

## SHORT NOTE:

BIONOMICS OF THE ROCK GECKO *CYRTODACTYLUS SCABER* IN QATAR

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## INTRODUCTION

Whilst Visiting Professor to the University of Qatar during March and April, 1986, I took the opportunity on a number of evenings to walk around the grounds of the Doha Sheraton Hotel, where I was staying, in order to determine the population density of the nocturnal rock geckos (*Cyrtodactylus scaber*) there, and to ascertain the extent to which this species might be territorial. It was immediately apparent that the animals were only to be found in anything but negligible numbers on certain illuminated concrete paths between the flower beds of the garden, and on the walls of the north-eastern corner of the hotel, which were floodlit.

## POPULATION DENSITY

Numbers were assessed using the modified version of the standard capture/recapture method (based upon recognition of individual lizards in the same places on different evenings) that I employed in a study of *Agama agama* at Nsukka, eastern Nigeria (Cloudsley-Thompson, 1981a). A sketch map of the area to be monitored was made, and the positions of the geckos marked on it daily, with notes of recognisable characters such as sizes, postures, and broken tails. A single specimen of *Hemidactylus flavicaudis* which appeared about 6m up the hotel wall approximately every other evening, was not counted. The results obtained were as shown in Table 1 (n = 12):

|  | On the walls<br>(40m) | On the paths<br>(210m) |
|--|-----------------------|------------------------|
| Mean ( $\pm$ SE)                                     | 4.8 $\pm$ 0.65        | 3.6 $\pm$ 0.45         |
| Maximum observed<br>at one time.                     | 9                     | 8                      |
| Maximum calculated<br>on recognition<br>(after 24 h) | 10                    | 24                     |

TABLE 1: Summary of observations.

The area monitored nightly comprised some 40m of wall and 210m of pathway. Although occasionally seen at higher elevations, the geckos on the walls of the hotel were nearly always within 3m of the ground — as noted by Arnold (1984), most of whose records were

less than 0.5m from the ground. It was therefore assumed that the area of walls, with the narrow flower beds at their bases, represented approximately 120m<sup>2</sup>. The paths were about 2.5m in width, and the beds between them not more than 4m wide. I therefore calculated that the area of pathways and flower beds surveyed comprised 210 x 4.5 = 945m<sup>2</sup>. The maximum density of geckos on the walls was therefore about 83ha<sup>-1</sup>. These figures compare with maximum densities of 78.3ha<sup>-1</sup> on walls, and 40ha<sup>-1</sup> on paths of *A. agama* at Nsukka (Cloudsley-Thompson, 1981), and of 16.2ha<sup>-1</sup> and 56.7ha<sup>-1</sup> on walls and paths respectively at Ibadan, Nigeria (Harris, 1964).

The similarity in the population densities of *C. scaber* and *A. agama* is remarkable, especially when the crudity of the method adopted for measuring lizard numbers is taken into consideration. Since *A. agama* is a much larger species than is *C. scaber*, however, the biomass of the former must be considerably greater. Differences between the densities of *A. agama* in Nsukka and Ibadan were tentatively ascribed to the fact that there are no vultures at Ibadan, although kites are plentiful, whereas hawks are scarce and hooded vultures numerous in Nsukka. It was postulated that vultures may be less efficient predators of *A. agama* than are hawks and kites (Cloudsley-Thompson, 1981a). *C. scaber* appeared to feed entirely upon insects: I saw both moths and beetles taken. Furthermore, insects are really the only potential food for lizards foraging on walls, and I never saw geckos feeding upon vegetable matter as *A. agama* frequently does.

The geckos began to appear punctually at sunset each evening. On 7 April, for instance, the first geckos were seen; both in the garden and on the walls of the hotel, at 18.08h (local time), 12 min after the Maghreb (sunset) prayer time — before the floodlights were switched on (at 18.13h), and while the animals could easily be seen by the light of the setting sun. By 16.20h it was completely dark, and a total of 14 geckos was then counted. Unusually few geckos were initially observed on evenings when the wind was blowing strongly but, later on, they came out in larger numbers — especially on the walls of the hotel.

## TERRITORIALITY

On two occasions only were any of the geckos seen closer to each other than 1m and on one of these a baby, no longer than 3.5cm, was involved. It seems, therefore, that like *Tarentola annularis* (Cloudsley-Thompson, 1972), *Hemidactylus brookii* (Cloudsley-

Thompson, 1981b) and *Tarentola mauretanic* (Cloudsley-Thompson, 1984), *C. scaber* exhibits Stamps' (1977) Type 3 spacing pattern.

#### DAY-TIME REFUGES

During the daytime, *C. scaber* was found in irrigated oases and agricultural stations underneath rocks and in the axils of palm fronds. Presumably they passed the day in similar situations in the grounds of the Doha Sheraton, but I felt that destruction of the ornamental trees in the interests of herpetology would not be regarded with approval by the hotel authorities. The rocks were all rather small and I did not discover any geckos beneath them.

#### SUMMARY

Maximum densities of *C. scaber* recorded in Doha were 83ha<sup>-1</sup> on walls, and 25ha<sup>-1</sup> on pathways. These compare with densities of *A. agama* of 78.3 and 16.2ha<sup>-1</sup> on walls, and of 40 and 56.7ha<sup>-1</sup> on pathways at Nsukka and Ibadan respectively. *C. scaber* exhibits Stamps' (1977) Type 3 spacing pattern.

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#### SHORT NOTE:

### NOTES ON THE DIETS OF SOME LIZARDS IN THE STATE OF QATAR

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#### INTRODUCTION

The diet of free-living lizards has been recorded by numerous authors (Angelov, et al. 1966; Itamies and Koskela, 1971; Sadek, 1981; Quayle, 1983; Arnold, 1984). In contrast, relatively little has been published about the diet of lizards of the Arabian desert (Arnold, 1984). Qatar State is a Peninsula, projecting in the north western central coast of the Arabian Gulf. It is an extension from the Arabian Peninsula measuring exactly 11, 437km<sup>2</sup>. The land is mostly pale desert approaching sea level in most places, and the highest peak is 103m above sea level (Clavelier, 1970).

The present work records the diet of 10 lizard species from 4 families. The diet was determined by analysis of alimentary canal contents.

#### MATERIALS AND METHODS

100 lizards were collected from the desert and from areas of lush vegetation comprising plantations and gardens, virtually all of which were dependent on artificial irrigation. These lizards were collected during August and September 1985. The alimentary canal contents were extracted and stored in 90 per cent ethanol. They were analysed under 120X, 140X and 400X magnifications. The formula of Quayle (1983) was used to calculate the percentage of prey in each category, for every lizard species. The percentages have been rounded off to the nearest whole number.