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## A BREEDING RECORD OF THE WHISTLING DOVE OF KADAVU, FIJI

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### ABSTRACT

The first known record of the nesting of the Whistling Dove (*Ptilinopus layardi*) is presented, along with notes on its diet and very un-dove-like whistled calls. The fact that only the female was seen brooding the young may be of some significance to an understanding of the evolution of extreme sexual dichromatism in the Golden Dove Group to which the Whistling Dove belongs.

### INTRODUCTION

The Whistling Dove\*, *Ptilinopus layardi*, is confined to the island of Kadavu and the nearby smaller island of Ono, in the south of the Fiji Group. It is one of the distinctive "Golden Dove Group" of three geographically representative fruit doves, all of which are endemic to Fiji. The other two members of the group are the Golden Dove (*P. luteovirens*) and the Orange Dove (*P. victor*). The group was originally classified in a genus of its own, *Chrysoenas* Hartlaub (1854), but in recent years it has generally been considered to be a subgroup of the genus *Ptilinopus* (Amadon 1943: 5, 6; Cain 1954: 273, 278; Goodwin 1970: 332). The Whistling Dove is the most "primitive"

\* I have chosen to call this species the Whistling Dove because that name appears to be the most distinctive and most authentic of the English names which have been applied to this bird (Martin 1940: 5). As far as I know, the name Velvet Dove originated with Mayr (1945: 130), who implied that he had some doubt that the dove gives a whistled call. Goodwin (1970: 378) followed Wood (1926: 116) in using the name Yellow-headed Dove.

of the group. While sexual dichromatism is very pronounced in the other two species, in the Whistling Dove, adult male plumage is more like that of females and juveniles and that of other doves of the genus *Ptilinopus*. See Sibson (1972) for Belcher's painting of both male and female.

Little has been published about the Whistling Dove since it was originally described in 1875 by E. L. Layard, the British administrator of the newly ceded colony of Fiji. Layard noted that his male specimens, collected in August, had "enormously developed" testes. He concluded that they were breeding at that time.

### NESTING

About noon on 28 September, 1977, I was watching a male Whistling Dove giving his peculiar whistle call in the top of a nearby tree when I stepped back and inadvertently flushed another Whistling Dove off a nest just behind me. The nest was about 3 metres above the ground in forest on a low rounded ridge near the edge of a long-abandoned Fijian *teitei*, or garden, in the interior of the south-western part of Kadavu, about 3 km south of Richmond Bay (Fig. 1). The nest was a loose thin platform, about 10 to 12 cm in diameter, constructed mainly of twig-like pieces of the vine that grew on nearby tree trunks (Fig. 2). The nest was so sparsely built that one could see right through it from below. It contained a single nestling and a fragment of white shell. A larger piece of pure white shell lay on the ground directly below the nest.

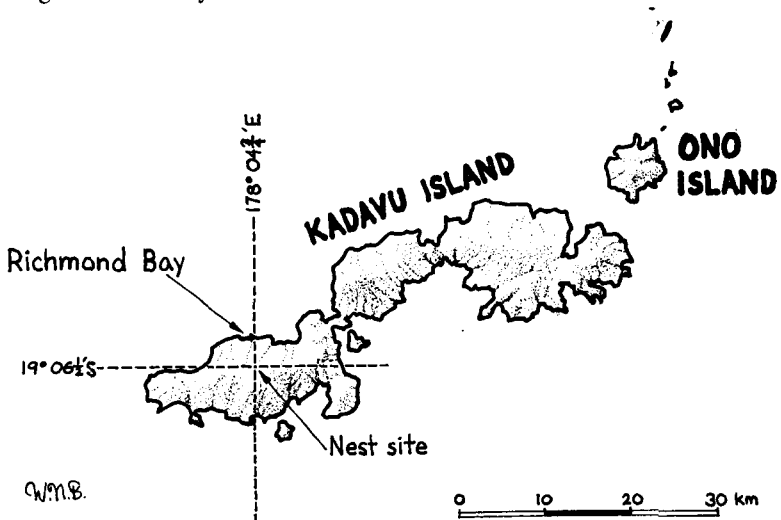


FIGURE 1 — Location of the Whistling Dove nest in the interior of the mountainous island of Kadavu

