

THE BIRDS OF SALAYAR AND THE FLORES SEA ISLANDS

By

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Summary

The islands of Salayar, Bonerate and Kalaotoa were visited for a few hours and the island of Tanahjampea for two days between 23 and 26 September 1993. Although only limited time was available for bird observations, a number of species new for each island were observed and the conservation status of the forest birds was assessed. These islands, according to current taxonomic opinion, host one endemic species, White-tipped Monarch *Monarcha everetti*, in addition to many endemic subspecies and populations of some widespread but threatened species.

Introduction

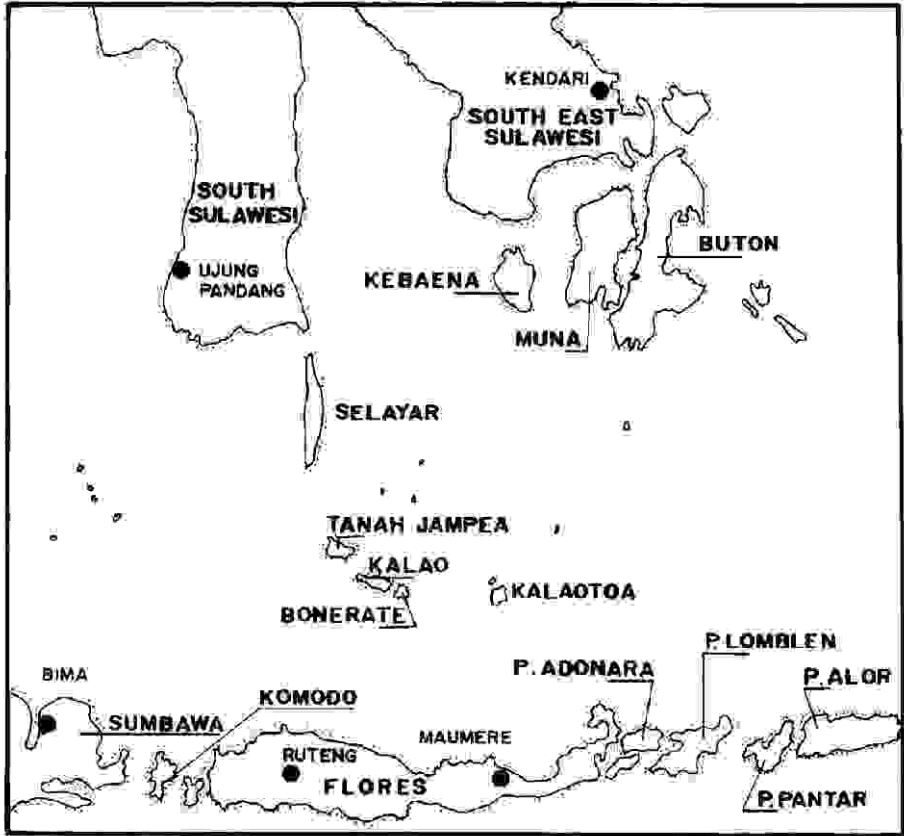
Between Flores and the south-west of Sulawesi lie a series of little-known islands (Map 1). Salayar is a relatively large island with an impoverished Sulawesi avifauna, lying 20 km just off the main island of Sulawesi. Tanahjampea, Kalao, Bonerate, Kalaotoa and adjacent smaller islands are small coralline islands located midway between Sulawesi and Flores. These islands have avifaunal components from both Sulawesi and the Lesser Sundas, in addition to several Wallacean supertramp species. One species, the White-tipped Monarch *Monarcha everetti*, is endemic to Tanahjampea. Supertramps are species virtually confined to small species-poor islands, whilst tramp species occur on some of these islands but also on more species-rich islands (Diamond 1974).

Few previous ornithological studies have been made on these islands. Collections by Weber and Everett are detailed in Hartert (1896, 1897) and all collections from last century are summarised in Meyer and Wigglesworth (1898). The only subsequent study of birds on these islands was by von Plessen in 1927 (Meise 1929, 1930 and von Plessen 1929).

The islands were visited between 23 and 26 September 1993 from a commercial ferry that operates between Flores and Sulawesi and from smaller inter-island boats. This permitted two days on Tanahjampea but only a few hours on the other islands.

