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Oribatid mites (Acari: Oribatida) associated with pastures of Shiraz township, Fars province, Iran

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A b s t r a c t : In the faunistic survey of oribatid mites (Acari: Oribatida) in pastures of Shiraz township, Fars province, southern Iran, conducted during 2011-2013, totally 64 species from 45 genera and 32 families were collected and identified. Among them, 2 genera and 6 species were first records for Iran. Mites were extracted by means of Berlese funnels, cleared in lactophenol and mounted in Hoyer's medium on microscopic slides.

K e y w o r d s : Acari, Oribatida, Fars, Iran, pasture, fauna.

Introduction

Oribatid mites (suborder Oribatida or Cryptostigmata), also called "moss mites" or "beetle mites" are one of the numerically dominant arthropod groups in most soils (NORTON & BEHAN-PELLETIER 2009). These mites are among the most abundant soil-living microarthropods reaching densities of up to 500.000 individuals per square meter in forest soil (SCHATZ & BEHAN-PELLETIER 2008). Some oribatid mites act as intermediate hosts of tapeworms of the Anoplocephalidae (STUNKARD 1937; AKRAMI et al. 2007). Oribatid mites have different feeding guilds such as phyllophage, xylophage, mycophage, bacteriophage, phycophage, zoophage, coprophage and necrophage (PANDE & BERTHET 1973). Shiraz township is located in the south of Iran and the northwest of Fars province. It is built in a green plain at the foot of the Zagros mountains 1,500 metres (4,900 feet) above sea level. In the not too distant past, we had very little information on the oribatid mites of Iran, and Iran was one of the few completely uninvestigated countries of the world in relation to the taxonomic study on its oribatid mite fauna, but in the past decade, our information and knowledge of Iranian oribatid mites has increased. Some of studies on Iranian oribatid mite fauna are BAYARTOGTOKH & AKRAMI 2000a,b 2014; HADDAD IRANI-NEJAD et al. 2000, 2003; MAHUNKA & AKRAMI 2001; AKRAMI & SABOORI 2001, 2004; AKRAMI 2007, 2008; AKRAMI & COETZEE 2007; AKRAMI & SUBIAS 2007, 2008, 2009; AKRAMI et al. 2009, 2011; AKRAMI & EBRAHIMI 2013a,b and AKRAMI & BEHMANESH 2013a,b.

Materials and methods

During 2011-2013, in the course of a faunistic survey of oribatid mites in pastures of Shiraz township, Fars province, Iran, soil samples were taken from different locations and were transferred to the Acarological laboratory of Shiraz University. The mites were extracted by Berlese funnel. Oribatid mites were removed, cleared in lactophenol and mounted in Hoyer's medium on glass microscopic slides for identification. The slides were placed in an oven at 45°C for 10 days and then the specimens were examined using a light microscope (Zeiss Standard 20). All specimens deposited in the Acarological Collection of the Department of Plant Protection, College of Agriculture, Shiraz University, Iran.

Results

During this study, 64 species belonging to 45 genera and 32 families of oribatid mites from pastures of Shiraz township were collected and identified, of which 2 genera and 6 species are reported for the first time from Iran (marked by one asterisk), two species have described for the first time (marked by two asterisks) and 11 species are reported for the first time from Fars province (marked by three asterisks).

Hypochthoniidae BERLESE, 1910

***Hypochthonius luteus* OUDEMANS, 1917**

Material examined: Fars, Bajgah, 10.IV.2011, (N: 29°32'; E: 52°35'; 1810 m), soil under safflower (*Carthamus* sp.), leg. F. EBRAHIMI.

Distribution: Holarctic region, northeast of Oriental region, New Zealand (SUBIAS 2014) and Iran (BAYARTOGTOKH & AKRAMI 2000a).

Cosmochthoniidae GRANDJEAN, 1947

Cosmochthonius (C.) ponticus* GORDEEVA, 1980**

Material examined: Fars, Kaftarak, 14.VIII.2011, (N: 29°33'; E: 52°42'; 1427 m), soil and litter under knotweed plants (*Polygonum* sp.), leg. F. EBRAHIMI.

Distribution: Mediterranean oriental (SUBIAS 2014) and Iran (AKRAMI & SABOORI 2012).

