



The Distribution of Tillack’s Kukri Snake, *Oligodon tillacki* Bandara, Ganesh, Kanishka, Danushka, Sharma, Campbell, Ineich, Vogel, and Amarasinghe 2022, in Gujarat, India

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The colubrid genus *Oligodon* Fitzinger 1826 consists of small, usually mild-tempered, crepuscular, oviparous, non-venomous, widely distributed snakes, in which females are larger than males (Whitaker and Captain 2004, 2008; Desai 2011, 2017; Parmar and Tank 2019; Uetz et al. 2022). Some species in the genus *Oligodon* (e.g., *O. arnensis* Shaw 1802 and *O. taeniolatus* Jerdon 1853) exhibit considerable morphological variation. Historically, researchers concluded that *O. arnensis* is a single species that is widely distributed throughout southern Asia (Daudin 1803; Duméril et al. 1854; Gunther 1864; Wall 1921, 1923; Deraniyagala 1936, 1955; Smith 1943). Recently, Bandara et al. 2022 resolved the taxonomic confusion emanating from the extensive variation in the species with a description of a new species, *Oligodon tillacki*. According to previous records, two species of *Oligodon* were known to occur in Gujarat (i.e., *Oligodon arnensis* Shaw 1802 and *Oligodon taeniolatus* Jerdon 1835)) but the study by Bandara et al. 2022 forced a reevaluation of the distribution of *O. arnensis* in Surat, Gujarat.

Previously *O. tillacki* had been reported from Ahmedabad and Baroda (Bandara et al. 2022). Herein, I verify the previously recorded reports of *O. arnensis* and confirm records of *O. tillacki* from Surat, Navsari, The Dangs, Jamnagar, Bhavnagar, Botad, and Amreli Districts of Gujarat.

Sampling involved field surveys, rescuing snakes, and scanning roads for roadkills. Individuals were identified by using keys addressing banding patterns, scalation, and distributions provided by Bandara et al. 2022. I counted scales following the methods of Dowling (1951) and determined sex using the popping method (Gregory 1983).

I obtained four individuals designated A, B, C, and D (i.e., one male and female from Surat; one female from The Dangs, and one female from Navsari District, respectively). These snakes would have been identified as *O. arnensis* but verification of scalation and morphometrics confirmed that they were *O. tillacki* (Tables 1 & 2). *Oligodon tillacki* can be readily identified by banding patterns on the head and body, scalation, and the



Fig. 1. Body pattern of Tillack’s Kukri Snake (*Oligodon tillacki*) (left), note the markings on the head and the number and thickness of the bands on the body; lateral view of the head of *O. tillacki* (right), note the prominent loreal scale. Photographs by Dikansh S. Parmar (left) and Adit Patel (right).

Table 1. Scalation and pattern of Tillack’s Kukri Snakes (*Oligodon tillacki*) from Gujarat, India. Abbreviations: Veer Narmad South Gujarat University is (VNSGU), Vansda National Park (VNP), dorsal scales behind the head, at midbody, and anterior to the vent (DS), ventrals (V), subcaudals (SC), supralabials (SL), infralabials (INFL), number of supralabials in contact with the eye (SLCE), supraoculars (SO), preoculars (PRO), postoculars (PO), loreals (L), supralabials in contact with the loreal (SLCL), temporals (T), and anal plate (AP).

Scalation/pattern	Individual A	Individual B	Individual C	Individual D
Locality	VNSGU (Surat) 21.1535°N, 72.7832°E	Magdalla (Surat) 21.1371°N, 72.7602°E	Mahal (The Dangs) 20.9156°N, 73.6691°E	VNP (Navsari) 20.7638°N, 73.4861°E
Sex	M	F	F	F
DS	17:17:15	17:17:15	17:17:15	17:17:15
V	188	201	199	200
SC	53	49	45	48
SL (L/R)	7	7	7	7
INFL (L/R)	7	7	7	7
SLCE (L/R)	2 (3rd and 4th)	2 (3rd and 4th)	2 (3rd and 4th)	2 (3rd and 4th)
SO (L/R)	1	1	1	1
PRO (L/R)	1	1	1	1
PO (L/R)	2	2	2	2
L (L/R)	1	1	1	1
SLCL (L/R)	2 (2nd and 3rd)	2 (2nd and 3rd)	2 (2nd and 3rd)	2 (2nd and 3rd)
T (L/R)	1+2	1+2	1+2	1+2
AP	Divided	Divided	Divided	Divided
Bands	Blotched anteriorly	Blotched anteriorly	Blotched anteriorly	Blotched anteriorly
Anterior bands	Enlarged	Enlarged	Enlarged	Enlarged
Thickness of bands (no. of scales)	4	3	3	4
No. of scales between bands	4	4	5	5
Bands on body and tail	25+7	26+8	26+9	28+6
Markings on nape	Triangular	Triangular	Triangular	Triangular

presence of a loreal scale, which is absent in *O. arnensis* (Fig. 1). *Oligodon tillacki* and *Oligodon russelius* Daudin (1803) share a similar character, i.e., the loreal scale is present in both species but they can be distinguished by banding pattern, scalation and geographic distribution (*Oligodon russelius* is not distributed in Gujarat). I also examined photographic records from Amreli,

Botad, Jamnagar, Bhavnagar, and other districts of Gujarat and confirmed the wide distribution of *O. tillacki* (Fig. 2).

