Zootaxa 2318: 38–55 (2009)
www.mapress.com/zootaxa/
Copyright © 2009 · Magnolia Press

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

New species of terrestrial isopods (Isopoda: Oniscidea) from Sardinia*

STEFANO TAITI[1] & ROBERTO ARGANO[2]

[1]*Istituto per lo Studio degli Ecosistemi, Consiglio Nazionale delle Ricerche, Via Madonna del Piano 10, I-50019 Sesto Fiorentino, Florence, Italy. E-mail: stefano.taiti@ise.cnr.it*
[2]*Dipartimento di Biologia Animale e dell'Uomo, Università di Roma "La Sapienza", Viale dell'Università 32, I-00185 Rome, Italy. E-mail: roberto.argano@uniroma1.it*

**In*: Cerretti, P., Mason, F., Minelli, A., Nardi, G. & Whitmore, D. (Eds), *Research on the Terrestrial Arthropods of Sardinia (Italy). Zootaxa*, 2318, 1–602.

Abstract

Four new species of terrestrial isopods from Sardinia are described: *Alpioniscus thanit* **sp. nov.** (Trichoniscidae), *Halophiloscia cristagalli* **sp. nov.** (Halophilosciidae), *Alloschizidium maymon* **sp. nov.** and *Alloschizidium magrinii* **sp. nov.** (Armadillidiidae). *Alpioniscus thanit* and *Alloschizidium magrinii* were collected in endogean environments, *Halophiloscia cristagalli* on granitic beaches of small islands in the northern and western part of Sardinia, and *Alloschizidium maymon* from a cave. The diagnostic features and the affinities of the new species are discussed.

Key words: Isopoda, Oniscidea, Trichoniscidae, Halophilosciidae, Armadillidiidae, new species, Italy, Sardinia

Introduction

Due to its geographic position in the middle of the western Mediterranean Sea, its peculiar and well known geological history and its environmental heterogeneity, Sardinia is of extreme interest for naturalistic studies. The terrestrial isopods are an ideal biological model for faunistic and biogeographical studies, due to their reduced dispersal ability and strong stenoecy. Considering the rich literature, starting from the first monograph of Arcangeli (1925), this group of organisms seemed to be reasonably well known in Sardinia. Despite these premises, while studying our old collections and some new records of Oniscidea from our recent research trips to the island, we discovered four new species which are described herein: a second species for Sardinia of the genus *Alpioniscus* Racovitza (*A. thanit* **sp. nov.**, family Trichoniscidae) collected in an endogean environment, a halophilous species (*Halophiloscia cristagalli* **sp. nov.**, family Halophilosciidae), and two species of *Alloschizidium* Verhoeff (family Armadillidiidae), one cavernicolous (*A. maymon* **sp. nov.**) and one endogean (*A. magrinii* **sp. nov.**).

Material and methods

Specimens are stored in 75% ethanol and identifications are based on morphological characters. For each new species the material examined, a diagnosis, description, etymology and remarks are given. Terminology used in species descriptions is mainly based on Vandel (1960, 1962). The taxa are illustrated with figures prepared with the aid of a camera lucida mounted on Wild M5 and M20 microscopes.

The material is deposited in the collection of the Museo di Storia Naturale dell'Università, Sezione di Zoologia "La Specola", Florence (MZUF).

 Accepted by P. Cerretti: 28 Oct. 2009; published: 22 Dec. 2009

Abbreviations: CA = Cagliari province; I. = island; NU = Nuoro province; OR = Oristano province; OT = Olbia-Tempio province; SS = Sassari province.

Taxonomy

Trichoniscidae

Genus *Alpioniscus* Racovitza, 1908

Alpioniscus thanit sp. nov.

(Figs 1–3)

Type material. Holotype ♂: NU, Dorgali, Cala Fuili, 40°15'27.8"N - 9°36'56.2"E (WGS84), 25.IV.2008, leg. R. Argano and S. Taiti (MZUF 9281).
Paratypes: 13 ♂♂, 29 ♀♀, NU, Dorgali, Cala Fuili, 40°15'27.8"N - 9°36'56.2"E (WGS84), 25.IV.2008, leg. R. Argano and S. Taiti (MZUF 9281); 1 ♂, same locality, 19.V.2004, leg. S. Cianfanelli and E. Talenti (MZUF 9282); 1 ♂, 3 ♀♀, 1 juv., NU, Galtellì, Monte Tuttavista, Pozzo 1 Tres Puntas, 19.III.2008, leg. P. Marcia (MZUF 9283).

Diagnosis. A species of *Alpioniscus* characterized by antennal flagellum of eight articles, antennula with up to 10 aesthetascs, male pereopod 7 merus with a large rounded basal lobe bearing three setose teeth, male pleopod 1 exopod with a long and narrow posterior point and sinuous outer margin, and male pleopod 2 endopod of three articles with a short bifid terminal seta.

Description. Maximum length: ♂, 5.5 mm; ♀, 6.2 mm. Colourless body, pereon with almost parallel sides, pleon narrower than pereon. Back strongly granulated; disposition of granules as in Fig. 1A; each granule with an ovoid scale-seta at the top (Fig. 1B). Numerous gland pores on lateral margins of pleonites 4 and 5, telson and uropodal protopods; some gland pores on dorsal surface of uropodal protopod and exopod. Eyes absent. Cephalon (Fig. 1C–E) with suprantennal line bent downwards, clearly visible only at sides; antennal lobes quadrangular with a central depression. Posterior margin of pereonite 1 convex, of pereonites 2, 3 straight, and of pereonites 4–7 progressively more concave (Fig. 1A). Pleonites 3–5 with no posterior points visible in dorsal view (Fig. 1F). Distal part of telson with concave sides and broadly rounded apex (Fig. 1F). Antennula (Fig. 1G) of three articles; distal article longer than second and first, flattened and bearing 9 or 10 aesthetascs on apical margin. Antenna (Fig. 1H) with peduncle strongly granulated; fifth article as long as flagellum; flagellum of eight articles with one row of aesthetascs on second, third and fifth article. Mandibles with one penicil in the right (Fig. 2A) and three penicils in the left (Fig. 2B). Outer branch of maxillule with 5+5 teeth, apically entire, and two slender stalks; inner branch with three penicils (Fig. 2C). Maxilla with setose and bilobate apex, inner lobe smaller (Fig. 2D). Maxilliped endite narrow, with a large apical penicil (Fig. 2E). Pereopods with an ungual seta and a large, bifid and setose dactylar seta (Fig. 3A). Uropod (Fig. 1F) with protopod slightly grooved on outer margin; endopod distinctly shorter than exopod, more proximally inserted.

Male: Pereopod 1–4 (Fig. 3A) with carpus and merus bearing numerous short scales on sternal margin. Pereopod 7 (Fig. 3B–C) ischium with straight sternal margin; merus with concave sternal margin and a large rounded lobe in the proximal part bearing three setose teeth. Genital papilla (Fig. 3D) with a spatuliform apical part. Pleopod 1 (Fig. 3D) exopod with a very long narrow posterior point and deeply sinuous outer margin; endopod narrow with almost parallel sides and with enlarged basal part, armed with a long apical seta. Pleopod 2 (Fig. 3E) exopod triangular with convex outer margin; endopod of three articles, slightly longer than exopod, third segment about three times shorter than second with a strong bifid terminal seta.

Etymology. The new species is named after Thanit, divinity of earth and fertility in the mysterious pantheon of the Nuragic culture.

