The Australian

BIRD BANDER

Seasonal Banding of Fairy Martins

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Results of five banding seasons are detailed and discussed. The method of trapping is described and some questions are posed for future consideration.

The habits of Fairy Martins (*Hylochelidon ariel*) have been variously described as migratory, seasonal or nomadic, usually with the comment that some birds remain throughout the winter. Questions covering extent, distances or routes used in these movements and whether, in fact, the birds that do "remain" are ones that bred in the locality or are ones that have moved in from elsewhere, still require answering.

My banding experience with Fairy Martins is rather limited as they now rarely succeed in breeding in most parts of the Sydney district due to the destruction of the majority of their colonies by vandals.

At Broke, 20 miles south of Singleton, New South Wales, banding has been carried out by a number of banders during the past five seasons, but it has been restricted to the number of visits (usually two) that can be made to the location annually. Consequently the results are not conclusive and serve only as a guide.

The Fairy Martin banding at Broke commenced in 1960, at a small nesting colony in a culvert which consists of five pipes about 2 feet in diameter. Since that time, the main breeding colony has been situated in a large new concrete culvert completed prior to the 1961 season and located some 400 yards north of the pipe culvert. It consists of three sections, each about 9 feet high and 9 feet wide extending the full width of the road and embankment. The small pipe culvert was not used in 1961, but some nests were in use in it in 1962 and a number of birds captured at the main colony were retrapped the next day flying through the reoccupied pipe colony.

Method of Trapping

All trapping has been carried out with mist nets. In order to avoid unnecessary disturbance and possible desertion of the colony during the building stage and early in the incubation period, netting is done quickly and without any attempt being made to catch all birds in the culvert at one time. The nets are set at each end of the culvert during the late afternoon and "closed up" immediately erection has been completed. The nets are opened just prior to first light the following morning with the absolute minimum of noise.

During this operation, birds are usually heard twittering in the nests and, at the first glimmer of light, the early risers fly from their funnels. Invariably there is a quick build-up of birds leaving the culvert, many calling as they do so, and probably this helps to stimulate others into leaving the warmth of the nest.

Immediately birds are caught in the nets, they are quickly removed and placed in holding cages, carried to the vehicle and taken a few hundred yards away for banding. This permits other birds to return to the colony as they wish.

As soon as the nets can be cleared from the first rush of birds and always within ten to fifteen minutes, the nets are closed down and removed. This again is done quietly, and during the process other birds have still been heard in the nests.

The success of this method, in minimising the disturbance during the early stages of breeding, is entirely dependent on the skill of the banders in carrying out the task quietly.

Holding Cages

The holding cages used in these and similar trips are made from cardboard grocery cartons. The flaps at the top of the carton are folded back against the sides. Small mesh (about ¼ inch) netting similar to that used for prawning, is stretched across the top and around the sides and the whole tied around with cord. A three sided flap, large enough to permit entry of an arm for removing birds, is cut in a convenient place. A suitable carton would measure approximately 18 inches long, 12 inches wide and 15 inches deep. The size of the floor space when the carton is turned on its side, determines the number of birds that can be held satisfactorily in the "cage".

Banding Details

Table 1 gives a summary of birds caught at the two colonies during the five seasons. Of the birds banded in the first four seasons, 41 (29%) have been retrapped during a subsequent season and of those banded in the first 3 seasons, 7 birds (5%) have been retrapped so far in two subsequent seasons. Details of these are shown in Table 2, while Table 3 shows banding details at the new culvert colony.

Table 1

Summary of birds caught at the two colonies during the five seasons.

	1960	1961	1962	1963	1964	Total
5 Pipe Culvert						
New birds	8	Not in use	*23	Not in use	Not in use	31
New Culvert						
New Birds	—	57	49	34	109	249
Birds originally banded at Pipe Culvert	—	2	3	2	4	8
Retraps from previous years	—	—	6	10	23	—
Total Individuals	—	59	58	46	136	257

* 23 new birds and 2 birds banded in new colony on 29.9.62 were caught when flying through the pipe culvert although there were only 3 or 4 nests in one pipe.

Table 2

Birds Retrapped in Two Subsequent Seasons.

Band Number	Season Banded	Seasons Retrapped	
010-05135	1962	1963	1964
010-05151	1962	1963	1964
010-13239	1962	1963	1964
010-15071	1960	1961	1962
010-15753	1960	1962	1963
010-15873	1961	1962	1963
010-15882	1961	1962	1963

Table 3

Banding Details at New Culvert Colony.

