

A COOK'S PETREL SPECIMEN FROM CALIFORNIA

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On the morning of 17 November 1983, Bob Moon found a Cook's Petrel (*Pterodroma cookii*) floundering in the driveway of his seaside home at 2-2702 East Cliff Drive, Santa Cruz, Santa Cruz County, California (37°N). Moon called the Native Animal Rescue Service, a local wildlife rehabilitation center, but the bird expired before the center's volunteers could respond. They retrieved the carcass, however, and delivered it to us for identification. To the best of our knowledge, it is the first specimen of Cook's Petrel for the continental United States and the first land record for the species in the Northern Hemisphere.

Our preliminary examination revealed that the specimen was a small (length 30 cm) tube-nosed bird in extremely worn plumage. Its upperparts were uniformly dark gray, its wings and rump sooty black and brown, and its underparts all white except for a narrow dark margin on the underwing. The pale blue feet and high-contrast white inner vanes of the otherwise black primaries (Figure 1) indicated that it was one of the *Cookilaria* petrels (Palmer 1962); the subgenus *Cookilaria* comprises several species of small *Pterodroma* petrels (see Table 1). We identified this specimen as *cookii* on the basis of plumage characteristics, after comparing it with a series of *Pterodroma* petrels at the California Academy of Sciences. George Watson (*in litt.*) subsequently compared the specimen with those in the National Museum of Natural History and confirmed our diagnosis. The specimen was deposited in the California Academy of Sciences (71447).

The problem of identifying *Cookilaria* petrels is exacerbated by the lack of a universally accepted classification for the group. We combine those by Jouanin and Mougín (1979) and Bourne (1983), both of which accommodate Fleming's (1941) finding (based on skull morphology) that two parallel radiations of similar species exist within the group. Arrangements by other authors (e.g., Murphy 1936, Harper and Kinsky 1978, Harrison 1983) differ in varying degrees from the one presented here (Table 1).

Historically, three races of *P. cookii* have been described, as follows: *cookii* from breeding islands near New Zealand; *orientalis*, described by Murphy (1936), from unknown breeding areas believed to be in the southeastern Pacific; and *defilippiana*, from Mas Atierra and other islands west of Chile. Murphy described *orientalis* as larger than *cookii* and paler above (due to light feather edgings). Most authors now believe *orientalis* is invalid, having been based on freshly molted or juvenal plumage *cookii* (Palmer 1962, Bourne 1983, G. Watson *in litt.*). *P. defilippiana*, believed to be restricted to Chilean waters (Harrison 1983), is now considered by Jouanin and Mougín (1979), Bourne (1983) and the AOU (1983) to be a separate species, the Mas Atierra Petrel. Therefore, *P. cookii* is currently considered monotypic.

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Whether observed at sea or in the hand, a *Cookilaria* petrel presents an identification challenge. Plumage differences between the taxa are subtle, and individual and seasonal variation within species are not adequately addressed in most field guides. In general, our Santa Cruz specimen resembles the Cook's Petrel pictured in the National Geographic Society guide (Scott 1983), but it has the upperwing pattern of the Pycroft's Petrel (*P. longirostris pycrofti*) illustrated in Harrison's guide (1983). The crown, nape and back of the Santa Cruz specimen are uniformly dark gray. The color is much darker than that usually depicted for *cookii* (Harper and Kinsky 1978, Harrison 1983), but the distinctly darker cap typical of *P. longirostris* is not evident. Apparently, among *Pterodroma* petrels, plumage becomes darker with wear; in fact, a very worn *cookii* may appear as dark as a fresh *longirostris*, but the former's cap and back will be concolor (Roberson 1980). The upperparts of this specimen are so dark that the M-shaped mantle pattern described for *cookii* by several authors (Roberson 1980, Harrison 1983) is not obvious. The central rectrices (dorsal side) are sooty brown, but the lateral ones are paler, ranging from light gray to white with a fine gray speckling (Figure 2). The lateral rectrices become sequentially paler toward the edge of the tail, and the inner vane of each feather is significantly paler than the outer vane, a pattern which is typical for *cookii* (Murphy 1936). The white outer tail mentioned as a diagnostic field mark for *cookii* by several authors (Roberson 1980, Harrison 1983) is probably most conspicuous when the rectrices are heavily worn. In contrast, *P.l. longirostris* usually has darker outer rectrices; *P.l. pycrofti*, however, is intermediate, often showing some white in the

