

## The chequered history of Chattering Kingfisher *Todiramphus tutus* on Tahiti. II: review of status

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**SUMMARY.**—Chattering Kingfisher *Todiramphus t. tutus* is endemic to the Society Islands, French Polynesia, but is poorly known on the main island of Tahiti. We evaluated historic and recent evidence for the species' occurrence there, reviewing 115 specimens of Chattering Kingfisher in museums worldwide. Andrew Garrett collected most specimens in the 1870s on Huahine. We established that there are no reliable field observations of the species on Tahiti. Furthermore, we reveal uncertainties concerning at least eight specimens reportedly taken on Tahiti (of a total of 13). The locality of Tupai for two specimens is also questionable. We conclude that Chattering Kingfisher has never occurred on Tahiti or Tupai. The distribution of *T. t. tutus* should be restricted to the islands of Bora Bora, Huahine, Maupiti, Raiatea and Tahaa alone.

In the tropical Pacific, only a few islands host two species of kingfisher (Pratt *et al.* 1987, Fry *et al.* 1992, Dutson 2011). Tahiti (Society Islands, French Polynesia) is supposedly one of these. While sympatric occurrence of kingfishers is usually well documented, the situation on Tahiti is unclear. Society Kingfisher *Todiramphus veneratus* is well known and easily seen in secondary forests in lowland valleys, whereas the occurrence of the nominate subspecies of Chattering Kingfisher *T. t. tutus* on Tahiti is enigmatic because there are no confirmed recent reports. Nor can prehistoric occurrence of kingfishers on Tahiti be inferred, as no avian bones have been found there, unlike other Polynesian islands (Steadman 1995).

The lack of recent confirmed reports of Chattering Kingfisher on Tahiti adds to this confusion. Kingfishers are territorial species that respond aggressively to other species and conspecifics, and thus in general make their presence known to observers. However, the occurrence of Chattering Kingfisher on Tahiti could go unnoticed as, for this island, the species is reported to be present only in montane forest above 1,000 m (Holyoak 1974, Fry *et al.* 1992). On other islands within its range (i.e. Bora Bora, Huahine and Raiatea west of Tahiti), Chattering Kingfisher occurs from sea level to 800 m (Holyoak 1974, Fry *et al.* 1992), which makes it perhaps more readily observed. Chattering Kingfisher has never been reported on Moorea (the island closest to Tahiti), despite the species' occurrence on the other Society Islands (Fig. 1). Two other subspecies of Chattering Kingfisher have been described, but these occur on the Cook Islands and are not relevant to the present discussion.

We attempt to resolve the confusion concerning the occurrence of Chattering Kingfisher on Tahiti, by (1) examining the provenance of extant specimens of *T. t. tutus*, and (2) evaluating modern-day field observations of Chattering Kingfisher in the light of the similarity in plumage between Chattering and Society Kingfishers (Cibois & Thibault 2009). We also briefly discuss the type specimen as its type locality is Tahiti (Gmelin 1788, based on Latham 1782).

## Extant specimens of Chattering Kingfisher

The taxonomic situation with respect to kingfishers in the southern Pacific in the 19th century was best described by Sharpe (1868) when speaking of Chattering Kingfisher: 'The confusion which has existed respecting the present species is probably unparalleled in the annals of Ornithological Science.' Hence, we refrain here from mentioning unsubstantiated reports and present data only on extant specimens, of which several are available in museums in Australia, Europe and North America. We collected data on specimens of *T. t. tutus* alone, because it has been reported to occur on Tahiti. Via a request to the eBeac email-group of European curators, we received information on most specimens of Chattering Kingfishers currently held in European and several North American museums. Other data were retrieved from online databases of museums worldwide and from personal requests by e-mail. Reference to Banes *et al.* (1973), Roselaar (2003) and Gill (2006) revealed several additional collections in North America, Europe, Australia and New Zealand where specimens of Chattering Kingfisher might be present, which we then contacted. Although we attempted to locate as many relevant specimens as possible, additional specimens probably exist that are not mentioned in Table 1. Nevertheless, we believe that firm conclusions can be drawn from our data. Data collated for each specimen were year and precise locality (island), collector's name, age (juvenile or adult), museum (acronyms are explained in Table 1) and collection number. If the collector is unknown, we note if the museum acquired the specimen via a well-known collector ('coll.' in Table 1) or a dealer (denoted 'via' in Table 1). For four specimens, no collector, former collection or dealer is known.

We retrieved data on 115 different specimens in 17 museums (Table 1). Most specimens are from Huahine (43), followed by Bora Bora (26), Raiatea (18), Tahiti (13), Maupiti (five) and Tahaa (three). Two specimens are labelled Tupai. For five specimens, it is unknown on which island they were collected. Specimens were collected up to 1973, when J.-C. Thibault obtained the last series (via a permit issued to MNHN: Thibault 1974). Collecting bird specimens is no longer permitted in French Polynesia.

