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SOME MITES OF THE SUPERFAMILY BDELLIDOIDEA 
(ACARI: PROSTIGMATA) 
OF KARAJ (IRAN), 
WITH DESCRIPTIONS OF TWO NEW SPECIES 
AND REDESCRIPTION OF BDELLODES KAZERUNI 

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(Accepted September 2007)

SUMMARY: Eight bdellid species in four genera are recorded from Karaj (Iran). These are Spinibdella cronini (Baker & Balock), Cyta latirostris (Hermann), Bdellodes meridionalis (Thor), Bdellodes iraniensis sp. nov., Bdella longicornis (Linnaeus), Bdella muscorum (Ewing), Bdella karajensis sp. nov. Bdellodes kazeruni Ostovan & Kamali is redescribed. Bdella muscorum and B. meridionalis are reported for the first time from Iran. Two species in two genera of the family Cunaxidae, namely Coleosciurus magdalenae (Den Heyer) and Pulaeus subterraneus (Berlese) are reported for the first time from Iran. A key to the genera found at Karaj and the Iranian species of these genera are given.

INTRODUCTION 

Members of the families Bdellidae Dugès and Cunaxidae Thor (Acari: Prostigmata: Bdelloidea) are predators and some species are important control agents in integrated pest management (IPM) worldwide (ROSEN & HUFFAKER, 1983). Bdellodes lapidaria (Kramer) was successfully introduced into Australia and South Africa against the Lucerne flea, Sminthurus viridis (L.) (WALLACE, 1954, WALLACE & WALTERS, 1974, GERSON et al., 2003). Bdella depressa Ewing is a voracious feeder of the clover mite, Bryobia praetiosa (Koch) and various springtails in the USA. Bdella longicornis (L.), together with phyto- seiids, plays an important role in the control of vine spider mites in California (SORENSEN et al., 1983, GERSON et al., 2003). Bdella distincta (Baker & Balock) feeds on eggs and crawlers of armoured scale insects in Florida (Muma, 1975). Cunaxid predators of various pests are: Cunaxa capreolus (Berlese), which was reared on booklice and on Eutetranychus orientalis (Klein); C. lukoschusi Smiley which preyed on tenuipalpids; Cunaxoides oliveri (Schruft) fed on the grape rust mite, Calepitrimerus vitis (Nalepa), in Germany; Cunaxa cf. setirostris (Hermann), which together with other predators suppressed the coconut pest, Oligonychus isellemae (Hirst) in India; Coleosciurus simplex (Ewing) and Neocunaxoides andrei (Baker

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& Hoffmann) feed on nematodes (Zaher et al., 1975; Corpus-Raros & Garcia, 1995; Sathiamma, 1995; Walter & Kaplan, 1991; Taha et al., 1988; Gerson et al., 2003). Six genera and 24 species of the family Bdellidae and six genera and 18 species of the family Cunaxidae were hitherto reported from Iran (Ostovan & Kamali, 1995 and Kamali et al., 2001).

METHODS AND TECHNIQUES

To further the study of these mites in Iran, a survey was conducted from 2000-2002 at Karaj, northwest of Tehran, by the second author. Mites were extracted from soil and debris samples with Tullgren funnels, cleared in lactophenol and mounted in Cunaxidae were hitherto reported from Iran & Hoffmann) feed on nematodes (Zaher et al., 1975; Corpus-Raros & Garcia, 1995; Sathiamma, 1995; Walter & Kaplan, 1991; Taha et al., 1988; Gerson et al., 2003). Six genera and 24 species of the family Bdellidae and six genera and 18 species of the family Cunaxidae were hitherto reported from Iran (Ostovan & Kamali, 1995 and Kamali et al., 2001).

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The holotypes are deposited in the Acari Collection, Department of Entomology, College of Agriculture, Science and Research Campus, Islamic Azad University, Tehran, Iran and paratypes in the Acari Collection, Zoological Museum, College of Agriculture, University of Tehran, Karaj, Iran.

All measurements are in micrometers (μm).

