



Mating behavior of *Otocryptis nigristigma* (Bahir and Silva 2005) (Reptilia: Agamidae) in Sri Lanka

Dayupathi Eranda Nipunika Mandawala¹ and Panadura Arachchige Don Mokshi Viragi Perera²

¹Faculty of Science, Horizon Campus, Knowledge City Malabe, Chandrika Kumaratunga Mawatha, Malabe, Sri Lanka.
(email: nipunika1@hotmail.com; ORCID: 0000-0001-7780-1226)

²Department of Botany, Faculty of Science, University of Kelaniya, Kelaniya, Sri Lanka (ORCID: 0000-0002-4887-9750)

Sri Lanka is home to 22 species of agamid lizards, of which 20 are endemic, belonging to four endemic genera (Karunaratna et al. 2020). The genus *Otocryptis* has recently been recognized as an endemic genus with the elevation of the Indian species *O. beddomi* to a new genus (Agasthyagama; Srikanthan et al. 2021). The genus *Otocryptis* is now represented by two endemic species, *O. wiegmanni* and

O. nigristigma. *Otocryptis wiegmanni* is known to be found abundantly in the wet zone of Sri Lanka while *O. nigristigma* is restricted to the lowland intermediate and dry zones from sea level to above 600 m. *Otocryptis wiegmanni* is a diurnal, terrestrial, fast moving agamid species found on the forest floor, on rocks, and on tree trunks, commonly dwelling in tropical mixed evergreen forests, scrublands, land cultivated



Figure 1: Copulation event of *Otocryptis nigristigma*. Photograph by Dayupathi Eranda Nipunika Mandawala.

with vegetables, and home gardens (Bahir and Silva 2005; Somaweera and Somaweera 2009; De Silva and Ukuwela 2020). *Otocryptis wiegmanni* has been researched quite extensively with territorial behavior reported by Karunarathna and Amarasinghe (2008) and egg laying behavior reported by Sudasinghe and Kusuminda (2013) in natural conditions and in captivity (Lakkana et al. 2018). However, no record of breeding or ovipositional behavior of *O. nigristigma* was found in the literature. Here we report for the first-time the mating behavior of *O. nigristigma* in natural conditions with photographic evidence.

The observations were made at around 1000 h on 10 October 2019 during a hike to the Pidurangala Rock (7.9664° N, 80.7618° E). The Pidurangala Rock is a 200-meter-high rock to the north of the more famous Sigiriya Rock in the Central Province of Sri Lanka, which is situated in the country's dry zone. The vegetation of the forest surrounding the rock is a tropical dry zone with mixed evergreen forest, plenty of shade, and leaf litter on the forest floor. While ascending the stone stairs leading to the summit of the rock, about 75 m from the summit, we noticed movement in the leaf litter on the forest floor a few meters into the forest. Upon closer observation, one agamid lizard was seen chasing another. We quickly realized that this was mating behavior between a male and female (sexually dimorphic) and subsequent observations were made from a distance of about 3–5 m to avoid disturbing them. Photographs were first taken using a Nikon D750 camera with AF-S VR Zoom-Nikkor 70–300 mm f/4.5–5.6G IF-ED telephoto zoom lens and then by Sigma 105mm f/2.8 EX DG OS HSM macro lens. Field guide books by Somaweera and Somaweera (2009) and De Silva and Ukuwela (2020) were used to identify the lizard species.

The male appeared slightly larger than the female and the male's head and neck regions showed luminescent greenish-blue while the female showed light brownish/yellow, with the head and neck region dull black (De Silva and Ukuwela 2020). The male was observed displaying its dewlap and showing rhythmic head bobbing to the female, after which it chased the female and bit and held onto the back of her neck. Subsequently, the male copulated with the female and both remained in the copulatory position (Fig. 1) for about 2 min before separating and moving away from each other. During copulation they appeared well-camouflaged in the leaf litter on the forest floor. Similar breeding behavior of *O. wiegmanni* was observed by Lakkana et al. (2018) in captivity. It was unclear how many times this pair had mated; in this session we observed only one copulation event. After they separated, the female moved through the leaf litter onto a rock

before climbing onto a tree trunk. The male remained in the leaf litter and then moved onto a rock and remained on it for a few minutes, exhibiting its vibrant colors before the colors gradually faded away.

Sudasinghe and Kusuminda (2013) reported reproduction of *O. wiegmanni* taking place between July and January with a peak between October and January. However, the reproductive period for *O. nigristigma* is unknown. Somaweera and Somaweera (2009) mentioned that reproduction of *O. nigristigma* probably takes place in the months towards the end of the year; our observation concurs with this comment, as our current observation was in October leading us to believe that the reproduction season of *O. nigristigma* may be similar to that of *O. wiegmanni*. However, follow up observations are required before this can be confirmed. Ovipositional behavior of all *Calotes* species in Sri Lanka except *C. desilvai* have been documented and compared (Sudasinghe and Kusuminda 2013). However, ovipositional behavior of *O. nigristigma* has not been documented before or in this article. It would be interesting if this behavior could be recorded and similar comparisons could be drawn to its sister species.

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