in late Sept–late March, with first clutch laid in last week of Sept. On Breaksea and Motuara Islands, first eggs laid in second and third weeks of Oct, respectively; most nests with eggs or nestlings between third week of Oct and first week of Jan. On Motuara and Ulva Islands, most nests in natural cavities (54% and 80%, respectively); on Breaksea Island, 67% of nests were in flax (*Phormium*). Sites generally in understorey or subcanopy. Cup-shaped nest, only slightly larger than bird. Female lays 1 or 2 (generally 2) oval, white or pale beige eggs marked with brown or purplish-brown spots and blotches (rarely streaks or lines; more at large end). Only female incubates (average: 20 days) and broods, but both parents feed chicks; fledgling period 25–27 days.[239]

BIOMETRICS

TL 25 cm; **W** ♂ 99.4 mm, ♀ 97.3 mm; **TA** ♂ 40.6 mm, ♀ 37.5 mm; **WGT** ♂ 85 g, ♀ 75 g; **Wing Formulae:** 10 primaries, p5&6 longest. P10 35–42 mm shorter, p9 20–23, p8 8–11, p7 2–3, p4 0–3, p3 3–6, p2 5–8, p1 8–10.[239]

TAXONOMIC NOTES

Māori name The name Tīeke is onomatopoeic. Another name, Tīeke rere, comes from the bird's cry when alarmed. **English name** The English name describes the distinctive, saddle-shaped, reddish-chestnut patch across the back, and includes a geographic indicator. **Scientific name and taxonomy** The specific name was given by Johann Gmelin in 1789[38] and is a direct Latinisation of the name used by Latham in his 1785 *General Synopsis*:[64] 'Wattled stare'. *Stare* is Old English for 'starling'. The North Island species is sometimes considered a subspecies of the South Island taxon. However, the North Island taxon has proportionally shorter legs and wings, the narrow yellow line between the saddle and nape, and juveniles are more similar to adults. There are also differences in calls and foraging behaviour.

The Stitchbirds

FAMILY Notiomystidae

Until recently, Stitchbirds were thought to be a basal honeyeater. However, DNA analysis has shown conclusively that this ancient Gondwanan species has no close relatives and in fact belongs in its own family.[275] Accordingly, Stitchbirds have recently been placed in their own endemic family, the Notiomystidae.[276] The family and sole genus name was coined by George R. Gray in his 1846 *Genera of Birds*[71] and comes from a combination of the Ancient Greek words νότιος, meaning 'southern', and μύστης, 'mystery'. The name was first used as a family-level name by Amy Driskell and colleagues in 2007.[276]

Stitchbird *Notiomystis cincta*

Hīhī

Hihi

Threatened

An attractive black, brown and off-white honeyeater-like bird that is strongly sexually dimorphic. The back and head of the male are black, as is the centre of the tail, and there is a yellow breast band and yellow streaking on the wings and back. The female, however, is a dull brown and off-white. Both sexes have remarkable white plumes around the ears which can be erected when agitated or displaying. The species is now, naturally, only found on Hauturu/Little Barrier Island. Recent transfers to various mainland and offshore island sites have resulted in no other self-sustaining populations.

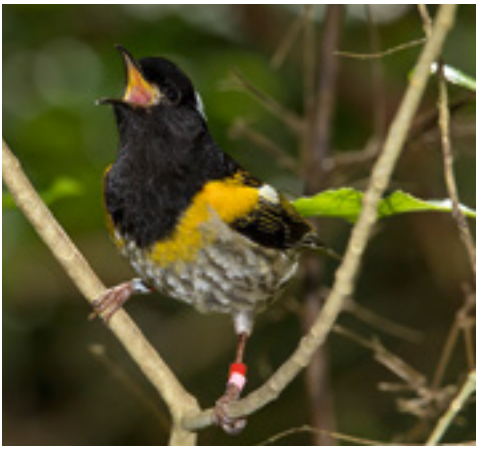
IDENTIFICATION

Medium-sized, rather plump with a short, slender, gently decurved bill and rather short tail, often held cocked. Sexes differ markedly in adult and immature

▲ An adult male displaying, showing the distinctive cocked tail and white ear ornamentation. TIRITIRI MATANGI ISLAND, HAURAKI GULF; 21 SEPT 2010.

▲ An adult male displaying. Note the rictal bristles about the gape. TIRITIRI MATANGI ISLAND, HAURAKI GULF; 20 SEPT 2010.

