

Although the primary method of feeding was similar in both the pine and native forests, Bellbirds in the pines appeared more nervous and alert when feeding near the ground than did Bellbirds in native forest. In pine stands, Bellbirds probed the inner bark of manuka scrub (three observations), but more frequently they searched pine needles and pecked at branches.

The surfaces on which Bellbirds fed differed between forest types (Fig. 2). The birds fed on the ground twice as often in the pines (18%) as in the native forest (9%). In native forest 26% of the birds fed on insects and honeydew on the underside of branches and foliage, whereas in pines only 11% fed on the underside of branches and foliage. Bellbirds feeding on the upper surfaces of branches and foliage accounted for 19% of the observations in native forests and 50% in the exotic forests. In the native forests, 45% of the pecks occurred on tree trunks, whereas only 23% occurred on trunks in exotic forests.

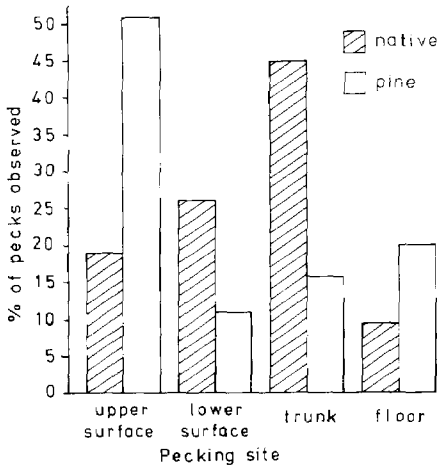


FIGURE 2. — Pecking sites of Bellbirds in native and pine forests

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SHARON M. FEGLEY, *University of Minnesota, Department of Ecology and Behavioral Biology, Minneapolis, Minnesota 55455*

Nesting of White-Faced Herons at the Chatham Islands

White-faced Herons (*Ardea novaehollandiae*) usually nest in the tops of trees. In the Chatham Islands, however, where they have been known for over 100 years, they have been recorded nesting in rather different situations. Thus, Gordon (1979) reported a nest containing eggs and a chick in a cleft in a rocky bluff on the south-west coast of Chatham Island, over a kilometre from the nearest tree.

In December 1986 we came across two pairs of White-faced Herons breeding in such rocky situations, rather than atop trees, which we report here together with some observations on herons attempting to breed on South East Island.

RGC surveyed Motuhinahina Island on the western side of Te Whanga Lagoon on Chatham Island on 16 December. The island is a limestone outcrop rising some 3 metres above lagoon level, capped by 2 metre high scrub through which three trees emerge (one *Olearia traversii*, one *Hymenanthera chathamica* and one lower *Corynocarpus laevigatus*). Small limestone outcrops up to 1.5 metres high occur around the shore. A White-faced Heron nest containing three chicks was found on one outcrop. The nest of twigs was in a depression in the rock 1 metre above the lagoon and about a metre below nesting Red-billed Gulls (*Larus novaehollandiae*).

In mid-December a nest containing three pale blue eggs was found in a vertical fissure between two massive slabs of rock at the base of a c.50 metre cliff on the north coast of South East Island. On 28 December ADH inspected the site more fully and found two White-faced Heron chicks.

The fissure itself ran parallel to the coast some 10 metres inland and was about 30-40 cm in width. The nest — a characteristic shambles of twigs! — was on a small promontory within the fissure, about 4 metres above the sea, which was visible at the bottom over much of the c. 10 metre length of the fissure. The surrounding area, for about 100 metres in either direction, is devoid of vegetation and presents one of the bleakest stretches of coastline on the island.

On subsequent visits, up to 10 January, both chicks were still being attended by adults. Although we did not visit the nest after 10 January, ADH, from a vantage point at the top of the cliffs, saw adult herons make several visits to the site in early February. It seems likely, therefore, that a chick or chicks survived to fledging.