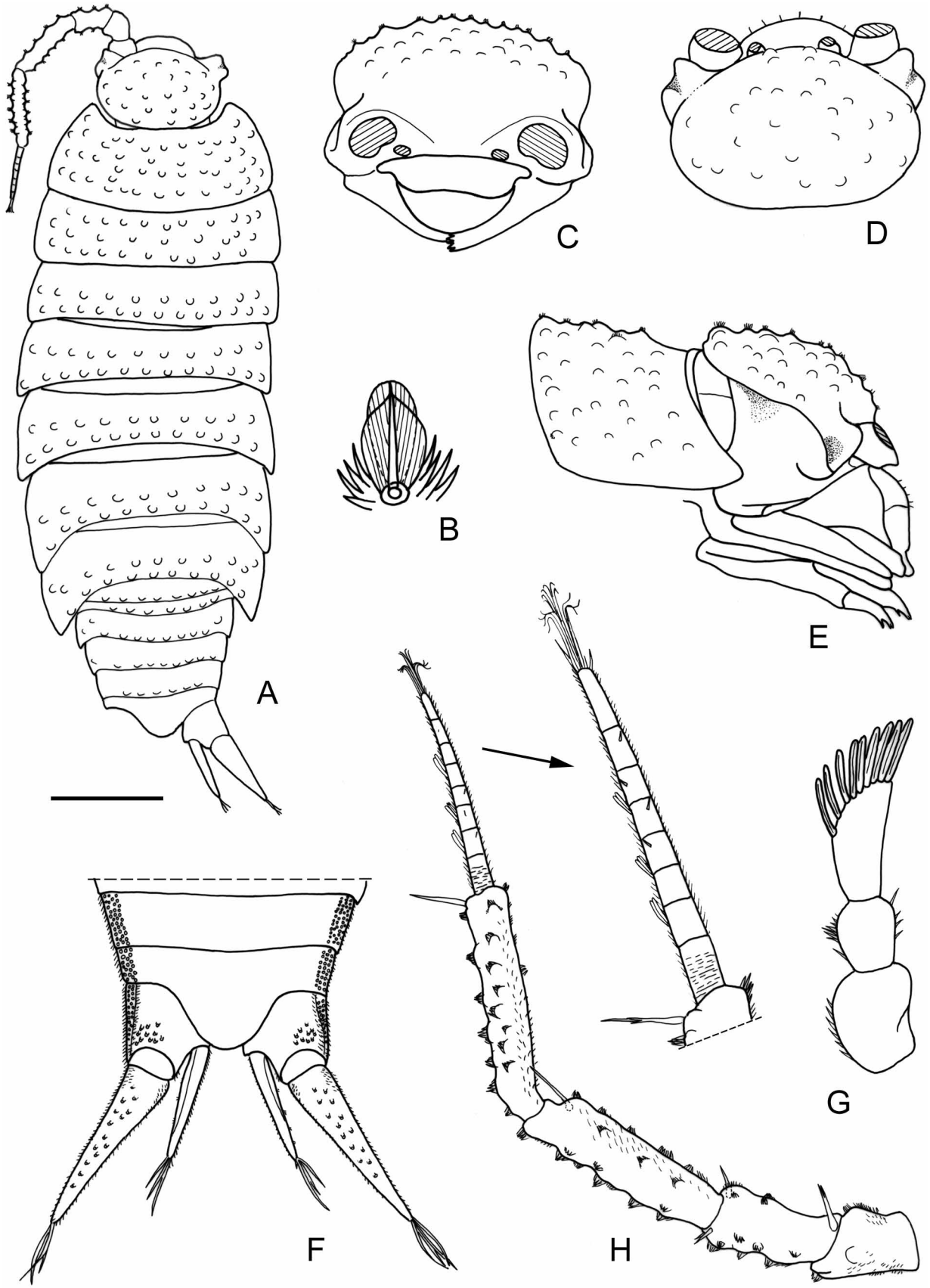

FIGURE 1. *Alpioniscus thanit* sp. nov. (♀, paratype from Cala Fuili). **A.** Animal in dorsal view, scale bar: 1 mm. **B.** Dorsal scale-seta. **C.** Cephalon, frontal. **D.** Cephalon, dorsal. **E.** Cephalon and pereonite 1, lateral. **F.** Pleonite 5, telson and uropods. **G.** Antennula. **H.** Antenna.

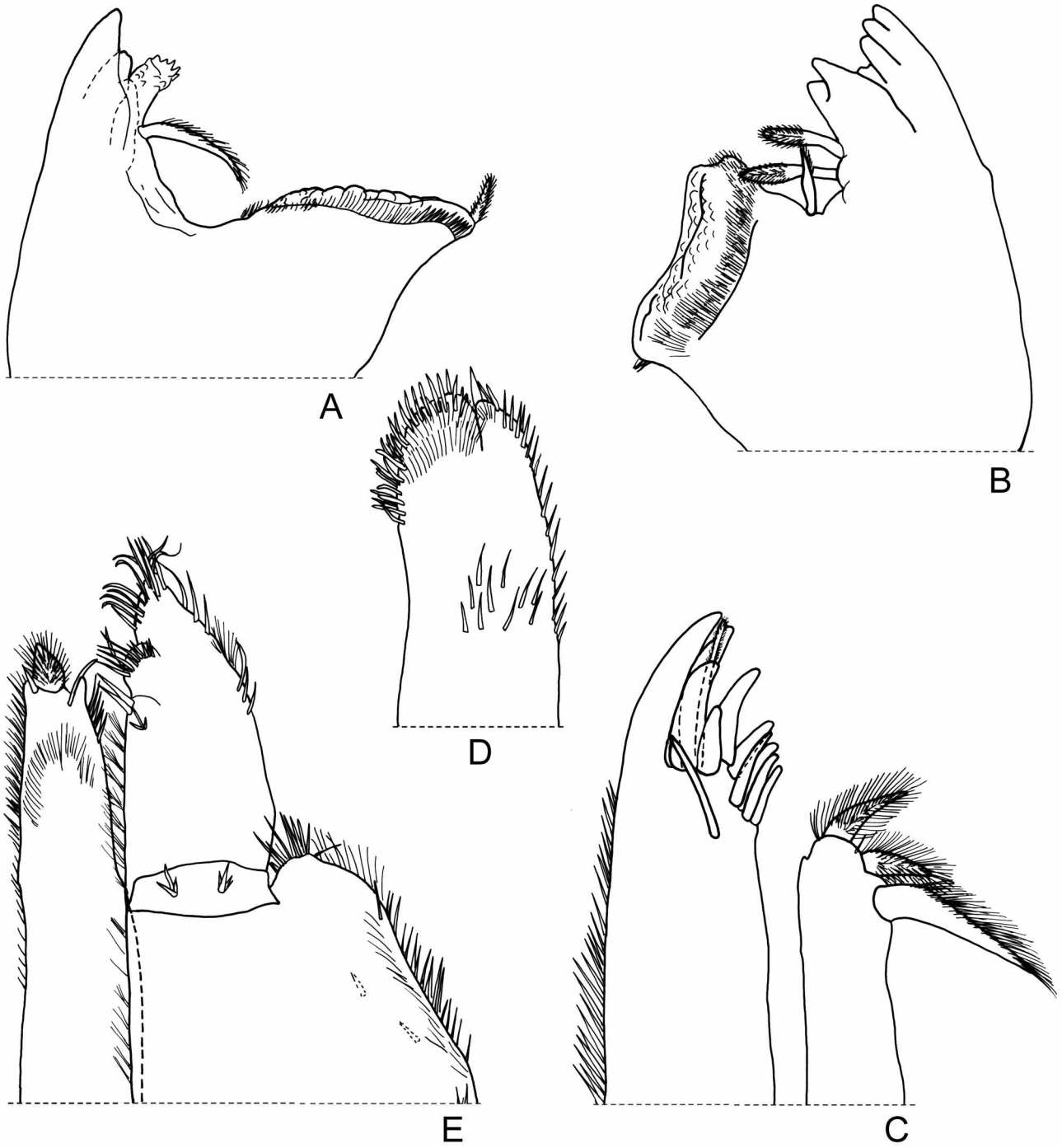

FIGURE 2. *Alpioniscus thanit* sp. nov. (♀, paratype from Cala Fuili). **A.** Right mandible. **B.** Left mandible. **C.** Maxillula. **D.** Maxille. **E.** Maxilliped.

Remarks. At present the genus *Alpioniscus* includes 27 species (Schmalfuss 2003) subdivided into two subgenera: *Alpioniscus* Racovitza, 1908 with 12 species, and *Illyrionethes* Verhoeff, 1927. According to Tabacaru (1996) the two subgenera can be distinguished solely on the different relative length of the second and third article of the male pleopod 2 endopod: in *Alpioniscus* the second article is shorter or equal to the third, while in *Illyrionethes* it is distinctly longer. It is difficult to judge whether this difference can be enough to distinguish two subgenera, and their validity needs to be confirmed, since also their distributions are not congruent.

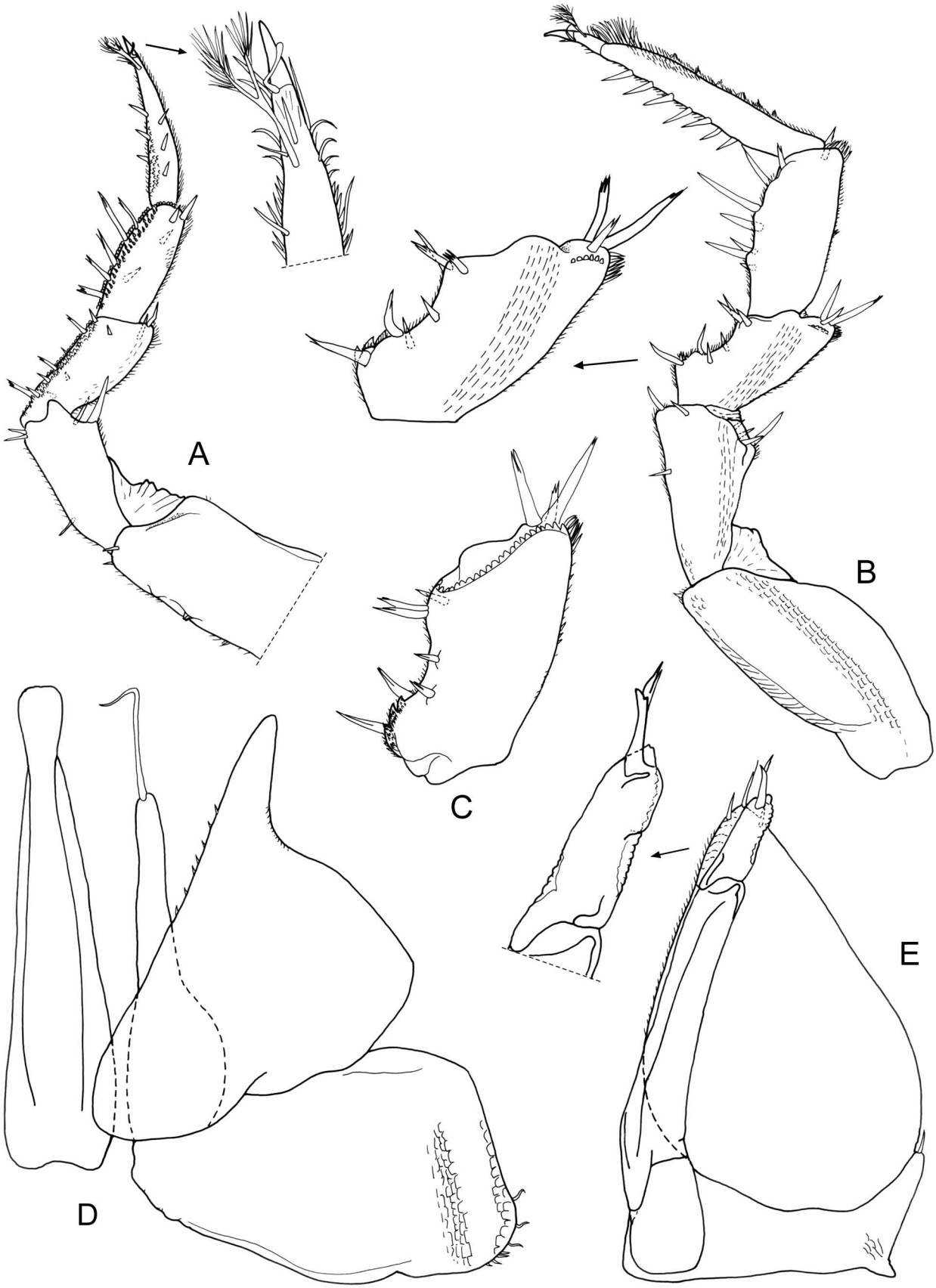

FIGURE 3. *Alpioniscus thanit* sp. nov. (♂, paratype from Cala Fuili). **A.** Pereopod 1. **B.** Pereopod 7, caudal surface. **C.** Pereopod 7 merus, frontal surface. **D.** Pleopod 1 and genital papilla. **E.** Pleopod 2.