The most important collector of Chattering Kingfisher specimens was Andrew Garrett, who worked in the Pacific for the Museum of Comparative Zoology, Cambridge, MA (MCZ; 1855–66) and subsequently (1866–79) for the Godeffroy firm (Thomas 1979, Scheps 2005). He lived on Huahine in the Society Islands between 1870 and his death in 1887 (Gräffe 1873, Scheps 2005). Garrett collected 38 specimens, all on Huahine, except three labelled Tahiti and one each Raiatea and Tupai. Rollo Beck, Ernst Quayle and their colleagues collected 14 specimens, mainly on Raiatea, during the Whitney South Sea Expedition in 1921–22, while Thibault took 13 specimens in 1973, including on Maupiti and Tahaa, where none had previously been collected.

## Reports of Chattering Kingfisher from Tahiti since 1900

Two large-scale ornithological surveys of Tahiti were mounted during the 20th century: the Whitney South Sea Expedition between September 1920 and April 1923, and the other between 1986 and 1991 (Monnet *et al.* 1993). Neither recorded the species on Tahiti (Monnet *et al.* 1993).

Monnet *et al.* (1993) briefly reviewed field observations of Chattering Kingfisher on Tahiti and mentioned just two since 1900. The oldest was by Wilson (1907). Monnet *et al.* (1993) simply stated that Wilson collected the species, but Wilson's account is unclear as to what he observed. Wilson gave no description of the birds, while he clearly erred with respect to the occurrence of Society Kingfisher on Bora Bora (see below). We conclude that

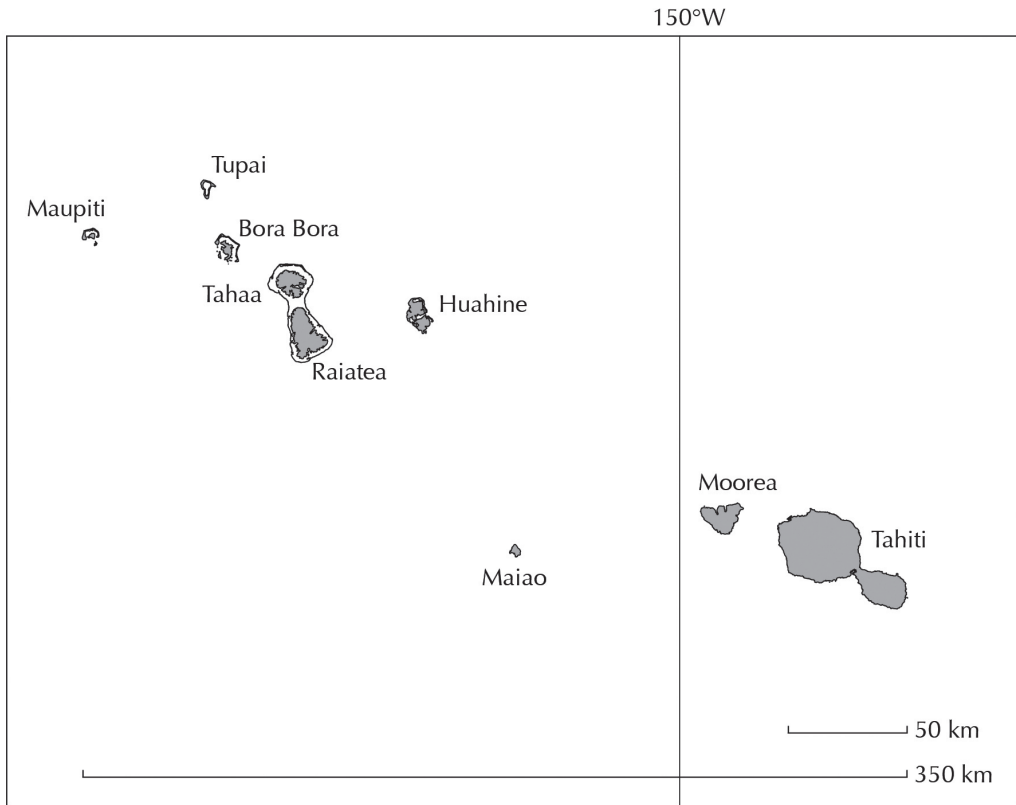


Figure 1. Map of French Polynesia showing the islands mentioned in the text.

his report of Chattering Kingfisher on Tahiti is unreliable. Holyoak (1974) is the source of the second observation mentioned by Monnet *et al.* (1993). He reported having observed 11 individuals in Mataiea district, Tahiti, in 1972, but he did not provide any description.

More recent observations of Chattering Kingfisher emanate from two sources, bird tours and observations by local birdwatchers reported in *Te Manu*. Two trip reports published on the internet mention records of Chattering Kingfisher on Tahiti. The first involved a probable heard-only in September 2006 (Morris 2006). However, the vocalisations of Chattering and Society Kingfishers are very similar (Fry *et al.* 1992), so this report can be discounted. The second is the description of a bird in the lower Papehue Valley on 3 September 2008 (Finn 2008). The lack of a breast-band, stressed as an identification character, does not exclude Society Kingfisher, while the rest of the description does not conclusively support identification as Chattering Kingfisher either.

