

THE CORRECT IDENTITY OF THE BLACK-TOED PETREL *PROCELLARIA* *MELANOPUS* GMELIN, 1789

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ABSTRACT

The Black-toed Petrel of Latham, on which Gmelin founded his *Procellaria melanopus*, has not previously been satisfactorily identified. For many years earlier this century, *melanopus* Gmelin was widely used as the name for the Providence Petrel *Pterodroma solandri*. On the basis of available evidence it is reasonable to conclude that Latham's Black-toed Petrel was in fact a specimen of the Mottled Petrel *Pterodroma inexpectata*, taken in the course of Cook's third voyage at sea off the north-west coast of North America, probably in the Gulf of Alaska in May 1778.

Among papers in the Warwick County Record Office at Warwick, formerly belonging to Thomas Pennant, there is a letter dated 18 August 1784 (CR2017/TP277/9) to him from John Latham in which Latham advised Pennant, *inter alia*, that he

saw three Peterils at ye Lev.Mus. where I was ye other day, which Mr Waring assured me came from N.America, & were given to Sr Ash. by Capt King – but, alas I knew two of them to be from ye pacific ocean – ye 2nd titled/from America/Length 13 In. Bill 1½ In. black: forehead, betw ye bill & Eye, Chin, & throat greyish white, minutely spotted with dusky: Crown & all ye upper Parts dusky black: under parts pale hoary lead Colour: Legs pale. This in Sr Jos. Banks Catalogue is said to be native of ye S. Seas –

This passage was the source of Pennant's inclusion that same year among "certain species of Petrels, observed on the western coast of North America" of "another, about thirteen inches long, with the forehead, space between the eyes and bill, the chin, and throat, of a greyish white, varied with specks of dusky: crown and upper part of the body dusky: under parts hoary lead-colour: legs pallid". He said that it was in the Leverian Museum (Pennant 1784-7; Introduction to Volume 1:cxlviij).

Latham's description of the Black-toed Petrel, published in 1785 (Latham 1781-5:III:408,no.12), was clearly based by him on the specimen he had seen in the Leverian Museum and to which he had referred in his letter to Pennant.

BLACK-TOED PETREL. *Lev. Mus.*

Description: LENGTH thirteen inches. Bill an inch and a half long, black: all round the base of the bill, the chin, and throat, pale silvery grey, marked with minute dusky specks: top of the head, and all the upper parts of the plumage, wings, and tail, dusky black, inclining to hoary on the back: tail rounded at the end: wings and tail even: the under parts of the body hoary ash-colour: legs very pale: the webs for one third the same; the rest to the end black: joints of the toes black.

Place. Said to inhabit *North America*.

In 1787, Pennant (1784-7, Suppl:73) also published a full description of the Black-toed Petrel. There is no evidence that he separately examined the specimen in the Leverian Museum. His description was obviously based on that of Latham to which he referred, but there are some subtle differences:

BLACK-TOED PETREL

With a black bill, an inch and a half long; chin, throat, and space round its base, of a pale silvery grey, minutely speckled with dusky: crown, upper part of the neck, back, wings, and tail, of a sooty black, a little hoary on the back: whole lower part of neck and body of a hoary ash: tail rounded at the end: legs, and one third of the length of the webs, very pale: the rest of the webs and the joints of the toes black. Length thirteen inches.

From a specimen in the Leverian Museum, supposed to come from the western side of *North America*.

It will be seen that Pennant described the bird as having the "whole lower part of neck and body of a hoary ash" whereas Latham said "the under parts of the body hoary ash-colour"; and that Pennant said the bird described was "supposed to come from the western side of *North America*".

Gmelin in 1789 (1788-93:I:562,no.16) based his *Procellaria melanopus* on Latham's Black-toed Petrel, and Latham himself in 1790 (1790:II:824-5,no.12) applied the same binomial to it.

Many years afterwards, in 1824, Latham (1821-8:10:185-6,no.15) also included the Black-toed Petrel in his *General History of Birds*.

BLACK-TOED PETREL.

LENGTH thirteen inches. Bill one inch and a half; all round the base, the chin, and throat pale, silvery grey, marked with minute dusky specks; breast and belly hoary ash-colour; top of the head, and all the upper parts of the plumage, wings, and tail dusky black, inclining to hoary on the back; tail rounded at the end; wings and tail even; legs very pale; webs for one-third the same, the rest to the end black; joints of the toes black.

