The Olive-backed Oriole: an Occasional Disseminator of Mistletoe

JOHN LIDDY

Birds are regularly mist-netted and banded* at Cowiebank (26 58'S., 153 04'E.), some 11 km east of Beerburrum, south-eastern Queensland. The study area has been described (Liddy 1982). Small numbers of Olive-backed Orioles *Oriolus sagittatus* are sometimes present in the study area and six have been netted since 1976. On 18 September 1980, one oriole defecated 25 seeds of the Loranthaceous mistletoe *Amyema cambagei* in the calico bag in which it was held prior to examination and banding. The epicarps of the fruits were not defecated. Orioles have not been seen eating mistletoe fruits and the method of removing the epicarps is unknown.

The seeds defecated by the Oriole were as viscid as those defecated by Mistletoebirds *Dicaeum hirundinaceum* and adhered to any surface with which they came into contact. The seeds were set on the thin growth tips of a Swamp Oak *Casuarina glauca* in eight groups of three seeds plus one single seed. Each group of seeds was marked with a numbered aluminium tag. All 25 seeds germinated, as indicated by the appreciable elongation of the hypocotyls which were readily visible to the unaided eye on 12 October 1980. Four groups of three seeds, set in close proximity, had disappeared by 1 November 1980; it is tolerably certain that these seeds were eaten by an arthropod, as about six small heaps of minute droppings, held together with small threads (?), were found attached to the twigs by the viscid remnants at the sites of the former seeds. One aluminium tag disappeared in February 1981, and the fate of the two seeds it then marked is unknown. Excluding these eaten and lost seeds, two plants established from the remaining 11 seeds, to give an establishment rate of 18%. This compares with establishment rates of 6 to 22% attained from several samples of seeds of *A. cambagei* defecated by Mistletoebirds during the spring of 1980.

Orioles thus defecate viable seeds of *A. cambagei* which will establish if lodged on suitable portions of compatible hosts. However, for orioles to be accepted as a disseminator of *A. cambagei*, it is also necessary to demonstrate that some defecated seeds so lodge and it seems unlikely that this will be witnessed in nature. At Cowiebank, *A. cambagei* will establish only on the thin growth shoots of *C. glauca*, assumedly because the hypocotyl cannot penetrate older, thicker bark. These shoots have many thin stems growing outwards along their length, and it would be almost impossible for a bird to place its anus close to these shoots to directly defecate seeds on to them. At Cowiebank, Mistletoebirds frequently defecate seeds of *A. cambagei* while perched in *C. glauca* and it is assumed that orioles occasionally do likewise. The fruits of *A. cambagei* are succulent and the Mistletoebird ejaculates the seeds with appreciable fluid. It is thought the falling seeds and fluid strike the thin stems of *C. glauca* and slide down one or more of these to lodge against the shoot as the excessive fluid drains off. It seems likely that seeds of *A. cambagei* defecated by orioles would also be accompanied by appreciable fluid and such seeds would appear to have similar chances of lodging on receptive portions of *C. glauca* as have seeds defecated by Mistletoebirds whilst perched in similar positions. It is thus probable that the Olive-backed Oriole occasionally disseminates *A. cambagei* but this is unlikely to be significant in the overall dissemination of the species.

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Reference

Liddy, J. (1982), 'Food of the Mistletoebird near Pumicestone Passage, south-eastern Queensland', *Corella* 6: 11-15.

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J. Liddy,
5 Ben Street,
Chermside, Qld., 4032.