

TABLE I

Distribution, size and occupancy of trees in a Starling roost, Narromine, NSW.

Type of tree	N	P	N	N	B	P	B	B	B	P	N	P	N	N	B	P	B	N	N	N	P
Height (m)	4	5	3	4	9	8	6	5	7	6	4	7	4	5	8	10	10	5	4	3	7
Crown width (m)	3	5	2	5	5	5	5	3	4	3	3	5	3	3	4	5	5	3	4	4	5
Distance from end (m)	116	112	108	105	95	92	87	79	75	72	46	41	36	27	24	22	18	15	10	5	0
Occupancy 9 Aug.		+				+				+		+									+
Occupancy 12 Aug.		+				+				+		+			F	F	F				+

N = Leafless tree

B = Broadleaf tree *Brachychiton discolor*P = Palm *Phoenix* sp

+ = occupied by 100+ Starlings

F = occupied by few Starlings for part of night

insulation than the more irregular horizontal foliage of broad-leaved trees.

Demonstrating that the observed dispersion of birds in a roost is non-random is statistically trivial but may point to those factors such as structure and microclimates of roosts, composition of flocks and tradition, which are essential to understanding the social biology of a species. Actual measurement of microclimate in various parts of a Starling roost remain to be performed but Brenner (1965) demonstrated that single Starlings had significantly greater metabolic rates and significantly shorter survival times than did Starlings roosting in pairs and fours,

when subjected to temperatures of 2–4 °C. It is therefore reasonable to predict that microclimate ought to play an important role in the selection of roosting sites during winter for Starlings.

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NEST AND EGG OF THE BARRED HONEYEATER OF NEW CALEDONIA

Though the endemic Barred Honeyeater *Guadalupe undulata* is not uncommon on New Caledonia, it is not often met with near coastal towns where most people live. Therefore its natural history is largely unknown. During November and December 1976 I found it in all patches of humid rainforest: on Mont Panie and near Kavaatch in the north of the island and in the south on Mont Ouin and in the tributary valleys of the Ouinne Rivière, Rivière Bleue, Rivière Blanche and the Mois de Mai. I did not search the Niaouli (*Melaleuca leucadendron*) woodlands thoroughly; however (Warner 1947, Ph.D. Thesis, Cornell Univ.) noted it in them only when certain plants were in flower. He found it commonly in *Le Maquis des Terrains Miniers* (cf. *Géographie de la Nouvelle-Calédonie et des Îles Loyauté*. Noumea: Min. Educ. Jeun. Sports) between May and September when many flowers were in blossom.

This heath-like vegetational complex is common at lower altitudes in the south and is characterized by an arid red lateritic soil, prone to much erosion because the low stunted bushes, shrubs and ferns are sparse and there are few herbs. The only time when I saw *G. undulata* in this vegetation was when I flushed a sitting bird from its nest on 22 December on a northern slope of the Rivière Blanche valley near its headwaters. Apparently the nest and eggs of this species have not been described.

The cup-shaped nest (Plate 1) was attached to grasses and the low branch of a small bush *Xanthostemon auranticum* (Myrtaceae). It was well hidden from view by the bush. The exterior base of the nest was thirty centimetres above the ground and the site was at least eighty metres from the nearest patch of humid forest. The nest was strongly constructed with a tightly woven outer base of dead