South East Island has often had two pairs of White-faced Herons during the summer over the past 10 years. Generally they are unsuccessful at breeding, although nests with young have been found in Thinornis Bay on the south-east coast. A major problem for White-faced Herons on the island appears to be breeding skuas (*Stercorarius skua lombergi*). Skua territories occupy virtually the whole coastline of the island and they react aggressively to intruding — or just nearby — herons from August to late December. A heron found with a broken wing by ADH in December 1984 had almost certainly been attacked by territorial skuas. At the same time a pair of herons attempting to build a nest in the top of a 3 metre *Olearia traversii* on the northern side of the island was repeatedly harried by breeding skuas and abandoned the attempt.

The stretch of coast on which this fissure nest occurred is one of the few coastal areas not actively patrolled by breeding skuas. In both 1984-85 and 1985-86 summers, a pair of herons was regularly seen along this coast and possibly nested high in cliffs below the summit of the island.

Robertson & Dennison (1979) conjectured that the occurrence of White-faced Herons on rocky shorelines might be explained by the absence of Reef Herons (*Egretta sacra*) in the Chathams or by “. . . limiting factors

inland". On South East Island one such limiting factor is clearly the skua, whose effect seems to be to confine breeding attempts to those parts of the island not used by breeding skuas. On Chatham Island, skuas do not breed and are rarely encountered. It seems more likely there that often the herons do not find trees, as suggested by Gordon (1979), or the bush fragments they do find are untenable given the wind — perhaps the case on Motuhinahina, where they did not use the available trees. In more sheltered locations the herons may still nest in trees — as they do periodically in the fine shelter belts of *Macrocarpa* at Kaiwhata on the north-east corner of Chatham Island. Thus, we need not invoke the absence of Reef Herons at all, but see cleft nesting as a response to climate, harassment by skuas or simply lack of trees.

LITERATURE CITED

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ALAN D. HEMMINGS, *Department of Zoology, University of Auckland, Private Bag, Auckland*; R. G. CHAPPELL, *Department of Conservation, Te One, Chatham Islands*

Black Stilts nesting at Lake Ellesmere

Three Black Stilts (*Himantopus novaeseelandiae*) constructed nests independently at Lake Ellesmere in spring 1986. Two were mated with Pied Stilts (*H. himantopus leucocephalus*). The third was two years old and was possibly unmated.

At Greenpark Sands on the shores of Lake Ellesmere on 23 September 1986, CO'D, Ken Hughey, Liz Jarman and Dick Hutchinson observed a Black Stilt feeding with Pied Stilts in a pond surrounding a small breeding colony of Pied Stilts. While we were watching, a Pied Stilt mounted and copulated with the Black Stilt. About 15 minutes later the Black Stilt moved to a small, grass-covered island, where it began arranging dry grasses at what appeared to be a nest.

There were 10 pairs of Pied Stilts in the colony. Their nests, which all had eggs, were on small hummocks of mud, covered with a salt-tolerant grass, *Agrostis stolonifera*, and surrounded by shallow water (100 mm). The colony was on the upper margin of the lake shore, close to farmland and nearly 2 km from open lake water.

The site was visited again on 25 September. The Black Stilt was roosting at the nest site, which was an empty scrape lined with dry grasses. A week later, on 2 October, CO'D, Ken Hughey, and Ron Nilsson visited the site and found the Black Stilt incubating four eggs. Two new Pied Stilt nests were also found and about 30 birds were at the colony. During two hours of observation, the Black Stilt incubated twice for 30 minutes, its pure pied mate incubating for the intervening hour. When Ron Nilsson visited the nest again on 9 October, the Black Stilt was not seen and all but one of the eggs had disappeared. During further checks over later weeks, the Black Stilt was not seen at the abandoned nest site.

Also in September, Teri Meis observed a second Black Stilt at Birdling's Flat, c.10 km further along the lake shore. This stilt was distinguished by its grey face and several white feathers about the vent. It was resident