***Cosmochthonius (C.) reticulatus** GRANDJEAN, 1947**

Material examined: Fars, Dasht Arjan, 16.I.2012, (N: 29°34'; E: 52°57'; 2042 m), forest, soil under oak trees (*Quercus* sp.), leg. F. EBRAHIMI.

Distribution: Mediterranean and Brazil (SUBIAS 2014).

Notes: This is the first record of this species for Iran.

Haplochthoniidae HAMMEN, 1959***Haplochthonius (H.) chamela* MAHUNKA & MEJIA-RECAMIER, 1998**

Material examined: Fars, Dasht Arjan, 16.I.2012, (N: 29°34'; E: 52°57'; 2042 m), soil under safflower, leg. F. EBRAHIMI.

Distribution: Mexico (SUBIAS 2014); Iran (AKRAMI & BEHMANESH unpublished data).

***Haplochthonius (H.) sanctaeluciae* BERNINI, 1973**

Material examined: Fars, Sarvestan, 21.V.2011, (N: 29°24'; E: 52°47'; 1556 m), soil under alfalfa (*Medicago sativa* L.), leg. F. EBRAHIMI.

Distribution: Southern Palaearctic region (Mediterranean and west central Asia), Senegal, Neotropical region (Galapagos and Chile) (SUBIAS 2014) and Iran (AKRAMI & SABOORI 2012).

***Haplochthonius (H.) simplex* (WILLMANN, 1930)**

Material examined: Fars, Shiraz, 21.V.2011, (N: 29°40'; E: 52°29'; 1601 m), soil under camel's thorn (*Alhagi camelorum* FISCH.), leg. F. EBRAHIMI.

Distribution: Semicosmopolitan: Holarctic, Ethiopian (Senegal and Congo) and Oriental regions (SUBIAS 2014); Iran (AKRAMI & SABOORI 2012).

Sphaerochthoniidae GRANDJEAN, 1947***Sphaerochthonius splendidus* (BERLESE, 1904)**

Material examined: Fars, Kaftarak, 14.VIII.2011, (N: 29°33'; E: 52°42'; 1427 m), soil and litter under knotweed plants, leg. F. EBRAHIMI.

Distribution: Pantropical, Neotropical and subtropical regions and Iran (SUBIAS 2014; BAYARTOGTOKH & AKRAMI, 2000a).

Epilohmanniidae OUDEMANS, 1923***Epilohmannia cylindrica cylindrica* (BERLESE, 1904)**

Material examined: Fars, Shiraz, 17.IV.2011, (N: 29°40'; E: 52°29'; 1601 m), soil under alfalfa, leg. F. EBRAHIMI.

Distribution: Cosmopolitan (SUBIAS 2014); Iran (AKRAMI & SABOORI 2004).

Lohmanniidae BERLESE, 1916***Heptacarus supertrichus** PIFFL, 1967**

Material examined: Fars, Ghalat, 10.VIII.2011, (N: 29°48'; E: 52°19'; 2072 m), soil under oriental plane trees (*Platanus orientalis* L.), leg. F. EBRAHIMI.

Distribution: Iraq and Mexico (SUBIAS 2014).

Notes: This is the first record of this species for Iran.

***Papillacarus aciculatus* (BERLESE, 1905)**

M a t e r i a l e x a m i n e d : Fars, Dasht Arjan, 16.I.2012, (N: 29°34'; E: 52°57'; 2042 m), soil under oak trees, leg. F. EBRAHIMI.

D i s t r i b u t i o n : West central Palaearctic region, Vietnam (SUBIAS 2014) and Iran (AKRAMI & SABOORI 2004).

***Lohmannia paradoxa* (HALLER 1884)= *L. loebli* MAHUNKA, 1974**

M a t e r i a l e x a m i n e d : Fars, Fathabad, 15.V.2011, (N: 29°17'; E: 52°39'; 1529 m), soil under alfalfa, leg. F. EBRAHIMI.

D i s t r i b u t i o n : Western Palaearctic region (SUBIAS 2014) and Iran (AKRAMI & SABOORI 2004).

