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## THE BIRDS OF TINJIL AND DELI ISLANDS, WEST JAVA

by

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### **Summary**

Pulau Tinjil and Pulau Deli are islands of 600 ha and 950 ha respectively lying 14 km off the south coast of West Java. The authors made six visits to one or other of the islands between 1988 and 1995. Both are covered with primary forest, but a large population of Long-tailed Macaque monkeys has recently been introduced on both islands as a free-range monkey-breeding facility. The islands have an depauperate avifauna with probably just 20 resident landbird species, common to both islands. These include one near-threatened species, the Nicobar Pigeon, which was formerly very common but which may have suffered as a result of the introduction of monkeys. Other small island/coastal specialists include the Beach Thick-knee, Pied Imperial Pigeon and Chestnut-capped Thrush. Except along the beaches, there are few forest-edge habitats, and most of the landbirds, including those normally occupying open habitats on the mainland such as White-breasted Waterhen, Yellow-vented Bulbul and Brown-throated Sunbird, have expanded their range to occupy the forest niche.

### **Geography**

Pulau Tinjil and Pulau Deli lie on the continental shelf *ca.* 14 km off the south coast of West Java at respectively 6°58'S, 105°48'E and 7°00'S, 105°33'E. Both lie at sea level, are formed mainly of coral, and are covered in littoral forest. They are 22 km apart, and are mutually just visible, as well as being visible from the mainland. Pulau Tinjil is 600 ha, and is mainly dry, although the interior has some seasonally wet patches. There is a very low rise of ground, not more than one or two metres in height, on non-coraline material, which is presumably the core around which the island formed. Pulau Deli is 950 ha, and has a rather wider variety of habitats, with up to 5 ha of open bullrush swamp, inundated to a depth of one metre in the wet season but drying out completely in, very dry years. Some of the adjacent forest is also seasonally flooded. Presumably Deli also has a non-coraline core, but the authors have not seen this. The soils are shallow Lithosols formed on coral rubble. Both islands have a fringing reef, but there are a few sandy beaches along the north coasts. In most places it is almost impossible to traverse the beach at high tide, with the overhanging branches and the waves lapping at the roots of the trees. The south coasts are very exposed. Both islands are uninhabited, except by temporary fisherman's camps, and a forest guard post on Tinjil, and by the staff of the monkey breeding facilities,

### **Vegetation**

Hoogerwerf (1962b) reported the extremely difficult conditions he found when he visited Tinjil

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and Deli. Either the logging of thirty years back still had its impact, or Hoogerwerf was exaggerating, because now the forest on both islands is relatively readily accessible and the terrain is nowhere rugged or impenetrable. A pre-logging account of the vegetation of Tinjil was given by Schnepfer (1934), of which a summary follows.

A pristine beach vegetation commences immediately behind the *ca* 10m broad northern beach, with *Calophyllum inophyllum*, *Terminalia catappa*, *Gnetum gnemon*, Kampak *Hernandia peltata* and Butun *Barringtonia asiatica*. Beach vegetation of the southern beach is dominated by *Pandanus bidur*, whilst in the east the Balotok *Ochrosia oppositifolia* is abundant. Sixty tree species are reported for the interior of which Marbau *Intsia amboinensis* and Kopen *Ficus pubinervis* are the most important. Formerly Sawokecik *Mwiilkara kauki* was an abundant tree, but after extraction this species had become rare.

Although an extensive trail system has been laid out, and logging of thirty years ago is still evident (many large logs are still lying), it is believed that the overall vegetation is still much the same as described above. A tiny bamboo grove is found on the small patch of non-coral soil on the highest part of the island. In the *Pandanus* forest, a small species of Araceae is especially abundant.

Deli has broadly the same vegetation as Tinjil. The beach vegetation is the same, with old typical beach trees such as *Terminalia* on the north side, and extensive *Pandanus* dominated vegetation along the surf exposed southern side. Formerly several coastal villages on Java had leases on the production of coconuts on the island, and would visit several times a year to harvest the nuts (Paulus 1917) - hence the name Klappereiland (= Coconut Island). However, very few coconut palms now remain. Another feature of Deli is the densely vegetated lagoon in the centre of the island.