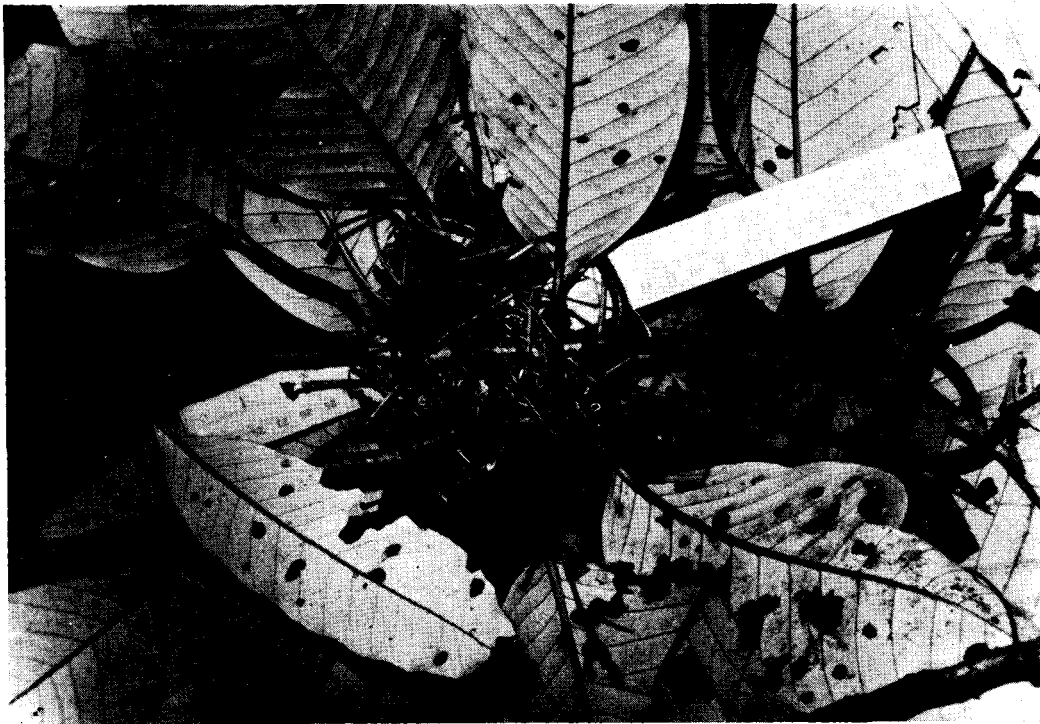


FIGURE 2 — Whistling Dove nest, photographed from directly below, after death of hatchling. A 1-foot (30.5 cm) ruler across the nest provides a scale.

Apparently the nestling had just hatched. The membrane inside the eggshell was still moist, although it had not rained that day. The hatchling lay prostrate; its down was damp and matted. The next morning the nestling held its head erect and its light-coloured scanty down was dry despite the misty rain that was then falling.

The nest was situated where two thin branches came close together. It was supported mainly by the long petioles of the large leaves of the tree, which a Fijian schoolboy identified as *vecea* (Fig. 3).

When I first flushed the bird from the nest, it flew off with a loud clapping of wings, like the sound of a Feral Rock Pigeon taking off, but I did not see it well enough to determine its sex. However, during my subsequent visits to the nest throughout the week, I never definitely identified a male either on the nest or within 10 metres of it.

When I returned to the site at 2.45 p.m., a female was sitting on the nest. She sat quietly for the next 39 minutes while I watched from about 10 metres away. When I then began approaching the nest, she sat tight until I was directly under the nest. She then flew off without such loud clapping of wings as I had heard the first time. The hatchling gave one soft *peep* as the female left.

On my next eight visits to the nest site over the following two

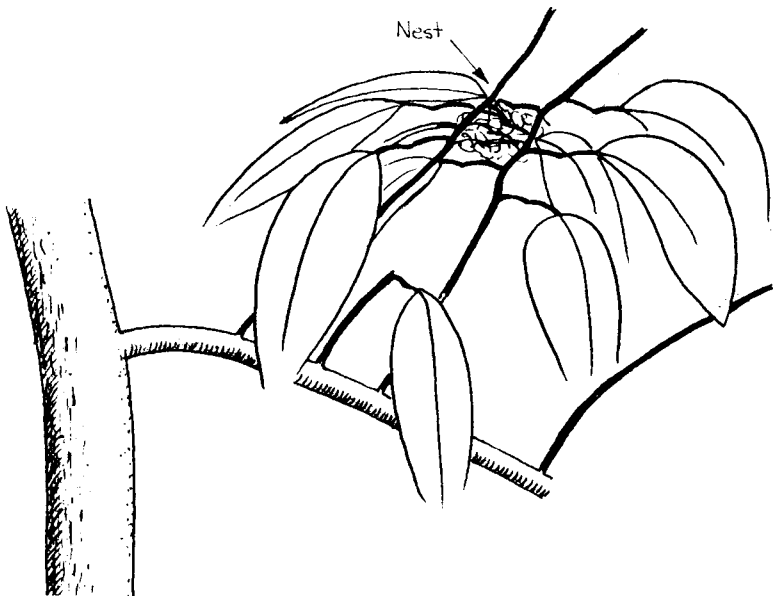


FIGURE 3 — Whistling Dove nest seen from below and to one side of the nest

days, I found the female sitting on the nest four times, the nest was unattended on three occasions, and once, at 6.45 p.m., I was unable to determine definitely the sex of the brooding bird, since darkness had fallen.

