

A new species of White-eye *Zosterops* and notes on other birds from Vanikoro, Solomon Islands

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A new species of white-eye, the Vanikoro White-eye *Zosterops gibbsi*, is described from the island of Vanikoro (= Vanikolo) in the Santa Cruz Islands (= Temotu Province) within the Solomon Islands. It differs from the geographically closest white-eye, the Santa Cruz White-eye *Zosterops sanctaerucis*, by a number of features including a much longer bill, and different leg- and eye-ring colour. This is the second bird species endemic to Vanikoro; the neighbouring Nendo Island supports three endemic species. Although the conservation status of this species appears to be secure, the Santa Cruz Islands are very poorly known. Despite supporting several globally threatened species, the Islands at present are not protected by any conservation activity.

Keywords: biogeography, endemic bird, Santa Cruz Islands, Vanikolo.

Despite occurring on nearly all large South Pacific Islands, the genus *Zosterops* was until recently unknown from the island of Vanikoro in the Santa Cruz Archipelago of the Solomon Islands. It is surprising that the Whitney South Seas Expeditions (WSSE) missed this species as they proved to have been very thorough in surveying other Melanesian islands. The WSSE spent two periods collecting on Vanikoro, in 19–25 September 1925 and 15–21 February 1927 (Beck 1925–1928). Their unpublished journals suggest that they covered the island thoroughly, with Correia (1927–1929) noting 'I went over the highest mountain in search of rare birds, but very few were seen about the ridge', although 'the weather was very bad every day'. In 1994, David Gibbs discovered a *Zosterops* white-eye on a brief visit to Lavaka Village on Vanikoro. He reported two observations of a *Zosterops* sp. and described and illustrated the differences between it and the Santa Cruz White-eye *Zosterops sanctaerucis* (Gibbs 1996), but in the absence of a specimen was unable formally to name it.

In 1997, I visited Vanikoro in 2–20 November. No white-eyes were found around my first base, Buma village, but at least five birds were found on

7 November, the day after moving to my next base, Lavaka village. I studied these birds on 8–10 November, finding an active nest, and took two specimens each on 11 and 12 November. I continued to observe a total of at least 17 white-eyes around Lavaka until 19 November and spent 2 days exploring the highest mountain to about 800 m altitude, close to the summit where white-eyes were abundant.

WHITE-EYE *ZOSTEROPS* SPECIES

White-eyes of the genus *Zosterops* have radiated widely, especially in the island archipelagos of Wallacea and the Pacific. The Solomon Islands alone have 14 taxa, currently classified as nine species (Sibley & Monroe 1990, 1993, Mayr & Diamond 2001). Most islands across Wallacea, Micronesia and Melanesia (to Fiji) have one or more species of *Zosterops*; the largest Pacific islands lacking a *Zosterops* are Woodlark (874 km²), Mussau (= St Matthias; 400 km²) and Karkar (267 km²) in Papua New Guinea, whereas the smallest island with an endemic *Zosterops* taxon is Gizo (35 km²) in the Solomon Islands. The absence of a *Zosterops* on the smaller Santa Cruz Islands (notably Utupua; 69 km²) and the neighbouring Torres Islands of Vanuatu (the largest Hiu, is 51 km²) is likely to be caused by a combination of their relatively small size and geographic isolation. The presence of a *Zosterops* on

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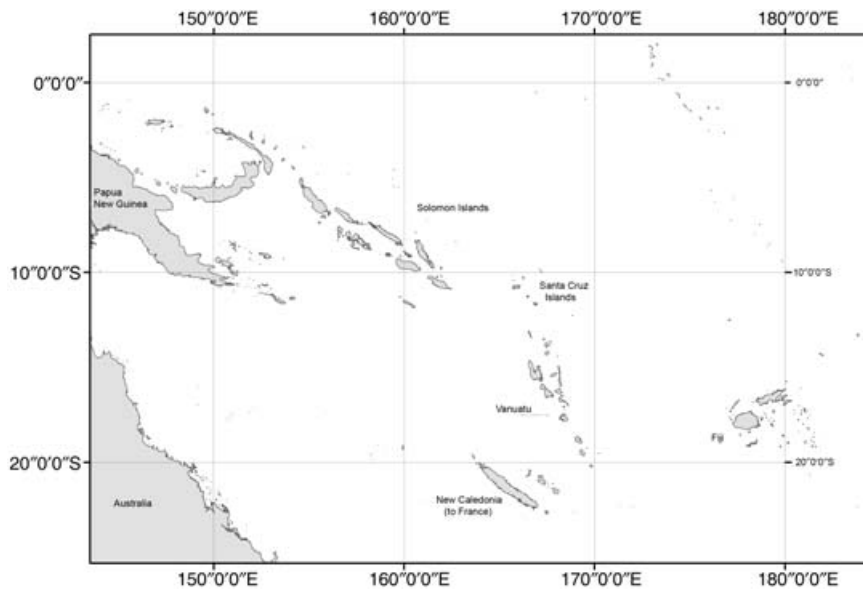


Figure 1. Map of Melanesia, showing the Santa Cruz Islands.