### Fauna

The main predators on the island, apart from sea-eagles, are Monitor Lizards *Varanus suscitator*; Pythons *Python reticularis* and small rats, probably *Rattus tiomanus*. There are no dogs, but one or two domestic cats are present at the base camps. Fruit Bats *Pteropus* sp. are present in moderate numbers, either resident on the islands or flying to and from the mainland and between the islands. The small Scincid lizards that are abundant on both islands are the east Indonesian species *Sphenomorphus florensis* and *Leiotopisma fuscum* (see Mertens 1957). Turtles (probably Green Turtles *Chelonia mydas*) formerly bred on Tinjil, but these were destroyed by the loggers (see next section).

### History

Logging concessions were let some 30 years ago, but logging was soon abandoned as unprofitable, and the forests remain more or less undisturbed. In 1987, a 20-year concession was granted to the Bogor Agricultural University (IPB) on Pulau Tinjil for the establishment of a free-range monkey breeding programme, under the management for a 4-year term of Dr. Chuck L. Darsono Long-tailed Macaques *Macaca fascicularis* from Sumatra were released on the island. Every monkey was quarantined in order to ensure virus-free stock. The intention is to harvest the off-spring as a sustainable source of export supplies for purposes of medical research. After 1991,

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management was allocated to a consortium formed by the University of Washington and Bogor Agricultural University (IPB). By that time, 478 monkeys in breeding condition had been released, with a sex ratio of 1 male per 10 females. A census in 1992 estimated a total population of *ca.* 2000 animals. There have been no further releases.

Operations commenced on Pulau Deli in 1989, and an agreement was signed on 30 June 1989 with the State Forestry Company Perum Perhutani for a 25 year concession with option to extend. C. V. Primates owns the concession, as a joint operation with Perum Perhutani. A total of 6223 monkeys has now been released, with a sex ratio of 1:4, and the 1995 population is estimated at *ca.* 8000. Thus the density is *ca.* 8.4/ha, compared with only 3.3/ha on Tinjil. The future of the monkey breeding business remains uncertain, owing to problems encountered in trapping the free-ranging monkeys.

### History of ornithological studies

The very first naturalist to visit the islands is believed to have been Captain Cook, who was reported to have collected *Treron curvirostra* from Panaitan Island. However this species does not occur on Panaitan, and it is believed that he visited either Tinjil or Deli (Hoogerwerf 1962b). In February 1932 a visit to Deli was made by Baron Victor von Plessen, instigated by Dr. Dammerman, and five species are mentioned by Stresemann (1934): *Treron cm-virostra*, *Dendrocopos moluccensis*, *Zoothera inerpres*, *Gerygone sulphurea* and *Pachycephala grimla*. In May 1933 or 1934 a botanical survey was made by Schnepper (1934) on Tinjil Island; his report gives an inventory of trees, and also a list of Sundanese names of 18 species of birds found on the island, of which 14 could be traced. Details on the subspecies of *Treron curvirostra*, *Macropygia emiliana* and *Pachycephala grisola* on the islands are found in Hoogerwerf (1962b), who visited them in August 1952 and June 1955. Further details on trips made in 1988 are given in Holmes & van Balen (1990).

### The avifauna

The review of the landbirds that follows is derived from the results of four week-end visits to the islands by both authors, as follows: 22-24 April 1988 (Tinjil), 28-31 May 1988 (Tinjil, with a morning visit to Deli on 30 May), 19-21 November 1988 (Tinjil) and 14-16 April 1995 (Deli). BvB also visited Tinjil on 13-16 July 1989 and Deli on 24-27 December 1995.

**Purple Heron** *Ardea purpurea*. One was present in the open swamp on Deli during April 1995. Only one bird was seen, but it gave the impression of being resident, with possibly a mate attending a nest. Status indeterminate.

**Pacific Reef-egret** *Egretta sacra*. One or two birds seen around the coasts on every visit. Status indeterminate. Dark and white morphs occur in approximately equal numbers. [On 29 May 1988, a party of >20 unidentified white egrets was observed through the forest canopy flying south-west over Tinjil].

**Malayan Night-heron** *Gorsachius melanolophiis*. An assumed winter visitor, one was flushed by DAH deep in the forest on Tinjil on 23 April 1988. The bird was flushed from the dry forest

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floor to a lower storey perch, where it was observed briefly before it flew off deeper into the forest.

**Yellow Bittern** *Ixobrychus sinensis*. One was present in the open swamp on Pulau Deli during December 1995.

**White-bellied Sea-eagle** *Haliaeetus leucogaster*. Each island appears to hold one breeding pair, with single immatures seen on Tinjil in April and May 1988. However, we have not explored the south-west half of Deli, which might possibly hold additional birds.

