

*This cloud-forest antpitta is endemic to the Central Andes of Colombia, where it has been recorded from very few localities in an area that has been affected by widespread deforestation.*

**DISTRIBUTION** The Bicoloured Antpitta is known from both slopes of the Central Andes in Colombia, where records of the nominate race come from Antioquia, Caldas, Quindío and Tolima departments, the subspecies *romeroana* being recorded from Cauca and possibly Putumayo (the subspecific identity of the bird seen in Putumayo is uncertain (see Remarks 1). The few localities where this species has been recorded (north to south, with coordinates, unless otherwise stated, from Paynter and Traylor 1981) are as follows:

**Antioquia** Santa Elena (6°13'N 75°30'W; 8 km east of Medellín on the eastern slope of the Central Andes, at 2,750 m), where the type-specimen was collected (Sclater and Salvin 1879); and Páramo de Sonsón (5°43'N 75°15'W; 65 km south-east of Medellín, and just 20 km north of the Caldas border: Hilty and Brown 1986), where a male (in USNM) was collected between 2,530 and 2,745 m in July 1951;

**Caldas** río Blanco watershed, north-east of Manizales (on the west slope of the Central Andes), where birds were commonly seen and heard during 1989-1990 (P. Kaestner *in litt.* 1992), with several heard in September 1990 (L. G. Olarte *in litt.* 1992), both records coming from 2,400 m;

**Quindío** above Calarcá (4°31'N 75°38'W; in the La Línea area of Navarco), where the species has been found fairly regularly between 2,700 and 2,900 m (F. G. Stiles *in litt.* 1992); above Salento (either at 4°39'N 75°36'W, or near El Roble at 4°41'N 75°36'W; on the western slope of the Central Andes), where a male (in AMNH) was taken at 2,745 m in November 1911; Alto Quindío Acaime Natural Reserve (c.4°37'N 75°28'W; on the western slope of the Central Andes, coordinates from Renjifo 1988), where the bird was found commonly between 2,500 and 3,150 m during 1989-1991 (Renjifo 1991, P. Kaestner *in litt.* 1992); Laguneta (c.4°35'N 75°30'W; on the western slope of the Central Andes), where four birds (two males and two females in AMNH) were taken at 3,140 m at the end of August 1911 (also Chapman 1917a);

**Tolima** La Leona (4°35'N 75°25'W), on the eastern side of the Quindío pass, where the bird was recorded in May 1990 (L. M. Renjifo *in litt.* 1992);

**Cauca** río Bedón waterfall (2°20'N 76°17'W: coordinates from Hernández Camacho and Rodríguez 1979), west of Versalles in Puracé National Park, where two birds were collected at 3,000 m during November 1970 (Hernández Camacho and Rodríguez 1979) (see Remarks 2);

**Putumayo** c.20 km east of San Francisco (1°11'N 76°53'W; on the eastern slope of the Andes), whence Hilty and Brown (1986) reported a sighting at 2,450 m in June 1981 (see Remarks 3).

**POPULATION** This bird is apparently localized and rare, and owing to widespread deforestation within its altitudinal range (see Threats) the population has presumably undergone a significant decline during this century. Although ornithological attention has been focused on Puracé National Park, especially the northern end where this bird has been recorded (e.g. Hilty and Silliman 1983), the Bicoloured Antpitta has not been found there since 1970 (see above). However, recent records on the western slope of the Central Andes near Manizales (several birds heard, and birds seen and heard commonly), above Calarcá (birds found fairly regularly and not uncommon: F. G. Stiles *in litt.* 1992; see Ecology) and at the Alto Quindío Acaime reserve (see Distribution) suggest that viable populations of the nominate race still survive. During intensive fieldwork at the last locality (from June 1989 to July 1990), Renjifo (1991) recorded densities between 1.6 and 5 birds per 10 km transect, with the higher densities in the primary forest at lower altitudes, describing it as uncommon, difficult to see and recorded mainly by vocalization (L. M. Renjifo *in litt.* 1992).

**ECOLOGY** Records of this antpitta come from between 2,400 and 3,150 m (Hilty and Brown 1986 and Fjeldså and Krabbe 1990 give ranges from 2,100 to 3,300 m), where it inhabits the floor and undergrowth of dense, humid, montane forest and cloud-forest near the tree-line (subpáramo) (Hilty and Brown 1986, Fjeldså and Krabbe 1990). P. Kaestner (*in litt.* 1992) suggested that the species seems to prefer wetter areas in the interior of montane forest. In Quindío, the habitat of the nominate race was described as open temperate-zone forest with small palms, tree-ferns, vines, "climbing bamboo", orchids and other epiphytes, with large trees including oaks *Quercus* sp.; the undergrowth was not dense, except within clearings, and the forest floor was remarkably bare (Chapman 1917a). Renjifo (1991) found the bird in primary and

secondary forest, but although birds were heard calling in young second growth, they did not apparently live there. The species at Alto Quindío was found to prefer primary humid forest with young dense vegetation in natural clearings or beside paths, the highest density of birds being noted at lower altitudes (i.e. around 2,500 m) (Renjifo 1991). Above Calarcá, this antpitta was found in an area consisting largely of pine and cypress plantations, with native forest (often highly disturbed) confined to streams and ravines: the birds did not use the plantations to any extent, thus this population is probably very patchy (see Population: F. G. Stiles *in litt.* 1992). At río Blanco (Caldas), the bird was seen in a plantation of native alder *Alnus acuminata*, with a dense, wet understorey; and at La Leona (Tolima) it was recorded in a forest remnant along a ravine (L. M. Renjifo *in litt.* 1992). The type-locality of *romeroana* (in Puracé National Park) was an area of dense forest (with *Clusia* sp., *Clethra* sp., *Weinmannia* sp., and a great abundance of ferns, bromeliads and epiphytic orchids), near its transition to páramo vegetation dominated by *Espeletia hartwegiana* and shrubs (Hernández Camacho and Rodríguez 1979).