Observations by local birdwatchers in 2002–08 fail to describe the distinguishing features well, and reports in *Te Manu* ceased following publication of Cibois & Thibault (2009) who stressed the superficial similarity in plumage between Chattering and Society Kingfishers.

## Discussion

*Mislabelling of specimens.*—Many Chattering Kingfisher specimens are now held in Australian, European and North American museums. Most are attributed to islands

where it presently occurs (e.g. Bora Bora, Huahine and Raiatea). Thirteen are labelled Tahiti, but this locality is not without doubt. Tahiti is the main island in the group, and the annotation 'Tahiti' could just as well indicate that a specimen was collected somewhere in the archipelago, especially when collectors in Europe, or elsewhere, had never visited the region (cf. Rasmussen & Prŷs-Jones 2003). Also, when collections were transferred to museums, labelling was often performed by curators with no knowledge of Pacific avian distributions.

It is quite remarkable that three 'Tahiti' specimens are attributed to Garrett. Firstly, Garrett is primarily known for his collections of molluscs and sea life (Clench 1979). On request, he did collect specimens of other taxonomic groups like birds, but on the Society Islands he is known to have done so only on Huahine and Raiatea (Sclater 1864, Gräffe 1873). Furthermore, he collected for MCZ until 1866, but we are unable to locate any bird specimen from Tahiti attributed to Garrett in that collection. During the period he was employed by the Godeffroy firm, he did not collect birds on Tahiti because the French, who had claimed Tahiti since 1847, did not permit collecting of birds there (Schmeltz 1874). After 1870, Garrett mainly lived and collected on Huahine, so the origin of the Chattering Kingfishers supposedly collected on Tahiti is much more likely to be Huahine, where most of his specimens originated. Because of the French ban on bird collecting on Tahiti, the provenance of Reischek's Tahiti specimen also becomes suspect. Reischek was an Austrian collector and trader who was active mainly in New Zealand in 1877–89 (King 1981), during a period when the French were still present on Tahiti. Because Reischek never visited the latter himself, both his specimens could have been collected by Garrett.

Because the species' distribution only includes islands with a volcanic history, its occurrence on the atoll of Moto Iti or Tupoi (both names used for present-day Tupai), near Bora Bora, would be unusual. Two specimens are said to have been collected there. One was sent by Garrett to Canon Tristram and is now at LIVCM. As Tristram's labelling is known to contain errors (Wagstaffe 1978), the locality may represent one such. A second specimen from Tupai was collected by J. T. Reinhardt during the first *Galathea* expedition, on 15 December 1846 (ZMUC 70305). It was one of several specimens of Chattering Kingfisher that Reinhardt collected during the expedition. Although this may lead to the alternative hypothesis of a (former) population on Tupai, the collection dates of Reinhardt's specimens seem to contain an error. Table 1 shows that Reinhardt collected five other specimens, three of them on Bora Bora. One is said to have been collected on 15 December 1846 (ZMUC 49931). However, on that date, Reinhardt was on Tupai (Bille & Von Rosen 1852: 363–364). Likewise, labels of Reinhardt's Tahiti specimens indicate they were taken on 11 December 1846, but on that morning the *Galathea* set sail for Huahine and Tahaa (Bille & Von Rosen 1852: 352) making it extremely unlikely they were collected on that date and casting doubt on the precise dates and localities for his specimens.

We have similar doubts concerning the localities of two specimens of Chattering Kingfisher at AMNH collected in 1904 by Wilson and labelled 'Tahiti'. From Wilson (1907), it is clear that he was confused regarding the distribution of kingfishers in the Society Islands. For example, he mentioned that 'two species of kingfisher were common on Bora-Bora', apparently referring to Chattering and Society Kingfisher, but on present-day knowledge only Chattering Kingfisher occurs there (Society Kingfisher is endemic to Tahiti and Moorea alone). In fact, Wilson's text for *Halcyon veneratus* reads: 'this species is fairly common, especially on the island of Bora-Bora'. Furthermore, Wilson (1907) wrote under *Todiramphus tutus* (Chattering Kingfisher): 'common throughout the Tahiti group'. We therefore conclude that Wilson's specimens were not necessarily collected on Tahiti. He visited several islands within the species' distribution, so his specimens could have

Table 1

Details of specimens of Chattering Kingfisher *Todiramphus t. tutus* in museums worldwide, arranged according to chronology of collection. \* = recently re-identified as Chattering Kingfisher (A. Cibois *in litt.* 2014, P. Sweet *in litt.* 2014). ND: no data. Museum acronyms: AMNH—American Museum of Natural History, New York; AMS—Australian Museum, Sydney; ANSP—Academy of Natural Sciences, Philadelphia; BPBM—Bernice P. Bishop Museum, Honolulu; DMNH—Delaware Museum of Natural History, Wilmington; LIVCM—World Museum, Liverpool; MCNM—Museo Civico di Storia Naturale, Milan; MCZ—Museum of Comparative Zoology, Cambridge; MHNG—Muséum d'Histoire Naturelle, Geneva; MNHN—Muséum National d'Histoire Naturelle, Paris; Naturalis—Naturalis Biodiversity Center, Leiden; NMINH—National Museum of Ireland Natural History, Dublin; NHMUK—Natural History Museum, Tring; NMW—Naturhistorisches Museum, Vienna; USNM—National Museum of Natural History, Washington; ZMB—Museum für Naturkunde, Berlin; ZMUC—Zoological Museum, Univ. of Copenhagen, Copenhagen.

