RING-TAILED PIGEON *Columba caribaea* **V**[9]

Illegal hunting and extensive habitat loss (compounded by a recent hurricane) have reduced the population and range of this montane forest frugivore, whose main hope of survival rests with the full implementation of national parks within its habitat on Jamaica.

DISTRIBUTION The Ringed-tailed Pigeon is endemic to Jamaica, where it is restricted to the least disturbed forested mountains, notably Cockpit Country, Blue Mountains and John Crow Mountains (Lack 1976, Downer and Sutton 1990). However there are also recent breeding records (parishes in bracketed italics) from: (*St Elizabeth*) Black River gorge, May 1990; (*St Andrew*) Red Hills (untraced), April 1990; Stony Hill (18°05'N 76°48'W), June 1990; and Barbican area (untraced), May 1990 (all records from *Gosse Bird Club Broadsheet* 55 [1990]: 19), while a bird was observed in a private garden in Brown's Town, St Ann (Helwig 1987). Records from other areas, historical and recent, include the following localities (from west to east, coordinates from OG 1955b): (*St James*) Hillcroft near Rocklands, where four birds were observed in late November 1985 (Salmon 1986); (*Trelawney*) undated (see Remarks 1) (two specimens in AMNH and USNM); Windsor (18°22'N 77°37'W), May 1859 (specimen in BMNH) and sometime before 1976 (Lack 1976); Mahogany Hall (untraced), November 1858 (specimen in BMNH); (*St Ann*) unspecified (Ridgway 1916); (*St Catherine*) Moneague, undated (Ridgway 1916); Spanish Town, March 1865 (two specimens in BMNH and MCZ) and undated (specimen in ANSP); (*St Mary*) Highgate mountains, where the species was known to have been abundant (Gosse 1847); "St Mary" where it was known to occur around 1950 (Jeffrey-Smith 1956); (*St Andrew*) unspecified, October 1883 (specimen in FMNH); "St Andrews", October 1908 (specimen in MCZ); junction of Jack's Hill and Sunset Drive, St Andrew hills, where a possible bird was observed in February 1986 (Fletcher 1986); (*Portland*) Rio Grande valley, undated (Spence 1977); Priestman's River, January and February 1891 (six specimens in CM, FMNH and MCZ); St George (St George Cliffs at 17°53'N 76°54'W), May 1882 (specimen in FMNH); (*St Thomas*) Cuna Cuna (18°00'N 76°22'W), July 1905 (specimen in USNM); Mansfield property, near Bath, June 1904 (specimen in USNM); mountains above Bath, March 1906 (specimen in MCZ).

POPULATION The Ring-tailed Pigeon appears to have suffered a steep decline in many parts of the country where it was formerly abundant (Gosse 1847, Scott 1891-1893, Lack 1976; also Distribution). Gosse (1847) found it abundant in the Highgate mountains, an area where the species no longer occurs, and Scott (1891-1893) referred to birds as "so common" in the vicinity of Boston (see Remarks 2) at altitudes between 300 m and 600 m that he "frequently used them as food". Bangs and Kennard (1920) considered the species "rather local" in distribution and "nowhere abundant" except in some of the very wildest mountain regions, while Bond (1940) referred to it as "widely distributed" in the wilder parts of the island, being "locally fairly common"; this opinion was maintained by Bond (1956b) and in Greenway (1958, 1967). Jeffrey-Smith (1956) referred to the species to be "still seen in fairly large numbers" in the mountains of Portland (i.e. Blue Mountains), Cockpit Country and St Mary; this last has not been mentioned in recent accounts (e.g. Lack 1976, Downer and Sutton 1990) and presumably no longer harbours the species. Lack (1976) reported it "common" in the forests of the Cockpit Country, John Crow Mountains and in the eastern part of the Blue Mountains, although he asserted that its range had been reduced by hunting. Sykes and Beach (1983) reported a flock of 15 birds within the Cockpit Country in August 1982. Helwig (1987) believed it to be "in danger of extermination", and although Downer and Sutton (1990) still considered it "fairly common locally" it is generally accepted that the species is still decreasing (Haynes *et al.* 1989). After the passage of Hurricane Gilbert in September 1988, local people in the forest areas in the Cockpit Country, Blue Mountains and John Crow Mountains all agreed to have seen "far fewer" Ring-tailed Pigeons in April–July 1989 compared with the same period the previous year; however, no strong decline was indicated by comparing the 1989 census with previous ones (1976 and 1985), although this may partly be a reflection of increased movements (hence greater detectability) in search of scarcer food rather than their true numbers, and marked declines may occur in the longer term (Varty 1991). Varty (1991) recorded 57, 41 and 39 birds (13.3, 17.3 and 31.4 birds per 10-hour period) during counts in the Blue Mountains, John Crow Mountains and Cockpit Country respectively in April–July 1989.