KEY TO THE SUBFAMILIES AND GENERA OF THE FAMILIES BDELLIDAE AND CUNAXIDAE FOUND AT KARAJ, AND SOME IRANIAN SPECIES

1. Palp tibiotarsus with two long distal setae; leg trichobothria present on tarsi III and IV and tibiae I and IV; adults with three pairs of genital papillae and two or more eugenital setae. — Bdellidae

2. Hypostome with six or seven pairs of ventral setae. — Bdellidae

3. Trichobothria present on tibia II — Odontoscirinae-Bdellodes

4. Setae sci closely associated with see and much shorter — Cunaxidae

5. Setae sci well separated from see and more than a third the length of the latter — Cunaxidae

6. Setae see simple; fixed cheliceral digit with a minute spine — B. kazeruni Ostovan & Kamali

7. Chelicerae with only one setae, base not inflated, each digit with a tooth — B. meridionalis (Thor)

8. Fixed chela with a slender acute process; striae on propodosoma longitudinal between setae vi and sci — B. iraniensis n. sp.

9. Striae on propodosoma mainly transverse — B. longirostris (Hermann)
— 129 —

FAMILY BDELLIDAE DUGÉS, 1834

SUBFAMILY ODONTOSCIRINAE: Grandjean, 1938

Bdellodes meridionalis (Thor)

Biscius (Biscius) meridionalis Thor, 1931: 74
Thoribdella meridionalis (Thor); Grandjean, 1938: 4

Bdellodes (Hoplocricus) meridionalis (Thor),
ATYEO, 1963: 132

Bdellodes meridionalis (Thor),
Wallace & Mahon, 1976: 65

DIAGNOSIS: Chelicera with proximal and distal setae approximate. Palp short, palpal tubitarsus stout, with seven setae (end setae included) telofemur and genu almost equal in length, basifemur with three setae. Propodosoma with anterior sensillae (sci) very short and approximate to sce.

FEMALE (n=1): Length (including gnathosoma) 703, length (without gnathosoma) 509, width 315, chelicera 189, length of palp 218.

DIETRIBUTION: Bdellodes meridionalis is widely distributed in Western Europe and North Africa, from Norway to Morocco, and in Western Australia (WALLACE & MAHON, 1976). ATYEO (1960) redescribed this species from material collected in the USA, Iceland, Sweden and Germany; this is its first record of this species from Iran.


Bdellodes iraniensis sp. nov. (Figs. 1-1)

DESCRIPTION: FEMALE (Figs. 1-10). Dimensions (n=2): (measurements of paratype in parentheses):

Length of idiosoma with gnathosoma 1756 (1571); length without gnathosoma 1232 (1078); breadth 785 (716); leg I 1286 (1209); leg II 1294 (1194); leg III 1494 (1271); leg IV 1775 (1594); setae: vi 154 (154); set 146 (146); sce 162 (154); c1 154 (146); c2 154 (139); d 146 (131); e 142 (126); f1 126 (97); f2 108 (92); h1 123 (108); h2 116 (92); psl 77 (77).

Gnathosoma (Figs. 1-3): Hypostome with six pairs of ventral setae. Chelicerae smooth, vaguely reticulated and striated and with one long seta. Movable and fixed cheliceral digits each with a tooth, latter also with a slender acute process. Palp chaetotaxy: coxa with one peg-like dorsal seta; basifemur with 16 setae,
FIGS 1-11: *Bdellodes iraniensis* sp. n. 1.—Female hypostome ventral view. 2.—Female chelicera. 3.—Female palp. 4.—Dorsal view of female. 5.—Seta cl of female. 6.—Genital opening of female. 7.—Ovipositor of female. 8.—Ovipositor gland of female. 9.—Leg I of female. 10.—Leg II of female. 11.—Internal genitalia of male.
telofemur with one seta; genu with four setae; tibiotarsus with 12 setae, two long end setae (VES and DES) and one solenidion.

Dorsum (Figs 4-5): Striae on propodosoma transverse between and behind setae vi, changing to irregular longitudinal and extending beyond setae see. Striae finely to coarsely broken. Internal apodemes not visible. Two pairs of eyes present, interval between eyes with transverse striae.

Venter (Figs 6-8): Anal region with only one pair of pseudoanal setae (ps) and one pair of anal setae. Genital covers each with six pairs of ag-setae and three pairs of ag setae. No unpaired seta present between coxae IV. Ovipositor and ovipositor gland as depicted in Figs 7-8, respectively.

