig. 6), whereas in *M. eleonora* these borders are clearly invaginated (Fig. 10). Additionally, the vulva of *M. eleonora* has broader copulatory ducts, anteriorly convoluted and posteriorly less twisted spermathecae (Fig. 11, cf. Fig. 7). The distinction of males is possible on the basis of two characters of the tegulum: The sclerotized lobe median of the conductor (TEA) is more protruding in *M. eleonora* than in *T. henroti*, and the ridge (R), which is running from the terminal end of the conductor across the conductor, reaches in *M. eleonora* only half (Figs 8-9), in *T. henroti* the whole width of the conductor (Figs 4-5). Additionally, the male palp is relatively smaller in *M. eleonora* than in *T. henroti*.

Malthonica sardoa Brignoli, 1977

Figs 12-14

Malthonica sardoa Brignoli, 1977: 38-39.

TYPE MATERIAL EXAMINED: ♀ holotype (MSNV, vas. 62); "dintonri di Asuni", Cagliari, Sardinia, IT; leg. A. Vigna, 20.2.1971; det. P. M. Brignoli. – 1 ♀ paratype (MSNV, vas. 62); "Grotta di S. Giovanni, M. Acque", Domusnovas, Cagliari, Sardinia, IT; leg. S. Puddu, 5.3.1972; det. P. M. Brignoli. – 1 ♀ paratype (MSNV, vas. 62); "Cant. Gaddau, Limbara", Sassari, Sardinia, IT; leg. P. M. Brignoli, 30.3.1971; det. P. M. Brignoli. – 1 ♀ paratype (MNHN, nr.



FIGS 12-14

Malthonica sardoa Brignoli. (12) Left male palp, retrolateral view. (13) Same, ventral view. (14) Female epigynum and vulva, ventral view. C = conductor, CD = copulatory duct, CO = copulatory opening, DV = small diverticulum on the CD, E = embolus, ET = epigynal teeth, MA = median apophysis, RTA = retrolateral tibia apophysis, ST = spermatheca.

1942); "M. d'Iscudo, vers. N", Sardinia, IT (altitude: 1300 m); collector unknown; det. P. M. Brignoli. – 1 ♀ paratype (MHNG); "dint. Asumi", Oristano, Sardinia, IT; leg. A. Vigna, 22.2.1971; det. P. M. Brignoli. – 1 ♀ paratype (MNHN); "Monte d'Iscudo", Nuoro, Sardinia, IT (altitude: 1300 m); leg. G. Franzini, 6.9.1975; det. P. M. Brignoli.

OTHER MATERIAL EXAMINED: 1 ♂, 2 ♀ (Fig. 14; NMB, 2793a); "Morgongiori, Mt. Arci", Oristano, Sardinia, IT (39°46'17"N / 8°44'48"E, altitude: 761 m); leg. M. A. Arnedo & M. Mejia, 15.10.2005, "open *Quercus* forest with mosses"; det. A. Bolzern. – 2 ♂ (Figs 12-13; MSNV); "Desulo, Mt. Gennargentu", Nuoro, Sardinia, IT (altitude: 1146 m); leg. M. A. Arnedo, M. Mejia & G. Giribet, 17.10.2005, "*Quercus pub.*, humid"; det. A. Bolzern.

DESCRIPTION OF MALE: Prosoma: Carapace: Plumose hairs present. 1.97-2.36 mm long, 1.61-1.89 mm wide in males (n=3); 1.86-2.19 mm long, 1.33-1.56 mm wide in females (n=2). Ratio fovea/carapace length: 0.10-0.13. Border continuously darkened, two very broad dark longitudinal bands continuing to head region, broader than the pale median band. Both eye rows straight or AER slightly recurved in dorsal view; both rows strongly procurved in frontal view. AME smallest, all other eyes equal in size. PME-PME about their diameter; PME-AME less than the diameter of PME; AME-AME less than or about half their diameter. CLY1 about 1½-2 x the diameter of AME; CLY2 less than or as high as the diameter of ALE. Chelicerae: 0.84-0.95 mm long, 0.36-0.42 mm wide in males; 0.84-0.96 mm long, 0.37-0.46 mm wide in females. CHA: 3 teeth; CHP: 8-9 (4-6 bigger and 3-5 smaller) teeth. Chelicerae uniformly brownish. Labium as long as wide or slightly wider than long. GNA: 0.517-0.538. Sternum: 1.15-1.27 mm long, 1.03-1.18 mm wide in males; 1.01-1.23 mm long, 0.96-1.02 mm wide in females. Only a pale median band present.

Legs: Plumose hairs present. No colour pattern. Trochanter straight. TTN on legs I-IV: 5-6. For leg measurements see Tables 1 and 2. For spine formulas see Table 3.

Opisthosoma: 2.1-2.63 mm long, 1.31-1.59 mm wide in males; 2.12-2.61 mm long, 1.53-1.7 mm in females. Plumose hairs present. Ground colour dark gray-green, anterior half with two symmetric bright longitudinal bands continuing to the back in chevrons and then in spots. Spinnerets: PS longer than all others; distal segment longer than basal one, both darkened or distal segment pale. Colulus forming a more or less rectangular plate, wider than long.

