

## Studies On Some Aspects Of Burrows Pattern Of Monitor Lizard (*V.bengalensis*) In The Karachi And Hyderabad, Sindh, Pakistan

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**ABSTRACT:** In the Areas of two major cities of sindh viz Karachi and Hyderabad for the observation were carried out about the Burrows pattern, Holes (House made methods) of *V.bengalensis* (Monitor lizard) were studied in semi dry areas of the Karachi and Hyderabad (sites) It was observed that the burrows of *V.bengalensis* has showed much variation in their nature. Several type of habitat (burrows pattern) were studied in the different areas of Karachi and Hyderabad . It was noticed that the mostly size (Hole of mouth & length) of burrows of mature *V.bengalensis* was almost same in various observation of burrows in the selected studies area.

**KEYWORDS:** Burrows pattern *V.bengalensis* Karachi, Hyderabad, Sindh.

### INTRODUCTION

Present Studies was conducted Due to much attention and significant presence of *V.bengalensis* in the selected studies areas of Karachi and Hyderabad accept all others Reptiles. These investigation was carried out between February 2013-February 2014 at the Karachi and Hyderabad located in sindh province of Pakistan. *V.bengalensis* made their burrows with Different pattern, Monitor lizard made their burrows/Holes/House for shelter from predators as well as for resting during drought conditions. *V.bengalensis* made their burrows by the Digging with the help of strong claws, and some time occupying existing burrows / holes of any other reptiles or other animals too. Monitor lizard were observed at various sites in the study areas, as like university of Karachi, Safari park, Malir cantt area, Cape monze, Hawks bay, Near Baharia town, near Dha city, near jokhya more (Karachi) and in Hyderabad Different burrows pattern were studied in different areas of Hyderabad as like Kotri, Hatri, Karachi mori, Hyderabad mori, near jamshoro, near to Dargah Baba salahuddin, near to Hyderabad Air- port, near to Hussainabad Etc. Some knowledge available on the habitat of *V.bengalensis* in Karachi and Thatta sindh [4] and general description on the burrows pattern of *V.bengalensis* is [1] and a good notes available for burrows of *V.bengalensis* in Agra india [3] and a V.good information for Holes and basking activity [5]

### METHODS

In all Selected studies area were observed for burrows pattern, due to this ,In each sites sampling area measurements were adopted by Gupta and sinha 2001, in which sampling area measurements were 1km x 1.5km as selected for observation, which was further divided in to smaller transects for 100m x 150m. in every sampling area 5 smaller transects were randomly selected for sampling of given area. For the measurements of straight tunnels depth of the hole at which the tunnel terminated was taken by a smooth semi elastic stick in single tunnel type and the measured with scale as well as the width of the burrows measurement with scale also. In case of multi tunnel burrows usually measure with the help of fresh plant sticks were used or more elastic stick were used and some time use elastic iron rod, thin iron rod were used for measurement of Holes after that iron rod measured with scale. For sampling, field studies, Burrows searching, (Habitat searching), and for climatic analysis, soil, sand quality, water availability, Burrows measurements and some others important

factors were noted by the help of five field assistance and a good four wheel jeep and car and some bikes were also used for good field studies for burrows searching and measurements.

## **RESULTS**

During the studies Six, main burrows pattern were observed .mostly were at ground levels.Most of the burrows 71.45% were active Burrows noticed(Table=01) .These Micro Habitat/ Burrows were Catogories in the following types

**1. Tree or Hollow tree trunk Burrow:-**Very few burrows were observed in hollow tree trunk or on the tree habitat (Fig =02) Mostly tree trunk use of *V.bengalensis* for feeding on birds and their eggs too

**2. Elevated areas Burrow:-** It is observed that *V.bengalensis* mostly like to made their burrows on angular slope.it was noticed that *V.bengalensis* made a small tunnel as like 1-1.9m size.Mostly for resting short time and long time when drought condtion occurse.these type of burrows found in Karachi and Hyderabad.(Fig=08-09)

**3. Gutters/Manholes/Pipe Burrow:-** Generaly this type of habitat of *V.bengalensis* were also used in the human colony for taken of food items available there in the form of insects Etc.*V.bengalensis* live in that available place and capture their preys.(Fig=01).

**4. Building Gaps/Stony types Burrow:-**Monitor lizard were occupying building Gaps in human living areas this type of burrow were observed in the University of Karachi and in Hyderabad areas.(Fig=03) These type of burrow monitor lizard used as for easy going place where food items birds.insects easily available.it is a shelter of monitor lizard also for their enemies.

