New distributional record for the Jocotoco Antpitta *Grallaria ridgelyi* in south Ecuador

Matthias Heinz, Veronika Schmidt and Martin Schaefer

Cotinga 23 (2005): 24–26

Jocotoco Antpitta *Grallaria ridgelyi* fué descubierto en 1997. Es una de las 14 especies endemicas de aves del Ecuador y fué clasificado En Peligro. En primer instancia solo fué encontrado fuera del límite sur del Parque Nacional Podocarpus. La Fundación Jocotoco, que es una organización sin fines del lucro, estableció en ese sector la reserva Tapichalaca con el fin de proteger dicha especie. Para establecer una eficiente base de datos ecologicos de ésta especie de ave, se realizó un estudio entre octubre de 2001 y febrero de 2002 usando grabaciones dentro de transectos definidos en las pendientes aledañas a Tapichalaca asi como en las condiciones específicas de su hábitat dentro y fuera del Parque Nacional Podocarpus. El presente estudio comprobó la existencia del ave en las pendientes orientales de Cerro Toledo. Un nuevo hallazgo se realizó al sur del caserío de Romerillos Alto, en la pendiente norte de la Cordillera de Tzunantza, donde antes no se había realizado ninguna expedición en busca de *G. ridgelyi*, aproximadamente a 30 km de distancia de la reserva Tapichalaca. Los resultados de éste estudio podrían indicar que exista un corredor de hábitat característico de ésta ave, que conecta las localidades donde el ave habita. Es posible que existe una población de ésta especie dentro de las fronteras del Parque Nacional Podocarpus, la misma que recibe protección legal. Por la continua degradación del habitat y la distribución extremadamente localizada de ésta especie, acciones de conservación aqui y en areas no protegidas deberían rapidamente establecer una area de bosques conectados y no intervenidos.

Jocotoco Antpitta *Grallaria ridgelyi* is one of the 14 endemic bird species of Ecuador[5]. Discovered only in 1997, the ecology of this secretive species is virtually unknown. BirdLife International[1] classified *G. ridgelyi* as Endangered, and the species is also listed as Endangered in the Ecuadorian Red Data Book[2]. It has been suggested that this strikingly distinct species went undiscovered until 1997 because of its very limited geographic distribution and, possibly, specific habitat requirements[4]. To achieve a deeper insight into the ecology, habitat and distribution of *G. ridgelyi*, a field study was conducted in October 2001–February 2002 in southern Ecuador.

Our main study site was Tapichalaca Reserve in Zamora-Chinchipe province (04º29'S 79º07'W), in the area where the species was discovered[4]. This reserve (now 4,500 ha) is owned by Fundación Jocotoco, a non-profit organisation that aims to protect endangered bird species through the purchase and management of private reserves throughout Ecuador[7]. Jocotoco Antpitta is the flagship species of the foundation.

Habitat and habits

The habitat of *G. ridgelyi* is wet montane forest with bryophyte-clad, generally low-stature trees and much bamboo on steep slopes in the upper subtropical zone, at elevations of 2,300–2,680 m[4,5]. The birds mainly use the lower strata of the dense vegetation, up to c.4 m above ground. They are very difficult to observe, unless using playback of the voice. Low pair density of *G. ridgelyi* has been found at Tapichalaca Reserve[3]. Natural song only occurs infrequently at the site and we were unable to confirm that such vocalisations peak around dusk and dawn, as reported for a two-week study period in January 1998[5].

Methods

Surveys of *G. ridgelyi* were performed by slowly walking defined transects listening for the species' calls. A standardised playback schedule, consisting of playing the species' song for 60 seconds every 200 m was used. After a pause of 2 minutes playback was repeated for another 60 seconds. The study revealed that *G. ridgelyi* defends large territories[3] and that the species reacts strongly to playback. We therefore assume that conducting playback every 200 m in suitable habitat is a reliable method of detecting the species in areas with territorial birds. The area covered by such counts includes a belt of c.200 m either side of the transect line, and can therefore be calculated as total length of transect multiplied by 400 m.

