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Hydrachnellae studies in Iran*

HOSSEIN SEPASGOSARIAN

Abstract

Studies of the water mite fauna in Iran were carried out for the first time in 1976 by Dr. Carl Bader, Switzerland, Prof. Dr. Jürgen Schwoerbel, Germany, and the author. This paper shows the results achieved so far.

Introduction

While information regarding water mites of India, Afghanistan and other countries of the region were available earlier (Lundblad 1934, Viets 1926, 1956, Walter 1928, Sokolow 1940, 1948, Imamura 1966), the water mite fauna of Iran had not been studied until 1976.

Considering the geographical location of Iran, a very rich fauna should be expected. Iran is zoogeographically located between the Palearctics and the Paleotropics and these two regions overlap in the southern part of Iran. Most parts of Iran are located in arid and semi-arid zones. The central plateau is bound by the east-west continuation of the Caucasian range extending to the Hindukush mountains, locally known as the Alborz range, and by the Zagros Mountains, flanking the western and southern boundaries. The annual precipitation in Iran varies from 10 cm to more than 150 cm. According to the yearbook No. 1374 (21.3.1994 - 20.3.1995) of the Iranian Water Authority, the annual average precipitation in that time was 256 mm; with its minimum 25 mm/m² at Shahdad, and maximum above 2000 mm/m² at Bandar Anzali.

The first data on Iranian water mites were provided by Bader, Schwoerbel and the author in 1976 (see References). Later, numerous new taxa at different levels have been described or provided with a new status by the authors. Regarding the supra-specific level, it concerned the new family Nilotoniidae and the new subgenus *Iranomegapus*. During the years 1976-1978, material of fresh water mites from rivers, quaterns (= underground drainage canals), springs, ponds and lakes was collected in 19 provinces by Dr. C. Bader, Prof. Dr. J. Schwoerbel and the author, according to the methods described by Bader (1976a). It is planned to collect further material in the remaining 6 provinces which were not yet studied. Up to now, 65 species belonging

* The paper is dedicated to the memory of the late Dr. Carl Bader.

to 36 genera and 19 families have been collected from 627 localities in 19 Iranian provinces. Among them, 30 species and one subspecies turned out to be new, and 35 species were recorded for the first time from Iran (Bader 1976a, 1981, 1988; Bader & Sepasgosarian 1979a, 1979b, 1979c, 1979d, 1980a, 1980b, 1980c, 1980d, 1987; Schwoerbel & Sepasgosarian 1976, 1978). These data include also a new species of *Unionicolina* and revision of the *crassipes*-group of species in this genus (Hewers 1984). Moreover, five species of the genus *Arrenurus* from a lake have been re-described (Schwoerbel & Sepasgosarian 1977). Studies on zoogeographical relations and on phylogeny of water mites were carried out as well (Sepasgosarian 1977). The subterranean mites were also studied (the Bashteh river in the province Fars), and a new species and subspecies were found (Schwoerbel & Sepasgosarian 1980).

Although Iran is located between the Caspian Sea in the North and the Persian Gulf in the South, only one new genus and one new species of the family Halacaridae has been identified so far, namely *Caspihalacarus hyrcanus* Viets, 1928. Extensive studies have yet to be carried out in this field in Iran. As a first step, a booklet introducing this group of mites has already been published in German and Persian language (Bartsch & Sepasgosarian 1978).

Results

Below, a list of species already reported in Iran and their localities is presented. The new taxa described from this country are marked by an asterisk (*). For further details regarding particular localities see Sepasgosarian (1976, 1978).

Family: Arrenuridae Thor, 1900

Genus: *Arrenurus* Dugès, 1833

Arrenurus (A.) *affinis* Koenike, 1887; A. (A.) *bicuspidator* Berlese, 1885; A. (A.) *compactus* Piersig, 1894; A. (A.) *crenatus* Koenike, 1896; A. (A.) *radiatus* Piersig 1894; A. (*Micruracanthus*) *octagonus* Halbert, 1906.

Localities: East Azarbayjan, Gilan (Bandar Anzali Lagoon), Kermanschah, Hamedan, Fars, Esfahan, Mazandaran, Kordestan.

Family: Athuridae Thor, 1900

Genus: *Albaxona* Szallay, 1944

Albaxona sp.; Locality: Fars.

Genus: *Albia* Thor, 1899

Albia sp.; Locality: Mazandaran, Lorestan, Esfahan.

Genus: *Aturus* Kramer, 1875

Aturus sp.

Locality: Tehran, Kerman, Mazandaran, Lorestan, Bakhtiari, Hamedan, Khorassan, East and West Azarbayjan.

Genus: *Axonopsis* Piersig, 1893

Axonopsis (*Navinaxonopsis*) *abnormipes* Cook, 1967; *A. (Hexonopsis) inferorum* Motas & Tanasachi, 1947.

Localities: Kermanshah, Fars, Lorestan.

