

Three *Walckenaeria* species from Peloponnese, Greece (Araneae: Linyphiidae)

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Summary

Three species of *Walckenaeria* from Peloponnese are described: *W. coniceps* n.sp. (♂♀), *W. cirriceps* n.sp. (♂♀), and *W. prope extraterrestris* Bosmans (♂), hitherto known only from Algeria. Taxonomic relationships are discussed and notes are given on habitat and phenology. The two new species are confined to montane woodland. *W. coniceps* has been found in NW Peloponnese only (Erimanthos Mts.), *W. cirriceps* is widespread, occurring in the northern (Helmos Mts.), central (Menalo Mts.) and southern Peloponnese (Tigetos and Parnon Mts.).

Introduction

The genus *Walckenaeria* in its broad limits accepted now (Merrett, 1963; Millidge, 1983; Holm, 1984) is represented in the Mediterranean region by more species than previously thought, see recent descriptions from the Canary Islands (Wunderlich, 1991) and from North Africa (Bosmans & De Smet, 1993). Two further species are presented here from Peloponnese, which add a new facet to the inexhaustible field of erigonine head morphology (Blest & Taylor, 1977; Schaible *et al.*, 1986), together with an exceptional second record for *W. extraterrestris* Bosmans (?).

Abbreviations: CTh=Thaler collection, MHNG=Museum d'Histoire naturelle, Genève, NMW=Naturhistorisches Museum Wien. AME (PME)=anterior (posterior) median eyes, Tm=metatarsal trichobothrium. All measurements are in mm.

Walckenaeria prope extraterrestris Bosmans, 1993 (Figs. 1–4, 7, 9–10, 12)

Material examined: Peloponnese, Ahaia, road Halandritsa-Kalavrita, near Micha, c. 700 m, at river bank under foliiferous shrubs, 1♂ (CTh), leg. Thaler, 19 September 1985.

Comparative material of *W. acuminata* Blackwall: Figs. 5–6, 8, 11, 13 (specimen from Switzerland, Jura bernois, Bonfol, leg. Marti 1971).

Description: *Male:* Total length 2.7; prosoma length 1.2, width 0.89. Head as in its sibling species elevated into a vertical turret (Fig. 2), its terminal lobe, which carries the PME, unlike in *W. acuminata* excavated on its anterior side (Fig. 9 cf. Fig. 8). For scanning photographs of *W. acuminata* see Eisenbeis & Wichard (1985). Stridulatory file widely spaced (Fig. 7). Leg measurements, see Table 1. Dorsal tibial spines 2211, their position on I (IV) 0.17/0.82 (0.24), length of proximal spine on I–III (IV) 0.4 (0.9) diam. TmI 0.72, TmIV 0.70. Palpal organ: Fig. 1. Very close to *W. acuminata*, but dorsal side branch of main tibial apophysis less elevated (Figs. 3, 12 cf. Figs. 5, 13). End of supratégulum rounded, with small digitiform process

(Fig. 4 cf. Fig. 6), tip of embolus almost identical (Fig. 10 cf. Fig. 11), tapering, with subterminal membranous flap (Holm, 1984).

Taxonomic remarks: *W. extraterrestris* was described recently from a single male from Algeria (Bosmans & De Smet, 1993). The specimen from Peloponnese differs from *W. acuminata* in exactly the same way as does the Algerian specimen of *W. extraterrestris*, see terminal lobe of turret and tibial apophysis. It is therefore identified with this species despite the geographical separation and a slight difference in the shape of the turret, which is broader in the Algerian specimen.

