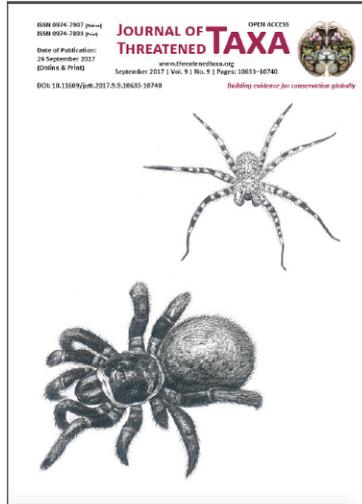


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COMMUNICATION

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LYGOSOMA ALBOPUNCTATUM (GRAY, 1846) (REPTILIA:
SCINCIDAE) WITH FURTHER TOPOTYPICAL RECORDS AND
NOTES ON THE TYPE LOCALITY**

S.R. Ganesh

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ON THE POORLY-KNOWN WHITE-SPOTTED SKINK *LYGOSOMA ALBOPUNCTATUM* (GRAY, 1846) (REPTILIA: SCINCIDAE) WITH FURTHER TOPOTYPICAL RECORDS AND NOTES ON THE TYPE LOCALITY

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OPEN ACCESS



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Abstract: The White-spotted Skink *Lygosoma albopunctatum*, a rarely recorded lizard, has been re-sighted from its type locality: Madras in the Coromandel Coastal Plains. Morphological details and field notes on the findings are elaborated. Since many past surveys in and around Madras, and in southern India generally, did not record this species, lack of consensus about its existence in southern India had developed, leading to published misconceptions about its distribution. These are highlighted and corrected herein. The species is also illustrated in life based on topotypical examples.

Keywords: Distribution, lizard, morphology, scalation, southern India, type locality.

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Author Detail: S.R. Ganesh is a Scientist at the Chennai Snake Park, conducting research on reptiles and amphibians of Southern India. His research themes include documenting diversity of under-explored eco-regions, updating and refining species characterizations and finding out modern day distribution patterns with respect to south India's herpetofauna.

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INTRODUCTION

The White-spotted Skink *Lygosoma albopunctatum* (Gray, 1846) was first described as *Riopa albopunctata*. Günther (1864) allocated this species to *Eumeces* Wiegmann, 1834. Boulenger (1887, 1890) later assigned this species to *Lygosoma* Hardwicke & Gray, 1827. Smith (1935) again transferred it back to *Riopa* Gray, 1839. Currently, it is reattributed to *Lygosoma* (see Venugopal 2010). As was common those days, Gray (1846) did not provide any scale counts or measurements, but only life colouration data and locality: "pale olive brown, yellowish beneath, sides of the head and front half of the body blackish, minutely white-spotted" (hence the name); "Habitat: Madras". Later, Boulenger (1887) provided scalation and measurements for this species, and also listed in its synonymy *Eumeces (Riopa) fischeri* Bocourt, 1878 originating from Puerto Cabello, Venezuela. Subsequently, it was realized that this synonymisation was an error, as Barbour (1921) remarked "*Riopa fischeri* was unceremoniously relegated to the synonymy of Gray's *Riopa albopunctata*, a wholly unrelated, Indian species". *Riopa fischeri* did not appear as a synonym in Boulenger (1890) but was again listed so in Smith (1935), despite Barbour's (1921) remarks. Taylor (1950) described a new skink *Riopa singha* based on a single specimen originating from 'Ceylon' and mentions that this is closely related to *L. albopunctatum*. *Lygosoma singham* remains known only from its type specimen (Somaweera & Somaweera 2009).

Lygosoma albopunctatum is one of only a few skinks to have a wide distribution from peninsular India to Indochina into South East Asia (Jerdon 1853; Boulenger 1887, 1890; Smith 1935; Das 2010 [part], Geissler et al. 2011). An editorial footnote mentioned its occurrence in Mergui in Myanmar near the Siamese Peninsula (Jerdon 1853). Günther (1864) mentioned Jerdon's record from Madras and Blyth's specimen from Mergui (see Jerdon 1853). Blanford (1870) recorded it from Korba, Bilaspur and Udaipur in central and western India. Anderson (1871) documented its presence in Assam. Stoliczka (1872) stated that this species is found in southern India, through central India, Bengal and Assam, and further east into Pegu [now Bago, in Myanmar], and later Stoliczka (1873) mentioned this species from Penang, remarking that it is "exactly the same as in Bengal". Blanford (1879) recorded *L. albopunctatum* from Ellore [now Eluru] and Dumagudem [now Dummugudem, near Khammam], in the Coromandel Coastal Plains. Grigg (1880) reported this species based on Col. R.H. Beddome's collection from the lower slopes of Nilgiris.