Nomenclature and sequence follow Andrew (1992). Where relevant, total numbers of each species seen are quoted, as a measure of abundance when correlated with time spent on the island.

FIGURE 1. LOCATION OF FLORES ISLANDS



SALAYAR (6°05' S, 120°30' E)

This large (670 km²) hilly, coralline island lies 20 km south of Sulawesi and was probably joined to it during the Pleistocene (White and Brace 1986). It has been heavily populated since the time of the first collectors (Hartert 1896) and a number of forest species may have been rare or extinct even then.

White and Brace (1986) list just 42 species for Salayar, of which 12 are likely to be non-breeding migrants. The total includes eight resident Sulawesi species: Sulawesi Serpent-eagle *Spilomis rufipectus*. Grey-cheeked Green-pigeon *Treron griseicauda*. Zebra Dove *Geopelia striata*. Grey-rumped Tree-swift *Hemiprogne longipennis*. Hair-crested Drongo *Dicrurus hottentottus*, Mangrove Blue Flycatcher *Cyornis rufigastra*, Citrine Flycatcher *Culicicapa helianthea* and Crimson Myzomela *Myzomela dibapha*, while two others are represented by Sulawesi subspecies (Pied Bush-chat *Saxicola caprata* and Flyeater *Gerygone sulphured*), raising the total to ten. The avifauna also includes one or two Lesser Sunda species and a number of tramp species: Orange-footed Scrubfowl *Megapodius reinwardti*, Dusky Cuckoo-dove *Macropygia magna*. Pink-headed Imperial Pigeon *Ducula rosacea*. Large-tailed Nightjar *Caprimulgus macrurus* and Red-chested Flowerpecker *Dicaeum mauei*. The other species occurring on Salayar are widespread in both Sulawesi and the Lesser Sundas. Two species recorded for the first time in 1993 were probably derived from Sulawesi (Little Swift *Apus affinis* and Slender-billed Crow *Corvus enca*).

On 26 September, seven hours (10.30-17.30) were spent looking for birds inland of the capital, Benteng. The land here is dominated by extensive coastal coconut plantations and cultivated hills. No natural forest was seen. Forest birds were observed in scattered large trees found in the hills and in a small area of degraded mangrove. Seabirds were observed from a boat whilst inshore for three hours along the south-west coast of Salayar. No forest was seen on any part of the island visible during this boat journey.

Two species previously recorded from Salayar were omitted by White and Bruce (1986): Cattle Egret *Bubulucus ibis* and Lemon-bellied White-eye *Zosterops chloris* (Hartert 1896; Meyer and Wiglesworth 1898; Meise 1929). Of the 39 species recorded on 26 September, 17 appear to be new island records:

Osprey *Pandion haliaetus*. A pair was seen close to Benteng.

Black-winged Kite *Elanus caeruleus*. A single over grassland inland of Benteng.

Spotted Kestrel *Faico moluccensis*. One bird hawking over a smaB estuary near Benteng at dusk.

Whimbrel *Numenius phaeopus*. Two birds on mudflats close to Benteng. **Common Tern** *Sterna hirundo*. About 25 birds offshore. **Great Crested Tern** *Sterna bergii*. About 130 birds, including a flock of 120, offshore. **Pink-necked Green-pigeon** *Treron vernans*. A flock of five birds in the edge of mangroves is only the second Wallacean record away from large islands (White and Brace 1986).

Spotted Dove *Streptopelia chinensis*. Only one was seen: this may have been an escaped cage-bird, which White & Brace (1986) postulated to be the origin of the Zebra Dove *Geopelia*

striata on Salayar. Both species are common cage-birds on the island and just one Zebra Dove was heard that may have been a free-living bird.

Green-winged Pigeon *Chalcophaps indica*. One bird was heard and seen in a coconut plantation with some undergrowth inland of Benteng.

Gould's Bronze Cuckoo *Chrysococcyx russalus*. One juvenile being attended by a Flyeater *Gerygone sulphured*. Although the bird was not seen well enough to identify it on plumage, this is the only member of the genus recorded breeding on Sulawesi and Flores (White & Bruce 1986).

Glossy Swiftlet *Collocalia esculenta*. This species was moderately common with ca. 34 seen.

