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HABITAT AND ECOLOGY OF INDIAN ROCK AGAMA (*PSAMMOPHILUS DORSALIS*) IN SHRUB LANDS AT NARAYANPUR, KARNATAKA, INDIA.

Prof. Smt. K. G. Hiremath

Associate professor, Department of Zoology, M.G.V.C first grade College Muddebihal,
Vijayapur (Dist), Karnataka, India.

ABSTRACT:

A research on habitat and ecology of Indian rock agama (*Psammophilus dorsalis*) in shrub lands at Narayanpur, Yadagiri (Dist), Karnataka, India. Observations were made one day per week was recorded for the first time in this area. The measurements of temperature, relative humidity were documented.

KEYWORDS: Agama lizard, Ecology, shrub lands, Narayanpur village.



INTRODUCTION

Psammophilus dorsalis is commonly called as Indian rock agama found in South India. It is also distributed in the states of UP, Punjab, MP etc. it is a common rock dwelling lizard wide spread throughout the Indian peninsula of elevations up to 1829 m (Daniel 2002). The Indian rock agama inhabits holes, crevices etc near water streams, ditches and rivers. It has been observed to hibernate in the holes during winter. These are known to breed from April to August (Sarkar and Shivaanandappa 1989, Shanbhag, 2002). The species shows sexual dimorphism, where males (Fig-1) are larger than females (Fig-2). During

breeding season males are brightly coloured and females coloured that matches with colour of rocks on which they are found (Smith, 1935). Perch height differs between sexes; males prefer to perch at greater heights than females, which may vary during breeding season (Radder *et al.*, 2005). The *P. dorsalis* observed entering water to reduce body temperature at Hampi, Karnataka (Veeranagouda *et al.*, 2010).

AIMS AND OBJECTIVES

The habitat and ecology of peninsular rock agama (*P. dorsalis*) are not reported from Narayanpur shrub lands of Yadagiri district of Karnataka. Therefore the present study was initiated to record the ecological factors and habitats of surrounding 10kms of shrub

lands.

MATERIALS AND METHODS

The study was carried out from April to September 2018 at Narayanpur. The area is provided with rocky outcrops, scrub jungle with sparse vegetation. The study area was selected where lizards were very commonly spotted. Observations were made one day per week. The ecological conditions of the area such as, temperature, relative humidity, type of rocks and vegetation was recorded. Ten specimens were captured randomly by noose method for morphological details and sex determination. They were released back in to their habitat. All the morphological characters were measured by using digital clipper scale. The measurements of temperature and relative

humidity (meteorological measurements) of the area were obtained from the Meteorological Department at Yadagiri. The name of species was identified and status of IUCN was recorded (Table-1).

Table.1: Shows species of Indian rock agama found in and around Narayanapur village of Yadagiri dist. Karnataka. India

Common Name	Species	Class	IUCN status
Indian rock agama	<i>Psammophilus dorsalis</i>	Reptilia	Least concern (LC)



Fig.1: *Psammophilus dorsalis* (Male)

RESULT

Habitat of this area consists of rocks and scrub jungle. Maximum temperature in many areas was 45°C during summer months with minimum winter temperature around 20-25°C. The Lizard was seen to move in river water of Basavasagar reservoir of Narayanpur village to reduce its body temperature and make rhythmic circular movements including placing a ventral surface of its abdomen in the water. Frequently two hind limbs were stretched and plunged in to the water many times.

Table.2: Temperature and Relative humidity of the study area.

Sl. No	Month	Temperature (°C)	Relative humidity (%)
1	April	39.50 (± 2.00)	74.00
2	May	45.00 (± 3.00)	76.00
3	June	38.60 (± 4.00)	72.50
4	July	36.50 (± 3.20)	71.60
5	August	36.00 (± 2.00)	72.10
6	September	35.00 (± 3.00)	70.00

P. dorsalis is well suited to arid conditions. It was found that these Lizards remain active throughout the day except for hottest hours. They feed on insects. Fruits, etc., the Lizards found in and around Narayanpur village areas, where enough food support a population. Here the total yearly rain fall is moderate. They prefer to breed in March to May months. After copulating with male, the female agama digs a nest in moist, sandy soil, in which plants are growing, and then deposits the eggs within the nest which is about 2 inches deep. It was seen that their population was more during the month of March and April. The temperature and relative humidity were recorded from April to September months (Table-2).

DISCUSSION

The Indian rock agama is agamid Lizard associated with rocky terrain in hilly areas of south India (Das 2002, Daniel 2002). It is sexually dimorphic species, where males are large with black

breeding colour on the head and lateral sides of the body, females are smaller than males. Perch height also differs between the sexes. Males prefer to perch at greater height than females.



Fig.2: *Psammophilus dorsalis* (Female)

In certain agamid Lizards that live in arid regions water uptake is by means of transporting water across the skin (Sherbrooke, 1993, Withers 1993). Further studies are therefore needed to determine if the behavior of *P. dorsalis* involves water uptake rather than thermoregulation as indicated (Veeranagouda *et al.*, 2010). There have been no records of *P. dorsalis* feeding on other smaller Lizards in the past. Agama is insectivorous and also consumes vegetation such as flowers, grasses and fruits. Their diet consists of mainly ants, grasshoppers, beetles and termites. *P. dorsalis* is a common agamid across the peninsular India and there are numerous studies largely on the behavioral ecology of this species. Detailed studies on the thermoregulatory behavior in a gravid female (Veeranagouda *et al.*, 2010) social behavior of this species with respect to the use of visual cues (Radder *et al.*, 2006), and anecdotal observations on the predation behavior have been made (Sreekar *et al.*, 2010).

CONCLUSION

The relative studies shows that temperature and humidity on this animal indicate that so far as the impact of these environmental factors are concerned, the temperature comes first, then rain fall and lastly humidity. This Lizard has breeding period from April to June/July and at times extends to early August. The basic natural history or descriptive ecological studies on the habitat quality/sustainability, diet composition, effects of anthropogenic disturbance and habitat modification on this species have been under taken.

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