Year	Date	Total Caught	Number Banded	Number Re-trapped	Details of Retraps
1961	1 Oct.	37	35	2	banded at pipe culvert.
	21 Oct.	31	22	9	banded on 1.10.61 (24%).
1962	29 Sept.	44	37	7	2 banded at pipe culvert. 5 from previous seasons.
	29 Dec.	16	12 (1)	4	2 from those caught 29.9.62 4%. 1 from previous season. 1 banded at pipe culvert.
1963	26 Oct.	46	34	12	10 from previous seasons. 2 banded at pipe culvert.
1964	4 Oct.	63	43	20	16 from previous seasons. 4 banded at pipe culvert.
	15 Nov.	47	32	15	4 from previous seasons. 11 from those caught 4.10.64 (17%).
	28 Nov.	56	34 (2)	22	3 from previous seasons. 10 from those caught on 4.10.64 (16%). 9 from those caught on 15.11.64 (19%).

(1) includes one juvenile.
(2) includes two juveniles.

Comment on 1964 Visits

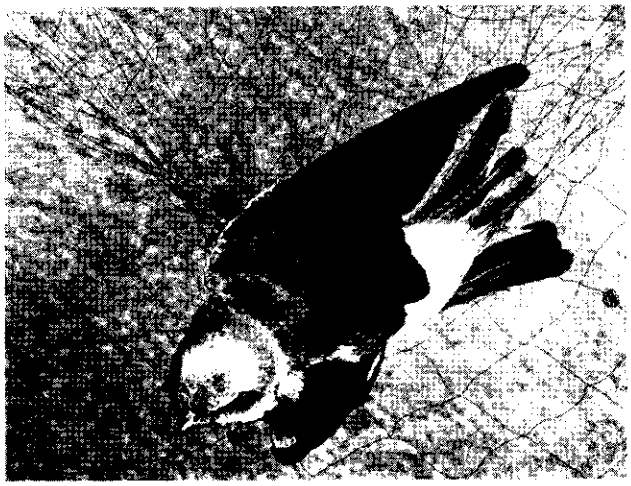
The following notes were made for the three visits in 1964:

4.10.64: Numerous nests under construction, some apparently completed and a number of old nests occupied. Broken eggs on the bottom of the culvert included fresh and partly incubated ones.

15.11.64: Birds appeared to be less numerous than on the previous visit. Some downy and partly feathered (dead) nestlings, as well as fresh, partly incubated and well incubated broken eggs were on the bottom of the culvert.

28.11.64: The colony appeared to be considerably reduced. Again dead nestlings and broken eggs were observed. A dead nestling, well feathered, was found jammed in a nest entrance; almost ready to leave the nest, it had apparently been at the entrance, attempted to turn around to return to the nest chamber and had become firmly stuck in the narrow funnel. Its removal revealed other nestlings inside the chamber, all apparently dead from starvation when the parents were unable to gain access with food. I have found similar instances in other colonies.

The reason for the broken eggs and dead nestlings on the floor of the culvert is not certain, although I have found this to be common with Fairy Martin colonies. In some instances, other



• *A Fairy Martin caught in mist-net for banding. Photo B. Chudleigh (by courtesy of The Gould League of N.S.W.).*

species, particularly House Sparrows (*Passer domesticus*), have been observed interfering with nests and fighting for occupancy. The Zebra Finch (*Taeniopygia castanotis*) and Striated Pardalotes (*Pardalotus ornatus* and *substriatus*) have been found using Fairy Martin's nests for their own breeding, the former usually in colonies deserted by the Martins and the latter in such small numbers that blame could hardly be attributed to them.

In many instances I have found the usual litter beneath the nests but have observed no evidence of interference by sparrows or other species, although a pair of Pardalotes has occasionally nested in the Broke colony.

The damage seems to be caused by the birds themselves in one of two ways. As the nests are built, more than one pair may contribute to the construction of an individual nest, as multi-unit premises are common. During the construction and, in fact, for a continuing period afterwards, there may be disputes between pairs for occupancy. In a similar manner, late arrivals possibly fight incubating birds for control of nests.

Discussion

The 63 birds caught on 4.10.64 represents only portion of the colony at that time, as a number of birds escaped during removal from nets or by bouncing off and flying under the bottom net strings, which are always raised so that any birds in the bottom pocket are clear of the water under the nets at the ends of the culvert. Others escaped during removal of nets and birds were still heard in nests as banders left the culvert.

