

Sighting record and range extension of *Calliophis* (= *Callophis*) *bibroni* Jan, 1858 (Reptilia, Squamata, Serpentes, Elapidae)

P. GOWRI SHANKAR¹ and S. R. GANESH²

¹ *Agumbe Rainforest Research Station, Agumbe, Thirthahalli Thaluk, Shimogga, Karnataka, India.*
pogirishankar@rediffmail.com

² *Dept. of Zoology, Divn. of Wildlife, A.V.C. College, Mannampandal, Mayiladuthurai, Tamil Nadu, India.*

CALLIOPHIS BIBRONI Jan, 1858 is endemic to the Western Ghats, southern India. It is terrestrial in habit, inhabiting moist deciduous forests within an altitudinal range 900-1000 m. Its distribution records are from three fragmented localities; Muthanza, Wyanad wildlife sanctuary, Kannur district, Silent Valley. The most recent field studies on this species were in 1996 from Parasanikadavu Snake Park, Kerala. The IUCN status for this species has is Endangered (EN), based on criteria that include; restricted distribution, limited location, continuing decline in extent of occurrence, severely fragmented area of occupancy and or quality of habitat. However, as per the Indian Wildlife (Protection) Act, 1972, it is listed in Schedule IV (Anonymous, 2001). This species is known from the Western Ghats as far north as Coorg (Smith, 1943). This article provides a record of two live individuals of *Calliophis bibroni* observed during reptile surveys in and around Agumbe, Karnataka, India. The photographs herein are the first for the species.

MATERIALS AND METHODS

Meristic and morphological characters such as standard scalation detail, measurement, coloration and body pattern of both the snakes were recorded. These details were collected from the live individuals without using any chemical immobilizing agents. Meristic data included the main, species-specific characters like the number of scales in a row around the body (near the neck, at mid-body and near the vent), number of ventrals, subcaudals, labials and internasals. The dorsal scale rows were counted one head length posterior to head (near neck), in the middle of snout-vent

length (at mid-body) and at one head length anterior to vent (near tail) (David & Vogel, 1998). Scales after the preventrals up to the scale before the anal scale were counted as ventrals (Dowling, 1951) and those after the anal, up to the penultimate scale (i.e., prior to terminal scale) were counted as subcaudals. Scales between rostral and the final scale bordering the jaw angle were counted as supralabials. Scales between the mental and final scale bordering the posterior genials were counted as infralabials. Scales surrounded by supralabials, postoculars and parietals were counted as temporals (Whitaker & Captain, 2004).

Symmetrical head scalation character values were given in left, right order. In addition to meristic data, morphologically diagnosable qualitative characters are also equally significant in species-identification (Vogel et al., 2007). Coloration and pattern present on the dorsum, venter and tail were noted. Morphometry (i.e., snout-vent length, and total body length) were measured with a string and a standard measuring tape (L.C = 1 mm; Butterfly brand) and the values recorded in mm. Sex-determination was done by inserting a thin, smooth, metallic probe. Photographs of the live specimens were taken prior to release. Photographs were documented in natural habitat background, using a Canon EOS 400 D model camera. Geographic coordinates and altitudes (m) of localities of capture were recorded using a Garmin 12™ Channel GPS. Habitat type followed Champion & Seth (1968). The map was modified from Gururaja et al., (2007).

Coloration in Life (Figs. 1-3 and 5-6)

The snakes were dark purplish above with black

bands that continued on to the ventral region which was bright coral red. Each dorsal body scale was dotted in the middle with scarlet red. Scales were smooth without any carination. Each black band was 3-5 times the scale's width. The inter-band distance was greater (1.5 times) than the band width. The bands were best visible from the lateral region, where the dark black colour contrasted with the scarlet, instead of the dark purple colour on the dorsum. A few bands were laterally divided. The snout and eye were black in colour, with a bright yellowish orange band that almost divides the parietals, which broadens laterally to meet the temporals. The neck was blackish with purple sides. The bands continued from the laterals on to the ventrals, where they fail to meet and form a complete cross band (Fig. 6). Preventrals and first few ventrals were less intensely coloured than the rest.

Habitus

Head depressed, body moderately slender, neck not evident, tail relatively short.

Ecological Notes

Two individuals were sighted within eight months in moist deciduous forests at around 600-700 m altitude. They were encountered on the move at night. The snakes flattened their bodies when

handled. Both the snakes were sighted in and around human habitation; the first one from a roadside and the second one from a plantation. The places of sighting were surrounded by houses, paddy, areca nut plantations and some patches of moist deciduous forest. Another coral snake species, *Calliophis nigrescens* was recorded to be syntopic with *C. bibroni* in both localities.

Locality (Fig. 4)

The first individual was found during September 2007, in Thirthahalli (N 13° 70' E 075° 23') and the second during April 2008, in Mandal Mane (N 13° 40' E 075° 23'). Both locations were present within Shimoga district of Karnataka state.

DISCUSSION

Precise distribution and collection data for this species is: *Calliophis bibroni* (10) – INDIA: Karnataka: Kodagu: Coorg, BNHS 2119, BMNH 1937.4.3.15; Kerala: Kannur: Thottada, ZSI (Calicut) 18-viii-1996; Kasaragod: Cherupuzha, ZSI (Calicut) 12-vi-1996; Wayanad: Wynad, BMNH, 1922.5.25.58, 72.1.2.7; 3000 ft, BMNH 1946.1.17.93; south India: Unknown, ZSI (Calcutta) 11376; Tamil Nadu: Nilgiris: Mudumallays, BMNH 74.4.29.51, BMNH 74.4.29.53 (Smith et al., 2008).