Genus: *Brachypoda* Lebert, 1879

Brachypoda sp.; Locality: Mazandaran.

Genus *Erebaxonopsis* Motas & Tanasachi, 1947

Erebaxonopsis brevipes Motas & Tanasachi, 1947; Locality: Fars.

Genus: *Frontipodopsis* Walter, 1919

Frontipodopsis reticulatifrons persicus Schwoerbel & Sepasgosarian, 1980 (*).

Locality: Mazandaran.

Genus: *Kongsbergia* Thor, 1899

Kongsbergia sp.; Locality: Mazandaran, Semnan, Kermanshah, Tehran.

Genus: *Ljana* Thor, 1898

Ljana sp.; Locality: Mazandaran.

Family: Eylaidae Leach, 1815

Genus: *Eylais* Latreille, 1796

Eylais hamata Koenike, 1897; *E. extends* (O. F. Müller, 1778).

Localities: Bakhtiari, Khorassan.

Family: Feltriidae Viets, 1926

Genus: *Feltria* Koenike, 1892

Feltria sepasgozariani Bader, 1976 (*); Locality: Khorassan, East & West Azarbayjan.

Family: Hungarohydracaridae Motas & Tanasachi, 1959

Genus: *Hungarohydracarus* Szalay, 1934

Hungarohydracarus subterraneus Szalay, 1943; Locality: Fars.

Family: Hydrachnidae Leach, 1815

Genus: *Hydrachna* Müller, 1776

Hydrachna (H.) cruenta cruenta O. F. Müller, 1776; *H. (Rhabdohydrachna) sepasgozariani* Bader, 1981 (*).

Localities: Gûri-Göl See, East Azarbayjan, Gilan (Bandar Anzali Lagoon).

Family: Hydrodromidae Viets, 1936

Genus: *Hydrodroma* Koch, 1837

Hydrodroma despiciens despiciens (O. F. Müller, 1776); *H. rheophila* Cook, 1967; *H. torrenticola* (Walter, 1908).

Localities: Mazandaran, Fars, Kordestan.

Family: Hydrovolziidae Thor, 1905

Genus: *Bharatavolzia* Cook, 1967

Bharatavolzia cooki Schwoerbel & Sepasgosarian, 1980 (*); Locality: Fars.

Genus: *Hydrovolzia* Thor, 1905

Hydrovolzia persica Bader & Sepasgosarian, 1980 (*); Locality: Mazandaran, Tehran, Fars.

Family: Hydryphantidae Piersig, 1896

Genus: *Hydryphantes* Koch, 1841

Hydryphantes sp.; *H. (Georgella) helveticus* (Haller, 1882).

Localities: Gilan (Bandar Anzali Lagoon), Khorassan, Kermanshah.

Genus: *Panisopsis* Viets, 1926

Panisopsis circularis Schwoerbel & Sepasgosarian, 1976 (*); Locality: Mazandaran, Fars

Genus: *Protzia* Persig, 1896

Protzia alborziensis Bader & Sepasgosarian, 1980 (*); *Protzia persica* Bader & Sepasgosarian, 1980 (*); *Protzia zagrosiensis* Bader & Sepasgosarian, 1980 (*); *Prozia (Calonyx)* sp.

Localities: Semnan, Mazandaran, Tehran, Fars, Kermanshah, Lorestan.

Genus: *Thyas* Koch, 1836

Thyas sp.; Locality: Mazandaran, Fars.

Genus: *Trichothyas* Viets, 1926

Trichothyas (Lundbladia) alborzensis Bader & Sepasgosarian, 1979 (*).

Locality: Tehran (Aderan), Mazandaran.

Family: Hygrobatidae Koch, 1842

Genus: *Atractides* Koch, 1837

Atractides (Iranomegapus) baderi Schwoerbel & Sepasgosarian, 1976 (*); *A. nahavandii* Schwoerbel & Sepasgosarian, 1976 (*).

Localities: Khorassan, Esfahan, Kerman, Mazandaran, Fars, Lorestan, Bakhtiari, Kermanshah, Hamedan, Saveh, Tehran, Kordestan, East & West Azarbayjan.

Genus: *Hygrobates* Koch, 1837

Hygrobates (Dekabates) qanaticola Schwoerbel & Sepasgosarian, 1976 (*).

Localities: Lorestan, Hamedan, Bakhtiari, Tehran, Kordestan, Khorassan, East and West Azarbayjan, Semnan, Kermanshah, Gilan.

Family: Krendowskiidae Viets, 1926

Genus: *Krendowskia* Piersig, 1895

Krendowskia sp.; Locality: Kermanshah, Fars.

Family: Lebertiidae Thor, 1900

Genus: *Lebertia* Neuman, 1880

Lebertia (Pseudolebertia) lineata Thor, 1906.