[**Sparrowhawk** *Accipiter* sp.] A sparrowhawk seen on 19 Nov 1988 had entirely banded underparts, with a rusty yellow wash on the breast, grey brown upperparts, and flight with interspersed glides.

**White-breasted Waterhen** *Amaurornis phoeniciinis*. Present in small numbers in the swampy areas of both islands, wandering into swamp forest and sometimes into drier edge habitats along the beach. On one occasion, in November, a bird was flushed from the dry forest floor on Tinjil; it behaved just as the Malayan Night-heron, perching briefly on a low forest branch, before disappearing deeper into the forest.

**Common Sandpiper** *Actitis hypoleucos*. One on Tinjil, November. Visitor.

**Whimbrel** *Numenius phaeopus*. Single birds observed in April and November, recorded from both islands. Visitor.

**Ruddy Turnstone** *Arenaria interpres*. Parties of 6 and 8 on Tinjil, November. Visitor.

**Beach Thick-knee** *Esacus magnirostris*. Present on both islands. As far as could be determined, Tinjil holds one breeding pair; a nest scrape containing one egg was found on the south coast of Tinjil on 23 April 1988, but it is believed that this was destroyed by high tides in May, at which time the birds were seen on the north coast, where they may have attempted another nest. Deli holds one pair along the north coast, seen in both May 1988 and April 1995, but we did not traverse the south and west coasts of this island, and more birds might be present.

**Thick-billed Green Pigeon** *Treron curvirostra*. Present as a sparse resident in the forest canopy of both islands in small numbers, but difficult to observe. These islands represent the only occurrence in the Java faunal region of this Sumatran species. Sumatra lies 120 km to the north of the islands, however Ujung Kulon at the western tip of Java intervenes (see Fig. 1). Nests were reported on Tinjil in July 1989 (Jarwadi, pers. comm.). The subspecies is *hypothapsina*, the same as occurs on Enggano Island (Hoogerwerf 1962a).

**Pink-necked Green Pigeon** *Treron vernans*: Present as a sparse resident in the forest canopy of both islands in small numbers, but difficult to observe. The subspecies is *griseicapilla*, which is

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that found on West Java and much of Sumatra (Hoogerwerf 1962c).

**Black-naped Fruit-dove** *Ptilinopus melanospila*. This is a common resident on both islands, its calls being one of the characteristic sounds of the forest.

**Pied Imperial Pigeon** *Ducula bicolor*. Very common resident, with probably up to three or four hundred birds present on both islands, often seen flying to and from the mainland and between the islands. On 14 April 1995, a steady stream of pigeons flying from Deli in the direction of Tinjil in the afternoon amounted to a total of 221 birds in the space of one hour; however, there were still substantial numbers feeding in the canopy of Deli after this time.

Occurrence and breeding on the islands appears to be rather erratic, presumably due to the species' nomadic habits (Hoogerwerf 1967). In July 1989, nests were reported on Tinjil (Jarwadi, pers. comm.). Hoogerwerf (1967) found nine nests in August 1952 on Deli in *Barringtonia* formation, not high above the ground, with young of mainly 10-20 days age. No nests were found in June 1955 on Deli, when no birds at all were seen on Tinjil. The two islands, and Bawean Island (Hellebrekers & Hoogerwerf 1967), are the only breeding sites known for Java. Bartels (1938) reported the foraging of these pigeons on *Ficus* spp and especially Gebang Palm *Corypha utan* on the mainland near Binuangeun, the birds returning to Tinjil between 17.00 and 18.00. The absence of Gebang Palm on the island may be due to unfavourable conditions, e.g. the species needs light and young plants die in dark conditions (Docters van Leeuwen 1938).

**Brown Cuckoo-dove** *Macropygia phasianella*. Present in the forest mid-storey on both islands, heard more often than seen. A common resident. The nominate subspecies occurs on the islands (Hoogerwerf 1962b).

**Nicobar Pigeon** *Caloenas nicobarica*. In 1988, this pigeon was found to be common, although there were only two sightings in the few hours that were spent on Deli in that year. On Tinjil, the noisy clapping of wings would signify the disturbance of two to three birds from feeding on the ground at approximately every 200-300 m of traverse in April 1988, although perhaps every 500 m in May and November. It was difficult to make a close approach or to obtain good views, and no vocalization was ever noted. A fresh egg shell was found on Tinjil on 15 July 1989, and immature birds were present on Tinjil during May 1988.

