

# NOTES ON THE BIRDS, REPTILES AND MAMMALS OF TONGATAPU AND 'EUA (TONGA)

By B. J. GILL

## ABSTRACT

During 13 days on Tongatapu and 9 days on 'Eua (Kingdom of Tonga) I noted 16 and 20 species of birds respectively. I collected 5 species of reptile on Tongatapu and 3 on 'Eua. Two species of ectoparasite from a Polynesian Rat (*Rattus exulans*) were identified.

## INTRODUCTION

In 1986 I spent 3 weeks in Tonga, comprising 13 days on Tongatapu (4-7 and 17-25 October) and 9 days on nearby 'Eua (8-16 October). Both islands were widely traversed – on foot, by bicycle, by vehicle or on horseback. Little has been published on the natural history of these islands and so it seems worthwhile recording details of the birds, reptiles and mammals that I saw. As this paper was going to press a very full account of the birds of 'Eua by Rinke (1987) appeared, based on observations from March 1983 to September 1984. The most recent account of the birds of Tongatapu seems to be that of Dhondt (1976) from observations in March and April 1974.

Tongatapu (260 km<sup>2</sup>) is more-or-less flat and densely populated. Nearly all the original forest cover has long since given way to coconut plantations and other forms of agriculture. 'Eua (90 km<sup>2</sup>), 20 km south-east of Tongatapu, rises to 300 m above sea level. The flatter western side is mainly cultivated but the hills and cliffs to the east have large tracts of rainforest.

## BIRDS

No time was spent at sea, and so the following list is biased towards land and shore birds. No birds were examined closely or critically enough to determine their race.

The terrestrial avifauna of Tonga is limited in diversity, but all the species I recorded on Tongatapu and 'Eua were common. On 'Eua there are no small bush birds to exploit the rainforest understorey. Bird-watching from the forest floor is therefore rather unrewarding. The parrots and pigeons of greatest interest usually frequent the canopy and are difficult to approach and see clearly. Femaeaki Lookout on a cliff east of Kahana Spring, north-east of Houma, is excellent for bird-watching because it overlooks the canopy of forest growing at a lower level. I had better sightings of pigeons in 5 minutes at Femaeaki than I had elsewhere on 'Eua in as many days.

**TAVAKE (WHITE-TAILED TROPICBIRD)** *Phaethon lepturus*  
*Tongatapu*. Not noted.

*'Eua*. Widespread at the coast and flying overhead inland.

**NGUTULEI (BROWN BOOBY)** *Sula leucogaster*

*Tongatapu*. Not noted.

*'Eua*. Seen at sea from cliffs at southern end.

**HELEKOSI (FRIGATEBIRD)** *Fregata* sp.

Frigatebirds were not seen closely enough to determine the species.

*Tongatapu*. One at Ha'atafu Beach.

*'Eua*. A few soaring high over centre of island. Seen from cliffs at southern end.

**CRESTED TERN** *Sterna bergii*

*Tongatapu*. Three roosting and fishing at end of peninsula east of Nuku'alofa.

*'Eua*. Not noted.

**GREY NODDY** *Procelsterna cerulea*

*Tongatapu*. Not noted.

*'Eua*. Seen from Femaeaki Lookout (north-east of Houma) and from cliffs at southern end.

**NGONGO (NODDY)** *Anous* sp.

Noddies were not seen closely enough to determine the species.

*Tongatapu*. Two on reef at Keleti Beach.

*'Eua*. Two on reef at 'Ufilei Beach (north of 'Ohonua). Seen from cliffs at southern end.

**'EKIAKI (WHITE TERN)** *Gygis alba*

*Tongatapu*. One at Ha'atafu Beach.

*'Eua*. Widespread in ones or twos. Perching in forest trees at 'Ufilei Beach (near 'Ohonua). Seen inland, even in the central hills, flying overhead.

**KIU (LEAST GOLDEN PLOVER)** *Pluvialis fulva*

Most birds were in intermediate plumage, with some evidence of black patches on the breast.

*Tongatapu*. Common on mudflats along Nuku'alofa waterfront and at Christianity Landing Place; singly or in pairs, well spaced out. Some seen feeding among roots of tall mangroves near Mu'a were very well camouflaged. On mown grass at Fua'amotu Airport.

