

## The vocalisations of Red-collared Woodpecker *Picus rabieri*

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### Introduction

Red-collared Woodpecker *Picus rabieri* is a poorly known species restricted to Lao PDR, Vietnam from North and East Tonkin south to Central Annam, and extreme north-east Cambodia, with one old record from Yunnan province, China (BirdLife International 2011, F. Goes pers. comm.). It occurs in evergreen and semi-evergreen forest and locally in tall deciduous forest below 700 m elevation, ascending locally to 1,000 m (BirdLife International 2001). It is rarely encountered and considered uncommon throughout the Vietnamese portion of its range, although it is locally abundant in Laos (Dersu 2008, Duckworth 2008, Thewlis *et al.* 1998, Duckworth *et al.* 1999, 2010, Timmins 2009, Suford in press). Where it is most abundant in Lao PDR, forests are generally semi-evergreen in character on level or at most gently sloping ground up to 300–400 m elevation (J. W. Duckworth pers. comm. 2012). It is probably not as common in Vietnam, perhaps owing to an almost complete loss of forest on gentle slopes and of forest below 400 m elevation on all except the steepest slopes; where forest at optimal altitudes for the species remains, it is usually on limestone karst. The species's abundance drops off rapidly above 400 m and it is unclear if its apparent preference for forest with a moderately dry substrate (semi-evergreen forest and forest on limestone karst) represents an actual preference or simply a lack of other forest types at favoured elevations (J. W. Duckworth pers. comm. 2012). It is classified as Near Threatened by BirdLife International (2011), owing to deforestation, particularly in the lowlands and more gentle terrain; as well as being the prime habitat of this woodpecker, these same areas are also favoured for agriculture, including plantation forestry.

Red-collared Woodpecker vocalisations have not been documented in the published literature. For instance, Robson (2011) does not list any calls but reports that the species 'drums in fast rolls'. A number of online trip reports and birding websites mention a short, explosive *keck*, often repeated in quick succession, and superficially similar to contact calls of similar-sized sympatric woodpeckers, e.g. Laced Woodpecker *Picus vittatus*. Similarly, Suford (in press) noted that it was vocally similar to congeners. Here we document the *keck* call and two previously undescribed vocalisations.

### Vocalisations

**Call 1.**—Although not documented in the published literature, the *keck* call is relatively well known by birders. Examples of this vocalisation can be found on xeno-canto.org (XC69142-6, previously published on AVoCet as AV5442-6); a sonagram is shown in Figure 1. It is a single abrupt but full and rich note 0.08–0.09 seconds in length. The fundamental frequency is at approximately 2.8 kHz and there are strong harmonics with the next strongest frequency at approximately 1.4 kHz, and successively weaker ones at approximately 4.0, 5.6 and 7 kHz. It is repeated at 1.5-second intervals.

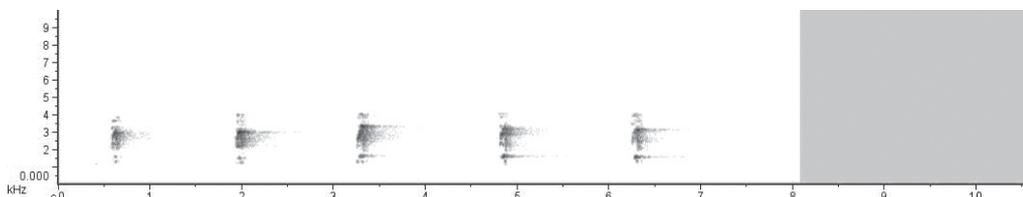
**Call 2.**—This call is remarkably similar to the territorial vocalisation of Blue-naped Pitta *Pitta nipalensis*, a species that overlaps in distribution with the woodpecker. This call was

elucidated in forest around Ban Nahin, close to the well-publicised Bare-faced Bulbul *Pycnonotus hualon* site, although it was assumed that a Blue-naped Pitta made it. Birders at this site first heard it in 2009, but despite much effort the bird was not seen (de Win 2009). JAE and other subsequent would-be observers of Blue-naped Pitta at Ban Nahin forest have had similar experiences.