Vanikoro (173 km²) is therefore neither surprising nor predictable.

VANIKORO ISLAND

Vanikoro (also spelled Vanikolo) is a volcanic island in the southwest Pacific (11.60°S, 166.85°E; Figs 1 & 2). It is part of the small Santa Cruz archipelago administered as Temotu Province by the Solomon Islands. The Santa Cruz Islands are about 350 km east of Makira (= San Cristobal), the most easterly island in the main Solomon group, but only 140 km north of the northernmost island of Vanuatu. Vanikoro is about 40 km southeast of Utupua (69 km²), and 120 km southeast of Nendo (= Santa Cruz; 505 km²), the two other major islands of the Santa Cruz archipelago. Vanikoro is a rugged island with very limited coastal plains leading onto steep hills up to a maximum altitude of about 923 m, all covered with tropical rainforest. Areas of forest supporting the conifer *Agathis macrophylla* (the Pacific Kauri) were logged until the 1960s but subsequently there have been few commercial activities on the islands. The human population is small (800 in 1999) and consists largely of subsistence farmers, but they also trade some seafood such as beche-de-mer and trochus shells.

Vanikoro is the site of the shipwreck of the explorer La Perouse and his ship, the *Astrolabe*. Subsequently, D'Urville's expedition in 1826–29

retrieved the remains of the ship, and also took the type specimens of the Uniform Swiflet *Collocalia vanikorensis*, which is widespread in the Papuan region, and the Vanikoro Flycatcher *Myiagra vanikorensis*, which also occurs in Fiji (Quoy & Gaimard 1830). However, the first serious ornithological exploration of Vanikoro was the Whitney South Seas Expeditions (WSSE), which spent 14 days on the island in 1925–27 (Mayr 1933). The only subsequent documented visits by ornithologists have been by C. J. Hadley in the 1960s (Hadley & Parker 1965) and David Gibbs in 1994 (Gibbs 1996). Visits to Vanikoro have been constrained by its inaccessibility. The island has no airstrip and no regular shipping services, being serviced by just a handful of visits by government or other ships each year, and local residents use small open boats to cross the rough seas to the nearest airstrip and regular shipping destination on Nendo (Santa Cruz) Island.

ZOSTEROPS GIBBSI SP. NOV

Vanikoro White-eye.

Etymology

The specific epithet *gibbsi* is chosen in honour of David Gibbs who discovered this species for science and has made many other significant ornithological discoveries in the Solomon Islands and Indonesia.

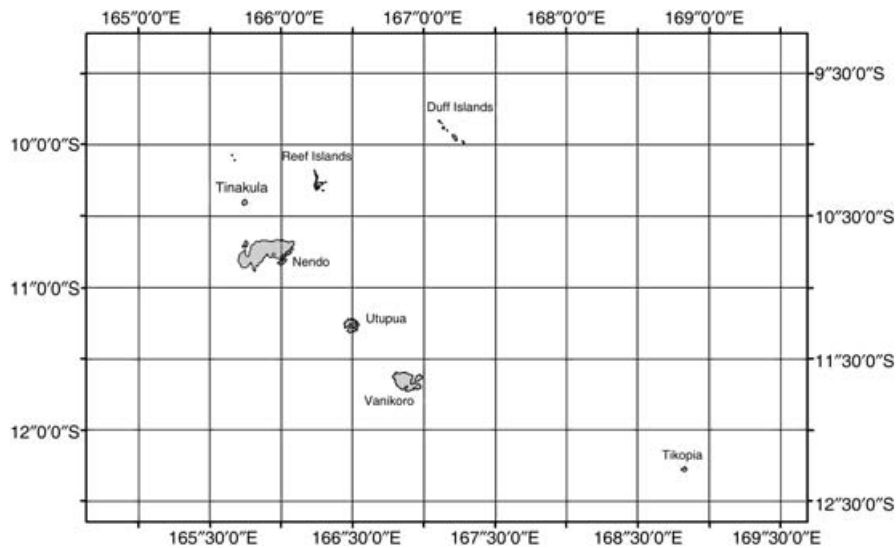


Figure 2. Map of the Santa Cruz islands, showing Vanikoro.

