

New records of Indian Garden Lizard, *Calotes versicolor* (Daudin, 1802) from Iran (Sauria: Agamidae)

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The Indian Garden lizard has been recorded as herpetofauna of Iran but the only existing records belong to far years before in which Balford (1870) and Zarudny (1903) recorded 2-3 specimens in Sistan and Baluchestan province of Iran. Afterward, there were no records on the species in the country. Based on the existing records the mentioned localities were investigated for years and using the information gained from local people finally we could find two specimens in Geravani village in Saravn city area, one adult and the other a juvenile. The captured adult had snout-vent length of 121.7 mm and tail length of 293.2 mm. The main color of the adult one was light brown to gray with patches of dark brown and white. Red throat and orange shoulders and orbit area were the main colorful parts. Other parts are under investigation to find more specimens.

Key words: Indian Garden Lizard, *Calotes versicolor*, Agamidae, new record, Iran

INTRODUCTION

The variable lizards, genus *Calotes* Cuvier, 1816 are agamid lizards, distributed in southern Asia, from eastern Iran and Afghanistan to Sri Lanka and Sumatra, north to the Himalayan foothills, and east to South China (Wermuth, 1967). The Indian Garden Lizard or variable agama, *Calotes versicolor* (Daudin, 1802), a large, common, widespread and showy lizard, was described early in the history of reptilian study in the Indian subcontinent by Daudin 1802, as *Agama versicolor* (Auffenberg and Rehman, 1993). This species has been reported as herpetofauna of Iran (Anderson 1999; Rastegar-Pouyani et al., 2008). However, the only existing records based on which the species included in the reptilian list comes from very old time. The most reliable and oldest record belongs to William Balford in which he has recorded surprisingly observation of the species in Baluchestan, in Khor Askan, north of Bampusht and Kalagan (Balford, 1876). The locations are in Bamposht area in Sistan and Baluchestan Province which are under the territory of Saravan at the moment. George Boulenger included Balford's record in the information provided about the species in his book, "Catalogue of the Lizards in the British Museum" (Boulenger, 1885). He gives details about the feature and size of the species as well as other recorded localities and distribution area of the lizard. Zarudny in his report has recorded the observation of the species from Farra and Sarbaz but, stating that had lost the specimen (Zarudny, 1903). The most reliable collection of information is provided by Anderson in his book: "The lizards of Iran" Anderson 1999). He gives details about the

diagnosis, habitat, distribution and size of the species as well as the localities of which the species recorded in Iran.

Based on the information, it seems that the species has very limited distribution in Iran, restricted only to some parts of Baluchistan, close to Pakistan border. Moreover, population size also seems to be low making the species rare and difficult to observe.

MATERIAL AND METHODS

Study area

As there were no new records on the species since at least 1903, different parts of the Baluchistan visited since 2002 to maybe could record and find the species and the main focus was in Mugger crocodile (*Crocodylus palustris*) habitats. The information gained from local people and colleagues could give chance to us to get a preliminary idea about the possible places in which we could find the rare lizard. Finally in our last survey on the crocodile in Nahang River area, and in our way to the river we (A. Mobaraki, E. Abtimn and M. Dehgannejhad) could find the lizard in Bamposht of Saravan area, 20 Km of Sirkan, Geravani village (26 44 52.6 N, 62 39 53.0 E) with kind helps and cooperation of the villagers in October 3, 2012 (Fig. 1). This locality is mountainous, few families of 4-5 live in the village near Nahng River, and each family has separate residential area compromising of the house and small garden. The planted species are small patches of vegetables and some trees, including, Mulberry (*Morus alba*), Dates (*Phoenix dactilifera*), Ziziphus (*Ziziphus spina-christi*), Peach (*Prunus persicus*), Pomegranate (*Punica granatum*), Grape (*Vitis vinifera*).

Methods

One adult specimen captured, and transferred to laboratory of Zoological Museum of Golestan (formerly Gorgan) University (ZMGU) and was kept in captivity. All measurements and scale counts were done on live specimen. This specimen died after about 109 days and unfortunately was lost most of internal sexual organs; there for sex determination was impossible. The second specimen was a juvenile. This specimen was released after taking of some photos of specimen in natural habitat and there are no available morphometric and meristic data.