***L o h m a n n i a* sp.**

M a t e r i a l e x a m i n e d : Fars, Shiraz, 12.I.2012, (N: 29°40'; E: 52°29'; 1601 m), soil under plane- tree maple (*Acer pseudoplatanus* L.), leg. F. EBRAHIMI.

***Thamnacarus* longisetosus** BULANOVA-ZACHVATKINA, 1987**

M a t e r i a l e x a m i n e d : Fars, Kaftarak, 22.VII.2010, (N: 29°30'; E: 52°50'; 1409 m), soil under oat plants (*Avena* sp.), leg. F. EBRAHIMI.

D i s t r i b u t i o n : Southern Palaearctic region (SUBIAS 2014).

N o t e s : This is the first record of this genus and species for Iran.

E u p h t h i r a c a r i d a e JACOT, 1930***Acrotritia ardua* (KOCH, 1841)**

M a t e r i a l e x a m i n e d : Fars, Maharloo, 17.IV.2011, (N: 29°26'; E: 52°43'; 1479 m), soil under alfalfa, leg. F. EBRAHIMI.

D i s t r i b u t i o n : Cosmopolitan (SUBIAS 2014); Iran (BAYARTOGTOKH & AKRAMI 2000a).

P h t h i r a c a r i d a e PERTY, 1841***Phthiracarus lentulus**** (KOCH, 1841)**

M a t e r i a l e x a m i n e d : Fars, Bajgah, 19.VIII.2011, (N: 29°32'; E: 52°25'; 1810 m), soil and litter under alfalfa, leg. F. EBRAHIMI.

D i s t r i b u t i o n : Holarctic region, Angola (SUBIAS 2014) and Iran (BAYARTOGTOKH & AKRAMI 2000a).

Phthiracarus furvus* NIEDBALA, 1983**

M a t e r i a l e x a m i n e d : Fars, Ghalat, 23.VII.2011, (N: 29°48'; E: 52°19'; 2072 m), soil under barley (*Hordeum* sp.), leg. F. EBRAHIMI.

D i s t r i b u t i o n : Eastern Mediterranean region (SUBIAS 2014) and Iran (AKRAMI & SABOORI 2004).

Malacoethridae BERLESE, 1916

***Malacoethrus* sp.**

Material examined: Fars, Ghalat, 10.II.2011, (N: 29°48'; E: 52°19'; 2072 m), soil and litter under oak trees, leg. F. EBRAHIMI.

Nothridae BERLESE, 1896

***Nothrus biciliatus* KOCH, 1841**

Material examined: Fars, Shiraz, 25.VI.2011, (N: 29°40'; E: 52°29'; 1601 m), soil and litter under knotweed plants, leg. F. EBRAHIMI.

Distribution: Germany, Netherlands, Sweden, Austria, Denmark, Hungary, Italy, Japan, Ireland (BALOGH & MAHUNKA 1983) and Iran (AKRAMI & SABOORI 2012).

Licnodamaeidae GRANDJEAN, 1954

***Licnodamaeus pulcherrimus* (PAOLI, 1908)**

Material examined: Fars, Ghalat, 10.IV.2011, (N: 29°32'; E: 52°35'; 1810 m), soil under safflower, leg. F. EBRAHIMI.

Distribution: Palaearctic region (SUBIAS 2014); Iran (AKRAMI 2007).

Gymnodamaeidae GRANDJEAN, 1954

***Jacotella frondeus* (KULIJEV, 1979)= *Plesiodamaeus ornatus* MAHUNKA, 1979**

Material examined: Fars, Bajgah, 14.V.2011, (N: 29°32'; E: 52°35'; 1810 m), soil under wild oat (*Avena fatua* L.), leg. F. EBRAHIMI.

Distribution: Eastern Mediterranean (SUBIAS 2014) and Iran (AKRAMI & SABOORI 2012).

Aleurodamaeidae PASCHOAL & JOHNSTON, 1985

***Aleurodamaeus setosus* (BERLESE, 1883)**

Material examined: Fars, Dasht Arjan, 25.VIII.2011, (N: 29°34'; E: 52°57'; 2042 m), soil under oak trees, leg. F. EBRAHIMI.

Distribution: Southern Palaearctic (SUBIAS 2014) and Iran (AKRAMI 2007).