According to these definitions, *Alpioniscus thanit* belongs to the subgenus *Illyrionethes* and shows its closest affinities with *A. fragilis* (Budde-Lund, 1885), endemic to Sardinia where it populates many caves (Argano & Rampini 1973; Puddu & Pirodda 1974). The main characters of *A. fragilis* are here illustrated (Figs 4 and 5) on the basis of specimens from Nurra de Sas Palumbas Cave (2 ♂♂, 3 ♀♀, NU, Oliena, M. Corvasi, Grotta Nurra de Sas Palumbas, 22.VII.1989, leg. S. Vanni and A. Nistri). The new species differs from *A. fragilis* in narrower body shape, antennula with thicker and less numerous apical aesthetascs (compare Figs 1G and 4C), male pereopod 7 with sternal margin of merus concave instead of straight (compare Figs 3B–C and 5A), male pleopod 1 exopod with outer margin distinctly sinuous instead of almost straight (compare Figs 3D and 5B), and male pleopod 2 endopod lacking the rounded lobe in the apical part of the third article (compare Figs 3E and 5C).

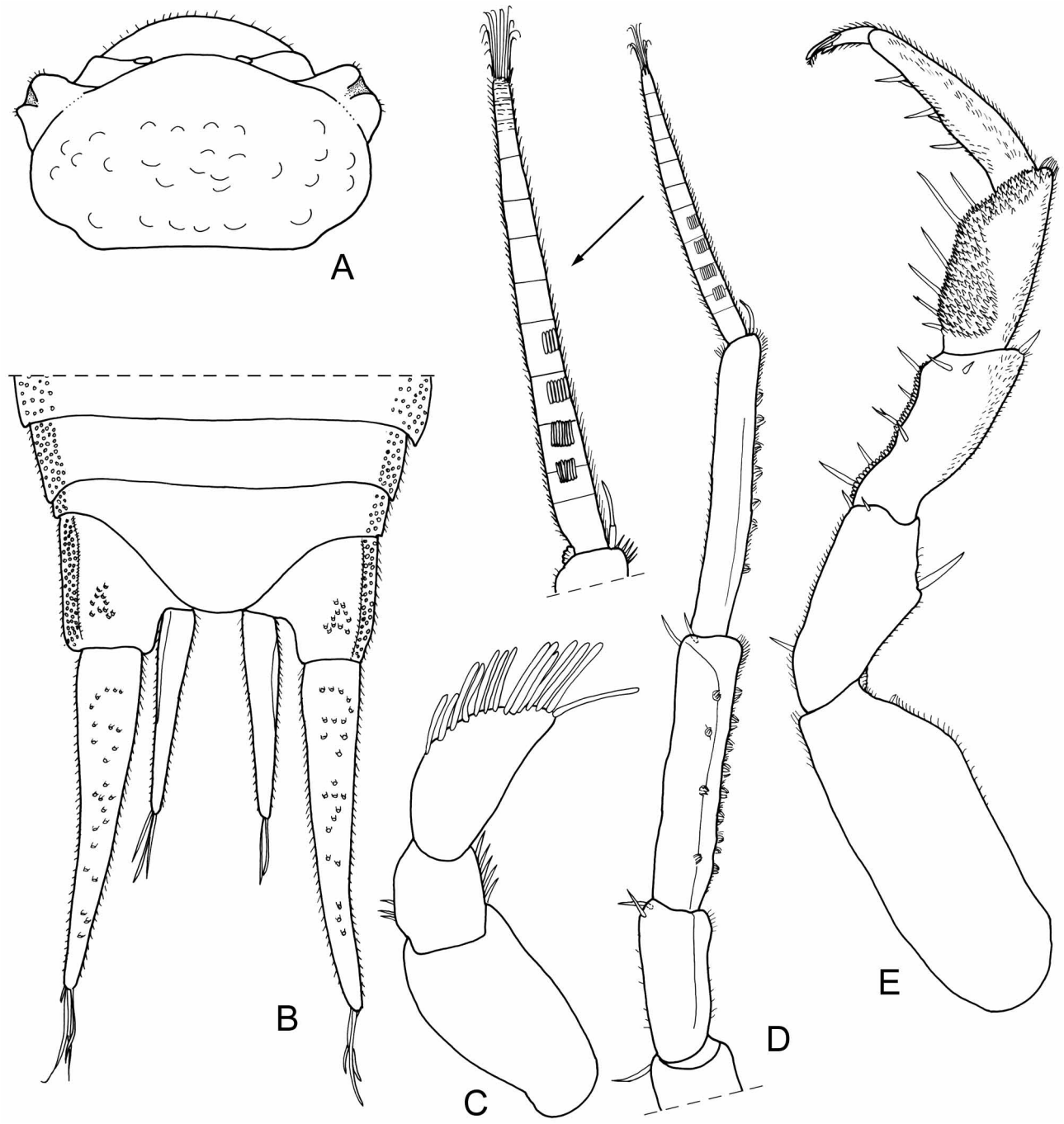

FIGURE 4. *Alpioniscus fragilis* (Budde-Lund). **A–C.** Female. **A.** Cephalon, dorsal. **B.** Pleonite 5, telson and uropods. **C.** Antennula. **D–E.** Male. **D.** Antenna. **E.** Pereopod 1.

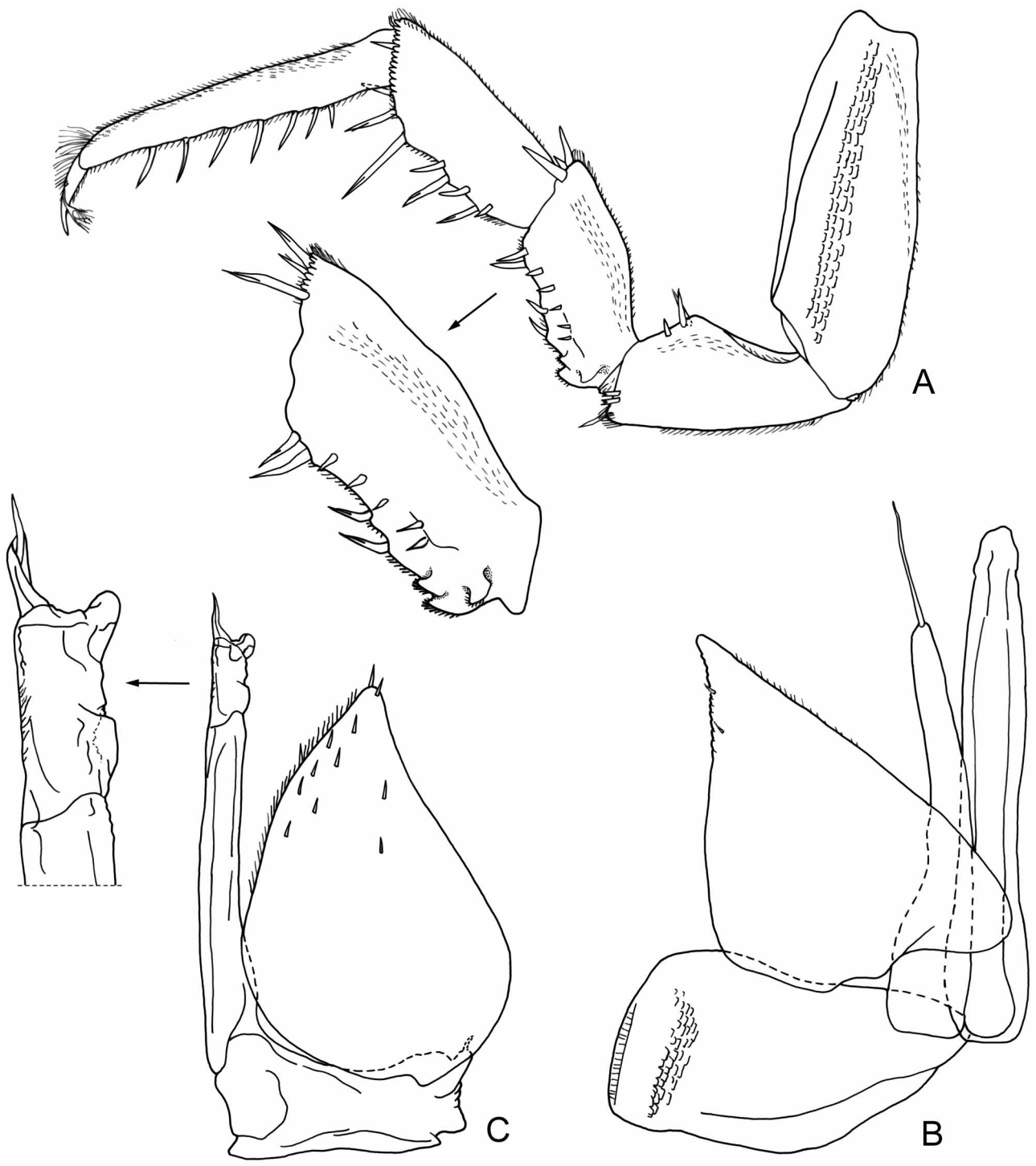

FIGURE 5. Male of *Alpioniscus fragilis* (Budde-Lund). **A.** Pereopod 7. **B.** Pleopod 1 and genital papilla. **C.** Pleopod 2.

