

HARVESTMEN FAUNA OF THE SOĞUKSU NATIONAL PARK, ANKARA (ARACHNIDA: OPILIONES)

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ABSTRACT: In spring, summer and autumn of 2003-2005, a total of 80 adults of harvestmen were collected from Ankara, Kızılcahamam Soğuksu National Park, Çamlıdere Çamkoru forests and Bolu Gerede forests, and identified. In the National Park and its environment, 4 species in 3 genera and 2 families were determined. Description, habitat, ecology and geographical distribution of the species were given. Together with *Opilio parietinus*, *Zacheus crista*, *Dicranolasma giljarovi* and *D. scabrum* the species number that recorded from Turkey raised to 41.

KEY WORDS: Harvestmen, Fauna, The Soğuksu National Park, Opiliones, Turkey.

Over 5.000 species were found on the world in Opiliones, up to now. Several studies were performed on fauna, taxonomy and ecology of harvestmen. Harvestmen have three suborders: Cyphophthalmi, Laniatores and Palpatores. Many investigations on harvestmen are still continuing in Europe. Roewer (1952, 1956) worked on European, Anatolian, Iranian and Afgan fauna. Silhavy (1966) worked on the Caucasian fauna. Starega (1966, 1978) performed faunistic investigations in the Middle and East Europe. Martens (1965, 1978, 1986) studied in Balkans, the Aegean Islands, Crete, Rhodos, Kos and the Mediterranean Islands. Cokendolpher (1990) worked on the fauna of Egypt. Chevrizov (1979) worked on harvestmen fauna of the East Europe and Russia. Snegovaya (1999) published the harvestmen fauna of Azerbaijan. Gruber (1969, 1979) collected many harvestmen from Turkey, and gave some records.

There are a few articles on the harvestmen fauna in Turkey. Most of them were published by foreigner arachnologists. The first article on harvestmen by native entomologist/arachnologist belongs to Özdikmen (2006). He gave nomenclatural changes for some Laniatores genera. In Turkey, 1 species in 1 family in Cyphophthalmi, and 40 species in 21 genera and 5 families in Palpatores, were determined according to the references. However, there is no any record in Laniatores.

In this study, 4 species in *Opilio*, 5 species in *Zacheus* and 3 species in *Dicranolasma* were recorded. The aim of this investigation is to record the harvestmen fauna of Ankara Soğuksu National Park and its environment.

MATERIALS AND METHODS

In spring, summer and autumn of 2003-2005, a total of 80 adults of harvestmen were collected from Ankara, Kızılcahamam Soğuksu National Park, Çamlidere Çamkoru forests and Bolu Gerede forests. The specimens were collected in daytime with pens, aspirator and hand pots, and preserved in 70 % ethanol. The tubes containing specimens were labeled; their location data were recorded, and carried to the laboratory. The identification was made with a SMZ10A Nikon Stereo microscope, and the keys of Silhavy (1966), Gruber (1969), Chevrizov (1979) and Hillyard & Sankey (1989) were used. The specimens were deposited in the Arachnological Museum of Kırıkkale University (KUAM).

RESULTS

The specimens were collected from different parts of Ankara Soğuksu National Park and the around forests, and *Opilio parietinus* (Degeer, 1778) and *Zacheus crista* (Brulle 1832) in Phalangidae, *Dicranolasma giljarovi* Silhavi, 1966 and *D. scabrum* (Herbst, 1798) in Dicranolasmatidae were determined from the area. The descriptions of the species are given below together with their localities and distributions.

Opilio parietinus (Degeer, 1778)

Opilio parietinum, Degeer 1778, Mem. pour servir a l'histoire des Insectes. 7: p.116.

Description: Body length: male 5.0-7.0 mm, female 6.0-9.0 mm. Body grey and brown with a rather obscure saddle (**fig. 1**). Dorsum is covered with black, acute tipped tubercles. Trident absent. Ventrums grey. There are dark spots on the coxa. Chelicerae robust, yellowish brown. Pedipalps yellowish brown. Legs long, yellowish brown with darker annulations. Length of second leg 35.0-55.0 mm. Femora in male angular in cross-section. Penis with two concave plates, rounded and without setae, on distal section of corpus at junction of glans (**fig. 2**). Base of glans is wide. Proximal part of penis is wider than distal, and getting narrower.

Material examined: Ankara, Kızılcahamam, Soğuksu National Park, 12.09.2003, 7♀♀; Çamlidere, Çamkoru Forest, 16.07.2005, 4♂♂; Bolu, Gerede Forests, 29.10.2004, 3♀♀, 03.06.2005, 2♂♂.

Habitat, Ecology and Distribution: They live in forests, gardens and fields. They were seen near walls, marshes in rural and urban area. They are adult in the period of July-December. They were recorded from Anatolia, Europe, Caucasus, the Middle Asia and North Africa (Çorak, 2004; Hillyard & Sankey, 1989; Snegovaya, 1999).

