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## THE STATUS AND MOVEMENTS OF HONEYEATERS AT WELLINGTON POINT, SOUTH-EAST QUEENSLAND

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### SUMMARY

Continuous and detailed observations of honeyeaters at Wellington Point from 1963 to 1976 are analysed. Nineteen species of honeyeater were recorded of which eight were vagrants. The remaining eleven species were divided into residents (6) and seasonal visitors (5) on the basis of seasonal changes in frequency. The migration of honeyeaters is discussed, including the date of first arrival, the pattern of diurnal movements, flight patterns and the influence of the weather.

### INTRODUCTION

Although many species of honeyeater (Fam.: Meliphagidae) are migratory or locally nomadic (Keast 1968; Frith 1979), there is little detailed information on the nature of these movements in Queensland, although Robertson (1958, 1965) summarised the available information, particularly for the Yellow-faced Honeyeater *Lichenostomus chrysops*. More recently, the status of honeyeaters in south-east Queensland has been described by Roberts (1979), with notes on their movements, but there is no quantified evidence to support these descriptions.

J.S. Robertson maintained a detailed and documented record of honeyeater presence and movements at his property 'Terete' at Wellington Point, south-east Queensland from 1963 to 1976 and this paper presents an analysis of these observations. Further analyses of annual variations in these data and of his banding records are in preparation.

### METHODS

#### *Study Area*

The study area was a residential garden, 'Terete' situated on Wellington Point, a peninsula extending north into Moreton Bay (Fig. 1). The garden was about 0.4 ha. in extent and a sugar-water feeder (Robertson 1964), visible from the lounge windows,

