

## Captive breeding of the reticulated python *Python reticulatus* in Andaman and Nicobar islands, India

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**ABSTRACT** - Captive breeding of a wild reticulated python *Python reticulatus* was conducted in the Mini Zoo at Port Blair, Andaman and Nicobar islands during 2010. The female laid three eggs and two hatched. The details of breeding activity are discussed in this paper.

THE Andaman and Nicobar Islands, popularly known as 'Bay Islands', are situated in the Bay of Bengal, mid way between peninsular India and Myanmar. The islands are located between 6°45' and 13°41' N and 92°12' and 93°57' E. There are 572 islands lying 193 km away from Cape Negrais in Myanmar, 1255 km from Kolkata and 1190 km from Chennai. The total geographic area of the Andaman and Nicobar Islands is 8249 km<sup>2</sup> of which the Andaman group covers 6408 km<sup>2</sup> while Nicobar covers 1841 km<sup>2</sup>. The islands attain a maximum altitude at Saddle Peak (730 m) that is formed mainly of limestone, sandstone and clay. Two islands of volcanic origin are found in the Narcondum and the Barren islands. The former is now apparently extinct while the latter is still active. The climate is typical of tropical islands of similar latitude. It is always warm but with sea-breezes. Rainfall is irregular, but usually dry during the north-east, and wet during the south-west, monsoons.

Studies on reptiles commenced with the notes on the Fauna of Nicobar Islands by Blyth, (1846) followed by Steindachner (1867), Gray (1842), and Sclater (1891). During the twentieth century many research organisations have been involved in the taxonomy of reptiles and amphibians in Andaman and Nicobar Islands (Smith, 1935, 1940, 1943; Cherchi, 1954; Biswas & Sanyal, 1965; Tiwari & Biswas, 1973; Pillai, 1977; Whitaker, 1978; Mehta & Rao, 1987; Das, 1996; Stoliczka,

1873). Recently, Das & Gemel (2000), Ghodke & Andrews (2001a & 2001b), Vijayakumar (2005) and Vijayakumar & David (2006) carried out studies in Andaman and Nicobar Islands. Reviewing this literature reveals that no studies have been carried out on breeding by *Python reticulatus*.

*Python reticulatus* is the longest snake in the world and among three old world pythons. It is a beautiful, appealing and large snake. It is relatively slender and characterised by an attractive pattern, diamond-shaped outline highlighted by white spots with a light brown background (Smith, 1943). It is native throughout Southeast Asia from the Nicobar Islands, Bangladesh, Burma, Thailand, Laos, Cambodia, Vietnam, Malaysia and Singapore, east through Indonesia and the Indo-Australian Archipelago and the Philippines (McDiarmid, 1999). *P. reticulatus* inhabits evergreen forest and is semi-aquatic in habit. It feeds mostly on small mammals, birds and reptiles. It occasionally feeds on mammals like wild boar, deer, cattle, and even humans. It lays eggs in large clutches of up to 100. The female python exhibits considerable parental care till the eggs are hatched.

### MATERIALS AND METHODS

This study was carried out during 2010 at Mini Zoo, Haddo, Port Blair. A healthy adult pair of *P. reticulatus* was selected for breeding. The male was eight feet long and female was twelve feet

|            | J | F | M | A | M | J | J | A | S | O | N | D |
|------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Wet season |   |   |   |   |   |   |   |   |   |   |   |   |
| Dry season |   |   |   |   |   |   |   |   |   |   |   |   |
| Mating     |   |   |   |   |   |   |   |   |   |   |   |   |
| Egg laying |   |   |   |   |   |   |   |   |   |   |   |   |
| Hatching   |   |   |   |   |   |   |   |   |   |   |   |   |

**Table 1.** Relationships between reproductive activities and season.

long. Both snakes were originally caught from the Great Nicobar Island. The breeding pair was kept in a 3 x 3 x 3 m concrete room. The front of the room was covered with wire mesh with an entrance. The pair was fed domestic fowls, weighing 1.5 kg on a fortnightly basis.

## RESULTS AND DISCUSSION

The female was introduced into the male's enclosure during the first week of October, 2009 and mating and courtship behaviour was observed from October to January. The highest mating frequency was observed during the months of December and January (Table 1). Mating was observed 10 times during night, morning and evening. Copulation varied from 25 to 30 minutes.

### Gestation, Clutch and Egg Size

The gestation period was considered from the date of last mating to the date of egg laying (Table 2). The last mating was observed on 12 January 2010 and a total of five eggs were laid on 2 April 2010. The gestation period of study was 81 days. During incubation, the female completely avoided food and shivered her body regularly over the eggs. The average egg length was 10.6 cm and 210 g. All the eggs were allowed to incubate naturally and the

|                             |                |
|-----------------------------|----------------|
| Gestation period (days)     | 81             |
| Number of eggs              | 5              |
| Egg length (cm)             | 10.6 (Average) |
| Egg weight (g)              | 210 (Average)  |
| Incubation period (days)    | 72             |
| Incubation humidity (%)     | 80-90 %        |
| Incubation temperature (°C) | 31-32°C        |
| New born length (cm)        | 70 (Average)   |
| New born weight (g)         | 39 (Average)   |

**Table 2.** *Python reticulatus* captive breeding data.

| Hatchling | Measurement (cm) |          |          |
|-----------|------------------|----------|----------|
|           | 20.6.10          | 10.10.10 | 10.11.10 |
| 1         | 80               | 84       | 86       |
| 2         | 60               | 71       | 72       |

**Table 3.** Growth measurement of hatchlings.

incubation period was 72 days. Out of five eggs only two hatched and the hatchlings were identified individually. The average total body length was 70 mm and 39 g. The growth in body length of hatchlings varied between the individuals (Table 3).

During this study, the mating of *P. reticulatus* was observed from December to January. This indicates that temperature may influence reproductive activity of this species. Temperature ranged from 31 to 32°C and humidity was 80 to 90% RH. The observed period of mating was similar to *Python molurus* (Ross & Marzec, 1990). The gestation period of 81 days was higher than *Python molurus* (Dattatri, 1990; Ross & Marzec, 1990). The variation in weight and size of hatchlings can be a result of temperature during incubation period. According to Vineger (1973), temperature not only affects the metabolic activity in ectothermic animals but also plays a vital role in the development of embryos. This example of captive management of *P. reticulatus* emphasises that if certain basic parameters are provided for the species, combined with individual care, breeding can be successful.

## ACKNOWLEDGEMENTS

Our sincere thanks to Shri W. Bimal Kumar, Range Officer, Shri Mohammed Ali, Veterinary Compounder, Shri Murugapan, Camp Officer, Shri Rama Rao, Animal Attender and other staff of Mini Zoo. We also acknowledge Dr. Gauri, Madras Crocodile Bank Trust for valuable suggestions for the breeding cage.

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