Legs (Figs. 9-10): Chaetotaxy of segments as follows (counts do not include the solenidia): coxae 4 or 5 - 3 or 4 - 4, 5 or 6 - 2; trochanters 1 - 1 - 1 - 1; basifemora 14 or 15 - 11 - 13 - 5; teflomera 6 or 7 - 7 - 6 - 6; genua 6 setae, 2 a - 6 setae, 2 a - 6 setae, 1 a; tibiae 14 setae, 4 a, 1 trichobothrium - 14 setae, 2 a, 1 trichobothrium - 13 setae, 1 a - 14 setae, 1 trichobothrium; tarsi 49 setae, 2 a - 17 setae, 1 trichobothrium - 41 setae, 1 trichobothrium. Seta dt1 smooth but seems pilose basally and dt 2-3 plumose on all four tarsi, tarsus IV, however, with only one dt 1 seta. Telofemor each with a macroseta.

Male (Fig. 11). Dimensions (n = 2): Length of idiosoma with gnathosoma 1571-1771; length without gnathosoma 1070 - 1270; breadth 770 - 832; leg I 1124-1170; leg II 1201; leg III 1263 - 1294; leg IV 1494 - 1617; setae: vi - 139 - 146; sce 131 - 146; see 146 - 156; cl 116 - 131; c2 131 - 139; d1 116 - 131; e1 100 - 131; fl 92 - 108; f2 92 - 100; h1 85 - 116; h2 77 - 85; ps1 77.

Ventral area with seven pairs of g setae, three pairs of ag-setae and eight pairs of eu genital setae. Internal genitalia as depicted in Fig. 11. Leg chaetotaxy similar to that of female.

Protonymph. Dimensions (n = 1): Length of idiosoma with gnathosoma 755; length without gnathosoma 532; breadth 408; leg I 447; leg II 462; leg III 485; leg IV 470; setae: vi -; sce 92; sce 69; cl 65; c2 69; d 62; e 62; f1 54; f2 54; l1 54; h2 46.

Hypostome with six pairs of ventral setae. Genital area with one pair of genital suckers, one pair of g setae and one pair of ag setae. Leg chaetotaxy: coxae 3-2-3-0; trochanters 1-1-1-0; basifemora 4-4-2-2; teflomera 5-5-4-4; genua 4 setae, 3 a - 4 setae, 1 a - 2 setae; tibiae 4 setae, 4 p, 1 trichobothrium - 4 setae, 2 p, 1 trichobothrium - 5 setae, 1 p - 3 setae; tarsi 20 setae, 4 p - 17 setae, 2 p - 19 setae, 1 trichobothrium - 6 setae.

Type Material: The holotype female (SRB-20011-1), two paratype males (SRB-20011-2 & 3) and one paratype protonymph (SRB-20011-4) were collected from litter, 15 August 2001.

Remarks: This species resembles B. longirostris (Hermann) and B. koloseta (Wallace & Mahon), in that the chelicerae bear only one seta (B. koloseta has a second minute seta) and in that the striaion between the eyes is transverse. The propodosomal striae are transverse between and just behind setae vi, becoming longitudinal and extending to setae see and sce and even beyond them in the new species and in B. koloseta. In B. longirostris, however, the striaion is mainly transverse between vi and sce. The fixed chela of the chelicera has a slender acute process and one tooth in the new species and in B. koloseta, but lacks this process in B. longirostris. The chelicerae are smooth in Bdellodes iraniensis sp. nov. and in B. longirostris but have coarse reticulate striaions in B. koloseta. The new species further differs from B. koloseta in the shape of the ovipositor gland.

**Bdellodes kazernani** Ostovan & Kamali (Figs. 12-23)

Bdellodes kazernani Ostovan & Kamali, 1995: 29-43

Redescription: Female Dimensions: (of paratype): Length of idiosoma with gnathosoma 1555; length without gnathosoma 1185; breadth 955; leg I 924; leg II 938; leg III 1032; leg IV 1263; setae: vi 131; sce 23; sce 185; cl 72; c2 72; d 62; e missing; fl 0; missing; f2 missing; h1 62; h2 missing; palp 439; chelicera 347.

**Gnathosoma** (Figs. 12-14): Hypostome with six pairs of ventral setae. Chelicera smooth with two setae, not inflated. Proximal cheliceral seta closer to base than to distal seta. Movable digit with one tooth and fixed digit with a small spine. Palp chaetotaxy: coxa with one peg-like dorsal seta; basifemur with
four setae, telofemur with one seta; genu with three setae; tibiobasalar with eight setae, two long end setae (VES and DES) and one solenidion.