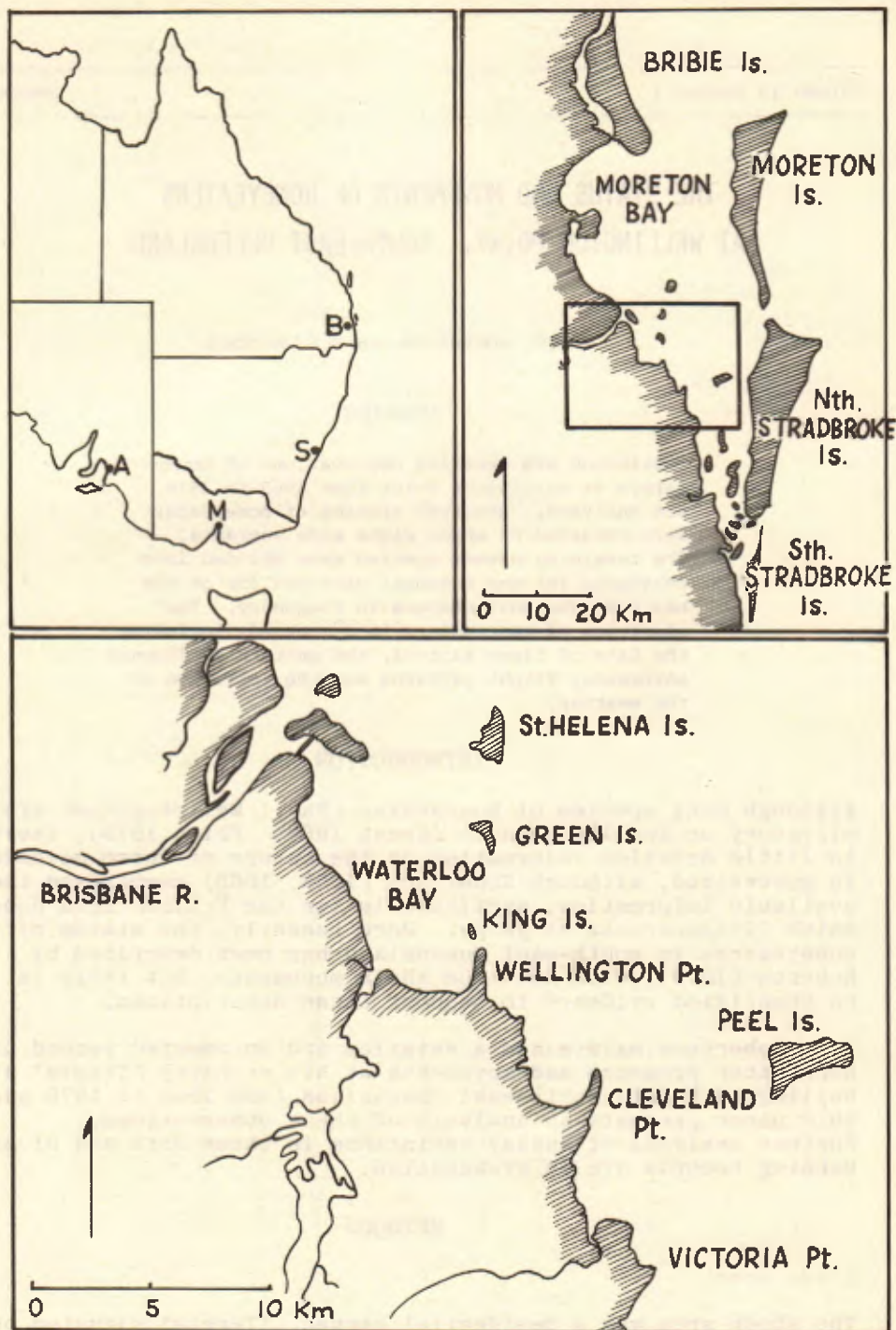


Figure 1: The study area 'Terete' was situated at Wellington Point on the southern boundary of Moreton Bay.

was continually available for the honeyeaters. Most of the day-to-day observations of honeyeater presence in the garden were made at the feeder. On the eastern boundary of the garden, a tall stand of eucalyptus *E. tereticornis* was used as a resting site for migrating honeyeaters and many flocks would briefly alight in the trees before continuing their journey.

Sometimes these migrants would notice the local birds below them drinking in the feeder, and would fly down to join them for a short while.

The house was situated on the south-eastern part of Wellington Point and commanded 180° views to the south-east, round through north-east to the north-west. This allowed clear views of migratory flocks approaching, passing and then departing as they followed the coastline northward.

*Observations on Honeyeaters*

Observations on the presence of honeyeaters were maintained in a loose-leaf notebook with a separate page for each species. Each month was divided into three 10-day periods, delineated by horizontal lines, and the presence of a species was recorded by a vertical line under the appropriate year (Fig. 2). Although the units of observation were nominally 10-day periods, the observations were in fact recorded with much greater precision and could be estimated to  $\pm 1$  day.

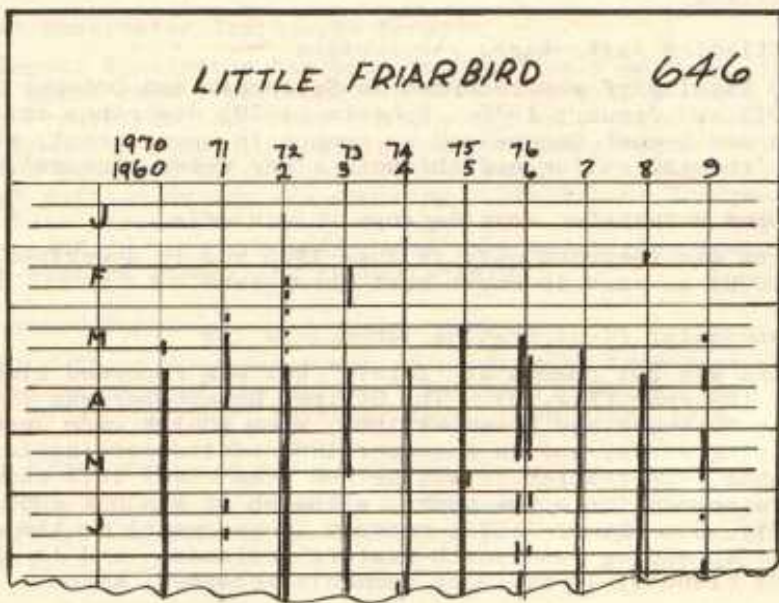


Figure 2: An excerpt from J.S.R.'s field note book showing how species were recorded by month and years.



This very large sample has enabled the percentage frequency for each 10-day period (over 14 years) to be calculated for each species with considerable accuracy, giving a very good indication of seasonal changes in frequency. These records have also enabled the first arrival of migrants each year to be determined.

Symbols indicating breeding activity or migratory movements were recorded on the original data sheets and additional notes were made where necessary. When large numbers of migrants were observed, more detailed records were made of continuous observations over several hours (Table 1) including the number, size and direction of migrating flocks, with some information on changes in the weather.