Male palp (Figs 12-13): PA absent. RTA with dorsolateral and lateral branches; dorsolateral branch simple, more or less pointed; lateral branch bigger than the dorsolateral branch, spoon-like. BL/CL: 0.678-0.819. Alveolus length 0.67-0.92 mm. Embolus filiform, becoming more slender distally, less than 1½ x cymbium widths, curved through 150°. Embolus origin on the left palp at approximately 9 o'clock position. Median apophysis a narrow oblong band, terminally spoon-like. Conductor longer than alveolus, continuously connected to the tegulum, parallel to margin of cymbium and folded along its entire length. Terminal end of conductor spine-like, big, strongly sclerotized. Subtegulum mostly hidden by tegulum and conductor.

Epigynum and vulva (Fig. 14): EP: 0.53-0.59 mm long, 0.53-0.62 mm wide. No delimited atrium visible. EP not salient. Posterior margin of the EP plate forming a rounded swelling with a circular depression reaching over the epigastric furrow. Spermathecae and/or copulatory ducts well visible through the plate. Epigynal teeth present, narrow but long. Copulatory openings well visible as holes, located in posterior half of EP. Vulva (Fig. 14): Copulatory ducts very long and winded; Small

diverticula on the copulatory ducts present. One pair of globular spermathecae present, separated by their diameter. Fertilisation ducts short.

DISTRIBUTION: This species can be found all over Sardinia (Brignoli, 1977). The known sites are all in higher altitudes (> ca. 700 m).

COMMENTS: Up to now, the male of *M. sardoa* was unknown. The finding of a male together with two females of *M. sardoa* strongly suggests that they are conspecific. The *M. sardoa* male is similar to those of *Malthonica arganoi* and *Malthonica sicana* from which it differs in the proportions of the cymbium and the bulb, and in the following three characters: 1) *M. arganoi* has an RTA with ventral, lateral and dorsal branches, whereas *M. sardoa* and *M. sicana* have an RTA with only dorsolateral and lateral branches; 2) the conductor of *M. sardoa* has a much longer, strongly sclerotized and more pointed tip compared to the corresponding structures in the other species; 3) the median apophysis of *M. sardoa* (Figs 12-13) is more slender and elongated, whereas in the other two species it is much shorter and broader (Figs 15-16, 19-20). The females can easily be distinguished from those of the other species by the morphology of the epigynum and vulva (Fig. 14; Brignoli, 1976a: 43, fig. 22). Furthermore, *M. arganoi* is, until now, only recorded from the Italian mainland regions Lazio, Umbria (Brignoli, 1971; Brignoli, 1977) and Calabria (not yet published).

Malthonica sicana Brignoli, 1976

Figs 15-18

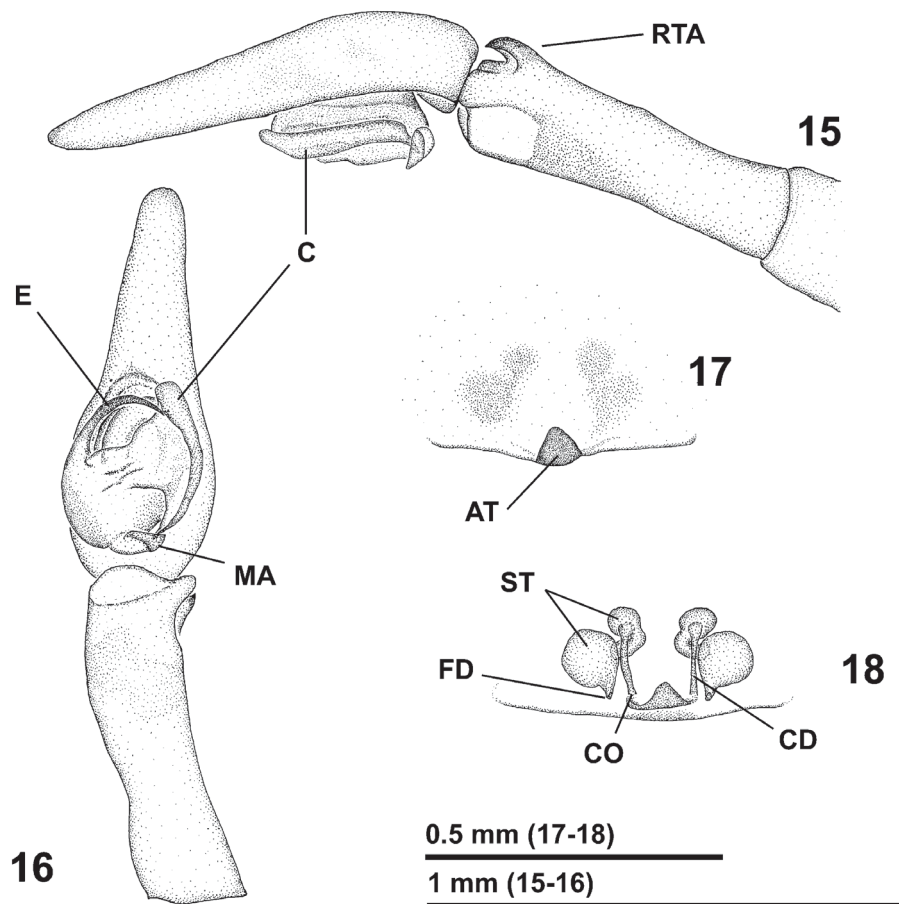
Malthonica sicana Brignoli, 1976: 30-33.

