

Behavioural Ecology of Red-Whiskered Bulbul as Observed Locally in Halisahar, West Bengal, India

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Abstract

The observation of the nest-building behavior and parental care of the red-whiskered bulbul was made locally in Halisahar at two different sites, one in between human habitation and the other site, away from habitation. Both the male and female bird took active participation in choosing the site and nest building process. The parental care was very pronounced in these birds. It was observed that the population of red-whiskered bulbul in Halisahar is greater than the adjoining areas. The reason behind this aggregation is yet to be studied.

Keywords: Red-whiskered bulbul, behavior, nesting ecology, parental care

1. Introduction

Red Whiskered Bulbul (*Pycnonotus jocosus*) is a talkative, musical bird which utters whistled phrases 'witiwet.' It can be seen in great number in and around Halisahar, 24 Pdns. (North), West Bengal. It belongs to order Passeriformes and Pycnonotidae family. It gets its name from the presence of a red patch, called "whiskers", behind and below the eyes. It is found in tropical Asia from Pakistan and India, to South West Asia and China¹. Its habitat includes open areas in bushes and scrubs, in thickets, near cultivated areas and gardens^{1, 2} close to human populations. It is common, least concerned and widespread in its range. It is one of the most common and important seed dispersal agents in anthropogenic open habitats in tropical Asia³. There is not much information regarding its breeding behavior in West Bengal. Previous attempts have been taken to gather information on nesting ecology in *P. jocosus* at Lucknow⁴ and China⁵. This study was aimed to collect basic information about its behavioural

ecology locally and to find out that if there is any local environmental reason for their aggregation around Halisahar.

2. Study area

The study was conducted in Halisahar (22.9441⁰ N Latitude and 88.4193⁰ E Longitude) at mainly two areas. One was in the middle of human habitation at Nanna (a locality near railway station). Other area chosen was approximately one and half kilometers away from Halisahar railway station. It was by the side of a fishing lake and a few meters away from Kalyani Expressway. The study was conducted during the dry seasons of February to July, 2014 and at the same time the next year, i.e., 2015.

3. Method of study and Results

Nest monitoring- Nests were found at different stages (nest building, egg laying, and nestling period) in the open field, whereas the entire nest- building process was observed twice during the first year (2014) and thrice during the second year (2015) at Nanna. In the second year of our observation, interestingly the whole process of nest building was twice observed indoors and once outdoor. Although the birds were observed to build nests five times, but successful breeding occurred only twice. In the field, once the nest was located, nest characteristics (height of plant, nest size, plant species etc) were recorded. It was found that most of the nests were built on thorny bushes, shrubs of height around 2.5-3.0 ft, but in the open field area nests on 8-9 feet high mango trees were also noticed.

Nest manufacturing- It was observed that the bird couplets took part in searching site for nest building. The pair entered the verandah of a house several times and also searched for suitable sites in the garden. They settled for a site on the handle of an old swing in the verandah. They tried to make their nest several times on the handle, but failed. Interestingly, they did not make any attempt to correct the posture of the nest once it failed, instead started building another one from scratch. The nest was built entirely of natural materials like dried leaf parts from coconut tree, cotton, twigs, grass blades, etc. The nest was made by criss-cross arrangement of the sticks and twigs, and thin strips of leaves of banana tree from the garden. The same sort of building materials was observed in the nests of the field birds. The birds took approximately 4-5 days for building the nests. It has been reported that the city birds take longer time (6-7 days approx.) and use thread and wires as their nest building material. This may be attributed to the scarcity of nesting material or to avoid the labour of procuring nesting material from faraway places⁴. It was noticed that on disturbing their preferred nest building site (both by human activities and other birds); they did not attempt to build the nest at that place.



Fig 1: Red-whiskered bulbul with nest building material in its beak

Courtship behavior- It was observed that the pair sits very near to each other and tickled each other's body. During this instance it was observed thrice that the red coloured patch on one bird's wing was a bit brighter than the other and the cry of the same bird was shriller than the other one. The pairs were seen to raise their pelvic portion several times. Billing and spooning were also observed.

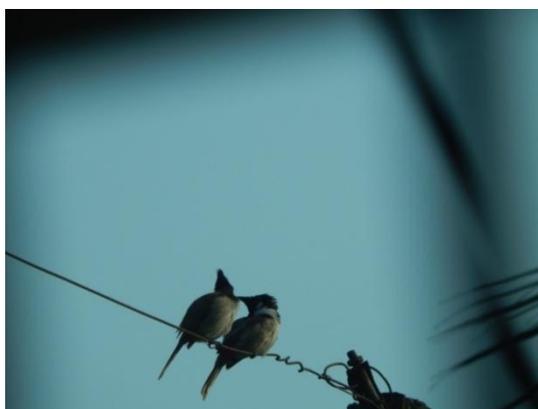


Fig 2: Red-whiskered bulbul engaged in courtship behaviour

Egg size and incubation period- The eggs were 2.0-2.5 cm in length and 1.35-5.0 cm in width. They were light pinkish in colour with brownish spots. The incubation period was observed as 12-14 days for whiskered bulbul.



Fig 3: An egg in the nest of Red-whiskered bulbul

Feeding behavior- Both the parents took active participation in feeding the chicks. As there is no pronounced sexual dimorphism present in them no conclusion about the role of individual parent could be made. One parent brought the food in its mouth while the other one sat around guarding the nest. The food included red or black ants, other insects, green or red berry like fruits and also grains suggesting their omnivorous feeding habit. Sometimes the birds were seen to feed the chicks with regurgitated food. The birds brought food at 4-5 mins interval compelled by the chicks' cries. Once fed, they fell silent repeating the behavior after about 5 minutes.