## RESULTS AND DISCUSSION

The overall percentage frequency given after each species is the proportion of the 504 ten-day periods in which that species was seen. No overall percentage frequency is listed for those species recorded on less than one percent of periods.

### *Species List*

Red Wattlebird *Anthochaera carunculata*

This species was recorded on only two occasions: May 1969 and 17 March 1971 and is described by Roberts (1979) as rare in south-east Queensland.

Little Wattlebird *Anthochaera chrysoptera*

The Little Wattlebird was recorded in September and October 1968, January 1973 and January 1975. Roberts (1979) describes this species in south-east Queensland as common in open forest, particularly in 'coastal wallum and thickets along water courses'.

Spiny-cheeked Honeyeater *Acanthagenys rufogularis*

This species was recorded only in June 1965 and is described by Roberts (1979) as rare in south-east Queensland.

Striped Honeyeater *Plectorhyncha lanceolata* 12%

This species was not common at 'Terete' but was recorded almost throughout the year (Fig. 5). The Striped Honeyeater was first recorded in November and December 1962, when adults were seen feeding flying young, and in November 1963 adults were again seen feeding young. Thereafter it was seldom seen until 1971 when it became more common for a few years, although it was not recorded in 1976 (Fig. 3). Storr (1973) reports it as casual on the east coast, but 'spreading into south-eastern lowlands; and in the last decade (1960's) it has been commonly recorded around Brisbane'.

Noisy Friarbird *Philemon corniculatus* 38%

The Noisy Friarbird is a common winter visitor to 'Terete', with low or zero frequency between December and February, and was most frequently observed from April - June (Fig. 4). A fairly regular, northward movement of Noisy Friarbirds occurred past Wellington Point in early winter (see below).

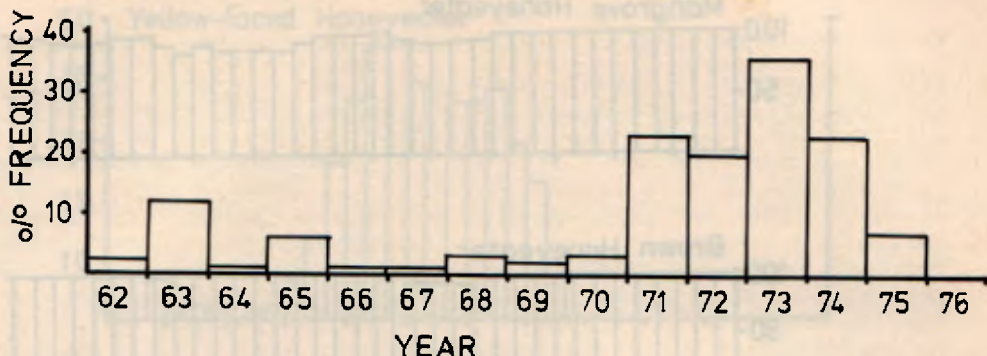


Figure 3: Annual changes in the percentage frequency of Striped Honeyeaters recorded at 'Terete'.

#### Little Friarbird *Philemon citreogularis* 26%

The Little Friarbird is also a regular winter visitor to 'Terete' but is less common than the Noisy Friarbird. It had low or zero frequency from October to February and was most frequent from April to July (Fig. 4). Northward movements past Wellington Point have been recorded in early winter (see below).

#### Regent Honeyeater *Xanthomyza phrygia*

The Regent Honeyeater has been recorded only once at 'Terete'. On 24 April 1965 a party of 6-8 were seen with a small party of Noisy Friarbirds, apparently migrating as a mixed flock. They came from the south to the big gums in the garden, rested a few minutes and then set off around the point to the south-west, as though daunted by the sea crossing. The Regent Honeyeaters were seen both perched and in flight and were identified beyond any doubt (JSR). They are considered rare and highly nomadic in south-eastern Queensland (Roberts 1979).

#### Blue-faced Honeyeater *Entomyzon cyanotis*

The Blue-faced Honeyeater was only recorded from four years in the latter part of the survey: February - March, June 1971; April 1974; October, November 1975; and March 1976.

#### Noisy Miner *Manorina melanocephala* 3%

The Noisy Miner was uncommon at 'Terete', but was recorded throughout the year (Fig. 5), being most frequent in December and January.