Diagnosis

This taxon is a typical *Zosterops* but lacks any white eye-ring, has a much longer bill (16 mm to feathering; 19 mm to the base of the skull) than most *Zosterops* species, has a black bill with a pale horn-coloured base, has pinkish-orange legs, has a distinct eye-ring of naked grey skin and has olive-green plumage with slightly paler underparts, especially the yellowish chin. These features are shared by other congeners but not in this combination, and none of these features is shown by any *Zosterops* species of the neighbouring Melanesian archipelagos, including the likely closest relative, *Zosterops sanctaecrucis*.

Material

Specimens

Three. Holotype is a female collected and prepared by G. Dutson on 11 November 1997 at 5 m altitude at Lavaka, Vanikoro, Solomon Islands, and deposited in the Natural History Museum, formerly the British Museum (Natural History) (BMNH), Tring, UK (BMNH reg. No. 2003.5.3). Paratype one is a female collected on 11 November 1997 at the same place (BMNH reg. No. 2003.5.2) and Paratype two is a male collected on 12 November 1997 at the same place (BMNH reg. No. 2003.5.4). Because of the lack of refrigeration or preserving materials, no tissue samples were taken.

Condition of specimens

The holotype had a small inactive ovary 2 mm in diameter. Paratype one had an active left ovary 5 × 3 mm, with about 30 visible follicles. Paratype two had two large active testes 5 mm diameter and a moderate cloacal protuberance. Holotype and Paratype two had empty stomachs, whilst Paratype one had small berries in the crop. Holotype had a tracheal pit 'fat score' of 2/5, whereas both paratypes had fat scores of 1/5 (where a score of 1 means a trace of fat and a score of 2 means base of tracheal pit obscured by fat but less than one third full; Redfern & Clarke 2001); all had small patches of subcutaneous fat. A fourth specimen was taken at 50 m altitude on 11 November 1997 but was lost a few days later, probably taken by rats. This specimen had a fat score of 0/5 but its sex was not ascertained. All had large moderately vascularized brood-patches. Skull ossification was not examined.

Measurements

Culmen = 16 mm to the base of feathering (Paratype two = 16 mm; Paratype one = damaged), and 19 mm to the base of the skull (Paratype two = 16 mm). Bill-depth = 4.2 mm at the base of feathering (Paratype one = 3.5 mm [bill slightly misaligned]; Paratype two = 4.5 mm). Tarsus = 19 mm (on all three types). Maximum wing flattened (= wing arc) = 67 mm (Paratype one = 69 mm; Paratype two = 67 mm). Tail (length of central rectrices from emergence to tip) = 42 mm (Paratypes 1 and 2 = 43 mm).

