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The earliest record of Raiatea or Leeward Society Islands Fruit Dove *Ptilinopus chrysogaster*

by Michael Lee & Alice Cibois

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Summary.—We report the earliest record of Raiatea or Leeward Society Islands Fruit Dove *Ptilinopus chrysogaster* by R. P. Lesson during the *La Coquille* expedition in 1823 on the island of Bora Bora in the Society Islands. This antedates the previous earliest record of the species by 30 years.

Among the birds of Oceania, the fruit doves (*Ptilinopus* spp.) and their close allies *Drepanoptila*, *Alectroenas* and *Chrysoena* (Columbidae) represent one of the most widespread groups. Probably originating in the proto-New Guinea region where they remain especially diverse fruit doves are distributed both sides of Wallace's Line, and are Oceania's most taxonomically diverse family of landbirds (Cibois *et al*. 2014, 2015). With at least 45 extant species, *Ptilinopus* occur throughout New Guinea, Indonesia, the Philippines, Australia and Oceania, with the largest ('*P. purpuratus*') clade involving taxa in the Moluccas, New Guinea, Micronesia and Polynesia. A subgroup of this clade, variously considered to comprise eight extant species (del Hoyo & Collar 2014) or seven species (Thibault & Cibois 2017), inhabits the Cook, Society, Marquesas, Tuamotu and Austral archipelagos of eastern Polynesia, the limit of the fruit dove's eastern trans-oceanic dispersal.

Raiatea or Leeward Society Islands Fruit Dove *Ptilinopus chrysogaster* is monotypic and currently known from four of the Leeward Society Islands of French Polynesia: Huahine, Raiatea, Taha'a and Bora Bora. It was also reported



Figure 1. Lithograph of the holotype of Raiatea or Leeward Society Islands Fruit Dove *Ptilinopus chrysogaster*, by J. Wolf, in *Proc. Zool. Soc. Lond.* 1853: Pl. LIV (courtesy Biodiversity Heritage Library: https://www.biodiversitylibrary.org/item/96679#page/77/mode/1up)

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Figure 2. Bora Bora where the *La Coquille* stayed from 25 May to 9 June 1823. 'Vue de l'île Borabora'. Engraving by Tardieu, after Lejeune and Chazal. Pl. 16 *in Voyage autour du monde, exécuté par ordre du Roi, sur la corvette La Coquille*, etc. *Atlas histoire du voyage*, 1828 (image courtesy Auckland War Memorial Museum)

on Maupiti but has not been recorded there since 1973 and is now considered locally extinct (Thibault & Cibois 2017). *P. chrysogaster* was named by Gray but he was unclear as to its provenance, suggesting incorrectly '*Hab.* – ? Probably from Otaheiti' (Gray 1853: 48; Fig. 1).

The Natural History Museum at Tring catalogue details relating to the type specimen of *P. chrysogaster* state that it was 'Presented by Verreaux, fide. Gray 1856' (https://www.nhm.ac.uk/research-curation/scientific-resources/collections/zoological-collections/bird-type-specimens/detail.dsml?vol=1&page=61&refer=browse&sort=ID&beginIndex=9&listPageURL=browse%2edsml%3fsort%3dID%26vol%3d1%26page%3d61). 'Verreaux' presumably refers to Maison Verreaux of Paris, the 19th-century firm of naturalists, collectors, taxidermists and traders of natural history specimens.

Gray's type locality was later corrected by Murphy (1924: 6) who chose Raiatea from among the known localities. Although he did not justify his choice ('The type of this species in the British Museum was erroneously labeled "Tahiti." Raiatea is here designated the type locality'), Murphy's revision is valid (ICZN 1999, Art. 76A.2). Meanwhile, the precise origin of Gray's type specimen is unknown (Holyoak & Thibault 1984, Thibault & Cibois 2017).