Said to inhabit North America. – Leverian Museum. One of these, supposed to be an adult bird, had the forehead, sides under the eyes, and all beneath from chin to vent white, but the under tail coverts were dusky.

It will be noted that Latham in 1824 amended his description of the underparts to provide that only the breast and belly were hoary ash-colour. Significantly, he added a brief description of another, supposed adult, specimen of his bird.

G.R. Gray (1844:164) was the first to attempt to identify *melanopus* Gmelin with known species. Under this name and "The Black-footed Petrel" he placed "*P. crepidata* Sol. Mss. *P. mollis*, Gould. *P. grisea*, Kuhl. Monogr. t.11.f.9". We shall return to *P. crepidata* later. *P. mollis* Gould is a reference to the bird now known as the Soft-plumaged Petrel *Pterodroma mollis* (Gould, 1844). Bourne & Elliott (1965) considered that the measurements given by Kuhl for his *Procellaria grisea* are sufficient to place that bird in the "*mollis* group" of petrels, but that Kuhl's description is wholly insufficient for identifying the species.

Coues (1866:193) considered *melanopus* Gmelin to be "Not identifiable, except opinionatively. Evidently some species of *Aestrelata*. Said to come from North America, which would make it referrible (*sic*) to *Ae. haesitata*. Description applies in most respects to *mollis* Gould." Later, Salvin

(1896:406) placed *melanopus* Gmelin doubtfully in the synonymy of *Pterodroma mollis*.

Then, in 1912, Mathews (1910-28:II:147) considered the description of Latham's Black-toed Petrel to be "applicable in every detail, save size and habitat" to the bird known today as the Providence Petrel *Pterodroma solandri* (Gould, 1844). Mathews summarily dismissed Latham's given habitat of North America by stating that it was "quite unknown", and Latham's given size by stating that it "is of little consequence in many of Latham's descriptions". Mathews regarded various plumage characteristics of the Black-toed Petrel as seeming "quite sufficient to absolutely fix the identity of Gmelin's *P. melanopus* with the Norfolk Island Petrel" being the *Procellaria phillipii* of G.R. Gray, 1862, which Mathews properly considered a synonym of *solandri* Gould. Mathews therefore arbitrarily fixed the type locality of *melanopus* Gmelin as Norfolk Island. However, in so doing he gave no consideration, for example, to the fact that before publication of Latham's description in 1785 only those Europeans on Cook's second voyage had visited Norfolk Island (on 10 October 1774), and that there is no evidence that any procellariids had been collected on the occasion of that brief visit.

In 1924, Loomis (1924:282) pointed out that there appeared to be no valid reason for connecting *solandri* Gould with *melanopus* Gmelin as the dimensions assigned to the Black-toed Petrel of Latham are those of a much smaller bird than the one named by Gould. However, although Mathews must have known about the views of Loomis, he chose to ignore them for he continued to apply the name *melanopus* Gmelin to the Providence Petrel in all his subsequent references to that species (e.g. Mathews 1927:118; 1928:17; 1934:166). So too did Mathews' co-worker Iredale who wrote (1929) of how they had together established the identity of *melanopus* Gmelin with *solandri* Gould and *phillipii* G.R. Gray. Hartert (1928) complicated the situation further by considering that *melanopus* Gmelin must either be taken as the oldest name of the Kermadec Petrel *Pterodroma neglecta* (Schlegel, 1863) or better quoted with a query. Mathews (1932:524-5) disagreed with this view, but not before Peters (1931:63), on the authority of Hartert, had replaced *melanopus* Gmelin with *solandri* Gould as the name for the Providence Petrel, and included *melanopus* Gmelin doubtfully under *phillipii* G.R. Gray, which Hartert considered a synonym of *neglecta* Schlegel.

No further comment on the situation occurred until Murphy & Pennoyer (1952:15) followed Loomis in rejecting *melanopus* Gmelin in favour of *solandri* Gould as the proper name for the Providence Petrel. They considered that the descriptions of both Latham and Gmelin showed that those authors were referring to a much smaller species and that, in addition, their details of plumage and pattern could not well be reconciled with *solandri*. However, despite the views of Murphy & Pennoyer, some authors (e.g. McKean & Hindwood 1965:88) continued to use *melanopus* Gmelin for the Providence Petrel. In 1979, Jouanin and Mougin (1979:68) adopted *solandri* Gould as the name for the species and it seems to have been universally accepted ever since.