While all the other species of *Alpioniscus* are troglobitic, *A. thanit* seems to be an endogean species. In Cala Fuili it was collected by digging in the ground at the base of the limestone formation, from a few metres from the sea to a few hundred metres inland.

Halophilosciidae

Genus *Halophiloscia* Verhoeff, 1908

***Halophiloscia cristagalli* sp. nov.**
(Figs 6–7)

Halophiloscia n. sp.; Argano and Manicastri 1996: 286, 287, 289.

Type material. Holotype ♂: OT, La Maddalena I., Cala Bassa Trinità, 14.X.1989, leg. C. Manicastri (MZUF 9284).

Paratypes: 8 ♂♂, 15 ♀♀, OT, La Maddalena I., Cala Bassa Trinità, 14.X.1989, leg. C. Manicastri (MZUF 9284); 1 ♂, OT, La Maddalena I., Spiaggia dello Strangolato, 24.IX.1985, leg.? (MZUF 9285); 3 ♂♂, 5 ♀♀, SS, Asinara I., Cala Sgombro, 13.X.1989, leg. C. Manicastri (MZUF 9286); 5 ♂♂, 12 ♀♀, SS, Asinara I., Cala Reale, 13.X.1989, leg. R. Argano (MZUF 9287); 3 ♂♂, 2 ♀♀, same locality, 16.VI.1989, leg. C. Manicastri (MZUF 9288).

Previous records. La Maddalena I., Spargi I., Mortorio I. (OT); Asinara I. (SS); Maldiventre I. (OR) (Argano & Manicastri 1996).

Diagnosis. A species of *Halophiloscia* readily distinguishable by the characteristic shape of the male pleopod 1 endopod with the apical part bearing a long pointed process bent upwards and three lobes increasing in size from proximal to distal, resembling a cockscomb.

Description. Maximum length: ♂, 5.0 mm; ♀, 7.5 mm. Body outline as in Fig. 6A. Colour brown, mottled with the usual pale muscle spots. Back smooth with numerous pointed scale-setae (Fig. 6B); no visible gland pores along the lateral margin of pereonites; 5 or 6 lines of noduli laterales per side on the pereonites (Fig. 6D). Cephalon with no frontal line and suprantennal line bent downwards in the middle (Fig. 6C); eyes with 15 ommatidia. Pleon much narrower than pereon; pleonites with very small posterior points visible in dorsal view (Fig. 6E). Distal part of telson with sinuous sides and broadly rounded apex (Fig. 6E). Antennula (Fig. 6F) with articles subequal in length; third article with two apical aesthetascs, one row of several aesthetascs in the middle and two aesthetascs in a more proximal position. Antenna (Fig. 6G) reaching back rear margin of pereonite 5; flagellum as long as fifth article of peduncle; first flagellar article slightly longer than second and third; three aesthetascs on second flagellar article and two on third. Buccal pieces typical of the genus, i.e. mandible with molar penicil consisting of many setae and 2+1 free penicils on the left and 1+1 on the right mandible, outer branch of maxillule with 6 (5 cleft)+5 teeth and a slender stalk among the outer group of teeth, inner branch of maxillule with two long narrow penicils, maxilliped endite setose with a large penicil near the inner corner. Pereopods with a very long ungual seta apically enlarged and a small dactylar seta (Fig. 6H). Uropod with exopod more than three times as long as endopod; protopod and exopod grooved on outer margin; insertion of endopod distinctly proximal to that of exopod (Fig. 6E).

Male: Pereopod 1 (Fig. 6H) and, to a lesser extent, 2 with carpus and merus distinctly flattened, enlarged and covered with numerous short scales. Pereopod 7 (Fig. 7A) with no distinct sexual modifications, ischium with straight sternal margin. Genital papilla (Fig. 7B) with an ovoid ventral shield and genital orifices opening up at the end of two long tubular lobes. Pleopod 1 (Fig. 7B) exopod with a triangular posterior point and deeply sinuous outer margin with some seven short setae; endopod with apical part equipped with long pointed process bent upwards, three lobes on medial margin increasing in size from proximal to distal, and a row of short setae. Pleopod 2 (Fig. 7C) exopod with a distal part bent outwards; endopod distinctly longer than exopod with apical part narrow and without any lobes. Pleopod 3–5 exopods as in Fig. 7D–F.

Etymology. From the Latin *crista* = crest + *gallus* = cock. The name refers to three apical lobes on the male pleopod 1 endopod, which resemble a cockscomb.

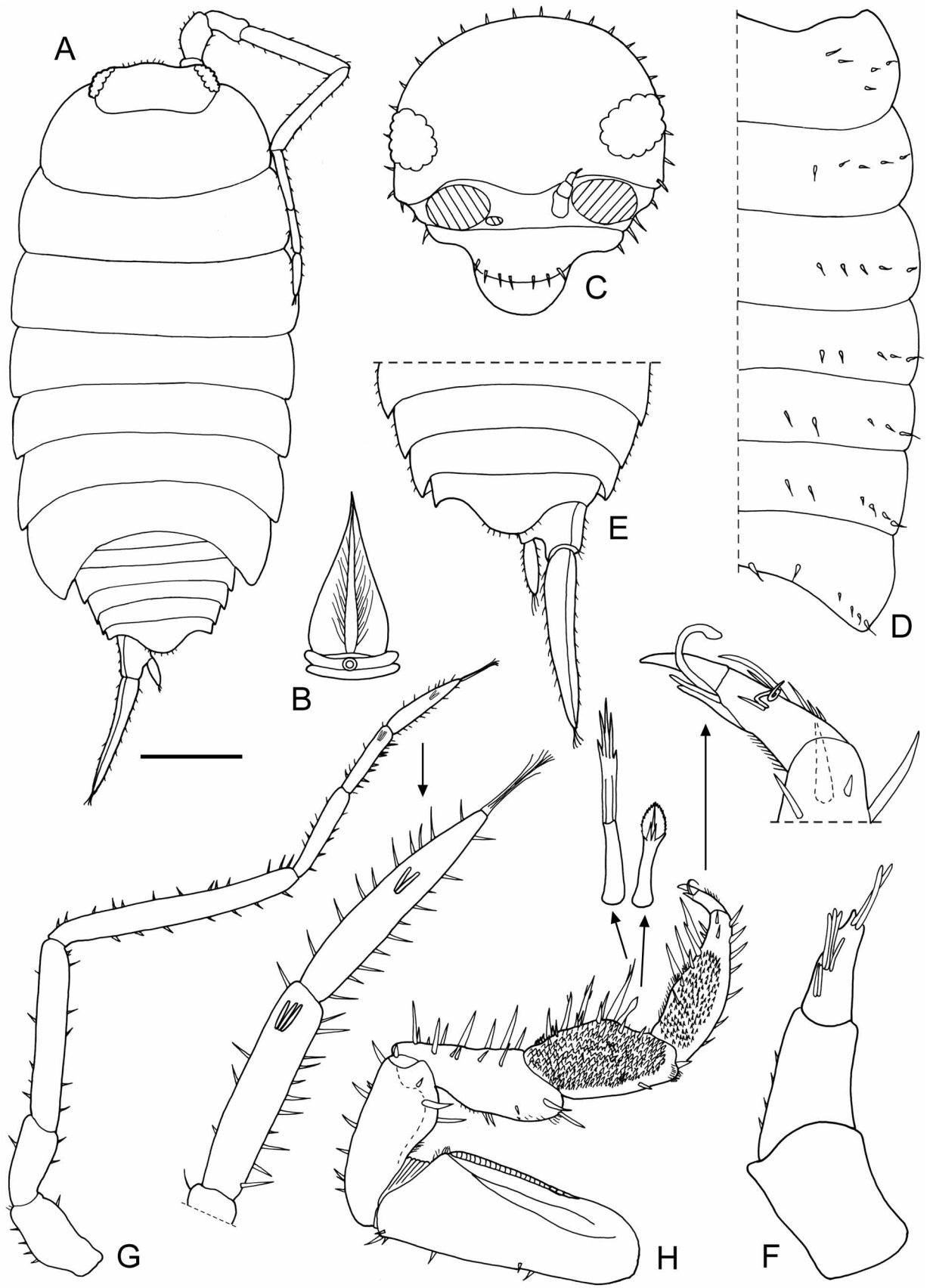

FIGURE 6. *Halophiloscia cristagalli* sp. nov. **A–E.** Female paratype (La Maddalena I.). **A.** Animal in dorsal view, scale bar: 1 mm. **B.** Dorsal scale-seta. **C.** Cephalon, frontal. **D.** Right side of pereonites showing disposition of noduli laterales. **E.** Pleonites 3–5, telson and right uropod. **F–H.** Male paratype (La Maddalena I.). **F.** Antennula. **G.** Antenna. **H.** Pereopod 1.