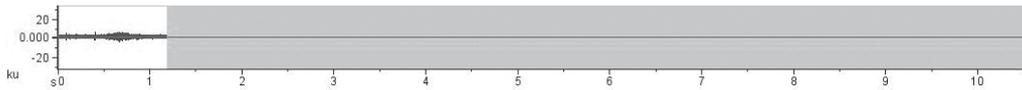
At 07h00 on 21 December 2010, SPM was attempting to locate Red-collared Woodpecker in Ban Nahin by speculatively whistling the *keck* call. He heard a *keck* given close by in response, so he whistled an imitation of the call back to the bird. Immediately afterwards he heard a Blue-naped Pitta type vocalisation which emanated from the same place. The bird was out of sight because of the density of the vegetation and the angle of the slope, but the sound seemed to come from the ground in an area of bamboo and saplings within broadleaved evergreen forest. SPM whistled an imitation of this sound and a Red-collared Woodpecker flew from the position under observation up to a liana c.1 m above the ground. It perched there for less than ten seconds, allowing an identification to be made, and then flew away into the forest. The *keck* call now emanated from the direction in which the woodpecker had fled. SPM continued to imitate the 'Blue-naped Pitta' call, and the woodpecker responded by flying towards him and perched about 20 m up in a tree close by, where it was partially obscured by leaves. Although throughout this time it did not vocalise, it made the 'Blue-naped Pitta' vocalisation twice more when not in view.

Knowing of SPM's experience, during a Birdtour Asia tour visit in January 2011 JAE, along with seven other birders, heard the 'Blue-naped Pitta' call three times from within 500 m of the site where SPM had seen the Red-collared Woodpecker. Unfortunately there was no sign of any bird, but the call appeared to come from a small patch of bamboo inside primary evergreen forest. Despite waiting 30 minutes, with playback of both the *keck* and 'Blue-naped Pitta' calls, there was no response. The following day, in exactly the same spot, JAE speculatively played the 'Blue-naped Pitta' vocalisation, receiving an immediate response. When the bird called a second time, JAE was able to obtain a single sound recording (Figure 2). Unfortunately, despite spending over two hours in the area, and investigating the area of bamboo, nothing was seen.

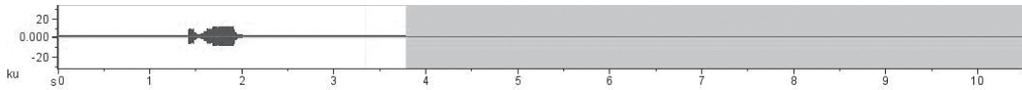
In mid-2011 Dave Farrow drew SPM's attention to a recording of a drumming Red-collared Woodpecker made by Craig Robson in Ke Go Nature Reserve, Ha Tinh province, Vietnam, at <500 m elevation. At the end of the recording a Blue-naped Pitta type vocalisation can be heard. Although it cannot be confirmed that the vocalisation was made by a Red-collared Woodpecker, it is extremely unlikely that Blue-naped Pitta occurs at Ke Go Nature Reserve owing to the location and to the presence of Blue-rumped Pitta *P. soror* there. Although Blue-naped and Blue-rumped Pittas occur sympatrically in northern Vietnam (e.g. at Tam Dao National Park), at these sites they separate out attitudinally, with Blue-rumped Pitta exclusively at lower elevations. Outside of the range of Blue-rumped Pitta, Blue-naped Pitta occurs at much lower elevations; for example it occurs at less than 100 m elevation at a



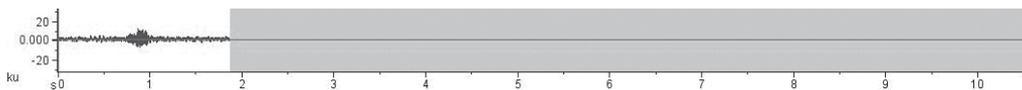
**Figure 1.** The *keck* call of Red-collared Woodpecker (JAE, March 2012, Phong Nha Ke Bang National Park, Vietnam).



**Figure 2.** The 'Blue-naped Pitta' vocalisation of Red-collared Woodpecker (JAE, January 2011, Ban Nahin, Lao PDR).



**Figure 3.** The territorial vocalisation of Blue-naped Pitta (JAE, March 2007, Tam Dao National Park, Vietnam).



**Figure 4.** The 'Blue-rumped Pitta' vocalisation of Red-collared Woodpecker (JAE, March 2012, Phong Nha Ke Bang National Park, Vietnam).

site close to Kaziranga National Park, Assam, India (JAE pers. obs.). In Indochina, semi-evergreen forest on karst supports a number of moderate- and high-altitude species at surprisingly low elevations (e.g. Green-backed Tit *Parus monticolus* and Green Cochoa *Cochoa viridis*, both of which have been regularly recorded at <400 m elevation at Ban Nahin), so it would not be unreasonable to assume that Blue-naped Pitta might also occur at similar elevations in karst at sites from which Blue-rumped Pitta is absent.

It is not surprising that birders suspected the Ban Nahin call of being made by Blue-naped Pitta (compare Figures 2 and 3). Like one of the vocalisations of that species it consists of a loud, mellow, throaty, upslurred whistle. However, it is possibly somewhat more abrupt than that of Blue-naped Pitta, although both are c.0.5 seconds in length. The woodpecker's vocalisation is perhaps not as modulated, with the first half of the strophe 1–1.8 kHz in pitch rising to just over 2 kHz at the end (perhaps slightly lower than the maximum frequency achieved by the pitta), and without dipping slightly in frequency in the first quarter as noticeably as in the pitta. The call is given singly or in a series.