But although Loomis and Murphy & Pennoyer had rejected *melanopus* Gmelin as being identical with *solandri* Gould, they did not venture to proffer

an opinion as to the correct identity of the former. Stresemann is the only author who has commented on that matter since Mathews, Hartert and Iredale. He considered (1953:371) that Ellis folio 40, drawn on Cook's third voyage, which depicts a Short-tailed Shearwater *Puffinus tenuirostris* from 'Amongst the Ice... between Asia & America' (Lysaght 1959:328), was perhaps the basis of Latham's Black-toed Petrel and *melanopus* Gmelin. However, as we have seen, Latham described his bird from a specimen in the Leverian Museum, not from an Ellis drawing (Medway 1979:326).

The specimen of the Black-toed Petrel, which Latham said in 1824 was supposed to be an adult bird, was undoubtedly the bird depicted in the Parkinson drawing labelled *Procellaria crepidata*, then in the Library of Sir Joseph Banks and now in the Department of Prints and Drawings, British Museum (199*b1,f.52). It is a beautifully finished painting which has been reproduced in monochrome by Lysaght (1959:279-80; Pl.36b). The bird depicted by Sydney Parkinson, the first gadfly petrel ever described and drawn, was shot by Banks on 15 October 1768 at 6°50' N, 23°46' W in the North Atlantic near the Cape Verde Islands. Banks described the event as follows (Banks in Beaglehole 1963:I:174):

...I had the good fortune however to see a bird of the shearwater kind which I shot, and it provd to be not descrbd; it was about as large as the common but differd from it in being whiter, especialy about the face: calld it *Procellaria crepidata*, as its feet were like the gulls shot last week, black without but white near the leggs.

Solander described this specimen as *Procellaria crepidata*. A fair copy of his original manuscript description is in The Natural History Museum, London in Sol. Z4 at ff.87-8. It was published by Mathews (1910-28:II:164-5). Bourne (1983:52) considered that the bird depicted in the Parkinson drawing is recognizable as the form of Soft-plumaged Petrel breeding locally at the Cape Verde Islands which he advocated treating binomially as a distinct species *Pterodroma feae*.

There is no evidence that Latham had access at any time to any of the Solander manuscript descriptions of petrels collected in the course of Cook's first voyage. But he did have access to the Parkinson drawings and used them as best he knew how for the purposes of his *General Synopsis of Birds*. The name Black-toed Petrel, which Latham first used in 1785 for the bird in the Leverian Museum, was probably derived by him from the name *Procellaria crepidata* which he had seen on the Parkinson drawing. Furthermore, folio 964 in the Latham collection of drawings in The Natural History Museum (Sawyer 1949:178) bears the annotations in Latham's hand "Procellaria melanopus, Ind.orn.2.824. Black-toed Petrel, Gen.Syn. 6.408". This drawing is an inferior copy, almost certainly by Latham, of the Parkinson folio labelled *Procellaria crepidata*. It is therefore clear that Latham regarded the Parkinson bird and the Leverian bird as representing the same species, the former supposed by him to be an adult of the latter, which was a much darker-plumaged individual.

Latham's opinion is not at all surprising when it is recalled that for many years it was generally believed that procellariids passed through dark to light plumage phases as they progressed from immaturity to adulthood. This view was aptly expressed by Coues (1866:138):

In general the younger the bird the more uniform, or more tending towards fuliginous are its colours: while in adult life light and dark colors occupy distinct areas, and are quite trenchantly defined.

However, a few years later, Salvin (1875:376), on receiving one adult and two young specimens of the Juan Fernandez Petrel *Pterodroma externa*, was able to say that the latter "are in a specially interesting state, as they show that the young assume the precise plumage of the adult with their first feathers". By 1883, Ridgway (1883:658), when describing his *Oestrelata fisheri* which was in reality a specimen of the Mottled Petrel *Pterodroma inexpectata* from Kodiak Island, considered the matter to be beyond doubt:

no fact in ornithology can be more thoroughly established than that, with the possible exception of the Albatrosses, *the Petrels have no distinct progressive stages of plumage*, the young assuming with their first feathers the fully adult livery.