Distribution: *W. acuminata* is a widespread European species as the records summarised in Bonnet (1959) show, absent in most Mediterranean countries but occurring across the continent from Portugal (Machado, 1949), France and the British Isles to Finland (Palmgren, 1976) and even Russia, easternmost records in the Ural Mts. (Eskov, 1994). In the British Isles and Germany *W. acuminata* is “not uncommon . . . in moss and detritus in woodland” (Locket & Millidge, 1953; Wiehle, 1960); like many congeners it is diplochrous and matures in late autumn. As indicated by the recent discovery of a sister species in Algeria and Greece its stem species was probably widely present also in the Mediterranean region. The highly disjunct and restricted occurrence of *W. extraterrestris* might then be due to aridisation of this region. Females recorded as *acuminata* from Caucasus (Tanasevitch, 1990) presumably will stand close to *extraterrestris*. The proper taxonomic assessment of Mediterranean populations will depend on a better understanding of the vicariance pattern in the *acuminata* subgroup.

Walckenaeria coniceps n.sp. (Figs. 14–23)

Material examined: Peloponnese, Ahaia, Erimanthos range: trail from Micha to summit of Olonos Mt.;

		Fe	Pa	Ti	Mt	Ta	Total
<i>W. prope extraterrestris</i> Bosmans (Ahaia, Micha)							
♂	I	1.14	0.39	1.04	0.89	0.51	3.97
	IV	1.14	0.35	1.05	0.97	0.53	4.04
<i>W. coniceps</i> n.sp. (Ahaia, Micha 1500–1800 m)							
♂	I	0.95	0.31	0.90	0.79	0.51	3.46
	IV	1.03	0.30	1.13	0.97	0.56	3.99
♀	I	1.07	0.34	1.08	0.87	0.52	3.88
	IV	1.13	0.33	1.15	1.07	0.54	4.22
<i>W. cirriceps</i> n.sp. (Helmos, Xyrokampos)							
♂	I	1.07	0.32	0.97	0.84	0.55	3.75
	IV	1.11	0.29	1.05	0.98	0.57	4.00
♀	I	0.97	0.32	0.89	0.74	0.51	3.43
	IV	0.99	0.29	0.98	0.88	0.50	3.64
<i>W. cirriceps</i> n.sp. (Tigetos, Lipovouni)							
♂	I	1.13	0.35	1.03	0.91	0.59	4.01
	IV	1.15	0.31	1.15	1.06	0.57	4.24
♀	I	1.12	0.36	1.02	0.89	0.58	3.97
	IV	1.17	0.33	1.12	1.04	0.59	4.25

Table 1: Leg measurements (mm) of *Walckenaeria* species.

1300 m, under stones in *Abies* woodland, 2♂ 3♀ paratypes (CTh), 21 September 1985; 1500–1800 m, in grassland, 1♂ holotype (NMW), 1♀ paratype (NMW), 22 September 1985. Kalendzi, 1200 m, under stones in *Abies* woodland, 2♂ 3♀ paratypes (MHNG), 27 September 1991. All material leg. Thaler (1985) and Thaler & Knoflach (1991) respectively.

Etymology: The specific name refers to the conical process (lat. *conus*) on the head (*-ceps*, abbreviation of *caput*, head), invariable.