TYPE MATERIAL EXAMINED: ♀ holotype (MSNV, vas. 62); "Piana degli Albanesi", Palermo, Sicily, IT; leg. Aliquò, 20.11.1972; det. P. M. Brignoli. – 1 ♀ paratype (MSNV, vas. 62); "M. Maganoce", Palermo, Sicily, IT; leg. A. Vigna, 2.5.1974; det. P. M. Brignoli. – 1 ♀ paratype (MSNV, vas. 62); "Bosco Ficuzza", Palermo, Sicily, IT; leg. A. Vigna, 4.5.1974; det. P. M. Brignoli. – 1 ♂, many ♀ paratypes (MSNV, vas. 62); "Carini, Grotta del Puntale", Palermo, Sicily, IT; leg. A. Vigna, 30.4.1974; det. P. M. Brignoli. – 1 ♀ paratype (MHNG); "Grotta del Puntale", Carini, Sicily, IT; leg. M. Bologna, 01.01.1976; det. P. M. Brignoli.

OTHER MATERIAL EXAMINED: 2 ♀ (Figs 17-18; NMB, 2794a); "Mt. Ferru, road Cuglieri - S. Leonardo", Oristano, Sardinia, IT (40°9'47"N / 8°37'11"E); leg. M. A. Arnedo & M. Mejia, 14.10.2005, "open *Quercus* forest, rich leaf litter"; det. A. Bolzern. – 2 ♀, 1 juv. (MHNG); "Mt. Ferru, 7 Fuentes, road Cuglieri - S. Leonardo", Oristano, Sardinia, IT (40°10'46"N / 8°35'8"E); leg. M. A. Arnedo & M. Mejia, 14.10.2005 "*Quercus* forest, open, not wet"; det. A. Bolzern. – 1 ♂ (Figs 15-16; NMB, 2794b); "Mte. Pelegrino, at the W-slope", Palermo, Sicily, IT (38°11'14"N / 13°20'40"E, altitude: 114 m); leg. A. Bolzern & R. Mühlethaler, 23.5.2007 (juv.) "under stones"; det. A. Bolzern.

The male collected by Bolzern & Mühlethaler was reared to maturity in the laboratory at the NMB. It reached adulthood in October 2007.

DESCRIPTION: Prosoma: Carapace: Plumose hairs present. 2.60 mm long, 2.01 mm wide in male (n=1); 2.15-2.75 mm long, 1.56-2.00 mm wide in females (n=4). Ratio fovea/carapace length: 0.08-0.29. Border continuously darkened, two relatively indistinct, broad longitudinal dark bands and a pale median band (one paratype pale brownish only, without bands, head region slightly darker; probably due to preservation in alcohol). Both eye rows straight in dorsal view; both rows strongly procurved in frontal view. AME smallest, other eyes equal in size. PME-PME 1-1½ x their diameter; PME-AME ½-1 x the diameter of the PME; AME-AME ½-1 x their diameter. CLY1 2-3 x the diameter of AME; CLY2 smaller than or as high as the diameter of

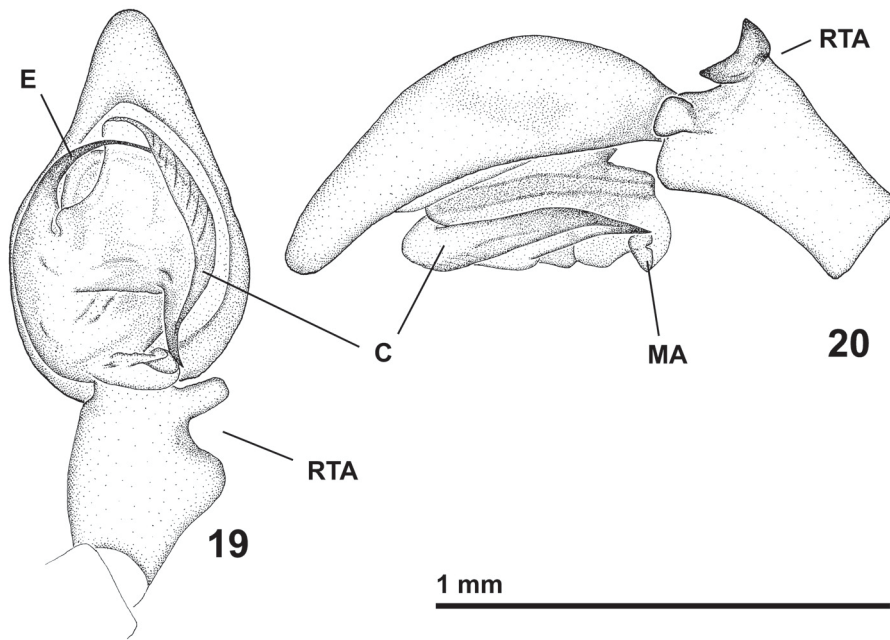


FIGS 15-18

Malthonica sicana Brignoli. (15) Left male palp, retrolateral view. (16) Same, ventral view. (17) Epigynum, ventral view. (18) Vulva, dorsal view. AT = atrium, C = conductor, CD = copulatory duct, CO = copulatory opening, E = embolus, FD = fertilisation duct, MA = median apophysis, RTA = retrolateral tibia apophysis, ST = spermatheca.