Year of collection	Locality	Collector	Age	Museum	Specimen no.
1806	Tahiti	coll. J. A. Lever	ad	LIVCM	D2326
pre-1807	ND	coll. C. J. Temminck	ad	Naturalis	RMNH.AVES.204878
pre-1819	Tahiti	coll. W. Bullock	ad	Naturalis	RMNH.AVES.204880
1823	Bora Bora	R. P. Lesson & P. Garnot	ad	MNHN	2006-544
1823	Bora Bora	R. P. Lesson & P. Garnot	ad	MNHN	2006-545
pre-1840	Tahiti	ND	ad	ANSP	21431
pre-1846	Bora Bora	coll. F. V. Masséna	ad	ANSP	21443
pre-1846	Bora Bora	coll. F. V. Masséna	ad	ANSP	21444
pre-1846	Bora Bora	coll. F. V. Masséna	ad	ANSP	21445
pre-1846	Bora Bora	coll. F. V. Masséna	ad	ANSP	21446
pre-1846	Bora Bora	coll. F. V. Masséna	juv	ANSP	21447
1846	Bora Bora	J. T. Reinhardt	juv	ZMUC	49933
1846	Bora Bora	J. T. Reinhardt	ad	ZMUC	49932
1846	Bora Bora	J. T. Reinhardt	ad	ZMUC	49931
1846	Tupai	J. T. Reinhardt	ad	ZMUC	70305
1846*	Tahiti	J. T. Reinhardt	juv	ZMUC	49929
1846*	Tahiti	J. T. Reinhardt	juv	ZMUC	49930
pre-1847	Tahiti	via Maison Verreaux	ad	NHMUK	1847.7.8.3
pre-1847	Huahine	via Maison Verreaux	juv	NHMUK	1847.7.8.4
pre-1849	Tahiti	via J. Warwick	ad	LIVCM	D378(S)
pre-1851	ND	ND	ad	LIVCM	D2326a
1861	Bora Bora	coll. F. de Lafresnaye	ad	MCZ	84319
pre-1863	ND	ND	juv	Naturalis	RMNH.AVES.204879
pre-1864	Huahine	coll. J. H. Gurney	ad	NHMUK	1864.7.4.7
1866	ND	via Maison Verreaux	ad	Naturalis	RMNH.AVES.204883
1874	Raiatea	A. Garrett	ad	Naturalis	RMNH.AVES.204881
1877	Huahine	A. Garrett	ad	ANSP	50147
1877	Huahine	A. Garrett	ad	ANSP	50148
1877	Huahine	A. Garrett	juv	ANSP	50149
1877	Huahine	A. Garrett	ad	LIVCM	1989.66.718
1877	Huahine	A. Garrett	juv	LIVCM	1989.66.722
1877	Huahine	A. Garrett	ad	NHMUK	1888.10.20.699
1877	Huahine	A. Garrett	juv	NHMUK	1888.10.20.698
1877	Huahine	A. Garrett / H. B. Tristram	juv	AMS	O.32459
1877	Huahine	A. Garrett / H. B. Tristram	ad	AMS	O.32460
1877	Huahine	A. Garrett / H. B. Tristram	ad	AMNH	640303
1878	Huahine	A. Garrett	ad	AMNH	640299
1878	Huahine	A. Garrett	ad	AMNH	640300