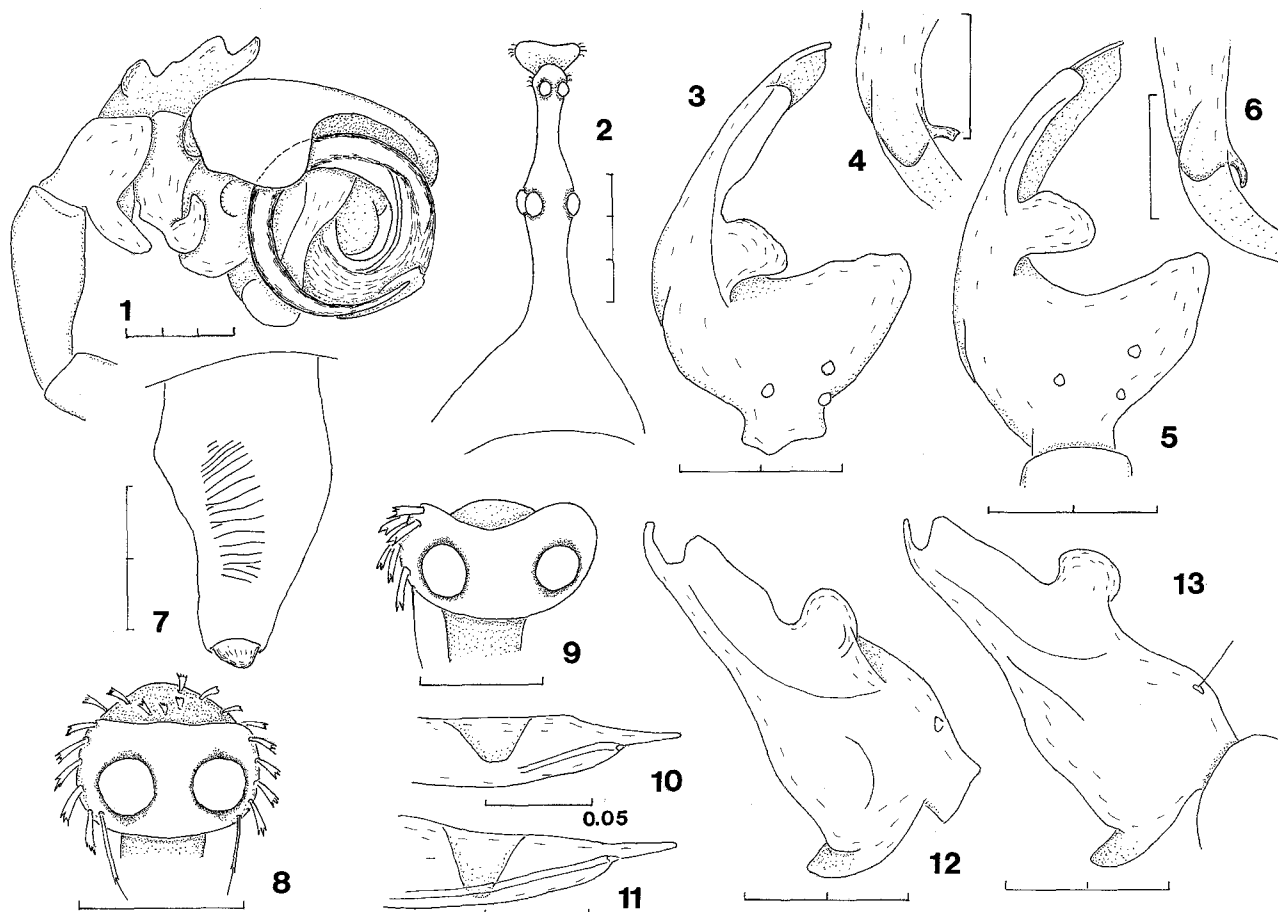
Diagnosis: *W. coniceps* n.sp. differs conspicuously from its west-palaearctic congeners by the male head (Figs. 14–15). It can also be distinguished from *W. cirriceps* n.sp. by the palpal tibia, the main apophysis of which is straight (Fig. 19 cf. Fig. 31), by the short tibial spines (♂ 0.2 vs. 0.9) and by the vulva (Fig. 23 cf. Fig. 35).

Description: *Male*: Total length 2.6; prosoma length 1.11, width 0.81. Head elevated into a projecting cone with PME at its base, its anterior side with a group of 4+4 strongly modified setae, and a transverse row of smaller setae in eye field (Figs. 14–15). There is slight variation in the shape of the cone (Figs. 16–17). Stridulatory file coarse (Fig. 14). Leg measurements, see Table 1. Dorsal tibial spines 2211, their position on I (IV) 0.15/0.83 (0.30), length of proximal spine on I-III

(IV) 0.2 (0.3) diam. TmI 0.58, TmIV 0.76. Palpal organ: Fig. 18. Palpal tibia: Figs. 19–20; with stout retro-lateral and straight pro-lateral apophysis; the latter with triangular dorsal (D) and rounded ventral (V) process and sickle-shaped apex (A, Fig. 20). Protegulum truncate, embolic part in close coil. Suprattegulum elongate. Tip of embolus: Fig. 21.