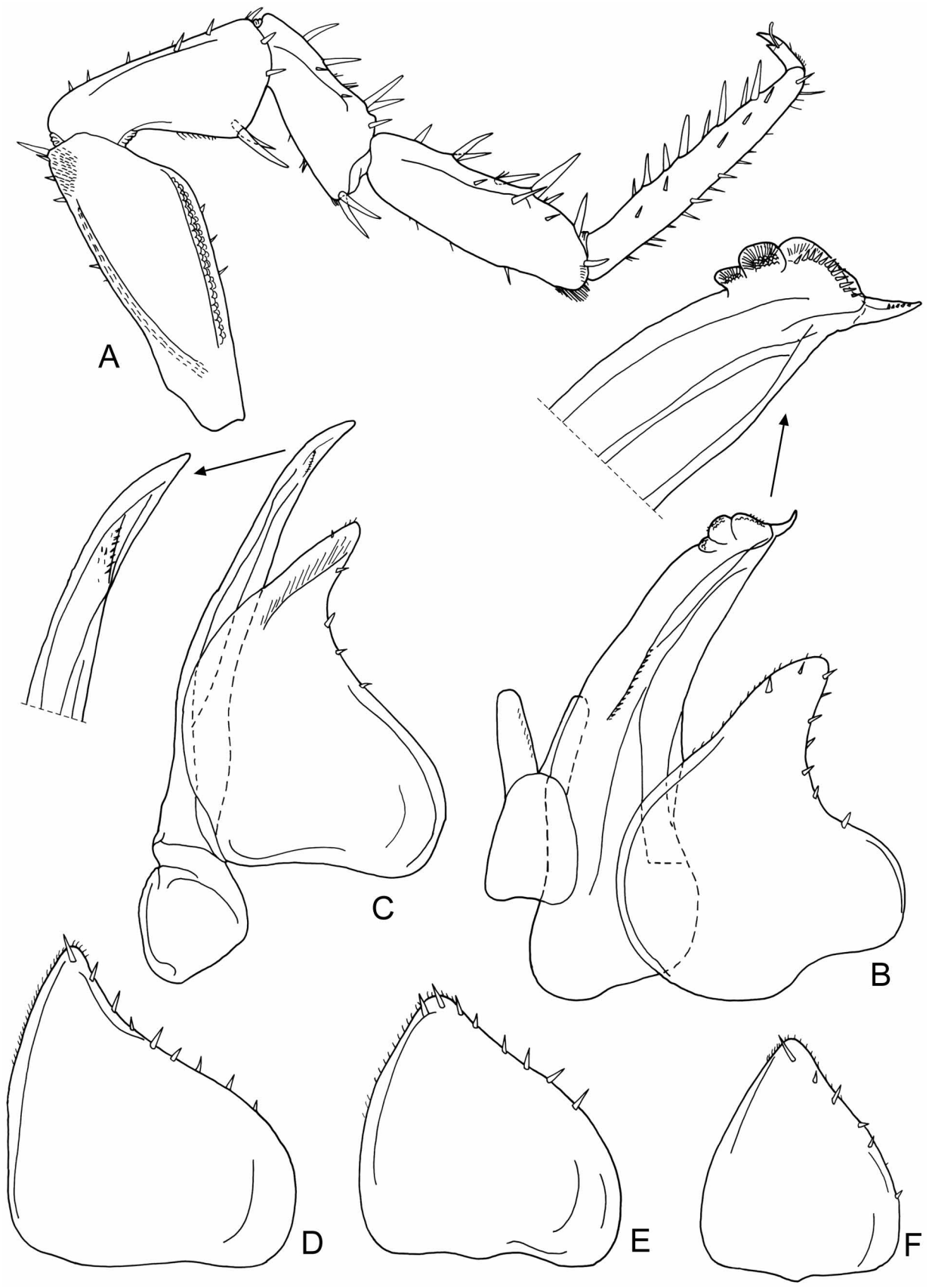

FIGURE 7. Male of *Halophiloscia cristagalli* sp. nov. (paratype from La Maddalena I.). **A.** Pereopod 7. **B.** Pleopod 1 and genital papilla. **C.** Pleopod 2. **D.** Pleopod 3 exopod. **E.** Pleopod 4 exopod. **F.** Pleopod 5 exopod.

Remarks. At present the genus *Halophiloscia* includes seven halophilic species distributed along the Mediterranean and Atlantic coasts of Europe and Africa and one species from some lava tubes on La Palma Island in the Canary Archipelago (Schmalfuss 2003; Taiti & López 2008). The new species is readily distinguished from all the known species by the characteristic three lobes, resembling a cockscomb, on the tip of the male pleopod 1 endopod.

This species was already recorded but not described by Argano and Manicastri (1996). The material from Spargi I., Mortorio I. and Maldiventre I. cited by these authors could not be re-examined and included in the type specimens because it is no longer available due to a fire. *Halophiloscia cristagalli* occurs on the coasts of the granitic small islands of the northern and western part of Sardinia, while no records are presently known from the coasts of Sardinia mainland.

Armadillidiidae

Genus *Alloschizidium* Verhoeff, 1919

Alloschizidium maymon sp. nov.

(Figs 8–10)

Type material. Holotype ♂: CA, Armungia, Baccu Gospuru, Gospuru Cave, 12.XI.2000, leg. C. Onnis and J. De Waele (MZUF 9289).

Paratype: 1 ♀, CA, Armungia, Baccu Gospuru, Gospuru Cave, 12.XI.2000, leg. C. Onnis and J. De Waele (MZUF 9289).

Diagnosis. A blind, colourless species of *Alloschizidium* characterized by sparse pointed scale-setae, cephalon with a scutellum clearly separated from the vertex but not protruding above it, schisma of pereonite 1 with inner lobe shorter than outer one, telson trapezoidal with truncate apex, uropodal exopod longer than wide, male pleopod 1 exopod with broadly rounded distal margin.

Description. Length: ♂ and ♀, 6.0 mm. Body colourless, strongly convex with vertical epimera, able to roll up into a perfect ball (Fig. 8A). Back smooth with sparse pointed scale-setae (Fig. 8B); one line of noduli laterales per side on the pereonites, more or less at the same distance from the lateral margin (Fig. 8A). Cephalon (Fig. 8C–D) with triangular scutellum slightly depressed in the middle and distinctly separated from vertex but not protruding above it; frontal line continuing the scutellar upper margin; postscutellar line semicircular on both sides; antennary lobes quadrangular, obliquely directed frontwards; eyes absent. Pereonite 1 (Fig. 8E) with posterior margin slightly concave; postero-lateral schisma with outer lobe rounded and distinctly protruding backwards compared to inner one; lateral margin slightly thickened. Pereonite 2 with a small ventral tooth. Telson trapezoidal, almost as long as wide, with slightly concave sides and truncate apex (Fig. 8F). Antennula (Fig. 8G) of three articles, second article much shorter than the others; a tuft of about 10 aesthetascs and a lobate appendix at the apex. Antenna (Fig. 8H) with flagellum as long as fifth article of peduncle; second flagellar article about three times as long as first and bearing four rows of aesthetascs. Mandibles (Fig. 9A–B) with molar penicil consisting of many setae and 2+2 free penicils on the left and 1+2 on the right mandible. Maxillule (Fig. 9C) outer branch with 6 (5 cleft)+4 teeth, inner branch with two stout penicils and a small posterior point. Maxilla (Fig. 9D) with bilobed and setose apex. Maxilliped (Fig. 9E) endite with two triangular terminal spines, one subterminal strong seta and a triangular spine on medial margin. Pleopods 1 and 2 exopods with monospiracular lungs. Uropod (Fig. 9F) with exopod flattened, much longer than wide; endopod longer than exopod.

Male: Pereopod 1 (Fig. 9G) with a row of strong setae on carpus. Pereopod 7 (Fig. 10A) with no distinct sexual modifications, ischium with straight sternal margin. Pleopod 1 (Fig. 10B) exopod with a broadly rounded distal margin; endopod with apical part slightly swollen and bearing a row of short setae. Pleopod 2 (Fig. 10C) exopod with a distal part bent outwards; endopod distinctly longer than exopod. Pleopod 3–5 exopods as in Fig. 10D–F.