The earliest accepted record of Leeward Society Islands Fruit Dove at Bora Bora was by Wilson who visited the island in 1904 and noted the bird was a 'distinct local form' (Wilson 1907: 376). However, recent research relating to the work of the scientific expedition by the French navy corvette *La Coquille* of 1822–25, under the command of Louis Isidore Duperrey (1786–1865) (Duperrey 1826–30, Cretella 2010), reveals that the first record of the species on Bora Bora (Fig. 2) dates from May 1823—81 years earlier than Wilson's and 30 years prior to Gray's original description. This was by the medical officer and naturalist René Primevère Lesson (1794–1849; Fig. 3) (Lee & Holyoak 2017, Lee 2018).

Among the extensive mineralogical, botanical and zoological specimens brought back by the *La Coquille* expedition, at least 254 bird species were identified, 46 of them considered new to science (Cuvier 1825). Reviewing the nomenclature of the *La Coquille* bird records

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Dickinson *et al*. (2015) identified 86 avian taxa; all but four of these, they adjudged, were named by Lesson, or by his naval surgeon colleague Prosper Garnot (1794–1838), or by the two as co-authors.

Lee & Bruce (2019) identified three further birds from the *La Coquille* expedition, all named by Lesson. Another bird named by Lesson from the expedition but overlooked by both Dickinson *et al*. (2015) and Lee & Bruce (2019) has also been identified (ML unpubl.).

During its Pacific voyage, *La Coquille* called at Tahiti on 2–22 May 1823, where Lesson recorded the Grey-green Fruit Dove, providing a full description and the name *Columba kurukuru* var. *täitensis* which he modified in his 1831 *Traité* to *Columba taïtensis* (Lesson 1831: 472). This was treated as a synonym of *Ptilopus* [*sic*] *purpuratus*, J. F. Gmelin 1789, by Salvadori (1893: 105) (Dickinson *et al*. 2015).

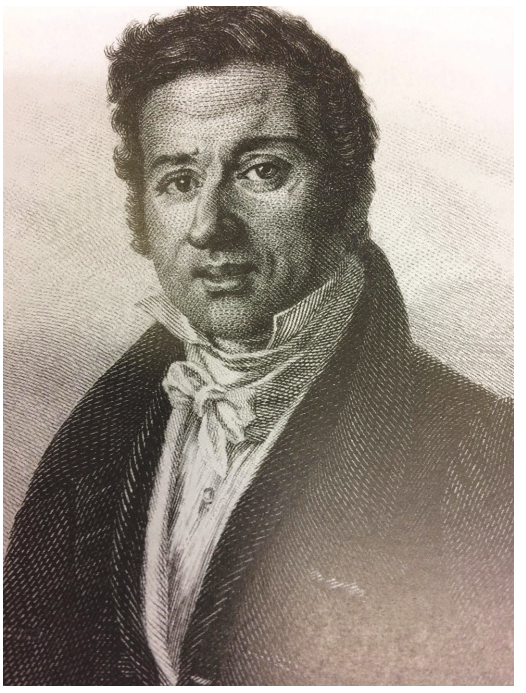


Figure 3. René Primevère Lesson (1794–1849), medical officer and naturalist of the *La Coquille* global expedition, which visited the Society Islands of Tahiti and Bora Bora in 1823. Lesson authored at least 86 new birds, mainly from Oceania, as the result of his work during the *La Coquille* expedition. Despite providing the earliest record, the fruit dove from Bora Bora was not among them (image courtesy Alexander Turnbull Library, National Library of New Zealand, Wellington)

Lesson reported that the fruit dove was by then restricted to the remote mountainous, 'le plus sauvage', regions of Tahiti due to it being hunted by the local people (R. P. Lesson *in* Duperrey 1826: 296–298). This accords with the zoo-archaeological data of Steadman who found that the Society Islands once supported six species of columbids, of which all but the two fruit doves are now extinct. He observed that 'being so palatable, hunting may have been a larger factor in the depletion of columbids than in that of most other landbirds' (Steadman 2006: 321, 329).

After departing Tahiti, *La Coquille* called at the island of Bora Bora, *c*.277 km to the north-west, on 26 May 1823. Bora Bora (727 m, 30.55 km^2) is a high island formed by an eroding extinct basaltic volcano. Geologically it is the second oldest of all the Society Islands, after nearby Maupiti (Neall & Trewick 2008, see also Dickinson *et al*. 2019).