Female: Total length 2.8; prosoma length 1.19, width 0.85. Leg measurements, see Table 1. Position of tibial spines on I (IV) 0.13/0.77 (0.21), length of proximal spine on I-III (IV) 0.9 (0.7) diam. TmI 0.60, TmIV 0.74. Epigyne/vulva: Figs. 22–23. Midplate narrow, but visible in ventral view (this structure has been called dorsal plate by Millidge, 1984); copulatory ducts (c, Fig. 23) short, their anterior corner forming almost a right angle.

Affinities: This species cannot with certainty be allocated to subgenus following the key proposed by Wunderlich (1972). As the divisions suggested there are also not fully supported by Millidge (1977, 1983), this may indicate gaps in our knowledge. The embolic coil and the branching of the tibial apophysis indicate affinity to the *monoceros* species group (subgenus *Prosopotheca*). Species recently described in this group from Italy (Millidge, 1979) and from North Africa (Bosmans & De Smet, 1993) agree in male head



Figs. 1–13: *Walckenaeria prope extraterrestris* Bosmans. 1 Male palpus, retrolateral view; 2 Male prosoma, frontal view; 3 Male palpal tibia, dorsal view; 4 Suprattegulum; 7 Male chelicera; 9 Turret of male head, dorsal view, most setae omitted; 10 Tip of embolus; 12 Male palpal tibia, pro-lateral view.

W. acuminata Blackwall. 5 Male palpal tibia, dorsal view; 6 Suprattegulum; 8 Turret of male head, dorsal view; 11 Tip of embolus; 13 Male palpal tibia, pro-lateral view. Scale lines=0.05 (10–11), 0.1 (4, 6, 8–9), 0.2 (3, 5, 7, 12–13), 0.3 mm (1–2).

modification with *W. monoceros* (Wider). Some additional species with bizarre heads are now known from the Canary Islands and the Caucasus (Thaler, 1984; Tanasevitch, 1987; Wunderlich, 1987, 1991). The palpal structures of at least some of these resemble the Peloponnese species.

Distribution, habitat: *W. coniceps* is known so far only from NE Peloponnese, in *Abies* woodland and alpine grassland of the Erimanthos range, 1200–1800 m. The specimens collected in late September were freshly moulted.