On Deli in April 1995, there was a total of only three observations, each of a single bird. The assumption might be made that the birds cannot tolerate the population of monkeys, especially at the density now occurring on Deli. This conclusion is not positive, because few birds were seen there in 1988, however it would seem unlikely that Deli would have held a lower density of birds than Tinjil. Nevertheless, rather erratic occurrence was also found by Hoogerwerf (1967), who found the species on both islands in August 1952, and on Tinjil in June 1955 when it was absent from Deli.

The population needs farther monitoring to determine whether the presence of monkeys is having a negative impact. It is to be hoped that the population of Nicobar Pigeons will survive the

relatively low density of monkeys on Tinjil, if not on Deli.

**Asian Koel** *Eudynamys scolopacea*. Relatively common on both islands and apparently resident. There are no crows on the islands, and it is assumed that the koels are parasitizing orioles. On May 30 1988, a loud altercation was heard between a koel and an oriole, suggesting such an interaction.

White in White & Bruce (1986) utilizes host species as a basis for the separation at species level of Australian and Asian Koels *E. cyanocephala* and *E. scolopacea*, the former utilizing honeyeaters (mainly *Philemon* sp.) and orioles in Australia. We would observe, however, that Tinjil and Deli are not the only locations where the Asian Koel appears to use the Black-naped Oriole as the primary host species. Koels were observed to be common, in the presence of orioles and the absence of crows, on both Pulau Krakatau (SvB pers. obs.) in August 1990, and Pulau Talaud off North Sulawesi (DAH pers. obs.) in March 1995. In neither case was breeding status determined, but the Koels on Pulau Talaud would appear to be resident; Bishop (1992) heard Koels on Talaud each day in late May (20-22nd) 1986, J. Taylor (*in litt.* 1991) had several records from both Pulau Sangihe and Pulau Talaud during 24-30 Oct 1990, while J. Riley (*in prep*) recorded Koels as common on Talaud during September-October 1995 (likewise on Sangihe). Moreover, the Koel is recorded only as a resident in the Philippines (Dickinson *et al.* 1991).

Elsewhere, mynas have been reported as a host species in Palawan (Gonzales 1983) (the Philippines - this is presumably Hill Myna *Gracula religiosa*), and both orioles *Oriolus oriolus* and mynas *Acridotheres tristis* in India (Ali & Ripley 1969), while Smythies (1953) and Stuart Baker (1927) quote Magpie *Pica pica* as a host in Burma, Stuart Baker (1927) includes this species together with Blue, Magpie *Urocissa erythrorhyncha* and Black-necked Starling *Sturnus nigricollis*, and Vaughan & Jones (1913) mentions the same starling. More recently, Lewthwaite (1995) records the Blue Magpie as host in Hong Kong. Finally there is a record of Indian Black Drongo *Dicrurus assimilis* being used as a host species (Smith 1950). Clearly koels are somewhat opportunistic in selection of host species, and hosts would not appear to be a very reliable criterion in species differentiation.

**[Brown Boobook** *Ninox scutulata*] C.L. Darsono described the voice of a nightbird at Oeli, on unknown date(s), that would fit this species. Possibly this may represent a migrant bird, as the species has been collected on other small off-shore islands (e.g. van Marle & Voous 1988).

**Black-nest Swiftlet** *Aerodromus maximus*. Swiftlets were common on Tinjil in April 1988. Two species were present, probably Edible-nest Swiftlet *A. fuciphagus*, identified by very slightly or not forked tail, dark above with a lighter belly, and 'chriirk' call, and this species, which was more positively identified by its stockier body with broader wings. Very much fewer were present on subsequent visits. Their presence around the forest edge on the beach at first and last light led us to assume that they were roosting in the trees on the island, although it may be that they roost on the wing (D.R. Wells *in litt.*). However, on 30 May 1988, a party of three unidentified swiftlets was encountered in the pre-dawn near-darkness midway between Tinjil and Deli, while on 19 November 1988 one was seen at dawn flying out from the mainland towards Tinjil.

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**Fork-tailed Swift** *Apus pacificus*. Six seen over Tinjil, November 1988; visitor.

**Sacred Kingfisher** *Halcyon sancta*. Visitor during the Austral winter. The first arrivals were noted along the beach on both islands at the end of May 1988.

**Collared Kingfisher** *Halcyon chloris*. A common resident on both islands, encountered both along the beaches and in the forest canopy.