Ferreira (1897) recorded this species from Pangim [now Panaji], Goa on the Konkan Coast of peninsular India.

Later, Boulenger (1887, 1890) and Smith (1935) mentioned the distributional range of *L. albopunctatum* to be southern and central India, Bengal, Assam, Burma and the Malay peninsula, specifying precise localities such as Madras, Denkanikottah Hills [near Hosur, Tamil Nadu, India], lower Godavary Valley, Bilaspur, Bengal and Penang. The species has been reported from Dibrugarh in Assam based on Frank Wall's collection (Anonymous 1908). Annandale (1921) recorded *L. albopunctatum* from Chilka Lake in the Circar Coast of peninsular India and stated it to be nowhere common. In contrast, Underwood (1947) found it to be common, reporting on 37 individuals from Kakinada on the Coromandel Coast of India. Phillips (1958) and Fitter (1981) mentioned it from Maldives Island. Also, Sharma (1982) reported this species from Travancore, near the Malabar Coastal Plains. Sharma (1982) and Chandra & Gajbe (2005) reported this species from central India. Gayen (1999) and Vyas (2010) recorded it from Gujarat, western India. Dutta et al. (2009) noted this species from Similipal forests in Chota Nagpur plateau. Ahmed et al. (2009), Purkayastha et al. (2011), Islam & Saika (2013), Hassan et al. (2014) and Sarker (2014) reported this species from northeastern India and Bangladesh.

Many herpetological studies done in southeastern India did not record this species. In the Coromandel Coastal Plains Kalaiarasan & Kanakasabai (1999), Tsetan & Ramanibhai (2011) and Subramanean (2012) surveyed the Chennai, Kanchipuram and Tiruvallur regions, Kannan et al. (1994) surveyed Mayiladuthurai, Ramesh et al. (2013) surveyed Kalpakkam. Likewise, Ravikumar (1999) surveyed Darmapuri and Chandramouli & Baskaran (2012) surveyed Hosur, both located near the Denkanikotta Hills in the Southern Eastern Ghats (a previously known distribution site, see Smith, 1935). But none of the aforementioned works in the Eastern Coastal Plains and the Eastern Ghats recorded *L. albopunctatum*. Only three studies have recorded this species: Daniels (2002) from Velachery, Madras and Ganesh & Chandramouli (2007) and Nath et al. (2012) both from Mayiladuthurai, all situated in the Coromandel Coastal Plains.

The fact that this species had not been reported recently in places of its known distribution in southeastern India by many recent works has led some to doubt its occurrence in southern India (where lies its type locality). Daniels (2002) remarked that this species is known from the north of Tamil Nadu, including

Andhra Pradesh and an 80 year old record from Travancore, Kerala and that his report from Chennai had 'extended' its range further south to include Tamil Nadu. Aengals (2009) for reasons unknown did not even list *L. albopunctatum* in a compilation of list of reptiles of Tamil Nadu State. Das (2010) listed the distribution of this species as "Myanmar, Vietnam, Northern India, Nepal, Bangladesh", thereby excluding its type locality from its presumed distribution. After Smith's (1935) review, more recent works on Indian lizards such as Das (2002), Daniel (2002) and Murthy (2010) have not shed light on this species. Therefore, to provide clarity on this species' distribution and type locality, I herein report my recent findings of *Lygosoma albopunctatum* from southern India, with descriptions of both live and preserved topotypic specimens as well as a note on its type locality.