***Walckenaeria cirriceps* n.sp.** (Figs. 24–35)

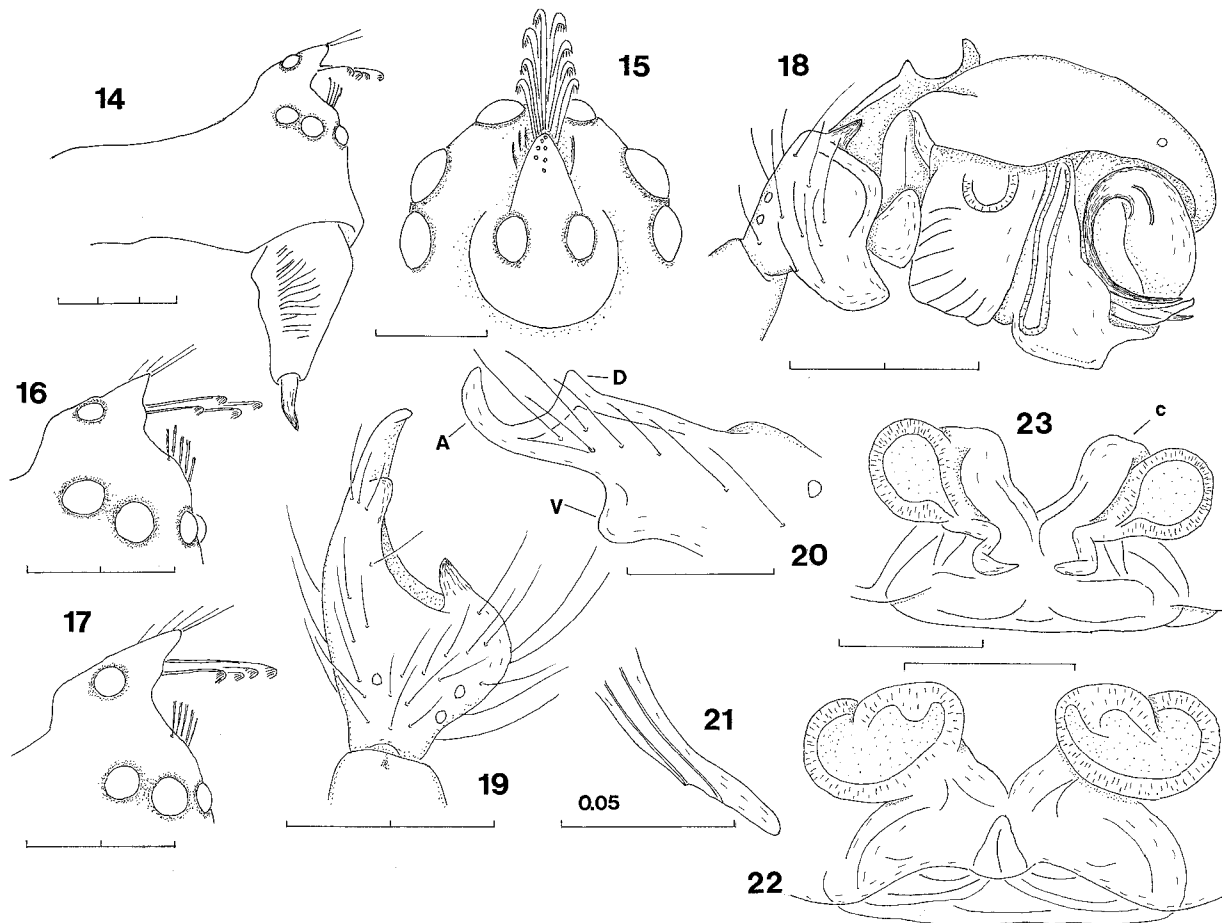
Material examined: Peloponnese, Ahaia, Helmos Mts.: Agridi, 1200–1600 m, 1♂ paratype (CTh), 19 September 1987; Xyrokampos near Kalavrita, 1300 m, 1♀ paratype (CTh), 21 September 1987, 1♂ holotype (NMW), 2♀ paratypes (NMW), 20 September 1993. Arkadia, Menalo Mts.: near Kardaras, 1200 m, 1♂ 1♀ (CTh), 2 October 1991; south to Vitina, 1200 m, 1♂ (CTh), 30 September 1992. Lakonia, Taigetos Mts.: near Lipovouni, 1400 m, 1♂ 1♀ (CTh), 23 September 1992; Anogia, road to shelter of Taigetos, 1000 m, 3♂ 2♀ (CTh, NMW), 24 September 1993. Parnon Mts.: Kosmas, 1200–1400 m, 2♂ (CTh), 26 September 1992; near Polidroso, 1500 m, 1♀, 28 September 1992. All

material taken in *Abies* woodland, leg. Thaler (1987) and Thaler & Knoflach (1991–1993) respectively. Owing to variation in male head, only specimens collected on Helmos Mts. have been designated as paratypes.

Etymology: The specific name refers to the peculiar ornamentation of the head with setae (lat. *cirrus*), invariable.

Diagnosis: *W. cirriceps* n.sp. differs from *W. coniceps* n.sp. by the male head (Figs. 24–25), the curved main apophysis of the palpal tibia (Fig. 31 cf. Fig. 19), longer tibial spines (♂ 0.9 vs. 0.2) and by the vulva (Fig. 35 cf. Fig. 23).