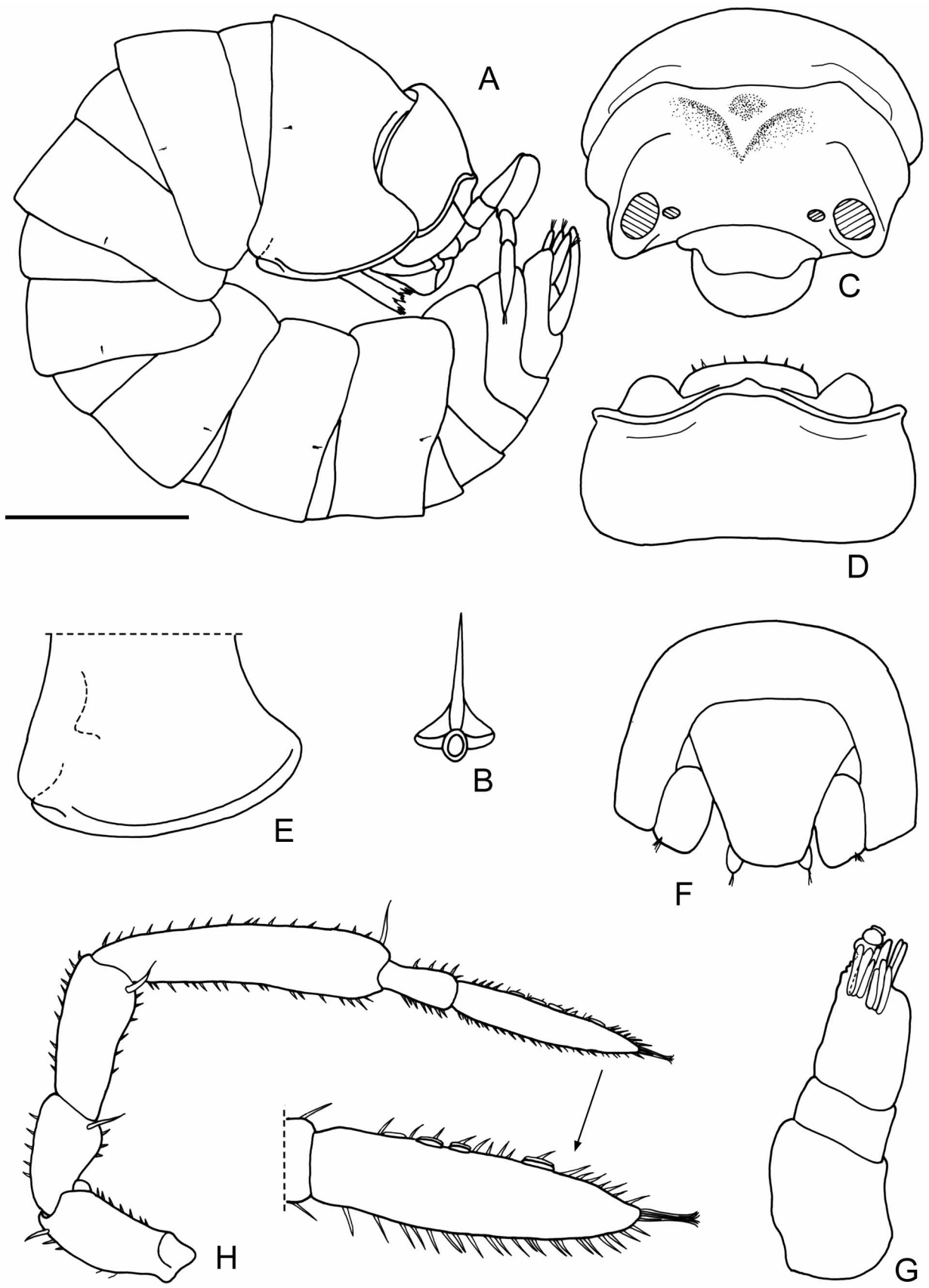

FIGURE 8. *Alloschizidium maymon* sp. nov. (holotype ♂). **A.** Animal in lateral view, scale bar: 1 mm. **B.** Dorsal scale-seta. **C.** Cephalon, frontal. **D.** Cephalon, dorsal. **E.** Pereonite 1, dorsal. **F.** Pleonite 5, telson and uropods. **G.** Antennula. **H.** Antenna.

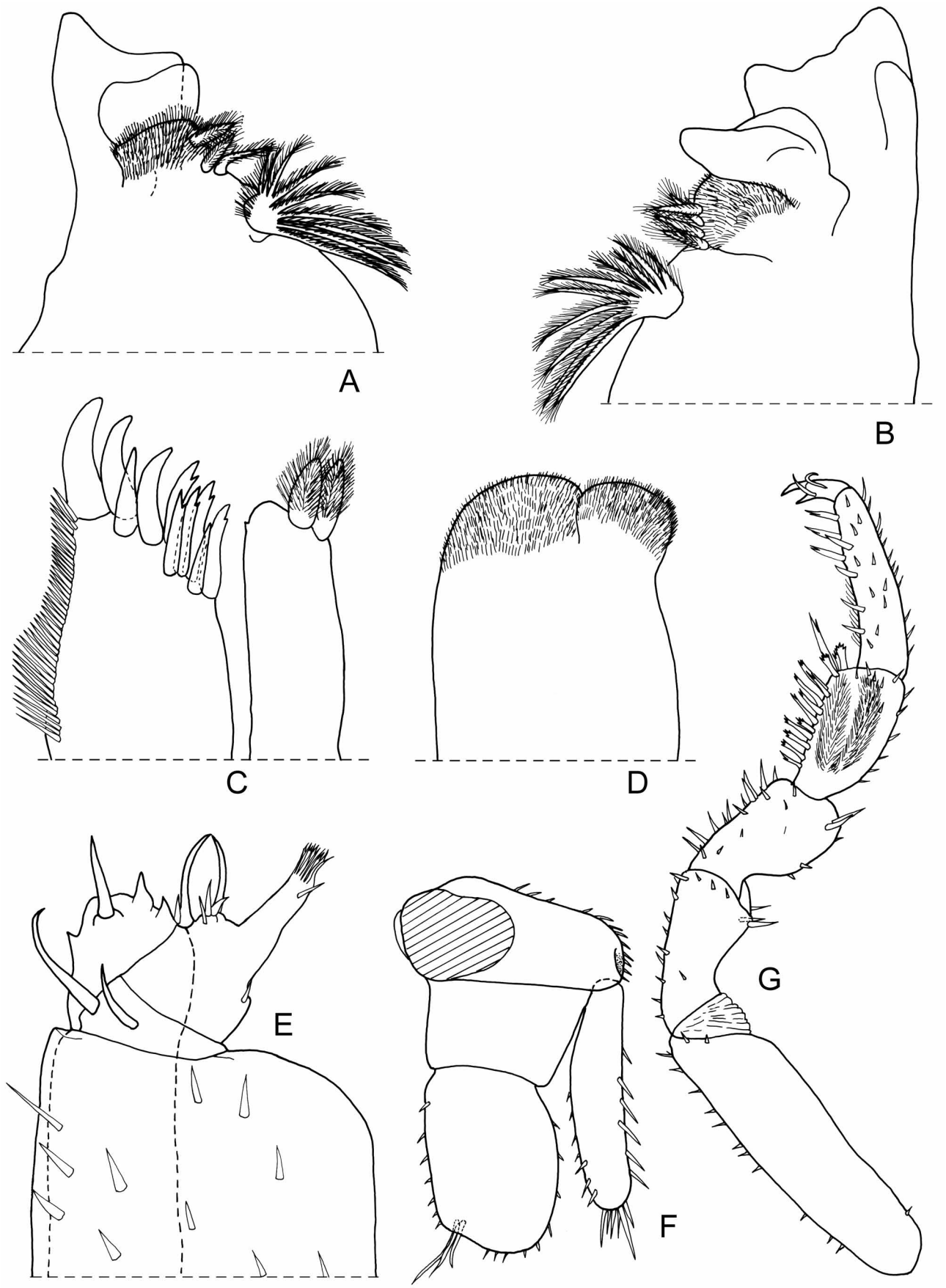

FIGURE 9. *Alloschizidium maymon* sp. nov. (holotype ♂). **A.** Right mandible. **B.** Left mandible. **C.** Maxillule. **D**. Maxilla. **E.** Maxilliped. **F.** Uropod. **G.** Pereopod 1.

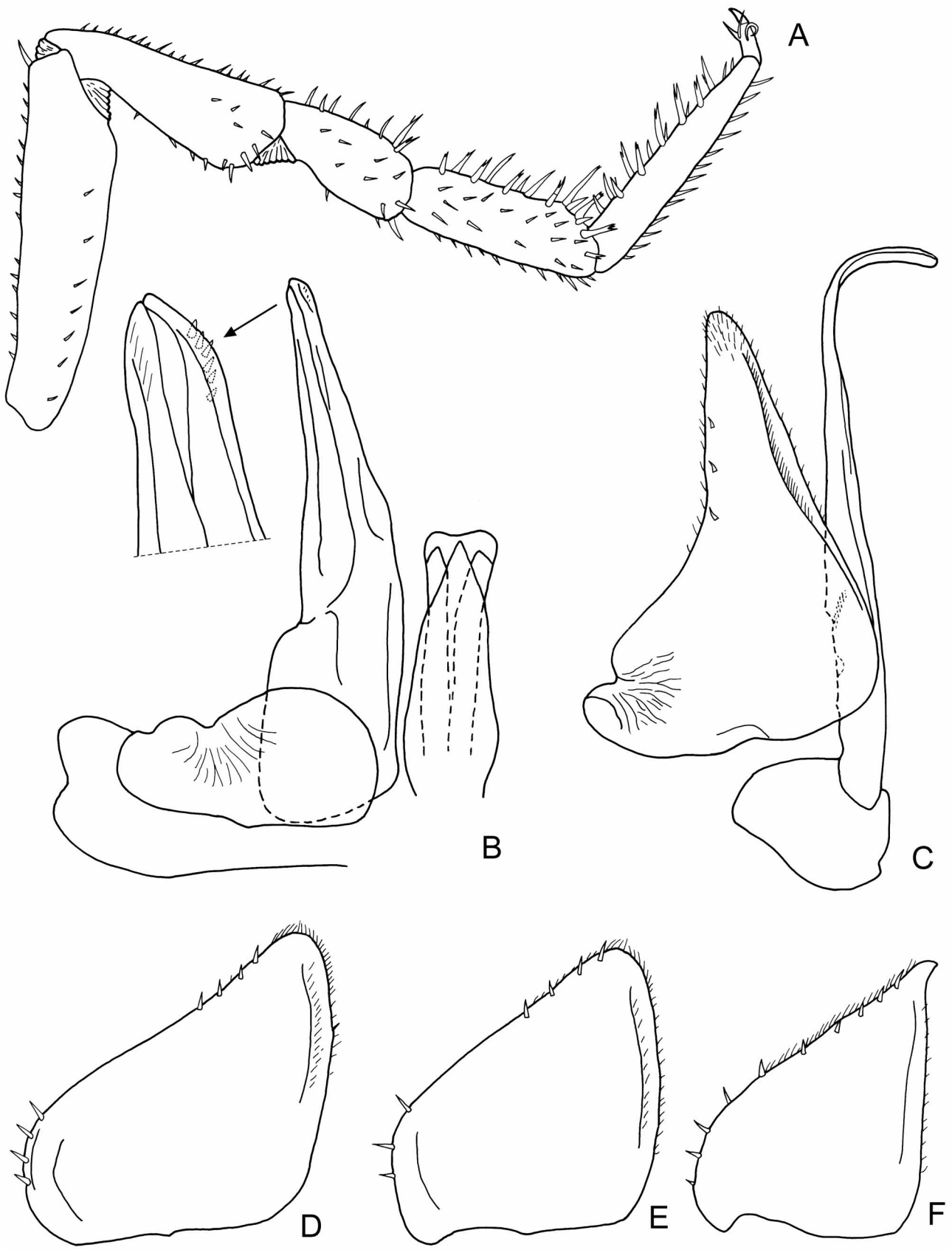

FIGURE 10. *Alloschizidium maymon* sp. nov. (holotype ♂). **A.** Pereopod 7. **B.** Pleopod 1 and genital papilla. **C.** Pleopod 2. **D.** Pleopod 3 exopod. **E.** Pleopod 4 exopod. **F.** Pleopod 5 exopod.