**Dorsum of idiosoma** (Figs. 15-17): Striae on propodosoma transverse between and behind setae vi. Striae finely broken. Internal apodemes not visible. Two pairs of eyes present, interval between eyes with transverse striae. Setae sci minute and closely associated with see, which are much longer and slightly serrated. Dorsal setae short and serrated.

**Venter** (Figs. 18-19): Anal region with only one pair of pseudoanal setae (ps) and one pair of anal setae. Genital covers with about nine pairs of ag setae each and three pairs of ag setae. No unpaired seta present between coxae IV. Ovipositor and ovipositor gland as depicted in Figs. 18-19, respectively.

**Legs** (Figs. 20-23): Chaetotaxy of segments as follows (counts do not include solenidia): coxae 4-3-4-3; trochanters 1-1-1-1; basifemora 13-12-6-4; telofemora 8-8-6-6; genua 6 setae, 5 or 6 σ - 6 setae, 3 σ - 6 setae 2 or 3 σ - 6 setae, 4 σ; tibiae 13 setae, 9 ϕ, 1 trichobothriunm - 11 setae, 6 ϕ, 1 trichobothriunm - 11 setae, 2 ϕ - 11 setae, 1 or 2 ϕ, 1 trichobothrium; tarsi 44 setae, 5 ϕ (one peg) - 44 setae, 4 ϕ - 45 setae, 1 trichobothriunm - 36 setae, 1 trichobothrium.

**Material examined:** One paratype female from wheat and barley litter, 15 February 2001.

**Subfamily Bdellinae** Grandjean, 1938

*Bdella muscorum* Ewing

*Bdella muscorum* Ewing, 1909: 124

**Diagnosis:** This species can easily be confused with *B. longicornis* (Linnaeus), differing from the latter in that the palp basifemur has eight to eleven setae and the tibiobasalar has six, as compared to 13 or more setae on the palp basifemur, and seven on the tibiobasalar in *B. longicornis* (ATYEO, 1960).

**Female:** Length with gnathosoma 607, without gnathosoma 437, width 218, chelicera 206, palp 170.

**Distribution:** This species was described from Illinois, USA, but additional material was examined from other States (including Alaska) and from Germany, Czechoslovakia and Iceland (ATYEO, 1960, ATYEO & TUXEN, 1962). This is its first report from Iran.

**Material examined:** Two females in soil and litter, 7 October 2001; one female in litter of fruit tree, 3 December 2001.

*Bdella longicornis* (Linnaeus)

*Acarus longicornis* Linnaeus, 1758: 618

*Bdella longicornis* (Linnaeus), Latreille, 1795: 18.

**Diagnosis:** This widespread species is closely related to *B. muscorum* Ewing and to *B. iconica* Berlese. *Bdella longicornis* can be distinguished from *B. muscorum* by having seven setae (including two apical setae) on the palp tibiobasalar rather than six, and in having interlacing minor internal apodemes on the dorsal propodosomal shield, lateral rather than mesad to the bell-shaped primary apodemes. The palp tibiobasalar of *B. iconica* is identical to that of *B. longicornis*, but the striae of the propodosomal shield are transverse medially in *B. longicornis* longitudinal medially in *B. iconica*. Color of female in life, deep pink to red, with irregular brown to dark blue blotches. Body ovoid, weakly constricted (ATYEO, 1960).

**Female:** Length (including gnathosoma) 1266, length (without gnathosoma) 922, width 158, chelicera 376, palp 405.

**Distribution:** The type locality is unknown and only given as Europe. Subsequently it was also recorded from the USA, Barro Colorado Island, Panama, Costa Rica, Cuba and Mexico. KAMALI et al. (2001) recorded it from Iran.

**Collection data:** One female in soil, 24 August 2001.

*Bdella karajiensis* sp. nov. (Figs. 24-34)

**Description:** Female (Figs. 24-31). Dimensions (n=1): Length of idiosoma with gnathosoma 1209; length without gnathosoma 862; breadth 508; leg I 770; leg II 693; leg III 785, leg IV 970; vi missing; ve 77; see missing; cl 108; c2 123; d 116; e 116; f1 108; f2 92; h1 108; h2 77; ps1 92.

**Gnathosoma** (Figs. 24-25): Hypostome with six setae ventrally. Chelicera with two long setae, distal
seta closer to chela than to proximal seta. Palp chaetotaxy: coxa with one peg-like seta; basifemur 15 setae; telofemur one seta; genu four setae; tibiotarsus four setae, two very long end setae (VES and DES) and one long solenidion.