Zacheus crista (Brulle 1832)

Phalangium crista Brulle 1832, Exp. Moree, 3 I (2): p. 60.

Description: Body length: male 4.0-5.0 mm, female 4.5-6.0 mm. Saddle present (**fig. 3**). Ocularium with two rows of 7-8 acute black tipped

tubercles on top. Opisthosomal tubercles furnished cross parallel rows. Cheliceral apophyses is placed in middle dorsal of basal segment of chelicerae, and cross black bands on lateral side of distal segment. Tarsus of pedipalp is twice longer than of tibia. Legs are fine and long. Length of second leg 15-28 mm. Femora angular, short spines present at corner. Penis is flat in ventral view, and it is curved in lateral view (**fig. 4**). Penis head is triangularous.

Material examined: Ankara, Kızılcahamam, Soğuksu National Park, 15.07.2004, 4♂♂; 20.11.2004, 3♀♀; Çamlıdere, Çamkoru Lake Side, 29.10.2005, 1♂, 5♀♀; Bolu, Gerece Forests, 24.11.2004, 4♀♀.

Habitat, Ecology and Distribution: They are mostly found under stones and trunks in forests, fields and grasslands. The specimens were collected from grasslands and soil zones in summer months. This species is recorded from Anatolia, Carpathos, Crete, Rhodos, Kos, Lesbos, Naxos and Paros in Mediterranean; Apsheron peninsula and Lenkoran region in Caucasia (Çorak, 2004; Martens, 1965; Gruber, 1969, 1979; Hillyard & Sankey, 1989; Snegovaya, 1999).

***Dicranolasma giljarovi* Silhavi, 1966**

Dicranolasma giljarovi Silhavi 1966, Neue Troguliden aus dem Kuban-Gebiet und dem Kaukasus, Senck. biol. 47, 2: 151-154.

Description: Body length: male 3.0-3.5 mm, female 3.5-4.5 mm. Inside of the cucullus is provided with teeth. Eyes are placed on the mid-lateral of the cucullus (**fig. 5**). Basal segment of chelicerae is strong and swollen. The spinous process presents in the middle of basal segment. There are a few denticles on ventrum of coxa of pedipalpus. Patella is strong. Length of second leg is 9.0-12.0 mm. Base of the corpus of penis is concave; proximal of the corpus is larger than the distal. Penis glans looks like an arrow head (**fig. 6**).

Material examined: Ankara, Kızılcahamam, Soğuksu National Park, 06.04.2003, 3♂♂, 07.07.2005, 1♀; Çiğirler Village, 13.08.2004, 4♀♀; Stream Bed of the Mineral Water Factory, 24.06.2003, 1♂; Çamlıdere, Çamkoru Forest, 09.05.2004, 2♀♀; 31.10.2004, 3♀♀; 07.07.2005, 3♀♀; Çamkoru Lake Side, 28.07.2004, 1♂.

Habitat, Ecology and Distribution: The members of this species live in soil zone in moist places, under stones and near of walls. They distribute in Rhodos, Carpathos, Caucasia and Anatolia (Çorak, 2004; Martens, 1965; Starega, 1978; Snegovaya, 1999).

***Dicranolasma scabrum* (Herbst, 1798)**

Trogulus scabrum Herbst 1798, Naturgeschichte der Insekten – Gattung *Opilio*, Natursystem der Ungeflügelten Insekten. Zweytes Heft, 1-26, Berlin.

Description: Body length: male 3.5-4.5 mm, female 4.0-6.0 mm. Only outside of the cucullus is provided with teeth, small arms that its tip is shape in a fork extent from lateral side (**fig. 7-8**). Eyes are placed on the

middle of cucullus. Body with dark transversal and parallel spots on dorsum. A few small spicules are noticed on dorsum of basal segment of chelicerae. Coxa of pedipalp is narrow. Acute tipped tubercles are noticed on dorsum and ventrum of femora (**fig. 9**). Lengths of second leg is 10.0-14.0 mm. Acute tipped tubercles are found on trochanter, femora and patella. All segments except tarsus are angular in cross section. Base of penis is flat, proximal of corpus is wider than distal. Thick spines that placed on corpus form transversal and parallel rings.

Material examined: Ankara, Kızılcahamam, Soğuksu National Park, 23.10.2004, 2♀♀, 15.06.2005, 5♀♀; Çiğirler Village, 06.11.2004, 3♀♀, 11.10.2005, 2♀♀; Stream Bed of the Mineral Water Factory, 04.06.2004, 4♀♀; Çamlıdere, Çamkoru Forest, 27.11.2004, 4♀♀, 18.07.2005, 1♀; Çamkoru Lake Side, 13.07.2004, 1♀, 18.07.2005, 7♀♀.