**Brown-capped Woodpecker** *Dendrocopos moluccensis*. Resident on both islands, encountered in forest edge habitats and in the middle and upper storeys.

**Barn Swallow** *Hirundo rustica*. Winter visitor in small numbers, encountered on both islands.

**Pied Triller** *Lalage nigra*. A female was observed by BvB close to the base camp at Tinjil in April 1988, but there were no subsequent records, and it must be assumed that this was a chance dipersant.

**Yellow-vented Bulbul** *Pycnonotus goiavier*. A common resident bird in the middle and upper storey of the forest on both islands. It was rarely seen along the edge habitat of the beach, and the species appears to have adapted fully to living in a forest environment.

**Chestnut-capped Thrush** *Zoothera interpres*. Present on both islands, although only observed well on Tinjil. The silence and secretiveness of this bird ensures that it is rarely observed, and indeed it is likely to be regularly overlooked in forests on the mainland with their much more varied avifauna. In the small island situation, by contrast, there is less distraction from other species, but even here we, have very few actual records. The soft but shama-like song was heard at two or three locations on Tinjil in April 1988, at which time the birds were breeding, with one sighting of a fledgling. During July 1989 they were singing frequently with three or four birds encountered on each transect. At other times, their presence was generally detected only by their very soft thrush calls. Even when heard or accidentally disturbed, it was generally impossible to obtain a decent view:

**Pallas's Warbler** *Locustella certhiota*. One was present and in song in the open swamp on Deli in May 1995, and also observed in December 1995.

[**Oriental Reed-warbler** *Acrocephalus orientalis*}. Present in the open swamp on Deli in May and December 1995, believed to be this migrant species. The birds were greyish-brown, rather than rufous-brown, with long whitish eyebrows, and the song (in May) was relatively varied, with frequent high-pitched sharp 'chi' notes.

**Flyeater** *Gerygone sulphurea*. A common resident on both islands, encountered in the canopy along the beach and in the interior.

**Mangrove Whistler** *Pachycephala grisola*. A common and vocal resident in the middle storey of both islands. Fledglings were observed during May.

**Brown-throated Sunbird** *Anthreptes malacensis*. A common resident on both islands throughout the forest. It is interesting to note that van der Meer Mohr (1927) reported the absence of this sunbird on Jarak Island (Sumatra) which he attributed to the absence of coconut trees. This raises the question whether the sunbirds on Tinjil and Deli are a relict of earlier times when there were coconut plantations on the islands. However, it seems more likely that the dependence of this sunbird on coconuts is less strict than thought, allowing for the impressive niche expansion shown by this species into the forest.

**Olive-backed Sunbird** *Nectarinia jugularis*. Resident on both islands, mostly encountered in vegetation close to the beach.

**Black-naped Oriole** *Oriolus chinensis*. Common in the forest on both islands, one of the most frequently heard calls. Fledglings were seen on Tinjil in July 1989.

**White-breasted Wood-swallow** *Artamus leucorhynchus*. Resident in the canopy on both islands.

In addition, a number of Sundanese bird names were recorded from the local fishermen employed at the primate centre. These, and most names given in Schnepfer (1934), could be confirmed with birds currently present on the islands, but there were two names which might represent species that were formerly present: *yulun* (a drongo), and *kadanca* (a large greyish pigeon probably *Ducula aenea*).

## SEABIRDS

Various seabirds accompanied the crossings to and from the islands, but do not form part of this, review; they include the following (with dates):

Streaked Shearwater *Calonectris leucomelas* (few, 30 May 1988)

Wedge-tailed Shearwater *Puffinis pacificiis*. (ca. 50 on 30 May 1988)

Brown Booby *Sula leucogaster* (May and November 1988 and April 1995)

Christmas Frigatebird *Fregata andrewsi* (April and November 1988, April 1995)

Lesser Frigatebird *Fregata ariel* (April and May 1988)

Pomarine Skua *Stercorarius pomarinus* (One, probable, 21 November 1988, see van Balen 1991)

Whiskered Tern *Chlidomas hybridus* (April 1988)

White-winged Tern *Chlidomas leucopterus* (April 1988)

Little Tern *Sterna alhifrons* (May and November 1988)

Common Tern *Sterna himmudo* (every visit, very common)

Great Crested Tern *Sterna bergii* (every visit, common)



Lesser Crested Tern *Sterna bengalensis* (April 1995)  
 Bridled Tern *Sterna anaethelus* (April and May 1988)

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