



## New Record of *Myriopholis macrorhyncha* (Jan, 1860) (Squamata: Leptotyphlopidae) from Isfahan Province, Central Iran

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### ABSTRACT

**Introduction and Objectives:** Snakes are among the reptiles reported from different regions of Iran. Given the importance of regional identification of snakes, reports on their distribution have attracted interest. The aim of this study was to identify a new record of snake species collected from Isfahan province, central Iran. **Materials and Methods:** In the present research, two snake specimens collected from Meshkat-Ravand in Kashan county in central Iran and were studied during May-June, 2019-2020. They were identified using their morphological and habitat characteristics compared with photographs and other data. **Results:** Each specimen had a rounded snout and eyes as two black spots on its head. The body scales (except for the head scales) were of the same size and shape, but the top of the head scales were modified into large shields. Each snake had a short tail and with a spine at the tip. The dorsal surface of the body was light red and the ventral surface a little lighter. In this study, the length of the hook-snouted worm snake, *Myriopholis macrorhyncha* specimens were 31 cm and 28 cm. **Conclusions:** *Myriopholis macrorhyncha* had not been reported from Isfahan Province before and this is the first time it is captured and identified in Kashan County located in Isfahan Province.

**Keywords:** Snake, New Record, Hook-snouted Worm Snake, *Myriopholis macrorhyncha*.

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### INTRODUCTION AND OBJECTIVE

Humans have always lived with the fear of being stung or bitten by animals such as snakes and other venomous creatures [1, 2]. For this reason, snakes have never ceased to attract the attention of humans. Not all snakes are venomous, although nonvenomous snake bites may still sometimes result in complications. Approximately 90% of all snakes are non-venomous. To date, approximately 3789 species of snakes have been identified worldwide [3] in a range of xeric to more humid habitats from Southeast Europe

to the Middle East [4]. There is always the possibility of being bitten by snakes in these habitats. However, the frequency of snake bites differs around the world due to variations in snake distribution patterns [5].

Geographically, the largest numbers of snakebite deaths occur in South and Southeast Asian and Sub-Saharan African countries [6]. As in other tropical, subtropical, and temperate countries, there are large numbers of venomous and non-venomous snake species throughout Iran from the southernmost islands in the Persian Gulf to the northernmost areas of the country [7-10]. Eighty-three snake species have been identified in Iran, of which 27 are venomous [11,12], 11

are mildly venomous, and 45 are non-venomous [7-9, 13, 14].

Non-venomous snakes or aglyphous snakes (snakes without fangs; species of the family Colubridae) have simple teeth without a path leading to venom glands. They have round pupils with round tails that taper to a point. Additionally, they have a triangular head. Non-venomous snakes are very fast and agile [13,15,16].

Venomous and non-venomous snakes bite in self-defense. In addition to experiencing effects of the venom, victims of snakebite may suffer from pain or discomfort and develop local or general bacterial and fungal infections. People with weak immune systems are more vulnerable to these infections. The diversity of bacterial species found in a snake's mouth is a determining factor in whether wound infection develops secondary to snakebite [14,17].

In addition to their medical significance, snakes play an important role in the ecological balance of nature. Despite their value, however, snakes are at heightened global extinction risk due to the misconceptions that people hold about their danger, which results in the killing of snakes around the world [18,19].

Accurate information on the distribution and habitats of any venomous or non-venomous snakes can help to preserve these reptiles for their ecological value while raising awareness of the potential risks resulting from snake bites. Accurate knowledge about any living creature, including snakes, increases public awareness of its significance and role in nature, which reduces damage to the ecosystem in each region and preserves biocapital for future generations. The aim of this study was to confirm the identity of a newly reported snake species collected from Isfahan province, central Iran, during May-June 2019-2020.

#### MATERIAL AND METHODS

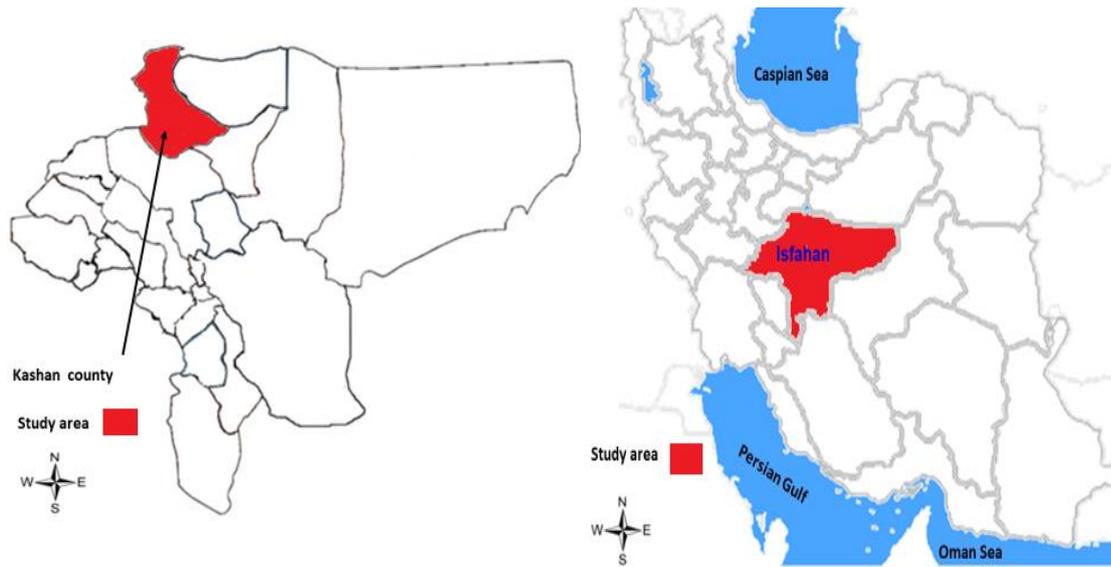
Kashan is a county located in the north of Isfahan on the Isfahan-Tehran Road in central Iran. Ravand (34°1' 9"N 51°20'40"E) is one of the cities in Kashan county (33°59'N 51°26'E) located in its central district. Ravand, seven kilometers north of Kashan on the main Qum-Kashan road, has an altitude of 990 meters. Meshkat (34°10' 37"N 51°15'54"E) is another city in Kashan county in Isfahan province

