

Oligodon kheriensis ACHARJI & RAY, 1936, in India and Nepal, with notes on distribution, ecology and conservation

The Coral-red Kukri Snake, *Oligodon kheriensis* ACHARJI & RAY, 1936, is one of the rarest snake species worldwide. There are about 70 species belonging to the central Asian genus *Oligodon* (GREEN 2010; DAVID et al. 2011). Among these, *O. kheriensis* is known from only nine specimens. The type was reported from a forest camp near Kheri Division, Lakhimpur-Kheri district, State of Uttar Pradesh, India (ACHARJI & RAY 1936), the second specimen from Siddhanath Science Campus, Mahendranagar in western Nepal (SCHLEICH & KÄSTLE 2002), and the third from Pithuwa village, Chitwan district, south-central Nepal (PANDEY 2012). Individuals number four and five (from Sirshtala in 2010 and 2012), six (from Dhapgunj in 2012) and seven (from Mohitnagar in 2013) were reported from the district of Jalpaiguri in the Indian state of West Bengal (SNAKE LOVERS IN INDIA 2013), eight from Katerniaghat Wildlife Sactuary, Uttar Pradesh, India (Anonymous 2012; SNAKE LOVERS IN INDIA 2013), and nine from an area near Kachugaon Reserve Forest, Kokrajhar, Assam, India (SUTRADHAR & NATH 2013). However, this snake's threat status, biology and ecology are almost unknown (SCHLEICH & KÄSTLE 2002). In the present note, the authors refer to nine new observational records of this taxon with photo evidence that extend the known distribution range, and add some ecological information noticed in the natural habitats in the lowlands of south-eastern Nepal and West Bengal, India. This information may be useful for a more in-depth scientific study to better understand the natural history of *O. kheriensis* and formulate strategies of its conservation. Its rareness is the prime reason why *O. kheriensis* was never formally assessed against IUCN criteria for risk of extinction.

The new individuals of *O. kheriensis* were recorded at: i) Damak - ward no. 06, Jhapa (Nepal); ii) Sauraha, Chitwan (Nepal); iii) Saktikhor area, Chitwan (Nepal); and iv) Jalpaiguri, West Bengal (India). Their geographic distribution is described based on

Table 1: New record localities for the rare Coral-red Kukri Snake, *Oligodon kheriensis* ACHARJI & RAY, 1936, in Nepal and India.

Individual No.	District, State, Country (Altitude) [m a.s.l.]	Locality (Altitude) [m a.s.l.]	Coordinates (time of the day)	Date	Circumstances
1	Jhapa, SE Nepal	Municipality of Damak, ward no. 06	26.68769°N, 87.67451°E, (129)	February 26, 2012 (09:00)	While excavating a harvested crop field
2	Jhapa, SE Nepal	Municipality of Damak ward no. 06	26.687756°N, 87.672756°E, (140)	March 2013 (12:30)	Edge of water canal, about 1 km from the first individual
3	Chitwan, SC Nepal	Saktikhor area	27.73048°N, 84.59001°E, (414)	February, 2007 (during the day)	while digging by dozer
4	Chitwan, SC Nepal	Sauraha area	27.57380°N, 84.49969°E, (195)	October 3, 2014 (13:14)	Adult female, no locality details
5	Chitwan, SC Nepal	Sauraha village	26.54135°N, 88.71904°E, (86)	When disturbed December 9, 2010 (20:28)	buried itself in the soil When disturbed
6	Jalpaiguri, W Bengal, India	Rajbaripara	26.71383°N, 88.43130°E, (127)	June 19, 2012 (21:17)	buried itself in the soil On open pebbly soil
7	Jalpaiguri, W Bengal, India	College Para	26.71383°N, 88.43130°E, (127)	June 19, 2012 (21:17)	On open pebbly soil
8	Jalpaiguri, W Bengal, India	College Para	88.43130°E, (127)	July 23, 2012 (22:40)	When disturbed
9	Jalpaiguri, W Bengal, India	Mohitnagar	26.52924°N, 88.67059°E, (86)		buried itself in the soil

