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#### RECENT RECORDS OF THE BANDED RACER *ARGYROGENA FASCIOLATA* (SHAW, 1802) (REPTILIA: SQUAMATA: COLUBRIDAE) FROM SOUTHERN COROMANDEL COAST, PENINSULAR INDIA

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## RECENT RECORDS OF THE BANDED RACER *ARGYROGENA FASCIOLATA* (SHAW, 1802) (REPTILIA: SQUAMATA: COLUBRIDAE) FROM SOUTHERN COROMANDEL COAST, PENINSULAR INDIA

Janani Sagadevan<sup>1</sup> , Sumaithangi Rajagopalan Ganesh<sup>2</sup> , Nitesh Anandan<sup>3</sup>  & Raveen Rajasingh<sup>4</sup> 

<sup>1,4</sup> Department of Zoology, Madras Christian College, Chennai, Tamil Nadu 600059, India.

<sup>2</sup> Chennai Snake Park, Rajbhavan post, Chennai, Tamil Nadu 600022, India.

<sup>3</sup> No. 12/14 Vittoba Kovil street, Lower bazaar, Ooty, Tamil Nadu 643001, India.

<sup>1</sup> rtr.janu@gmail.com, <sup>2</sup> snakeranglerr@gmail.com (corresponding author), <sup>3</sup> niteshanandan9393@gmail.com,

<sup>4</sup> raveenraja2002@gmail.com

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**Abstract.** We report the Banded Racer *Argyrogena fasciolata* from the Coromandel Coast in peninsular India, where its occurrence remained doubtful. This is based on four specimens—two live, uncollected ones from Tambaram and Auroville, respectively, and two preserved specimens from Tuticorin. The sighting points span a distance of 500 airline km north-south across the eastern coastal plains. Both juvenile and adults were included in these records, which underscores that breeding populations exist in the regions dealt with. Our records highlight the need for faunal surveys even in reportedly depauperate or well-studied ecoregions, an element that points out a hidden diversity including species that are not ecologically cryptic.

**Keywords:** Diurnal species, dry forests, eastern coastal plains, land snake.

The Banded Racer *Argyrogena fasciolata* (Shaw, 1802) is a species of non-venomous colubrid snake found in the Indian subcontinent. General accounts on Indian herpetology state this species to be widespread, distributed more or less throughout the country (Daniel 2002; Das 2002; Whitaker & Captain 2004). The most comprehensive review of this species is the one by Wilson (1967). Aside from late 18<sup>th</sup> and early

19<sup>th</sup> centuries classical taxonomic treatises, very few regional works focusing on a certain geographic region dealt with this species. In one such historic regional monograph, Jerdon (1853) stated that this species was not uncommon in Madras and elsewhere in the Carnatic. Whether Jerdon meant Madras Presidency (i.e., the region now inclusive of entire southeastern India) or the actual city of Madras (= Chennai) per se, however, is not clear. Similarly, Günther (1858) recorded a “half-grown” specimen collected from “Madras” by Walter Elliot. Jan (1863) listed the distribution of this species as “Indie Orient” (also see Günther 1864). Theobald (1868) recorded this species from Ramri (in Rajasthan) based on a purchased specimen and from “South India” based on Jerdon’s material.

Boulenger (1893) clearly gave the distribution as “Madras Presidency” while acknowledging the origin and locality of specimens of *Argyrogena fasciolata* in the British Museum, presented as “Madras” by Jerdon and Elliot. Wall (1914) gave its distribution from Cape Comerin to the Himalayan foothills, except perhaps in

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Travancore. Smith (1943) stated that its distribution extended from peninsular India northwest as far as a line drawn from Baroda through Gwalior to the Himalaya south of Nepal, east to West Bengal, and northern Ceylon. Wilson (1967) reviewed this species and gave its range similarly. Whitaker (1976) gave its distribution as plains throughout most of India. Daniel (2002) enumerated its geographic range as peninsular India, up to Sind in Pakistan, north to the Himalaya and in the east to West Bengal, and northern Sri Lanka. Das (2002) gave its range as peninsular India, besides Bangladesh and Nepal; Sri Lanka was not mentioned. Its record from Jaffna by Haly is considered doubtful (Wall 1921; Taylor 1950).

