

ARBOREAL BEHAVIOUR IN THE INDIAN PAINTED FROG *KALOULA TAPROBANICA* PARKER, 1934

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Abstract: I quantified the arboreal behavior in the Indian painted frog *Kaloula taprobanica* Parker, 1934. Out of a 51 day study, a sum of 34 sightings of imagos and adults were obtained on tree trunks during rainy nights. The perching height value ranged from 1.2 to 3 m but most (n=28) were seen at a perching height of about 1.5–2.5 m. No individuals were seen on crevices on walls and building structures. Two sightings were from above three meters. Active foraging, feeding and courtship behavior were observed.

Key words: India, Amphibia, Anura, microhylid frog, perching height, tree hole.

Resumen: S.R. Ganesh. “Comportamiento arborícola en la rana pintada de la India *kaloula taprobanica* Parker, 1934”. Cuantificamos el comportamiento arbóreo en la rana pintada de la India *Kaloula taprobanica* Parker, 1934. A partir de un estudio de 51 días, se obtuvieron 34 avistamientos de imagos y adultos en troncos de árboles durante noches lluviosas. El rango de altura de la percha osciló entre 1.2 y 3 m pero la mayoría (n = 28) fueron vistos en una altura de percha de cerca 1.5-2,5 m aproximadamente. No fueron vistos individuos en grietas de paredes y estructuras de construcción. Dos avistamientos estuvieron por encima de tres metros. Se observaron ejemplares activos forrajeando, alimentándose y en comportamiento de cortejo.

Palabras Clave: India, Amphibia, Anura, microhílido, altura de percha, agujero de árbol.

INTRODUCTION

The Indian Painted frog *Kaloula taprobanica* Parker, 1934 is a common, semi-fossorial, nocturnal insectivorous species of microhylid frog distributed in South Asia, including Sri Lanka, peninsular India and Bangladesh (Biju 2001, Chanda 2002, Daniel 2002, Daniels 2005, Dutta and Manamendra-Arachchi 1996, Dutta 1997, Giri *et al.* 2001, Kanmadi and Hiremath 1989, Kirtisinghe 1957, Molur and Walker 1998, Naik *et al.* 1993, Vyas and Patel 1994). Inger *et al.* (2004) remark it to be “a burrowing species found in a wide variety of habitat types including dry forests, plantations (coconut and rubber), wetlands and areas close to human habitations (...) generally found under leaf-litter, in loose soil, and under logs and other ground cover.” Some behavioural studies have been conducted on this species in Sri Lanka (de Silva and de Silva, 1995). In this note, I present my observations on the arboreal behaviour of the painted frog.

MATERIALS AND METHODS

The observations took place in the Chennai Snake Park Campus (13°08'N 80°27'E; 19 m asl) – a region situated in the Coramandel Coastal plains of southeastern India, consisting primarily of tropical dry evergreen scrub forest type growing on alluvial soil. These observations were made during the transition between southwestern and northeastern monsoon seasons, in the months of August and September. During these months, for a period of 51 days, a total of two hours between 18:00-20:00 hrs were spent surveying tree holes for sighting painted frogs. Moderate rains were experienced on 12 days. Ambient air temperature in degree Celsius

and relative humidity in percentage were recorded using a digital thermo-hygrometer. Girth at breast height of trees was measured with a standard inch tape, while the tree height was measured by ocular estimation. All trees were intensely observed for presence of any hole of crevice (> 2 cm width) for being scored separately. The tree species in the study site are given in Appendix 1. Dimensions of trees present in the study site are given in Table 1.