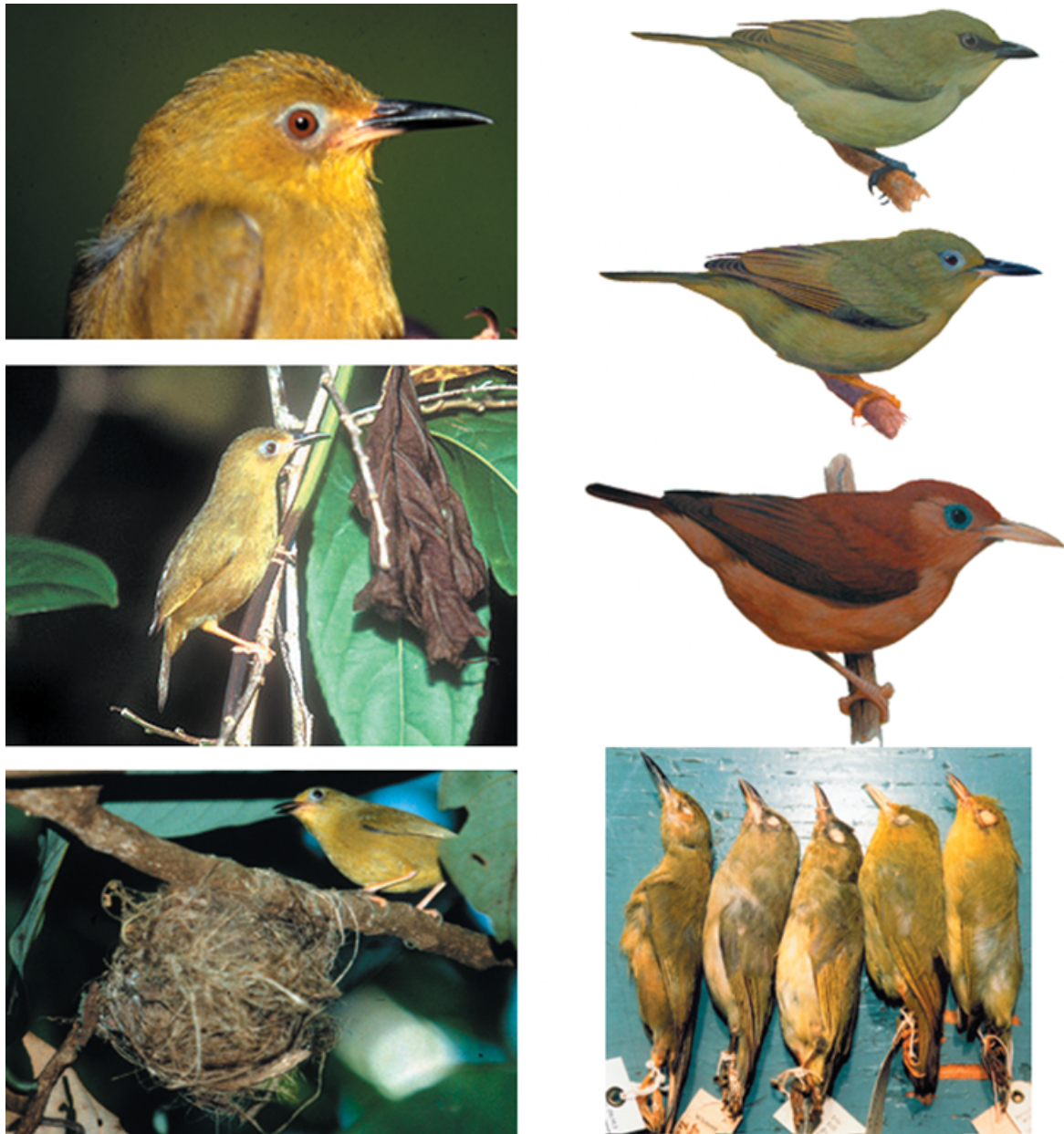


Figure 3. Vanikoro White-eye *Zosterops gibbsi*; clockwise from bottom left: adult *Z. gibbsi* at nest; adult *Z. gibbsi* in field; close-up of *Z. gibbsi* type in hand; painting of *Zosterops sanctaecrucis* (upper), *Z. gibbsi* (middle) and *Woodfordia lacertosa* (lower); specimens (from left to right) of *Z. gibbsi*, *Z. sanctaecrucis*, *Zosterops stresemanni*, *Zosterops rennellianus* and *Zosterops (griseotincta) eichhorni*. Painting by Adam Bowley and photographs by Guy Dutson.

Photographs

A series of photographs of live birds were taken, and representatives are illustrated in Figure 3.

Description of holotype

Colours in the following detailed description follow Smithe (1975). The bill is Jet Black (89) except for

the base of the lower mandible where the proximal 5 mm of the bill-sides and the ventral 10 mm (out of 17 mm of exposed bill) are Pale Horn (92). On the live bird, this pale base was noted as 'pale pink', the fleshy gape was a slightly richer 'orange-pink', the inside of the bill was 'pale grey' and the irides were 'rich rufous-orange'. The eyes were surrounded by a uniform narrow powder-grey naked eye-ring, not

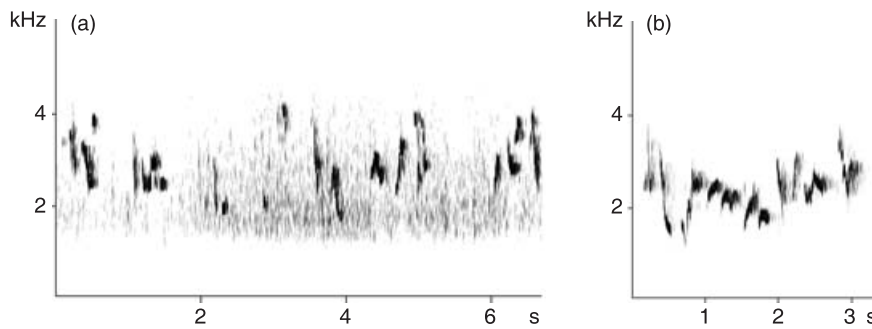


Figure 4. (a) Sonogram of a representative song phrase of *Zosterops gibbsi*. (b) Sonogram of a representative song phrase of *Zosterops sanctaegrucis*.