Whitaker & Captain (2004) described its range as most of the peninsular plains, to the Himalaya, in the east to Bengal and south to Tirunelveli, except the southeastern coast. The precise mention of the southeastern coast probably stems from the remarks of Wall (1914) (see below) and the authors' own personal observations of its non-detection in the region. Studies on snakes in southeastern India (Madras: Kalaiarasan & Kanakasabai 1999, Ganesh et al. 2005, Tsetan & Ramanibai 2011; Kalpakkam: Ramesh et al. 2013; Mayiladuthurai: Ganesh & Chandramouli 2007, Nath et al. 2012; Ramnad: Annandale 1906; Tuticorin: Sondhi 2009) did not document this species, and such evidence does attest to its rarity there. Specimen holdings in regional museums do not reveal any specimen collected from this region (Ganesh & Asokan 2010). Secondary sources and literature compilations also do not furnish any precise records from this part of the Coromandel Coast (Srinivasulu et al. 2014). A note that reported a live specimen from Tuticorin stands short of better substantiation (Rameshwaran 2008). Therefore, the occurrence of *Argyrogena fasciolata* in southeastern India along the southern parts of the Coromandel Coast remains unclear. To clarify this situation, we here elaborate on our recent field sightings and describe older voucher specimens of *A. fasciolata* from the region.

#### MATERIAL AND METHODS

We studied live and preserved specimens of *A. fasciolata* stemming from the Coromandel Coast. We followed Whitaker & Captain (2004) for morphologic examination terminology and scoring protocols. We followed Dowling (1951) for counting ventral scales and Dowling & Savage (1960) for hemipenial terminologies. We measured body length using a standard measuring tape (L.C. 1mm) and other smaller measurements using vernier callipers (L.C. 0.1mm). Where necessary,

we observed scales and hemipenis, viewing through magnifying illuminated hand lens (5x optic zoom). Scalation and distribution data were compared with the literature. Images were taken using Canon EOS 5D digital camera. GPS coordinates were sourced from Google Earth software and projected on WGS-84 map datum. Sighting points were represented in decimal degrees, corrected to three decimal digits. Habitat classification followed Champion & Seth (1968).

#### RESULTS

##### *Argyrogena fasciolata* (Shaw, 1802)

(Image 1; Table 1)

**Specimens examined:** A live uncollected juvenile (Image 1a) observed by JR, NA, and RR on 7 May 2018 in Tambaram (12.916°N & 80.123°E; elevation 33m) [Tamil Nadu State], Coromandel Coast, peninsular India.

A live uncollected adult (Image 1b) observed by NA on 26 July 2017 at 15.55h in Auroville (12.005°N & 79.813°E; elevation 60m) [Tamil Nadu State], Coromandel Coast, peninsular India (Fig. 1).

CSPT/S-50 a, b [Chennai Snake Park Trust] (Image 1c) coll. late M.V. Rajendran from Tuticorin (ca. 8.765°N & 78.135°E; elevation 1m), [Tamil Nadu State], Coromandel Coast, peninsular India.

**Morphology:** Head fairly distinct from neck; snout declivous; rostral pointed, protruding further beyond mental; body fairly slender, cylindrical; tail long and tapering. Scales elongate, smooth, slightly glossy laterally, in 21–23:21–23:17 rows; ventrals 199–226; subcaudals on complete tail 86–88 pairs; supralabials 8 (4, 5 touching eye); infralabials 8 (1–5 touching genials); anterior genials slightly larger than posterior ones; preocular 1, reaching upper surface of head, touching prefrontal; postoculars 2; loreal 1, small, subequal to nasal; temporals 2+2/3 (Table 1).