Results and discussion

Distribution

G. ridgelyi is known only from two localities and has an extremely small range. In this area, habitat destruction is occurring due to forest clearance for cattle pastures, timber and mining[1,3]. Until now, the only record from outside Tapichalaca Reserve

was in 1998, when F. Sornoza M. and M. Jácome collected a *G. ridgelyi* on the east slope of Cerro Toledo, c.10 km north-east of the type locality[5]. We visited this site on 8–9 February 2002 and a total area of c.330 ha on the east slope was searched for the species. Only small patches of suitable forest remain at the site of the 1998 record, with huge areas having been cleared for cattle ranching, and we failed to find the species there. However, a territorial *G. ridgelyi* finally responded to playback on one of the adjoining forested slopes (04°22'S 79°05'W), at 2,600 m, c.750 m in a direct line from the previous record. Although the area abuts Podocarpus National Park and conservation measures are in preparation (E. Benitez pers. comm.), it is very uncertain whether the local population of *G. ridgelyi* can survive in the face of rapidly ongoing habitat destruction.

Further field work in January–March 2002 explored other sites outside Tapichalaca Reserve in search of potentially suitable areas, but the species was only found at two (see Table 1).

Krabbe *et al*.[4] speculated that, due to seemingly similar habitat conditions, the species could occur throughout the forests north, south-east and south-west of Tapichalaca Reserve, ranging south-east to the southern Cordillera del Condor, south-west to the río Isimanchi, and north throughout Podocarpus National Park to the río Zamora. The vegetation map of mainland Ecuador[6] supports such speculation, as there are corridors of montane cloud forest with similar vegetative characteristics extending in these directions. It should be reiterated that *G. ridgelyi* appears strongly associated with such montane forest at 2,300–2,700 m. However, it is not easy to find the species in such regions because habitat is either inaccessible due to the very dense vegetation or accessible and hence already altered by man.

New record

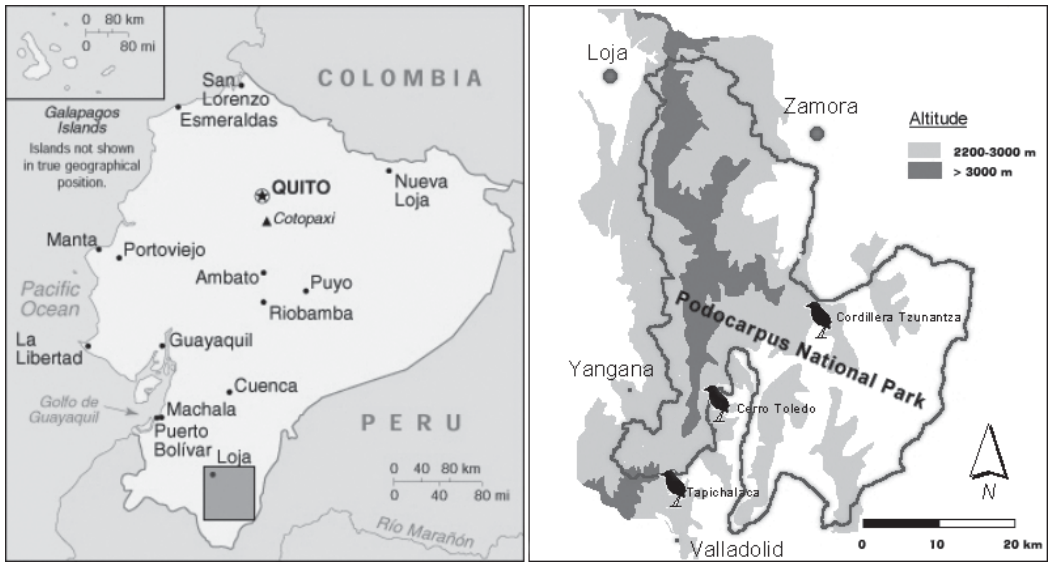
During a field trip south of Zamora on 10–12 February 2002, we found the species on the northern slopes of Cordillera de Tzunantza (04°17'S 78°57'W), at 2,300 m. Here, a small footpath starting from Romerillos Alto accesses higher altitudes of the cordillera and penetrates Podocarpus National Park in the direction of the San Luis gold mines. After hearing the characteristic vocalisation of *G. ridgelyi* on 11 February 2002, playback was used to elicit a response. Whereupon a second bird simultaneously gave a loud territorial song from close to the path. The adjacent area was searched the following day, but no further birds were located. Habitat here is very similar to that in Tapichalaca Reserve, i.e. steep slopes covered by generally low-stature trees, and in parts very dense undergrowth with tall bamboo stands. Trees are heavily clad in moss and older trees are laden with epiphytes. This locality is within Podocarpus National Park and therefore ostensibly legally protected.