Bandara et al. 2022 reported *O. tillacki* from Ahmedabad and Baroda/Vadodara. Herein I present additional records of the species from Surat, Navsari, The Dangs, Amreli, Botad, Jamnagar, Bhavnagar, and other districts in Gujarat (Fig. 3).



Fig. 2. Photographs of Tillack’s Kukri Snakes (*Oligodon tillacki*) from districts of Gujarat: Surat (A), Navsari (B), The Dangs (C), and Bhavnagar (D). Photographs by Dikansh S. Parmar (A & C), Adit Patel (B), and Nayan K. Rathod (D).

Table 2. Morphometrics (in mm) of Tillack’s Kukri Snakes (*Oligodon tillacki*) from Gujarat, India (localities as in Table 1). Abbreviations: head length from the tip of snout to posterior angle of the jaw (HL), head length from the tip of the snout to the posterior border of the parietal shield (HLP), head width (HW), horizontal diameter of eye (EYED), vertical diameter of eye (EYEDV), distance between eye and nostril (EYE-N), interorbital distance (ID), length of parietal shield (LP), width of parietal shield (WP), length of frontal shield (LF), width of frontal shield measured between supraoculars (WF), length of prefrontal shield (LPF), width of the prefrontal shield (WPF), length of internasals (LIN), width of internasals (WIN), length of rostral shield (LR), width of rostral shield (LW), total body length (TBL), and snout–vent length (SVL).

	Individual A	Individual B	Individual C	Individual D
HL	11.1	11.4	11.1	11
HLP	10	10.1	10.2	8.9
HW	8.2	8.2	8.3	8.0
EYED	2.3	2.2	2.3	2.2
EYEV	3.1	3.2	3.2	3.0
EYE-N	2.6	2.8	2.7	2.6
ID	5.7	5.7	5.8	5.0
LP	3.9	3.9	3.8	3.3
WP	3.4	3.5	3.4	2.9
LF	4.3	4.6	4.6	4.1
WF	3.5	3.5	3.3	2.9
LPF	2.2	2.2	2.3	2.1
WPF	2.8	2.9	2.9	2.4
LIN	2.1	2.1	2.1	2.0
WIN	2.2	2.3	2.3	2.0
LR	3.2	3.2	3.3	3.0
WR	2.9	2.8	2.9	2.6
TBL	353	412	357	333
SVL	277	340	282	257

The loreal scale is one of the key distinguishing characteristics between the two species (*O. Tillacki* and *O. arnensis*) and by following the diagnostic keys given by Bandara et al. 2022 we conclude that *Oligodon tillacki* is the widespread species in Gujarat that was mistaken as *Oligodon arnensis*.

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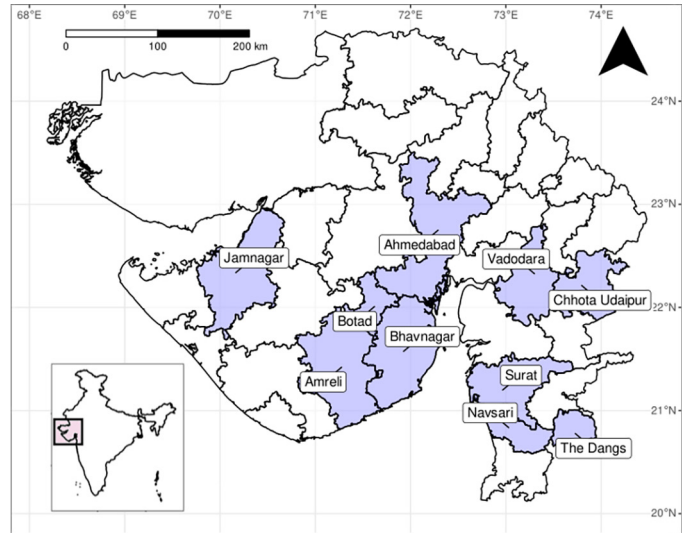


Fig. 3. Map showing the wide distribution of Tillack’s Kukri Snake (*Oligodon tillacki*) in Gujarat, India.

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