Localities: Semnan, Esfahan, Tehran, Kerman, Mazandaran, Kermanshah, Lorestan, Hamedan, Bakhtiari, Khorassan, East & West Azarbayjan, Fars.

Family: Limnesiidae Thor, 1900

Genus: *Limnesia* Koch, 1836

Limnesia sp.; Locality: Gilan (Bandar Anzali Lagoon), Kermanshah, Hamedan, Khorassan, Kordestan, East & West Azarbayjan.

Family: Mideopsidae Koenike, 1910

Genus: *Mideopsis* Neuman, 1880

Mideopsis orbicularis (O. F. Müller, 1776); Locality: Mazandaran, Lorestan, Esfahan, Fars.

Family: Nilotoniidae Viets, 1929 (*sensu* Bader & Sepasgosarian, 1979)

Genus: *Nilotonia* Thor, 1905

Nilotonia boettgeri Bader & Sepasgosarian, 1980 (*); *N. rackae* Bader & Sepasgosarian, 1980 (*); *N. (Nilotonia) schwoerbeli* Bader & Sepasgosarian, 1979 (*); *N. (Dartia) vietsi* Bader & Sepasgosarian, 1980 (*).

Localities: Khorassan, Lorestan, East & West Azarbayjan, Mazandaran, Kermanshah.

Family: Pionidae Thor, 1900

Genus: *Forelia* Haller, 1882

Forelia sp.; Locality: Kermanshah, Lorestan, Khorassan, Kordestan, East & West Azarbayjan.

Genus: *Piona* Koch, 1842

Piona sp.; Locality: Kermanshah.

Family: Sperchontidae Thor, 1900

Genus: *Sperchon* Kramer, 1877

Sperchon (Mixosperchon) afzalipouri Bader & Sepasgosarian, 1979 (*); *Sperchon (M.) beckeri* Bader & Sepas., 1984 (*); *Sperchon (M.) beneckeii* Bader & Sepas., 1982 (*); *Sperchon (M.) bispinosus* Bader & Sepas., 1982 (*); *Sperchon (Hispidosperchon) amuzgari* Bader & Sepas., 1979 (*); *Sperchon (Hispidosperchon) hispidus* Koenike, 1895 (*); *Sperchon (S.) fundamentalis* Bader & Sepas., 1980 (*).

Localities: Tehran, Kerman, Mazandaran, Fars, Esfahan, Kermanshah, Lorestan, Hamedan, Bakhtiari, Semnan, Khorassan, Kordestan, East & West Azarbayjan.

Family: Torrenticolidae Piersig, 1902

Genus: *Torrenticola* Piersig, 1896

Torrenticola (T.) baueri Bader & Sepasgosarian, 1987 (*); *Torrenticola (T.) jasmineae* Bader, 1988 (*); *Torrenticola (R.) ramini* Bader, 1988 (*); *Torrenticola (R.) wiljae* Bader, 1988 (*).

Localities: Tehran, Kerman, Mazandaran, Fars, Kermanshah, Esfahan, Lorestan, Khorassan, Kordestan, East & West Azarbayjan.

Genus: *Monactractides* Viets, 1926

Monactrectides sepasi (Bader, 1988) (*); Locality: Mazandaran.

Family: Unionocolidae Oudemans, 1909

Genus: *Neumania* Lebert, 1879

Neumania sp.; Locality: Gilan (Bandar Anzali Lagoon), Fars.

Genus: *Unionicola* Haldeman, 1842

Unionicola gilani Hevers, 1984 (*)

Locality: Gilan (Bandar Anzali Lagoon), Kermanshah, Kordestan.

Remarks

Hitherto gained results from studies of Iranian water mites suggest that:

1. Members of the genera *Arrenurus*, *Atractides*, *Hygrobates*, *Lebertia*, *Sperchon*, and *Torrenticola* are dominant and widely distributed.
2. The fauna of Iranian quanats consists primarily of species of *Hygrobates* and *Atractides*, followed by *Sperchon* and *Torrenticola*.
3. The fauna of the Bandar Anzali Lagoon with its recorded 8 genera is rich.
4. Brooks in the forests of the Caspian region and in the Zagros Mountains have a rich water mite fauna. In one Caspian Sea area 16 genera have been found.

Recently several water mite species known from Iran have been also found in Turkey: *Feltria sepaosgozariani* Bader, 1981; *Hydrachna sepaosgozariani* Bader, 1981; *Hydrovolzia persica* Bader & Sepasgosarian, 1980; *Nilotonia (Dartia) vietsi* Bader & Sepasgosarian, 1979; *Protzia alborziensis* Bader & Sepasgosarian, 1980 and the subspecies *anatolia* of *Hydrovolzia persica* Bader & Sepasgosarian, 1980 (Dr. Özkan, the University of Erzurum: pers. comm.).

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Author's address:

Prof. Dr. H. Sepasgosarian (Emeritus), Oberstegle 1, D-78464 Konstanz, Germany.

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