It is no longer reasonable to doubt the validity of North America as the locality given for the Black-toed Petrel. Mr Waring (then caretaker of Sir Ashton Lever's museum) assured Latham that it came with others from North America and, furthermore, that it had been given to Sir Ashton by Captain King. Captain King was Captain James King, who was in command of the *Discovery* during the latter stage of Cook's third voyage.

The ships of Cook's third voyage were off the north-west coast of North America in 1778. Birds were collected at sea in that area. For example, in the Gulf of Alaska off the St Elias Range, King recorded under date 8 May 1778 that "The Gentlemen of the Discovery were shooting at sea birds about us but we perceiv'd they had little success, the birds being very wild". And under date 9 May 1778 Charles Clerke recorded that "We have very fine Weather, smooth Water, and plenty of the good Company of Whales, Ducks, Shaggs & c, the fowl however are so shy, that it is with difficulty we get enough of them to make a roast" (Beaglehole 1967:I:340,n.2).

We do not know what birds were collected then. However, one of them, later to become the Black-toed Petrel of Latham, may well have been among the petrels, said to have come from North America, which were presented by King to the Leverian Museum after the return of the third voyage ships to London in October 1780.

The fate of Latham's Black-toed Petrel is not known. It has not been identified among the lots contained in the public sale of the Leverian Museum collection in 1806, unless it was Lot 5736 "Small black petrel, N.W. America" included on the 48th day, 30 June 1806 (Donovan 1806:256).

The descriptions by Latham and Pennant of the Black-toed Petrel, particularly that of Latham in 1824 in which he said that the breast and belly were hoary ash-colour, answer in all material respects to the Mottled Petrel. A very rare dark form has been recorded in the southern population of the similar Soft-plumaged Petrel (Bourne 1983), but that species has never been known to occur in the North Pacific let alone in waters of the north-west coast of North America visited by the ships of Cook's third voyage. On the other hand the Mottled Petrel is, for instance, a common, non-breeding resident in the Gulf of Alaska from June through October. Gould *et al.* (1982:17,253), for example, estimated some 110 000 were in the Gulf of

Alaska during the northern summer of 1776, with a few birds having arrived there as early as 4 May of that year.

The Mottled Petrel had been taken on both the first and second Cook voyages. Banks first collected it on 1 February 1769 in Lat. 58°30' S, 80°58' W. His specimen was described by Solander as *Procellaria lugens* (Sol. Z4 at ff.91-2, published by Mathews 1910-28:II:159-160), and Parkinson sketched it (Lysaght 1959:276). On the second voyage it was taken by the Forsters at 67°20' S, 137°12' W on 23 December 1773 and drawn and described the next day (Medway 1991:245).

George Forster's folio 97 was inadvertently labelled *Procellaria haesitata*, the name given by the Forsters to the Grey Petrel *Procellaria cinerea* (Lysaght 1959:294-5). In a manuscript catalogue (89 f. F) of the Forster animal drawings in The Natural History Museum (Whitehead 1978:32), formerly in the possession of Sir Joseph Banks, the entry for *Procellaria haesitata* at page 9 reads "South Sea within the Antarctic Circle. Nat size". We know that Latham used this catalogue. It is undoubtedly the "Sr Jos. Banks Catalogue" to which he refers in his letter of 18 August 1784 to Pennant. The Forster painting, an illustration of the type of *Pterodroma inexpectata*, shows a bird with a dark breast and belly as described by Latham for his Black-toed Petrel in 1824. Clearly he identified the Leverian Museum specimen with Forster's drawing of *inexpectata*. On the basis of the catalogue entry, he initially believed the species was in fact native of the South Seas and did not come from North America, as he had been assured by Mr Waring.

Even in the absence of the specimen itself, it is reasonable to conclude on the basis of the foregoing evidence that Latham's Black-toed Petrel was in fact a specimen of the Mottled Petrel, taken in the course of Cook's third voyage at sea off the north-west coast of North America, probably in the Gulf of Alaska in May 1778. However, the name *melanopus* Gmelin has never been used for the Mottled Petrel which has almost always been known as *inexpectata* Forster. In such circumstances, although *melanopus* has priority over *inexpectata* by 55 years, it would be quite inappropriate to resurrect *melanopus* Gmelin as the valid name for the taxon. After some 200 years it is sufficient that it has been possible to satisfactorily identify another problematic procellariid species now known to have been collected on Cook's voyages, and to assign it at last to its proper place in history and taxonomy.

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