1878	Huahine	A. Garrett	ad	AMNH	640302
1878	Huahine	A. Garrett	ad	Naturalis	RMNH.AVES.204882
1878	Huahine	A. Garrett	juv	NHMUK	1898.12.2.756
1878	Huahine	A. Garrett	ad	NHMUK	1898.12.2.757
1878	Huahine	coll. H. B. Tristram	ad	MCNM	Av.20082
1878	Huahine	via Edward Gerrard & Sons	ad	NMINH	1880.292.1
1878	Huahine	via Edward Gerrard & Sons	juv	NMINH	1880.293.1
pre-1880	Huahine	A. Garrett / H. B. Tristram	ad	ZMB	ZMB24770
1880	Huahine	A. Garrett	ad	LIVCM	T3479
1880	Huahine	A. Garrett	juv	LIVCM	T3480
1880	Huahine	A. Garrett	juv	LIVCM	T3481
1880	Huahine	A. Garrett	ad	LIVCM	T3482
1880	Huahine	A. Garrett	ad	LIVCM	T3484
1880	Huahine	A. Garrett	ad	LIVCM	T3485
1880	Huahine	A. Garrett	juv	LIVCM	T3486
1880	Huahine	A. Garrett	ad	LIVCM	T3487
1880	Huahine	A. Garrett	ad	LIVCM	T3488
1880	Huahine	A. Garrett	juv	LIVCM	T3489
1880	Huahine	A. Garrett	juv	LIVCM	T3491
1880	Huahine	A. Garrett	ad	LIVCM	T3492
1880	Huahine	A. Garrett	ad	LIVCM	1989.66.719
1880	Tupai	A. Garrett / H. B. Tristram	ad	LIVCM	T6093
pre-1881	Huahine	coll. J. Gould	ad	NHMUK	1881.5.1.2983
pre-1881	Huahine	coll. J. Gould	juv	NHMUK	1881.5.1.2991
pre-1888	Tahiti	A. Garrett	ad	AMNH	640305
pre-1888	Tahiti	A. Garrett	ad	AMNH	640306
pre-1888	Tahiti	A. Garrett	ad	AMNH	640307
pre-1888	Huahine	A. Garrett / H. B. Tristram	ad	AMNH	640298
pre-1888	Huahine	A. Garrett	ad	AMNH	640301
pre-1888	Huahine	A. Garrett	ad	AMNH	640304
pre-1889	Tahiti	coll. A. Reischek	ad	NMW	50642
pre-1889	Huahine	coll. A. Reischek	juv	NMW	50641
1899	Bora Bora	C. Townsend	ad	MCZ	81959
1899	Bora Bora	C. Townsend	juv	MCZ	81960
1899	Bora Bora	C. Townsend	ad	USNM	212357
1899	Bora Bora	C. Townsend	ad	USNM	212359
1899	Bora Bora	C. Townsend	juv	USNM	212360
1902	Raiatea	A. Seale	ad	AMNH	193305
1902	Raiatea	A. Seale	ad	BPBM	2433
1902	Raiatea	A. Seale	ad	BPBM	2434
1904*	Tahiti	S. Wilson	juv	AMNH	640290
1904*	Tahiti	S. Wilson	juv	AMNH	640291
1904	Bora Bora	S. Wilson	ad	AMNH	640295
1904	Bora Bora	S. Wilson	ad	AMNH	640296
1904	Bora Bora	S. Wilson	ad	AMNH	640297
1904	Bora Bora	S. Wilson	ad	MNHN	1910-796
pre-1907	ND	ND	ad	MHNG	715064
1921	Raiatea	Whitney expedition	ad	DMNH	13554
1921	Raiatea	Whitney expedition	ad	AMNH	190247
1921	Raiatea	Whitney expedition	ad	AMNH	190252
1921	Raiatea	Whitney expedition	ad	AMNH	190253

1921	Raiatea	Whitney expedition	ad	DMNH	13555
1921	Raiatea	Whitney expedition	ad	AMNH	190250
1921	Raiatea	Whitney expedition	ad	AMNH	190254
1922	Raiatea	Whitney expedition	ad	AMNH	190255
1922	Raiatea	Whitney expedition	ad	AMNH	190249
1922	Raiatea	Whitney expedition	ad	AMNH	190251
1922	Raiatea	Whitney expedition	ad	AMNH	190256
1922	Bora Bora	Whitney expedition	ad	AMNH	223585
1922	Bora Bora	Whitney expedition	ad	AMNH	190245
1922	Bora Bora	Whitney expedition	ad	AMNH	190246
1937	Bora Bora	R. W. Smith	ad	ANSP	128446
1937	Bora Bora	R. W. Smith	ad	ANSP	128447
1937	Bora Bora	R. W. Smith	ad	ANSP	128448
1973	Raiatea	J.-C. Thibault	juv	MNHN	1974-2044
1973	Raiatea	J.-C. Thibault	ad	MNHN	1974-2037
1973	Raiatea	J.-C. Thibault	ad	MNHN	1974-2046
1973	Maupiti	J.-C. Thibault	ad	MNHN	1974-2039
1973	Maupiti	J.-C. Thibault	juv	MNHN	1974-2043
1973	Maupiti	J.-C. Thibault	ad	MNHN	1974-2038
1973	Maupiti	J.-C. Thibault	ad	MNHN	1974-2047
1973	Maupiti	J.-C. Thibault	ad	MNHN	1974-2048
1973	Tahaa	J.-C. Thibault	ad	MNHN	1974-2041
1973	Tahaa	J.-C. Thibault	ad	MNHN	1974-2042
1973	Tahaa	J.-C. Thibault	juv	MNHN	1974-2045
1973	Huahine	J.-C. Thibault	ad	MNHN	1974-2040
1973	Huahine	J.-C. Thibault	juv	MNHN	1974-2049

originated there. The same conclusion can be drawn regarding his observations of the species on Tahiti.