detectable on the specimen but clearly visible on the live bird. The lores are sparsely feathered, with the pale grey skin showing through. The ventral aspect of the lower mandible is close to straight, with a slight gonyeal angle, and the culmen is smoothly curved beyond the end of the nostril. The toes are Warm Buff (118), becoming Buff (124) on the legs, but were noted as a richer 'pale orange' on the live bird and flushed pinker when captured in a mist-net. The toes are slightly darker and the nails are Drab (27). The upperparts are uniformly Citrine (51) (note that this is an olive-green tone, not yellow), with a slight bronze wash on the uppertail-coverts. The remiges are Fuscous (21) and the rectrices are Dark Greyish Brown (20), with slightly paler Citrine outer fringes, and a slight bronze sheen distally. The tertials and secondaries have narrow Citrine outer fringes, becoming bronze on the distal fringes of the outer secondaries, and the primaries have narrow Olive-Yellow (52) fringes, becoming bronze distally. The tail is square-ended except for the central pair of rectrices which are 4 mm shorter and probably not fully grown (all rectrices are a similar length in Paratypes 1 and 2). The wing-formula relative to P4 is: P2 = -8 mm; P3 = -1 mm; P4 = 0 (longest feather); P5 = -1 mm; P6 = -3 mm; P7 = -6 mm; P8 = -7 mm; P9 = -9 mm; P10 = -10 mm; longest secondary = -11 mm. The throat, breast and central belly are slightly paler and yellower (Olive-Yellow; 52) than the upperparts, with brighter yellow washes, especially on the chin, and the flanks are slightly darker. The underwing-coverts and inner margins of the remex undersides are silvery. In the live bird, the chin was a contrastingly paler 'bright yellow-green' and the thighs 'pale yellow'.

Description of paratypes and other birds

The two paratypes and other birds seen in the field appeared to have identical plumage. A juvenile seen

in the field was similar, but the legs were a paler washed-out pink-orange, the base of the bill was duller, the bill dark horn with a pale yellowish tip, the bare grey skin around the eye was more prominent and the plumage was generally duller.

Vocalizations

The range of vocalizations included a quiet buzzing *vruh*, sometimes repeated several times in quick succession and varied in length and tone (these are generic *Zosterops* contact calls); a similar but higher-pitched flight call; a loud harsh nasal scold similar to that of the sympatric Cardinal Myzomela *Myzomela cardinalis*; a sub-song of about five notes similar to contact calls but longer; and a full song of varied phrases of usually 6–20 melodic notes. These vocalizations were recorded and deposited with the British Library Sound Archive. Sonograms of a representative song phrase of *Z. gibbsi* and *Z. sanctaegrucis* are presented in Figure 4.

Comparison with Santa Cruz White-eye *Zosterops sanctaegrucis*

The type specimens were compared with 26 specimens of the geographically closest congener, the Santa Cruz White-eye *Z. sanctaegrucis* in the American Museum of Natural History (AMNH), where biometrics were taken from five male and five female *Z. sanctaegrucis*, and with the description in Mees (1961) and field observations and sound-recordings of both species. The differences are outlined in Table 1.

DISCUSSION

Taxonomic relationships

This taxon is included within *Zosterops* as it differs little in any feature except its long bill, which is the

Table 1. Differences between Vanikoro White-eye *Zosterops gibbsi* and Santa Cruz White-eye *Zosterops sanctaerucis*. Colours follow Smithe (1975).