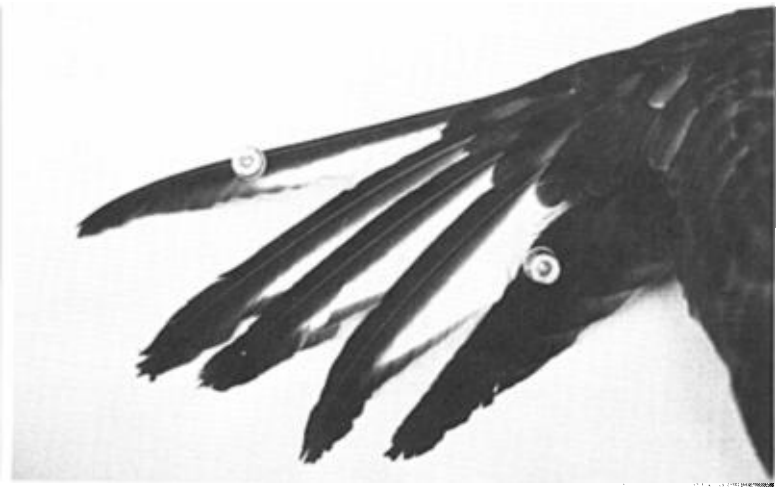


Figure 1. Dorsal view of primaries of immature female Cook's Petrel (*P. cookii*; California Academy of Sciences 71447) showing contrasting white inner vanes.

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outer tail (Oliver 1955, Roberson 1980). In the field, *P. defilippiana* is not considered to be safely separable from *cookii*, but in the hand it can be distinguished by the larger, more deeply grooved bill (Murphy 1936), darker eye patch, and longer tail (Harper and Kinsky 1978). All other *Cookilaria* petrels have even darker upperparts and more pronounced underwing patterns.

Cook's Petrels breed from October to April. During the austral winter (May-September), they leave their breeding areas (Oliver 1955) and disperse into the central and eastern Pacific. The range of dispersal and migration routes are not well known. Most records are from waters off Peru, northern Chile, and Baja California (Murphy 1936, Roberson 1980, Pitman 1986), but considerable movement through the central Pacific has been noted (Pitman 1986). The northernmost records are from the vicinity of the western Aleutians (Roberson 1980).

During the period 3 October through 1 December 1979, 21 sightings of *Cookilaria* petrels were made 50 to 200 km off the coast of California, from Point Piedras Blancas (35°40'N) to Point Arena (39°N; Roberson 1980). These sightings represent the northernmost records along the west coast of North America (excluding the Aleutian records). Because *P. defilippiana* is nearly identical to *P. cookii* under field conditions, the identification of these birds, as well as several others seen off southern California and one on the Salton Sea during summer 1984 (McCaskie 1984, R. Pitman *in litt.*), is currently unresolved; all are under consideration by the California Bird Records Committee.



Figure 2. Dorsal view of rectrices of immature female Cook's Petrel (*P. cookii*; CAS 71447).