Etymology. The new species is named after Maymon, god of the Hades in the Nuragic culture.

Remarks. To date, the genus *Alloschizidium* includes 10 species distributed in the lands encompassed by the Tyrrhenian Sea (Taiti & Ferrara 1996; Schmalfuss 2003). In Sardinia two species of *Alloschizidium* are known: *A. sardoum* (Arcangeli, 1933) from some caves near Alghero (SS), and *A. cottarellii* (Argano & Pesce, 1974) from Ardara (SS) and southern Corsica. In the shape of the telson and uropods *A. maymon* resembles *A. sardoum* (compare description and figs 11–21 in Arcangeli 1933) from which it differs in not having a tomentose appearance, in the cephalic structure with frontal line clearly visible and antennary depression less developed, and male pleopod 1 exopod with rounded instead of acute distal margin. It differs from *A. cottarellii* (compare with fig. 25 in Taiti & Ferrara 1996) in having the cephalic scutellum distinctly separated from the vertex, and longer telson and uropods. In the cephalic structure the new species resembles *A. cavernicolum* Taiti & Ferrara, 1995 from a cave in southern Tuscany, but it is readily distinguishable by the shorter dorsal scale-setae, and shorter telson and uropods (see figs 13–14 in Taiti & Ferrara 1995).

Information on the Gospuru Cave, type-locality of *A. maymon*, can be found in Bartolo and Rattu (1991).

***Alloschizidium magrinii* sp. nov.**
(Figs 11–12)

Type material. Holotype ♂: OR, South of Montresta, 40°21'19.8"N – 8°29'24.0"E (WGS84), 480 m, under big stones, 24.IV.2007, leg. R. Argano and S. Taiti (MZUF 9290).

Paratypes: 1 ♂, 2 ♀♀, OR, South of Montresta, 40°21'19.8"N - 8°29'24.0"E (WGS84), 480 m, under big stones, 24.IV.2007, leg. R. Argano and S. Taiti (MZUF 9290); 1 ♀, same locality, 5.XII.2005, leg. P. Magrini (MZUF 9291); 1 ♂, 7 ♀♀, same locality, 27.IV.2008, leg. R. Argano and S. Taiti (MZUF 9292).

Diagnosis. A blind, colourless species of *Alloschizidium* characterized by short triangular dorsal scale-setae, a distinct groove along the frontal margin of the cephalon and along the lateral margin of pereonite 1, schisma of pereonite 1 with inner lobe distinctly shorter than outer one, wider than long trapezoidal telson, uropodal exopod as long as wide, and subquadrangular male pleopod 1 exopod.

Description. Maximum length: ♂, 3.5 mm; ♀, 5.0 mm. Body colourless, strongly convex with vertical epimera, able to roll up into a perfect ball (Fig. 11A). Back smooth, covered with numerous triangular scale-setae (Fig. 11B); one line of noduli laterales per side on the pereonites, more or less at the same distance from the lateral margin (Fig. 11A). Cephalon (Fig. 11C–D) with triangular scutellum slightly depressed in the middle; a distinct groove is present along the whole anterior margin of vertex; postscutellar line not visible, due to the presence of the cephalic groove; eyes absent. Pereonite 1 (Fig. 11E) with posterior margin slightly concave; postero-lateral schisma with outer lobe rounded and distinctly protruding backwards compared to inner one; lateral margin deeply grooved along its entire length, continuing the cephalic groove. Pereonite 2 (Fig. 11F) with a small triangular tooth on ventral side. Telson (Fig. 11G) trapezoidal, wider than long, with slightly concave sides, wide, slightly convex apex. Antennula (Fig. 11H) of three articles, second article much shorter than the others; a tuft of about eight aesthetascs and a lobate appendix at the apex. Antenna (Fig. 11I) with flagellum as long as fifth article of peduncle; second flagellar article more than four times as long as first and bearing two rows of aesthetascs. Buccal pieces and respiratory structures on the pleopods as in *A. maymon*. Uropod (Fig. 12A) with exopod flattened, quadrangular, as long as wide; endopod distinctly longer than exopod.

Male: Pereopod 1 (Fig. 12B) with some strong setae on carpus. Pereopod 7 (Fig. 12C) with no distinct sexual modifications, ischium with straight sternal margin. Pleopod 1 (Fig. 12D) exopod subquadrangular; endopod with a triangular apical part equipped with a row of short setae. Pleopod 2 (Fig. 12E) endopod thickset, distinctly longer than exopod. Pleopod 3-5 exopods as in Fig. 12F–H.

Etymology. The new species is named after our friend Dr. Paolo Magrini, a Florentine entomologist, who first collected this species near Montresta.

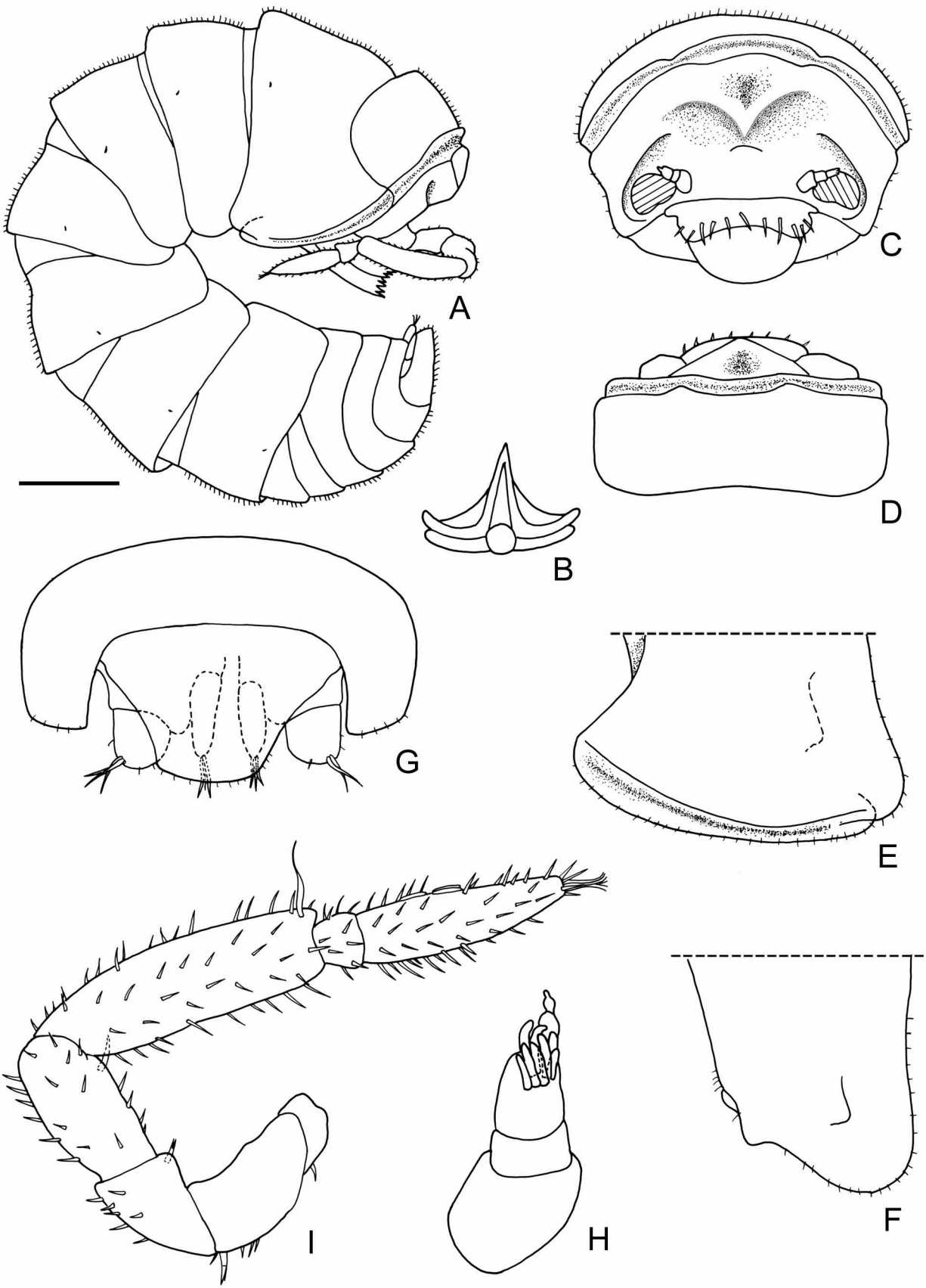

FIGURE 11. *Alloschizidium magrinii* sp. nov. (♀, paratype). **A.** Animal in lateral view, scale bar: 0.5 mm. **B.** Dorsal scale-seta. **C.** Cephalon, frontal. **D.** Cephalon, dorsal. **E.** Pereonite 1, dorsal. **F.** Pereonite 2, ventral. **G.** Pleonite 5, telson and uropods. **H.** Antennula. **I.** Antenna.