*'Eua*. One flying along reef at 'Ufilei Beach (near 'Ohonua). Tufuvai – one at a small rocky pool on the otherwise sandy beach. On grazed grass at Hango Agricultural College (near 'Ohonua) and near cliffs at southern end. Thirty-six sleeping or foraging on mown grass at Kaufana Airstrip on 17 October.

**KIU (WANDERING TATTLER)** *Tringa incana*

*Tongatapu*. Common in small numbers along Nuku'alofa waterfront. Two on rocky reef at Keleti Beach.

*'Eua*. One darting at food between waves breaking over rocky reef along rugged shore on north-eastern tip (map series X872, sheet 23, 167 439). Several near 'Ohonua Wharf feeding among low woody plants growing on the rocky foreshore. Tufuvai – one at a small rocky pool on the otherwise sandy beach.

**TURNSTONE** *Arenaria interpres*

*Tongatapu*. Two on mudflats at Christianity Landing Place (7 October).

*'Eua*. Not noted.

**MOTUKU (REEF HERON)** *Egretta sacra*

Total sightings for both islands together were six dark phase and two white phase.

*Tongatapu*. A few on mudflats along Nuku'alofa waterfront and at Christianity Landing Place. One on rocky reef at Keleti Beach.

*'Eua*. A few on reef at 'Ufilei Beach and between there and 'Ohonua.

**MOAKAIVAO (FERAL DOMESTIC FOWL)** *Gallus gallus*

*Tongatapu*. Not noted in a truly feral state.

*'Eua*. Heard crowing in heavy bush leading down to rocky shore at north-eastern tip (map series X872, sheet 23, 167 439).

**VEKA (BANDED RAIL)** *Rallus philippensis*

*Tongatapu*. Not noted.

*'Eua*. Seen five times at roadsides both inland and near the coast; frequenting plantations, heavy bush and low shoreline scrub.

**DOMESTIC PIGEON** *Columba livia*

*Tongatapu*. Seen only in Nuku'alofa, along the waterfront, at the vegetable market and in the Royal Palace grounds. Some birds brown and white. Probably not truly feral to date.

*'Eua*. Not noted.

**LUPE (PACIFIC PIGEON)** *Ducula pacifica*

*Tongatapu*. Not noted.

*'Eua*. Widespread and common in or near forest; occasionally in cultivated areas. Difficult to approach closely. They fly strongly, covering long distances, and sometimes perform acrobatic flights like New Zealand Pigeons (*Hemiphaga*).

**KULUKULU (CRIMSON-CROWNED FRUIT-DOVE)**

*Ptilinopus porphyraceus*

I recorded fruit-doves at 10 locations. At only two of these could I approach birds closely enough to see the yellow undertail coverts that distinguish this species from the similar Manuma'a or Many-coloured Fruit-dove (*Pt. perousii*). I assumed all fruit-doves to be Crimson-crowned, perhaps wrongly.

*Tongatapu*. Not noted.

*'Eua*. Widespread and common in or near forest; occasionally in cultivated areas or scrub. Difficult to approach closely; more often heard than seen. They fly strongly, covering long distances.

**KAKĀ (RED-BREASTED MUSK PARROT)** *Prosopaea tabuensis*

*Tongatapu*. Not noted.

*'Eua*. Widespread and common in and about thick forest from the shoreline to the summit. Present at 'Ufilei Beach and in the Lakataha Ravine near 'Ohonua. Seen at Ha'aluma Beach in old coconut plantations with dense understorey scrub.

**PEKEPEKA (WHITE-RUMPED SWIFTLET)** *Collocalia spodiopygia*

*Tongatapu*. Common in all habitats. At 'Anahulu Cave near Haveluliku on 24 October dozens of birds were sitting on nests attached to the roof. The site is now operated as a commercial tourist attraction. Electric lights are switched on periodically, but the cave is very large and remains dim. The birds seem unaffected but more detailed observations

of the effects are needed. Constant clicking sounds (for echolocation) were given by dozens of birds in flight within the cave.

'Eua. Common everywhere.

SIKOTĀ (WHITE-COLLARED KINGFISHER) *Halcyon chloris*

Tongatapu. Not greatly abundant. Seen at Ha'atafu Beach and just outside Nuku'alofa.

'Eua. Common everywhere.

MANUFO'OU (RED-VENTED BULBUL) *Pycnonotus cafer*

Tongatapu. Common everywhere.

'Eua. Not noted.