Microzetidae GRANDJEAN, 1936

***Berlesezetes aegypticus* (BAYOUMI, 1977)**

Material examined: Fars, Koohanjan, 27.IV.2012, (N: 29°18'; E: 52°53'; 1475 m), soil under bermuda grass (*Cynodon dactylon* (L.)), leg. F. EBRAHIMI.

Distribution: Egypt (SUBIAS 2014) and Iran (AKRAMI 2007).

D a m a e o l i d a e GRANDJEAN, 1965

***Fosseremus laciniatus* (BERLESE, 1905)= *F. quadripertitus* GRANDJEAN, 1965**

M a t e r i a l e x a m i n e d : Fars, Shiraz, 16.III.2012, (N: 29°40'; E: 52°29'; 1601 m), soil under Johnson grass (*Sorghum halepense* (L.)), leg. F. EBRAHIMI.

D i s t r i b u t i o n : Cosmopolitan (SUBIAS 2014); Iran (AKRAMI 2007).

O p p i i d a e SELLNICK, 1937

***Lasiobelba (Antennoppia) heterosa* (WALLWORK, 1964)**

M a t e r i a l e x a m i n e d : Fars, Fathabad, 18.VIII.2011, (N: 29°17'; E: 52°39'; 1529 m), soil under alfalfa, leg. F. EBRAHIMI.

D i s t r i b u t i o n : Chad and Iran (SUBIAS 2014; AKRAMI & SUBIAS 2007).

Ramusella (Ramusella) sengbuschi* s. str. HAMMER, 1968**

M a t e r i a l e x a m i n e d : Fars, Ghalat, 25. V.2011, (N: 29°48'; E: 52°19'; 2072 m), soil under oriental plane trees, leg. F. EBRAHIMI.

D i s t r i b u t i o n : Pantropical (except Ethiopian), subtropical (SUBIAS 2014) and Iran (AKRAMI & SUBIAS 2007).

***Ramusella (Insculptoppia) insculpta* (PAOLI, 1908)**

M a t e r i a l e x a m i n e d : Fars, Shiraz, 14.IV.2012, (N: 29°40'; E: 52°29'; 1601 m), soil under safflower, leg. F. EBRAHIMI.

D i s t r i b u t i o n : Palaearctic region, Vietnam (SUBIAS 2014); Iran (AKRAMI & SUBIAS 2007).

***Ramusella (Insculptoppia) farsi* AKRAMI, SUBIAS & BEHMANESH, 2011**

M a t e r i a l e x a m i n e d : Fars, Shiraz, 14.IV.2012, (N: 29°32'; E: 52°35'; 1810 m), soil under safflower, leg. F. EBRAHIMI.

D i s t r i b u t i o n : Iran (AKRAMI et al. 2011).

***Ramusella (Rectoppia) damavandica* AKRAMI & SUBIAS, 2008**

M a t e r i a l e x a m i n e d : Fars, Dasht Arjan, 19.II.2012, (N: 29°34'; E: 52°57'; 2042 m), soil under oak trees, leg. F. EBRAHIMI.

D i s t r i b u t i o n : Iran (AKRAMI & SUBIAS 2008).

***Discoppia (Cylindroppia) cylindrica* (PEREZ-INIGO, 1965)**

M a t e r i a l e x a m i n e d : Fars, Dasht Arjan, 19. II.2012, (N: 29°34'; E: 52°57'; 2042 m), soil under oak trees, leg. F. EBRAHIMI.

D i s t r i b u t i o n : Southern Palaearctic, Oriental and Central America (SUBIAS 2014) and Iran (AKRAMI & SUBIAS 2007).

***Rhinoppia obsoleta* (PAOLI, 1908)**

M a t e r i a l e x a m i n e d : Fars, Shiraz, 18.IV.2011, (N: 29°40'; E: 52°29'; 1601 m), soil under lamb's quarters goosefoot (*Chenopodium album* L.), leg. F. EBRAHIMI.

D i s t r i b u t i o n : Palaearctic region, Greenland, New Zealand, Hawaii (SUBIAS 2014); Iran (AKRAMI & SUBIAS 2007).

C a r a b o d i d a e KOCH, 1837

***Austrocarabodes* sp.**

M a t e r i a l e x a m i n e d : Fars, Dasht Arjan, 16.VII.2011, (N: 29°34'; E: 52°57'; 2042 m), soil under oak trees, leg. F. EBRAHIMI.