**Dorsum** (Figs. 26-27): Striae on propodosoma transverse between setae vi but longitudinal between ve and sce. Two internal apodemes present (Fig. 15). Two pairs of eyes located lateral to setae sce with diagonal striations between each pair. Striations on propodosoma and opisthosoma sparsely or coarsely broken.

**Venter** (Figs. 28-29): Setae ps 1-3 and ad 1-3 present. Genital covers with eight pairs of g-setae but position of ag-setae renders an examination impossible. No setae between coxae IV. Ovipositor and ovipositor gland depicted in Figs. 28 and 29, respectively.

**Legs** (Figs. 30-31): Chaetotaxy of segments (counts do not include solenidia): coxae 5(6)- 6(7)- 5-4; trochanters 1 - 1 - 2 - 2; basifemora 14 - 11 - 11 - 4; telofemora 14 - 11 - 11 - 10; genua 10 setae, 1 pair of duplex setae, 4 α - 10 setae, 1 pair of duplex setae – 10, 1 pair of duplex setae – 10, 1 σ; tibiae 16 setae, 1 pair of duplex setae, 1 trichobothrium, 4 ϕ - 17 setae, 3 ϕ - 17 setae, 1 ϕ - 14, 1 trichobothrium; tarsi 32 setae, 5 ω - 30 setae, 3 ω - 29 setae, 1 trichobothrium – 27 setae, 1 ω, 1 trichobothrium. Macrosetae on telofemora III-IV clearly longer than those on I-II. Dorsoterminal setae dt 1-3 on tarsi I-IV plumose. Most setae on venter of tarsi plumose.

**Tritonymph** (Figs. 32-34). Dimensions (n = 1): Length with gnathosoma 916; length without gnathosoma 716; breadth (level of setae sci and sce); leg I 547; leg II 501; leg III 585; leg IV 678; setae: ve missing, ve 54; sci missing; sce 85; c1 85; c2 92; d 85; e 85; f1 77; f2 62; h1 77; h2 62; ps1 77.

Differs from the female as follows: hypostome with five pairs of setae ventrally; palpfemur with 11 or 12 setae; chaetotaxy of following leg segments: basifemora 10 – 8 – 9 – 4; telofemora 10 – 10 – 9 – 6; genua 8 setae 1 pair of duplex setae, 3 σ - 8 setae, 1 pair of duplex sete – 7 setae, 1 pair of duplex setae – 8 setae, 1 σ; tibiae 12 setae, 1 pair of duplex setae, 1 trichobothrium, 3 ϕ - 12 setae, 3 ϕ - 13 setae 1 ϕ - 11, 1 trichobothrium; tarsi 28 setae, 5 ω - 26 setae, 2 ω - 25, 1 trichobothrium – 23 setae, 1 trichobothrium, 1 ω.

Tibia of one of the legs II with a small peg-like solenidion, but absent on the other tibia. Genital area with five pairs of g - setae and eight to nine ag-setae.

**Remarks:** This species is similar to *B. longicornis* and closely related to *B. muscorum*. It differs from both in that the striae are transverse between vi but longitudinal between ve and sce, instead of transverse on most of the propodosoma of the former two species. It further differs from *B. muscorum* in that the palp basifemur has 15 setae and the palp tibiotarsus has six setae, instead of 8-11 and five, respectively. Genu I of *B. muscorum* bears one solenidion and one pair of duplex solenidia whereas the new species has four solenidia and one pair of duplex solenidia.

**Type Material:** The holotype female (SRB-20011-5) and paratype tritonymph (SRB-20011-6) were collected from litter beneath ornamental plant vases and from soil 29 September and 18 July 2001, respectively.

**Subfamily Cyrtinae** Grandjean, 1938

*Cyta latirostris* Hermann

*Seirus latirostris* Hermann, 1804: 62

*Bdella robustirostris* Ewing, 1913: 112


**Diagnosis:** This species is recognizable by having a trichobothrium on tibia IV, setae ve approximate to posterior sensillae sci, two eyes and an unpaired eye anteromedially to anterior sensillae vi, an unpaired seta between coxae IV and the chelicerae short and inflated basally, with the fixed chela with two teeth. Females are dark red with dark blue spots, with a short, robust body. (*Atyco*, 1960; *Den Heyer*, 1981).

