

Notes on the Distribution of and Insectivory in the Figbird *Sphecotheres viridis* in the Illawarra and Shoalhaven Regions of New South Wales

by C.J. CHAFER, 69 Lake Heights Road, Lake Heights, N.S.W. 2502

Summary

Recent data collected from the Illawarra and Shoalhaven regions of New South Wales suggest that the Figbird *Sphecotheres viridis* has become a breeding resident in these regions as opposed to the previous status of breeding visitor. The presupposed frugivorous diet of the Figbird, as indicated in most Australian references for this species, is questioned and observations of Figbirds regularly engaged in insectivorous foraging at Primbee, N.S.W., over a four-month period are detailed.

Introduction

In the Illawarra and Shoalhaven regions of New South Wales, the Figbird *Sphecotheres viridis* is regarded as a scarce visitor, occasionally breeding (Gibson 1989). In this note I present evidence to vindicate a reassessment of this status. Most Australian standard references and field guides list the Figbird's diet as being strictly frugivorous (Morcombe & Morcombe 1974, Pizzey 1980, Blakers et al. 1984, Cayley 1984, Chapman 1986). Herein I report an observation of insectivory and present references from the literature which suggest that the species is at least partially insectivorous as well as being frugivorous.

Range and status

The Shoalhaven River (Nowra area, 34°53'S, 150°36'E) is normally regarded as the southern limit of the Figbird on the east coast of Australia, with occasional sightings south to Ulladulla (Disney 1979, Morris et al. 1981, Chapman 1986), and infrequently as a vagrant farther south (Blakers et al. 1984). Over the last 50 years, the species has undergone a range expansion southward, appearing in Sydney for the first time in 1946 (Hindwood & McGill 1958, Bell 1983). Since then it has expanded a further 120 km south, appearing in Shellharbour in December 1955 (J.D. Gibson in litt.), Kiama in February 1957 (McGill 1961) and Nowra in October 1978 (Hobbs 1979). McAllan & Bruce (1988) attribute this expansion to either extensive planting of indigenous fig trees *Ficus* sp. for ornamental purposes or to recent climatic change which has created milder winters and an increase in annual precipitation. The present author prefers the latter explanation, as the Illawarra/Shoalhaven regions historically contained one of the largest tracts of lowland rainforest in New South Wales (e.g. Mills 1988), and the species was not recorded by Gould or Gilbert in their visits to the Illawarra (early 1840s) at a time when much of the rainforest was still in place (Gould 1865). Whatever the reason, there can be little doubt that the species has invaded the coast south of Sydney and judging by the increased frequency of observations in the Illawarra and Shoalhaven regions over the past 10 years, it has become a locally nomadic breeding resident. The only recorded instance of the Figbird breeding in the Illawarra region is of an active nest situated in a large Rusty Fig *Ficus rubiginosa* at Shellharbour in November 1956 and January 1957 (Sefton & Devit 1962, J.D. Gibson in litt.), although in recent years observations of juveniles accompanying adults and of adults feeding dependent young at Nowra (D. Wright pers. comm.) and at Primbee (see below) indicate that further breeding has occurred in the area since then. Since 1984 Figbirds have been recorded with increased regularity through the winter months from the Minamurra/Dunmore (e.g. Smith & Chafer 1987), Port Kembla, Primbee and Nowra

areas (C. Brandis, R. Imisides and D. Wright pers. comm.) as well as the author's residence at Lake Heights. Previous to this, the Figbird had been recorded only between August and April.

In the Illawarra and Shoalhaven regions the Figbird has been recorded only from lowland locations within 15 kilometres of the coast. This is despite the fact that the main remaining tract of regional rainforest is situated farther west along the eastern slopes of the Illawarra and Cambewarra Ranges (Mills 1988) in areas regularly frequented by local bird observers familiar with the species. The Figbird is most often encountered singly or in small flocks of <15, congregated in fruiting fig trees *Ficus macrophylla*, *F. rubiginosa* and *F. obliqua* or perching in adjacent eucalypts or Camphor Laurels *Cinnamomum camphora*. To the best of my knowledge, it has not been observed feeding in exotic fruit trees in the area.

Observation of insectivory

On 29 November 1990 Ron Imisides informed me of a pair of Figbirds frequenting his garden at Primbee (34°30'S, 150°53'E). They had been returning for several evenings and had been observed foraging for insects during a short period before nightfall. The following is a summary of our subsequent discussion.

