

## SEASONAL OCCURRENCE OF THE MISTLETOEBIRD IN THE INNER NORTH-EASTERN SUBURBS OF ADELAIDE

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### INTRODUCTION

The Mistletoebird *Dicaeum hirundinaceum* is variously regarded as nomadic, seasonal or of permanent occurrence in different districts throughout Australia (cf. Jenkins 1931; Hindwood 1936; Serventy 1948; Lord 1956; Keast 1958; Hobbs 1961; Kikkawa *et al.* 1965; Lamm and Wilson 1966; Baldwin 1975). Several writers have commented on the species' seasonal appearance on the southern Adelaide Plains. Samuel White, writing to John Gould in an undated note (about 1865), said that Mistletoebirds "arrive here [Reedbeds, Adelaide] about Feb. and stay but a short time" (S.A. Parker pers. comm.). Jarman (1935) commented, "The mistletoe lures this beautiful little creature to the Botanic Park in varying numbers between February and August. Whilst the number has reached as many as 40, they are usually far short of that number, 12 being the average figure." Paton (1976) found that the species had declined in abundance in the Botanic Park by 1971-74, her three records falling between March and May. Reid (1976), summarizing these and other observations made between 1972-75, stated that the species visited the inner north-eastern suburbs of Adelaide between March and June with a peak of records in early May.

This paper reports recent observations of Mistletoebirds in Adelaide's inner north-eastern suburbs, and suggests that the predominance of records between late summer and early winter is associated with the fruiting of the harlequin mistletoe *Lysiana exocarpi*.

The principle diet of the Mistletoebird in southern Australia is mistletoe fruit (Keast 1958; Liddy 1983; Reid 1983). Several authors have related the seasonal occurrence of birds in different parts of Australia to the fruiting season of one or more species of mistletoes (McGill 1923; Lamm and Calaby 1950; Chaffer 1966; Ford and Paton 1976; Paton and Paton 1980; Liddy 1982). Thus the simplest explanation to account for the Mistletoebird's pattern of occurrence on the southern Adelaide Plains is that a seasonal flush of mistletoe fruit is coincident with the birds' presence. Jarman (1935) implied that this was the reason for the species' seasonal abundance in the Botanic Park.

### THE HARLEQUIN MISTLETOE *Lysiana exocarpi* IN ADELAIDE

The Harlequin Mistletoe *L. exocarpi* is the only species of mistletoe in Adelaide's inner north-eastern suburbs. It is a host-generalist (Barlow 1966), individuals commonly being found on several host species in the one locality. In the study area delimited in Fig. 1, *L. exocarpi* infects the Pyramid

Tree *Lagunaria patersonii* (frequently), Hawthorn *Crataegus* sp., a fig *Ficus carica*, Cootamundra Wattle *Acacia baileyana*, *Robinia pseudoacacia*, *Retama retam* (= *Genista monosperma*), *Pittosporum undulatum*, Ash *Fraxinus* sp., Lemon, Orange and Mandarin *Citrus* spp, Pear *Pyrus communis*, Silver Birch *Betula pendula*, Quandong *Santalum acuminatum*, *Ceanothus* sp., and flowering *Prunus* (Anon. 1940; Cleland 1954; K. Turner pers. comm.; Herbarium specimen label data; pers. obs.). *L. exocarpi* produces red, black or orange fruits which are eaten by Mistletoebirds in Adelaide and elsewhere (Wainwright 1966; Reid 1983).

The fruiting pattern of the southern Adelaide Plains' population was established by reference to specimens in the State Herbarium of South Australia and by field observations made between 1974-82. Flowering and fruiting occur regularly each year. Table 1 records the seasonal distribution of specimens and observations of *L. exocarpi* in flower and fruit within metropolitan Adelaide. Most records of flowering fall between January and March, in agreement with observations at Para Wirra Recreation Park, 40km north-east of Adelaide, and other parts of the Adelaide region (Paton and Ford 1977; Ford 1979). Most fruiting records near Adelaide span March to July. Fruit begins to ripen on plants after peak flowering. Overlap between flowering and fruiting on individual plants is not uncommon.