Range

The new record of *G. ridgelyi* expands the species' known range to at least 180 km^2, and the species may occur in undisturbed forests along a corridor from Tapichalaca Reserve to the northern slopes of Cordillera de Tzunantza, an assumption supported by the known population on Cerro Toledo. A corridor of potentially suitable habitat continues south, following Cordillera de Tzunantza and Cordillera de Paredones, and north-west to Cordillera del Consuelo. However, *G. ridgelyi* is still

Table 1. Localities searched for Jocotoco Antpitta *Grallaria ridgelyi* during January to March 2002. The species was only located at those sites marked (*).

Site	°S	°W	Altitudes (m)	Searched area (ha)
Estación Científica San Francisco (ECSF)	03°59'	79°04'	1,800–2,600	260
ECSF—Sabanilla Trail to San Juan del Oro	03°58'	79°04'	1,650–2,050	420
Trail Quebrada Las Palmas–Las Palmas–Timbara	04°01'	78°55'	900–2,050	380
Trail Zamora–Loma de la Conga–Fincas Salinas	04°01'	78°57'	900–2,100	260
Trail Zamora–El Líbano–Quebrada del León	04°06'	78°59'	950–1,900	340
Cajanuma	04°07'	79°10'	2,400–3,050	330
Trail Romerillos Alto–Quebrada las Dantas	04°15'	78°56'	1,450–1,800	190
Trail Romerillos Alto–San Luis*	04°18'	78°57'	1,450–3,000	620
Anganuma–Cerro Toledo–río Numbala*	04°23'	79°06'	1,900–3,200	690
Trail Palanda–Fátima	04°36'	79°11'	1,200–1,750	440
Trail Palanda–Lomas Calima	04°38'	79°10'	1,150–2,750	300



Map showing the location of the study area in southernmost Ecuador and the areas within which Jocotoco Antpitta *Grallaria ridgelyi* has been found.

unknown from the latter areas, although they are rarely visited by ornithologists and there is little, if any, access to these parts of the Podocarpus National Park. The corridor south-west from Tapichalaca Reserve follows the eastern slopes of the Cordillera de Sabanilla toward Peru. Until now, searches for *G. ridgelyi* have been unsuccessful there (N. Krabbe pers. comm.), but further work is needed. Again, it appears that the initial problem is to locate accessible, still-undisturbed forests in this area.

Prospects

It is conceivable that there is a considerable population of *G. ridgelyi* within Podocarpus National Park and thus receiving legal protection. Due to ongoing habitat degradation, conservation action here and in unprotected areas should establish an area of undisturbed connected forests, especially including the eastern slopes of Cerro Toledo, the western slopes of Cordillera de Paredones, the immediate Quebrada Honda area and the slopes south-west of Tapichalaca Reserve.

Acknowledgements

We are highly indebted to Fundación Jocotoco for its continued logistic and financial support of this study.

References

1. BirdLife International (2000) *Threatened birds of the world*. Cambridge, UK: BirdLife International & Barcelona: Lynx Edicions.
2. Granizo, T., Pacheco, C., Ribadeneira, M. B., Guerrero, M. & Suárez, L. (eds.) (2002) *Libro rojo de las aves de Ecuador*. Quito: SIMBIOE/Conservación Internacional/ EcoCiencia/Ministerio del Ambiente/UICN.
3. Heinz, M. (2002) Ecology, habitat, and distribution of the Jocotoco Antpitta (Formicariidae: *Grallaria ridgelyi*) in south Ecuador. Diploma. Münster: Institute of Landscape Ecology, University of Münster.
4. Krabbe, N., Agro, D. J., Rice, N. H., Jácome, M., Navarrete, L. & Sornoza M., F. (1999) A new species of antpitta (Formicariidae: *Grallaria*) from the southern Ecuadorian Andes. *Auk* 116: 882–890.
5. Ridgely, R. S. & Greenfield, P. J. (2001) *The birds of Ecuador*. Ithaca, NY: Cornell University Press.
6. Sierra, R., Cerón, C., Palacios, W. & Valencia, R. (1999) *Mapa de vegetación de Ecuador Continental*. 1:1,000,000. Quito: Proyecto INEFAN/GEF-BIRF, Wildlife Conservation Society & EcoCiéncia.
7. Sornoza M., F. (2000) Fundación Jocotoco: conservation action in Ecuador. *World Birdwatch* 22: 14–17.

Matthias Heinz
Schaumburgstrasse 25 a, 48145 Muenster, Germany. Email: matt_heinz@web.de.

Dr Martin Schaefer and Dr Veronika Schmidt
Institute for Biology 1, Hauptstrasse 1, 79104 Freiburg, Germany. Email: martin.schaefer@biologie.uni-freiburg.de.