NGUTUENGA (EUROPEAN STARLING) *Sturnus vulgaris*

Tongatapu. Widespread but not particularly common.

'Eua. Small numbers at Hango Agricultural College (near 'Ohonua). Flock of 20-30 on grassy areas near cliffs at southern end.

MISI (POLYNESIAN STARLING) *Aplonis tabuensis*

Tongatapu. Seen in Nuku'alofa.

'Eua. Widespread and common, particularly in or near forest. Several collected nest material; one nest site was a hollow branch of a dead tree in partly cleared forest. A bird seen closely had a dark iris.

SIKIVIU (POLYNESIAN TRILLER) *Lalage maculosa*

Tongatapu. Common everywhere. Apparent immatures seen on 5 October.

'Eua. Common everywhere.

FULEHEU (WATTLED HONEYEATER) *Foulehaio carunculata*

Tongatapu. Common everywhere.

'Eua. Common everywhere.

## REPTILES

I collected six species of reptiles, five from Tongatapu and three from 'Eua. All specimens are held in Auckland Museum and the registration numbers are cited here. Besides these species, on 12 October I saw clearly, but could not catch, a large brown skink more than 80 mm from snout to vent. It was in coastal scrub between 'Ohonua and 'Ufilei Beach ('Eua) and had a striped pattern across its "lips". It was active in the heat of the day, though in shade, and moved very rapidly among the exposed roots of a tree.

The Tongan name for gecko is *moko* and for skink is *pili*. Some locals mentioned the name *fokai*. H. L. Bregulla established that this refers to the iguana *Brachylophus fasciatus* (W. Pond, pers. comm.).

STUMP-TOED GECKO *Gehyra mutilata*

Tongatapu. Found as a house gecko in Nuku'alofa (H1017, H1018).

'Eua. Not noted.

OCEANIC GECKO *Gehyra oceanica*

Tongatapu. Not noted.

'Eua. Two collected under bark of rotting trees – H1015 in forest north-east of Houma and H1016 in partly cleared forest in the central hills near the summit. H1015 had a fresh weight with intact tail of 12.5 g.

**MOURNFUL GECKO** *Lepidodactylus lugubris*

*Tongatapu*. Found as a house gecko in Nuku'alofa (H1021).

'Eua. Found as a house gecko at Hango Agricultural College near 'Ohonua (H1019, H1020).

**SNAKE-EYED SKINK** *Cryptoblepharus poecilopleurus*

*Tongatapu*. One collected at Keleti Beach in low supralittoral vegetation (H1013).

'Eua. Not noted.

**BLUE-TAILED SKINK** *Emoia cyanura*

*Tongatapu*. Seen in litter and low vegetation at Good Samaritan, Keleti and 'Anahulu Beaches (H1010-1012).

'Eua. Very common and widespread. In shoreline litter and vegetation, litter under intact and partly cleared forest and in open grassy areas. They reach high densities, far greater than I saw on Tongatapu, perhaps because there is less predation on 'Eua by Domestic Fowls (H999-1009).

**MOTH SKINK** *Lipinia noctua*

*Tongatapu*. One collected at Keleti Beach in low supralittoral vegetation (H1014).

'Eua. Not noted.

## MAMMALS

**PEKA (FLYING FOX)** *Pteropus tonganus*

*Tongatapu*. Large colonies roosted by day in trees at Tofoa (near Nuku'alofa) and Kolovai.

'Eua. A few flying after dark among trees at 'Ufilei Beach. Several seen from Femaekai Lookout roosting in the forest canopy below.

**KUMĀ (POLYNESIAN RAT)** *Rattus exulans*

*Tongatapu*. Not noted.

'Eua. A juvenile (Auck. Mus. M458), found injured on a track through a plantation north-east of Houma, had as ectoparasites the flea *Xenopsylla vexabilis* and the louse *Hoplopleura pacifica* (R. L. C. Pilgrim, pers. comm.).

## DISCUSSION

My observations on the general status and distribution of birds agree closely with those of Dhondt (1976) and Rinke (1987). Rinke (1987) confirmed that Many-coloured Fruit-doves (*Ptilinopus perousii*) occur on 'Eua. I did not see the Blue-crowned Lory or Henga (*Vini australis*) on either island. It was reported from both by duPont (1976), but according to Rinke (1986) it is now extinct on these and certain other Tongan islands. The Spotless Crake or Moho (*Porzana tabuensis*) and Fiji Shrikebill or Fuiva (*Clytorhynchus vitiensis*) also appear to have disappeared from 'Eua within the last century, except that the shrikebill persists on Kalau, the islet southwest of 'Eua (Rinke 1987).