Little Swift *Apus affinis*. Five birds seen, of which three were at least 500 m offshore. The range of this species is expanding in Wallacea (White and Bruce 1986) and the Philippines (Dickinson *et al.* 1991, Evans *et al.* 1994).

Sacred Kingfisher *Halcyon sancta*. Five birds were seen along the coast.

Rainbow Bee-eater *Merops ornatus*. About 19 birds were seen in the hills inland of Benteng.

Pacific Swallow *Hirundo tahitica*. A total of 28 birds was seen, mostly around the Benteng sea front.

Black-naped Oriole *Oriolus chinensis*. Four birds were seen.

Slender-billed Crow *Corvus enca*. A pair was seen in scrubby grassland close to Benteng.

White and Bruce (1986) recognise two endemic subspecies from Salayar: Mangrove Blue Flycatcher *Cyornis rufigastra peromissa* and Common Golden Whistler *Pachycephala pectoralis teysmanni*. A single Mangrove Blue Flycatcher was seen in degraded mangrove, and the Common Golden Whistler was common in scrub and secondary habitats with a total of 15 recorded. The subspecies of the Dusky Cuckoo-dove *Macropygia magna macassariensis* is shared with the neighbouring island of Tana Keke. Only one bird was seen, in secondary forest edge. Two subspecies: Red-chested Flowerpecker *Dicaeum maugei splendidum* (two seen) and Crimson Myzomela *Myzomela dibapha eva* (three seen) are shared with Tanahjampea.

TANAHJAMPEA (=Jampea) (7°05'S, 120°42'E)

Tanahjampea is the largest of the mid-Flores Sea islands, with an area of ca. 150 km² and a maximum altitude of 521 m; it consists of an uplifted coralline island with evergreen forest, and it has the richest avifauna (see White & Bruce 1986).

Two hours were spent sailing along the south coast on 23 September and two full days were spent on the island. On 24 September, 13 hours were spent in the field, of which ten were in forest along the road from the capital town Labuhanmarege to the microwave (transmitter) station at the highest point on the island. On 25 September, nine hours were spent in coastal, cultivated and forest-edge habitats. The coast is highly populated with many villages along a circling coastal road, reportedly totalling ca. 100,000 inhabitants. Most coastal flat land and low hills have been cleared for coconuts, rice paddies and dry cultivation. Small areas of degraded mangroves persist in places but the largest area of mangroves seen had been largely cleared for fish-ponds. Evergreen forest remains on about half of the island, extending even to the coast on rocky or steep hills. All of the forest seen had been extensively logged, with some small areas retaining a closed-

canopy. Most areas had large trees of canopy height 25-30 m (including many *Ficus* species) interspersed with creeper-infested thickets and secondary growth to 20 m. Forest on small offshore islands here, and elsewhere in the archipelago, was much less extensive and much drier (often about 80% deciduous).

White and Bruce (1986) list 51 species for Tanahjampea. The author failed to record ten of these, namely five Palearctic migrants: (Japanese Sparrow-hawk *Accipiter gularis*. Oriental Cuckoo *Cuculus saturatus*. Brown Bobook *Ninox scutulata*, Pechora Pipit *Anthus gustavi* and Arctic Warbler *Phylloscopus borealis*), and five species whose status is unclear: Rufous Night-heron *Nycticorax caledonicus*. Black-winged Kite *Elanus caeruleus* (both possibly non-breeding visitors). Pied Imperial Pigeon *Ducula bicolor* (likely to be nomadic but possibly exterminated by clearance of coastal forest). Rainbow Lorikeet *Trichoglossus haematodus* (see below) and **Barn Owl** *Tyto alba* (reported by locals and presumably still present).

The Rainbow Lorikeet is represented by an endemic subspecies here, *T. h. djampeans*, and on Kalaotoa by *T. h. stresemanni*. Both subspecies were reported to be "very common" by von Plessen (Meise 1929). This species is trapped quite commonly on Sumbawa and Flores, and a bird said to be from Kalaotoa was seen at Ujung Pandang (Sulawesi). Coomans de Ruiter and Maurenbrecher (1948) also found feral Tanahjampea birds at Ujung Pandang. The Rainbow Lorikeet is likely to be suffering the same fate as the Yellow-crested Cockatoo *Cacatua sulphurea* which was reported by local people to have been trapped almost to extinction on Tanahjampea. However, it was notable that Great-billed Parrots *Tanygnathus megalorhynchos* were found in healthy numbers on Tanahjampea.

