

First record of Odonata nymphs from Karun River, south-west Iran

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The Odonata are well known insects with widely distributed species around the world. Both adults and larvae are predators and consume every living prey in suitable size; they can get hold of using their functional labium, such as protozoans, crustaceans, mosquito larvae and tadpoles (Norling & Sahlén, 2005). Odonata fauna is poorly known in Iran and most of the previous studies deal with northern parts of the country (Ebrahimi et al., 2009; Heidari & Dumont, 2009 and Sadeghi, 2010). Most of the published literatures on Odonata of Iran have been based on adult specimens (e.g. Kiani & Minaei, 2009; Ebrahimi et al., 2009 and Sadeghi, 2010) and nymphs of Iranian Odonata have been less studied so far.

Karun River is the most affluent river of the country with 890 km long and pass through Ahvaz, the capital city of Khuzestan province. Aquatic fauna of Karun River has been less extensively explored (Shaverdo et al., 2013). In this study, Karun River was sampled for aquatic insects in the city of Ahvaz in south-west of Iran during 2009–2011. The sampling area alongside the Karun River, covered 7 kms of the river from Shahid Chamran University Campus to Kianpars region in Ahvaz city (ca. 16m a.s.l.) (Fig. 1). Odonata nymphs were collected from different ecological habitats such as riverside pools and river edge (e.g. in the water or among shore's vegetation such as *Phragmites*). Sweeping the water with a metal sieve or net was the main collecting method. Specimens were sorted and stored in 70% ethanol, transferred to laboratory and were identified to the lowest possible taxa based on available keys (e.g. Askew, 2004; Dumont, 1991). However, some of nymphs were too young for identification and did not treat here. Materials were deposited at Insect and Mite Collection of Ahvaz (IMCA).

As a result, 40 nymphs of one damselfly species and four dragonfly species of the order Odonata comprising five genera from four families were recorded in the present investigation from Karun River in Ahvaz. All of the species are newly reported from Khuzestan province. Species list with their distribution data in Iran and the material examined are presented.

Suborder Zygoptera

Family Coenagrionidae

Genus *Ischnura* Charpentier, 1840

Ischnura elegans (Vander Linden, 1825)

Materials: 3 specimens, 31° 21' 14"N 48° 41' 56"E, 28 August 2010; 5 specimens, 31° 20' 10"N 48° 41' 12"E, 21 October 2011; 6 specimens, 31° 21' 14"N 48° 41' 56"E, 28 October 2011; 5 specimens, 31° 18' 51"N 48° 40' 28"E, 04 November 2011.

Distribution: Bande-Amir, Bizjan village, Pole-Berenji, Beyza and Dashte Arzhan all in Shiraz vicinities of Fars prov. (Sadeghi & Mohammadalizadeh, 2009) Anzali in Gilan prov. and Yasuj-Gachsaran road in Kohgiluyeh and Boyer Ahmad prov. (Heidari & Dumont, 2002).

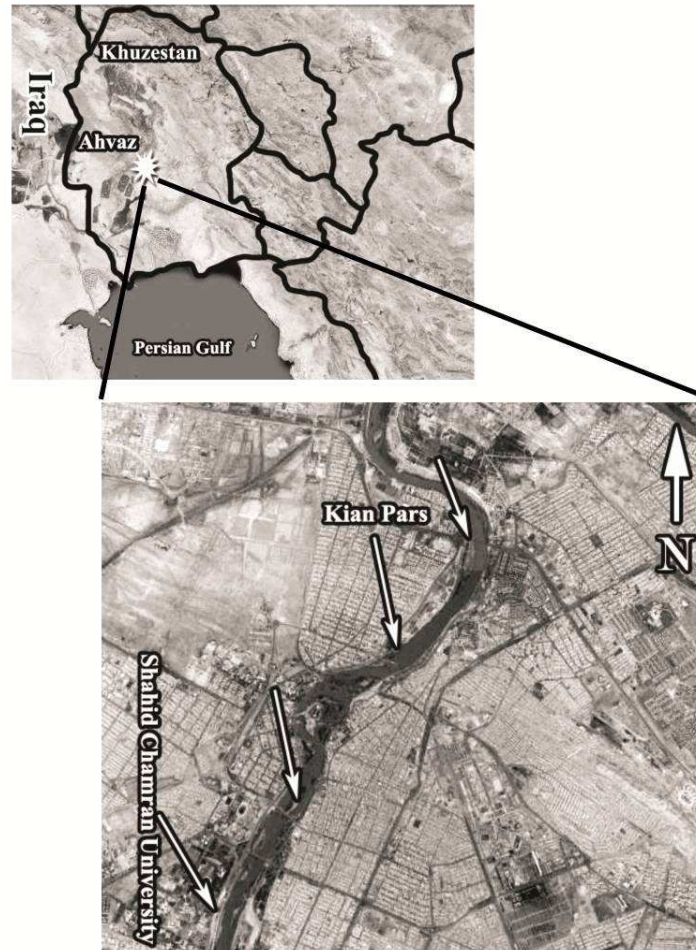


FIGURE 1. Sampling area alongside the Karun River in Ahvaz city, Khuzestan province, south-west Iran; with arrows showing the main sampling locations.