MATERIALS & METHODS

This study is based on an examination of both preserved voucher specimens and live individuals encountered in the field. Detailed morphological data were gathered from a series of formalin-preserved voucher specimens using standard vernier slide calipers (L.C. 0.5mm) for measurements and magnifying hand lens (5 X zoom) for scale counting. Morphological terminology and definitions follow Smith (1935). Live individuals encountered in the field were examined to establish unambiguous species-identification but were

not subjected to full morphological analysis like the preserved specimens. Photographs were taken using high resolution digital cameras. Geo-coordinates (in decimal degrees to two decimal places) and elevation (in meters above mean sea level) were taken using Google Earth software. Ecoregional classification follows Rodgers & Panwar (1988). Habitat type classification follows Champion & Seth (1968). Discussions on nomenclature comply strictly with the 4th edition of the International Code of Zoological Nomenclature, ICZN (1999).

TAXONOMY

Lygosoma albopunctatum (Gray, 1846)

Riopa albopunctata Gray, 1846

Riopa albopunctata - Jerdon, 1853; Smith 1935 [part]

Eumeces albopunctatus - Günther, 1864

Lygosoma albopunctatum - Boulenger, 1887 [part] 1890; Das 2010

Lygosoma albopunctata (sic) - Das, 1996; Daniels 2002; Vyas 2010

Note on nomenclature: The gender of the genus name *Lygosoma* Hardwicke & Gray, 1827 is neuter and hence in accordance with Art. 31.2 of the 4th edition of International Code of Zoological Nomenclature (ICZN 1999), the emended epithet *albopunctatum* (see Boulenger 1887) is to be deployed. Thus the name of this species should be *Lygosoma albopunctatum* (Gray



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Image 1. One of the three type specimens of *Lygosoma albopunctatum* BMNH 1946.8.18.87-90 (ex. 1946.11.22.13-15) collected by T.C. Jerdon, from Madras, India.