White and Bruce (1986) recognised three subspecies of birds that are endemic to Tanahjampea: Rainbow Lorikeet *Trichoglossus haematodus djampeanus*. Common Cicadabird *Coracina tenuirostris emancipata* and Mangrove Blue Flycatcher *Cyornis rufigastra djampeana*. Ten subspecies are shared with other Flores Sea islands: Brown Goshawk *Accipiter fasciatus stresemanni* (six other islands), Dusky Cuckoo-dove *Macropygia magna longa* (Kalaotoa), Glossy Swiftlet *Collocalia esculenta minuta* (Kalao), Elegant Pitta *Pitta elegans virginalis* (Kalao and Kalaotoa), Rufous Fantail *Rhipidura rufifrons celebensis* (Kalao), Common Golden Whistler *Pachycephala pectoralis everetti* (Kalaotoa and Madu), Red-chested Flowerpecker *Dicaeum maugei splendidum* (Salayar), Olive-backed Sunbird *Nectarinia jugularis teysmanni* (Kalao, Bonerate, Kalaotoa and Madu), Crimson Myzomela *Myzomela dibapha eva* (Salayar) and Black-naped Oriole *Oriolus chinensis boneratensis* (five other islands). The Olive-backed Sunbird *Nectarinia jugularis teysmanni* is a distinctive all-black subspecies similar to populations on the Moluccas.

The avifauna of Tanahjampea contains just three of the Sulawesi species that are found on Salayar (Grey-cheeked Green-pigeon *Treron griseicauda*. Mangrove Blue Flycatcher *Cyornis rufigastra* and Crimson Myzomela *Myzomela dibapha*) but thirteen species that probably derive from the Lesser Sundas (Crested Baza *Aviceda subcristata*. Brown Goshawk *Accipiter fasciatus*. Orange-footed Scubfowl *Megapodius reinwardt*. Dusky Cuckoo-dove *Macropygia magna*, Rainbow Lorikeet *Trichoglossus haematodus*. Edible-nest Swiftlet *Aerodramus fuciphagus*, Barn Owl *Tyto alba*. Large-tailed Nightjar *Caprimulgus macrurus*. Elegant Pitta *Pitta elegans*. Common

Cicadabird *Coracina tenuirostris*. Broad-billed Monarch *Myiagra ruficollis*. Rufous Fantail *Rhipidura rufifrons* and Red-chested Flowerpecker *Dicaeum maugei*). Many of the above species are considered to be 'tramp' species whilst three other species are primarily supertramps (Blue-tailed Imperial Pigeon *Ducula concinna*. Pink-headed Imperial Pigeon *Ducula rosacea* and Island Monarch *Monarcha cinerascens*). The zoogeographic boundary between the Sulawesi and Lesser Sunda avifaunas appears to run between Salayar and the rest of the Flores Sea islands.

The 70 species recorded on 24 and 25 September are listed below, with the 22 new island records asterisked, and total numbers of each species indicated:

- Lesser Frigatebird** *Fregata ariel** (2)
Little Pied Cormorant *Phalacrocorax melanoleucus* (1)
Great-billed Heron *Ardea sumatrana* (4)
White-faced Heron *Egretta novaehollandiae** (12)
Cattle Egret *Bubulcus ibis* * (2)
Javan Pond-heron *Ardeola speciosa** (54)
Striated Heron *Butorides striatus** (1)
Osprey *Pandion haliaetus* (7)
Pacific Baza *Aviceda subcristata* (6)
Brahminy Kite *Haliastur indus* (16)
White-bellied Sea-eagle *Haliaeetus leucogaster* (6)
Brown Goshawk *Accipiter fasciatus* (3)
Spotted Kestrel *Falco moluccensis* (10)
Peregrine Falcon *Falco peregrinus ernesti** (1)
Sunda Teal *Anas gibberifrons* (140)
Orange-footed Scubfowl *Megapodius reinwardt* (20)
Buff-banded Rail *Gallirallus philippensis** (7)
White-breasted Waterhen *Amaurornis phoenicurus* (2)
White-browed Crake *Poliolimnas cinerea* (1)
Pacific Golden Plover *Pluvialis fulva* * (9)
Whimbrel *Numenius phaeopus* * (5)
Common Redshank *Tringa totanus* * (12)
Wood Sandpiper *Tringa glareola* * (7)
Common Sandpiper *Actitis hypoleucos* * (16)
 [snipe species probably **Swinhoe's Snipe** *Gallinago megala* *]
Australian Pratincole *Stiltia isabella* * (10)
Common Tern *Sterna hirundo* * (20)
Black-naped Tern *Sterna sumatrana* * (12)
Bridled Tern *Sterna anaethetus* * (300)
Sooty Tern *Sterna fuscata* (50)
Little Tern *Sterna albifrons* (1)
Great Crested Tern *Sterna bergii* (18)
Grey-checked Green-pigeon *Treron griseicauda* (13)
Black-naped Fruit-dove *Ptilinopus melanospila* (43 seen, 88 heard)
Blue-tailed Imperial Pigeon *Ducula concinna* (36 seen, 108 heard)
Pink-headed Imperial Pigeon *Ducula rosacea* (29 seen)

- Dusky Cuckoo-dove** *Macropygia magna* (11 seen, 16 heard)
Spotted Dove *Streptopelia chinensis* * (186)
Green-winged Pigeon *Chalcophaps indica* (14)
Yellow-crested Cockatoo *Cacatua sulphurea* (2)
Great-billed Parrot *Tanygnathus megalorhynchos* (41)
Lesser Coucal *Centropus bengalensis* (4)
Large-tailed Nightjar *Caprimulgus macrurus* (8)
Edible-nest Swiftlet *Aerodramus fuciphagus* * (11)
Glossy Swiftlet *Collocalia esculenta* (245)
Common Kingfisher *Alcedo atthis* (8)
Sacred Kingfisher *Halcyon sancta* (110)
Collared Kingfisher *Halcyon chloris* (64)
Rainbow Bee-eater *Merops ornatus* (39)
Common Dollarbird *Eurystomus orientalis* (14)
Elegant Pitta *Pitta elegans* (2 heard)
Barn Swallow *Hirundo rustica* * (4)
Pacific Swallow *Hirundo tahitica* * (40)
Yellow Wagtail *Motacillaflava* * (23)
Common Cicadabird *Coracina tenuirostris* (7)
White-shouldered Triller *Lalage sueurii* (48)
Mangrove Blue Flycatcher *Cyomis rufigastra* (25)
Island Monarch *Monrcha cinerascens* (21)
White-tipped Monarch *Monarcha everetti* (43)
Broad-billed Monarch *Myiagra ruficollis* (29)
Rufous Fantail *Rhipidura rufifrons* (79)
Common Golden Whistler *Pachycephala pectoralis* (21)
Red-chested Flowerpecker *Dicaeum maugei* (10)
Olive-backed Sunbird *Nectarinia jugularis* (167)
Lemon-bellied White-eye *Zosterops chloris* (625)
Crimson Myzomela *Myzomela dihaptha* (22)
Black-faced Munia *Lonchura molucca* (800)
Short-tailed Starling *Aplonis minor* (12)
Black-naped Oriole *Oriolus chinensis* (52)
White-breasted Woodswallow *Artamus leucorhynchus* (48)

Not surprisingly, many of these new island records are of seabird and waterbird species. Several of the waterbirds may be breeding, perhaps having colonised the increased area of man-made wetland habitats that have been developed since the time of the early collectors. There are few previous records of Common Tern *Sterna hirundo* from Wallacea (White and Bruce 1986, Kukila 1992, Bishop 1993) but it is likely that it has been overlooked: birds were also seen off Salayar and on South Sulawesi. The only previous Wallacean record of Edible-nest Swiftlet *Aerodramus fuciphagus* outside the main Lesser Sunda islands is of nesting birds on Batu, a small islet near Tanahjampea (Hartert 1896). The birds seen appeared indistinguishable from Edible-nest Swiftlets seen on Flores but field identification of this subfamily is very difficult.