RESULTS

Agamidae

Calotes versicolor (Daudin, 1802)

Brief Description

A moderate sized agamid lizard. Head large, nostrils are somewhat circulars and located inside of one scale. Eye is large, but opening small and almost horizontal with orange iris. Ear opening is definite, tympanum is almost superficial and about diameter of eye opening, there are two separate spines above ear openings on each side. Body laterally compressed. Dorsal scales regular, uniform and of on sides of body pointing backwards and upwards. A dorsal crest developed with 47 spines from nape to base of tail. Spines of anterior part of body after nape and anterior part of trunk are longer than posterior ones. All limbs are long and well developed. Forelimbs with 5 long, slender, slightly compressed laterally fingers and their arrangement is 4>3>2>5>1, hind limbs also with 5 toes and their arrangements is 4>3>2>5>1. All digits terminate in black strong claws. Tail is round, slender, its length 240.9 percent of snout-vent length. Head scales irregularly arranged and juxtaposed in top of head. There are 12-13 upper and 12-12 lower labial scales in left and right respectively (without 1 or 2 small scales in posterior of the last scales). Body scales are keeled, imbricate, mucronate and in 42 rows at mid body. All scales of upper and lower parts of femur, tibia, palms, soles and tail are keeled.

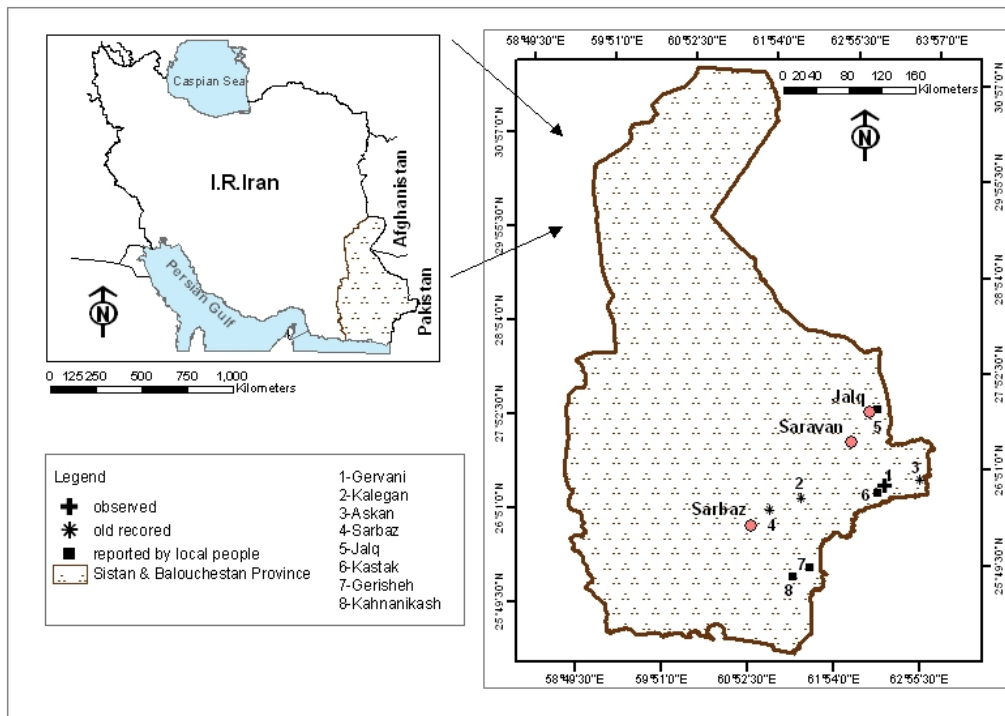


FIGURE 1. Distribution of *Calotes versicolor* in Sistan and Baluchestan province, southeast of Iran.



FIGURE 2. Juvenile of *Calotes versicolor* in Gervani village on Mulberry (*Morus alba*), Sistan and Baluchestan province, Iran (Photo by: A. Mobaraki).



FIGURE 3. Adult of *Calotes versicolor* in Gervani village on Christ Thorn (*Zizphus spina-christi*, Sistan and Baluchestan province, Iran (Photo by: A.Mobaraki) (ZMGU. 2776, captured).