#### Lewin's Honeyeater *Meliphaga lewinii* 1%

Lewin's Honeyeater was uncommon at 'Terete' but recorded from most of the year except December - January and July - August (Fig. 5).

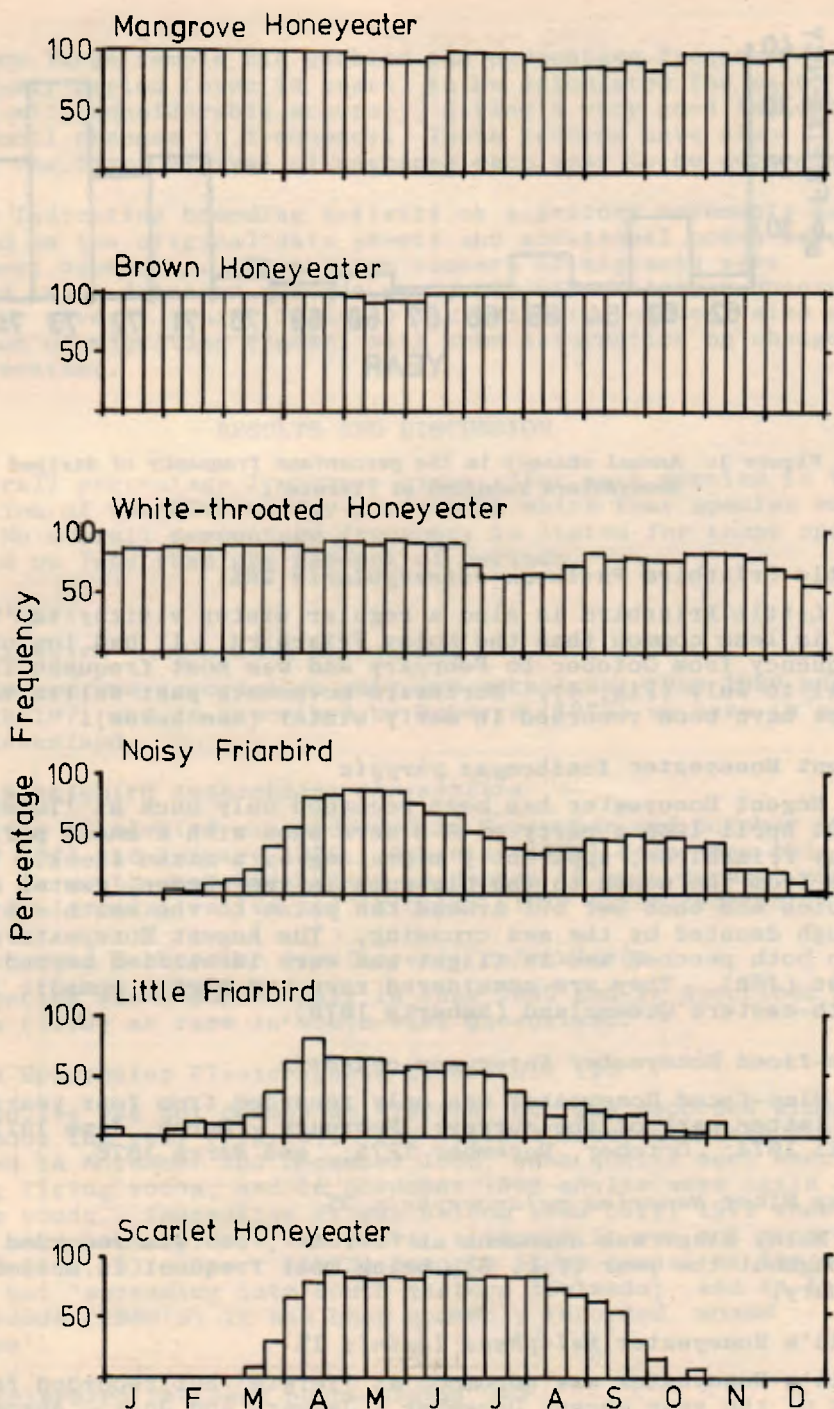


Figure 4: Seasonal changes in the percentage frequency of some common honeyeaters recorded at 'Terete'.



