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EASTERN MONTPELLIER SNAKE (*Malpolon insignitus fuscus*) OPHIOPHAGY BEHAVIOR FROM ZAGROS MOUNTAINS

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Herein, we present three cases of wild *Malpolon insignitus* preying on *Platyceps najadum*, *Eirenis punctatolineatus*, and *Natrix tessellata* from Iran, in addition one observation from Kurdistan of Iraq. Furthermore, we report two new records of *M. insignitus* from northwestern Iran.

Keywords: *Malpolon insignitus*; Serpentes; Lamprophiidae; Kurdistan; Iran; Iraq; diet.

Eastern Montpellier Snake, *Malpolon insignitus* (Geoffroy Saint-Hilaire, 1827) earlier known as a subspecies of *M. monspessullanus* (Carranza et al., 2006; Sindaco et al., 2013; Jablonski et al., 2015). Two subspecies are recognized, which *M. i. fuscus* (Fleischmann, 1831) exists in Iran (Safaei-Mahroo et al., 2015). Ophiophagy is a common feeding behavior in many genera of snakes such as *Cylindrophis*, *Agkistrodon*, *Lampropeltis*, *Drymarchon*, *Ophiophagus*, *Micrurus*, *Atractaspis* (Freiria et al., 2006; Greene, 1997; Jackson et al., 2004). *Malpolon* spp. feeds on snakes in the wild and captivity (Bannikov et al., 1977; De Haan, 1999) although there is scant information about the feeding habits of Eastern Montpellier Snakes in the Middle East. Snakes preying on other snakes have been reported in the wild, but most observations have occurred in captive conditions (Freiria et al., 2006). It has been stated that Montpellier snake (*Malpolon monspessullanus*) can attack and prey on other snakes such as vipers (Freiria et al., 2006; Bellairs, 1975; Gasc, 1994). Various observations of captive specimens showed that *Malpolon* in a terrarium accepts a broad variety of snakes as food (De Haan, 1999). Generally, most recorded dietary items of Eastern Mont-

pellier Snake include lizards, snakes, small mammals, birds and their eggs and large insects (Carranza et al., 2006; Jablonski et al., 2015). Furthermore, a juvenile tortoise has been reported in the *Malpolon* food items (De Haan, 1999).

The first observation took place in the mid-September 2014, at 14:43, a sub adult Eastern Montpellier Snake was preying upon the same size Slender Flat-headed Snake (*Platyceps najadum*). Salmabadi and Aliasl found these animals under a large boulder near a sprig in rocky valley, foothill habitat (34°26'59.2" N 50°37'03.7" E; 1300 m a.s.l.) in Shanyeh spring, Palang-dareh Protected area, Qom Province, Iran (Fig. 1A, B). The syntopic snakes were *Spalerosophis diadema*, *Psammophis schokari*, *Macrovipera lebetina*, and *Pseudocerastes persicus*.

On 16 June 2015 at 12:15, we found the second one in a dry seasonal riverbed situated in a cobblestone hillside; an adult 109 cm long (TL 22 cm) *M. insignitus* was swallowing a Dotted Dwarf Snake (*Eirenis punctatolineatus*) in Badr and Parishan Protected Area, Qorveh, Kordestan Province, Iran (35°02'55.4" N 47°48'14.1" E; 2432 m a.s.l.) (Fig. 1C, D). Due to our disturbance, the Eastern Montpellier Snake regurgitated the prey and after five minutes *E. punctatolineatus* died. The syntopic snakes were *Dolichophis schmidtii*, *Hemorrhoids ravergeri*, *Platyceps najadum*, *Eryx jaculus*, *Natrix tessellata*, and *Montivipera raddei*.

The third predation was observed in a creek during a field survey on the noon of 17 June 2015, at 11:17, an adult *M. insignitus* preying upon a Dice Snake (*Natrix tessellata*) in the vicinity of the Vahdat Dam

