Observations of Nectar- and Insect-Feeding by Painted Honeyeaters *Grantiella picta*

The migratory movements (Blakers et al. 1984), and low densities of Painted Honeyeaters *Grantiella picta* across a vast range, have meant that little ecological information exists about this rare species. This paucity of knowledge has to be addressed for effective management and conservation to be achieved. Painted Honeyeaters are believed to be highly dependent on the fruit of at least five species of *Amyema* mistletoe (Reid 1986). Furthermore, there are only two published accounts of nectarivory (Hindwood 1935, McGill 1975), and three of insectivory (Gould 1865, Chisholm 1944, Eddy 1961) for this species. The commonly held belief that Painted Honeyeaters feed only on mistletoe fruits seems unlikely, as no other species of Australian honeyeater, nor the Mistletoebird *Dicaeum hirundinaceum*, are totally frugivorous (N. Reid pers. comm.). Although their movements are probably governed by the fruiting phenology of different species of mistletoes in different regions, there must be occasions when fruit availability is low, and other types of food are eaten. Dietary information for Painted Honeyeaters is particularly lacking for the winter months, and it is important to know what winter food sources and habitat types have to be managed to protect the species.

The objective of this paper is to present non-frugivorous feeding records of Painted Honeyeaters. We hope to encourage ornithologists with Painted Honeyeater foraging observations to publish or make available their data, and to stimulate further ecological investigation into this mysterious bird. We present records of nectarivory by Painted Honeyeaters at two disparate locations, and records of insectivory at one of those locations.

A single female Painted Honeyeater was seen at the Gwydir River, Torryburn, New South Wales (30°26′15″S, 151°12′15″E) between 2 and 13 December 1995. She foraged and called frequently in riparian gallery forest dominated by River Sheoak *Casuarina cunninghamiana* that was being used at the time as a breeding site by eight nesting pairs of endangered Regent Honeyeaters *Xanthomyza phrygia* (Oliver et al. 1998). On two occasions DLO observed the Painted Honeyeater consuming the nectar of flowering Needle-leaf Mistletoe *Amyema cambagei*. However, the majority of her foraging time was spent taking berries from this mistletoe.

On 21 and 22 December 1997 we observed a female Painted Honeyeater, and heard at least two other Painted Honeyeaters calling, in box-stringybark woodland at Whorouly South, Victoria (36°37′15″S, 146°36′00″E). On four occasions the bird was seen probing blossoms of a 9 m tall Yellow Box *Eucalyptus melliodora*. Each time she spent between one and two minutes feeding among flowers, and spent the rest of her time perching and preening. During absences from the Yellow Box, the Painted Honeyeater was observed moving amongst the foliage of Grey Mistletoes *Amyema quandang*, which were growing on about twenty 2–3 m tall Silver Wattles *Acacia dealbata*, in an area of about 0.1 hectare. We presumed that she was searching for mistletoe berries, although the mistletoes had only just finished flowering, and upon inspection we could find no ripened fruit. However, on one occasion we thought we saw a mistletoe berry in her beak. Other species of mistletoe in the area, Box Mistletoe *Amyema miquelii* and Drooping Mistletoe *A. pendula*, also did not appear to be bearing fruit at the time. A female bird, presumably the same individual, was sighted in the same Yellow Box by RMW and SCW on 31 December.

On three occasions, DLO observed the female Painted Honeyeater at Whorouly South hawking insects from the dead branches of a tall Red Stringybark *Eucalyptus macrorhyncha* on 21 December 1997. The next day SCW saw the bird glean the foliage of a 3 m tall Silver Wattle for about 15 seconds.