- 29 Sept. 2.45 p.m. Nest unattended, dove whistling nearby  
 4.05 p.m. Female brooding  
 5.00 p.m. Female brooding  
 6.45 p.m. Dove brooding, sex undetermined
- 30 Sept. 9.00 a.m. Nest unattended, dove whistling nearby  
 10.15 a.m. Female brooding  
 1.45 p.m. Female brooding  
 3.00 p.m. Nest unattended, dove whistling nearby

Over this period the female became progressively more wary and quiet in leaving the nest, until by 1 October she was apparently slipping off the nest while I approached, without my seeing her, leaving only the swaying nest as evidence that she had just been there. Thereafter I did not again see a brooding bird on the nest, although I continued to pass near the nest several times each day. On 3 October I found the nestling on the ground beneath the nest, still alive. After unsuccessfully attempting to feed it slightly diluted sweetened condensed milk, I returned it to the nest. The next day I found it still alive in the nest. On 5 October the nestling was dead in the nest. The small piece of eggshell still remained in the nest where I had first seen it. When I matched this to the other larger piece, a nearly complete eggshell was formed measuring 23.5 mm by 33 mm.

#### CALLS

Throughout this period, whether or not the female bird was sitting on the nest, I generally heard the male call in the canopy about 10 to 20 metres away. The call was a loud clear rising whistle immediately followed by a softer sound which I can only (inadequately) describe as a falling tinkle (Fig. 4). The whistle was easy to imitate closely, but the tinkle was not humanly reproduceable. The call could be heard at almost any time of the day, from all over the forest. It is probably the same call described by Wood (126: 116) as a "double whistle, the second sound being much less distinct or loud." More recent authors have described the call simply as a "double whistle" (Blackburn 1971: 157; Sibson 1972), a description which poorly fits the calls I heard.

The male sometimes gave another distinctive call. It sounded somewhat similar to a small, high-speed electric motor starting up, immediately followed by a very high squeaky whistle, falling in pitch, reminiscent of the calls of the Polynesian Starling (*Aplonis tabuensis*).

#### DIET

Layard (1875: 151) reported that the Whistling Dove "fed on the berries of a species of banyan." Wood (1926: 116) described its

food as "berries, or small pea-like fruit." Finsch (1877: 736) found a "fruit about the size of a cherry, with a large hard stone" in the stomach of one specimen.

I saw Whistling Doves in the top of a tree (identified by Fijian boys as *tagiri*) feeding on the fruit, which grew in clusters. The fruit were 2.5 to 3 cm in diameter. Each one apparently opened in situ, exposing three carpels, each filled by two large brown seeds with a small amount of attached reddish-orange pulp. The Whistling Dove did not swallow the whole fruit, but plucked out and swallowed the contents of each carpel. Peale's Pigeons (*Ducula latrans*) fed on the fruit in the same manner.

#### DISCUSSION

The fact that I saw only the female at the nest may be only a coincidence, but on the other hand it may possibly be part of the answer to a baffling puzzle regarding the evolution of the Golden Dove Group. This group includes the most extreme cases in the Columbiformes of sexual dichromatism, with the development of brilliant plumage in the male. Yet, as far as I have been able to determine, these doves do not very well fit any proposed explanation of the evolution of such dichromatism unless they are quite exceptional among the Columbiformes in breeding behaviour, the males having little or no role at the nest (Beckon: in manuscript). If further observations prove that males do participate in incubating eggs and feeding young, like other better-known pigeons and doves, then the puzzle remains unsolved.

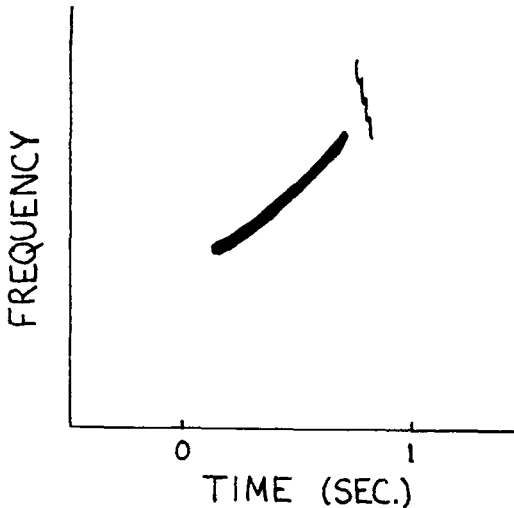


FIGURE 4 — Approximate diagrammatic sonogram of the most common call of male Whistling Doves in south-western Kadavu in September-October

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## SHORT NOTE

## TEREK SANDPIPER FEEDING LIKE AN AVOCET

At Karaka shellbanks, Manukau Harbour. on 22 April 1978, J. A. Brown and I sat quietly on the outer bank watching waders. Before us was an area of firm wet mud with many little pools and patches of shells where birds were feeding on a falling tide. Among them was a Terek Sandpiper (*Tringa cinerea*) working busily towards us. We were able to watch it for about 30 minutes at distances as short as 20-30 m. These are wary birds in New Zealand, and so we were fortunate to have such an opportunity. The weather was fine and calm with clear visibility and I was able to note the following feeding methods:

1. Stood still, then ran to pick flies from surface of water with sometimes an extra run as prey escaped.
2. Picked randomly from surface of mud.
3. Jumped to take flying insects.
4. Probed in water about 3 cm deep for ? crabs, which were shaken and turned before being eaten. Bird was distant at this time.