Feature	<i>Zosterops gibbsi</i>	<i>Zosterops sanctaerucis</i>
Bill length (to feathering)	16 mm ($n = 3$)	12–13 mm ($n = 10$)
Bill colour (of specimens)	Black	Brown; most Sepia (219)
Bill base colour (of specimens)	Pale Horn (92)	Yellow Ochre (213C)
Irides (from specimen label)	Rich rufous-orange	Brown
Eye-ring (in live birds)	Naked; powder-grey	Feathered; dark grey
Leg colour – live birds	Rich pinkish-orange	Dark blue-grey
Leg colour – specimens	Buff (124)	Greyish, grey or bluish
Wing length (max. flattened)	67–69 mm ($n = 3$)	67–70 mm ($n = 10$)
Tail	42–43 mm ($n = 3$)	40–45 mm ($n = 10$)
Wing shape	Similar except second primary = 8 mm shorter than wing-tip in <i>gibbsi</i> ; 4–6 mm shorter than wing-tip in <i>sanctaerucis</i>	
Upperparts plumage	Similar, except for a distinct grey wash on <i>sanctaerucis</i>	
Head pattern	<i>gibbsi</i> has paler lores and eye-ring	
Underpart plumage	<i>gibbsi</i> is distinctly darker with more contrastingly yellow throat	
Song	<i>gibbsi</i> differs in having longer slower phrases, with shorter, less melodic and more regular notes without any truncated notes	
Habitat	<i>gibbsi</i> is common in upland forest, and localized in forest edge in the lowlands; <i>sanctaerucis</i> is common and widespread in lowland forest	
Behaviour	<i>gibbsi</i> regularly forages on tree-trunks and investigates bunches of dead leaves and undersides of branches; this has not been observed in <i>sanctaerucis</i>	

longest in the genus (although the much bulkier Large Lifou White-eye *Zosterops inornatus* has a similar bill length; the bill-feathering/wing of three specimens in BMNH = 15.5/69, 16.5/69 and 18.5/75 mm). Many aberrant genera of the Zosteropidae have long bills but always in combination with major plumage and often other morphological differences. The long bill of *Z. gibbsi* could indicate a genetic relationship or morphological convergence (related to observed similarities in foraging behaviour) with Sanford's White-eye *Woodfordia lacertosa*, the other white-eye on neighbouring Nendo Island, which is placed in the genus *Woodfordia* because of its robust structure, larger size, long heavy bill and brown plumage.

Zosterops gibbsi is proposed as a full species under the Biological Species Concept because the differences between it and *Z. sanctaerucis* on the neighbouring island of Nendo, as well as between *Z. gibbsi* and other nearby *Zosterops* species, are greater than those between other allopatric species of *Zosterops* in neighbouring Pacific archipelagos, following the guidelines of Helbig *et al.* (2002). In the Solomons, the allotaxa Ranongga White-eye *Zosterops (splendidus) splendidus*, Banded White-eye *Zosterops vellalavella* and Splendid (Gizo) White-eye *Zosterops luteirostris* are now generally treated as species (Sibley & Monroe 1990, 1993, Mayr & Diamond 2001) based largely

on differing bare-part coloration, but these taxa are otherwise very similar (G. Dutson pers. obs.). Diamond (1998) compared the songs of these allospecies and described variation in six features; *Z. gibbsi* and *Z. sanctaerucis* differ in four of these features (length, structure, speed and quality) and are similar in pitch; volume was not determined.

The only mitochondrial nucleotide analysis of insular *Zosterops* species has indicated that the morphologically similar Micronesian taxa Bridled White-eye *Zosterops conspicillatus*, Rota Bridled White-eye *Zosterops rotensis* and Caroline Islands White-eye *Zosterops semperi* and Plain White-eye *Zosterops hypolais* should be treated as separate species (Slikas *et al.* 2000). Similarly, a detailed morphological and vocal study of the Black-fronted White-eye *Zosterops atrifrons* superspecies distributed from Sulawesi to New Guinea concluded that several valid species had been misclassified as subspecies (Rasmussen *et al.* 2000). Other poorly researched polytypic *Zosterops* species in the main Solomons archipelago may be better classified as full (allo)species rather than their current status as (allo)subspecies, notably the Solomons White-eye *Zosterops (rendovae) rendovae*, *tetiparia* and *kulambangrae* (Mayr & Diamond 2001; G. Dutson pers. obs.). Note that the specific names of *Z. rendovae* and Grey-throated White-eye *Zosterops ugiensis* are interchanged between authorities; *rendovae*

is used here to refer to the taxon on Rendova and *Z. ugiensis* the taxon on Makira, adjacent to Ugi, following Mayr and Diamond (2001), for example, but contra Sibley and Monroe (1990).