**Colouration in life (based on live uncollected individuals):** Dorsum sandy fawn brown; upper labial, lateral region, and chin ivory white; top of head variegated with white random markings; back with a series of 33–39 distinct white cross bars extending from nuchal region till two-thirds of the body; anteriorly bold and conspicuous, posteriorly obscure and disintegrated; crossbars mildly edged with thin black border; ends of crossbars diverging basally along ventrolateral region, often confluent on to the nearby bar forming ovoid pattern; posterior part of body variegated with black and whitish-cream specklings randomly on the brown ground colour; interscalar skin white; iris golden brown with black circular pupil; body pattern more intense in juvenile than in the adult snake.



Image 1. *Argyrogena fasciolata*: a - living, uncollected adult from Auroville © N. Anandan | b - living, uncollected juvenile from Tambaram © S. Janani | c - CSPT/S-50b from Tuticorin © S.R. Ganesh | d - habitat showing dry evergreen vegetation in Tambaram © S. Janani.

**Colouration in formalin:** Dorsally brownish-grey to pale creamy-white, with off-white cross bars bordered with ashy black, visible or obscure; labia, lateral region, and venter white; eye black with greyish circular pupil.

**Hemipenis (based on CSPT/S-50a):** Everted; organ smooth, not forked; extending to third subcaudal scales; organ length (including lobe head and pedicel) 8mm; organ width 3mm; pedicel smooth, as thick as apex; lobe head with a small dent at apex; sulcus spermaticus single, clearly visible throughout its length in sulcate view; sulcal lips simple, without much folds; lobe head not spinose, but papillated with small villi; asulcate side calyculate, calyses small and dense.

**Field observations:** The juvenile from Tambaram was sighted inside Madras Christian College campus with relict patches of scrub vegetation. It was seen actively moving around on ground near grass patches abutting a small ephemeral water body surrounded by scrub thickets. The adult from Auroville in Puduchery

was sighted in a community forest with dry evergreen vegetation type. The sighting of the juvenile (<300mm total length) in May implies the breeding season of this species in the region to be around January. Both snakes were observed in pre-monsoon season during May–July. Further observations are needed to confirm if this part of the year is the peak activity period of this species in the region.

#### DISCUSSION

Wall (1914) was perhaps the first to explicitly state the apparent rarity of this species in the Coromandel region, in writing thus, “Though Jerdon remarks that it [*A. fasciolata*] is not uncommon in the Carnatic, this has not been my experience. I have never obtained one when in residence in southern India (Trichinopoly, Madras, Cannanore, and Bangalore)”. Studies in southern India, in aptly dry forests, did not record this species. Ganesh & Asokan (2010) mention a specimen from Coimbatore,



Figure 1. Map of southern India, depicting areas of new records of *Argyroena fasciolata* from across the Coromandel Coast: Tambaram, Auroville and Tuticorin (black diamonds).

abutting the Ghats, with no further data. The Madras Christian College, where this species was now sighted, once donated specimens to the Madras Government Museum (Ganesh & Asokan 2010). It is surprising that when this happened half a century ago, no *A. fasciolata* specimen was obtained. Its occurrence in the related and nearby region of northern Sri Lanka is also debatable at best (Taylor 1950; Das 2002; Bauer & de Silva 2007; Abyerami & Sivashanthini 2008). Therefore, we hypothesize that the lack of sightings of *A. fasciolata* anywhere from southeastern India prompted literature (Whitaker & Captain 2004) to exclude the southeastern coast of India from the distribution of this otherwise widespread species. Our own field experience in the

Coromandel Coast for nearly two decades did not yield a sighting of this species (SRG pers. obs.), attesting to its rarity here. Though relict forests here are rich, they are simply underexplored, as exemplified by the recent discoveries of elusive wild cats (Guptha & Ramanujam 2017). At least Tambaram is relatively special in its snake fauna, unlike Madras City by and large, as exemplified by the much more frequent occurrence of *Lycodon striatus* instead of the usual *L. anamallensis* and *L. aulicus* (SRG pers. obs.).