Habitat, Ecology and Distribution: They live under stones in soil zone on sides of rivers and moist places. They distribute in Rhodos, Carpathos, Caucasia and Anatolia (Çorak, 2004; Martens, 1965; Starega & Chevrizov, 1978; Snegovaya, 1999).

DISCUSSION

In this study, harvestmen were collected in the daytime. But majority of harvestmen are nocturnal. To collect nocturnal species, it is necessary to study at the night. In addition, only adult harvestmen were examined. Many collected nymphs were not identified because of non-developed genital organs.

Harvestmen generally distribute on clear and protected zones. That is why, they are importance indicator species for natural areas. Also in this investigation, harvestmen were collected from only clean places. For instance, they have never been collected from dirty places such as get dirty by sewerage water.

In another study, harvestmen were collected from some other regions in Turkey (Çorak, 2004). According to the results of this study, *Opilio parietinus* was recorded from Konya, Kırşehir and Kırıkkale. *Zacheus crista* was recorded from Kırıkkale, *Dicralosma giljarovi* was recorded from Van, and *D. scabrum* was recorded from Van and Kırıkkale.

All of these species are palearctic (Roewer, 1959; Starega, 1978; Martens, 1978, 1986; Gruber, 1969). Harvestmen distribute in Europe, Mediterranean, the Middle East, Caucasia and the Middle Asia but some species such as *Z. crista* usually have Mediterranean character.

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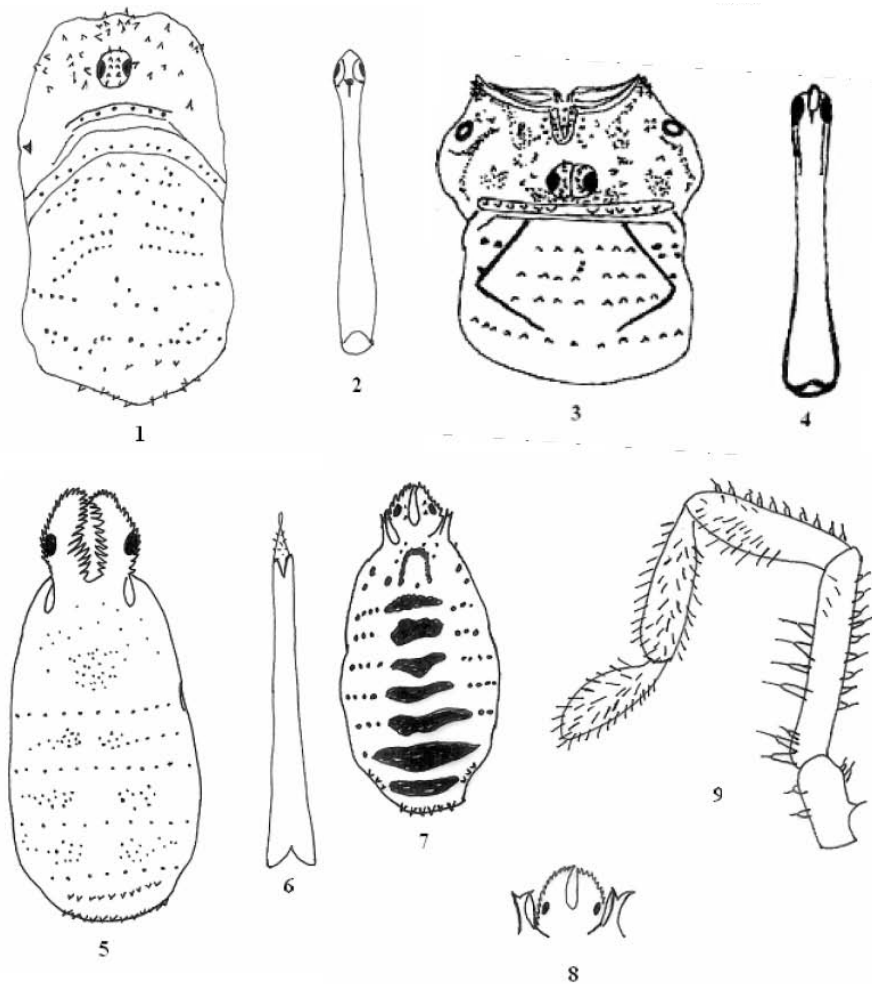
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Figs. *Opilio parietinus*, 1. Body, dorsal view, 2. Penis; *Zacheus crista*, 3. Body, dorsal view, 4. Penis; *Dicranolasma giljarovi*, 5. Body, dorsal view, 6. Penis; *Dicranolasma scabrum*, 7. Body, dorsal view, 8. Cucullus, 9. Pedipalp, lateral view.