As well as the endemic White-tipped Monarch *Monarcha everetti*, Tanahjampea supports

populations of the 'Endangered' Yellow-crested Cuckoo *Cacatua sulphured* and the 'Near-threatened' Great-billed Heron *Ardea sumatrana* (Collar *et al.* 1994). One pair of *C. sulphured* was seen investigating a potential nest-hole on the edge of forest but local people said that the species had been trapped almost to extinction. The Tanahjampea populations have small bills and have previously been treated as a separate subspecies *C. 5. djampeana* (Hartert 1897). One pair and two singles of *A. sumatrana* were seen, appearing to be tolerant of human disturbance.

There were large populations of both Blue-tailed Imperial Pigeon *Ducula concinna* and the Pink-headed Imperial Pigeon *D. rosacea*; both are small-island tramp species apparently at risk throughout their ranges from hunting. Although local people reported hunting these species, a shortage of guns and a relatively high standard of living apparently limits the intensity of hunting. No distinctive calls were heard from Pink-headed Imperial Pigeons, which appeared to be slightly scarcer and more of a coastal species than Blue-tailed Imperial Pigeon.

The Blue-tailed Imperial Pigeon appeared identical to birds on Kalaotoa, and showed blue iridescence on the tail (when viewed from some angles), the head appeared as rounded as on Pink-headed Imperial Pigeon and Green Imperial Pigeon *D. aenea*, none showed a black loreal line, the upperparts had largely green iridescence on the wing coverts and bronze on the remiges and mantle; they had a most distinctive loud crow-like "kraa" call as well as more typical imperial pigeon *Ducula* calls. This is a large species, appearing black and very pale grey at a distance, with a distinctive jizz in flight (long-winged, pinched-in wing bases and a rocking *Columba livia* flight action) and pale orange irides and pink-red feet. Wallace described the call of this species as "a remarkably loud, hoarse, booming note, like the roar of a wild beast" (Meyer and Wigglesworth 1898).

The White-tipped Monarch *Monarcha everetti* is considered an allospecies with several pied Wallacean congeners. It is similar to Flores Monarch *Monarcha sacerdotum* from which it differs in its plumage pattern, the lack of any grey in its plumage and its habit of frequently cocking a half-fanned tail. This habit is reminiscent of fantail *Rhipidura* species and unlike any monarch previously seen by the observer. The juvenile plumage is virtually identical to the juvenile Flores Monarch (Butchart *et al.* 1993) except for the tail pattern and a deeper, more extensive orange wash on the underparts. The species has white on the inner edges of the inner remiges, which Ripley (1959) described as a "poorly concealed white wing patch which must be extremely noticeable in flight"; this white was not however seen. This species was quite common in forest and less common in scrub and mangroves with scattered big trees. It was recorded most often in mixed-species flocks, often two birds but rarely up to four together. It was very vocal, both scolding the observer with harsh notes, and a presumed territorial call - a slightly tremulous plaintive whistle. It, and most of the other forest species, are at risk from any large-scale increase in logging on the island. As well as requiring timber for buildings, all of the Flores Sea islands have boat-building industries which are consuming relatively large volumes of timber. Whilst not under imminent threat, the White-tipped Monarch should perhaps be included in the **Red Data Book** with a status of Vulnerable.

KALAOA (7°18'S, 120°58'E)

Although only seen from the sea, this island appeared to be largely forested. This is presumably logged forest, as on Tanahjampea, but appeared to be more deciduous than on that island. Von Plessen (1929) reported that the island was then so arid that there were very few birds. Those species known from Kalao but from no other Flores Sea islands are: Beach Thick-knee *Esacus magnirostris* and Grey Wagtail *Motacilla cinerea*. White and Bruce (1986) recognise two endemic subspecies: Mangrove Blue Flycatcher *Cyornis rufigastra kalaoensis* and Common Golden Whistler *Pachycephala pectoralis kalaoensis*. They also omit three species recorded by Hartert (1896):

Oriental Cuckoo *Cuculus saturatus* White-shouldered Triller *Lalage sueurii* Black-naped Oriole *Oriolus chinensis*

The following seven species new for Kalao were seen offshore on 23 September:

Lesser Frigatebird *Fregata oriel* (3)

Red-footed Booby *Sula sula* (2)