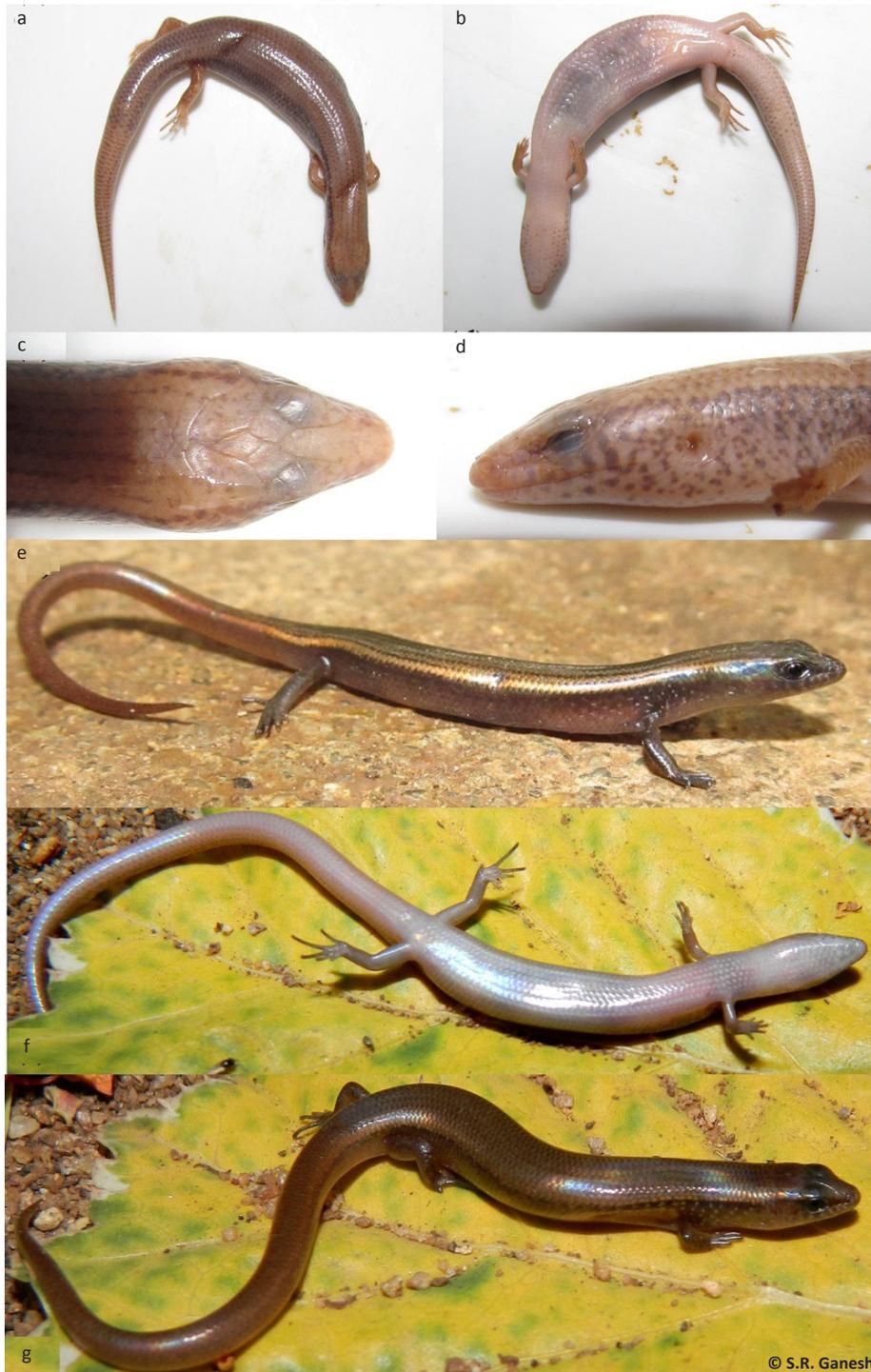


Image 2. *Lygosoma albopunctatum* : topotype CSPT/L-26a entire (a) dorsal view, (b) ventral view, (c) head dorsal view, (d) head lateral view; live uncollected topotypical individuals depicting in-life colouration of (e) subadult, (f) adult in ventral view, (g) adult in dorsal view.

1846).

Note on type locality: This species was described based on type specimens (Image 1) collected by Thomas Caverhill Jerdon from ‘Madras’ (Gray 1846; Boulenger 1887, 1890; Smith 1935). Gray (1846) in

his introductory notes mentions thus: “Mr. Jerdon of Madras having kindly sent to the Museum, a series of specimens of Indian reptiles, I hasten to describe the following species ...”. Jerdon (1853) wrote “I have found it [*L. albopunctatum*] in the Nellore district, where it

is rare” and went on further to say that some Indian lizards including *L. albopunctatum* “were described by Mr. Gray from specimens sent home by me to the British Museum”. Günther (1864) precisely stated that “this species [*L. albopunctatum*] was discovered by Jerdon in Nellore District.” Boulenger (1887) likewise mentioned the collector of the types to be Jerdon. Taken together, these facts likely indicate that Jerdon’s types might have been collected from between Madras and Nellore, in the Coromandel Coastal Plains (politically abutting Tamil Nadu-Andhra Pradesh State border) in southeastern India. Perusal of the accession register entry details of the Natural History Museum, London collections only revealed the word “Madras” and not “Nellore” either for the types or any other specimens of this species housed there (David Gower pers. comm. September 2013). Further support comes from Srinivasulu & Das (2008) who commented “As Civil Surgeon of Nellore in 1842, Jerdon collected extensively in the then poorly known region between Madras and Nellore.” Following Srinivasulu & Das (2008), I interpret that any material stemming from the region within and between Madras and Nellore as being topotypic.

Material examined (n=4): CSPT/L-26a-d (Image 2a–d) [Chennai Snake Park Trust] three adults and a subadult, all from Madras (=Chennai), Coromandel Coastal Plains (Tamil Nadu State), peninsular India.

Description

Habitus: A fairly small and slender skink, with very small and slender pentadactyle limbs, elongate trunk and large, thick tail. Head slightly wider than neck; neck not evident; snout slightly acuminate; loreal region concave; anteriorly adpressed forelimb reaches tympanum; both limbs when adpressed inwards along trunk fail to touch each other by more than two head lengths; trunk slightly depressed; tail (original) cylindrical in profile, when complete, longer than rest of the body; regenerated tail fairly shorter than original one; tail base thick, but thinner than hind part of trunk, gradually tapering towards tip. Measurements (in mm): Snout to vent length: 30.5–52.5, body width: 4.5–8.0, axilla-groin distance: 20.5–35.5, tail length (n=3): 35.5–63.0 (n=1; 27.0 broken), head length: 6–8.5, head width: 4.0–5.5, head depth: 3.0–5.0, humeral length: 0.85–1.00, radius ulnar length: 0.9–1.0, carpal length: 0.8–1.0, femoral length: 3.0–3.5, tibia length: 2.5–3.0, metatarsal length: 4.0–5.0, horizontal eye diameter: 1.5–2.0, tympanum diameter: 0.7–1.0, eye to tympanum distance: 2.0–3.5, eye to nostril distance: 1.5–2.0, eye to lip distance: 0.7–1.0, internarial distance: 0.8–1.0, interocular distance:

