JAMAICA PETREL *Pterodroma caribbaea* **E/Ex**[4]

Predation by introduced mongooses and human exploitation for food caused the extinction or near-extinction of this very poorly known seabird of the forested mountains of eastern Jamaica, which recent evidence suggests is (or was) a good species.

DISTRIBUTION The Jamaica Petrel (see Remarks 1) formerly nested in the Blue Mountains of Jamaica, where specimens were taken at the summit in 1829 (Bancroft 1835) and in Cinchona Plantation on the south flank at about 1,600 m in November and December 1879 (Bond 1956b, Benson 1972, Imber 1991). Carte (1866) was aware of the species in the north-eastern end of Jamaica, and the John Crow Mountains, adjacent to the Blue Mountains, were known to harbour birds at the end of the nineteenth century (see Scott 1891-1893); Bourne (1965) reported that "birds are still said to call at night" in the John Crow Mountains. It is conceivable that the species also nested in the mountains of Guadeloupe and Dominica, since there is evidence of nesting black petrels in Guadeloupe (see Bent 1922, Murphy 1936, Imber 1991, Remarks 2 under Black-capped Petrel *Pterodroma hasitata*), and Verrill (1905) reported that the Jamaica Petrel nested in Dominica (see Remarks 2) in La Birne, Pointe Guignarde, Lance Bateaux, Morne Rouge and Scott's Head. Virtually nothing is known about the species's range at sea other than Bond's (1936) report of a possible sighting west of the Bimini Group, Bahama Islands.

POPULATION When first reported in the literature in 1789 it was considered plentiful (see Godman 1907-1910). Gosse (1847) was aware of the existence of the "Blue-Mountain Duck" in the Blue Mountains, although he could not provide further information. In 1866 two additional specimens were taken in the same region (Carte 1866), and between November and December 1879 at least 22 specimens were collected at Cinchona (see Imber 1991). The investigation conducted by Scott (1891-1893) in 1891 led him to consider the species to be "nearly if not quite exterminated": for this assessment he investigated and gathered information from local people, discovering that a man living several miles away from Mooretown (south of the John Crow Mountains) knew of the species and indicated that at one time it had been exploited for food and that not long before he himself had taken a pair from one of the burrows; furthermore, when Scott's assistant was conducted to the area (late February or early March 1891) where these birds had previously been taken, they dug out some twenty-five burrows, but were unable to find a single bird, though in many of the holes excavated they found mongooses. Furthermore, the information given by Scott (1891-1893) revealed that while the species was considered extirpated from the Blue Mountains it was still "abundant" in the John Crow Mountains (perhaps the last area occupied by the species in the island). Godman (1907-1910) indicated that the petrels were believed to be "nearly extinct", for despite careful searches and the offer of a reward no birds were found. Hellmayr and Conover (1948) listed the species as extinct, and Smith (1968) referred to it as "probably extinct", with the last specimen collected at Cinchona around 1880, although he entertained the possibility of birds still being present on high, inaccessible cliffs in the mountains, obviously unaware of Bourne's (1965) recent rumours of petrels in the John Crow Mountains. Most modern assessments have considered the species extinct or possibly so (e.g. Lack 1976, Bond 1978, Mayr and Cottrell 1979, Haynes 1987, Haynes *et al.* 1989, Downer and Sutton 1990) and several searches in the 1970s and early 1980s in the John Crow Mountains were unproductive (van Halewyn and Norton 1984), yet Wingate (1964a,b) and Imber (1991) have suggested it may still be alive as gadfly petrels are known to persist for decades or centuries in imperceptible numbers, e.g. the Cahow *Pterodroma cahow* (see relevant account), the Magenta Petrel *P. magentae* (see King 1978-1979) or Madeira Petrel (or Freira) *P. madeira* (see Collar and Stuart 1985).

That the species nested on Guadeloupe is not entirely clear (see Remarks 2 under Black-capped Petrel). On the assumption that "black" petrels nested on the Soufrière, these (either the Jamaica Petrel or a dark morph of the Black-capped Petrel) must have been abundant, as J. B. Labat's narrative of a hunting expedition conducted on 14 and 15 March 1696 described how a party of six men captured more than 200 birds hauled from their burrows.