▼ An adult male in song. Note grey and beige, moulted belly. TIRITIRI MATANGI ISLAND, HAURAKI GULF; 21 SEPT 2010.



▼ An adult female. Note the wing edges to the primaries and white greater coverts that allow separation from female Bellbird. TIRITIRI MATANGI ISLAND, HAURAKI GULF; 20 SEPT 2010.

plumages but juveniles are alike. All adults with prominent white patch on folded wing. Bill, rictal bristles and iris black; feet and legs dark grey above, pinkish below. **Adult male** slightly larger than female, with no seasonal variation. Head, neck, mantle and breast velvety black, bordered by a golden yellow band across lower breast and shoulders; underparts mostly pale brownish grey, diffusely streaked darker; short white tufts near ear coverts. **Adult female** much duller and plainer than male: upperparts, sides of head and neck dark brownish olive; underparts paler brownish grey and diffusely streaked darker; white ear tufts present but smaller than in male. **Juvenile** similar to adult female but slightly duller and browner, with more uniform underparts (dark grey-brown to dull buff), duller orange-brown patch on folded wing; pale fringes of secondary coverts duller yellow-brown, pale edges of flight feathers duller grey-brown. Bill grey-black (duller than in adults), becoming dirty yellow or brownish orange at lower mandible base; gape yellow or orange-yellow and appears swollen. **Immature male** similar to adult male; difficult to distinguish except in the hand. With excellent views, retained juvenile flight feathers, primary coverts and alula may be seen (greater primary coverts and alula dull brown, not deep black as in adults). Immature's feathers also have distinct, narrow, olive-yellow edges but these may be lost with wear. **Immature female** extremely similar to adult female and doubtfully separable in the field.

▲ An immature male showing shorter, white ear ornamentation, a dull brown, juvenile alula and pointed (not rounded) juvenile tail feathers. Note also the extended honeyeater-like tongue that made early scientists believe this species was actually a honeyeater. TIRITIRI MATANGI ISLAND, HAURAKI GULF; 21 SEPT 2010.

In the hand, retained juvenile flight feathers, primary coverts and alula are duller and browner, with dull olive-yellow edges.

VOCALISATIONS

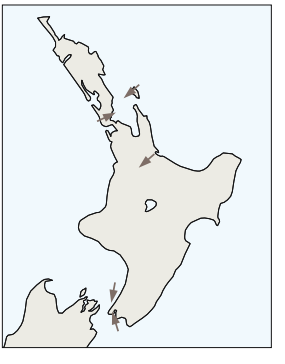
Calls are extremely varied and generally high-pitched. Both sexes call at regular intervals when foraging. Most distinctive call *stitch* or *titch* is common, given either singly or in series, accelerating as bird becomes more agitated, and may be succeeded by alarm call, which is a series of high-pitched *yeng* calls.

SEPARATION FROM SIMILAR SPECIES

Slightly larger, plumper and finer-billed than similar Bellbird, but much smaller than Tui (with which it is unlikely to be confused). Males hard to mistake, but females and immatures separable from female Bellbirds by combination of white wing panel and absence of pale moustachial stripe. Stitchbird's habit of cocking its tail, its distinctive posture – always looking ready to leap into the air – and plumpness all useful in identifying silhouette or in poor light. *Stitch* call also diagnostic.

DISTRIBUTION

Endemic to the North Island and offshore islands where evidence suggests it was widespread until 1870s, although historic presence in Northland disputed. Oliver[10] assumed that Yate[277] must have encountered the species in the Bay of Islands (where Yate was based) prior to 1835 but this is not necessarily true as Yate travelled the North Island a great deal and may have encountered it elsewhere. Underwent a rapid decline after 1870; by 1885, had disappeared from the southern North Island, Great Barrier Island (Aotea) and Kapiti Island. Now, naturally found only on Little Barrier Island. In recent years, transferred to various mainland and offshore island sites (where they receive supplementary feeding and are provided with nest boxes) but no other self-sustaining populations have thus far been established.