**5. The nests of Termite Burrow:-**These type of burrows were mostly observed at that place where dead organic matter available in in the form of dead trees base (Fig=06) Etc,which were provide food for termites.*V.bengalensis* mostly inhabiting in termite mounds for shelter as wel as taken food on termites too.

**6. Small Mounds Burrow:-** These type of burrows were noticed in three different origin which were in agricultural soil mounds,semi dry areas mounds,near to river bank mounds (Fig=08-10) This type of burrows were made for easily approach for food items too.

During observation 80% of burrows Holes at ground levels, such as elevated land tree trunk, Gutters/manholes, Termite mounds,Small mounds,stonny types Etc. The Burrows mean length was 110cm and burrows diameter was 10.5cm respectively. Mean length of tunnel in multy tunnel was also same in lenth, unusually the mouth opening of burrow has a convex roof structure with out any cover.

## **DISCUSSION**

During our studies it is very much intresting that the observation of *V.bengalensis* of Burrow length size and width diameter was also similar in all reported case of burrows of *V.bengalensis* in the different areas of Karachi and Hyderabad, may be due to the body size of mature *V.bengalensis* which is similar to report by[3].In the studies of Burrow pattern of *V.bengalensis* we find out maximum burrows at ground levels, which are similar by some previous workers as like [7],[1],[3],[4]. It was noticed that *V.bengalensis* made their Burrows for shelter and for resting during hibernation period.The maximum burrows were investigated in the vegetation areas and on the river banks Etc,where types of tree were dominated in it.In the agricultural wall as wel as river banks wall the soil condition is very much soft and suitable for burrows made easily, as wel as second advantage is more food items easily available for *V.bengalensis* that's-why *V.bengalensis* made their burrows in these sites, this investigation is almost similar by [3]. During investigation of Burrows of *V.bengalensis*, one case was reported in building gaps in Karachi university where a monitor lizard shelterd in building gaps.some previous work also support in same investigation as like[2],[3],[4].We also investigate that *V.bengalensis* found in gutters and manholes pipe Etc, as before same report by some workers,[8],[3],[4].One study sites (Karachi university) also report that *V.bengalensis* live on the tree or hollow tree trunk for shelter as wel as feeding on birds and their eggs too. Which is similar by [9],[3].In our investigation very few sites report that *V.bengalensis* shelter in Termite nests.Termite nests were observed in Hatri forestry areas (Hyderabad) where dead plant bodies were in more abundant, in that places suitable for building of termite nests and mounds. *V.bengalensis* occupying termite mounds and feed on termite too. [1],[3]; were also report in the same manners. In the investigation of burrows pattern one stony types shelter of *V.bengalensis* was also report in Hyderabad sites.this is similar by [5]. In all types of *V.bengalensis* burrows are very much threatened by human activity and increasing human population need more and more places for their needs is directly propotional to the degaradation of burrows of *V.bengalensis*, needs very much intention for conservation of *V.bengalensis* in various parts of sindh.



**(Fig=01)** *V.bengalensis* Burrow, Man- hole/gutter Habitat at University of Karachi



**(Fig=02)** *V.bengalensis* Burrow, Plant / Tree habitat at University of Karachi.



**(Fig=03)** *V.bengalensis* Burrow, Building gaps/stony habitat at Karachi university



**(Fig=04) *V.bengalensis*, Ground levels Habitat at Malir Cantt Karachi**



**(Fig=05) *V.bengalensis* Burrow, Stony small mound at Malir Cantt Karachi**



**(Fig=06) *V.bengalensis* Burrow, Termitaria, Termite nests Burrow at Hotri Hyderabad**



**(Fig=07)** *V.bengalensis* Burrow, Big stony Burrow near Darbar Baba Salahuddin at Hyderabad



**(Fig=08)** *V.bengalensis* Burrow, Small mounds Burrow at Jokhya more near D.H.A City karachi



**(Fig=09)** *V.bengalensis* Burrow, Sand dunes Burrow with Convex mouth at Hyderabad Mori (Canal)



(Fig=10) *V.bengalensis* Burrow, Sand dunes Burrow (Convex mouth) at kotri Hyderabad

Table=01. Study areas (Sites) and types of pattern of Burrows of *V.bengalensis* in Karachi & Hyderabad (Sindh).

Nos	Study Areas(Sites)	Type of Burrow / Habitat	No of Active Burrows
1.	Karachi	Plant or Tree trunk	01
2.	Karachi & Hyderabad	Elevated areas	55
3.	Karachi	Gutter/manholes/pipes	01
4.	Karachi	Building gaps/wall crevices	01
5.	Hyderabad	Nests of termite/termit mounds	02
6.	Karachi/Hyderabad	Small mounds	50

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