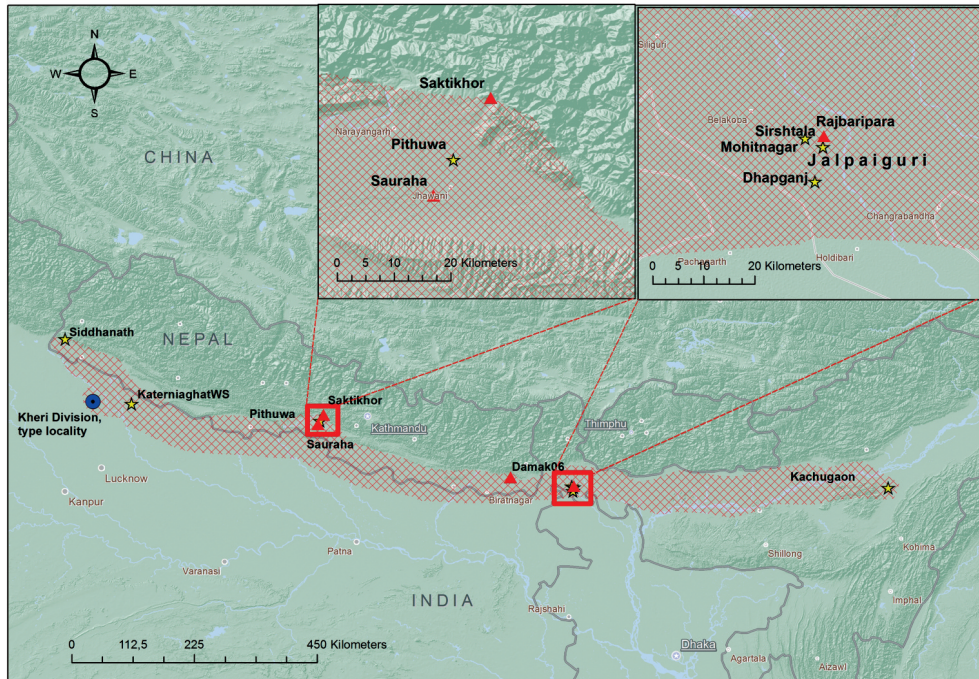


Fig. 1: Map showing the currently known distribution of *Oligodon kheriensis* ACHARJI & RAY, 1936, in India and Nepal. Blue circle – type locality; yellow stars – literature data; red triangles – new records; dashed area – known distribution.

photographic records and published locality information; precise record localities were geo-referenced, general habits, habitat types inhabited and circumstantial information documented. Due to the opportunistic data collection, morphometric measurements were not made. Previously published locality information was included in the description of the known range, now extending across the Terai lowland regions of Nepal and India. Extent of occurrence (EOO) and area of occupancy (AOO) were calculated from the updated distribution information. Considering the 2001 IUCN Red List Categories and Criteria (Version 3.1.), these results along with ecological data were used to define the threat of extinction category for *O. kheriensis*. All geographic distribution information was entered on a 2 km x 2 km grid map using the software packages ESRI ArcGIS Desktop 10.

This note reports nine individuals of *O. kheriensis* from four new localities

(Table 1, Figs. 1 and 2). These localities lie approximately 106 km east of Damak, eastern Nepal. The records suggest a wider distribution range for *O. kheriensis* than earlier reported and fill in large gaps between known localities. Damak and Jalpaiguri localities are situated approximately 700 km and 800 km east of the type locality in India (ACHARJI & RAY 1936) and approximately 330 km and 430 km east of the record's location at the village of Phithuwa, Chitwan district, south-central Nepal (PANDEY 2012).

All individuals were recorded in lowland areas along the foothills of the southern Himalayas from 54 m (SUTRADHAR & NATH 2013) to 414 m a.s.l. Damak and Shaktikhor individuals were found under the soil surface when exposed by an excavator. The location is surrounded by crop fields on alluvial wet soil traversed by a water canal. Bamboos grow along the water canal. The Shaktikhor individual was rescued by a local from premises of the erstwhile third



Fig. 2: *Oligodon kheriensis* ACHARJI & RAY, 1936, observed during the authors' research.
Top left – Damak specimen; top right – Rajbaripara specimen;
bottom left and right – two of the Chitwan specimens.

division of the Maoist army based in Shaktikhor, Chitwan (now the headquarters of the Nepal Army General Directorate) while excavating to settle that camp. The land was not agrarian. The Jalpaiguri specimens were observed in rocky soil in a plain open area. During the observations, all individuals tried to dig themselves into the soil for escape. It is obvious that the fossorial nature of this cryptic species along with lack of systematic survey, can explain the very low number of recorded individuals. ACHARJI & RAY (1936) and SCHLEICH &

KÄSTLE (2002) did not provide any information on the time of the day when individuals were found but PANDEY (2012) recorded it from Chitwan valley at mid-afternoon (15:56 h) during April at an open cultivated land. The individual from Katarniaghat Wildlife Sanctuary was observed at late night (Anonymous 2012). The most recent observations were made in the early morning hours (9:00 h; first Damak specimen in February), at mid-day (12:30 h - second Damak specimen in March; 13:14 h - Sauraha specimen in October) and at dark

hours of the day (20:28 h; 21:17 h; 22:30 h; all Jalpaiguri specimens in December, June and July) which indicates that this species can be active both by day and night.

According to the authors' data, *O. kheriensis* is a globally endangered, EN B2ab (iii, iv) species based on IUCN Categories and Criteria (Version 3.1.). This is caused by the small size of the known extent of occurrence of just 48.000 km² and area of occupancy of just 28 km². At present, the population must be considered small and severely fragmented as in total only 18 individuals were ever observed. Due to habitat degradation (urbanization and agriculture) and intentional killing (PANDEY et al., unpublished), it can be inferred that there is a continuous population decline in terms of area of occurrence, quality of habitat and number of subpopulations. The wide range of known distribution localities and occasional reports along the southern Himalayas suggest a wide distribution of *O. kheriensis*. However, further, elaborate studies will be necessary to verify this snake's detailed distributional status, ecology, habits and habitat.

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