



NEW LOCALITIES OF SQUARE SPOTTED GECKO, *HEMIDACTYLUS GRACILIS* BLANFORD, 1870 (SQUAMATA: SAURIA: GEKKONIDAE) WITH HABITATS, DISTRIBUTION AND CONSERVATION STATUS, FROM MAHARASHTRA, INDIA.

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ABSTRACT:

Hemidactylus gracilis Blanford 1870 is one of the poorly known endemic geckos from India. Earlier it was reported from Maharashtra (Pune, Yavatmal, Satara and Nashik districts), Madhya Pradesh (Mandala, Shivpuri districts), Chhattisgarh (Raipur) and Andhra Pradesh (Kalavabugga). *Hemidactylus gracilis* comes under IUCN Least Concern category. We observed that it is common in eastern and central Maharashtra. We studied 11 specimens of *Hemidactylus gracilis* from different localities and added eleven new localities for Maharashtra. We also provide some data on its distribution, habitat and threats in Maharashtra.

Keywords: *Hemidactylus gracilis*, new locality, distribution, Maharashtra

INTRODUCTION:

The genus *Hemidactylus* Oken 1817 is one of the most species rich genus of the family Gekkonidae. It is widely distributed genera are found in the tropical, subtropical and oceanic islands regions of the world. About 144 species are documented worldwide of genus *Hemidactylus* (Uetz and Hošek 2016). The Indian subcontinent hosts about 30 species (Bauer et al. 2010; Agarwal et al. 2011; Mirza and Sanap 2010; Murthy et al 2015; Dandge and Tiple 2015; Mirza and Raju 2017). *Hemidactylus* has been highly affected by repeated transmarine colonizations, human activity, spontaneous rafting, which have contributed significantly to the unusually wide distribution range (Smid et al., 2013).

Hemidactylus gracilis Blanford 1870 is poorly known endemic geckos of India. *Hemidactylus gracilis* was described by Blanford in 1871 based on specimens collected from southeast Berar and Raipur in Central Province (now in Chhattisgarh) (Smith 1935). *Hemidactylus gracilis* has been reported earlier from Maharashtra (Nagpur, Mahavali, Pune Wai and Alandi, Satara, Chandrapur, Bilimora and Madhya Pradesh (Mandala and Shivpuri). IUCN assessed *Hemidactylus gracilis* is a Least Concern due to

wide distribution of the species and its habitats. Some habitats are under threat due to tourism related infrastructure development (Srinivasulu and Srinivasulu 2013).

D'Abreu 1928 was reported this species is common at Nagpur. Murthy (1986); Tikadar and Sharma (1992); Sharma (2002) provided some additional localities for *H. gracilis* in Andhra Pradesh (Kalavabugga, Sugalmatta, Gorgyapurum and Hatkeshwar). Notes on habitat, distribution, natural history, reproduction and phylogenetic relationship were given by Baure et al. (2005). Chandra and Gajbe (2005) reported *H. gracilis* from Mandala and Shivpuri in the state of Madhya Pradesh; they also provided additional localities from Sarguja and Raipur, Chattisgarh. Recently Mirza and Sanap (2010) reported *H. gracilis* from 'Nashik', Maharashtra.

The present study is an attempt to examine the 11 new different localities from Maharashtra and also provide some data on its distribution, habitat and threat in Maharashtra.

METHOD AND MATERIAL:

Hemidactylus gracilis was surveyed in different areas of Maharashtra states, India from 2008 to 2016. Opportunistic surveys and sightings were

recorded with collecting proper photographic evidences. Geckos were spotted with the head torch light on grasslands, scrublands and plateaus in Maharashtra. Specimens were collected by hand and released after collecting data within one hour. Descriptions and mensural characters were compared with available literatures Blanford 1870, Smith 1935, Murthy 1990 and Baure et al 2005 and type specimen of *Hemidactylus gracilis* at Zoological survey of India, Kolkata (ZSI 5190).