Brown Booby *Sula leucogaster* (1)

Whimbrel *Numenius phaeopus* (12)

Bridled Tern *Sterna anaethetus* (85)

Great Crested Tern *Sterna bergii* (2)

[**Arctic Jaeger** *Stercorarius parasiticus*] (4 birds, identified by structure, based on UK Experience)

BONERATE (7°22'S, 121°08' E)

This 55 km² island is the administrative capital for the islands south-east of Tanahjampea and has very little remaining forest habitat. White and Bruce (1986) list only 17 species for the island, including few forest species, suggesting that it was extensively deforested by the 1890s. No forest was seen in 1993 from sea or land: the whole island appeared to be covered with cultivation, secondary growth and coconut plantations. It was visited for just half an hour on 23 September when 14 species were recorded, including the following eight new for the island:

Javan Pond-heron *Ardeola speciosa* (5)

Common Sandpiper *Actitis hypoleucos* (8)

Bridled Tern *Sterna anaethetus* (1)

Great Crested Tern *Sterna bergii* (1)

Glossy Swiftlet *Collocalia esculenta* (5)

Collared Kingfisher *Halcyon chloris* (1)

Rainbow Bee-eater *Merops ornatus* (1)

Pacific Swallow *Hirundo tahitica* (2)

KALAO TOA (7° 22' S, 121° 47' E)

This island, with an area of 80 km² and a maximum altitude of 342 m, is the most easterly of the Flores Sea islands. It is an uplifted coralline limestone island with typically very little surface water. White and Bruce (1986) list 41 species (plus Black-faced Cuckoo-shrike *Coracina novaehollandiae* known only from Madu 7°30'S, 121°45'E), including four endemic subspecies:

Rainbow Lorikeet *Trichoglossus haematodus stresemanni*, Common Cicadabird *Coracina tenuirostris kalaotuae*. Rufous-sided Flyeater *Gerygone dorsalis senex* (shared with Madu) and Rufous Fantail *Rhipidura rufifrons mimosae*, in addition to the subspecies shared with other Flores Sea islands and listed under Tanahjampea.

Three and a half hours (14.30-18.00) were spent ashore on 23 September, mostly in coconuts and secondary scrub inland of the town of Latodo. Seabirds were seen during six hours of sailing south of the island. The island was much rockier than Tanahjampea, with few flat coastal areas suitable for cultivation. Nevertheless, much of the coastal land had been converted to coconut plantations, and between this and the forested centre of the island lay a variably wide belt of cultivation with extensive areas of secondary scrub. No paths were found into the forest which, although broken-canopy, appeared to have been logged less than that on Tanahjampea.

Of the 35 species recorded, the following nine were new for the island:

Lesser Frigatebird *Fregata oriel*. Five birds seen offshore.

Red-footed Booby *Sula sula*. The total of 234 birds offshore suggests that the species is breeding on islets to the south of Kalaotoa. Most were white phase birds, a few of the white-tailed **phase**.

Brown Booby *Sula leucogaster*. Two adults seen offshore with the previous species. Bridled Tern *Sterna anaethetus*. Probably also breeding nearby. 111 seen.

Great Crested Tern *Sterna bergii*. Five birds seen offshore.

[**Arctic Jaeger** *Stercorarius parasiticus*]. (One seen offshore, identified by structure only)

Spotted Dove *Streptopelia chinensis*. Three were seen: this species is far less abundant than on Tanahjampea, perhaps to the benefit of the Dusky Cuckoo-dove *Macropygia magna*, of which 12 were seen.

Green-winged Pigeon *Chalcophaps indica*. Three birds were seen in coconuts and secondary Forest.

Gould's Bronze Cuckoo *Chrysococcyx russatus*. One calling adult seen. Kalaotoa is the only island in the range of the Rufous-sided Gerygone *Gerygone dorsalis* with no previous records of a resident bronze-cuckoo *Chrysococcyx* species. Gould's Bronze-cuckoo *Chrysococcyx russatus* is also known from adjacent Madu and the Kalaotoa bird was heard and seen well enough to allow confident identification.