FIGURE 4. The Adult *Calotes versicolor* captured in Gervani village Sistan and Baluchestan province, Iran (photo by: A. Mobaraki) (ZMGU. 2776, captured).

Coloration

The general coloration of the adult and juvenile lizards was different as the adult one was completely colorful and showing variable patterns in different conditions. For the adult one, dorsal part had light brown to sooty gray through which with patches of dark brown and white. The white patches form longitudinal line close to the spines. Throat and chest were in red or dark orange in case that the shoulders and the scales around the orbit had pale orange colors. Two large path of black color were evident in the both sides of the throat. There were several black streaks around the orbit. Some parts of the head show yellowish pattern. The ventral part was mainly whitish with some small dark patches or spots. The juvenile one had mainly sooty gray pattern on the dorsal part with black and white bars or dorsolateral strips, with very short crest and less grown elongated scales (horns) on the head, the belly was whitish creamy with orange spots along.

Measurements. Measurements of an adult specimen (ZMGU.2776) are as follows. Snout-vent length from anterior of snout to anterior of cloaca 121.7mm, tail length from anterior of cloaca to tip of tail 293.2mm, Axilla-groin length from posterior base of forelimb to anterior base of hindlimb 58.9mm. The juvenile specimen was released in the field without measurements.

Habitat and Behavior

Describing the feature of the lizard to the people, they all were in believing that the lizard is used to live on the trees and occasionally appearing on the ground. Looking for the existing trees, we could find one adult on a big Christ Thorn (*Zizyphus spina-christi*) in a sunny day at 10:30 to 11 AM. It was very difficult to locate the lizard among the branches due to high camouflage. Juvenile specimen was found on a Mulberry tree (*Morus alba*) in vertical climbing. The trees that collected and observed lizards on them were about 4 meters height. Local name of this lizard is Bagar and local people with Sind- Pakistani language say Sando to this Agamid. In some areas Bagar is referred to all lizards generally too. This lizard is insectivorous according to local peoples and adult collected specimen ate some small and soft bodied insects such as moths (Heterocera), house flies (*Musca domestica*) and ladybug (Coccinellidae) but avoided feeding of Grasshopper (Acrididae) and beetles (Tenebrionidae). Other reptile species were seen and identified in this locality are as follows: *Trapelus agilis*, *Laudakia nupta*, *Testudo graeca zarudnyi*, *Spalerosophis diadema schirazianus*.

Distribution

One juvenile and one adult studied specimen were from Gervani village. This lizard was also observed in Kalegan village of Jalk city near Saravan in the gardens. Others observed in Gerisheh village in gardens and in areas between Pishin and Jakigor and Bigadag village (Pishin basin to Pakistan border) (Fig.1).

Based on the collected information from local people in the area as well as other parts of Baluchistan, like Sarbaz and Pishin, it seems that the species could have more extended distribution in the country and further studies are needed to find out the exact situation on different aspects.

DISCUSSION

Lizards of the genus *Calotes* are characteristic animals of forested regions of Southeast Asia where about 30 species occur, a single species in Iran (Minton, 1966; Anderson, 1999; Rastegar-Pouyani et al, 2007).

Blanford (1876) in her report states; "I only met with this species twice, and on both occasions it was found on date- palms. He did not give any details about the size and gender of the specimen. As the plantations of these palms are few in number and many miles intervene between them, it is very difficult to account for the appearance of these lizards, unless we suppose them to have inhabited the country at a time when it was more covered with wood than is the case at present. I have

repeatedly seen and captured specimens on the ground, but always, I think, in the neighbourhood of trees” (Blanford, 1876). Their residence on the trees seems to be temporary and the lizard leaves the trees in cold season and night hours to their holes on the ground or on the adjacent walls. However, the specimens caught both were on other trees in the small gardens rather than the palm trees. It seems that living or vagrant insects play essential role in attracting the lizard. According to the observations and the record from local people, it seems that *Calotes* could have a wider range in Iran and its westernmost limit could be extended. There is little information on biology, ecology and population size of the species in the country, which needs more research works and investigation to cover the gaps.

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