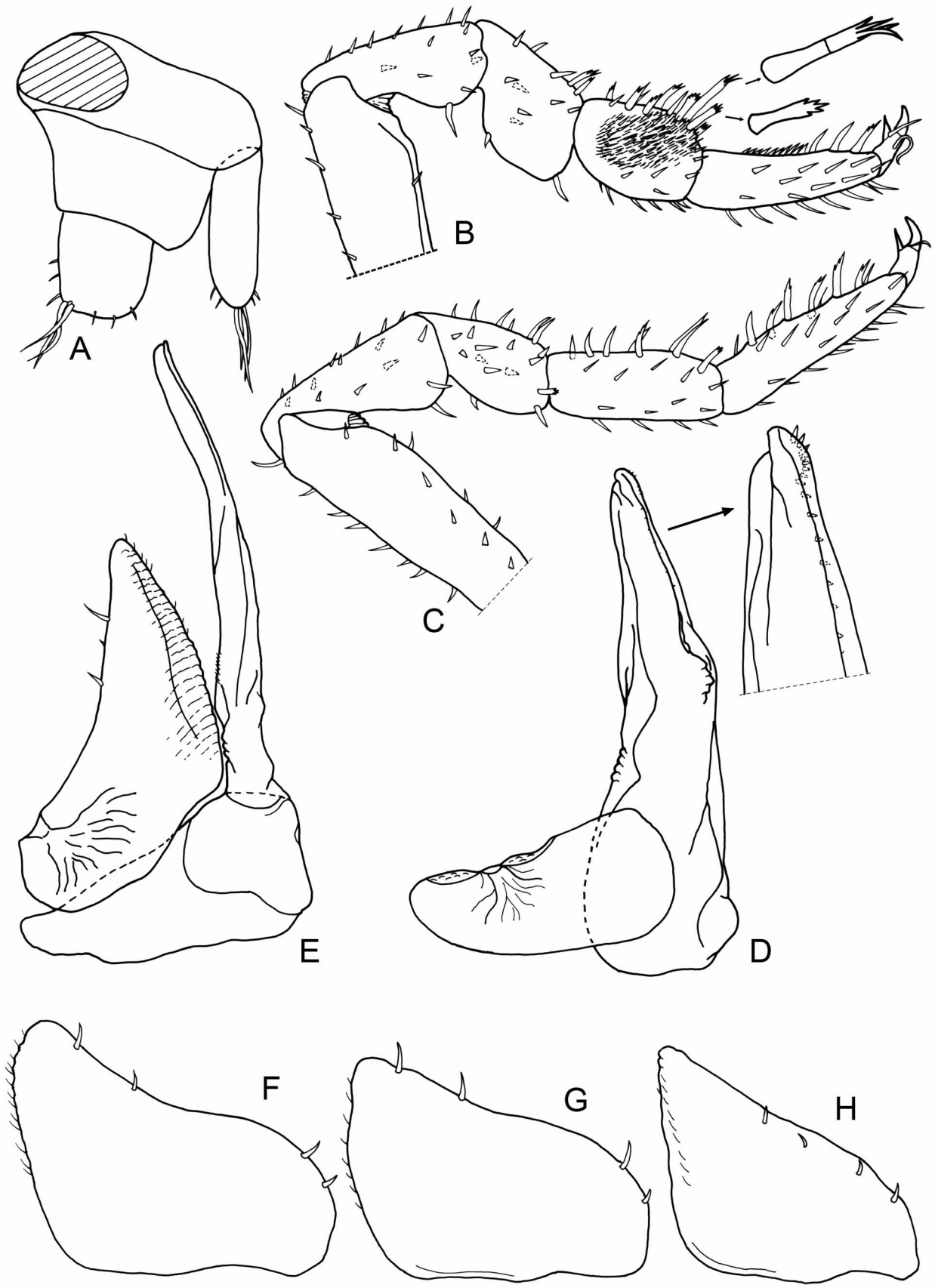

FIGURE 12. *Alloschizidium magrinii* sp. nov. **A.** Uropod (♀, paratype). **B–H.** Male (paratype). **B.** Pereopod 1. **C.** Pereopod 7. **D.** Pleopod 1. **E.** Pleopod 2. **F.** Pleopod 3 exopod. **G.** Pleopod 4 exopod. **H.** Pleopod 5 exopod.

Remarks. *Alloschizidium magrinii* is readily distinguishable from all the other species in the genus by the presence of a groove along the anterior margin of the vertex. For the presence of a groove on the lateral margin of the pereonite 1 it also resembles *A. igiliense* (Ferrara & Taiti, 1978) from Giglio Island (Tuscan Archipelago), from which it is distinguished, besides by the above mentioned cephalic groove, also by the narrower uropodal exopods and less developed posterior point of the male pleopod 1 exopod (compare to fig. XXV in Ferrara & Taiti 1978).

As most of the species in *Alloschizidium*, *A. magrinii* is an endogean form. It was collected under large stones at the margin of a meadow.

Acknowledgements

We wish to thank G. Grafitti and P. Marcia (Sassari, Italy), C. Manicastri (Rome, Italy), and P. Magrini (Florence, Italy) for entrusting us with part of the material here described. I. Checcucci (Florence, Italy) is particularly acknowledged for her invaluable help with the figures.

References

Arcangeli, A. (1925) Gli isopodi terrestri della Sardegna. *Bollettino dei Musei di Zoologia ed Anatomia Comparata della Reale Università di Torino*, 39, 3–75, pls 4–5.

Arcangeli, A. (1933) Due nuove specie cieche della famiglia Armadillidiidae (Isopodi terrestri). *Archivio Zoologico Italiano*, 19, 389–403, pls 5–6.

Argano, R. & Manicastri, C. (1996) Gli isopodi terrestri delle piccole isole circumsarde (Crustacea, Oniscidea). *Biogeographia, Lavori della Società Italiana di Biogeografia (n.s)*, 18, 283–298.

Argano, R. & Pesce, G. (1974) Un elumino mirmecofilo di Sardegna: *Typhloschizidium cottarellii* n. sp. (Isopoda, Oniscoidea, Armadillidiidae). *Fragmenta Entomologica*, 9, 283–291.

Argano, R. & Rampini, M. (1973) Nota sulla distribuzione dei Trichoniscidae in Sardegna (Crustacea, Isopoda, Oniscoidea). *International Journal of Speleology*, 5, 311–317.

Bartolo, G. & Rattu, M. (1991) *Le grotte di Gospuru*. Gruppo Grotte Ogliastra Editore, Perdasdefogu, 15 pp.

Budde-Lund, G. (1885) *Crustacea Isopoda terrestria per familias et genera et species descripta.* Nielsen & Lydiche, Hauniae, 320 pp.

Ferrara, F. & Taiti, S. (1978) Gli isopodi terrestri dell'Arcipelago Toscano. Studio sistematico e biogeografico. *Redia*, 61, 1–106.

Puddu, S. & Pirodda, G. (1974) Catalogo sistematico ragionato della fauna cavernicola della Sardegna. *Rendiconti del Seminario della Facoltà di Scienze dell'Università di Cagliari*, 73(3–4) [1973], 151–205.

Racovitza, E. (1908) Biospéologica. IX. Isopodes terrestres (seconde série). *Archives de Zoologie Expérimentale et Générale, 4ème série*, 9, 239–415.

Schmalfuss, H. (2003) World catalog of terrestrial isopods (Isopoda: Oniscidea). *Stuttgarter Beiträge zur Naturkunde, Serie A*, 654, 1–341.

Tabacaru, I. (1996) Contribution à l'étude du genre *Hyloniscus* (Crustacea, Isopoda). II. Diagnoses des genres *Hyloniscus* et *Nippononethes* nov. gen. La tribu des Spelaeonethini. *Travaux de l'Institut de Spéologie "Émile Racovitza"*, 35, 21–62.

Taiti, S. & Ferrara, F. (1995) Isopodi terrestri (Crustacea, Oniscidea) delle grotte della Toscana (Italia centrale). *Mémoires de Biospéologie*, 22, 169–196.

Taiti, S. & Ferrara, F. (1996) The terrestrial Isopoda of Corsica (Crustacea, Oniscidea). *Bulletin du Muséum National d'Histoire Naturelle, Paris, 4ème série*, 18, 459–545.

Taiti, S. & López, H. (2008) New records and species of Halophilosciidae (Crustacea, Isopoda, Oniscidea) from the Canary Islands (Spain). *In*: Zimmer, M., Charfi-Cheikhrouha, F. & Taiti, S. (Eds), *Proceedings of the International Symposium of Terrestrial Isopod Biology ISTIB-07*. Shaker-Verlag, Aachen, pp. 43–58.

Vandel, A. (1960) *Isopodes terrestres (Première Partie). Faune de France 64.* Lechevalier, Paris, pp. 1–416.

Vandel, A. (1962) *Isopodes terrestres (Deuxième Partie). Faune de France 66.* Lechevalier, Paris, pp. 417–931.

Verhoeff, K.W. (1908) Über Isopoden: 15. Aufsatz. *Archiv für Biontologie*, 2, 335–387, pls XXIX–XXXI.

Verhoeff, K.W. (1919) Ueber augenlose Armadillidien und kritische Prüfung der Familie Armadillidiidae. 25. Isopoden-Aufsatz. *Archiv für Naturgeschichte*, 83, A [1917], 160–170.

Verhoeff, K.W. (1927) *Illyrionethes* n. g. eine cavernicole Trichonisciden-Gattung. 35. Isopoden-Aufsatz. *Zoologischer Anzeiger*, 72, 268–274.