Description: Male: Total length 2.5; prosoma length 1.10, width 0.81. Head with PME elevated into a low lobe with sharp anterior and rounded posterior edge, with a group of 8+8 strongly modified setae at its front, and a transverse row of smaller setae above AME (Figs. 24–25). This lobe is variable, Figs. 26–29. Stridulatory file coarse (Fig. 24). Leg measurements, see Table 1. Dorsal tibial spines 2211, their position on I (IV) 0.18/0.84 (0.39), length of proximal spine on I–III (IV) 0.9 (1.0) diam. TmI 0.52, TmIV 0.68. Palpal organ: Fig. 30. Palpal tibia: Figs. 31–32; retrolateral apophysis stout, prolateral apophysis curved outwards, with a triangular dorsal (D) and a rounded ventral (V) process (Fig. 32). Protegulum and embolic division as in *W. coniceps* n.sp. Tip of embolus: Fig. 33.



Figs. 14–23: *Walckenaeria coniceps* n.sp. 14 Male prosoma (holotype); 15 Male head, dorsal view (holotype); 16–17 Male head (specimens from Micha, 1300 m); 18 Male palpus, retrolateral view; 19 Male palpal tibia, dorsal view; 20 Ditto, prolateral view; 21 Tip of embolus; 22 Epigyne/vulva, ventral view; 23 Ditto, dorsal view. Figures drawn from specimens from Micha 1500–1800 m except where indicated otherwise. Scale lines=0.05 (21), 0.1 (15, 20, 22–23), 0.2 (16–19), 0.3 mm (14).

Female: Total length 2.7; prosoma length 1.03, width 0.78. Leg measurements, see Table 1. Position of tibial spines on I (IV) 0.14/0.82 (0.30), length of proximal spine 1.2–1.4 diam. TmI 0.57, TmIV 0.74. Epigyne/vulva: Figs. 34–35. Midplate almost vertical, visible in posterior view. Copulatory ducts (c, Fig. 35) short, their anterior corner forming a loop.

Affinities: *W. cirriceps* n.sp. is clearly related to *W. coniceps* and therefore also belongs in the *monoceros* group of *Walckenaeria*. Two species with bizarre heads in this group apparently resemble *W. cirriceps*: *W. bifasciculata* Tanasevitch (1987) from Caucasus, *W. denisi* Thaler (1984) from Tenerife. Of course, such similarity in head structure might be due to mere convergence. The head lobe of *W. cirriceps* males shows some variation (Figs. 25–29); it is highest in a male from central Peloponnese (Fig. 27) and lowest in a specimen from Taigetos Mts. (Fig. 29). No taxonomic value is attributed to such individual variation. Unlike in the species swarms in North Africa (Bosmans & De Smet, 1993) and East Africa (Holm, 1984), the palpal tibia and embolic part in these specimens are identical with the holotype.

Distribution, habitat: *W. cirriceps* has been found in mountains in northern (Helmos), central (Menalo) and southern Peloponnese (Taigetos, Parnon), under logs