ALE. Chelicerae: 1.20 mm long, 0.55 mm wide in male; 0.92-1.46 mm long, 0.45-0.70 mm wide in female. CHA: 3 teeth; CHP: (5 in male) 8-9 teeth (5 bigger and 3-4 smaller ones). Chelicerae partly pigmented, sometimes very weakly so. Labium slightly wider than long. GNA: 0.480-0.589. Sternum: 1.40 mm long, 1.28 mm wide in male; 1.21-1.52 mm long, 1.02-1.30 mm wide in females. Only a pale median band present.

Legs and palps: Plumose hairs present. Female palps with dark pigmentation on patella and tibia, weakly pronounced. Legs annulated, in some paratypes no pattern visible (maybe due to alcohol preservation). Trochanter straight. TTN on legs I-II and IV: 5-6, leg III: 5. For leg measurements see Tables 1 and 2. For spine formulas see Table 3.



FIGS 19-20

Malthonica arganoi (Brignoli). Specimen from “Parco Naz. del Pollino”, Cosenza, Calabria, IT; leg. & det. A. Bolzern, 2007. (19) Left male palp, ventral view. (20) Same, retrolateral view. C = conductor, E = embolus, MA = median apophysis, RTA = retrolateral tibia apophysis.

Opisthosoma: 2.79 mm long, 1.65 wide in male; 2.11-3.01 mm long, 1.61-2.03 mm wide in females. Plumose hairs present. Ground colour dark gray-green, with two symmetric bright longitudinal bands anteriorly, discontinuous, ending posteriorly in 3-4 chevrons. Spinnerets: PS longer than all others, distal segment longer than basal one, both darkened. Colulus forming a more or less rectangular plate, wider than long.

Male palp (Figs 15-16): PA absent. RTA with dorsolateral and lateral branches; dorsolateral branch simple, more or less pointed; lateral branch as long as the dorsolateral branch, lobe-like. BL/CL: 0.464. Alveolus length 0.41 mm. Embolus filiform, becoming more slender distally, less than 1½ x cymbium widths, curved through 150°. Embolus origin on the left palp at 9 o'clock position. Median apophysis short, pocket-like, terminally spoon-like. Conductor as long as or longer than alveolus, continuously connected to the tegulum, parallel to the cymbium margin and folded along its entire length. Terminal end of conductor pointed, sclerotized. Subtegulum mostly hidden by tegulum and conductor.

Epigynum and vulva (Figs 17-18): EP: 0.17-0.23 mm long, 0.29-0.40 mm wide. Atrium visible as a cavity in posterior view, covered by a triangular, strongly sclerotized plate (Fig. 17). Anterior and posterior margins of EP not pronounced. EP strongly salient. Spermathecae and/or copulatory ducts weakly visible through EP plate. Epigynal teeth absent. Copulatory openings indistinct. Vulva (Fig. 18): Copulatory ducts short and straight. Two pairs of globular spermathecae present. Fertilisation ducts short.

DISTRIBUTION: Previously known only from Sicily (Brignoli, 1976a), *M. sicana* is reported here for the first time from Sardinia. The findings of four females at two localities (collected by hand) suggest that the species is fairly common there.

COMMENTS: The species is easily recognisable by the very distinct vulva shape (Fig. 18). Brignoli (1976a) mentioned a very high variability in body size, which is confirmed in the present study (Table 2). Except for a very large female paratype, the specimens from Sicily lie approximately in the same size range as those from Sardinia. This also holds true for the leg spine formulas (Table 3).

DISCUSSION

In his checklist of Italian spiders Pesarini (1994; see also www.faunaitalia.it) listed eleven *Malthonica* and *Tegenaria* species from Sardinia: *Malthonica campestris* (C.L. Koch) (under *T. campestris*), *M. eleonora* (under *T. eleonora*), *M. pagana* (C.L. Koch) (under *T. pagana*), *M. sardoa*, *M. soriculata* (Simon) (under *T. soriculata*), *Tegenaria agrestis* (Walckenaer), *T. armigera* Simon, *T. domestica* (Clerck), *T. drescoi*, *T. henroti* and *T. parietina* (Fourcroy). Here we replace the record of *T. drescoi* with that of *M. dalmatica* and add *M. sicana* to the spider list of Sardinia.

M. eleonora, *M. sardoa* and *T. henroti* are endemic to Sardinia. *M. soriculata* and *M. armigera* are known from Sardinia and Corsica, *M. sicana* from Sardinia and Sicily only. This high rate of endemism may be explained by the fact that these spiders are troglophilous.

We know only about two publications recording *M. soriculata* from Sardinia (Kraus, 1955: 379, under *T. soriculata*, and Garneri, 1902: 72). Already Brignoli (1971: 67) expressed some doubts about the validity of these two records: "sarebbe interessante un controllo di questo materiale, date le somiglianze esistenti tra questa specie e *T. henroti* ...". The material treated by Kraus (1955) was checked in the spider collection of the Senckenberg Museum and proved to be a misidentification of *T. parietina*. The material treated by Garneri (1902) could not be traced. Since we could not confirm any specimens of *M. soriculata* from Sardinia, we question its presence there and assume that it only occurs on Corsica.