DIAGNOSIS

Body slender, weakly depressed, head is short and relatively narrow. Digits are relatively narrow, feebly webbed. The sub digital scansors are divided distally, but entire or only notched basally (Bauer et al. (2005). Distal lamella is also entire (undivided) as like most of *Hemidactylus*, as shown in Figure. Dorsum Light to dark grey, dark brown squarish spots arranged on the dorsum, (Dark grey specimens doesn't having the spots on the dorsum) yellow stripe running from the nostril up to eye and from posterior side of eye to end of the neck. Four large postmentals, gular region with small rounded scales, rostral broader than high; nostril between rostral and several small scales, 9 or 10 supralabials and 7 infralabials. 5 lamellae under first toe and 9 -10 under fourth toe of pes. Each ventral scale spotted with 3 to 7 dark brown or black spots, 10 to 13 longitudinal series of strongly keeled tubercles. Male having six (6) precloacal pores. 1 Rounded postcloacal spurs on each side (Fig 1 to 6).

RESULTS AND DISCUSSION

Distribution and Habitat:

The specimens of *Hemidactylus gracilis* were studied from Wadgaon mahure village of Amravati (N20° 58' 48.36", E77° 48' 57.1572"), Umred tahsil of Nagpur (N20° 51' 44.7768", E79° 19' 4.9038"), Near Ghogali Village, Nagpur (N21° 4' 13.9656", E 79° 6' 9.0714") Pathanpura area of Chandrapur (N19° 56' 37.6254", E79° 18'

28.9722"), Panjabrao Krishi Vidyapith campus at Akola (N20° 42' 42.7242" E77° 3' 13.7622"), Shegaon road, Khamgaon, Buldhana (N20° 32' 44.4186", E 76° 8' 46.1358"), Aanandgarh, Jalna (N19° 55' 44.6514", E75° 58' 15.582"), Satarahill's, Aurangabad (N19° 50' 13.7868", E75° 19' 9.5586"), Mhaismal, Aurangabad (N 20° 5' 21.5838", E75° 11' 1.125"), Yawtmal (N20° 19' 23.1414" E78° 15' 13.7262") and Gadchiroli (N 20° 9' 29.3976", E 79° 59' 49.7934") see Fig 7. We observed *H. gracilis* is common in all eleven localities. The area of Vadgaon 15 Km East away from Amravati on Nagpur Road; Pathanpura layout (property for sell) peripheral area of the city (Chandrapur); Shegaon road, Khamgaon (Buldhana); Panjabrao Krishi Vidyapith, (agricultural land and scrub) 4 Km. away from Nagpur road, Akola; Aanandgarh, 10 Km from Deulgaon Raja road, Jalna; surrounded by scrub forest and layouts (property for sell). Specimens of *H. gracilis* found on the plateaus and scrublands from eastern and central Maharashtra near crevices on the ground and under the loose rock boulders.

We observed Khair, (*Acacia chundra*) and Babbul (*Acacia nilotica*) are dominant plant species on these localities. Scrublands and plateaus having good availability of insects for this small insectivorous species of geckonid lizards. We observed more than 18 (Eighteen) species of beetles belonging to 5 (Five) genera, 13 (thirteen) species of bugs belonging two 3 (three) genera and many of ants species. *H. gracilis* were feeding on termites ants at Wadgaon mahure (Amravati). The habitat is shared with sympatric reptile species like *Hemidactylus sp.*, *Hemidactylus trieridus*, *Eutropis carinata*, *Lygosoma lineata*, *Lygosoma punctata*, *Cyrtodactylus collegalensis*, *Ophisops jerdonii*, *Sitana spinaecephalus*, *Sarada deccanensis*, *Lycodon striatus*, *Boiga trigonata*, *Echis carinata*. *Hemidactylus gracilis* prefers the shrub land as a habitat and hide under the loose

rocks, same observation made by Bauer et al. (2005).

Habitat of Mhaismal (Aurangabad) is a plateau surrounded by dry deciduous forest where Teak (*Tectona grandis*) and Palash (*Butea monosperma*) are dominant plant species, we observed number of loose rock boulders under which *H. gracilis* hides itself. We observed good population of scorpions species like *Hottentotta patyurus* and *Neoscorpions maharashtraensis* there and they were feeding on the juveniles of *H. gracilis* in night as a predator species of this small geckonid lizard. *H. gracilis* shared habitat sympatric with reptile species like *Hemidactylus brookii*, *Eutropis macularia*, *Eutropis carinata*, *Sitana ponticeriana*, *Oligodon taneolatus*.

Threats

We observed in Vadagao (Mahure) area four stone mines, it destructing *H. gracilis* habitat. Maharashtra state provides good habitat (scrub forest) for *H. gracilis* but it is covered by stone mine. The Revenue department has given permission to mines for royalty and in some places illegal mining is the threat in Vidarbha region of Maharashtra.. Some scrub forest area is already approved for the layouts and construction sites, hence the *Hemidactylus gracilis* is going to end their presence from the locality in Amravati, Chandrapur and Jalna. We need to protect habitat to conserve *H. gracilis* species.

