

This cotinga is confined to western Peru, at elevations ranging from 3,400 to 4,250 m, where it is a mistletoe specialist inhabiting Polylepis woodland. These patchily distributed woods are generally small in extent and thus vulnerable, and in places they have diminished owing to cutting by locals; but two areas where the species is common appear to be safe.

DISTRIBUTION The White-cheeked Cotinga (see Remarks) is known under 15 localities in La Libertad, Ancash, Lima and Ayacucho departments, western Peru, most of which are *Polylepis* or mixed *Polylepis*–*Gynoxys* woods at 3,250 to 4,250 m, while at least one is a mixed wood at 2,500–2,900 m and apparently not a breeding area (Parker 1981). Coordinates in the following account are from Stephens and Traylor (1983) and IGM (1971, 1972, 1973, 1975, 1978b), with localities as follows:

La Libertad Tayabamba (8°17'S 77°18'W), in the central Andes, whence comes a sight record at 3,250 m (the species presumably also inhabits *Polylepis* woods in the western Andes in this department) (Parker 1981);

Ancash (Cordillera Blanca) above (i.e. south of) Yánac (8°37'S 77°52'W), and Quebrada Tútapac (c.8°40'S 77°49'W), 25 km by trail south of Yánac, whence come specimens (in ANSP, LSUMZ) taken at 3,950–4,550 m (also Parker 1981, NK); Quebrada Paron (c.8°58'S 77°39'W), north-east of Laguna Paron, on the western slope at 4,200–4,400 m, and 1 km south-west of Laguna Paron (9°00'S 77°41'W), also on the western slope at 3,400–4,050 m (Frimer and Møller Nielsen 1989); Quebrada Morococha (c.9°03'S 77°34'W), on the eastern slope (TAP); Quebrada Llanganuco (c.9°05'S 77°39'W), on the western slope between 3,400 and 4,300 m (Parker 1981); Quebrada Ishinca (9°20'S 77°31'W), on the western slope between 3,950 and 4,400 m, and upper Quebrada Rurichinchay (c.9°22–23'S 77°16–19'W), on the eastern slope at 3,800–4,000 m (Frimer and Møller Nielsen 1989); Quebrada Pucavado (9°41'S 77°14'W), on the eastern slope at 4,150 m (Fjeldså 1987; specimen in ZMUC), and at 3,900 m further east in the same valley (Fjeldså 1987);

Lima surroundings of Pueblo Quichas (previously Hacienda Quichas, at c.10°34'S 76°45'W), north of Oyón, whence come records (with specimens in MHNJP, ZMUC) between 3,980–4,200 m (also Fjeldså 1987); Quebrada Quicar (east of Chancay at 11°35'S 77°16'W), at c.3,700 m (Parker 1981); upper Santa Eulalia valley (c.13 km west of Milloc, at c.11°35'S 76°22'W), records (with specimens in AMNH, LSUMZ, MHNJP) from between 3,600 and 4,200 m (Parker 1981, Fjeldså 1987); Zérate (c.11°53'S 76°27'W), near San Bartolomé, with records (specimens in AMNH, LSUMZ, MHNJP) at 2,700–2,900 m (also Koepcke 1954); above (south-west of) Hortigal (c.12°47'S 75°44'W), with records (specimens in MHNJP, ZMUC) between 3,800 and 4,350 m (Fjeldså 1987);

Ayacucho Pampa Galeras (14°40'S 74°23'W), whence come sight records and photos of nests at (3,650) 3,900–3,950 m (Parker 1981, Fjeldså 1987, TAP).

This species undoubtedly occurs in extreme north-western Arequipa department (adjacent to the Ayacucho locality) (Parker 1981), but not further south, as an investigation of the apparently suitable *Polylepis* woods above Chuquibamba in 1987 showed no trace of the bird or its preferred food-plants, although unidentified mistletoes were common in the brushland at lower elevations (Fjeldså 1987), probably dispersed by emberizines like Blue-and-yellow Tanager *Thraupis bonariensis* and Mourning Sierra-finch *Phrygilus fruticeti* (NK).

POPULATION A highly speculative estimate of the entire population would be in the order of 3,000 individuals, but actual numbers may be anywhere between 1,500 and 6,000.