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7. General Discussion

For a long time, the content of and the relationships within the family Agelenidae were subject of controversial discussions (see introduction in chapter two). The results of the present study improve the knowledge of the most species rich group of European agelenids, the *Tegenaria/Malthonica*-complex. The presented phylogenetic hypothesis in chapter two and two suggest that this complex contains four monophyletic clades, each representing one genus, two of them newly described in this thesis.

Meaningful results rely on the original data and the methods applied. To meet these prerequisites I have chosen to include morphological and molecular data. When the use of genetic methods for phylogenetic purposes became established, many taxonomists relied exclusively on molecular data, neglecting the more traditional morphology. Today, it is widely realised and accepted that molecular analyses are insufficient for getting the whole picture. It could be shown, that a combination of different data sources can improve the resolution and support of phylogenetic trees (see e. g. Arnedo, et al., 2009). Moreover, identification of specimens still is based mostly on morphology. In this thesis, it is obvious that morphology plays an important role in unravelling the taxonomic and phylogenetic relationships of agelenid spiders.

Phylogenetic methods

Different tree search methods are available for phylogenetic analyses. Addressing systematics, the most popular and therefore most comparable ones are maximum parsimony, Bayesian analysis and maximum likelihood. Of these three methods, only the first one does not rely on a priori assumptions, a model of evolution, estimated based on the given data. This is a strong advantage because estimations of models are always based on probabilities and assumptions and therefore afflicted with uncertainty. For morphological data, the estimation of evolutionary models does not make much sense (the order of characters in the list is arbitrary) and therefore, only parsimony analyses were conducted. For the molecular data, a model of evolution, based on the gene section, makes obviously sense. Mitochondrial genes are coding for amino acids and the genes are built up in a triplet code. The 3rd base of each triplet is known to have a higher mutation rate than the first two because of its exchangeability. Most changes of this base do not result in a change of the amino acid. Of the model based methods, I chose Bayesian analyses instead of maximum likelihood. The reason for that decision is that while maximum likelihood methods seek trees that maximise the probability of observing the data given those trees, Bayesian analysis seeks the tree that maximises the probability of the tree given the data and the model of evolution. This means that in Bayesian analysis “likelihoods” are rescaled to true probabilities (posterior probability) and that in Bayesian analysis a set of best trees is searched while maximum likelihood only seeks the single most likely tree.

Morphological methods and analysis

A very challenging problem was the search, selection and description of morphological characters. The difficulty lies in the recognition of true homologies of apparently differently expressed structures. Sometimes this is straight, e. g. the median apophysis can be differently developed, but is well distinguishable in very different taxa. In other cases the detection homologous structures is more difficult, e. g. the retrolateral tibia apophysis (RTA) with its three branches in some species and with only one branch in

others, how can one decide which of the three branches in the first group is homologous to the single branched RTA of the second group? Some authors address this issue by using topology. But looking at the RTA of *Teegenaria circeoensis* n. sp. and relatives I cannot objectively decide if this 1-branched RTA is homologous to a ventral, lateral or dorsal branch of an RTA of another species. This particular problem of the RTA is partly discussed in a recent publication on the phylogeny of *Philodromidae* (Muster, 2009). In the morphological section of chapter two, I tried to avoid such problems by scoring these character states indirectly, e. g. based on their complexity.

The criterion for grouping species to higher taxa is synapomorphy, a shared derived character. To recognise synapomorphies it is necessary to know the polarity of characters, which is the “primitive” (plesiomorphic) state. This is done by outgroup comparison where the character state primitive. Outgroups are included in a cladistic analysis also for rooting the resulting trees. As can be seen in the trees presented in chapters two and three, I used several outgroups, some distantly and closely related to the ingroup. As the most distant taxa species of the genus *Amaurobius* (*Amaurobiidae*) are included which is, like agelenids, a member of the RTA clade (Coddington & Levi (1991) even placed the two families into the same superfamily *Amaurobioidea*). Some of the characters which were previously used by some authors are phylogenetically not informative and thus not characterising monophyletic groups. This could be shown in chapter two for several characters. E. g. the position of the origin of the embolus on the male palp and the shape of the embolus itself, characters which were used by Guseinov et al. (2005) as key character to assign species to *Teegenaria* or *Malthonica*. In the morphological analyses, these characters turned out to be highly homoplastic. The use of such a character as grouping criterion results in taxonomic chaos. The many nomenclatural changes proposed in the present study are a result of this. This problem has been discussed for chapters two to six of this thesis and will be solved by the publication of the manuscript presented in chapter two. For the two genera newly described in this thesis, synapomorphic characters are e. g. the pattern and number of the cheliceral teeth and the shape and sclerotisation of the median apophysis for *Eratigena* n. gen., the spination patterns on the patellae or metatarsi and the arrangement of gland spigots on the posterior median spinnerets for *Aterigena* n. gen. (chapter three).

