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Life History of Red Vented Bulbul *Pycnonotus cafer* bird from egg laying to first flight

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Abstract:
The Red-vented Bulbul (*Pycnonotus cafer*) exhibits a well-defined life cycle from egg laying to fledging. Nests are built in shrubs or small trees using plant materials. The female lays 3 stippled eggs, with an incubation period of 11–14 days. Hatchlings are altricial and fully dependent on parental care. Both parents contribute to feeding, mainly insects and fruits, ensuring rapid growth and feather development. The nestling stage lasts about 9–14 days, after which fledging occurs. Juveniles gradually develop flight ability and independence, although they remain under parental care briefly, highlighting strong parental investment and adaptability.

Key Words: Red-vented Bulbul, Pycnonotus cafer, Eggs, Chicks, Shirpur, India.

Introduction:

The Pycnonotidae (bulbuls) family is a large group of passerines with 138 species and 355 taxa that can be found in southern Asia, Africa, Madagascar, and the western Indian Ocean islands (Fishpool & Tobias 2005) [6]. Pakistan is home to five species, one of which is the Red-vented Bulbul (Lepage 2007) [9]. Many studies on the breeding aspects of Red-vented Bulbul (Ali 1930; Baker 1932; Dixit 1963; Dhondt 1977; Watling 1983; Prajapati *et al*. 2011; Manju & Sharma 2013) [2, 3, 5, 4, 17, 12, 10] have been conducted in Pakistan (Roberts 1991 & 1992) [14, 15]. In the Shirpur region, the Red-vented Bulbul (*P. cafer*) is a common bird. Within the research region, it is a resident and common breeder bird. Vijayan conducted the first systematic study of the breeding biology of the Red-vented Bulbul (*P. cafer*) (1980). Baker (1932) [3] also provides a basic overview of *P. cafer* breeding, and the majority of his results are based on scattered notes from others, which were based on causal observation on one or two pairs. On the size, shape, and colour of the eggs, however, satisfactory but generalised information is provided (Ali and Ripley 1971 and Baker 1932) [1, 3]. Ali (1930) [2], McCann (1931) [11], Dutt (1932), and Lamba (1932) provide scattered notes on various aspects of *P. cafer* breeding biology (1968). Dixit (1963) [5]. However, no such studies have been carried out in Shirpur tahsil, where it is found.

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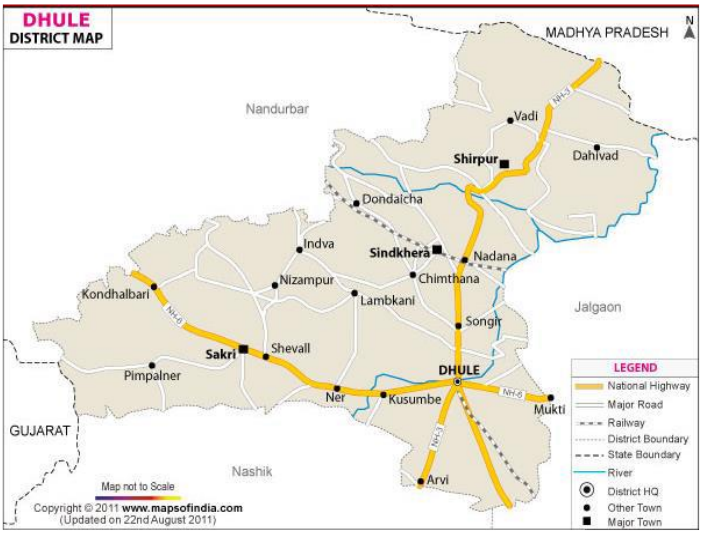

Materials and Methods

Study Area Shirpur is a city and a tehsil in Maharashtra's Nasik Division's Dhule district. It is located on the National Highway that connects Mumbai (MS) to Agra (UP) (NH3). The city is located on the banks of the Arunavati River, at an elevation of 159 metres above mean sea level, between the coordinates 21 0 21 ′ 1 ″ North latitude and 74 0 52 ′ 43 ″ East longitude. Shirpur tehsil has a population of 76905 people and is located in the foothills of the Satpura mountain on the northern bank of the Tapi (Tapti) river. Shirpur covers an area of 1113.36 hectares

Methods: Nests were discovered in the indoor plant pots at the residence (nest building, egg laying, and nestling stage), and the complete nest-building process was watched two or three times in April 2021.Surprisingly, the entire process of nest construction was watched indoors. The nest's characteristics (building height, nest size, and so on) were documented. The nests were discovered to be built on indoor plants at a height of 5 meters. The research will last four months, from April to July 2021. Nests with a total of three eggs were discovered. The nests were directly inspected to check what was inside and to record egg laying dates, and they were observed 2 to 3 times per day. A measuring tape was used to determine the height of the nest in meters (m). A tiny scale was used to measure the length and width of the eggs. Other actions of the Red-vented Bulbul were observed during the research time. If the nest was discovered while the eggs were being laid, the clutch size was determined by counting the number of eggs each day until no more were laid. Three broods' feeding visits and fledging behaviours were observed. From the day the first egg hatched until the final nestling fledged, the feeding trips were recorded. Three chicks successfully fledged from the nests. Hatching success was 100%, and all of these clutches hatched successful broods, resulting in 100% nest success.