In Lima department, the largest known concentration of the White-cheeked Cotinga is at Pueblo Quichas, where it was found to be common, with a population estimated at 500 birds in 1987 (Fjeldså 1987, NK). It has also been reported as fairly common in the upper Santa Eulalia valley (Parker 1981, Fjeldså 1987) and above Hortigal (Fjeldså 1987). In Ancash department, at least 40 were found at Quebrada Tútapac (TAP), with a sizeable population possibly also on the eastern slope of Cordillera Blanca, where it was found to be fairly common at Quebrada Morococha (TAP), although only a few were recorded at Quebrada Pucavado (Fjeldså 1987). Frimer and Møller Nielsen (1989) only recorded the species at four of 16 *Polylepis* woodlands investigated, most in Quebrada Paron, where five birds were seen. At Pampa Galeras, Ayacucho department, although reported relatively common by Parker (1981), Fjeldså (1987) only found a few birds.

ECOLOGY The White-cheeked Cotinga inhabits *Polylepis* or mixed *Polylepis*–*Gynoxys* woods at 3,250 to 4,300 m, but during the dry season (August to November) it may also be found down to 2,700 m in mixed woodlands of *Oreopanax*, *Escallonia* and other trees (Parker 1981, Fjeldså 1987, Fjeldså and Krabbe 1990).

It usually occurs alone or in pairs, but may rarely be found in feeding aggregations of four to ten birds (Parker 1981). Although often perching atop a tree on an exposed branch (Parker 1981), it spends most of its time hidden in the foliage (NK), where it feeds on loranthacean mistletoe berries of *Tristerix* and possibly *Ligaria* (Parker 1981). In northern Ancash and central Lima (Santa Eulalia valley) the bird eats *Tristerix chodatianus* (Parker 1981), in central Lima (Zárate) *Tristerix secundus* (Koepcke 1958), in northern and southern Lima *Tristerix longebrachteatum* (Fjeldså 1987); however, these may all be the same species (NK). Parker (1981) gave the food-species in Ayacucho as probably *Ligaria cuneifolia*. The cotinga always regurgitates the (unusually large) seeds of the berries, and may be the only disperser of these plants above 3,000 m (Parker 1981). These mistletoes apparently produce fruit throughout the year, though less abundantly during the dry season (August to October), which may account for the post-breeding dispersal of part of the cotinga population to lower elevations at this time (Parker 1981).

Nest-building has been observed in Lima in March, when birds with enlarged gonads have been collected in Ancash and Lima (Parker 1981; specimens in ZMUC). In May, five nests with eggs and young have been found in Lima and Ancash, all of which were on north-facing slopes and were well-made, rather deep open cups placed within large clumps of mistletoes: the four nests that could be inspected closely all had three eggs or young (Parker 1981).

THREATS Despite its restricted geographical and elevational distribution, the White-cheeked Cotinga does not yet appear to be a seriously threatened species (Parker 1981); however, *Polylepis* woodland is generally a threatened habitat (Fjeldså 1987). Simpson (1977) and Smith (1977) postulated that the patchy distribution of *Polylepis* woodland is largely autecological, but Ellenberg (1958), Ferreyra (1977), Jordan (1983) and Fjeldså (1987) believed man to have had a great impact on its distribution, mainly by clearance for cultivation and grazing, cutting for firewood, roof-beams and fence-rails, burning for maintaining young grass, and extensive grazing by goats and sheep.

In the Tunari National Park, Cochabamba, Bolivia, *Polylepis* has regenerated well in dense, tall grass, and the theory that *Polylepis* is excluded by steppic vegetation must therefore be questioned (Fjeldså 1987). The local people around the large *Polylepis* woods near Hortigal in southern Lima department, where a good population of the cotinga exists, thought of the woods as potential sources for a charcoal-burning industry and were apparently unaware of the danger of soil erosion and rain-catchment loss (Fjeldså 1987). Even within the Huascarán National Park, in the Cordillera Blanca, Ancash department, the *Polylepis* forests are threatened: in general uncontrolled burning for grazing areas and cutting for firewood seems to be the major threat, many woodlands having already been destroyed, and signs of soil erosion can already be seen at several localities; furthermore the woodland which shows the biggest avian uniqueness index, Quebrada Rurichinchay, which prior to 1980 was the most heavily vegetated valley in Cordillera Blanca, has been extensively deforested since this date, owing in part to use of the wood for melting silver at the local mine at Tingo (Frimer and Møller Nielsen 1989). Extensive cutting for a furniture industry in the Huantar area occurs in some of the largest forest tracts within the park, especially in Quebradas Carhuascanchas (around Lake Potrero), Rurec and Rurichinchay (Fjeldså 1987). At Quebrada Llanganuco the *Polylepis* woodlands were noticeably degraded between 1980 and 1987 (P. K. Donahue *in litt.* 1990). The White-cheeked Cotinga must be adversely affected by this development.