Molecular methods and analyses

If the most significant question in morphology is which characters should be included, the equivalent question in molecular systematics is which gene section should be chosen. It is safe to assume that the larger the number of analyses bases is, the larger is the number of phylogenetically informative characters (potential synapomorphies). I decided to choose three gene section, two mitochondrial and one nuclear gene. The CO1 gene was included, because this gene was in discussion for “DNA bar coding“ (Kipling & Rubinoff, 2004; Meier, et al., 2006) and have been used in many studies (Arnedo, et al., 2009; Astrin, et al., 2006; Hedin, 2001; Hedin & Maddison, 2001; Paquin & Hedin, 2004) including one on agelenid spiders (Spagna & Gillespie, 2008). Since it is well known that this gene does not resolve higher taxa level relationships (mutation rate is high, and therefore homoplasies between distant clades are highly probable) I included also a more adequate gene for a better resolution at the genus level. J. Spagna (pers. comm.), the first author of the above mentioned paper, suggested the use of the 28S gene, which provided good results in his work. The last gene, the NADH1, has been chosen because it has successfully been applied in recent studies on spiders (Binford, et al., 2008; Murphy, et al., 2006) addressing similar questions as the present study. The

phylogenetic trees resulting from analyses of these genes (chapter two and three) or their combination show, that all genes resolve and support the genera very well. The 28S gene was less informative than expected and the relationships between the examined genera remain unresolved. As for morphological characters, in molecular sequences synapomorphic characters could be detected. This is presented in the chapter for *Aterigena* n. gen. where in a relatively short sequence of the mitochondrial CO1 gene three synapomorphic amino acid substitutions were detected.

It is well known that molecular methods are useful for revealing cryptic species, especially in groups where the morphology is very homogeneous and diagnostic characters are not available or not yet detected (e. g. see Duncan, et al., 2010; Schaffer, et al., 2009). In such cases analyses based solely on morphology would result in an underestimation of species diversity (e. g. see Schonhofer & Martens) because not morphology but spatial segregation (Griffiths, et al., 2010) or behaviour are the elements separating the species (Töpfer-Hofmann, et al., 2000). In *Teegenaria* the species group around *T. campestris* is a promising candidate for further investigations of this topic. Deltchev (2008) named the group, composed of four species from Bulgaria, a “super species”. As I showed in the first chapter, distinct morphological characters to separate these species are lacking. However, the molecular analyses revealed that at least *T. rilaensis* distinctly differs from *T. campestris* in the genetic distance (chapter two, Fig. 7, NADH supports this observation, tree not shown).

Comparison and combined analysis

The direct comparison of the phylogenetic trees, presented in chapter two, based on morphological, molecular and combined data is not possible in this study because the taxa included are only partly the same. I preferred to involve all species available for each analysis instead of reducing them to the least common denominator for all analyses. Too many species would have had to be excluded from the analyses (this is due to the fact that it is beyond the possibilities of such a study to get fresh material of all known species). By the way, such a comparison is partly implied by the combination of all available data within one analysis (which required the exclusion of many taxa) which was conducted and presented in chapter two. By including as many taxa as possible, the gain of information is regarded much higher than the benefit of a direct comparability of the presented trees. The outcome that all analyses with all the different methods and characters recover and strongly support the four clades (representing the genera *Teegenaria*, *Malthonica*, *Eratigena* n. gen. and *Aterigena* n. gen.) is regarded as sufficient support of the proposed phylogeny. The fact that the analyses of the molecular data resulted in similar tree topologies as the one in the morphological analysis is probably the strongest indicator for the reliability of the proposed phylogenetic hypothesis.

Comments to variation and species groups

The variation of characters within a species is extensively discussed in this thesis. The examination of a high number of specimens revealed that in the spider group in focus the intraspecific variation is very high. Such a variation can only be detected as variation, if one can find a continuum of “form A” to “form B”. This is obviously not possible in species where only one or very few specimens are known. I decided to describe a “morphotype” only as new species, if it was clearly diagnosable from all other described taxa known in the relevant group. The species described in the chapters four and five could be described in detail, also addressing variation (e. g. in the size or

the spination patterns of the legs). For some species described in chapter two, the description of variation was not possible since only one or a few specimens were available, but the observed structures were distinctive to such an extent, that the formal naming as new species is justified. An example where I did not formally describe a new species is that of the group around *T. regispyrri* (chapter two). This group could not be divided into different species because the relevant structures (epigyne, vulva) are similar to one another and there was not enough material and therefore not enough information available to propose any hypothesis. The studied specimens can be separated morphologically and geographically. But because there are only females available and the variation within these species is unknown, a conservative strategy is more appropriate than the description of the forms as new species. Within *Eratigena* several species groups could be detected (see chapter two). For *Tegenaria* this is only possible in a few cases (e. g. the species of *T. parmenidis*, *T. sbordonii*, *T. capolongoi* and *T. circeoensis* n. sp. form a morphologically homogeneous group which is probably monophyletic). This genus is the most heterogeneous group with a wide range of states in some characters. The relationships between the species of *Tegenaria* could only partly be resolved in this study. The narrow definition of *Tegenaria* presented here constitutes a solid base for future investigations focusing on the phylogenetic relationships within *Tegenaria*.

Impact to science

The results of this thesis can serve as base for future studies concerning the taxonomy and systematics of related spider groups. The proposed phylogenetic hypothesis is essential for understanding and interpreting characters and their polarity. Mistakes in polarising of character states and rooting trees which can lead to wrong conclusions as in the work of Král (2007) can be avoided.

