

Additional records for *Ophiomorus brevipes* (Blanford, 1874) and *O. tridactylus* (Blyth, 1853) (Sauria: Scincidae) from Sistan and Baluchestan Province, Southeastern Iran

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The burrowing skinks of the genus *Ophiomorus* Duméril and Bibron, 1839 with eleven described species distributed from Greece through southwest Asia to northwestern India (Anderson and Leviton, 1966; Nilson and Andrén, 1978; Anderson, 1999; Kazemi et al., 2011). The main diagnostic exo-morphological characteristics of these lovely lizards are described as follows: body elongate; limbs greatly reduced or absent; eye small, lower eyelid with an undivided, transparent disc; ear opening absent or hidden; “nostril between an upper and lower nasal scale, both of uncertain homology; prefrontal scales separated; frontal scale hour-glass shaped due to constriction of frontal by first supraocular (except in *O. latastii*); frontoparietal and parietal distinct; postmentals two; dorsal and lateral body scales with one or sometimes two (in tandem) minute pits in central posterior part of scale” (Boulenger, 1887; Anderson and Leviton, 1966; Anderson, 1999; Greer and Wilson, 2001). Iran hosts seven species of the genus including the Iranian endemic species namely *Ophiomorus maranjabensis* Kazemi, Farhadi Qomi, Kami and Anderson, 2011; *O. nuchalis* Nilson and Andrén, 1978; *O. persicus* (Steindachner, 1867); *O. streeti* Anderson and Leviton, 1966; and native species including *O. blanfordii* (Boulenger, 1887) from Pakistan and Iran; *O. brevipes* (Blanford, 1874) from Iran, Afghanistan and Pakistan; and *O. tridactylus* (Blyth, 1853) from Iran, Pakistan and Afghanistan (Leviton, 1959; Anderson and Leviton, 1966; Anderson, 1999; Khan, 2004; Gholamifard, 2011; Kazemi et al., 2011).

Šmíd et al. (2014) recorded eight species of *Ophiomorus* for Iran, but listed seven species of the genus (the above mentioned species). Based on Ananjeva et al. (2006) perhaps the eighth member of the genus *Ophiomorus* for the herpetofauna of Iran is *O. chernovi* Anderson and Leviton, 1966, as they included it for northeast of Iran (“on the left bank of Tejen River” of Iran), whereas the holotype of this rare species is from “Pul-i-Khatun, at confluence of Geshef-Rud and Hari-Rud” in Turkmen, near the Iranian and Afghan borders (Anderson and Leviton, 1966). However *O. chernovi* not listed among the Iranian lizards by Anderson (1999), Rastegar-Pouyani et al. (2008), Kamali (2013), and Šmíd et al. (2014).



FIGURE 1. Map of Iran shows the new locality records for *Ophiomorus brevipes* (blue circle) and *O. tridactylus* (red circle) in Sistan and Baluchestan Province. Source of map from the Google earth (www.earth.google.com).

Because of the fossorial habits of *Ophiomorus*, its species have been collected and investigated less often than most other lizards in Iran. In spite of the relatively high species diversity of *Ophiomorus* (with emphasis on the endemic species), there are relatively limited published data about these scincids.

Here we record two new populations of the sand skinks from southeastern Iran. During fieldwork on the herpetofauna of Sistan and Baluchestan Province three specimens of *Ophiomorus* were collected by the first author and his field assistants from two habitats in eastern and southeastern regions of Sistan and Baluchestan Province (Fig. 1). One adult specimen of *O. brevipes* (RUZM-SO14.01) (Fig. 2a) was collected on 3rd November 2013 at about 9:00 a.m. from under a mass of dried palm leaves on the ground in a palm grove (Fig. 3a) in Sarjau (approximately 27°21'N, 62°19'E), Saravan County, east of Sistan and Baluchestan Province (Fig. 1). Further, two adult and subadult specimens of *O. tridactylus* (RUZM-SO13.01, RUZM-SO13.02) (Fig. 2b) were collected on 9th July 2014 at about 6:00 p.m. from a sandy habitat with semi-dense cover of halophilic bushes in Beris-e Kohneh region (approximately 25°9'N, 61°11'E) (Fig. 3b), Chabahar County, south east of Sistan and Baluchestan Province (Fig. 1).