Results and Discussion

Feeding behaviour

Both parents participated actively in the feeding of the chicks. The food was brought in by one parent, while the other sat around guarding the nest. Caterpillar or larvae, other insects, green fruits, and cereals were among the foods found, indicating that they were omnivores. The birds were occasionally reported feeding the young regurgitated food. After about 5.30 p.m., the feeding process came to an end. In the

afternoons, from 10.30 a.m. until 2.30 p.m., more frequent feeding was done. The duration and frequency of feeding for the field birds observed by us were the same. Camera recorded was used to observe the feeding visits and fledging habits of three broods (SONY). The other broods were checked once per day. From the day the first egg hatched until the last nestling fledged, feeding visits were documented.

Parental care

In these birds, parental care behaviour is particularly prominent. During the day, it was more noticeable. Surprisingly, only one bird was observed acting as the protector. At the moment of the first grown-up chick's flight, another fascinating example of parental care was noticed. For about 2 to 3 hours, the parents accompanied the chick. They did not come to feed the other chicks in the nest during this time. On the same days, the second chick flew away from the first. This occurrence was witnessed twice.

Incubation and Breeding success

According to my observations, the Red-vented Bulbul incubation period lasted 11 to 14 days on average. In early April, an egg-filled nest was discovered. We kept track of the nestling from 12 to 14 days. In mid-April, the nestling was discovered. Similar observation noted by Bhole P.N. study showed that the breeding activity of Red Vented Bulbul was observed from end of August to end of September in Tehsil Walwa, District Sangli, Maharashtra, India

In present investigation the observed red vented bulbul preferred leafy shrub of *Hibiscus rosa sinensis* for the nest construction at height of 1.5 meter from ground.

Nest of Bulbul

Egg of Red vented bulbul

First Egg hatched

Second Egg hatched

Third Egg hatched

6 th day After hatching



Growing stages (Feather development)



Ready to first Flight Flight Chick



Feeding to chick Parental care Continuous monitoring

Discussion

The current study found that the breeding season of the Red-vented Bulbul lasted from April to July, but other authors found that the period varied depending on where you were in the species' range. The Red-vented Bulbul's breeding season is reported to be from April to September, with a peak in August-September in the Balaram-Ambaji Wildlife Sanctuary in Gujarat (Prajapati *et al*. 2011) [12]. According to Rao *et al*. (2013) [13], the breeding season of this species was from March to October, with the peak breeding activity occurring in September in the Sikar Region of India. Haryana's breeding season ran from March to May. (Manju & Sharma 2013) [10]. Newton (1964) observed year-to-year variation in the breeding season and peak breeding activity. Because the quality and quantity of the vegetation provided suitable prime habitat, we believe the Red-vented Bulbul did not nest atop any man-made structure in the study region. *P. cafer* nested on indoor plant species with an average height of 5 m in the

research region. These findings are comparable to those of Vijyan (1980) [16], Walting (1983), and Zia *et al*. (2013) [18], who found that the species preferred to nest between 1-4 meters above ground level. Dixit also observed nesting heights in shrubs of roughly 2-3 meters (1963). Lamba has also reported nests made of twigs, plastic
particles, rootlets and grasses, and metal wires (1968).The species nested on 12 distinct plant species, generally at a height of 1.5-3M, according to Prajapati *et al*. (2011) [12], but did not prefer nesting at a height below 1.0M.Nests were found in four different plant species in the Sikar Region, but some were on man-made structures like electrical boxes and wires (Manju & Sharma 2013) [10]. Nests were found at a height of 2.0-3.5 metres on 12 distinct plant species in Haryana (Rao *et al*. 2013) [13].
Red-vented Bulbul nested in five plant species in Islamabad-Rawalpindi, including Zizyphus nummularia, Psidium guajava, Dalbergia sissoo, Dodonea viscosa, and Phoenix dactylifera (Zia *et al*. 2013) [18]. The eggs of the Red-vented Bulbul are pale pinkish with darker red spots that are dense at the broad end (Jerdon 1863) [7]. The clutch size of the Red-vented Bulbul in the study area was 2.3, with a range of 1-3, which was slightly lower than the 2-3 found by Prajapati *et al*. (2011) [12] and Manju & Sharma (2013) [10]. Zia *et al*. (2013) [18] reported an average clutch size of 2.5, with a range of 1-4.The variation in clutch size has been shown to be correlated with the availability of food for the young; when such food is abundant, a larger clutch size is laid (Vijayan 1980) [16].
According to observation the nestlings of broods that fledged on the same day were found in all three broods. In these circumstances, the parents continued to feed the remaining nestlings until they fledged after the elder children had fledged. The success percentage of fledging was 100%. Parents and chicks never returned to the nesting location after they had fledged.

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