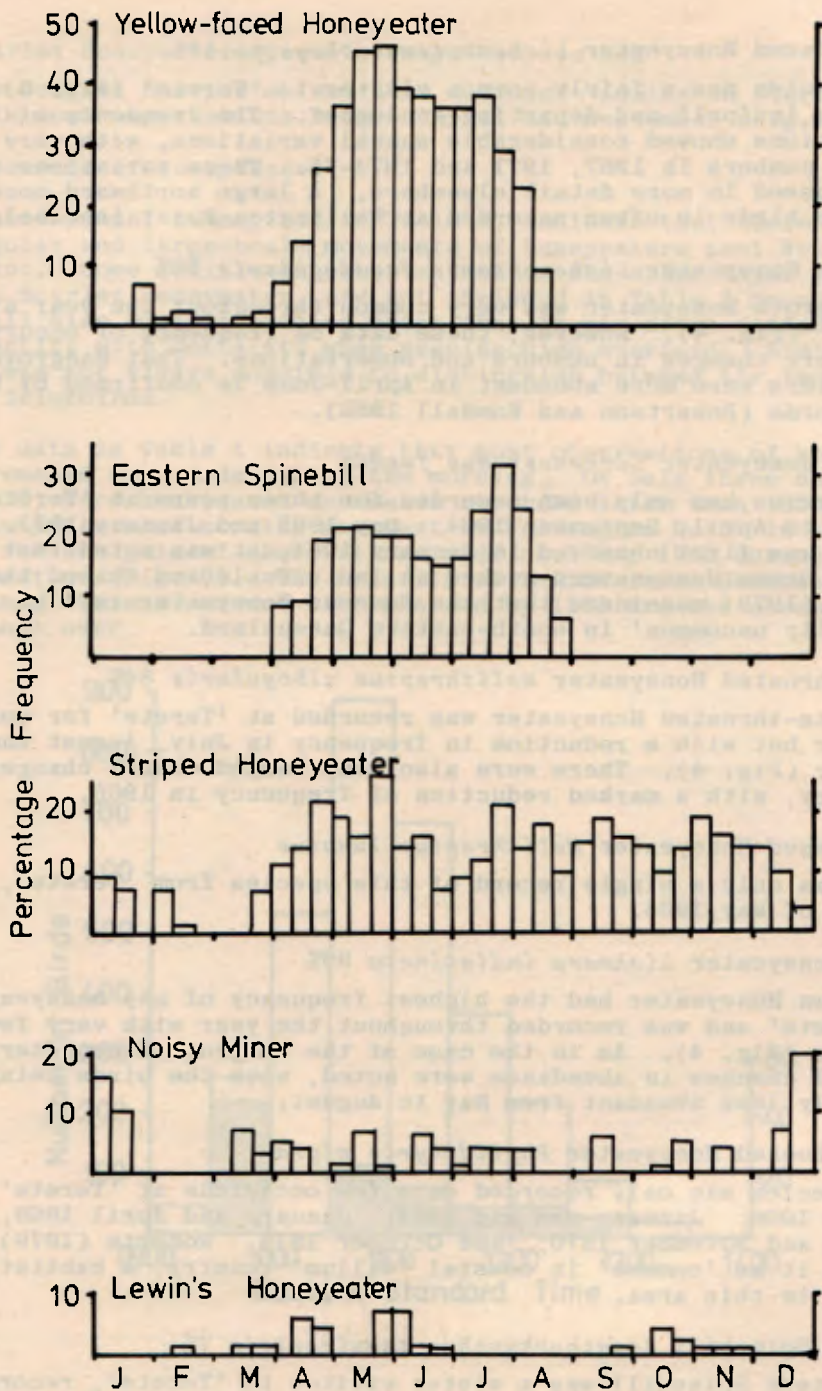


Figure 5: Seasonal changes in the percentage frequency of some less common honeyeaters at 'Terete'.

Yellow-faced Honeyeater *Lichenostomus chrysops* 12%

This species was a fairly common visitor to 'Terete' (Fig. 5) arriving in April and departing in August. The frequency of observations showed considerable annual variations, with very low or zero numbers in 1967, 1971 and 1974-75. These variations will be discussed in more detail elsewhere. A large northward movement of these birds is often recorded at Wellington Point (see below).

Mangrove Honeyeater *Lichenostomus fasciogularis* 96%

The Mangrove Honeyeater was very common throughout the year at 'Terete' (Fig. 4). However, these data on frequency of occurrence do obscure changes in numbers and observations. That Mangrove Honeyeaters were more abundant in April-June is confirmed by banding records (Robertson and Woodall 1982).