The characters assessment and the character matrix of the morphological cladistic analysis will serve as basis for future investigations concerning the whole family Agelenidae. A thorough investigation of the relationships between the genera within this family is highly desirable. Especially the questions if the cribellate Australian clade and the Coelotinae belong to this family are important questions which have to be answered in the near future.

In a more practical point of view, the present thesis is very valuable for the identification of spider species. First of all, I was able to “clean up” the taxa in focus by the detection of many synonyms and taxonomical problems in the recent and older literature (e. g. the confusion about *T. ferruginea* triggered by Brignoli due misidentifications). Of course, not all problems could be solved but remaining problems are at least discussed (e. g. the *bucculenta* problem, see chapter two). Furthermore several new descriptions, redescriptions, new descriptions of the missing sex of several species and additional information usable for the identification of the relevant species are provided (chapters two to six). The provided identification keys with numerous figures to the European agelenid genera and the species of *Aterigena* n. gen., *Eratigena* n. gen., and *Tegenaria* are important tools for all researchers and taxonomists confronted with species determination.

Proposed future investigations

Some future investigations are already proposed in previous paragraphs. A further promising field for future investigations, based on this thesis, is the biogeography of the taxa in focus including the relationships of the North American endemics of *Tegenaria*

to the European taxa. Until now, it is not known if these endemics are related to *Tegenaria* or to one of the newly described genera. The knowledge of this affiliation would be of high interest for the biogeography and the evolution of the whole group. It was not the aim of this thesis to investigate the biogeography of the *Tegenaria/Malthonica*-complex. But during this work an obvious pattern could be observed: the species of *Eratigena* n. gen. are significantly more diverse in western Europe (higher number of species) whereas *Tegenaria* is much more diverse in south-eastern Europe. The knowledge of species distribution is still poor and several species from Greece or from Turkey are only known by one specimen (and therefore from one locality).

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2002–2003 Degree in plant ecology, neurobiology, medical parasitology and elective course environmental sciences, University of Basel
2004 Dipl. Biol., University of Basel. Thesis: “Spiders (Arachnida: Araneae) on and under subalpine Pines at Alp Flix, Grisons - a comparison of methods”. Supervisors: PD Dr D. Burckhardt, Dr A. Hänggi, Prof. Dr B. Baur
2005–2010 PhD at the University of Basel and the Natural History Museum Basel: “Taxonomy and phylogeny of the European *Tegenaria/Malthonica*-complex (Araneae, Agelenidae): a revision using morphological and molecular data”. Supervisors: PD Dr D. Burckhardt, Dr A. Hänggi, Prof. Dr B. Baur

Scientific work and Teaching experience

- Planning, founding and realization of the PhD project.
- Talks and posters presentations at national and international meetings and congresses.
- Several scientific stays at different natural history museums and universities.
- Planning, founding and realization of field excursions to Southern Europe.
- Guidance of field trips at several “Days of Biodiversity”, at the “Scientific days at Alp Flix in Grisons” and for the University of Basel.
- Guidance and teaching assistant at several biodiversity field courses, Institute of Environmental Sciences, University of Basel.
- Teaching assistant at the lecture “Determination of Animals” at the University of Basel.

Scientific skills

- Identification of different arthropod groups (especially Araneae) and using them for quantitative and qualitative analyses.
- Search, describe, collect, and process morphological data for phylogenetic analyses by using different computer programs (DELTA, PAUP, WinClada, TNT, etc.).
- Describe new taxa according to modern scientific standards.
- Applying molecular methods (DNA extraction, PCR, sequence processing) for phylogenetic purposes.
- Application of different phylogenetic methods (based on molecular and morphological data) using a wide range of computer programs (PAUP, WinClada, MrBayes, Phylip, PhyML, MEGA, TNT, etc.).
- Build up and support different databases (MS Access, File Maker).
- Prepare and maintain a collection of Arthropods.

Fundraising, Grants and Awards

- Fundraising for the expenditures for the molecular analyses of the PhD project from different private foundations.
- Research grants of the foundations of the University of Basel and the Swiss Academy of Sciences for field excursions and international congress attendances.
- Grant from SYNTHESYS (EU founded project) for research stay at the „Muséum national d’histoire naturelle Paris“.
- Grant for finishing the PhD thesis through a private foundation (Freiwillige Akademischen Gesellschaft Basel (FAG)).
- First price winners of the “Young scientist award for outstanding posters” at the 24th European Congress of Arachnology, Bern 2008.

Working experience among studies

1998	Three month employee at an engineer office at the F. Hoffmann-La Roche AG, Basel
2001	Two weeks work experience at the “Vivarium” of the “Zoologischen Garten Basel”
2002	Three weeks work experience at the Natural History Museum Basel, entomology
2001–2003	Employee at the “Präparatesammlung” at the F. Hoffmann-La Roche AG, Basel
2004	Six month work experience at the Swiss federal veterinary office SFVO, Bern

2004–2009	Guided tours in the special exhibition at the Natural History Museum Basel
2005	GBIF project: registration of the Psyllid-collections from the Natural History Museums of Basel and Geneva
2005–2007	Support of the website of the Natural History Museum Basel
2005–2007	Employee of the CSCF for a two year project (50%) regarding the Red-List of ground living Arthropods

Languages

German:	Oral and written with very high proficiency, Swiss-German is the native language.
English:	1999 twelve weeks language-learning stay in San Diego, CA, USA. I speak fluently and read/write with good proficiency.
French:	Read with good proficiency, speak and write with basic competence.