To conclude, we have demonstrated that the locality of at least ten specimens of Chattering Kingfisher labelled 'Tahiti' or 'Tupai' is questionable. We were unable to investigate the other five specimens said to originate from 'Tahiti' because details of the collector are unknown (*cf.* Table 1). Mislabeled specimens are not uncommon in museums (Rasmussen & Prŷs-Jones 2003). For Society Kingfisher, it is easy to detect errors because the species occurs only on Tahiti and Moorea. We received data from nine museums concerning 140 specimens of Society Kingfisher with collection locality, of which 5.7% are wrong. If this percentage of incorrectly labelled specimens is valid for nominate Chattering Kingfisher, at least six specimens with a collection locality could be mislabelled, based on the 110 specimens for which a locality is mentioned. This compares with an actual number of 15 specimens that according to the label data were collected outside Bora Bora, Huahine, Maupiti, Raiatea or Tahaa (*cf.* Table 1). Because both subspecies of Society Kingfisher are single-island endemics, correcting an error in locality is easy for these taxa, presumably resulting in a lower error rate than for Chattering Kingfisher. Correcting locality errors for species with a wider range like Chattering Kingfisher is less straightforward.

**Type locality for Chattering Kingfisher.**—The species was first described by Latham (1782) based on specimens collected during Cook's third voyage (Jansen & van der Vliet 2015) and his work formed the basis of the formal description by Gmelin (1788), as *Alcedo tuta* (from Tahiti). The specimen(s) Latham described were perhaps in the possession of Sir Joseph Banks who owned several kingfishers from Polynesia. Evidence comes from the inclusion of such specimens in two undated catalogues by Jonas Dryander describing

Banks' collection (*cf.* Medway 1979 for a description of both catalogues). Unfortunately, many Cook specimens are wrongly labelled (Stresemann 1950) which renders relevant type localities unreliable. Furthermore, Dryander's descriptions are very brief, preventing certain identification of Banks' kingfishers.

Two different specimens have been quoted in recent literature as the type specimen of Chattering Kingfisher. Largen (1987) concluded that a specimen now at the Liverpool museum (LIVCM) could be the type (specimen D2326), whereas Lysaght (1959) claimed that a bird held at the Naturalis Biodiversity Center, Leiden, is the type (RMNH.AVES.204878). Both are the oldest extant specimens of Chattering Kingfisher that we have traced (Table 1). However, neither was included in the relevant overviews of type specimens at these museums (Wagstaffe 1978, van den Hoek Ostende *et al.* 1997), and we agree that neither specimen can be conclusively identified as being type material (*cf.* Jansen & van der Vliet 2015).

*Chattering Kingfisher never occurred on Tahiti.*—The occurrence of Chattering Kingfisher on Tahiti must be considered doubtful. No modern-day field observations of Chattering Kingfisher from Tahiti exist, so only specimens can prove that it once occurred there. We cannot eliminate that the type specimen originated from Tahiti, but this does not necessarily imply that the species occurred there naturally. A surprisingly large number of 18th-century authors were impressed that kingfishers were considered sacred by natives of Polynesia. For example, Latham (1782) mentioned this as a peculiarity of both his Venerated and Respected Kingfishers. Their sacredness has resulted in at least four kingfisher taxa in the southern Pacific bearing a (sub)specific epithet in reference to this: *T. tutus* (Chattering Kingfisher) and *T. veneratus* (Society Kingfisher) in French Polynesia, *T. sanctus* (Sacred Kingfisher) of Australia, New Zealand and Melanesia, and *T. chloris sacer* (Collared Kingfisher) from Tonga. Their special status may also have resulted in trade of live birds as mentioned by E. Mayr (*in* Lysaght 1959), which could also explain why several kingfisher taxa, including both nominate Chattering and Society Kingfishers, were ascribed to islands where they do not occur (Jansen & van der Vliet 2015). A similar situation involves Red Shining Parrot *Prosopiea (tabuensis) tabuensis*, a species endemic to Fiji, for which the type locality is Tonga (Amadon 1942, Medway 2010).

Several post-1900 reports of Chattering Kingfisher on Tahiti have been published. None features a description or other evidence (photograph, sound-recording, video or specimen). Ambiguous descriptions and depictions of adult Society Kingfisher (e.g. Pratt *et al.* 1987, Fry *et al.* 1992) may have resulted in such reports. Many, or most, female Society Kingfishers have white underparts without a breast-band, not unlike Chattering Kingfisher. Only males sometimes have a broad green breast-band (Sharpe 1868, Townsend & Wetmore 1919, Cibois & Thibault 2009). Furthermore, their vocalisations are rather similar (Fry *et al.* 1992). Modern-day reports contrast markedly with the results of two major expeditions in the 20th century, which failed to record Chattering Kingfisher on Tahiti. Evidence that it may have disappeared from Tahiti after the introduction of Swamp Harrier *Circus approximans* in 1885 (Gouni 2011) is unconvincing because the spread of the harrier to the Leeward Islands (e.g. Bora Bora, Huahine and Raiatea) did not result in Chattering Kingfisher declining there. For example, the harrier was noted on Bora Bora as long ago as 1922 (Holyoak & Thibault 1984), where the kingfisher still occurs (an estimated 238 individuals in 2004; Anon. 2004). Also, Chattering Kingfisher is still common on Raiatea despite the presence of Swamp Harrier on the island (Fry *et al.* 1992). We conclude that there are no modern-day records or specimens of Chattering Kingfisher from Tahiti. Field observations are not supported by evidence, while specimens labelled 'Tahiti' were either not obtained on Tahiti, or may be trade



birds. Any future report of Chattering Kingfisher on Tahiti must be clearly documented to eliminate all possibility of confusion with Society Kingfisher.