**Female (n=5):** Length of idiosoma with gnathosoma 565, without gnathosoma 424, width 279, chelicera 133, palp 194.

**Distribution:** In Iran this species was found on different plants, such as *Malus domestica* (Borkh.), *Camellia sinensis* (L.), *Andropogon annulatus* (Forssk) and in soil samples from Mazandaran, Tehran and west Azarbaijan (*Kamali et al.*, 2001).
MATERIAL EXAMINED: Four females found in litter under flowers in greenhouses and litter under fruit trees, 23 September, 9 May and 15 August 2001; one female from soil samples, 15 April 2001; one male in litter under ornamental flowers in greenhouses, 7 October; one larva from soil samples, 18 August 2001.

SUBFAMILY SPINIBDELLINAE Grandjean, 1938
Bdella cronini Baker & Balock, 1944: 178
Spinibdella cronini (Baker & Balock),
ATYEO, 1960: 432; ATYEO, 1963: 173;
WALLACE & MAHON, 1972: 563

DIAGNOSIS: Color of female in life pale red, with darker markings dorsolaterally on propodosoma. Body elongate, strongly constricted. According to ATYEO (1960, 1963) the longitudinal or obliquely directed striae in the center of the propodosoma are a good criterion to determine this species. Tibia II has a blunt solenidion that is not recessed, the chelicerae are striated and the dorsal hypostomal setae are very short (16).

FEMALE (n=2): Length (including gnathosoma) 642, length (without gnathosoma) 509, width 279, chelicera 158, palp 194.

DISTRIBUTION: In Iran this species has formerly been collected from litter and soil samples under Onobrychis sp., Acroptilon sp., Rainier pseudoacacia (L.), Alhagi camelarum (Fisch), Trifolium sp., Glycyrhiza glabra (L.), Astragalus sp. and Sophora alopecuroides (L.) from Hamedan and East Azarbaijan (KAMALI et al., 2001).

MATERIAL EXAMINED: one protonymph, 10 tritonymphs and 10 males in litter of Pistacia vera, 23 September, 2000; Two females in soil samples, 15 April, 2000.

FAMILY CUNAXIDAE, THOR, 1902
SUBFAMILY COLEOSCIRINAE, Den Heyer, 1978
Coleoscirus magdalenaev Den Heyer, 1978, 533

DIAGNOSIS: SMILEY (1992) synonymized C. magdalenaev with C. simplex (Ewing) without stating his reasons or comparing it with the type specimens of the latter. However, the chaetotaxy of the basife-

mora, 5-6-5-2 and of the telofemur, 5-5-4-3 of C. magdalenaev as compared to 5-6-4-2 and 4-4-4-3, respectively in C. simplex, distinguish it from the latter. Coleoscirus magdalenaev further differs from C. simplex by genu I bearing four normal solenidia and five setae, instead of three normal and one microsolenidion and four setae, genu II, with three solenidia that are subequal in length instead of one elongate and two apparently short solenidia. SMILEY (1992) refers to the solenidia on tibia I-III of C. simplex as elongate but in C. magdalenaev they are short and blunt distally (DEN HEYER, 1978). Therefore C. magdalenaev is reinstated as a valid species. The Iranian specimens were compared with the type specimens of C. magdalenaev and fully resemble them.

DISTRIBUTION: This species previously known only from South Africa is now reported for the first time from Iran.

FEMALE. Dimensions: Length with gnathosoma 570, length without gnathosoma 340, width 245, chelicera 182, palp 158.

MALE. Dimensions: Length with gnathosoma 397μ, length without gnathosoma 247μ, width 136μ, chelicera 133μ, palp 131μ.

MATERIAL EXAMINED: 11 females and one male from soil, 10 and 15 August, 2001.

SUBFAMILY CUNAXOIDINAE Den Heyer, 1979
Eupalus subterraneus Berlese, 1916; 293.
Cunaxoides subterraneus (Berlese),
Baker & Hoffmann, 1948: 245.
Pulaeus niloticus Zaher & El Bishlawy,
Pulaeus subterraneus (Berlese),
DEN HEYER, 1980: 18

DIAGNOSIS: This species is distinguished by possessing a punctuated dorsal shield with setae c1 and d about half the length of e and by having an elongate mushroom like or balloon-like apophysis on the palp tibiotarsus.

FEMALE. Dimension: Length with gnathosoma 473, Length without gnathosoma 364, width 165, chelicera 109, palp 56.
This species is reported from Iran for the first time.

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**REFERENCES**


