

Fig. 1. The study area, Sandaun Province, with collecting localities marked (stars), as well as major topographical features. The dotted line marks the north-south divide.

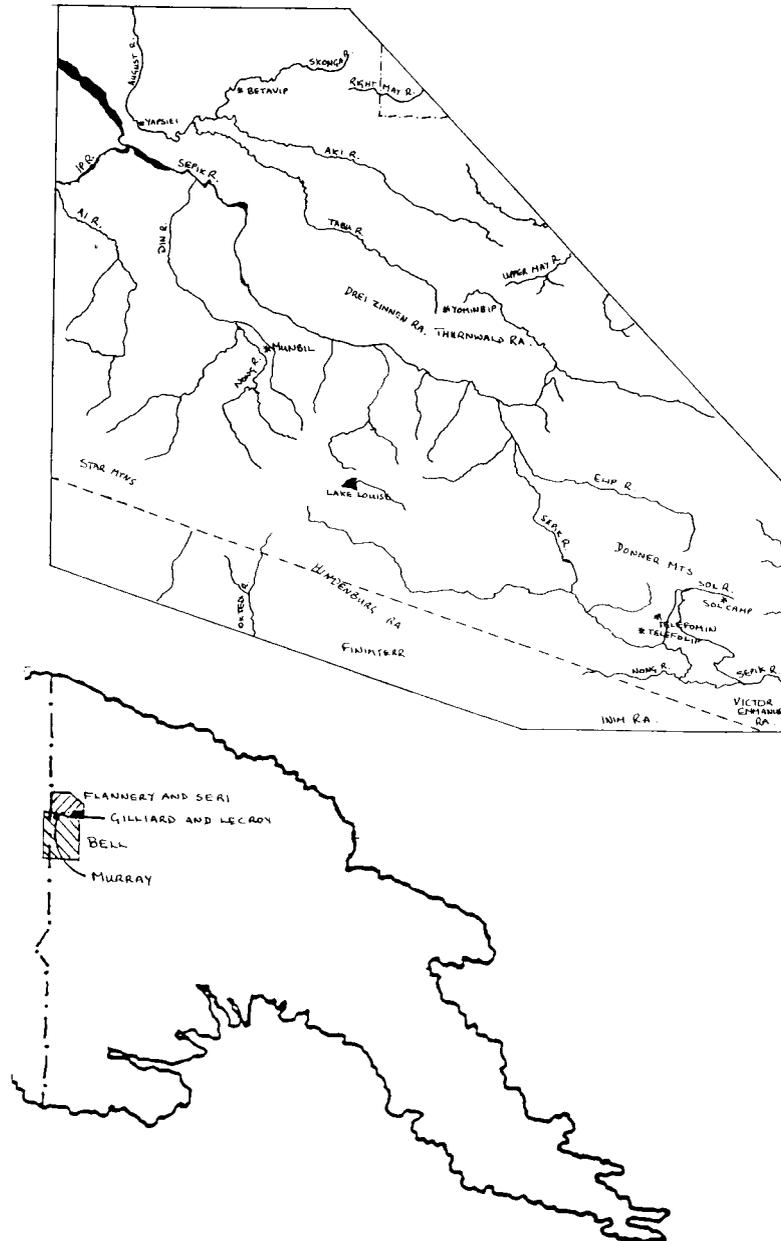


Fig. 2. Map showing Flannery and Seri's study area and other survey areas mentioned in text.

NOTES ON THE DISPLAY BEHAVIOUR OF A FULLY -PLUMED MALE BLUE BIRD OF PARADISE *Paradisaea rudolphi*

by Richard Whiteside

Introduction

A number of visits were made between September and December 1994 to a 50m square patch of dense secondary growth on a north-facing slope which served as the display territory for a male Blue Bird of Paradise *Paradisaea rudolphi*.

Preliminary observations provided information on behaviour and the display sequence, choice of display sites, times of display and daily routine. I hope to follow up these observations over an extended period, and particularly to investigate possible interaction with the Magnificent Bird of Paradise *Cicinnurus magnificus*.

Discussion

The study site is near Kaindan village, at an altitude of approximately 1,700m, 4km south-east of Kompam District Headquarters in the Enga Province. The display territory is roughly central in a foraging area which encompasses some primary forest, dense scrub and secondary growth, a coffee garden, grassland and some agricultural land.

The male Blue Bird of Paradise typically gave advertising calls from tall trees (frequently *Casuarina*) above the display territory. At least two other birds could be heard advertising on nearby slopes, but their foraging areas probably did not overlap. Display took place low down in thick vegetation.

The daily sequence of behaviour was very variable. Typically, display followed a period when the bird advertised its presence by calling from the tall trees, but this was not always the case. The peak time for display was in the morning between 0630 and 0930, with a second period of display in the afternoon between 1530 and 1830. Between 0930 and the afternoon display, the bird was often in the vicinity of the display territory, where it sometimes engaged in short periods of display. Frequently these were not preceded by any advertising, and on some occasions the bird engaged directly into the "intense phase" of display associated with an electrical-like buzzing sound (Coates 1990).

The morning advertising period typically began at about 0640, though sometimes not until much later. It would sometimes last for more than two hours, though was frequently of much shorter duration. The bird tended to be active in the display territory before advertising, and would sometimes enter the display sequence without any significant advertising period.