T e c t o c e p h e i d a e GRANDJEAN, 1954

***Tectocephus minor* BERLESE, 1903**

M a t e r i a l e x a m i n e d : Fars, Dasht Arjan, 16.VII.2011, (N: 29°34'; E: 52°57'; 2042 m), soil under oak trees, leg. F. EBRAHIMI.

D i s t r i b u t i o n : Semicosmopolitan (SUBIAS 2014); Iran (BAYARTOGTOKH & AKRAMI 2000a).

***Tectocephus velatus* (MICHAEL, 1880)**

M a t e r i a l e x a m i n e d : Fars, Bajgah, 21.V.2012, (N: 29°32'; E: 52°35'; 1810 m), soil under safflower, leg. F. EBRAHIMI.

D i s t r i b u t i o n : Cosmopolitan (SUBIAS 2014); Iran (BAYARTOGTOKH & AKRAMI 2000a).

D a m a e i d a e BERLESE, 1896

***Belba* sp.**

M a t e r i a l e x a m i n e d : Fars, Shiraz, 2.IV.2012, (N: 29°40'; E: 52°29'; 1601 m), soil under field bindweed (*Convolvulus arvensis* L.), leg. F. EBRAHIMI.

P a s s a l o z e t i d a e GRANDJEAN, 1954

***Passalozetes (P.) africanus* GRANDJEAN, 1932**

M a t e r i a l e x a m i n e d : Fars, Shiraz, 14.V.2011, (N: 29°40'; E: 52°29'; 1601 m), soil under bermuda grass, leg. F. EBRAHIMI.

D i s t r i b u t i o n : South central Palaearctic region, Guinea (SUBIAS 2014) and Iran (BAYARTOGTOKH & AKRAMI 2000a).

Scutoverticidae GRANDJEAN, 1954

***Scutovertex perforatus** SITNIKOVA, 1975**

Material examined: Fars, Dasht Arjan, 17.IV.2012, (N: 29°39'; E: 52°59'; 2042 m), soil under safflower, leg. F. EBRAHIMI.

Distribution: Western Palaearctic region (SUBIAS 2014).

Notes: This is the first record of this species for Iran.

Tegoribatidae GRANDJEAN, 1954

Tectoribates ornatus* (SCHUSTER, 1958)**

Material examined: Fars, Sarvestan, 8.VIII.2012, (N: 29°24'; E: 52°47'; 1623 m), soil under fig trees (*Ficus* sp.) and safflower, leg. F. EBRAHIMI.

Distribution: Palaearctic and Neotropical regions (SUBIAS 2014); Iran (AKRAMI & BASTAN unpublished data).

Achipteriidae THOR, 1929

***Achipteria* sp.**

Material examined: Fars, Bajgah, 3.VII.2011, (N: 29°32'; E: 52°35'; 1810 m), soil under camel's thorn, leg. F. EBRAHIMI.

Ceratozetidae JACOT, 1925

***Ceratozetes (C.) macromediocris* SHALDYBINA, 1970**

Material examined: Fars, Ghalat, 10.II.2013, (N: 29°48'; E: 52°19'; 2072 m), soil under barley, leg. F. EBRAHIMI.

Distribution: Eastern Europe (SUBIAS 2014) and Iran (AKRAMI & SABOORI 2012).

Punctoribatidae THOR, 1937

***Punctoribates (P.) liber* PAVLITCHENKO, 1991**

Material examined: Fars, Koohanjan, 1.V.2012, (N: 29°18'; E: 52°53'; 1475 m), soil under bermuda grass, leg. F. EBRAHIMI.

Distribution: Mediterranean region and Iran (SUBIAS 2014).

Zetomotrichidae GRANDJEAN, 1934

***Zetomotrichus persicus* AKRAMI & BEHMANESH, 2013**

Material examined: Fars, Dasht Arjan, 19.II.2012, (N: 29°34'; E: 52°57'; 2042 m), soil under oak trees, leg. F. EBRAHIMI.

Distribution: Iran (AKRAMI & BEHMANESH 2013a).