On 27 May Lesson accompanied by two of the ship's navigating officers, Auguste Bérard (1796–1852) and Victor-Charles Lottin (1795–1858), set off to climb the island's central peak in what Lesson described as 'the best weather in the world'. After two hours they reached a circular plateau and after pausing to admire the views of the other islands in the Leeward group, Lesson recounted:

'Ce plateau élevé et solitaire, est l'asile d'une jolie tourterelle qui descend rarement dans la partie inférieure de l'île: depuis plusieurs instants ses roucoulements nous annonçaient sa présence; mais son plumage vert la faisait échapper à nos regards: nous parvînmes pourtant à en tuer plusieurs.'

'Cette tourterelle, que les naturels nomment Ouba est la Columba kurukuru des auteurs, que nous avions trouvée aussi a O-Taiti: son plumage offre quelquefois de légères différences. Au vert brillant des ailes et du dos, succèdent un vert jaunâtre pâles sur la cou,

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Figure 4. Leeward Society Islands Fruit Dove *Ptilinopus chrysogaster* (© Fred Jacq, www.fred-jacq.org)

un jaune-serin sur la gorge, et un jaune vif sur le ventre et sur les couverture inférieures de la queue. Une calotte, d'un violet tendre que borde un auréole jaune, couvre la tête de la manière la plus gracieuse; les rémiges sont œillées de blanc à leur extrémité, le bec est jaunâtre, et les pieds sont oranges. L'ouba a huit pouces de longueur totale.'

In translation:

'This elevated and solitary plateau provides refuge for a pretty turtle dove that rarely descends to the lower part of the island; though its cooing announced its presence; for some time its green plumage allowed it to escape our attention; yet we managed to shoot several of them.'

'This turtle dove, which the natives call 'ouba' ['u'upa], is the *Kurukuru columba* of the authors which we also found at Tahiti: its plumage however offers slight differences. With brilliant green wings and mantle, a pale yellowish green on the neck, a yellow-serin on the throat, and a bright yellow on the belly and on the lower coverts of the tail. A cap, of a tender violet bordered by a yellow halo, covers the head in the most graceful manner; the flight feathers are hemmed in white at their extremity, the bill is yellowish, and the feet are orange. [It] is eight inches in length.' (R. P. Lesson *in* Duperrey 1828: 313–314).

In the first volume of his later book *Voyage autour de monde*, Lesson republished the extract but with some modified wording: 'Cette tourterelle, que les naturels nomme ouba était nouvelle … L'ouba est huit pouces de longueur et appartient à la race des kurukuru.' In translation: 'This turtle dove, that the natives call 'u'upa was new … [it] is eight inches in length and belongs to the race [group] of kurukuru' (Lesson 1838: 475–476).

Here Lesson goes somewhat further than just noting differences in plumage by suggesting that the Bora Bora bird was 'new'. However he stopped short of naming it as

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such, although his conclusion that the bird 'belongs to the race of kurukuru' anticipates its status as a subspecies of the Tahiti bird, a status it held according to most authors until recent molecular analysis found it to be a distinct species, more closely related to the Cook Islands fruit doves (*P. rarotongensis* and *P. r. goodwini*) (Holyoak 1974), than Grey-green Fruit Dove (Cibois *et al*. 2014, del Hoyo & Collar 2014, Thibault & Cibois 2017).

However, despite Lesson recording that he collected specimens, there are no fruit doves from Bora Bora from the *La Coquille* expedition among the extensive present-day collection of fruit dove specimens in MNHN where the expedition collection was lodged (Voisin *et al*. 2004, 2005, 2008, Jansen 2015; P. Boussès pers. comm.). Raiatea or Leeward Society Islands Fruit Dove (Fig. 4) can be added to the list of birds (including three from New Zealand) that Lesson collected, described and provided indigenous names for (Lee & Bruce 2019) but probably due to the press of work did not allocate scientific names, leaving them for subsequent naturalists to name.

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