Watling (1978) cited an unpublished MS by E. Carlson (1974) as authority for stating that Red-vented Bulbuls occur on 'Eua, having spread

there from Tongatapu where introduced in the 1940s. My observation, however, and that of Rinke (1987) is that the species is currently absent from 'Eua. European Starlings are said by Rinke (1987) to be a very recent arrival on 'Eua. He did not note them at the grassy areas near the southern cliffs, and so they are likely to have spread there since 1984.

Watling's map (1982: 103) indicates that Tonga lies in a region where Polynesian Starlings have yellow irides, the iris being brown in the main Fiji islands to the west. This is wrong. The bird I saw closely had a dark iris, and all those seen by Rinke (1987) had brown irides.

Very little has been published on the reptiles of Tonga. According to Rinke (1987) 'Eua has "about 11 species of reptiles", including an endemic (*Lepidodactylus euaensis*), but he gave no further details and cited no published references. Gibbons (1985) reported *Lepidodactylus manni* from 'Eua, this having previously been considered endemic to Viti Levu, Fiji group. The species I noted are widely distributed in the south-west Pacific and are likely to occur on both islands when I recorded them from only one. The iguana *Brachylophus fasciatus* is said to occur on both Tongatapu and 'Eua (Gibbons 1981). Rinke (1986) believed that it can still be found on Tongatapu but he did not find it on 'Eua. I saw none. The large skink *Tachygia* (or *Eugongylus*) *microlepis* is known only from the two types collected on Tongatapu last century (Greer 1974). Rinke (1986) did not find this species. There is a slight possibility that this was the large brown skink I saw on 'Eua but could not catch.

It was depressing on 'Eua to see slash and burn agricultural practices encroaching on rainforest when there is so much guava scrub that might be cleared instead. The proposal for a national park on 'Eua (e.g. Singh 1986) needs encouragement.

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## SHORT NOTE

### Co-operative breeding in Brown Creeper?

In co-operative breeding, more than two adults assist in rearing young (Elmen 1984). The closely related Yellowhead (*Mohoua ochrocephala*) and Whitehead (*M. albicilla*) are known to breed co-operatively (Soper 1976, Gill & McLean 1986, G. Elliott pers. comm.). However, no evidence of co-operative breeding was found by Cunningham (1985, pers. comm.) in the only detailed breeding study of Brown Creeper (*Finschia novaeseelandiae*) made to date. Here, we report observations made at Kowhai Bush, Kaikoura (where Cunningham also worked) of Brown Creepers appearing to breed co-operatively.

Brown Creepers had a poor breeding season in 1986-87 at Kowhai Bush, probably because of a drought, which killed about 10% of the trees in the study area and partly defoliated many others. Of about 25 pairs studied only four (possibly five) fledged chicks, several built nests but did not lay, and many apparently did not start nest-building. Thus, a large number of birds were presumably physiologically ready to breed but did not do so.

On 5 November, when we removed chicks from a nest for banding, three adult Brown Creepers arrived and mobbed us. On 16 November, we mist-netted the adults from this nest one day after the (banded) chicks first flew. While we were holding the parents for banding, we saw two other adult creepers with the chicks, which were perched 10 m away, and heard the usual calls of chicks being fed. On their release, the true parents (determined by many subsequent checks of band combinations) flew immediately to the chicks and chased the other birds away.

On 11 November we saw three adult creepers within two metres of a nest containing banded young. One of these adults was chased off by the other two. Two adults from this nest were banded on 19 November. After 19 November, an unbanded bird was twice seen feeding the chicks while the banded birds (the usual feeders) were away. On two other occasions an unbanded bird approached with food and was chased off. Two unbanded creepers were often seen within 20 m of these chicks after they had left the nest. Any other creepers which approached to within a few metres of the chicks were always chased by the banded adults if they were seen.

Do these observations show that Brown Creepers are co-operative breeders?

If co-operation is indeed rare in Brown Creepers, then our observation of co-operation in two of the three families we followed intensively seems too coincidental. However, Cunningham (1985) did not see similar behaviour despite many hours of observation. The most likely explanation is that the