**Biogeographical and conservation implications.**—That Chattering Kingfisher probably never occurred on Tahiti prompts some interesting observations concerning biogeography and conservation. The nominate subspecies of Chattering Kingfisher is not the only bird taxon endemic to the Leeward Islands, there is also a subspecies of Grey-green Fruit Dove *Ptilinopus (purpuratus) chrysogaster*. On the other hand, Tahiti and Moorea are inhabited by two other subspecies of Grey-green Fruit Dove that resemble one another but apparently are not sister to *P. (p.) chrysogaster* (Cibois *et al.* 2014). Other Leeward / Windward species-pairs include (1) the extinct Raiatea Parakeet *Cyanoramphus ulietanus* on the Leeward Islands (Raiatea) and the extinct Black-fronted Parakeet *C. zealandicus* on Tahiti; and (2) the extinct Garrett's Reed Warbler *Acrocephalus musae* on Raiatea and Huahine vs. Tahiti Reed Warbler *A. caffer* and the extinct Moorea Reed Warbler *A. longirostris* (Cibois *et al.* 2008). These examples demonstrate that the avifauna of the Leeward Islands has its own history, independent of the Windward Islands of Tahiti and Moorea, making the absence of Chattering Kingfisher on Tahiti unsurprising.

The nominate subspecies of Chattering Kingfisher is certainly known only from the five volcanic Leeward Islands: Bora Bora, Huahine, Maupiti, Raiatea and Tahaa. Because the original vegetation on Tupai atoll can be presumed to differ markedly from that on the five Leeward Islands, we consider occurrence on Tupai unlikely. Furthermore, Thibault (1974) did not record the species on Tupai in 1973. For Maupiti and Tahaa, Holyoak & Thibault (1984) estimated <100 pairs and 450–500 pairs, respectively, but did not provide estimates for Huahine and Raiatea (which may be the most important islands for the species). For Bora Bora, Holyoak & Thibault (1984) estimated <100 birds (*c.* 50 pairs), but this was revised to 238 individuals (*c.* 120 pairs) by Anon. (2004). If Huahine and Raiatea harbour 2,000 pairs each, the world population would be <5,000 pairs.

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#### References:

- Amadon, D. 1942. Birds collected during the Whitney South Sea Expedition, 50. Notes on some non-passerine genera 2. *Amer. Mus. Novit.* 1176.
- Anon. 2004. L'avifaune de Bora Bora. *Te Manu* 46: 4–5.
- Banes, R. C., Clench, M. H. & Barlow, J. C. 1973. Bird collections in the United States and Canada. *Auk* 90: 136–170.
- Bille, S. A. & Von Rosen, W. 1852. *S. Bille's Bericht über die Reise der Corvette Galathea um die Welt in den Jahren 1845, 46 und 47*. C. A. Reitzel, Copenhagen.
- Cibois, A. & Thibault, J.-C. 2009. Combien d'espèces de martins-chasseurs existe-t-il à Tahiti? *Te Manu* 65: 16–18.

