https://doi.org/10.48047/AFJBS.6.15.2024.4369-4374

African Journal of Biological Sciences

Journal homepage: http://www.afjbs.com

Research Paper Open Access

A study on the mating behaviour of *Mabuya multifasciat Fitzinger* in Darrang, Assam

Dr Moushumi Hazarika, Dr Dhirendra Kr Sharma

Research Scholar , Gauhati University Professor, USTM

*__Corresponding author__.Email: msmimsmi253@gmail.com
Moushumi Hazarika ORCiD ID number: 0000-0003-3569-472X

Volume 6, Issue 15, Sep 2024

Received: 15 July 2024

Accepted: 25 Aug 2024

Published: 05 Sep 2024

doi: 10.48047/AFJBS.6.15.2024.4369-4374

ABSTRACT :
The Scincidae is the largest family of existing lizards and includes over 1578 species (Uetz *et al.,* 2014), is thought to have originated in Africa and then diversified and spread through Asia and Australia to its current worldwide distribution (Greer, 1970). On the basis of morphological characters, Greer (1970) divided Scincidae family into four subfamilies *viz.* Scincinae, Acontinae, Feyliniinae, and Lygosominae. Of these, the Lygosominae contains over 600 species distributed mainly in temperate and tropical Asia, Australia, and central and southern Africa. Mabuya multifasciata has a significant mating behaviour related with the reproductive cycle.
Key words : *Mabuya multifasciata*, mating behaviour, Darrang, Assam

1. INTRODUCTION :

Mabuya multifasciata has a significant mating behaviour related with the reproductive cycle. On the basis of morphological characters, Greer (1970) divided Scincidae family into four subfamilies viz. Scincinae, Acontinae, Feyliniinae, and Lygosominae. Of these, the Lygosominae

contains over 600 species distributed mainly in temperate and tropical Asia, Australia, and central and southern Africa. Among all, Mabuya develops a beautiful and bright colour during the time of reproduction.

2. METHODS :

Every species have a special courtship behavior and trait. *Mabuya multifasciata* also display some special courtship behavior which is being studied by ethogram. For study the display and mating behaviour an outdoor arrangement was made. A terrarium of (120cm $_x$ 100cm $_x$ 80cm)was made . It was made of iron net.It was placed in the outdoor natural habitat in an undisturbed area covered with shadow and little jungle. Inside the terrarium plant materials, broken pots etc were provided as a place of hide. Water bowl and food also provided. The lizards were provided with insect materials like cockroach,grasshoppers etc. Two pairs of *Mabuya multifasciata* were placed in the terrarium of both sexes. The SVL of female was 120±0.13 mm and body mass was 200 ± 0.70g. The mature male measured 85 ± 0.02 mm in snout vent length (SVL) and weighed 190 ± 5 g in body mass. For one year courtship and mating behavior was observed. Bright orange red colour exhibited in neck and head region of the male. But the colouration of the male lizards are seen in the adult stage . The notes were made as handwritten.

2.1 **Study of mating behavior** :

We follow the Carpenter and Ferguson protocol.

Aggression : Agonistic or dominating actions performed by male.

Approach : Males approach towards female.

Body-wrapn: Male with neck bite hold and tail twist, body arched over female with fore-leg hold on female”s trunk and hind leg hold on the base of the female”s tail.

Chase : Rapid pursuit of one individual by another that is retracting from the former.

Copulation : Intromission of the hemipenis into the vent of the female, stationary for 5-9 s withdrawal of hemipenis.

Flee: Rapid retract by a lizard on appraoach of other lizard.

Follow: Male follows the retracting female.

Four-leg push-up : Rapid raising and lowering the body on all four legs.

Grip release : Male releases the neck-bite and leg-hold on the female.

Limp: Submissive body condition of female dragged by the male with neck-bite hold. Neck-bite hold : Male grasps on the skin of the neck of female with its jaws.

Push-up : Rapid raising and lowering of the anterior region of the body with fore legs.