Zetomotrichus lacrimans* GRANDJEAN, 1934**

Material examined: Fars, Dasht Arjan, 17.IV.2012, (N: 29°39'; E: 52°59'; 2042 m), soil under safflower, leg. F. EBRAHIMI.

Distribution: Mediterranean, Ethiopian, Philippines (SUBIAS 2014) and Iran (AKRAMI & BASTAN 2012).

***Ghilarovus* hispanicus** SUBIAS & PEREZ-INIGO, 1977**

Material examined: Fars, Shiraz, 3.II.2011, (N: 29°40'; E: 52°29'; 1601 m), soil under hairy crab grass (*Digitaria sanguinalis* (L.)), leg. F. EBRAHIMI.

Distribution: Western Mediterranean (SUBIAS 2014).

Notes: This is the first record of this genus and species for Iran.

Oribatulidae THOR, 1929***Oribatula (Oribatula) pallida* BANKS, 1906**

Material examined: Fars, Dasht Arjan, 19.II.2012, (N: 29°34'; E: 52°57'; 2042 m), soil under oak trees, leg. F. EBRAHIMI.

Distribution: Holarctic region, India (SUBIAS 2014); Iran (AKRAMI et al. 2008).

***Oribatula (O.) tibialis* (NICOLET, 1855)**

Material examined: Fars, Fathabad, 19.VII.2012, (N: 29°17'; E: 52°39'; 1529 m), soil under alfalfa, leg. F. EBRAHIMI.

Distribution: Holarctic region, India (SUBIAS 2014); Iran (AKRAMI et al. 2008).

***Oribatula (Zygoribatula) connexa* BERLESE, 1904**

Material examined: Fars, Ghalat, 4.IV.2011, (N: 29°48'; E: 52°19'; 2072 m), soil under wild oat, leg. F. EBRAHIMI.

Distribution: Subtropical region (SUBIAS 2014) and Iran (BAYARTOGTOKH & AKRAMI 2000b).

***Oribatula (Z.) undulata* BERLESE, 1916**

Material examined: Fars, Ghalat, 4.IV.2011, (N: 29°48'; E: 52°19'; 2072 m), soil under wild oat, leg. F. EBRAHIMI.

Distribution: Pantropical and subtropical regions (SUBIAS 2014) and Iran (AKRAMI & SABOORI 2012).

***Oribatula (Z.) sp. nr. skrjabini* (BULANOVA-ZACHVATKINA, 1967)**

Material examined: Fars, Kaftarak, 7.I.2011, (N: 29°33'; E: 52°43'; 1426 m), soil under cypress grass (*Cyperus* sp.), leg. F. EBRAHIMI.

Distribution: *Oribatula (Z.) skrjabini* is distributed in southern Palaearctic region (SUBIAS 2014).

Scheloribatidae GRANDJEAN, 1933

***Scheloribates fimbriatus* THOR, 1930**

Material examined: Fars, Bajgah, 4.VII.2011, (N: 29°32'; E: 52°35'; 1810 m), soil under alfalfa, leg. F. EBRAHIMI.

Distribution: Cosmopolitan (SUBIAS 2014); Iran (BAYARTOGTOKH & AKRAMI 2000b).

Scheloribates praeincisus* (BERLESE, 1910)**

Material examined: Fars, Sarvestan, 14.II.2011, (N: 29°24'; E: 52°47'; 1556 m), soil under oak trees, leg. F. EBRAHIMI.

Distribution: Pantropical and subtropical regions (SUBIAS 2014) and Iran (BAYARTOGTOKH & AKRAMI 2000b).

Protoribatidae J. & P. BALOGH, 1984

***Protoribates (P.) paracapucinus* (MAHUNKA, 1988)**

Material examined: Fars, Maharloo, 18.VI.2011, (N: 29°20'; E: 52°48'; 1551 m), soil under safflower, leg. F. EBRAHIMI.

Distribution: Oriental region, Congo, Ecuador and Iran (SUBIAS 2014; BAYARTOGTOKH & AKRAMI 2000b).

Protoribates (Triaunguis) bipilis* (HAMMER, 1972)**

Material examined: Fars, Shiraz, 9.V.2011, (N: 29°40'; E: 52°29'; 1601 m), soil under lamb's quarters goosefoot, leg. F. EBRAHIMI.