Of those caught, 11 only (17%) were caught again on 15.11.64, six weeks later and 10 (16%) on 28.11.65, 8 weeks after the first visit. Most birds occupying the colony, other than nestlings, were deliberately caught on the last visit and few escaped capture. Two birds escaped by remaining in their nests despite hand clapping and noise in the culvert, designed to flush all flying birds from the nests prior to removal of nets. They were observed to fly from nests while the nets were being rolled.

Allowing for an incubation period of about two weeks and a further two to three weeks before nestlings fly, birds with eggs on 4.10.64 would have completed nesting before the second visit on 15.11.64.

Those still breeding on 15th and 28th November could have been late arrivals, ones that lost eggs or nestlings at one or more earlier attempts, or some in both categories. The activities during 1961 and 1962 seasons do not provide enough data to be of much assistance. However, the retrap ratio over the three seasons (only one visit was made in 1963) is indicated in Table 4.

Table 4

Retrap Ratio within Each Season.

Year	Banding Date	Number Caught	Retrap Percentages 3 weeks later	6 weeks later	8 weeks later	13 weeks later
1961	1 Oct.	37	24	—	—	—
1962	29 Sept.	44	—	—	—	5
1964	4 Oct.	63	—	17	16	—

One juvenile was caught on 29.12.61 and two on 28.11.64. As there has been no evidence of artificial predation, it would appear from Table 4 that, although the evidence is meagre and in no way conclusive, most of the breeding adults and their offspring leave the colony soon after the latter fly and do not continue to use the colony as a roosting place.

No record has been kept of the number of nests in use each season. However, I remember counting something over 70 occupied nests in 1963 and just over 100 in October, 1964. The number of individuals caught on these visits was 46 and 63 respectively or about 30% of the adults from the nests. (No juveniles were caught on either occasion).

Conclusion

This limited banding activity has provided some information. Approximately 25% of banded birds have been recovered back at the colony at least

once during subsequent seasons. So far, only negative evidence indicates that breeding adults and their offspring leave the colony soon after the latter fly. A number of questions are highlighted as a result of this analysis, and these can only be answered by future banding projects.

Do breeding pairs and birds from a breeding colony remain together during migration? Is there a complete or partial change-over of birds in areas where Fairy Martins are known to be present throughout the year or do some birds remain in their breeding areas? How far do they migrate? Does their migration take them to the same areas by the same routes each year?

The Ninth Annual Report of The Australian Bird Banding Scheme, July, 1962, to July, 1963 (C.S.I.R.O. Division of Wildlife Research Technical Paper No. 7), shows 1233 Fairy Martins banded and 75 individuals recovered. A further 283 were banded in the following 12 months. The oldest recorded Fairy Martin of known age is 010-21617 banded as a fledgling on 6.11.60 and retrapped at nest near banding point on 4.10.64 (see Vol. 2, No. 4, p. 111).

So far, no recoveries have been recorded away from banding locations. This is not surprising in view of the relatively small number banded to date. The position is unlikely to change greatly unless a concerted co-operative effort is directed at banding this species throughout the Continent.

This would certainly produce fascinating answers to at least some of the questions concerning the distribution, movements and habits of the Fairy Martin. A great opportunity awaits the bander who has the ability, enthusiasm and time to initiate and promote a co-operative Fairy Martin Banding Project.

Acknowledgements

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Juvenile Plumage in The Grey Shrike-Thrush

We have not been able to trace details in the literature of the change from juvenile to adult plumage of the Grey Shrike-Thrush (*Colluricincla harmonica*).

Juvenile birds are readily recognisable in that they have the upper parts greyish-brown with a distinct olive tinge; the area around the eye and a distinct stripe over the eye are pale rufous; the feathers of the underparts have a prominent dark-brown centre streak.

The adult male has a white patch on the lores area and the chin and upper throat area are dull white. The breast area is plain ashy-grey.

The adult female is similar to the adult male but has less white on the throat and has narrow black shafts to the ashy-grey feathers of the throat and breast areas.

On April 25, 1964, at the Botanical Gardens, Canberra, we banded a bird in typical juvenile plumage. As the local breeding season is from September to early January this bird would probably have been at least three months old at this time.

This bird was retrapped on May 22, 1965, when the feathers around the eye and the eye stripe were still pale rufous but distinctly paler than in a bird of the year. The streaking on the breast and throat was much reduced and rather similar to that of the adult female. The dull white of the chin and upper throat areas was lacking as the ashy-grey streaked plumage extended right to the bill.

The bird was probably an immature female at this stage, at a believed minimum age of sixteen months. Had it not been banded we would probably have classed it as a juvenile as it was much closer to juvenile than to adult plumage.—

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