The feeding process stopped after approximately 4.30 pm in the evening. More frequent feeding was done in the afternoon around 12.30-1.30 pm. The duration and frequency of feeding was the same for the field birds as observed by us.

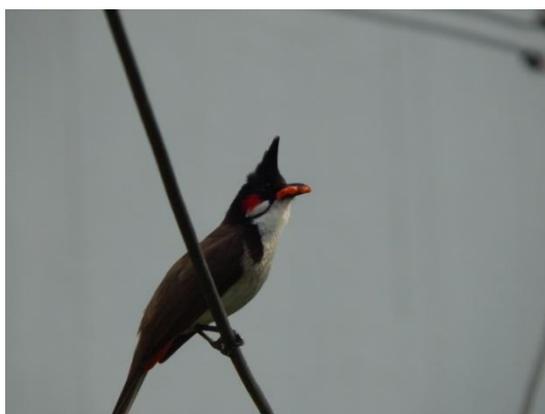


Fig 4: Red-whiskered bulbul holding food in its mouth

Clutch size- Most of the times the clutch size was of two chicks. The chicks were covered by chocolate brown feathers.

Parental care- The parental care behavior is very much pronounced in these birds. It was more evident during a stormy session one evening. Interestingly only one bird was observed to play the role of the protector, the other was not present during the storm. Another very interesting instance of parental care was observed at the time of flight of the first grown up chick. The parents accompanied the chick for about 6-7 hrs. During this period they did not come to feed the other chicks in the nest. The second chick flew away after 5 days of the first chick. This instance was observed twice.

4. Discussion

It seems from the present study that the breeding season of the red whiskered bulbul is during the dry seasons of March-June. There are some slight variations in other reports. It is also reported May-August as the breeding season of bulbul⁶. The breeding season is very much related to increasing photoperiod and temperature. This is corroborated by findings of various authors⁴. The red-whiskered bulbul is a highly territorial bird and its territory range is lower in nesting period than pre-nesting period in order to conserve energy during the breeding season⁷. It was reported that stability of the territory boundary occurred both during the pre nesting and nesting period⁸. This aspect of observation was beyond the scope of this study. The interference by red vented bulbul during nest building process of whiskered bulbul led to leaving the site by the latter after 5-6 attempts. This observation suggests the choosy behavior of the whiskered bulbul. *P. jocosus* has plasticity with respect to nesting plant species⁵. *P. sinensis* built nests on 11 plant species⁹ and open cup passerine species *Sporophila caerulea* is reported to built in 8 plant species¹⁰. The incubation time was also reported to be less than other passerine birds⁵. The parental care behavior was observed in both the sexes in whiskered bulbul while in red vented bulbul the female bird plays the major role¹¹. The cause of high nesting success rate is high in this area can be attributed to abundance of food, proper conditions for nest building such as plants camouflaged by thorny bushes, dense cover, appropriate atmospheric conditions, less infection among hatchlings, less predation etc. The parents provided the protein rich invertebrate food in addition to plant food suggesting a relation between the growth rate and diet. There is a positive correlation between invertebrate biomass and increased growth rate in wood thrush (*Hylocichla mustelina*) hatchlings¹². It has been also suggested that the hatchlings are poikilotherms and they must be kept warm^{13, 14} so there may be a probability of a change in age related diet¹⁵. Although it is difficult to observe any sexual dimorphism in these birds but the differences observed in the coloured patch gives us a possibility to analyse the role of male and female in nest building, feeding chicks, parental care etc. Red whiskered bulbul is common and widespread and can live near human habitation and large cities. Its nests can be easily accessible, so it can prove an ideal model for the future studies of nesting ecology of Asian passerine birds.

References:

1. B. Mark. Birds of East Asia. Princeton University Press (2009).
2. L. Fishpool, & J. Tobias. Red-whiskered bulbul (*Pycnonotus jocosus*) In: del Hoyo J Elliott A. Sagratal J, Christine OA, de Juana, E. *Handbook of the birds of the world alive*. Barcelona: Lynx Edicions (2005).
3. R. T. Corlett. *Biological Reviews of the Cambridge Philosophical Society*, **73(4)**; 413-448 (1998).
4. A. Mazumdar and P. Kumar. *Burphyck*: 98-102 (2007).
5. H. Li , Zhang, X. M., X. T. Yang, L.W. Cu, & C. R. Quan. *Zoological Research*, **36(4)**; 233-240 (2015).
6. M. D. Wright. *J. Bombay Nat. Hist. Soc.*, **54**; 631 (1957).
7. G. Gauthier. *Can. J. Zool*, **65**; 1402-1410 (1987).
8. S. Sotthibandhu, *J. Sci. Technol.*, **25(5)**; 553-563 (2003).
9. S. S. Lan, Q. Zhang, Q. Huang & S. H. Cheng. *Zoological Research*, **34(3)**; 182-189 (in Chinese) (2013).
10. M. R. Francisco. *The Wilson Journal of Ornithology*, **118(1)**; 85-90 (2006).
11. D. Dixit. *Pavo*, **1**;19-31 (1963).
12. J. P. Duguay, P. B. Wood & G. W. Miller. *Wildlife Society Bulletin*, **28(4)**: 1123-1131 (2000).
13. R. E. Ricklef & F. R. Hainsworth. *The Condor*, **70**; 121-127 (1968).
14. H. Watson. *Sea Bird*, **26**; 96-99 (2003).
15. L. Yang, X. J. Yang & X. J. When. The avifauna of Yunnan China. **Vol II**; Passeriformes. Kinning: Yunnan Science and Technology Press (in Chinese) (2004).