Fuscous Honeyeater *Lichenostomus fuscus*

This species has only been recorded for three years at 'Terete': January to April, September 1964; May 1965 and January 1973. When it was first observed in January 1964, it was noted that several Brown Honeyeaters pecked at individuals and chased them. Roberts (1979) considers that the Fuscous Honeyeater is 'generally uncommon' in south-eastern Queensland.

White-throated Honeyeater *Melithreptus albugularis* 84%

The White-throated Honeyeater was recorded at 'Terete' for most of the year but with a reduction in frequency in July, August and December (Fig. 4). There were also some marked annual changes in frequency, with a marked reduction of frequency in 1966.

White-naped Honeyeater *Melithreptus lunatus*

There was only a single record of this species from 'Terete', at the end of May 1965.

Brown Honeyeater *Lichmera indistincta* 99%

The Brown Honeyeater had the highest frequency of any honeyeater at 'Terete' and was recorded throughout the year with very few absences (Fig. 4). As in the case of the Mangrove Honeyeater, seasonal changes in abundance were noted, with the birds being generally less abundant from May to August.

White-cheeked Honeyeater *Phylidonyris nigra*

This species was only recorded on a few occasions at 'Terete': January 1966; January and May 1968; January and April 1969; October and November 1970; and October 1973. Roberts (1979) records it as 'common' in coastal 'wallum' country, a habitat not present in this area.

Eastern Spinebill *Acanthorhynchus tenuirostris* 7%

The Eastern Spinebill was a winter visitor to 'Terete', recorded between April and August (Fig. 5). Annual variation in its frequency follows a similar pattern to that of the Yellow-faced Honeyeater, with low frequency in some years (1967, 1971).



### Scarlet Honeyeater *Myzomela sanguinolenta* 38%

The Scarlet Honeyeater was also a winter visitor to 'Terete', with most observations between April and September (Fig. 4).

#### *Movements of Honeyeaters*

Observations, summarised in Table 1, indicate that there were regular and large-scale movements of honeyeaters past Wellington Point. Some additional observations on the other major migrant, the Scarlet Honeyeater, are not included in Table 1 because the small size of this species meant that it was often difficult to identify with certainty when passing high overhead. Similarly, it was not always possible to distinguish between the two species of friarbirds.

The data in Table 1 indicate that most observations of honeyeater movements were made during the morning. On only three days (out of 22) were honeyeater movements recorded later than 1300 hrs. This pattern of morning movement at Wellington Point is supported by the analysis of observations made on 1 May 1963 during heavy migration (Fig. 6). The majority of Yellow-faced Honeyeaters passed 'Terete' around 1100 hrs and by 1300 hrs the movement was almost over.

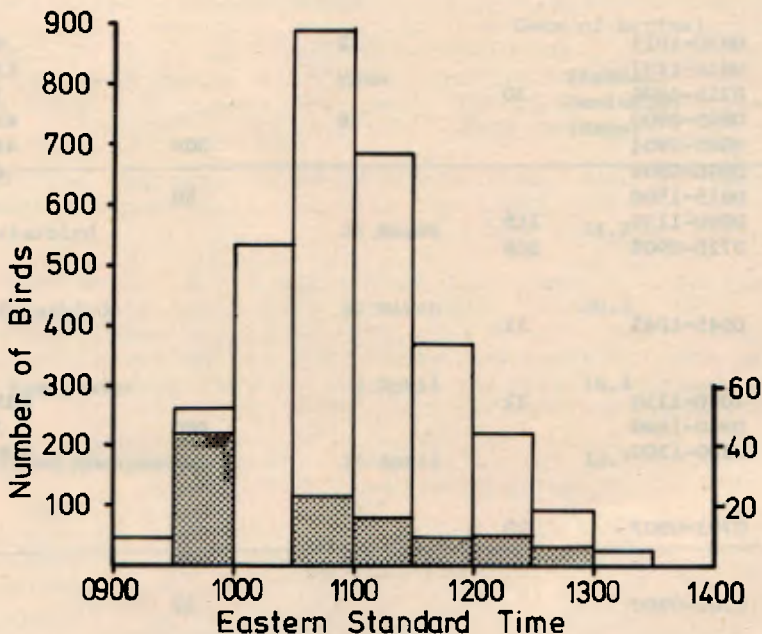


Figure 6: The numbers of Yellow-faced Honeyeaters and Noisy Friarbirds (shaded) counted moving north past 'Terete' on 1 May 1963.