PLATE 1

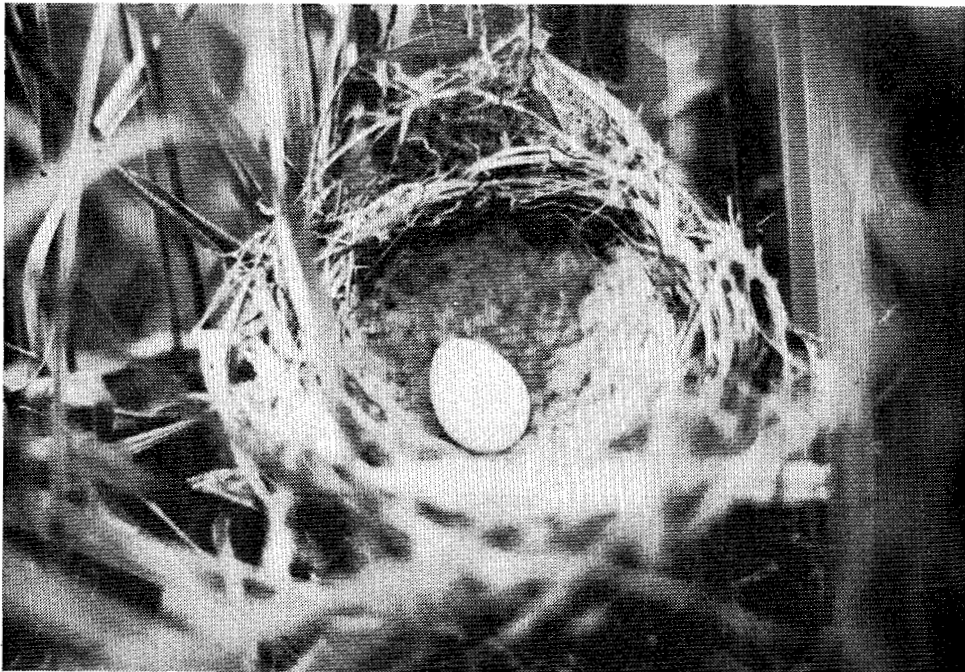


Plate 1 (upper). Site of nest of Barred Honeyeater; just above white spot in lower centre of photograph.
(lower). Nest and egg of Barred Honeyeater.

grasses and ferns and a very soft, thick inner lining of rufous material with a texture of wool but probably consisting of material from the inflorescences of sedges, it being not far from swampland. It measured (mm): 65, internal diameter; 90, external diameter; 35, depth inside; 60, depth outside. The single pyriform egg was ivory-white in colour and measured 23.5 x 17.2 millimetres.

While I was measuring and photographing the nest and egg the adult, which had been incubating, flittered round within a radius of twenty metres, flying

from bush to bush and uttering the typical 'pew-pew' bi-syllabic call of the species. Neither nest nor egg was collected and I could not revisit it.

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MARBLED FROGMOUTH IN THE CONONDALE RANGE, SOUTH-EASTERN QUEENSLAND

On the night of 28 October 1976, we heard an unfamiliar call from inside rainforest bordering Booloumba Creek in the Conondale Range, south-eastern Queensland (26°38'S, 152°35'E), approximately 130 kilometres north of Brisbane. GJR traced the call and, using a spotlight, located a frogmouth. The bird was perched three metres above the ground on a vine hanging low from a Strangler Fig *Ficus watkinsiana*. It had its back turned and wings outstretched, displaying a series of four to seven rows of conspicuous white spots on each wing. The bird was brownish-fawn in coloration and surprisingly small. The head was turned and bright-orange eyes were observed. The bird was identified as a Marbled Frogmouth *Podargus ocellatus*. The call was first heard at 21:50 and approximately every half-hour thereafter in the same vicinity. At least two birds were calling simultaneously on at least three occasions. The call consisted of a series of six to ten 'caw-caw' notes repeated in rapid succession and descending in volume. It was repeated for several minutes immediately before dawn and would sometimes be preceded by one or two loud 'coo' notes.

A Marbled Frogmouth was seen about 100 metres from the first site at 00:45 on 30 October after again tracing the source of the call with a spotlight. It was perched on a dead branch in the creek and permitted our approach to within four metres. In addition to features mentioned, a white eyebrow was seen. Underparts appeared to be of somewhat paler though similar coloration (brownish-fawn) to upperparts but with a generally blotched appearance and irregular dark streaking. Another call was heard during the same night, presumed to belong to *P. ocellatus*. It was a soft 'koo-loo', of two notes closely joined. It was repeated several times for some minutes. The call appears to be similar to or identical with that described in similar terms by Mac-

gillivray (1918) for the Marbled Frogmouth. Both calls were heard regularly on the nights of 5 and 6 November with C. Corben and A. Smyth but no birds were located. They were heard during several visits to the same locality from that time until mid-December. We returned to the same area on 25 April 1977, when one bird was heard before dawn for several minutes.

Habitat in which the bird was recorded was closed forest. Chief emergent trees were Rose Gum *Eucalyptus grandis*, Brush Box *Tristania conferta* and Quandong *Elaeocarpus grandis*. Tree-fern *Cyathea* sp and Piccabean Palm *Archontophoenix cunninghamii* were common in the area. It is believed that this habitat has close affinities with the lowland rainforests of the 'big scrub' of north-eastern New South Wales, now largely cleared (J. P. Stanton, pers. comm.).

The Tawny Frogmouth *Podargus strigoides* is much larger and more robust than *P. ocellatus*. The length of *P. strigoides* ranges from 340 to 460 millimetres, with smaller specimens belonging to the northern race *P. s. phalaenoides*; *P. ocellatus* ranges from 330 to 380 millimetres (Reader's Digest 1976). The Papuan Frogmouth *P. papuensis* is much larger than both species (450 to 540 mm). Tawny Frogmouths are generally greyish-brown, streaked black on the upperparts and grey with darker streaks on the underparts. This species, however, has a rarer phase in which some parts of the plumage are replaced by rufous-brown. To our knowledge there are no specimens of this species with the brownish-fawn coloration noted in *P. ocellatus*. The wing spots of *P. strigoides* are fainter and more obscure and, from our experience, are difficult to note in the field compared to those of *P. ocellatus*. The eyes of the Tawny Frogmouth are always yellow but those of the Marbled are orange. The Papuan Frogmouth has