(34°00'N 51°20'E) located in central Iran (Figure 1).

This was a descriptive study of two snake specimens. One of these was captured alive in a garden house in Ravand, 10 kilometers north of Kashan. The other was found dead in a bed in one of the rooms of a residential house in Meshkat, 20 kilometers northwest of Kashan (during May-June 2019-2020). The specimens were transferred to the laboratory and their morphological characteristics, such as size, and other features were recorded. After identifying and confirming the species according to reliable resources, the living specimen was released in a garden house. The data obtained from the specimens are presented together with photographs.

#### RESULTS

Both snakes were identified as hook-snouted worm snake,, *Myriopholis macrorhyncha* (Squamata, Serpentes, Leptotyphlopidae) ; which look like earthworms in size and color, but have ring-shaped scales on their body. Two specimens were measured 31 cm and 28 cm long. They had a round snout. The eyes were two black spots on the head. The bodies scales (except for the head scales) were of the same size and shape, but the top of the head scales were modified into large shields. They had a short tail with a spine at the tip (Figure 2). The dorsal surface of the bodies were uniformly dusty pink with no lines or patterns and the ventral surface were slightly lighter.



**Figure 1;** Map showing the location of the study site, Kashan county, Isfahan province, Iran.



**Figure 2;** Two views of *Myriopholis macrorhyncha* (Jan,1860) and the hook at the bottom of its body.

## DISCUSSION

The hook-snouted worm snake. (*M. macrorhyncha*) is a species belonging to the Leptotyphlopidae family. In this family, the snakes are typically small and worm like. Their body is covered with almost round, smooth scales. The caudal part of their body is short, has a width similar to that of the head, and ends in a spine-like appendage. The lower jaw is toothless. *Myriopholis macrorhyncha* (is known as hook-snouted worm snake. These snakes live underground in burrows, so they are also called earth snakes. Because they have no use for vision, their eyes are mostly vestigial. Blind snakes are among the most primitive snakes [7, 8].

The genus *Myriopholis* is very similar to *Xerotyphlops* genus, but it differs in diameter, size and scales [20]. In Iran, these snakes are mostly found in dry orchards when the ground is dug. They feed on small insects, have a very small body, and can even move backwards. They have a smooth and slippery skin. Blind snakes are typically pink and shiny with a short tail, round head, two black tiny eye spots and an oral cavity on the head. They are typically harmless and are about 35 cm long and oviparous. The female snake lays 4 to 8 white elongated eggs [9].

*Myriopholis macrorhyncha* has been reported from different parts of Iran, especially in the provinces of East and West Azarbaijan, Tehran, Fars, Mazandaran, Kermanshah, Khuzestan, Gazvin and Golestan [20-23]. However, this species (*M. macrorhyncha*) has not previously been reported from Isfahan Province. Therefore, this report has confirmed the presence of this species to Isfahan Province.

*Myriopholis* belongs to the family Leptotyphlopidae. Hook-snouted worm snakes are also found in West Africa to Turkey, Egypt, West to East of India, Iraq, Pakistan and Iran [20, 24-30]. They are harmless and prey on insects and arthropods in their habitats. Blind snakes mostly feed on ants and insect larvae and live underground, under rocks, in hilly areas, arid regions and orchards [8]. The blind snake creates a multitude of fine channels in the soil through which air can infiltrate and thus improve soil quality. In addition, as they feed on ants and insect larvae, especially on larvae living underground, they help control the populations of soil insects, especially those of pests. They are preyed upon by birds and small mammals [7-9].

## CONCLUSIONS

Although hook-snouted worm snake (*M. macrorhyncha*) has been reported from different provinces in Iran, there has been no report of this species from Isfahan Province. The present study confirmed that *M. macrorhyncha* is found in Kashan County, north of Isfahan Province, Central Iran.

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## Conflict of interest statement

The authors report no conflict of interest.

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