Suborder Anisoptera

Family Gomphidae

Genus *Lindenia* Selys, 1840

***Lindenia tetraphylla* (Vander Linden, 1825)**

Materials: 1 specimen, 31° 20' 10"N 48° 41' 12"E, 12 March 2010.

Distribution: Anzali in Gilan prov., Minab in Hormozgan prov., Nehbandan in Khorasan-e-Jonubi prov. and Ilam prov. (Heidari & Dumont, 2002).

Family Aeschnidae

Genus *Anax* Leach, 1815

***Anax parthenope* (Selys, 1839)**

Materials: 1 specimen, 31° 21' 14"N 48° 41' 56"E, 11 November 2011.

Distribution: Bidueyeh and Sirch in Kerman prov. and Sari in Mazandaran prov. (Yousefi Lafooraki et al., 2013), Shiraz in Fars prov. (Sadeghi & Mohammadalizadeh, 2009; Sadeghi, 2010), Seguch and

Chabis in Kerman prov., Anzali and Sefid Rud in Gilan prov., Lake Parishan (Kazerun) in Fars prov., North Sistan & Balouchestan prov. and Qazvin (Heidari & Dumont, 2002). Behshahr and Amol in Mazandaran prov. (Ghahari et al., 2009).

Family Libellulidae

Genus *Crocothemis* Brauer, 1868

Crocothemis servilia (Drury, 1770)

Materials: 3 specimens, 31° 20' 10"N 48° 41' 12"E, 08 October 2011; 2 specimens, 31° 21' 14"N 48° 41' 56"E, 14 October 2011; 4 specimens, 31° 18' 51"N 48° 40' 28"E, 28 October 2011; 5 specimens, 31° 21' 14"N 48° 41' 56"E, 11 November 2011; 1 specimen, 31° 18' 51"N 48° 40' 28"E, 18 November 2011; 2 specimens, 31° 21' 14"N 48° 41' 56"E, 01 December 2011.

Distribution: Gorgan, Ghara-su River and Shahkuh in Golestan prov., Shahrud in Semnan prov., Dehdasht in Kohgiluyeh and Boyer Ahmad prov., Borujerd in Lorestan prov., Sarbaz and Iranshahr in Sistan and Balouchestan prov. (Heidari & Dumont, 2002). Marvdasht, Pole-Berenji, Shiraz-Doroodzan road, Shiraz and its vicinities in Fars prov., Poldokhtar-Andimeshk road in Lorestan prov., Pir Sohrab in Sistan and Balouchestan prov. (Kiany & Minaei, 2009; Sadeghi & Mohammadalizadeh, 2009). Amol, Babol, Behshahr, Ghaemshahr and Savadkooh in Mazandaran prov. (Ghahari et al., 2009).

Genus *Brachythemis* Brauer, 1868

Brachythemis fuscopalliata (Selys, 1887)

Materials: 1 specimen, 31° 21' 14"N 48° 41' 56"E, 28 August 2009; 1 specimen, 31° 20' 10"N 48° 41' 12"E, 09 November 2009.

Distribution: Lake Parishan (Kazerun) in Fars prov. and along the shores of Persian Gulf and Sea of Oman (Heidari & Dumont, 2002). Zarivar Lake (Marivan) in Kordestan prov. (Sadeghi & Mohammadalizadeh, 2009).

Some specimens belonging to the genera *Anax*, *Ischnura*, *Orthetrum* and *Coenagrion* could not be identified to the species level due to lack of appropriate keys for the nymphs of Iranian Odonata; therefore, they were not treated here. There are not so many identification keys to Odonata nymphs in the world and the available keys are limited to specific localities. Despite of several long rivers crossing the Khuzestan province, there is little knowledge about Odonata in this area. The four species of *Ischnura senegalensis* (Rambur, 1842), *Sympetrum fonscolombii* (Selys, 1840), *Diplacodes lefebvrii* (Rambur, 1842) and *Anax immaculifrons* Rambur, 1842 are the only recorded species from this province in the checklist of the Odonata of Iran by Heidari and Dumont (2002). We expect the number of Odonata species in Khuzestan province will be increased in future by further researches and even new species and/or new records for the province and Iran may be added. According to Sadeghi and Mohammadalizadeh (2009), the species *Brachythemis fuscopalliata* included in the 2010 IUCN Red List of threatened species (IUCN 2010). In our study, two specimens were found provisionally belonging to this threatened taxon.

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