Only 10 deposited specimens are known for

Characters	Smith, 1943	Individual I	Individual II
Sex	-	Female	Female
Scales (smooth)	13:13:13	13:13:13	13:13:13
Supralabials (enters orbit)	7 (3,4)	6 (3,4)	6 (3,4)
Infralabials	-	5	5
Preocular	Nil	Nil	Nil
Postocular	1	1	1
Loreal	-	Nil	Nil
Temporal	1	1	1
Ventrals	219 – 227	229*	234*
Anal	-	1	1
Subcaudals	25 – 38	32	32
Total body length	775	601	451
Snout-vent length	645	556	416
Number of bands	-	34 on body, 5 on tail.	36 on body, 5 on tail.

Table 1. Meristic, morphologic and metric details of two live adult female *Calliophis bibroni*. * denotes additional data to Smith's data range.



Figure 1. *Calliophis bibroni* - dorsal head view showing the black snout and first band across the parietals.



Figure 2. *Calliophis bibroni* - ventral head view showing smaller posterior genials, chin shields and preventrals.



Figure 3. *Calliophis bibroni* - lateral head view showing orange supralabials and temporals.

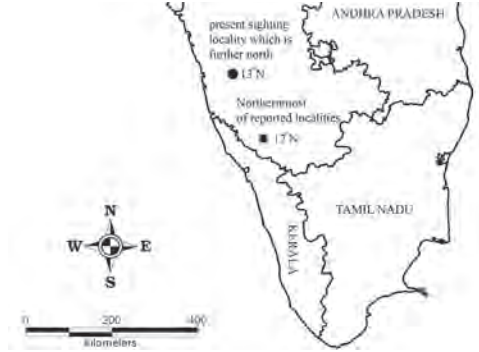


Figure 4. Map showing extended distribution, modified from Gururaja et al. (2007).



Figure 5. Live adult female *Calliophis bibroni* showing various diagnostic characteristics. All photographs by P. Gowri Shankar.

C. bibroni. This species was described by Jan, in 1858. The paucity of *C. bibroni* specimens can be clearly understood by the vast time span of almost 150 years, (i.e., from the year of description, to the current records).

Regarding distribution, *C. bibroni* has been recorded only from following localities: Manantoddy, Malabar, Muthanza, Kannur, Silent Valley and Coorg in the states of Kerala and Karnataka (Smith, 1943; Anonymous, 2001; Smith et al., 2008) respectively. These localities fall into the inter-state region in western Nilgiris (12° and 11° N lat. blocks of the Western Ghats). The sighting herein, recorded from Thirthahalli and Kanave (i.e., 13° N lat.) extends the range for the species, considerably northwards, by around 250-300 Km. Moreover, the paucity of sightings and or collection for this species, combined with the extended scalation range and distribution, are noteworthy for the species.

ACKNOWLEDGEMENTS

We thank Romulus Whitaker, Founder Director, Agumbe Rainforest Research Station for the support, Mr. Maruthi and Sandesh Kadur for helping us in sighting records.

REFERENCES

Anonymous. (2001). Note book for Reptiles. CAMP. CBSG South Asian Reptile Special Interest Group / South Asian Reptile Network, Taxon Data Sheets, 1998, 226 pp.

Champion, H.G. & Seth, S.K. (1968). *A Revised Survey of the Forest Types in India*. New Delhi, India: Manager of Publications.

David, P. & Vogel, G. (1998). Redescription of *Trimeresurus huttoni* Smith, 1949 (Serpentes, Crotalinae), with a discussion of its relationships. *Hamadryad* **22**, 73-87.

Dowling, H.G. 1951. A proposed standard system of counting ventrals in snakes. *British J. Herpetol.* **1** (5), 97-99.

Gururaja, K.V., Dinesh, K.P., Palot, M.J., Radhakrishnan, C. & Ramachandra, T.V. (2007). A new species of *Philautus* Gistel (Amphibia: Anura: Rhacophoridae) from southern Western Ghats, India. *Zootaxa* **1621**, 1-16.

Smith, E.N., Arachchi, M.K. & Somaweera, R. (2008). A new species of coral snake of the genus *Calliophis* (Squamata: Elapidae) the central province of Sri Lanka. *Zootaxa* **1847**, 19-33.

Smith, M.A. (1943). *Fauna of British India, including Ceylon and Burma, Vol. III Serpentes*. London: Taylor & Francis Limited, 583 pp.

Vogel, G., David, P., Lutz, M., Rooijen, V.J. & Vidal, N. (2007). Revision of the *Tropidolaemus wagleri*-complex (Serpentes, Viperidae, Crotalinae). I: Definition of included taxa and redescription of *Tropidolaemus wagleri* (Boie, 1827). *Zootaxa* **1644**, 1-40.

Whitaker, R. & Captain, A. (2004). *Snakes of India – The Field Guide*. Chengalpet: Draco Books, 481 pp.



Figure 6. (x2) *Calliophis bibroni* - ventral and subcaudal scales showing characteristic scarlet red colour and alternate black patches.