### RECORDS OF MISTLETOEBIRDS IN THE INNER NORTH-EASTERN SUBURBS

Between 1972-82, six observers kept records of Mistletoebirds in the part of Adelaide shown in Fig. 1. Observations were recorded during the course of day to day activities and while bird-watching more formally. Varying routines and minor and extended absences of recorders led to variation in sampling effort during the period. However, at least half the recorders were continuously resident in the area for all but short absences of a few days. Table 2 presents Mistletoebird records in the study area by month and year, and incorporates observations summarized by Paton (1976) and Reid (1976). About 95% of all records fall between March and June, with a pronounced peak in May.

In 1982, two methods of data collection were employed. Penelope and David Paton and Julian Reid conducted a Regular Observation Scheme survey (Jaensch 1980) and recorded birds on a weekly basis at Gilbert Street, Gilberton, adjacent to the River Torrens (Fig. 1). Results are plotted in Fig. 2. One or two birds were recorded in the majority of weeks from January until mid-August. The remaining recorders maintained the earlier programme in 1982, results for which are shown in Table 2.

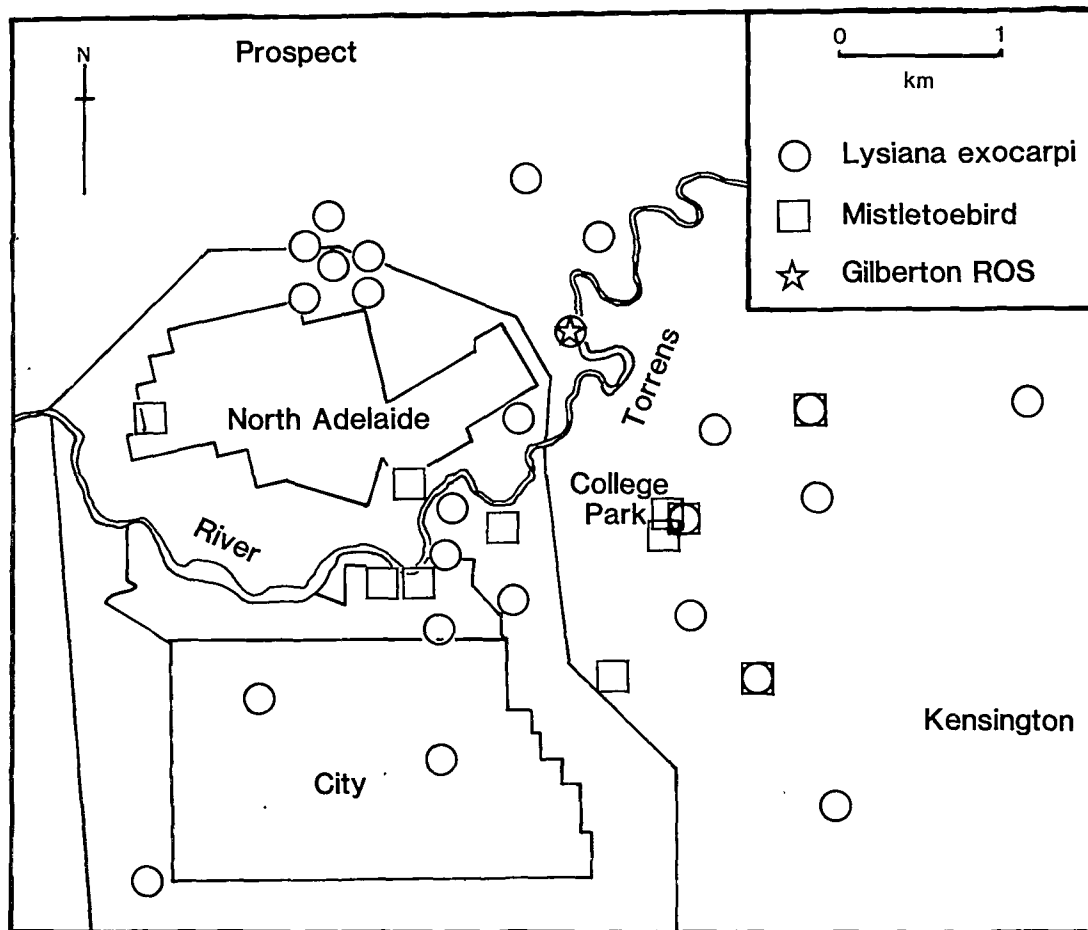


Figure 1. Occurrence of Mistletoebirds and the Harlequin Mistletoe *Lysiana exocarpus* in Adelaide and the inner north-eastern suburbs. Symbols imply one or more records of birds or plants. Most Mistletoebird records in Table 1 come from College Park.