ECOLOGY Very little is known. Carte (1866) was already aware of the Jamaica Petrel's nocturnal habits and of its excavating burrows (1.8 to 3 m long) for nesting, feeding on "fishes", and returning to the burrows "before dawn". Godman (1907-1910) compiled earlier reports that burrows were only found "in the crevices of almost inaccessible mountains" or in holes under trees "in the unfrequented woods" at elevations of 1,800 and 2,100 m. The "black" petrels referred to by J. B. Labat in the mountains of

Guadeloupe dug their nests in the soil, and the breeding season would have begun early in October (see Bent 1922); eggs were probably laid during January since the young were hatched by March, and by the end of May the fledglings made their way to sea (Murphy 1936).

THREATS The petrel's colonies in Jamaica were known to have been invaded by mongooses by the end of nineteenth century (Scott 1891-1893, Godman 1907-1910; see Population), although Imber (1991) appears to have overlooked this information, arguing that there is no evidence to support the Jamaica Petrel's being affected by these predators. Apart from the mongoose, man appears to have continuously exploited the petrels for food (Scott 1891-1893). If the species ever occurred in Guadeloupe and Dominica it obviously suffered a similar fate to the Black-capped Petrel (see relevant account).

MEASURES TAKEN The Blue and John Crow Mountains are currently being eastablished as a national park (Varty 1991, N. Varty verbally 1992).

MEASURES PROPOSED Searches for the species should be conducted in Jamaica (the Blue and John Crow Mountains), in Dominica and Guadeloupe, timed to coincide with the courtship, mating and prelaying periods (i.e. October to December) (Imber 1991; also Wingate 1964b). Further taxonomic studies are urgently required in order to clarify the relationship of the Jamaica and Black-capped Petrels. Specimens in MCZ may help, as there are skins of Black-capped Petrel from Guadeloupe showing substantial differences in size and coloration which originally marked them out as a different species (see Remarks 2 under Black-capped Petrel). For an overview of the importance of the endemic forests birds (not including the Jamaica Petrel) in the Blue and John Crow Mountains, see Varty (1991).

REMARKS (1) The taxonomic position of this petrel has been a source of much controversy: it was first described by Carte (1866) under the name of "*Pterodroma caribbaea*". Murphy (1936) treated it as a dark morph of the Black-capped Petrel and hence presumably did other authors (e.g., Bond 1956b, Smith 1968, Mayr and Cottrell 1979, AOU 1983, Harrison 1983, van Halewyn and Norton 1984, 1987, Haynes 1987, Haynes *et al.* 1989, Downer and Sutton 1990, Sibley and Monroe 1990). However, Hellmayr and Conover (1948), Bourne (1965) and Benson (1972) still maintained its taxonomic distinctiveness, Bourne (1965) indicating that it "appears to be a small dark race" of the Black-capped Petrel. Recently Imber (1991) has suggested that the Jamaican Petrel should be treated as a distinct species mainly based on biometric comparisons between the two species which showed the Jamaican form to be somewhat smaller and presumably more closely related to the Gon-gon or Cape Verde Petrel *Pterodroma feae* (for which see Collar and Stuart 1985). It is however important to note the apparent variation that Black-capped Petrels can show (Noble 1916, Murphy 1936), and further comparisons are perhaps in order to clarify the taxonomy position. That the Black-capped Petrel has two colour morphs (as with other *Pterodroma* species: e.g. Harris 1983, Warham 1990) would appear rather attractive as an explanation of the mystery of "black" birds nesting on Soufrière, Guadeloupe, in 1696 (see Remarks 2 under Black-capped Petrel); only a quarter of a century before, in the same locality, birds were described as having "white and black" plumage, this being explained by Murphy (1936) as a possible alternation of prevailing plumage-types, as one genetic factor or another gains ascendancy in the breeding population. However, Imber (1991) pointed out that Murphy's assertion that polymorphic species and subspecies retain the same underwing pattern does not hold true in this case, and added that there is no evidence for Black-capped Petrels breeding on Jamaica as would be expected if *caribbaea* merely represented a morph. Until further investigation on this problem is made, we are inclined to follow Imber (1991) in giving specific status to the Jamaica Petrel.

(2) Verrill (1905) referred to the Black-capped Petrel and Jamaica Petrel as both being present in the island. He claimed to have obtained specimens of the two species (two of the Jamaica Petrel), but the current location of this material is apparently unknown. Prior to Verrill (1905), F. A. Ober (in Lawrence 1878a) said of the Diablotin of Dominica that "it may be identical with the Jamaica Petrel", although he had not seen the bird and was apparently basing himself on "Prof. Baird".