In a review on the foraging ecology of Australian honeyeaters, Pyke (1980) reported 14 published accounts of frugivory and three accounts of nectarivory, but no observations of insectivory by Painted Honeyeaters. To our knowledge, this is the first published observation of a Painted Honeyeater consuming nectar of a woodland eucalypt. However, there may be a number of unreported foraging observations that should be made available for a review on the species' ecology. For example, S. Debus (pers. comm.) observed a male bird foraging on blossom of Yapunyah *E. ochrophloia* at the Paroo River in Currawinyah National Park, Queensland, in July 1992. Of the three published nectar-feeding accounts of Painted Honeyeaters, one reports 'feeding among the flowering cones of a large species of *Banksia*' (Ramsay 1920), but does not mention whether the bird probed the inflorescences for nectar. Although it is highly likely that nectar was taken, nectar-feeding insects may have been eaten instead. The other two records of Painted Honeyeaters taking nectar were made by Hindwood (1935) on the mallee eucalypt *E. dumosa*, and by McGill (1975) on an unidentified coastal forest eucalypt in northern New South Wales. McGill (1975) believed that the Painted Honeyeaters he saw were feeding on nectar, but conceded that they might also have been collecting insects. We have presented the first published record of a Painted Honeyeater taking mistletoe nectar. Reid (1986) could find accounts only of frugivory by the Honeyeater on five species of mistletoe. Our observations of nectarivory by Painted Honeyeaters are not surprising, as the species has a brush-tipped tongue like other honeyeaters (L. Conole unpubl.). Like most Australian birds, they are probably flexible in their resource selection in response to environmental fluctuations. A detailed study on the foraging ecology of breeding and non-breeding Painted Honeyeaters may reveal a much broader diet than previously recorded, as has been found for another highly mobile honeyeater, the Regent Honeyeater (Oliver 1998).

Pyke (1980) did not provide historical records of insect-feeding by Painted Honeyeaters. However, Barker & Vestjens (1990) cited one historical record of insectivory by the species, which came from Gould (1865). Therefore, our observation of hawking is the first published for the species since that of Gould's in 1839. It is also the first time that foliage gleaning has been observed for the species. The only other published report of protein in the diet of the Painted Honeyeater came from Eddy (1961), who stated that protein (of an unspecified nature) was the most important food source of nestlings in the early stages of development. Like other honeyeaters, Painted Honeyeaters would require at least a small amount of dietary protein for body growth and moult. Protein is also important during breeding, for egg production and food for developing young (Paton 1982). Hence, our results are to be expected. The data here are necessarily limited, but it is hoped that our findings will raise new questions and interest about the extent of frugivory by Painted Honeyeaters, and that the paucity of ecological information will be addressed.

References

Barker, R.D. & Vestjens, W.J.M. (1990), *The Food of Australian Birds 2, Passerines*, CSIRO, Melbourne.

Blakers, M., Davies, S.J.J.F. & Reilly, P.N. (1984), *The Atlas of Australian Birds*, Melbourne University Press, Melbourne.

Chisholm, A.H. (1944), 'Birds of the mistletoe', *Victorian Naturalist* **61**, 15–21.

Eddy, R.J. (1961), 'Twenty years of Painted Honeyeaters', *Aust. Bird Watcher* **1**, 122–128.

Gould, J. (1865), *Handbook to the Birds of Australia*, author, London.

Hindwood, K.A. (1935), 'The Painted Honeyeater', *Emu* **34**, 149–157.

McGill, A.R. (1975), 'The Painted Honeyeater on the north coast of New South Wales', *Aust. Birds* **10**, 36–38.
Oliver, D.L. (1998), Ecology and Conservation of the Endangered Regent Honeyeater *Xanthomyza phrygia* in Northern New South Wales, PhD thesis, University of New England, Armidale.
———, Ley, A.J., & Williams, M.B. (1998), 'Breeding success and nest site selection of the Regent Honeyeater *Xanthomyza phrygia* near Armidale, New South Wales', *Emu* **98**, 97–103.
Paton, D.C. (1982), 'The diet of the New Holland Honeyeater, *Phylidonyris novaehollandiae*', *Aust. J. Ecology* **7**, 279–298.
Pyke, G.H. (1980), 'The foraging behaviour of Australian honeyeaters: a review and some comparisons with hummingbirds', *Aust. J. Ecology* **5**, 343–369.
Ramsay, J.S.P. (1920), 'Field notes on the Painted Honey-eater (*Entomophila picta*)', *Emu* **19**, 273–274.
Reid, N. (1986), 'Pollination and seed dispersal of mistletoes (Loranthaceae) by birds in southern Australia', in Ford, H.A. & Paton, D.C. (Eds), *The Dynamic Partnership: Birds and Plants in Southern Australia*, 64–84, Government Printer, Adelaide.

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