Memberships

- Arachnologische Gesellschaft (ARAGES)
- European Society of Arachnology (ESA)
- British Arachnological Society (BAS)
- The American Arachnological Society (AAS)
- International Society of Arachnology (ISA)
- Schweizerische Entomologische Gesellschaft (SEG)
- Entomologische Gesellschaft Basel (EGB)
- Swiss Systematic Society (SSS)

Military service

I was Sergeant at the “Panzerjägerkompanie 4/2, Aufkl Bat 4, Infanteriebrigade 4” of the Swiss Army.

List of Publications, April 2010

- Bolzern, A., Hänggi, A., Burckhardt, D. (in prep.) Phylogeny and taxonomy of European funnel-web spiders of the *Tegenaria-Malthonica* complex (Araneae: Agelenidae) based upon morphological and molecular data.
- Bolzern, A., Hänggi, A. & Burckhardt, D. (accepted) *Aterigena*, a new genus of funnel-web spider, shedding some light on the *Tegenaria-Malthonica* problem (Araneae, Agelenidae). *Journal of Arachnology*.
- Bolzern, A. & Hervé Ch. (2010) A new funnel-web spiders species (Araneae: Agelenidae) from Mercantour National Park, France. *Bulletin of the British Arachnological Society* 15 (1): 21-26.
- Bolzern, A., Crespo, L. & Cardoso, P. (2009) Two new *Tegenaria* species (Araneae: Agelenidae) from Portugal. *Zootaxa* 2068: 47-58.
- Bolzern, A., Hänggi, A. & Burckhardt, D. (2008) Funnel web spiders from Sardinia: Taxonomical notes on some *Tegenaria* and *Malthonica* spp. (Araneae: Agelenidae). *Revue Suisse de Zoologie*, 115 (4): 759-778.
- Gloor, D., Hänggi, A. & Bolzern, A. (2008) 11 - Spinnentiere, p. 213-232. In B. Baur, W. Billen, & D. Burckhardt (eds.), *Vielfalt zwischen den Gehege: wildlebende Tiere und Pflanzen im Zoo Basel*. Monographien der Entomologischen Gesellschaft Basel, 3: pp. 462.
- Bolzern, A. (2007) Zweitnachweis von *Tegenaria mirifica* Thaler, 1987 (Araneae, Agelenidae) für die Schweiz - oder die Wichtigkeit von präzisen Fundortsangaben. *Mitteilungen der Entomologischen Gesellschaft Basel*, 57(1): 22-28.
- Burckhardt, D., Bolzern, A. & Wyniger, D. (2007) Funde vom Winterhaft *Boreus westwoodi* (Insecta, Mecoptera) auf der Alp Flix. *Jahresbericht der Naturforschenden Gesellschaft Graubünden*, 114: 89-90.
- Zschokke, S. & Bolzern, A. (2007) Erste Nachweise sowie Kenntnisse zur Biologie von *Cyclosa oculata* (Araneae: Araneidae) in der Schweiz. *Arachnologische Mitteilungen* 33: 11-17.
- Hänggi, A. & Bolzern A. (2006) *Zoropsis spinimana* (Araneae: Zoropsidae) neu für Deutschland. *Arachnologische Mitteilungen*, 32: 8-10.
- Frick, H., Kropf, Ch., Hänggi, A., Nentwig, W. & Bolzern, A. (2006) Faunistically remarkable spiders (Arachnida: Araneae) of the timberline in the Swiss Central Alps (Alp Flix, Grisons. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 79 (3-4): 167-187.
- Bolzern, A. & Hänggi, A. (2006) *Drassodes lapidosus* und *Drassodes cupreus* (Araneae: Gnaphosidae) – eine unendliche Geschichte. *Arachnologische Mitteilungen*, 31: 16-22.
- Bolzern, A. & Hänggi, A. (2005) Spinnenfänge (Arachnida: Araneae) auf subalpinen Fichten der Alp Flix (Schweiz, GR) – ein Methodenvergleich. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 78(1-2): 125-141.
- Bolzern, A., Hänggi, A., Kropf, Ch. & Frick, H. (2005) Erstnachweis von *Maro lehtineni* Saaristo, 1971 in den Schweizer Alpen. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 78(1-2): 165-172.
- Bolzern, A. & Burckhardt, D. (2004) The last instar larva of *Bactericera silvarnis* (Hemiptera, Psylloidea) and the taxonomic value of some setal characters. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 77(1-2): 125-131.
- Bolzern, A. (2004) Spinnen (Arachnida: Araneae) auf und unter subalpinen Fichten der Alp Flix, GR – ein Methodenvergleich. *Diplomarbeit*. Universität Basel, pp. 65.

I declare that I have written this thesis “Taxonomy and phylogeny of the *Tegenaria-Malthonica*-complex (Araneae, Agelenidae), using morphological and molecular data” with the help indicated and that I have only submitted it to the Faculty of Science of the University of Basel and to no other faculty or university.