The polytypic taxa Layard's White-eye *Zosterops explorator* (in Fiji) and Silver-eye *Zosterops lateralis* (Australia to Fiji, including Vanuatu) have multiple subspecies of varying distinctness but with little significant morphological (except size and face colour of *Z. lateralis*), behavioural or vocal differences (Murphy & Mathews 1929, Mees 1961, Bregulla 1992, Watling 2001, G. Dutson pers. obs.), with the exception of migratory behaviour of some temperate populations of *Z. lateralis* (Higgins *et al.* 2006). However, subspecies of the polytypic Yellow-fronted White-eye *Zosterops flavifrons* (of Vanuatu) show some significant morphological and mitochondrial nucleotide differences, and this species is also in need of taxonomic review (Phillimore 2006). In the few cases of sympatric *Zosterops* species cohabiting the same South Pacific island (i.e. *Z. lateralis* truly sympatric with *Z. explorator*, *Z. flavifrons*, Green-backed White-eye *Zosterops xanthochrous*, Small Lifou White-eye *Zosterops minutus* and *Zosterops inornatus*; *Z. uginensis* sympatric in a narrow altitudinal range with Yellow-throated White-eye *Zosterops metcalfi*; and Hermit (= Kolombangara Mountain) White-eye *Zosterops murphyi* sympatric in a narrow altitudinal range with *Z. kulambangrae*), the morphological differences are distinct.

Biogeographic and evolutionary considerations

The Santa Cruz Islands are equidistant between Makira (= San Cristobal) of the Solomon group and the Torres and Banks Islands of north Vanuatu. The avifauna shows closest links with Vanuatu but also has strong links to the Solomons and Fiji. *Zosterops sanctaerucis* and *Z. gibbsi* show little resemblance to *Z. uginensis*, *Z. flavifrons*, *Z. lateralis* or *Z. explorator* of Makira, Vanuatu and Fiji, respectively. The rather uniform green plumage, the absence of a white eye-ring and the presence of a narrow grey eye-ring is shared by a number of Solomon Island taxa, including Malaita White-eye *Zosterops stresemanni* and Rennell White-eye *Zosterops rennellianus* and the geographically distant Samoan White-eye *Zosterops samoensis* (Murphy & Mathews 1929). *Zosterops stresemanni* has slightly mottled underparts, a pale yellow lower mandible and a naked grey eye-ring, and is the closest species morphologically to *Z. sanctaerucis* (Mayr

1931). *Zosterops rennellianus* is a smaller species with a fine pale yellowish-orange bill, brighter plumage including a yellowish throat and a naked blue-grey eye-ring, but its underpart coloration is similar to *Z. gibbsi*. *Zosterops rennellianus* is classified as part of the Louisiades White-eye *Zosterops griseotincta* group of 'tramp' white-eyes, which includes taxa on small islands in the Admiralties, Louisiades and Solomons (Mayr & Diamond 2001). Given the similarity in plumage between *Zosterops* species, it would be premature to place *Z. gibbsi* and *Z. sanctaerucis* in the *Z. griseotincta* superspecies without also re-assessing the status of *Z. stresemanni*.

Field notes

This species was seen mostly in two habitats: degraded forest at sea level and mid-montane forest above 350 m altitude. Only two sea-level sites were searched, and four 'groups' of birds were found in the area around Lavaka village. Inland, my only lowland record was of a bird heard singing on two dates in a natural thicket along a braided riverbed, but Gibbs (1996) saw a group of three and a single bird in forest and natural secondary growth at 140–175 m. Birds were seen in old-growth forest without any clearings above 350 m, and this was the commonest bird species at the highest altitudes where about 25 were recorded in 1½ h in light rain above 700 m on both an afternoon and the next morning.

The first 'group' was centred around a small secondary forest thicket on an old logging road but no nest was found; the lost specimen was taken from this group. The second 'group' was centred in a shady area of closed forest on an old logging road. At least six birds were present, and at least three attended a nest found on 8 November 1997 with two small nestlings. Four hours of detailed observations and several more visits indicated that one to three birds visited the nest with food every 10–15 min in the early morning (07:00–09:30 h) but visits were rare through the middle of the day and infrequent after 16:00 h, although one bird was sometimes brooding the chicks through the day. Similar numbers of visits were made by one, two and three birds, suggesting that at least one 'helper' assisted to feed the chicks. However, cooperative breeding is only documented for two congeners, Seychelles White-eye *Zosterops modestus* and Mascarene White-eye *Zosterops borbonicus* (Fry *et al.* 2000, Higgins *et al.* 2006) and this behaviour is in need of further investigation. The nest was a deep bowl of tightly woven fine grass

and other plant fibres, hanging from a fork in a small horizontal branch about 4 m up a small, rather sparsely leaved understorey tree (see Fig. 3), similar to nests described for Australian congeners (Higgins *et al.* 2006). The nest was not checked between 12 and 19 November 1997, when it was empty without any evidence of predation (the fledging period of *Z. lateralis* in Australia is 10–12 days; Higgins *et al.* 2006). The third ‘group’ was on the edge of a recently cleared abandoned garden close to some secondary forest and some tall, closed-canopy forest. Four to six birds were usually present. Three specimens were taken from a favoured fruiting tree in this vicinity, leaving at least four birds remaining in this area. The fourth ‘group’ was a pair seen in secondary forest about 50 m from closed-canopy forest fragments. At higher altitude, birds were again encountered in groups of at least three to six individuals, sometimes flocking with other small passerine species.