RESULTS

A total of 34 sightings of metamorphs (= ‘imago’) and adults of the target species, i.e. the painted frog, were obtained during the 51 days period. The details are presented in Table 2. Most individuals (n=28; Table 2) were seen at a perching height of about 1.5–2.5 m on tree trunks during rainy nights. A nocturnal, insectivorous gekkonid lizard *Hemidactylus leschenaultii* Dumeril et Bibron, 1837 was also observed to occupy the same substrate, but not during rainy nights. No individuals of painted frogs were seen on crevices on walls and building structures. These were occupied by another, smaller, much more arboreal microhylid frog species, *Ramanella variegata* (Stolizcka, 1871) and another gecko species *H. frenatus* Schlegel, 1836. Two sightings were from nearly three meters above and were sighted largely due to frog’s calls. The least perching height value was 1.2 m on a buttress root. Several individuals foraged actively for insects, mostly termites that flourished on the old trees’ trunks. Feeding was observed thrice when the painted frogs fed on termites, scooping up the emerging winged termites from their nests on tree trunk’s crevices. Courtship behavior was observed once, when an amplexing pair was sighted.

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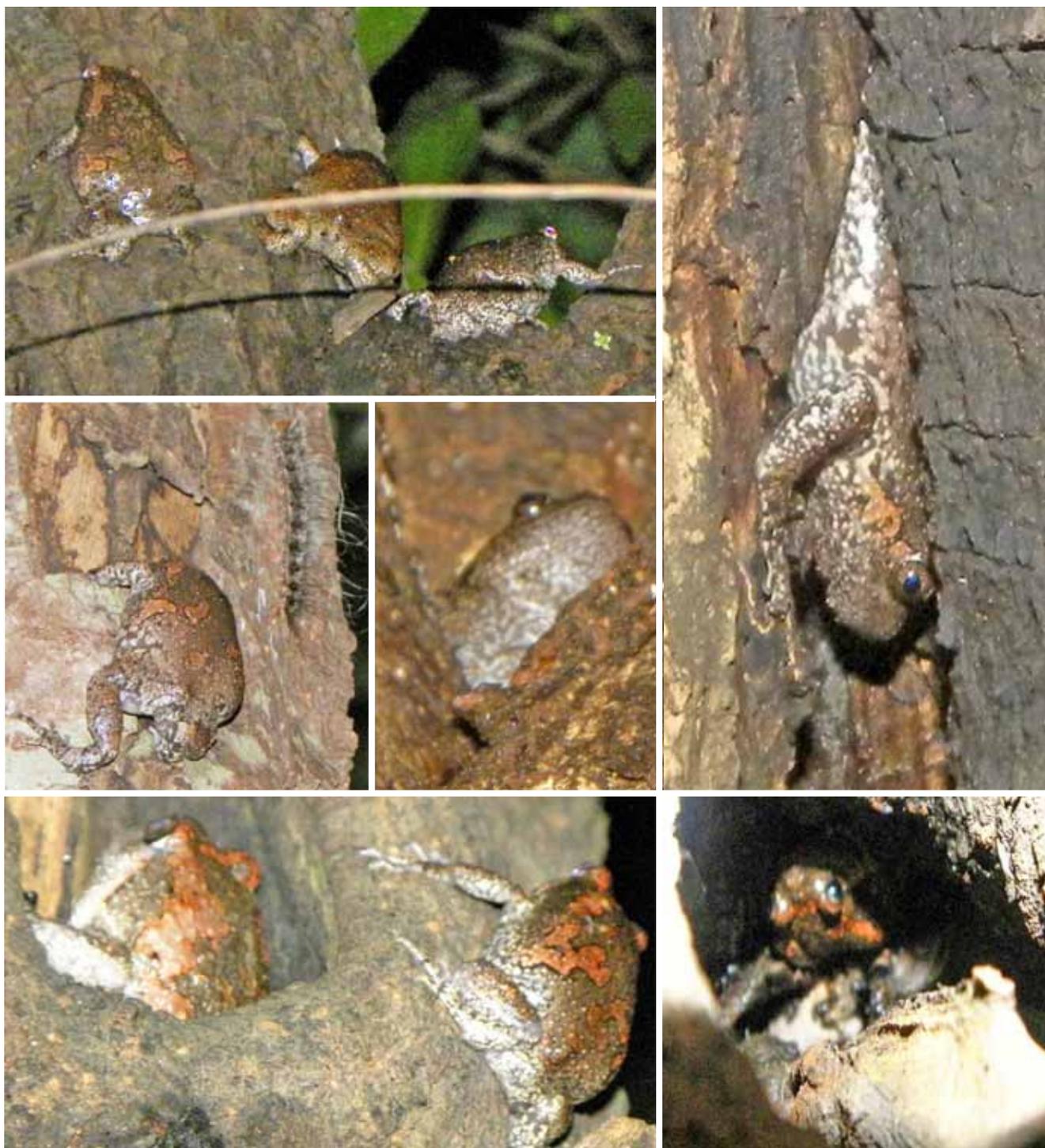