For preparation of the distribution map of the present specimens in Iran, approximate coordinate of each locality was inserted in the Google earth map (www.earth.google.com) via installed Google earth software and labeled, and then the prepared map was edited (Fig. 1). The collected specimens of *Ophiomorus* are now deposited at the Razi University Zoological Museum (RUZM), Kermanshah, Iran. Counts and measurements for these specimens are given in the Table 1.

The short-legged snake skink, *O. brevipes* originally described as *Zygnopsis brevipes* Blanford 1874 based on a single specimen (ZSI 3464; Zoological Survey of India, Kolkata, India) from “haud procul a Karman in Persia meridionali” [= near Kerman in southern Persia]. Das et al. (1998) specified the type locality to “Saadatabad, southwest of Karman, Persia”. In Iran most records are from Khorasan Razavi, South Khorasan, Sistan and Baluchestan Provinces along the Afghan and Pakistani border, and other records are from Semnan, Kerman, and Hormozgan Provinces (Anderson, 1999; Rastegar-Pouyani et al., 2006; Šmíd et al., 2014).



FIGURE 2. (a) Dorsolateral view of an adult specimen of *Ophiomorus brevipes* (RUZM-SO14.01) with broken tail from Sarjou, Saravan County, and (b) dorsal view of an adult specimen of *O. tridactylus* (RUZM-SO13.01) from Beris-e Kohneh, Chabahar County, both in Sistan and Baluchestan Province, southeastern Iran. Scale bar = 1 cm. (Photo by Ali Gholamifard).

Morphologically, *O. brevipes* is distinguished from its closely related congener, *O. nuchalis* by having the nuchal scales equal to or about $1\frac{1}{2}$ times size of the dorsals (Fig. 4a), while the nuchals in *O. nuchalis* are distinctly enlarged (about $2\frac{1}{2}$ times larger than the dorsals) (Nilson and Andrén, 1978; Anderson, 1999). It is also recognized from the other Iranian congeners (*O. persicus* with 3 fingers and 2 toes, *O. maranjabensis*, *O. streeti* and *O. tridactylus* all with 3 fingers and 3 toes) by having 4 fingers and 3 toes; 22 scales around middle of body (*O. blanfordii* and *O. streeti* both with 20 scales around middle of body), and the interparietal shield that is broader than long (Fig. 4a) (Anderson and Leviton, 1966; Nilson and Andrén, 1978; Anderson, 1999; Kazemi et al., 2011).

Sphenocephalus tridactylus Blyth, 1853 is the original name for *O. tridactylus* and was described from Afghanistan (exact locality not given). The Iranian populations of this species known from the Zabol area in Sistan and Baluchestan Province (northeast of province) and from isolated localities in South Khorasan and Hormozgan Provinces (Anderson and Leviton, 1966; Anderson, 1999; Šmíd et al., 2014).

Morphologically, the three-toed sand skink, *O. tridactylus* is distinguished from its congeners by having three fingers, three toes, 22 scales around middle of body, and the parietal and prefrontals shields that are in contact with the anterior temporal and upper labials, respectively (Figs. 4b, f) (Anderson and Leviton, 1966; Anderson, 1999).

According to Anderson and Leviton (1966) and based on the current pattern of diversity and distribution of *Ophiomorus* species in Iran and adjacent areas, the Iranian Plateau can rightly be called a world hot-spot for *Ophiomorus*.



FIGURE 3. (a) Habitat of *Ophiomorus brevipes* in a palm grove in Sarjou, Saravan County, and (b) habitat of *O. tridactylus* in Beris-e Kohneh, Chabahar County, both in Sistan and Baluchestan Province. (Photo by Ehsan Damadi).

TABLE 1. The main measurements (in mm) and counts for examined specimens of *Ophiomorus brevipes* (RUZM-SO14.01) and *O. tridactylus* (RUZM-SO13.01, RUZM-SO13.02) from Sistan and Baluchestan Province. (R/L): Right/Left.