2.0–3.0. Scapulation: Scales smooth, cycloid, imbricate both dorsally and ventrally; midbody scalerows: 26, midventrals: 71–77, vertebrals: 56–61, nuchals: 2 on each side, not very elongate, overlapping on each other; tympanum subequal to a lateral body scale, larger than nostril; 4th toe subdigitals: 9–10, supralabials: 8–9, infralabials: 7–8. Colouration in formalin: Dorsum dull fawn colour sometimes with minute black spots forming a spotted stripe; wide dark brown band along the lateral region; this space finely spotted with white spots; the entire lateral pattern bordered below along the trunk by pale creamy wash; tail brown.

Colouration in life (based on live uncollected conspecifics; Image 2e–g): Dorsum fawn brown, finely spotted with dark brown to black appearing on dorsum as a series of spots, more so in the young; trunk between the axilla and groin laterally of a dark coffee brown shade densely speckled with creamy white spots; upper lip whitish; iris yellowish with a dark brown circular pupil; venter creamy to dirty white with small brown dots particularly near the chin, throat, limb insertions and scarcely along the belly; tail pale orangish brown barely discernable from the trunk colour, not red even in juveniles. Nuptial males with a yellowish wash along the ventrolateral parts of neck and forebody.

Field observations: On 08 August 2011, at around 08:45hr an adult male was sighted in Madras (or Chennai) (13.00 N & 80.23 E, 19m), actively moving about under leaf-litter. In the same area, on 18 August 2013, at around 13:15hr two subadults were sighted under a rock. The Spotted Supple Skink *Lygosoma punctatum* (Linnaeus, 1758) (*contra* Gmelin, 1789; see Bauer, 2003) was found to be a syntopic congener in this region.

DISCUSSION

A study on the molecular phylogeny of Indian *Lygosoma* species (Datta-Roy et al. 2014) remarked that this species, though often assigned to the genus *Riopa*, is nested within *Lygosoma*. The study also delineates that the sampled congeners of the Indian radiation “are largely confined to the Indian subregion except *L. albopunctata* (sic) which is also distributed in mainland Southeast Asia” (Datta-Roy et al. 2014). Their phylogenetic tree reveals weak genetic structure within multiple populations of *L. albopunctatum* sampled from multiple unspecified localities. Though Datta-Roy et al. (2014) recovered an Indian endemic *Lygosoma pruthi* (Sharma 1977) as a sister to a Southeast Asian radiation they did opine that the Indian radiation consisted of,

apart from the endemics, two widespread species *L. punctatum* and *L. albopunctatum*.

Stoliczka (1872) stated that individuals from south India have a rather uniform brown back whereas those from Bengal have black spotted lines along six median scale rows down the back, almost resembling *L. punctatum*. Ahmed et al. (2009), Islam & Saika (2013) and Sarker (2014) all illustrated *L. albopunctatum* from the Eastern Himalayan and Brahmaputra regions. The photographs clearly show a more orangish tail in juveniles, contrasting with their brown trunk colour. Given the enormous distance and geo-ecological differences between peninsular and northeastern parts of the Indian subcontinent, such variations and tail colour difference in young ones might indicate cryptic diversity of Indochinese populations. In fact some literature (e.g., Das 2010) that currently ascribes as *L. albopunctatum* actually excluded its original definition by virtue of type series and / or type locality, as elaborated herein. Nevertheless, even admitting such lack of consensus on its global distribution and population systematics, it is here clarified beyond doubt that this species is very much present in southern India, especially along the Coromandel Coastal Plains (also see Ganesh & Chandramouli 2007; Nath et al. 2012), where lies its type locality.

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