The birds arrived approximately 30 minutes before sunset each evening and were noted to be systematically searching through the foliage of a number of eucalypts growing in his predominantly 'native' back yard. Ron gained the impression that the Figbirds adopted three strategies in foraging for the insects. The first involved visual detection of newly emerged 'Christmas beetles' (Insecta: Coleoptera), which had begun appearing about the same time the Figbirds had started to reside in his yard. Once detected, the bird simply obtained the beetle and either consumed it immediately or flew to a nearby perch to despatch the meal. The second technique involved randomly descending through the leafy foliage until a beetle was disturbed and then pursuing it aerially in a 'flycatcher type' method until the insect was caught and subsequently consumed. The third method involved a systematic gleaning of the leaves of eucalypts, presumably harvesting psyllids or lerps (Insecta: Hemiptera) which were abundant on several *Eucalyptus* sp. in his yard at the time. This last method was adopted mainly during late February and March when the beetle population declined.

These procedures were observed with 10 x 40 binoculars from an elevated verandah on the rear of the house which offers almost mid-canopy perusal of the trees under observation. Both sexes utilised these behaviours and up to 10 beetles were estimated to be caught each evening. These foraging techniques were continued until failing light prevented further pursuits and the birds settled down to roost for the night. Ron also felt that some moths were being taken, however he was unable to confirm this.

At approximately 1000 h on 7 December 1990, I was visiting Ron at his house when a male Figbird announced his arrival in the yard with an emphatic *chyer* call (see Pizzey 1980). Both of us had binoculars at the time and so we settled down to observe the bird's behaviour. The emerging beetles, all apparently scarabs (with *Anoplognathus olivieri* and *A. chloropyrus*, Insecta: Coleoptera: Scarabaeoidea, being most numerous), were now abundant in the yard and were quite active diurnally, typical of the species' behaviour (Hawkswood 1987). The Figbird simply remained at its perch until a beetle (usually an *Anoplognathus* sp.) took flight. It then left the perch, and rather clumsily but effectively pursued and caught the beetle, then returned to its original position, a bare section of a horizontal limb approximately 8 metres from the ground and 10 metres from our observation position on the verandah. Upon alighting on the branch, the Figbird repeatedly beat the beetle against the limb until the elytra (wing carapaces)

were dislodged from the mesothorax. The beetle was held in the extreme tip of the bill while this offensive was being undertaken. Next the beetle was transferred to the mid section of the bill and the bird tilted its head backward, as if either 'drinking' the resulting secretion from the internal soft parts of the beetle, or removing the soft internal tissue of the beetle with its tongue. This behaviour was repeated nine times, lasting for almost five minutes until the beetle was thoroughly eviscerated and the remaining exoskeleton discarded. The bird then left the yard.

After this date, the Figbirds became less routine in their visits to Ron's yard, apparently in response to the increased diurnal activity of the beetles. They were subsequently observed at various times of the day and by the end of February 1991 up to six Figbirds (two adults and four juveniles, presumably constituting a family group) were frequenting the yard and foraging in a combination of the methods outlined above.

Discussion

In his study of mimicry in orioles, Beland (1977) mentioned the need for further study on the food preferences of Figbirds, particularly as most Australian literature regards the species as entirely frugivorous. Kloot & McCulloch (1980) noted one reference to insectivory (Richardson 1978) and also recommended further observations on foraging behaviour of Figbirds. The continuous foraging for insects by the Primbee birds recorded here suggests that they were well experienced at dealing with such prey and had adopted several methods for obtaining insects. At the 1956 Shellharbour nest mentioned previously, J.D. Gibson (in litt.) observed that 'Christmas beetles and figs were being fed to the nestlings'. A search through the literature produced the following references to insectivorous activity by the Figbird in both Australia and Papua New Guinea:

'Figs (native and cultivated) are the chief food, but lantana berries, wild verbena fruit and pepperina berries are eaten also, as well as insects when young are being fed' (Lord 1956); '. . . also a certain amount of insect food is given during the first few days of hatching' (Webster 1968); 'Also takes insects on the wing' (Campbell 1974); 'It eats fewer insects' [than other Oriolidae] (Simpson & Day 1984, p. 336); and Coates (1990) mentions Figbirds feeding on several kinds of insects including swarming flying ants. In three years of observation on nesting Figbirds near Mackay, Crouther & Crouther (1984) made only one observation of an insect (a caterpillar) being fed to nestlings. Richardson (1978) briefly described a foraging strategy on 'Christmas beetles' from Brighton Le Sands (a Sydney suburb) similar to that which was initially observed at Primbee.

It would appear from these admittedly limited references that insectivory in the Figbird is only a secondary foraging strategy. It is possibly undertaken when fruits in the bird's normal frugivorous diet are in short supply, when protein is required for nestlings, or when insects are found to be locally superabundant and thus easy to obtain.

In conclusion it can be stated that insectivory at least partly contributes to the Figbird's diet, although much further work is necessary to establish the percentage component and seasonal acquisition of insects in terms of the bird's overall dietary requirements.

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