NATURE IN SINGAPORE 2008 **1**: 207–210
Date of Publication: 25 November 2008

THE OLIVE-BACKED SUNBIRD, *CINNYRIS JUGULARIS* LINNAEUS, 1766 AND ITS PECTORAL TUFTS

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INTRODUCTION

Vision is a major form of communication among birds. Many male birds have striking plumage, combs, wattles, inflatable sacs, etc., that are generally thought to act as sexual signals (Darwin, 1871). Thus the male superb fairywren (*Malurus cyaneus*) displays its iridescent blue crown and cheek patches while the male greater prairie-chicken (*Tympanuchus cupido*) inflates its colourful sac when making his booming call to attract prospective mates (Alcock, 2004). The most elaborate of plumage is seen in the birds-of-paradise (Attenborough, 1998) and of course, the peacocks. Many of these strikingly colourful birds appear as such only during the breeding seasons. During these periods, they also indulge in elaborate displays to attract females. However, recent experimental evidence has shown that such signals may not always be sexual in nature. The red epaulets of the male red-winged blackbird (*Agelaius phoeniceus*) have been experimentally shown to function at repelling rival males (Roskaft & Rohwer, 1987; Cheke et al., 2001). When these epaulets were blackened, the bird lost his territory to a rival male but he could still attract females.

Many male sunbirds are more strikingly colourful compared to the females. During courtship the males may indulge in elaborate displays. For example, sugarbirds (*Promerops* species) perform spectacular flights, malachite sunbirds (*Nectarinia famosa*) display their pectoral tufts, and the greater double-collared sunbirds (*Cinnyris afer*) fan their tails and at the same time point their heads skywards (Cheke et al., 2001).

Currently there are six species of sunbirds in Singapore, and the seventh, the purple-naped sunbird (*Hypogramma hypogrammicum*), has not been seen for decades (Wang & Hails, 2007). Of these, the olive-backed sunbird (*Cinnyris jugularis*) is commonly seen in urban areas. These sunbirds normally arrive to feed on nectar from flowering plants. They come in pairs or small groups, darting around rapidly, seldom remaining in one spot for long. Their presence is announced by their noisy chatter. In flight they make a "trik-trik-trik" sound while during feeding the call is a strident "cheep-ip, chee-ip, chee-ip" (Wells, 2007).

OBSERVATIONS

The first author was strolling along at Bishan Park on the morning of 29 Mar.2006 when suddenly five female olive-backed sunbirds landed on a plant, all chattering loudly. Then suddenly a single male descended on the same plant.

Looking up from its perch at the females, the male began to flutter, his wings unfolded, also fluttering rapidly. At the same time it everted its orange-yellow pectoral tufts, which consist of fine feathers extending out from under its shoulders (Figs. 1–2). Besides fluttering, it also moved from side to side, trying to approach the females and calling loudly all the time. However, the females flew off to another tree with the male following close behind.

DISCUSSION

Of the 14 genera that make up the 199 sunbird species, five genera—*Chalcomitra*, *Cinnyris*, *Cyanomitra*, *Deleornis* and *Nectarinia*, have been reported to possess pectoral tufts in the males (Cheke et al., 2001). Most of the males of the genus *Cinnyris*, which consists 50 species, exhibit these tufts, but not the females. However, not all female sunbirds lack such tufts. The female scarlet-tufted malachite sunbird (*Nectarinia johnstoni*) has a pair of tufts that are significantly smaller 75–78% in size to those of the adult male (Evans & Barnard, 1995).

Fig. 1. A male olive-backed sunbird with its pectoral tufts everted and its bill pointing upwards. (Photo by: K. C. Tsang).

The brilliant yellow pectoral tufts of the male olive-backed sunbird has earlier been reported by a number of observers (Delacour, 1947; King et al., 1975; Smythies, 1999; Cheke et al., 2001; Wells, 2007). These tufts are normally hidden under the wings. During courtship, the male would throw his head back to display his black breast and at the same time erecting his pair of pectoral tufts laterally, calling loudly all the time (Wells, 2007). However, images of these birds

Fig. 2. The same male olive-backed sunbird fluttering its wings and calling loudly, its pectoral tufts still everted. (Photo by: K. C. Tsang).

with their pectoral tufts in full display are difficult to come by. It is only during the last few years, with the popularity of bird photography, that photographers have actually documented the function of pectoral tufts (Chan et al., 2007).

Although we believe that these tufts are used as sexual signals, their precise function has yet to be empirically tested in the field—except in the case of the scarlet-tufted malachite sunbird. In this East African species, the males use their pectoral tufts as signals of their ability to defend a territory (Evans & Hatchwell, 1992a, b). These tufts are prominently displayed in the early stages of a dispute. In fact, evidence suggests that it is the long tail of the male that is used as a mate choice cue (Evans & Hatchwell, 1992b; Evans & Barnard, 1995).

ACKNOWLEDGEMENTS

We wish to thank the anonymous reviewer for suggestions on improving the manuscript.

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