ECOLOGY The Ringed-tailed Pigeon is restricted to the forested mountain areas and hills (up to almost

2,000 m), descending to lower elevations (down to 300 m and even 150 m) in autumn and winter (March 1863, Scott 1891-1893, Bangs and Kennard 1920, Lack 1976, Goodwin 1983, Downer and Sutton 1990, Varty 1991). The species is known to move between areas of fruiting trees, when it tends to occur in groups of six or eight (March 1863, Varty 1991). It has been considered the most arboreal of all Jamaican columbids (Gosse 1847), feeding only occurring in the canopy on a variety of arboreal fruits and seeds: *Chrysophyllum oliviforme*, *Annona muricata*, *Calyptronoma occidentalis*, mistletoe (Loranthaceae), *Sapium jamaicense*, *Cordia collococca*, *Bumelia* sp., *Eugenia* sp., *Ficus* sp., *Laurus* sp., *Nectandra antillana* (see Davis *et al.* 1985). The Ring-tailed Pigeon is an important disperser of relatively large-seeded fruits, such as *N. antillana* (and other Lauraceae with similar fruits, such as *N. patens* and *Licaria triandra*) and *Xylopia muricata*; it may have a mutualistic relationship with the endemic *N. antillana* (Davis *et al.* 1985).

Nesting occurs in the spring and summer months (March 1863, Varty 1991). The nest consists of a thick mat or platform of sticks bedded with leaves, twigs and bark, constructed near the summit of some lofty tree enveloped in tangled masses of trailing plants (March 1863).

THREATS Illegal year-round hunting and destruction of forests threaten the species's survival, and it is likely that all remaining natural areas will be subject to severe disturbance in the near future (Haynes *et al.* 1989). Gosse (1847) long since remarked that the species was highly appreciated by hunters for its excellent flesh, and despite protection this holds true today: furthermore, regulations against hunting are poorly enforced and even senior politicians and Jamaica's elite overlook these particular laws (Haynes-Sutton 1988, Haynes *et al.* 1989). The seasonal concentrations of Ring-tailed Pigeons at known localities make it especially vulnerable to illegal shooting (Varty 1991). Gosse (1847) reported them being attracted to fires lit beneath fruiting trees in the forest, a hunter's trick also reported for the Maroon Pigeon *Columba thomensis* of São Tomé (see Collar and Stuart 1985) and the Trinidad Piping-guan *Pipile pipile* (see relevant account); Gosse implied that birds came to the smoke in order to avoid mosquitoes, but this explanation is somewhat fanciful.

Haynes *et al.* (1989) have indicated the existence of illegal trade of some species for pets, including the Ring-tailed Pigeon. The effects of strong hurricanes (e.g. Gilbert in September 1988: see Haynes-Sutton 1988, Varty 1991), which cause great damage to forest vegetation, are believed to affect frugivorous species negatively by damaging food trees, which need many years to regenerate; this, coupled with continuing human destruction and disturbance of the forests, constitutes an important threat to the species (Varty 1991; also Population). Furthermore, Varty (1991) noted extensive recent clearance in the three main forest areas where the species is still present (see Distribution): for instance, clearance in the Blue Mountains was spreading to higher, steeper areas, and fires there were recorded on several occasions in May and June 1989.

MEASURES TAKEN The species is legally protected (see Haynes *et al.* 1989), but see Threats. The Blue and John Crow Mountain National Park is being established, and the majority of the land covered by natural forest there and in Cockpit Country is classified as forest reserve, wherein a wide range of activities, including felling, are prohibited or restricted (Varty 1991, N. Varty verbally 1992); but again see Threats.

MEASURES PROPOSED The forests of Cockpit Country should be declared a national park, and "corridors" linking these forests and lowland areas should be maintained (Varty 1991); an overview of the importance of Cockpit Country and the Blue and John Crow Mountains for other endemic mountain forest birds is in Varty (1991) and under Jamaican Petrel *Pterodroma caribbaea*.

REMARKS (1) The specimen was collected by W. Osborn and thus presumably sometime during the mid-nineteenth century. (2) The specimens collected at Priestman's River (see Distribution) are the same as those referred to by Scott (1891-1893) as from the "vicinity of Boston", the two localities being 5 km apart.