The display sequence tended to be shortest after a long morning advertising period. On other mornings the bird would display several times from a number of sites within the general display territory. These sites were always low down, sometimes within a metre of the ground and surrounded by dense vegetation, making it difficult to observe the display.

Before commencing its display, the plumed male would arrive at a perch near the display perch and make short vocalizations. It would then flutter to the display perch and commence chattering

from the inverted hanging position. The chattering would last for anything from a few seconds to fifteen minutes, sometimes culminating in the "intense phase" of display, but this "intense phase" was not always preceded by chattering, and the duration of chattering did not seem to affect whether or not the "intense phase" followed.

Display would proceed as described above whether or not females were present. After displaying from one site, the male would either fly off and advertise, or would fly to a nearby display site where it would recommence displaying. If females were present, then the male would draw them with him from one display site to the next, and he would display for short spells at each site. There seemed to be no fixed route that the male used when travelling between display sites, but there seemed to be favourite display sites and perches.

I never observed display leading to copulation, and I never heard the "intense phase" of display to go on for more than 30 seconds. However a local man told me that he heard the bird "become electric (*kisim pawa*) for some minutes in June 1994. Perhaps the "intense phase" of the display lasts longer if a female shows enough interest.

As with the morning display sequence, the afternoon display sequence did not have a definite routine. Sometimes the bird would advertise for two hours or more before displaying (perhaps not coming down from its advertising lookout until after 1730), whereas at other times it would begin displaying without any or only very little advertising. It would chatter to itself when preparing for roost.

Conclusion

It was easy to hear the bird advertising from some distance, but the chattering and buzzing sounds could only be heard from fairly close range. Because of this, it is possible that some display went unnoticed during my study.

Some particularly interesting observations are listed below:

1. This bird, and also another plumed male nearby, both chose to display in dense secondary growth, although their foraging areas included primary forest. Earlier records (Coates 1990) suggest that Blue Birds of Paradise generally display in primary forest. Both birds had a number of display sites, commonly amongst tictic (*Miscanthus floridulus*) grass stems very close to the ground. At least one branch from which a bird displayed was within a metre of the ground. Display may not have previously been recorded from so low down (This certainly would seem atypical amongst other members of the genus such as Raggiana *P. raggiana*, Lesser *P. minor* and Greater Birds of Paradise *P. apoda*... *Ed.*)

2. A female plumaged Blue Bird of Paradise with an uneven tail was seen advertising and heard chattering on 24 December, 1993. It was assumed that this was a mature male in eclipse plumage, as a plumed male was observed advertising from this territory several times earlier in 1993 and again in 1994. The bird seemed less wary without its plumes. (Immature male or even a visiting female also seem possible. *Ed.*)

3. The main period of display was in the early morning, with a second major period in the late afternoon. This is not surprising, given what is known about when other birds of paradise display, but Coates (1990) suggests otherwise.

4. On 18 September 1994 the plumed male was observed, after chattering obscured by tictic stems for about twelve minutes, to fly to a vertical sapling, hop down to 1.8m above ground and engage straight into the "intense phase" of display for about ten seconds, after which it hopped back up the sapling and flew off. This may be the first record of display from a vertical post. On closer inspection I found that the green leaves had recently been bitten off the sapling and were lying underneath, so that the sapling was almost devoid of leaves. A fresh dropping (almost certainly from the Blue Bird of Paradise) was also found there. The dropping was orange and resembled a fruit which the male bird was seen to consume.

It is hoped that further observations will add to the information presented in this paper.

References

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MANED DUCK (AUSTRALIAN WOOD DUCK) *Chenonetta jubata* NEAR PORT MORESBY: THE FIRST RECORD FOR THE NEW GUINEA REGION

by Brian Coates

On the afternoon of 13 February 1994 a single Maned Duck *Chenonetta jubata*, in female or immature male plumage, was observed in an area of flooded low-lying pasture land alongside the Sogerly road, Central Province, opposite the turn-off to the Pacific Adventist College. Although the bird was some distance away, good views were obtained through a telescope. Also present were Pacific Black Ducks *Anas superciliosa* and some Grey Teal *A. gibberifrons*.

Because I am so familiar with this species, which is an abundant resident in the Brisbane area in the vicinity of my home, I recognized it immediately (though almost with a feeling of disbelief!). The following description is from field notes taken at the time:

Slightly smaller than a Pacific Black Duck; bill notably short, and grey; head and neck brown; a darker line through the eye, a short whitish line above the eye and another below it; body generally grey with a prominent black stripe down the side of the back (on scapulars); breast and flanks thickly spotted with white; ventral area white; tail dark; upper surface of wing, observed when the bird stretched, showed extensive white secondaries with a black bar and green speculum.

In the New Guinea region the Maned Duck is to be confused only with the Spotted Whistling Duck *Dendrocygna guttata*. However, the combination of small bill, grey body and black scapular-stripe is diagnostic.

The Maned Duck is endemic to Australia including Tasmania, where it is fairly widespread; it is absent north of about 15° S, except as a vagrant. It has occurred as a vagrant on Badu Island, Torres Strait and New Zealand (see Marchant & Higgins 1990). This is a gregarious species,