Museum number	Snout-vent length	Tail length	Head width	Head height	Upper labials (R/L)	Lower labials (R/L)	Scales around the middle of body	Scales from the postmental to level of vent	Fingers/Toes
<i>Ophiomorus brevipes</i> (RUZM-SO14.01)	84.71	-	6.03	5.08	7/7	6/6	23	119	4/3
<i>Ophiomorus tridactylus</i> (RUZM-SO13.01)	77.19	57.54	5.47	3.84	6/6	6/6	22	127	3/3
<i>O. tridactylus</i> (RUZM-SO13.02)	65.74	-	4.40	3.54	6/6	6/6	22	128	3/3

Based on Anderson (1999), local residents of Sistan refer to *O. tridactylus* as “mar-rig,” literally “sand-snake”. The most common name of these snake-like lizards among the local people in Sistan and Baluchestan Province is “roghan lis” literally “oil licking”, probably due to their shiny and greasy like skin. Other local name for *O. brevipes* in Sistan region is “mar-ke rigi” just “small snake of sand.”

Although there are a number of more or less detailed publications providing distributional and taxonomic data on the Iranian sand skinks (see above), there are still questions concerning the distribution and taxonomy of *Ophiomorus* in Iran that need to be resolved. Finally we recommend molecular studies to understand the taxonomy and phylogeny of these lovely scincids in Iran.

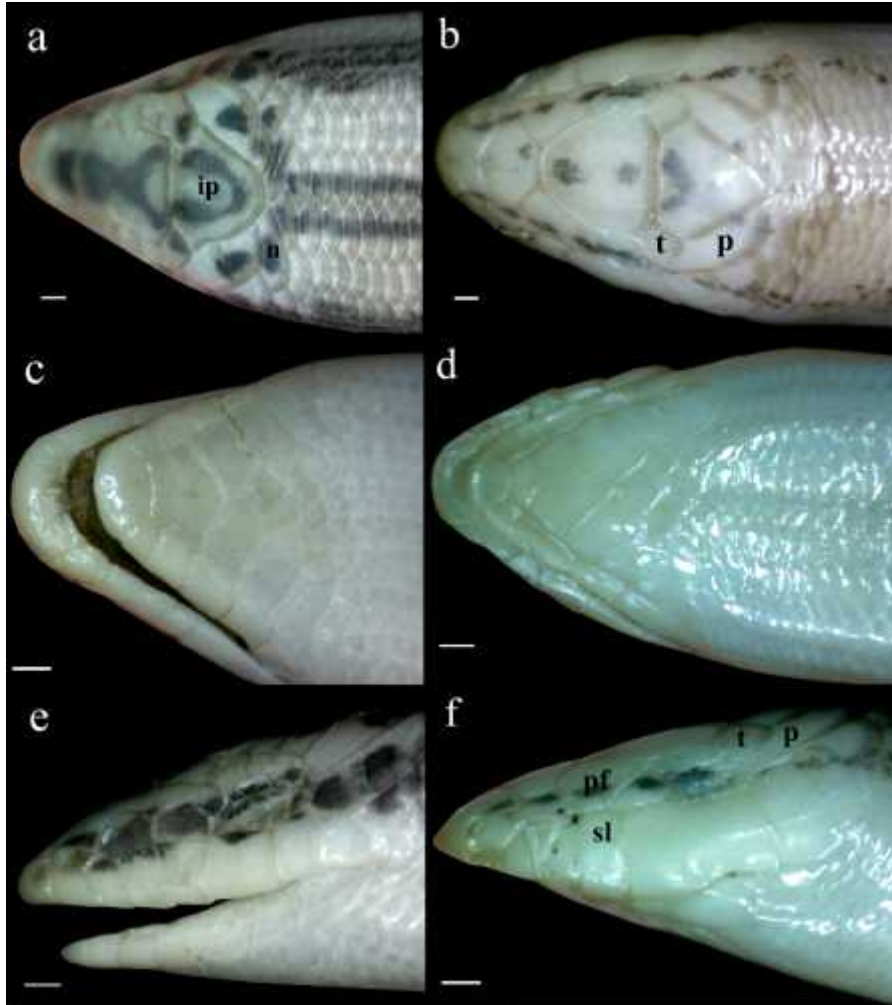


FIGURE 4. Dorsal (a, b), ventral (c, d), and lateral (e, f) views of head in *Ophiomorus brevipes* (RUZM-SO14.01) and *O. tridactylus* (RUZM-SO13.01) from Sistan and Baluchestan Province. ip: interparietal, n: nuchal, p: parietal, pf: prefrontal, sl: supralabial, t: temporal. Scale bar = 1 mm. (Photo by Ali Gholamifard).

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