Distribution: Polynesia, Philippines (SUBIAS 2014) and Iran (AKRAMI & SABOORI 2012).

Haplozetidae GRANDJEAN, 1936

Baloghiella foveolata AKRAMI & EBRAHIMI, 2013**

Material examined: Fars, Maharloo, 28.VIII.2011, (N: 29°21'; E: 52°48'; 1491 m), soil under knotweed plants, leg. F. EBRAHIMI.

Distribution: Iran (AKRAMI & EBRAHIMI 2013b).

***Peloribates* sp.**

Material examined: Fars, Dasht Arjan, 19.II.2012, (N: 29°34'; E: 52°57'; 2042 m), soil under oak trees, leg. F. EBRAHIMI.

***Haplozetes fusifer* (BERLESE, 1908)**

Material examined: Fars, Dasht Arjan, 4.VI.2011, (N: 29°34'; E: 52°57'; 2042 m), soil under camel's thorn, leg. F. EBRAHIMI.

Distribution: Mediterranean, India (SUBIAS 2014); Iran (AKRAMI & BEHMANESH 2013b).

Phenopelopidae PETRUNKEVITCH, 1955***Eupelops* sp.**

Material examined: Fars, Ghalat, 25.V.2011, (N: 29°48'; E: 52°19'; 2072 m), soil under oriental plane trees, leg. F. EBRAHIMI.

Galumnidae JACOT, 1925***Galumna iranensis* MAHUNKA & AKRAMI, 2001**

Material examined: Fars, Poshtepar, 18.I.2011, (N: 29°19'; E: 52°50'; 1476 m), soil under field bindweed, leg. F. EBRAHIMI.

Distribution: Iran (MAHUNKA & AKRAMI 2001).

***Galumna karajica* MAHUNKA & AKRAMI, 2001**

Material examined: Fars, Bidzard, 12.V.2012, (N: 29°17'; E: 52°39'; 1509 m), soil under safflower, leg. F. EBRAHIMI.

Distribution: Iran (MAHUNKA & AKRAMI 2001).

***Pilogalumna tenuiclava* (BERLESE, 1908) = *Allogalumna boevi* KRIVOLUTSKAJA, 1952**

Material examined: Fars, Shiraz, 18.IV.2011, (N: 29°40'; E: 52°29'; 1601 m), soil under lamb's squarers goosefoot, leg. F. EBRAHIMI.

Distribution: Holarctic region (SUBIAS 2014); Iran (AKRAMI 2007).

Allogalumna dentirostrata* BAYARTOGTOKH & AKRAMI, 2014**

Material examined: Fars, Dasht Arjan, 19.II.2012, (N: 29°34'; E: 52°57'; 2042 m), soil under oak trees, leg. F. EBRAHIMI.

Distribution: Iran (BAYARTOGTOKH & AKRAMI 2014).

***Allogalumna* sp. nr. *integer** (BERLESE, 1904)**

Material examined: Fars, Ghalat, 10.II.2013, (N: 29°48'; E: 52°19'; 2072 m), soil under barley, leg. F. EBRAHIMI.

Distribution: *Allogalumna integer* is distributed in south central Europe (SUBIAS 2014).

Acrogalumna lanceolata* BAYARTOGTOKH & AKRAMI, 2014**

Material examined: Fars, Khanezenyan, 7.IV.2011, (N: 29°40'; E: 52°10'; 1953 m), soil under camel's thorn, leg. F. EBRAHIMI.

Distribution: Iran (BAYARTOGTOKH & AKRAMI 2014).

Pergalumna microtuberculata* BAYARTOGTOKH & AKRAMI, 2014**

Material examined: Fars, Shiraz, 14.IV.2012, (N: 29°40'; E: 52°29'; 1601 m), soil under safflower, leg. F. EBRAHIMI.

Distribution: Iran (BAYARTOGTOKH & AKRAMI 2014).

Pergalumna persica AKRAMI & EBRAHIMI, 2013**

Material examined: Fars, Sarvestan, 14.IV.2011, (N: 29°18'; E: 52°47'; 1623 m), soil under safflower, leg. F. EBRAHIMI.

Distribution: Iran (AKRAMI & EBRAHIMI 2013a).

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