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The distribution of Cook's Petrels at sea is almost certainly related to patterns of sea surface temperature and associated oceanographic factors. Bourne (1983) says that Cook's Petrels prefer waters somewhat cooler than those frequented by other *Cookilaria*, but he does not mention any specific thermal range. Previously, it was thought that Cook's Petrels were associated with subpolar waters (4.0 to 13.9°C) in both hemispheres (Bourne, in Palmer 1962), but especially those of the sub-Antarctic Zone (Murphy 1936). However, current evidence shows that the species should be considered subtropical. The species' nesting islands are located in subtropical waters, very near the sub-Tropical Convergence. Breeding birds could easily forage in the cold productive waters of the sub-Antarctic Zone, but in fact are rarely recorded there (Watson 1975). During the austral winter, when waters nearer the colony become colder, the birds depart the area (Oliver 1955). Recent pelagic surveys have found that *cookii* occurs frequently in subtropical (14 to 21.9°C) and tropical (22+ °C) waters (Ainley and Boekelheide 1983, Pitman 1986). In the eastern Pacific, most records are from mild oceanic waters (approximately 15 to 25°C) seaward of cold-water upwelling zones (Murphy 1936, Roberson 1980, Pitman 1986). Pitman's data show also that Cook's Petrels are scarce in the very warm tropical

Table 1. The subgenus *Cookilaria*, after Jouanin and Mougín (1979) and Bourne (1983).

Taxon	English Name	Breeding Range Center
<i>Pterodroma</i> ^c <i>hypoleuca</i>	Bonin Petrel	Bonin and Volcano Islands (south of Japan), Leeward Hawaiian chain
<i>P. nigripennis</i> ^{a,c}	Black-winged Petrel	Southwest Pacific
<i>P. axillaris</i> ^{a,c}	Chatham Island Petrel	Southeast Chatham Island (east of New Zealand)
<i>P. cookii</i> ^b	Cook's Petrel	Little and Great Barrier Islands (northern New Zealand)
<i>P. defilippiana</i> ^b	Mas Atierra Petrel	Juan Fernandez Islands (west of Chile)
<i>P. longirostris</i> <i>longirostris</i> ^{b,d}	Stejneger's Petrel	Juan Fernandez Islands (west of Chile)
<i>P. longirostris</i> <i>pycrofti</i> ^{b,d}	Pycroft's Petrel	Northeast of New Zealand
<i>P. leucoptera</i> <i>leucoptera</i> ^{b,d}	Gould's Petrel	Cabbage Tree Island (eastern Australia)
<i>P. leucoptera</i> <i>brevipes</i> ^{b,d}	Collared Petrel	Southwest Pacific
<i>P. leucoptera</i> <i>caledonica</i> ^d	New Caledonian Petrel	New Caledonia
(undescribed) ^d	— — —	Solomon Islands

^aTogether form a superspecies (Jouanin and Mougín 1979).

^bTogether form a superspecies (Jouanin and Mougín 1979).

^cTogether form a superspecies (Bourne 1983).

^dTogether form a species, the White-winged Petrel, *P. leucoptera* (Bourne 1983).

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regions of the eastern Pacific, suggesting that records from tropical waters are probably birds in transit.

Although Cook's Petrels have been recorded in cold (4-5°C) water (Wahl 1978), the waters adjacent to the coast of California probably are usually too cold (10-17°C) for the species. The 1979 sightings and the present specimen were recorded during the warmest season (early autumn) and in unusually warm years. Weak and very strong El Niño conditions prevailed off Point Sur (36°N) during 1979 and 1983, respectively (Breaker 1983). Hydrographically, waters in the reported sighting locations (Davidson Seamount and northwest of Point Arena) are characterized by persistent warm-core (16-19°C) eddies that closely approach the California coast (Simpson et al. 1983, K. Briggs pers. comm.).

As evidenced by its worn plumage (G. Watson *in litt.*) and underdeveloped ovary (L. Thompson pers. comm.), the Santa Cruz specimen is an immature female. Given the October-November dates of occurrence relative to the nesting season, many of the California records likely have been of immature or nonbreeding individuals. Most late records of austral-breeding Sooty Shearwaters (*Puffinus griseus*) in California waters also pertain to immatures (E. Chu pers. comm.).

Our examination of the specimen's digestive tract revealed only irregular strips of thin translucent plastic (up to 1 x 3 cm) in the foregut, and several squid beak fragments and four small plastic particles (various colors, all < 1 cm across) in the gizzard.

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Sketch by Keith Hansen