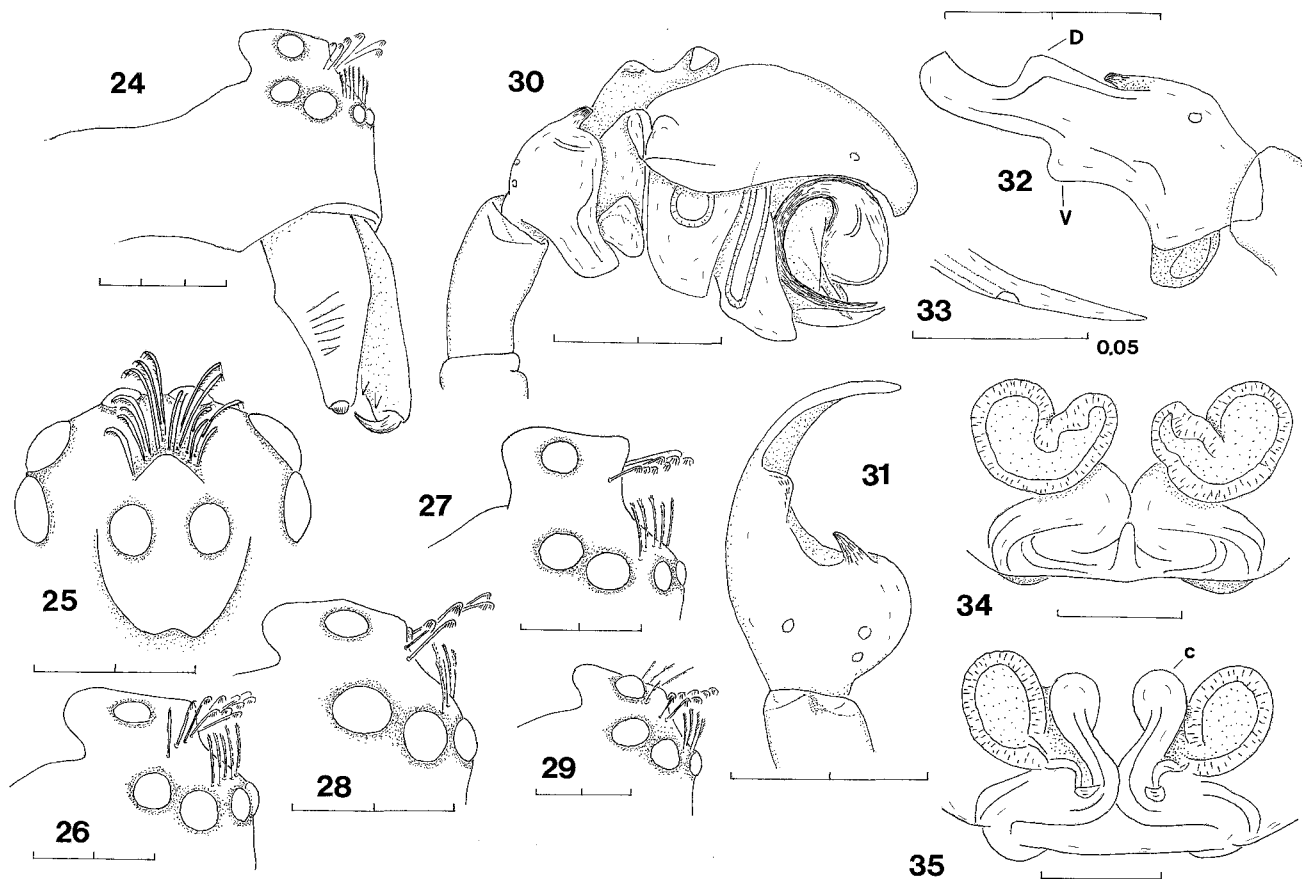
and stones in *Abies* woodland from c. 1000–1600 m. In late September freshly moulted specimens were taken together with some subadult males. Apparently *W. cirriceps* is diplochronous, as are most of its congeners in mid-Europe.

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Figs. 24–35: *Walckenaeria cirriceps* n.sp. **24** Male prosoma (holotype); **25** Male head, dorsal view (holotype); **26–29** Male head, specimens from Helmos, Agridi (26), Menalo, Vitina (27), Parnon, Kosmas (28), Taigetos, Lipovouni (29); **30** Male palpus, retrolateral view; **31** Male palpal tibia, dorsal view; **32** Ditto, prolateral view; **33** Tip of embolus; **34** Epigyne/vulva, ventral view; **35** Ditto, dorsal view. Figures drawn from specimens from Helmos, Xyrokampos, except where indicated otherwise. Scale lines=0.05 (33), 0.1 (34–35), 0.2 (25–32), 0.3 mm (24).

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