The type-specimen had been feeding on insects (Sclater and Salvin 1879). Specimens (in AMNH) collected in Quindío at the end of August and in November 1911 had undeveloped gonads, although the one from Antioquia in June 1951 was in breeding condition (Hilty and Brown 1986).

**THREATS** The forest around Laguneta is now mostly destroyed (Fjeldså and Krabbe 1990: see equivalent section under Moustached Antpitta *Grallaria alleni*) and, more generally, widespread deforestation (for the sake of agriculture and settlement) on both slopes of the Central Andes has caused the removal of much potentially suitable habitat (King 1978-1979, Hilty and Brown 1986, LGN). Even at the beginning of this century, deforestation and cultivation was noted to have caused a change in conditions near the type-locality at Santa Elena (Chapman 1917a). What little forest remains on the western slope of the Central Andes in Caldas and Quindío is apparently “rich”, and at least near Manizales and in the Alto Quindío Acaime Natural Reserve it supports populations of this species (Renjifo 1991, P. Kaestner *in litt.* 1992). This bird seems to tolerate considerable disturbance so long as forest cover is maintained, as in the plantations above Calarcá (F. G. Stiles *in litt.* 1992: see Ecology).

**MEASURES TAKEN** The nominate race has been recorded from just two areas during the last 40 years, one of which is within the private Alto Quindío Acaime and (departmental) Cañon del Quindío Natural Reserves (see Distribution and Measures Proposed): combined, these areas cover 4,850 ha of which 36% is primary forest, the rest being secondary forest at varying stages of regeneration (L. M. Renjifo *in litt.* 1991). Several tracts of apparently suitable habitat still remain in the northern Central Andes, small areas of which are protected within the boundaries of Los Nevados National Park (38,000 ha: CNPPA 1982; but see equivalent and following section under Rufous-fronted Parakeet *Bolborhynchus ferrugineifrons*), which mostly covers areas at altitudes too high for this species (Hernández Camacho *et al.* undated), or smaller reserves such as Ucumari Regional Park (Risaralda) (LGN: see equivalent and following section under Multicoloured Tanager *Chlorochrysa nitidissima*). The subspecies *romeroana* was described from Puracé National Park (83,000 ha: CNPPA 1982), and although it has not subsequently been recorded, the park still protects suitable habitat, and surrounding this park there are several forested areas where the species may yet be found, such as the small Finca Merenberg private nature reserve (LGN).

**MEASURES PROPOSED** Surveys are urgently required in the localities where the species has most recently been recorded (in Caldas and Quindío), but also in Puracé National Park and Putumayo, in order to determine the status of the species and to define more precisely its ecological requirements. The extent of suitable remaining forest cover in these areas is in urgent need of assessment, but once this has been carried out, other populations should be searched for (in, for example, the other protected areas mentioned above), and recommendations to extend protected areas or to designate new ones can be made.

The río Blanco watershed and Alto Quindío area seem to be ideal areas in which to conserve the now dwindling Central Andean montane forest, and efforts should be made to facilitate their protection, and indeed the further protection of this latter area (in five adjacent estates primary forest covers 73% of the 1,800 ha) forms part of a current proposal by ICBP and Fundación Herencia Verde (L. M. Renjifo *in litt.* 1991, M. G. Kelsey *in litt.* 1992). These two areas support a number of other threatened species, namely (at río Blanco) Rusty-faced Parrot *Hapalopsittaca amazonina*, and (at Alto Quindío) Fuertes's Parrot *H. fuertesi*, Rufous-fronted Parakeet, Golden-plumed Parakeet *Leptopsittaca branickii*, Yellow-eared Parrot *Ognorhynchus icterotis* and possibly Brown-banded Antpitta *Grallaria milleri* (see relevant accounts), and

any conservation action should consider their needs. The maintenance of primary forest along water courses, even within plantations (e.g. at río Blanco), should be encouraged, as this species is seemingly able to survive in such areas (see Ecology): however, the status of populations in these situations should ideally be monitored to confirm their viability.

Close to the Alto Quindío protected areas (in the vicinity of Salento), the Bicoloured Antpitta is known to have occurred alongside up to seven threatened species, and searches for any other remnant forest patches in this area is a high priority (see Moustached Antpitta for details). At Puracé National Park, this species has been recorded sympatrically with five other threatened species, namely Rusty-faced Parrot, Golden-plumed Parakeet, Yellow-eared Parrot, Giant Antpitta *Grallaria gigantea* and Masked Mountain-tanager *Buthraupis wetmorei* (see relevant accounts); at Páramo de Sonson it occurs sympatrically with Multicoloured Tanager (see relevant account); and near La Leona in Tolima the various sympatric species are listed in the equivalent section under Tolima Dove *Leptotila conoveri*. The initiatives mentioned above that are relevant to these areas should consider the needs of all these species.

**REMARKS** (1) On the evidence of the remarks below, it appears that this antpitta has been recorded from Antioquia, Caldas, Quindío, Tolima, Cauca and Putumayo departments, although the río Bedón is clearly only a short distance north of the Huila border. (2) Paynter and Traylor (1981) placed the río Bedón and its source (Laguna San Rafael) in Cauca rather than Huila department (*contra* Hernández Camacho and Rodríguez 1979); the citation of the specimens from this locality in Cauca (rather than Huila) was followed by Hilty and Brown (1986), but not by Fjeldså and Krabbe (1990). (3) Hilty and Brown (1986) incorrectly recorded this sighting from Putumayo as from Nariño department, a mistake perpetuated by Fjeldså and Krabbe (1990).