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Short Communication

CONSTRAINT HABITAT AND ADAPTATIVE BEHAVIORAL CHANGES IN *HEMIDACTYLUS FLAVIVIRIDIS*

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ABSTRACT

The association of house lizard to the human inhabitation is very long. This species has undergone varied behavioral adaptation with the human civilization. With the changes in human dwellings, the construction materials and architecture of houses, this species has adapted to the new microhabitat and pattern of co-evolution with human house.

Keywords: Co-evolution, Micro-habitat, Behavioral changes, Lizard.

INTRODUCTION

The association of house lizard to the human inhabitation is very long. This species has undergone varied behavioral adaptation with the human civilization. Right from the Stone Age to mud house and oil lamps this important species have been moderating its feeding patterns and home range and escaping predators (Swingland and Greenwood, 1983; Dingle and Holyoak, 2001). Many lizard species show distinct preferences for particular substrate, perch heights, vegetation types and other aspects of habitat structure (Heatwole, 1977; Moermond, 1979; Adolph, 1990; Diaz and Carrascal, 1991) and these species may be morphologically adapted to using their particular micro-habitats (Pounds, 1988; Losos, 1990). On the other hand micro-habitat selection is an important component of behavioural thermo-regulation by ectoderms' (Christian *et al.,* 1983; Grant and Dunham, 1988; Diaz *et al.,* 1960). The Iberian wall lizard *Podarcishispanica* is a small saxicolous, insectivorous, diurnal lacertid lizard (Salvador, 1974). It is more abundant in manmade walls than its original natural rock habitats (Salvador, 1974), possibly represents the transitory phases of adaptation through which house lizard *Hemidactylus flaviviridis* has evolved.

With the changes in human dwellings, the construction materials and architecture of houses, this species has adapted to the new microhabitat and pattern of co-evolution with human house can nicely be analyzed. In today's scenario houses are extensively electrified, crevices free smooth glossy walls and use of insecticides, insect repellant chemical sprays, fans, air conditioners and mesh fitted doors and windows having possibly no space to hide or to escape from the predator. None the less this species has explored new microhabitat, instead of wall it has now shifted to floor (Figure 1) and finds ample space to hide itself and feed. Moreover, floor is daily cleaned and has comparatively very low components of insecticides. During feeding time some lizards can be seen on mesh fitted windows or window panes outside the room. A few house lizards have been found exclusively associated with car or a vehicle and feeds on the insect's trapped in to its radiator and other parts. These lizards are so adapted that they travel clinging the vehicle hundreds of kilometers and come back to the same garage. Within air conditioned rooms they feed on floor and can be observed when light is switched on. They can sense vibration and take specific position on any movement on the floor. They have also developed dark pigmentation as compared to their counterparts on vehicles or window panes. These new adaptations to microhabitats has enhanced their survival value and ensured their co evolution with humans.

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Figure 1. Lizard (*Hemidactylus flaviridis*) moving along the wall angle on the corner of the room.

To conserve this important species it is suggested that development authorities and the architects should design garage and servants huts in traditional manner so as to protect the habitat of lizards. It is also recommended that as for possible painting of walls should be avoided and fixing of tiles on the wall should be minimized. These effects will conserve wall lizard and in return they predate upon the household insects like cockroaches, etc.

CONCLUSIONS

There is a parallel evolution between house lizard behavior and human civilization. With the changes in human dwellings, this species has adapted to the new microhabitat. The house lizard is the natural predator upon the household insects. Therefore protection of the habitat for conservation of this important species is recommended.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest associated with this article.

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