Table 1: Observations of migrating honeyeaters from 'Terete', Wellington Point, south-east Queensland.

| Date                  | Period of Observation | Average Number of Birds Flying North Per Hour |                  |                   |                         |
|-----------------------|-----------------------|---|------------------|-------------------|-------------------------|
|                       |                       | Noisy Friarbird                               | Little Friarbird | Friarbird Species | Yellow-faced Honeyeater |
| 29 Apr 63             | 0930-1235             |   |                  |                   | 208                     |
| 30 Apr 63             | 1145-1235             |   |                  |                   | 1535                    |
| 1 May 63              | 0850-1320             | 108   |                  |                   | 679                     |
| 12 May 64             | 0700-0730             | 80  |                  |                   | 100                     |
| 13 May 64             | 0700-0830             | 167   |                  |                   | 26                      |
| 23 May 64             | 0700-0730             |   |                  |                   | 120                     |
| 24 May 64             | 1215-1230             |   |                  |                   | 600                     |
| 28 Apr 66             | 0820-1015             |   | 2                |                   | 60                      |
| 29 Apr 66             | 0810-1207             |   |                  |                   | 137                     |
| 1 May 66              | 0715-0800             | 30  |                  |                   | 37                      |
| 6 May 66              | 0805-0900             |   | 6                |                   | 452                     |
| 9 May 66              | 0805-0904             |   |                  | 300               | 448                     |
| 10 May 66             | 0800-0900             |   |                  |                   | 41                      |
| 21 May 66             | 0815-1500             |   |                  | 50                |                         |
| 22 May 66             | 0800-1130             | 110   |                  |                   |                         |
| 7 Jul 66              | 0720-0908             | 208   |                  |                   |                         |
| 29 May 67             | 0845-1045             | 51  |                  |                   |                         |
| 2 May 68              | 1030-1130             | 12  |                  |                   | 2355                    |
| 3 May 68              | 0940-1620             |   |                  | 480               | 78                      |
| 5 May 68              | 1000-1300             |   |                  |                   | 2000                    |
| 19 Apr 69             | 0703-0907             | 20  |                  |                   |                         |
| 22 Feb 72             | 0700-0900             |   |                  | 22                |                         |
| Total number observed |                       | 1710  | 10               | 4054              | 16111                   |



The main migrant honeyeaters showed some differences in the timing of first arrival at 'Terete' each year (Table 2). The Noisy Friarbird arrived first, followed by the Little Friarbird and Scarlet Honeyeater and finally, a month later, by the Yellow-faced Honeyeater. These dates of 'first arrival' refer to the beginning of the continued presence for each species in any year. In many cases, the species was recorded sporadically 30-40 days before the start of a continuing presence for the season. Similarly, the main movement (of the friarbirds in particular), was often 20-30 days later than the arrival of the first bird. The arrival dates showed considerable variation from year to year as indicated by the high standard deviations in Table 2; but these will be considered in more detail elsewhere (Robertson and Woodall, in prep.).

Table 2: Arrival dates for migrant honeyeaters at 'Terete', Wellington Point, south-east Queensland.

| Species                 | Date of Arrival |                           |                     |
|-------------------------|-----------------|---------------------------|---------------------|
|                         | Mean            | Standard Deviation (days) | Sample Size (years) |
| Noisy Friarbird         | 26 March        | 24.2                      | 14                  |
| Little Friarbird        | 30 March        | 20.1                      | 12                  |
| Scarlet Honeyeater      | 3 April         | 16.4                      | 13                  |
| Yellow-faced Honeyeater | 26 April        | 12.7                      | 11                  |



### *Flight Patterns*

Migratory honeyeaters at 'Terete' had a more direct and purposeful flight, which was also often much higher than that of honeyeaters termed 'local nomads' by J.S.R. The flight of the 'local nomads' was low and erratic with frequent stops to perch in trees and to feed.

The 'migrants', on reaching 'Terete', would often perch for a few minutes in the tall eucalypts and then set off north again, gaining height as they approached the sea. Some of these flocks continued their direct flight NNW over the bay (Fig. 1) but some appeared to be daunted by the sea crossing. After first flying north along Wellington Point, they would return in a disorganised group and then fly north-west across the base of the peninsula, following the tree-shore margin.