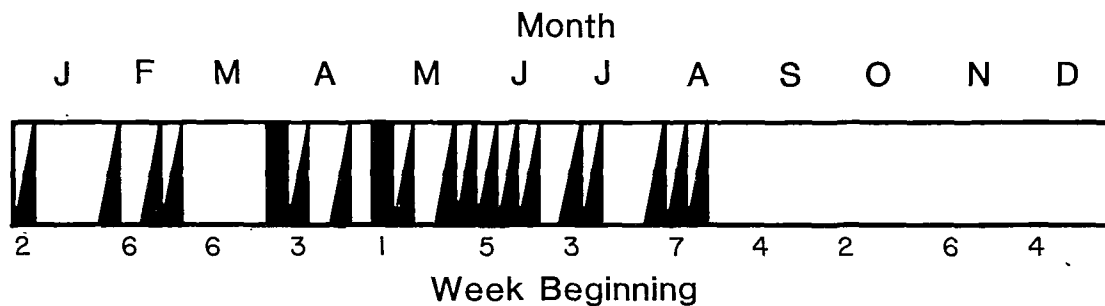


Figure 2. 1982 Regular Observation Scheme results for the Mistletoebird at Gilbert Street, Gilberton. Weekly totals are indicated by nil birds (blank), one bird (half column), two birds (column).

TABLE 1

Number of Herbarium specimens and observations of *Lysiana exocarpis* in flower and fruit in each month within the Adelaide metropolitan area.

|           |               | J | F  | M  | A | M | J | J | A | S | O | N | D | Total |
|-----------|---------------|---|----|----|---|---|---|---|---|---|---|---|---|-------|
| Flowering | Specimens*    | 3 | 8  | 9  | 2 | — | — | 1 | — | — | — | — | — | 23    |
|           | Observations+ | 2 | 28 | 20 | 1 | 1 | — | — | — | — | — | — | 1 | 53    |
|           | Total         | 5 | 36 | 29 | 3 | 1 | — | 1 | — | — | — | — | 1 | 76    |
| Fruiting  | Specimens*    | — | —  | 2  | 3 | 2 | 3 | 1 | 1 | — | 1 | — | — | 13    |
|           | Observations+ | — | 1  | 3  | 1 | 4 | 2 | 1 | — | — | — | — | — | 12    |
|           | Total         | — | 1  | 5  | 4 | 6 | 5 | 2 | 1 | — | 1 | — | — | 25    |

\* Specimens were examined from Adelaide city and parklands, Stonyfell, Marden, Blackwood, North Plympton, North Adelaide, Semaphore, Edwardstown, Grange, Hackney, Beaumont, Tea Tree Gully, Glen Osmond, Happy Valley, Windsor Gardens, Slapes Gully, Brighton, Eden Hills, Malvern, Fairview Park and Skye.

+ All observations came from within the study area in Fig. 1 except for Church's (1972) observation at Blackwood, Wainwright's (1966) at Malvern, and D. Paton's (pers. comm.) observations at Beaumont.

TABLE 2

Records of Mistletoebirds in the inner north-eastern suburbs of Adelaide between 1972-82. Most records were of solitary birds. A record is defined as a Mistletoebird observation in a locality more than 1 km from another observation on any one day.