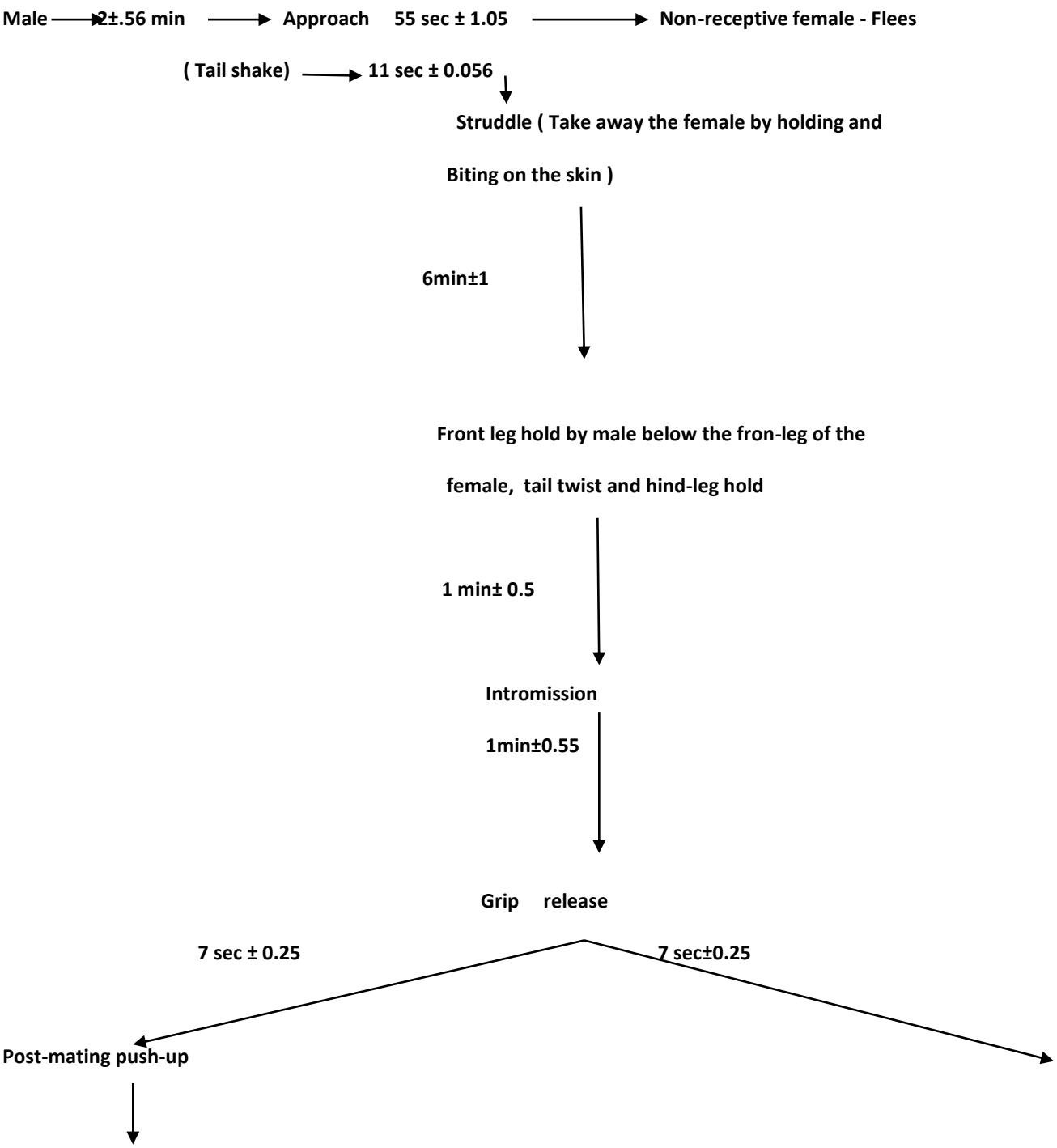
Stationary: No body movements for 5-6 s when male is mounted on female.

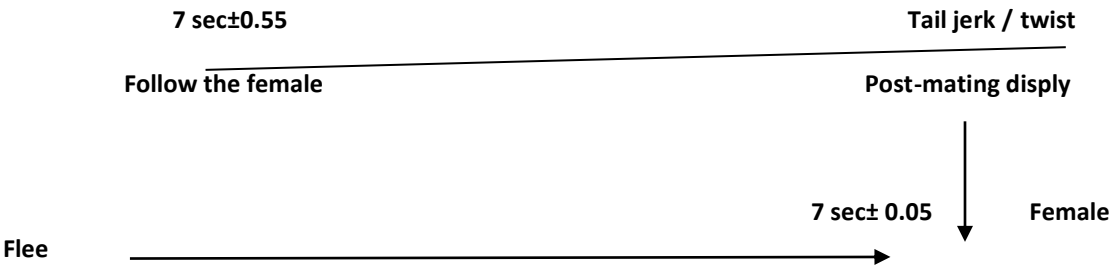
Straddle : Male holds female with neck-grip and partly embracing with limbs, climbs onto the back of the female.

Tail up at base : Tail lifted at base ,mid portion up and tip touching the substrate displayed by female.

Tail twist : Male”s tail twisted under the female”s tail bringing the cloaca close to that of female.

The sequences of courtship and mating behaviour are represented as a flow chart in Fig :





3. RESULT :

The ethogram represents the courtship behavior.

It is related to the reproductive development of the *Mabuya multifasciata*.

The fat body masses decreased rapidly in the female during the time of rapid embryonic growth. And again increased in size following the parturition. Both the embryonic growth and decreasing of fat bodies were negatively correlated

(F1, 31=0.998, p< 0.0001).

4. **DISCUSSION** :

The females during the time of September and October making moves away from their terrain and in natural habitat they were making their move away from their burrows. This behavior was not observed in any other months and in the males. For *Mabuya multifasciata*, September to October is a high time for mating and reproduction. The female movements suggests that their function is to attract male mating partners (Godfre,2015). Females In the present study having relatively larger value of SVL female produces heavier clutches . Earlier reported in some lizards like oriental Leaf-Toad Gecko Hemidactylus bowringii(Xu and Ji, 2007) where a negative correlation between cluctch mass and female size better explains female smaller SSD in the two oviparopus species, the energy allocation was preferable for production of offspring rather than growth of the offspring.

5**. REFERENCES** :

1. Ferguson, G. W. 1970. Mating behavior of the sideblotched lizards of the genus Uta (Sauria: Iguanidae). Anim. Behav. 18:65-72.

2. Godfrey, S. , Stephanie et. Al. (2015). Mating behavior in pigmy blue tongued lizards : do female attracts male lizards ? Australian journal of Zoology, 62(6), 25-28.

3. Greer (1970). The Systematics and Evolution of the Subsaharan Africa, Seychelles, and Mauritius Scincine Scincid Lizards. Bulletin of the Museum of Comparative Zoology, Harvard University 140 (1): 1-24. (Janetaescincus, new genus, p. 18).

4. Lindle, C. et. Al. (2002). Following trails of partners in the monogamous lizard, Tiliqua rugosa. Acta Ethologica 5, 25–28