FIG. 1. Painted frogs *Kaloula taprobanica* – various living, uncollected individuals active at night on tree trunks and holes. Nocturnal photos by S.R. Ganesh.

Ranas pintadas Kaloula taprobanica – varios individuos vivos, no colectados en troncos y agujeros de árboles. Fotos nocturnas por S.R. Ganesh.

TABLE 1. Dimensions (girth at breast height in cm; height in m) of trees present in the study site.**TABLA 1.** Dimensiones (diámetro a la altura del pecho en cm; altura en m) de árboles presentes en el sitio de estudio.

GBH (in cm) class intervals	Total no. of trees	No. of trees with holes	Approx. tree height (in m) class intervals	Total no. of trees	No. of trees with holes
< 50	13	3	< 2 m	2	1
50 – 100	30	26	2 – 4 m	14	11
100 – 150	13	10	4 – 6 m	23	21
> 150	2	1	> 6 m	16	7
Total	55	40	Total	55	40

DISCUSSION

Although this species is solitary on some occasions, as much as four individuals were seen together during this study. Some frogs were calling out from tree holes after partly emerging from the holes, peeing out of it. The habits of this species is relatively poorly-understood but has been consensually considered to be fossorial (Chanda 2002, Daniel 2002, Daniels 2005, Dutta and Manamendra-Arachchi 1996). But its arboreal habits have been reported earlier by Daniels (2005) who mentioned that this species can scale walls of buildings and even glass with ease and has been known to ascend hollow tree trunks infected with termites, its favorite food. The present observations are in favor of Daniels (2005). The present note offers a much more quantitative account on the arboreal behaviour in the painted frog.

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TABLE 2. Spatio-behavioural profiles of painted frogs sighted on trees during the study. Values in parenthesis indicate sample size.**TABLA 2.** Perfiles espacio-temporales de ranas pintadas en los árboles durante el estudio. Los valores entre paréntesis indican el tamaño de la muestra.

Perching height (in m) class intervals	Resting substrate	Orientation	Conspecific interaction	Inter-specific interaction
1 – 1.5 m (3)	Tree trunk (12)	Upwards (14)	Calling (7)	Antagonistic (1)
1.5 – 2 m (12)	Tree hole (12)	Downwards (11)	Foraging (6)	Avoidance (4)
2 – 2.5 m (16)	Branches (9)	Right side (5)	Feeding (2)	Inquisitive (0)
2.5 – 3 m (2)	Leaves (1)	Left side (4)	Courtship (1)	None (1)

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Appendix 1:

Tree species present in the study site:

Anona squamos, *Polyalthia longifolia*, *Atlantia monophylla*, *Azadirachata indica*, *Zizyphus mauritiana*, *Zizyphus xylopyrus*, *Caesalpinia coriaria*, *Delonix regia*, *Cassia siamea*, *Cassia rouxburghii*, *Tamarindus indica*, *Prosopis juliflora*, *Acacia planifrons*, *Acacia leucophloea*, *Albizia lebbek*, *Morinda pubescens*, *Santalum album*, *Borassus flabellifer*, *Wrightia tinctoria*, *Streblus asper*, *Pamburus missionis*, *Mangifera indica*, *Aegle marmelos*, *Mimusops elengi*, *Millingtonia hortensis*, *Peltophorum pterocarpum*, *Erythrina indica*, *Adenanthrea pavonina*, *Thespesia populnea*, *Kigelia pinnata*, *Guazama ulmiroli*, *Madhuca longifolia*, *Couroupita guianensis*.