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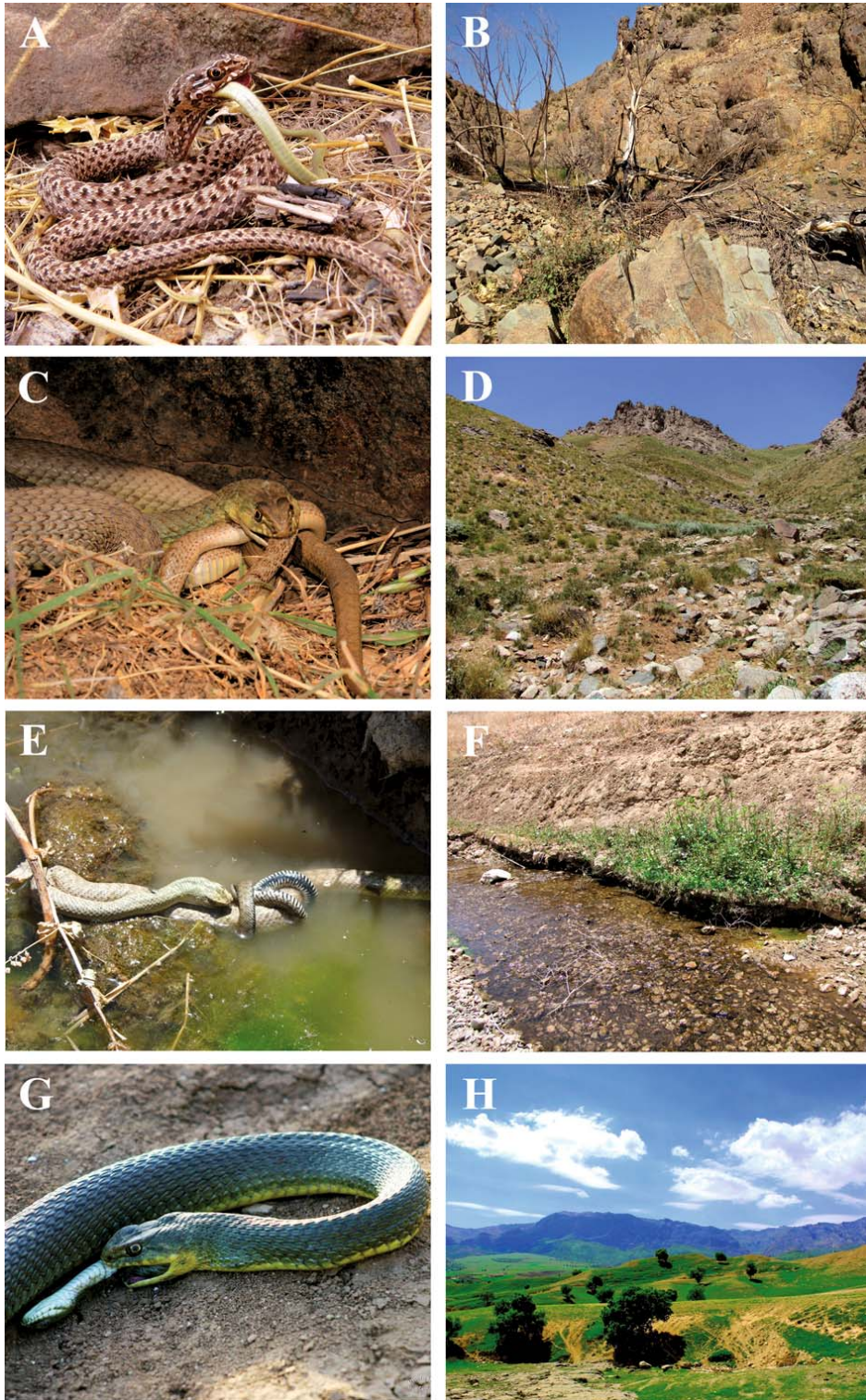


Fig. 1. Ophiophagy behavior in Eastern Montpellier Snake (*Malpolon insignitus*) in natural habitats: A, subadult *M. insignitus* swallowing *Platyceps najadum*; B, Palangdareh Protected Area, Qom Province, Iran; C, *M. insignitus* swallowing *Eirenis punctatolineatus*; D, Badr and Pari-shan Protected Area, Qorveh, Kordestan Province, Iran; E, *M. insignitus* preying upon *Natrix tessellata*; F, Vahdat Dam, Kordestan Province, Iran; G, *M. insignitus* swallowing *N. tessellata*; H, Suiraw village, Kurdistan, northern Iraq. Photographs by S. Salmabadi (A, B), B. Safaei-Mahroo (C, D), S. Almasi (E, F), and A. Ghafoor (G, H).