In flight the Yellow-faced Honeyeaters called 'twit-twit-twit' unlike their normal 'chick-up' call given when perched. The Noisy Friarbirds and Little Friarbirds were silent in flight and only called when perched.

### *The Influence of Weather on Movements*

From these data it is difficult to describe the precise influence of weather on the honeyeaters' migration, but some general observations are possible. On a number of occasions (e.g. 28 April 1966) increased movement of honeyeaters was noted when the weather improved and there were bright clear mornings with a south-west wind after wet, overcast days.

During cloudy periods there seemed to be a temporary halt to migration (e.g. 29 May 1967) or, with a dull overcast morning, no movement until noon (30 April 1963).

The wind was also an important factor and J.S.R. noted that as the south-west wind increased, the flocks flew lower and straggled more (29 April 1966). On 7 July 1966 there was fairly heavy migration from 0720-0908 hrs but after 1000 hrs no further birds were seen. This coincided with an increase in wind speed from Force 4 at 0800 to Force 6 at 1000 with stronger gusts.

These observations on the influence of the weather support the earlier statements made by Robertson (1958, 1965).

## GENERAL DISCUSSION

The topographic position of Wellington Point (Fig. 1) suggests that birds migrating north along the coastline might be concentrated on Wellington Point and then 'island-hop' across part of Moreton Bay before regaining the mainland and continuing a northerly movement.

Field observations overseas have shown that topographical features in the path of migration on a broad front can slightly deflect the migratory direction and concentrate the birds to give the impression of a 'migration corridor' (Matthews 1973). A similar

situation may be occurring at Wellington Point and in this context it may be significant that no major southward migration was observed at 'Terete'.

During the 14 years of observation at 'Terete', 19 species of honeyeater were recorded of which 11 were recorded regularly (Table 3) and 8 were vagrants. Considering that these observations were made from a small residential garden, they represent a remarkably high proportion of the 31 species of honeyeater recorded from south-east Queensland (Roberts 1979).

Table 3: A summary of the status of the eleven species of Honeyeater regularly observed at 'Terete'.

|          | Residents                          | Seasonal Visitors                |
|----------|------------------------------------|----------------------------------|
|          | Brown<br>Honeyeater (99%)*         | Scarlet<br>Honeyeater (38%)      |
| Common   | Mangrove<br>Honeyeater (96%)       | Noisy<br>Friarbird (38%)         |
|          | White-throated<br>Honeyeater (84%) | Little<br>Friarbird (26%)        |
|          | Striped<br>Honeyeater (12%)        | Yellow-faced<br>Honeyeater (12%) |
| Uncommon | Noisy<br>Miner (3%)                | Eastern<br>Spinebill (7%)        |
|          | Lewin's<br>Honeyeater (1%)         |                                  |

\* Overall percentage frequency

The 11 species of honeyeater regularly recorded at 'Terete' can be divided into two groups of 'residents' and 'migrants' (Table 3) with varying levels of overall percentage frequency. Keast (1968) found a relationship between the rainfall of an area and the proportion of honeyeaters that were residents or breeders. For example, in the Sydney area (40" of rainfall) 65% of honeyeater species were resident while in the Cairns-Atherton sector (55-76" of rainfall) 70-85% of species were resident. Our study would support this, with 55% of the regularly observed honeyeater species being considered resident.

Frith (1979) defines migration as the regular annual movement of a whole population, or a large part of it, between two areas. At



'Terete', the three common seasonal visitors (Scarlet Honeyeater, Noisy and Little Friarbirds (Table 3)) made regular annual movements although their place of origin and destination are unknown. The other two species (Yellow-faced Honeyeater and Eastern Spine-bill) were more irregular and were absent in some years.

These results differ from the conclusions reached by Keast (1968). He placed the Scarlet and Brown Honeyeaters, and the Noisy and Little Friarbirds, in the category "Marked Blossom Nomadism". While this may be true in some areas, the observations at 'Terete' suggest that the Brown Honeyeater is largely a resident and the Scarlet Honeyeater and Friarbirds are regular migrants.

However, many species showed annual variation in the timing of migration and in percentage frequency. These variations will be considered in more detail elsewhere.

#### ACKNOWLEDGEMENTS

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