The Rufous-sided Gerygone *Gerygone dorsalis* is a little-known bird with a range restricted to small islands between Kalaotoa and Tanimbar and Kai Kecil. Nine birds were seen and it appeared to be quite common in scrub, including long grass and undergrowth of coconuts and secondary forest. Of the other endemic subspecies, just two Rainbow Lorikeets *Trichoglossus haematodus* were heard, in coconuts close to a village (see discussion under Tanahjampea), no

Common

Cicadabirds *Coracina tenuirostris* were seen, and Rufous Fantails *Rhipidura rufifrons* were quite common in all habitats with 11 seen. Von Plessen found *C. tenuirostris* to be "common", and collected four specimens (Meise 1929).

One pair of Yellow-crested Cockatoos *Cacatua sulphurea* (Endangered) was seen in forest edge. Local people reported trapping the species but said that it was not rare on the island. The Blue-tailed Imperial Pigeon *Ducula concinna* was common in all habitats having some large trees (15 seen and 9 heard). This species was reported to be hunted but few guns are available. No Pink-headed Imperial Pigeons *D. rosacea* were seen.

Taxonomic notes

There are few field data available and few recent reviews of most of the taxa endemic to these islands. Although no studies have been made of museum specimens, the following notes might indicate the likely direction of future taxonomic revisions.

Grey-checked Green-pigeon *Treron griseicauda* Although White and Bruce (1986) treat the Flores Sea island populations as consub-specific with Sulawesi birds, they note the clinal differences which had been designated as *pallidior* on Tanahjampea and Kalao (Hartert 1896) and *ada* from Kalaotoa and Madu (Meise 1930). The plumage of birds seen on Tanahjampea appeared to be closer to Flores Green-pigeon *T. floris* than the *griseicauda* seen subsequently on Salayar (none was seen on any other Flores Sea islands). None on Tanahjampea had a chestnut mantle, none had a marked pale green eyering and few had dull orange undertail coverts (the undertail is bright orange-rufous in male *griseicauda* but green and white in *m. floris*). Both species occur on small islands but, with the predominant Lesser Sunda origin of the Flores Sea islands avifauna, *floris* would be more likely to occur on these islands than *griseicauda*.

Elegant Pitta *Pitta elegans*

The disyllabic call on Kalaotoa sounded identical to that on Sumbawa and Flores whilst the calls on Tanahjampea, although heard only distantly, sounded trisyllabic.

Mangrove Blue Flycatcher *Cyornis rufigastra* The conservative taxonomic treatment is to include the three Flores Sea island subspecies and that on Sulawesi (*C. r. omissa*) with Sundaic and Philippine subspecies. White and Bruce (1986) suggest that *omissa* should possibly be considered specifically distinct. Meyer and Wigglesworth (1898) split *C. djampeana* and *C. kalaensis* as full species. Stresemann (1940) combined *djampeana* and *kalaensis* as a species separate from *omissa* (including *peromissa*). As well as the marked plumage differences described in White and Bruce (1986), there are habitat differences between these subspecies, *rufigastra* (Sundaland) is a mangrove and coastal forest species, the Philippine *philippinensis* and *mindorensis* inhabit lowland forest (Dickinson *et al.* 1991), whilst *omissa* (Sulawesi) inhabits open forest most often at 800-1,400 m (White and Bruce 1986), or tall dense secondary and hill

forest (K.D. Bishop pers. comm.). *peromissa* was seen just once, in degraded mangrove, whilst *djampeana* was most common in closed-canopy forest, much less common in open forest habitats and not seen in degraded mangroves, *djampeana* differed notably from Philippine *philippinensis* and *mindorensis* in being confiding, often openly scolding the observer with sharp, almost woodpecker-like calls, and in frequently cocking its tail.

White-tipped Monarch *Manarcha everetti*

As noted above, the plumage is similar to that of Flores Monarch *M. sacerdotum* but the whistling call is distinct and its habit of cocking a half-fanned tail is unusual.

Conclusions

The Flores Sea islands support 22 endemic subspecies and at least one species of endemic bird. This centre of endemism has been largely ignored by analyses concentrating on full species. With important populations of seabirds, pigeons and parrots as well, these islands deserve more attention from ornithologists and conservationists. There are no protected forests on these islands and at least two of the largest islands (Salayar and Bonerate) have already been almost totally cleared.

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SOME BIRD RECORDS FROM OBI, MALUKU