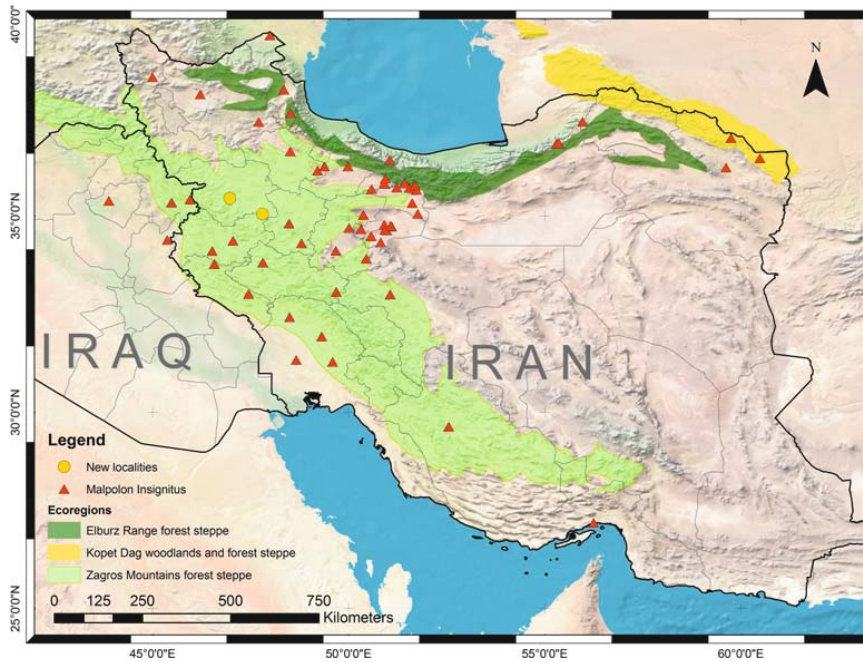


Fig. 2. Eastern Montpellier Snake (*Malpolon insignitus*) distribution in Iran and Iraq.

(35°27'9.33" N 46°58'7.23" E; 1736 m a.s.l.), 14 km north of Sanandaj city, Kordestan Province, Iran (Fig. 1E, F). Prey snake tightly coiled predator, *M. insignitus* was attempting to subdue *N. tessellata*, and the prey struggling to escape. The syntopic snakes were *Macrovipera lebetina*, *Eirenis collaris*, and *Hemorrhhois ravergieri*.

On 15 June 2010 at 12:00, an adult *M. insignitus* was swallowing *Natrix tessellata* almost completely in a steep hill near a stream, in the Suiraw village (35°20'36.14" N 45°29'5.09" E; 1121 m a.s.l.), Qara Dagh Mountain, 22 km south of Sulaymaniyah, Kurdistan, northern Iraq (Fig. 1G, H). The syntopic snakes were *Eirenis punctatolineatus*, *Dolichophis jugularis*, *Platyceps najadum*, *Spalerosophis microlepis*, and *Macrovipera lebetina*. In addition, in the same area *M. insignitus* feeds on an adult *Pseudopus apodus* (A. Ghafoor, personal observation).

The species occurs in mountainous foothills and semidesert habitats with grasslands or dense shrubbery in Iran. The greater part of the distribution of *M. i. fuscus* in Iran is limited to Zagros Mountains forest steppe, Alburz Range forest steppe and Kopet Dag woodlands and forest-steppe ecoregions (Fig. 2).

Eastern Montpellier Snake is known from southern Russia, northeast Morocco throughout northern Africa (including Lampedusa Island), and Middle East, Cyprus, Anatolia to southeast Europe extends to eastern Iran

(Jablonski et al., 2015). Iran is the easternmost global distribution of the genus *Malpolon*. In Iran this species is common especially in the western part of the country and widespread in Khorasan-Razavi, North Khorasan, Golestan, Mazandaran, Semnan, Tehran, Alborz, Qom, Esfahan, Yazd, Qazvin, Zanjan, Ardabil, East Azarbaijan, West Azarbaijan, Kermanshah, Ilam, Hamedan, Markazi, Lorestan, Khuzestan, Fars and Hormozgan Provinces (Wermer, 1917; Latifi, 1991; Leviton et al., 1992; Hasan-Zadeh et al., 1994; Frynta et al., 1997; Sindaco et al., 2013; Yousefi et al., 2015; Safaei-Mahroo et al., 2015). The snake has not been reported from Kordestan Province of Iran. The records we present here of *M. insignitus*, from Badr and Parishan Protected Area near the Vahdat Dam, are the first and second records of this snake from the Kordestan Province of Iran..

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