Snakes entering into human settlements and the consequent human-snake negative interactions are quite characteristic of many Indian cities. *Argyroena fasciolata*, by virtue of its large size (1.2m), active

**Table 1. Morphologic characters of live and preserved *Argyrogena fasciolata* from the southern Coromandel Coast, peninsular India.**

| Characters             | Live individual from Tambaram | Live individual from Auroville | CSPT/S-50a from Tuticorin (male) | CSPT/S-50b from Tuticorin (female) |
|------------------------|-------------------------------|--------------------------------|----------------------------------|------------------------------------|
| Scale rows             | 21:21:17                      | 23:23:17                       | 21:21:17                         | 21:21:17                           |
| Supralabials           | 8 (4, 5 touch eye)            | 8 (4, 5 touch eye)             | 8 (4, 5 touch eye)               | 8 (4, 5 touch eye)                 |
| Preocular              | 1                             | 1                              | 1                                | 1                                  |
| Postoculars            | 2                             | 2                              | 2                                | 2                                  |
| Loreals                | 1                             | 1                              | 1                                | 1                                  |
| Temporals              | 2+2                           | 2+2                            | 2+3                              | 2+2/2+3                            |
| Ventrals               | 199                           | 223                            | 226                              | 206                                |
| Anal shields           | 2                             | 2                              | 2                                | 2                                  |
| No. of white bars      | 37                            | 33                             | faded                            | 42                                 |
| Subcaudal pairs        | 88                            | 86                             | 88                               | 72+?                               |
| Head length            | -                             | -                              | 20mm                             | 24mm                               |
| Head width             | -                             | -                              | 12mm                             | 18.5mm                             |
| Eye diameter           | -                             | -                              | 3mm                              | 4mm                                |
| Inter-ocular distance  | -                             | -                              | 7mm                              | 9mm                                |
| Eye-snout tip distance | -                             | -                              | 3.5mm                            | 6mm                                |
| Snout-vent length      | 240mm                         | -                              | 725mm                            | 760mm                              |
| Tail length            | 50mm                          | -                              | 210mm                            | 220+?mm                            |
| Total length           | 290mm                         | 790 mm                         | 935mm                            | 980+?mm                            |

+? denotes cut tail.

foraging nature, and diurnal habits, is expected to be certainly present, if not prevalent, in snake rescue data sets from cityscapes. Indeed, this was the case in some data from places where this species is known to be common (Urfi 2005; Nande & Deshmukh 2007; Vyas 2013; Deshmukh et al. 2015). There are, however, areas where this species is not absent but still never featured in snake-rescue data. In Bengal, this species was recorded from city fringes, but was reported to be rare (Gayen et al. 2017). In Madras and its surrounding, this species was not encountered during rescue operations (Shravan Krishnan pers. comm. 2018). A single juvenile roadkill of *A. fasciolata*, however, was sighted in Tambaram in 2012 (identified by Ashok Captain based on image, Nishanth Nich pers. comm. 2018). Thus, though there are mixed opinions on the occurrence or the propensity of the species entering human settlements in the Madras region, past sightings attest to a relict population at least in rocky forested scapes of this area.

We believe that our report herein of this species including a breeding population will alleviate, to a large extent, the paucity of published records of *A. fasciolata* from the Coromandel Coast. Though many works (both published and unpublished) on snakes of this region exist, they involve almost always searching in rice fields with Irula tribals, and very few surveys were done in the

remnant forest belts of this region. In the past, novelties resulted from studies on ecologically (Aengals & Ganesh 2013) and behaviourally (Vogel & Ganesh 2013; Guptha et al. 2015) cryptic groups of snakes in eastern peninsular India. In our case, the live individuals dealt with here were found in remnant dry scrub forest patches in the outskirts of two cities, Madras and Puduchery. Thus, this work adds to an increasing reports of large-growing diurnal land snakes that remained obscure due to lack of surveys in dry forests (Ganesh et al. 2017) and even in well-accessible and populated city fringes (Narayanan & Satyanarayanan 2012; Seetharamaraju & Srinivasulu 2013; Viswanathan 2015; Visvanathan et al. 2017; Narayana et al. 2018).

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