| Year  | Month |   |   |    |    |   |   |   |   |   |   |   |   | Total |
|-------|-------|---|---|----|----|---|---|---|---|---|---|---|---|-------|
|       | J     | F | M | A  | M  | J | J | A | S | O | N | D |   |       |
| 72    | —     | — | 4 | 2  | 3  | 1 | — | — | — | — | — | — | — | 10    |
| 73    | —     | — | — | —  | 2  | — | — | — | — | — | — | — | — | 2     |
| 74    | —     | — | — | 2  | 6  | — | — | — | — | — | — | — | — | 8     |
| 75    | —     | — | — | 1  | 4  | — | — | — | — | — | — | — | — | 5     |
| 76    | 1     | — | — | —  | 1  | 1 | — | — | — | — | — | — | — | 3     |
| 77    | —     | — | 1 | —  | 4  | — | — | — | — | — | — | — | — | 5     |
| 78    | —     | — | — | —  | 6  | 2 | — | — | — | — | 1 | — | — | 9     |
| 79    | 1     | — | — | —  | 5  | 1 | — | — | — | — | — | — | — | 7     |
| 80    | —     | — | 1 | —  | —  | — | — | — | — | — | — | — | — | 1     |
| 81    | —     | — | — | 6  | 1  | 2 | — | — | — | — | — | — | — | 9     |
| 82    | —     | — | — | 2  | 1  | — | — | — | — | — | — | — | — | 3     |
| Total | 2     | — | 6 | 13 | 33 | 7 | — | — | — | — | 1 | — | — | 62    |

## DISCUSSION

Comparison of Tables 1 and 2 and Figure 2 demonstrates coincidence between the fruiting period of *L. exocarpi* and the Mistletoebird's main period of occurrence in Adelaide's inner north-eastern suburbs. While this supports the hypothesis that Mistletoebirds are attracted to the area by fruiting mistletoe, the evidence remains circumstantial. Other factors could be involved. For example, Mistletoebirds could be attracted by other food sources in the area. Liddy (1982) lists fruits other than mistletoe which the Mistletoebird eats. In the Adelaide area, the species has been recorded feeding on the berries of Boneseed *Chrysanthemoides monilifera*, a fuschia tree (? *Fuschia* sp.), Hawthorn and Pepper trees *Schinus areira* (Wainwright 1966; Sims 1966; Reid 1976; Ashton 1980). Cleland (1952) also lists *Coprosma lucida* (? *C. repens*) berries and an apple *Malus pumila* as alternative food items, probably based on observations near Adelaide.

An alternative explanation for the Mistletoebird's seasonal occurrence in the inner north-eastern suburbs is that it is on passage to areas where food is more abundant. The species is moderately common in spring in the Tea Tree Gully and Black Hill districts, 15km north-east of the city, where it breeds during the fruiting season of the Box Mistletoe *Amyema miquelii* (McGilp 1956; pers. obs.).\* A third species, the winter-fruiting Wire-leaf Mistletoe *A. preissii*, occurs south of the city at Lower Mitcham and Ascot Park (Andrewartha 1972) and may also influence Mistletoebird movements. Unfortunately, we have little information about the foraging or behaviour of Mistletoebirds in the study area to test the hypothesis concerning *L. exocarpi* offered above. However, the fruiting of *L. exocarpi* seems to have been the main attraction in the past in the Botanic Park (Jarman 1935).

Mistletoebird numbers declined in the Botanic Park after 1935 when Jarman reported up to 40 birds on one visit. Since 1971, we have recorded only three individuals. Botanic Gardens staff eradicated *L. exocarpi* in the Park about 1940 (Anon. 1940) and periodically removed plants thereafter (N. Lothian, pers. comm.). The reduction

in plants presumably led to the decline in Mistletoebird abundance. Only a few specimens of *L. exocarpi* presently occur in the Botanic Park, although at least one badly infested Pyramid Tree occurs in the adjacent Zoological Gardens.

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\* There are nine clutches of Mistletoebird eggs from Tea Tree Gully in the South Australian Museum, their dates span 23 September to 4 November.

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### ERRATUM

Vol. 29, p.63 : The Acknowledgements of N. Reid's paper, "Seasonal occurrence of the Mistletoebird in the inner north-eastern suburbs of Adelaide", were inadvertently omitted. The Editor apologizes for this oversight. The intended Acknowledgements are:

I am indebted to Ross, Muriel and Julian Reid, and David and Penelope Paton for contributing the bulk of bird records. Bob Whatmough, P. and D. Paton, Simon Willcox, Sandy Kinnear, Kingsley Turner and Noel Lothian contributed information about *L. exocarpi*. Laurie Haegi and Enid Robertson advised on the nomenclature of cultivated and ornamental plants, and the Director and staff of the State Herbarium of South Australia kindly allowed me to examine specimens in their care. David Paton's comments improved a draft of the manuscript. The work was written while I was a recipient of a Commonwealth Postgraduate Research Award in the Botany Department, University of Adelaide.