- Cibois, A., Thibault, J.-C. & Pasquet, E. 2008. Systematics of the extinct reed warblers *Acrocephalus* of the Society Islands of eastern Polynesia. *Ibis* 150: 365–378.
- Cibois, A., Thibault, J.-C., Bonillo, C., Filardi, C. E., Watling, D. & Pasquet, E. 2014. Phylogeny and biogeography of the fruit doves (Aves: Columbidae). *Mol. Phyl. & Evol.* 70: 442–453.
- Clench, W. J. 1979. A biography of Andrew Garrett, early naturalist in Polynesia. Part 2. *Nautilus* 93: 96–102.
- Dutson, G. 2011. *Birds of Melanesia*. Christopher Helm, London.
- Finn, M. 2008. Tahiti, New Caledonia & Fiji 2008, September 1st–18th. [www.birdwatchingbreaks.com](http://www.birdwatchingbreaks.com).
- Fry, C. H., Fry, K. & Harris, A. 1992. *Kingfishers, bee-eaters and rollers*. Christopher Helm, London.
- Gill, B. J. 2006. Birds in Australian and New Zealand museums – a major resource for ornithology. *New Zealand J. Zool.* 33: 299–315.
- Gmelin, J. F. 1788. *Systema naturae*, vol. 1. Georg Emmanuel Beer, Leipzig.
- Gouni, A. 2011. Le Busard de Gould. In: Soubeyran, Y., Caceres, S. & Chevassus, N. (eds.) *Les vertébrés terrestres introduits en outre-mer et leurs impacts. Guide illustré des principales espèces envahissantes*. Comité français de l'UICN & ONCFS, Paris.
- Gräffe, E. 1873. Vogelbälge aus Huahine, gesammelt für das „Museum Godeffroy“. *J. Mus. Godeffroy* 1: 48–51.
- van den Hoek Ostende, L. W., Dekker, R. W. R. J. & Keijl, G. O. 1997. Type-specimens of birds in the National Museum of Natural History, Leiden. Part 1: non-passerines. *NNM Bull.* 1: 1–248.
- Holyoak, D. T. 1974. Les oiseaux des îles de la Société. Part 2. *L'Oiseau et R.F.O.* 44: 153–184.
- Holyoak, D. T. & Thibault, J.-C. 1984. Contribution à l'étude des oiseaux de Polynésie orientale. *Mem. Mus. Natl. Hist. Nat. Paris* 127: 1–209.
- Jansen, J. J. F. J. & van der Vliet, R. E. 2015. The chequered history of the Chattering Kingfisher *Todiramphus tutus* in Tahiti. I: type specimens. *Bull. Brit. Orn. Cl.* 135: 108–120.
- King, M. 1981. *The collector. A biography of Andreas Reischek*. Hodder & Stoughton, Auckland.
- Largen, M. J. 1987. Bird specimens purchased by Lord Stanley at the sale of the Leverian Museum in 1806, including those still extant in the collections of the Liverpool Museum. *Archiv. Nat. Hist.* 14: 265–288.
- Latham, J. 1782. *A general synopsis of birds*, vol. 1(2). Benjamin White, London.
- Lysaght, L. 1959. Some eighteenth century bird paintings in the library of Sir Joseph Banks (1743–1820). *Bull. Brit. Mus. (Nat. Hist.). Hist. Ser.* 1: 251–371.
- Medway, D. G. 1979. Some ornithological results of Cook's third voyage. *J. Soc. Bibliog. Nat. Hist.* 9: 315–351.
- Medway, D. G. 2010. A review of the origin, European discovery, and first descriptions of the red shining-parrot (*Prosopeia t. tabuensis*) on 'Eua, Kingdom of Tonga. *Notornis* 57: 128–134.
- Monnet, C., Thibault, J.-C. & Varney, A. 1993. Stability and changes during the twentieth century in the breeding landbirds of Tahiti (Polynesia). *Bird Conserv. Intern.* 3: 261–280.
- Morris, P. 2006. Polynesia, 6–28 September 2006. [www.cloudbirders.com](http://www.cloudbirders.com).
- Pratt, H. D., Bruner, P. L. & Berrett, D. G. 1987. *The birds of Hawaii and the tropical Pacific*. Princeton Univ. Press.
- Rasmussen, P. C. & Prŷs-Jones, R. P. 2003. History vs mystery: the reliability of museum specimen data. *Bull. Br. Orn. Cl.* 123A: 66–94.
- Roselaar, C. S. 2003. An inventory of major European bird collections. *Bull. Brit. Orn. Cl.* 123A: 253–337.
- Scheps, B. 2005. *Das verkaufte Museum, die Südsee-Unternehmungen des Handelshauses Joh. Ces. Godeffroy & Sohn, Hamburg, und die Sammlungen "Museum Godeffroy"*. Goecke & Evers, Hamburg.
- Schmeltz, J. D. E. 1874. *Museum Godeffroy Catalog V. Nebst einer Beilage enthaltend topographische und zoologische Notizen*. L. Friederichsen & Co., Hamburg.
- Slater, P. L. 1864. List of a collection of birds from Huaheine, Society's Islands. *Proc. Zool. Soc. Lond.* 1864: 8–11.
- Sharpe, R. B. 1868. *A monograph of the Alcenididae*. Privately published, London.
- Steadman, D. W. 1995. Prehistoric extinctions of Pacific island birds: biodiversity meets zooarchaeology. *Science* 26: 1123–1131.
- Stresemann, E. 1950. Birds collected during Capt. James Cook's last expedition (1776–1780). *Auk* 67: 66–88.
- Thibault, J.-C. 1974. *Le peuplement avien des îles de la Société (Polynésie)*. MNHN-EPHE, Papeete.
- Thomas, W. S. 1979. A biography of Andrew Garrett, early naturalist of Polynesia. Part 1. *Nautilus* 93: 15–28.
- Townsend, C. H. & Wetmore, A. 1919. Reports on the scientific results of the expedition to the tropical Pacific in charge of Alexander Agassiz, on the U.S. Fish Commission steamer "Albatross," from August, 1899, to March, 1900, Commander Jefferson F. Moser, U.S.N., commanding. XXI. The birds. *Bull. Mus. Comp. Zool.* 6: 151–225.
- Wagstaffe, R. 1978. *Type specimens of birds in the Merseyside County Museums*. Merseyside County Mus., Liverpool.
- Wilson, S. B. 1907. XVIII – Notes on birds of Tahiti and the Society group. *Ibis* 49: 373–379.

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