Zosterops gibbsi was much less common on Vanikoro than *Z. sanctaerucis* was in the lowlands of Nendo; for the latter, counts were 61 in 7 h, 35 in 3 h and 27 in 3.5 h (G. Dutson pers. obs.). Mountains were not visited on Nendo.

The song of *Z. gibbsi* was commonly heard in the early morning starting before dawn, but infrequently during the day. Playback of song elicited a strong response, with birds flying in close to examine the source. One juvenile was seen begging and shivering wings, and being attended by at least three of six adults in the vicinity. Birds usually foraged in a slower, more methodical fashion than other white-eyes (including *Z. sanctaerucis*), including craning over to investigate dead leaves and the underside of branches, or perching on vertical tree-trunks. These foraging methods are similar to those of Sanford’s White-eye *Woodfordia lacertosa* on Nendo, suggesting that there may have been a niche expansion on Vanikoro in the absence of any other white-eyes or similar-sized gleaning insectivores (e.g. *Gerygone* and *Phylloscopus* warblers). As with other *Zosterops* species, birds were frequently seen feeding on small fruits.

Conservation status

The field observations indicate that this species occurs in the lowlands in groups of two to seven birds in very small core territorial areas on the edge of degraded and old-growth forest, between 350–600 m in the central hills, and commonly above 600 m (to > 750 m). The forest in the hills should be safe from any large-scale clearance or degradation, and the species’

tolerance of coastal secondary forest suggests that it is in little danger from habitat loss. The risk from alien invasive species is difficult to assess: although rats are present on Vanikoro (G. Dutson pers. obs.), the species and date of arrival are unknown (Flannery 1995). Other alien invasive species could threaten this species, such as the Brown Tree Snake *Boiga irregularis*, which has depredated the Guam Bridled White-eye *Zosterops c. conspicillatus* to extinction (Savidge 1987), but there is little current chance of this or other similar species colonizing Vanikoro given the lack of commercial traffic.

Other species on Vanikoro and the Santa Cruz islands

Following the Whitney South Seas Expeditions, Hadley and Parker (1965) recorded one new resident species for Vanikoro, the Purple Swamphen *Porphyrio porphyrio*, and I recorded two more species, Striated Heron *Butorides striatus* and Rainbow Lorikeet *Trichoglossus haematodus* (Dutson 2001). I recorded all the resident bird species recorded by the WSSE on the Santa Cruz Islands except for two ground species: the Island Thrush *Turdus poliocephalus vanikorensis* was taken on Vanikoro by WSSE but not seen in 1997, when I only spent about 5 h in light rain at the highest altitudes; ominously, this species has become extirpated from the Loyalty Islands and the mainland of New Caledonia (Barré & Dutson 2000) and much rarer on Tanna in Vanuatu (G. Dutson pers. obs. 1998). The Santa Cruz Ground-Dove *Gallicolumba sanctaerucis* was taken by WSSE on Tinakula and Utupua, and recorded from Nendo (and may therefore be expected to occur on Vanikoro), but has not been seen subsequently on these islands (BirdLife International 2000). Gibbs (1996), based on talking to the local villagers, believed that this species may have become extirpated from Utupua, perhaps as a result of introduced mammals, but it survives in the hills and mountains of Espirito Santo in Vanuatu (Bregulla 1992, G. Dutson pers. obs. 2002).

The Santa Cruz Islands support five endemic species: the two *Zosterops* white-eyes on Nendo and Vanikoro, Sanford’s White-eye on Nendo (Near Threatened), Vanikoro Monarch *Mayrornis schistaceus*, and Santa Cruz Shrikebill *Clytorhynchus nigrogularis* (Endangered; Stattersfield *et al.* 1998, Dutson 2006). The Santa Cruz Ground-Dove (Endangered) and Rusty-winged Starling *Aplonis zelandica* (Near Threatened) are shared with Vanuatu. In addition, there are several taxa classified as subspecies endemic

to the Santa Cruz Islands. Partly because of their physical and logistical isolation, the Santa Cruz Islands have seen very little recent research and no conservation activity. It is hoped that this paper will stimulate more interest in this forgotten archipelago.

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