Conservation status

Hemidactylus gracilis was considered to be of intermediate status by Sanyal et al. (1993) It has been considered threatened by Molur and Walker (1998), Bamberdenia and Samarasekara (2001). Our observation provides, *H. gracilis* is strong survival species and can live in area like layouts and shrub lands on side of the highways; it is common in eastern and central Maharashtra.

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Fig. 1. Dorsal view of the adult male of *Hemidactylus gracilis* from Vadgaon, Amravati



Fig. 4. Lateral view of head of *H. gracilis* from Mhaismal, Aurangabad.



Fig.2. Dorsolateral view of *H. gracilis* from Satara hills Aurangabad.



Fig.5 Lamellae of pes of *H. gracilis* showing basal and apical undivided lamellae.



Fig. 3. Dorsal view of *H. Gracilis* from Satara hills Aurangabad, showing gracile tuberculation.

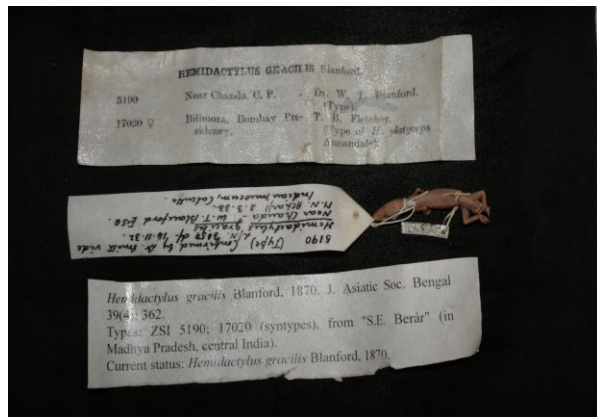


Fig.6 Image of the type specimen of *Hemidactylus gracilis* ZSI 5190.

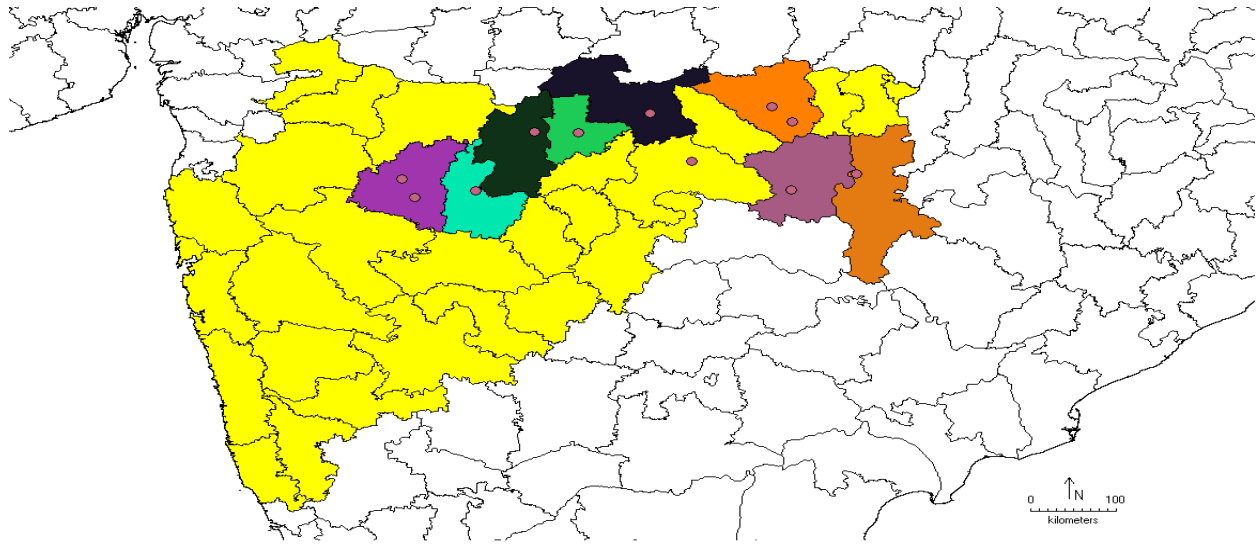


Fig. 7 Map showing the distribution of *H. gracilis* in Maharashtra state of India.