BREEDING BIOLOGY

Mostly recorded nesting in hollows, most frequently in puriri (*Vitex lucens*) or pohutukawa (*Metrosideros excelsa*), between 1–18 m above ground, but commonly at about 6 m. Birds readily use nest boxes where natural cavities are lacking (e.g. Tiritiri Matangi Island). Nest a platform of sticks, often 15–20 cm deep, topped with a cup of fern rhizomes bound with spider webs and lined with scales from tree ferns and feathers.[201] Nest nearly always built by female. Per clutch, female lays 3–5 pure white or yellow-white eggs, thickly spotted and clouded with pale rufous-brown.[9,10] Only female incubates the eggs, for 13–19 days. Chicks altricial, nidicolous and are fed by both parents until fledging, at c. 28–34 days old. Both parents continue to feed fledglings, until they are independent or until female lays another clutch. Between Sept and March, 2 (rarely 3) clutches laid.[268]

BIOMETRICS

TL 18 cm; **W** ♂ 98–117 mm, ♀ 91–97 mm; **TA** ♂

▲ A freshly fledged juvenile with the obvious yellow gape and yellowish edges on the flight feathers. TIRITIRI MATANGI ISLAND, HAURAKI GULF; 27 DEC 2004.

272–29.0 mm, ♀ 27.0–28.7 mm; **WGT** ♂ 29–42 g, ♀ 26–35 g. **Wing Formulae:** 10 primaries, p6 longest. P10 24–32 mm <p6, p9 8–14<p6, p8 2–3.5<p6, p7 0.5–1.5<p6, p5 0–1.0<p4 2.0–4.0<p3 5.0–7.0<p2 7.0–9.5<p1 9.0–5.0.[268]

TAXONOMIC NOTES

Māori name In Rev. W. Yate's *An Account of New Zealand* published in 1835, he used the name Kotihe.[277] It is possible Yate may have encountered this name on the East Cape, which he visited in the early 1830s (*contra* Oliver).[10] In the late 1850s, Dieffenbach obtained the name Ihi from the Māori of Taranaki.[62] The name Hīhī was first used by Taylor[279] for a bird 'like a koromiko' but in the same volume Kotihe is used for *Meliphaga cincta*. White[280] uses the name in his 1885 anthology but does not define what bird a Hihi is. Williams[281] placed this name first alphabetically in his important paper *Maori Bird Names*, listing another 18 names for this species, many describing the sexes and probably for birds of differing ages and females in different seasonal plumages. Like many Māori names from Williams now regarded as 'correct', it would appear that common usage follows the fact that Hīhī is listed first alphabetically. While some have suggested Hīhī is onomatopoeic, the bird produces no obvious call that this name resembles. Hīhī are the 'long plumes ornamenting the bow of a war canoe' and is also a method of dressing the hair in horns on each side of the head. These names undoubtedly refer to the prominent white tufts near the ear coverts that both sexes can manipulate and erect. **English name** The bird was named Stitchbird by early European settlers because its contact call bears resemblance to the word stitch. In recent years, the Department of Conservation have championed the common use of the name Hīhī but this appears to have been the name used only by a small subset of Māori. **Scientific name and taxonomy** It is unclear where or by whom the first specimens of this species were collected but George R. Gray[62] states 'The French whalers who visit [New Zealand] are constantly sending zoological specimens to Paris'. The species was formally described by the Belgian politician, ornithologist and palaeontologist Vicomte Bernard-Aime Leonard Du Bus de Gisignies (1808–1874).[282] Although Du Bus placed the species in the original honeyeater genus *Meliphaga*, Gray, head of the ornithological section of the British Museum, in 1846 recognised that the species was sufficiently distinct from *Meliphaga* to erect a new genus, *Pogonornis*. This name was an excellent description of the bird's unique facial bristles (πώγων means 'beard' and όρνις means 'bird'). However, Gray was not aware that this name had already been used for another bird in Billberg's incredibly obscure *Synopsis Faunae Scandinaviae*[260] and thus Gray's name was not available under the rules of zoological nomenclature. For this reason, in 1908, Richmond[283] coined the genus *Notiomystis* from the Greek νοτις (meaning 'southern'), and μύστίς ('a mystery'), referring to the species' uncertain affinities. The specific name was coined by Du Bus[282] and comes from the Latin *cinctus* ('banded') referring to male's yellow band that separates the black head from the plainer underparts. In 1935, the notorious splitter Gregory Mathews felt that specimens collected on Hauturu/Little Barrier Island were sufficiently different from those collected on the mainland to erect a new subspecies *hautura*[284] after the island's Māori name. Subsequently, no authority has recognised Mathew's name although it is occasionally resurrected by enthusiastic amateurs. This taxon is currently considered monotypic.