MEASURES TAKEN *Polylepis* woodland where this species has been recorded occurs within the Pampa Galeras National Reserve, Ayacucho department (6,500 ha), and in Huascarán National Park, Cordillera Blanca, Ancash department (340,000 ha) (IUCN 1992: see Threats). The planting of *Eucalyptus* around Yánac village in the 1920s and 1930s lessened the local need for *Polylepis* wood, and the *Polylepis* woodland south of Yánac is now left largely untouched (Parker 1981). The *Polylepis* around Pueblo Quichas north of Oyón, northern Lima department, where the largest population of this cotinga exists, is maintained as a mosaic of fields, moderately grazed meadows and forest patches with quite large *Polylepis* trees in certain places (Fjeldså 1987). This area could probably serve as a fine model for the sustainable use of *Polylepis* woodland (Fjeldså 1987).

MEASURES PROPOSED Parker (1981) strongly recommended the establishment of a *Polylepis* reserve in Lima department, as it would greatly facilitate badly needed studies of the flora and fauna of this distinctive environment. The following measures suggested by Frimer and Møller Nielsen (1989) for Cordillera Blanca are largely recommended for the rest of the species's range, given that information campaigns should be carried out at key sites with only a few communities.

Information campaigns about the risk involved in shortsighted exploitation are urgently needed, and local inhabitants should be made aware of the high risk of soil erosion after deforestation, and of the fertile soils formed in *Polylepis* woods.

Cutting for firewood should be dealt with by rotational use, whereby cutting, burning and grazing is temporarily prevented locally to permit regeneration, and to maintain the forests as a renewable resource (the east side of the cordillera has areas with mining of anthracite).

Burning for grazing should be restricted to parts of the flat riverplain grasslands, and not the woods up the valley slopes, with vegetation fringing the main rivers being secured to permit vertical movements for birds (and other wild animals) without having to leave forest habitats.

Planting of eucalyptus (which owing to its high phenol content has a detrimental effect on the soil) is not recommended, the avian species diversity of these plantations is usually low, and planting inside the national park should therefore be prevented. As shade and shelter for the cultivation of crops near houses, *Polylepis* and *Gynoxys* hedges seem valuable and, unlike *Eucalyptus*, apparently give a fine soil. *Polylepis* hedges may also attract some *Polylepis*-adapted birds, although this may depend on the distance of these hedges from other *Polylepis* habitats (Fjeldså 1987: see also Measures Taken).

A special effort should be made to secure the extremely valuable Quebrada Rurichinchay. An information campaign and a dialogue with the families living in the upper reaches as well as in the small villages at the quebrada entrance should include a model for sustainable use of *Polylepis* woodland, and the Tingo mine should be offered an alternative resource for melting silver (e.g. coal).

The *Polylepis* woods in Cordillera Blanca are also inhabited by three other threatened species of bird: Ash-breasted Tit-tyrant *Anairetes alpinus*, Plain-tailed Warbling-finch *Poospiza alticola* and Rufous-breasted Warbling-finch *Poospiza rubecula* (see relevant accounts), and the initiatives outlined above should be extended to and take into consideration the requirements of these species (see also White-tailed Shrike-tyrant *Agriornis andicola* account).

REMARKS The White-cheeked Cotinga was described as a monotypic genus, *Zaratornis* (Koepcke 1954) on the basis of its distinct skull structure. Although later merged with the genus *Ampelion* (Snow 1973), an arrangement followed by Parker (1981), we here use the traditional treatment in accordance with Lanyon and Lanyon (1989), although these authors recommended the transfer of this species and genus to the plantcutters Phytotomidae (see Remarks under Peruvian Plantcutter *Phytotoma raimondii*).