*Call 3.*—This third vocalisation (Figure 4) is somewhat intermediate between a Blue-rumped Pitta and a macaque species *Macaca*. It was elucidated by JAE in Phong Nha Ke Bang National Park, Vietnam, during a Birdtour Asia tour in March 2012. He was attempting to find Red-collared Woodpecker using the *keck* and 'Blue-naped Pitta' calls when he heard a novel sound. He recorded it and played it back, and almost immediately a Red-collared Woodpecker flew in, repeating the call. It consists of a short, modulated, slightly nasal, panicked-sounding strophe given singly or in a series. It is 0.2 seconds in duration and begins at 1–2 kHz, rising in pitch to 3.5 kHz before quickly dropping back to 1.5 kHz. The highest frequency in the strophe is located two-thirds of the way through: the rise in pitch is almost twice as long as the drop at the end. It is possible that this sound was previously overlooked as a variant Blue-rumped Pitta vocalisation.

## Discussion

Bird vocalisations have evolved to travel efficiently through the environment in which the birds that make them live. There is therefore often convergence in structure and pitch between distantly related bird species that occupy a similar habitat niche. Although superficially Red-collared Woodpecker and Blue-naped Pitta are species with very different habits, they are quite similar. Blue-naped Pitta obtains all or almost all of its food from the forest floor. Although data are scant and few detailed observations of the woodpecker have been published, most encounters with it are of birds seen foraging on the forest floor, or flushed from the forest floor, or in woody understorey tangles. A typical behaviour when

encountered is to flush from the forest floor to a low perch on a liana before flying off out of sight (J. W. Duckworth pers. comm. 2012). It is not known if the woodpecker seen by SPM in Ban Nahin forest was vocalising from the ground, as it was out of sight and might have been perched on a low stem or branch. Blue-naped Pitta usually vocalises from the ground or, when agitated, from a perch up to 3 m of the ground. The two species therefore spend most of their time in the same part of the forest stratum and presumably often vocalise from the same elevation above the ground. Interestingly, both species apparently vocalise relatively infrequently or at least vocalise infrequently when they are in view or have been detected by an observer.

In Indochina, Blue-naped Pitta and Red-collared Woodpecker rarely occur at the same location. Blue-naped Pitta is decidedly scarce in Vietnam, with confirmed records from only one location, Tam Dao, where Red-collared Woodpecker has not been recorded and native forest has been lost at lower elevations (Tordoff 2002). It has also been reported from Pu Mat National Park (SFNC 1998), although this record is considered unconfirmed by Tordoff (2002). Its status in Laos is unclear, although it has been recorded at only a small number of locations, including Nam Kading NBCA (down to 500 m elevation), Nam Xam NBCA and Nam Et NBCA.

Red-collared Woodpecker has been recorded at a number of sites within the range of Blue-naped Pitta in Lao PDR, including Nam Xam NBCA where it was recorded at 1,000 m (an exceptionally high elevation, although there is no reason to question the veracity of the record) and Nam Kading NBCA. In northern Vietnam it has been recorded at only one site (Ban Bung IBA) where Blue-naped Pitta could conceivably occur (Hill & Kemp 1996) but it has been recorded in Pu Mat National Park (Tordoff 2002).

There is very little remaining lowland forest in areas where both Red-collared Woodpecker and Blue-naped Pitta might co-occur in northern Indochina, but even the small number of records available suggests that their geographical distributions might overlap. At sites where they co-occur Blue-naped Pitta usually occurs at higher elevations than Red-collared Woodpecker, which occupies the lowlands and indeed is scarce outside gentle terrain. Heard-only records of Blue-naped Pitta from within the range of Red-collared Woodpecker (and *vice versa*), especially those from lower elevations, should be treated as unconfirmed owing to the potential for previously unforeseen confusion with that species. Although it is possible that knowledge of a fuller range of the vocalisations of Red-collared Woodpecker will lead to more records of this poorly known bird, it may be that the paucity of lowland forest on level ground or gentle slopes and the relative infrequency of observer effort within such habitat will mean that this species continues to be rarely recorded, especially by birdwatchers.

## Acknowledgements

We thank Will Duckworth for his comprehensive comments on an early draft of this manuscript and Pamela Rasmussen for making the sonagrams. Dave Farrow provided us with the Craig Robson recording of the Blue-naped Pitta type vocalisation of Red-collared Woodpecker, whilst Craig Robson and Pamela Rasmussen both provided helpful comments on the manuscript.

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# Diet of the Speckled Boobook *Ninox punctulata* in north Sulawesi, Indonesia

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## Introduction

The ecology of most of Sulawesi's owl species is poorly known (Bishop 1989, Debus 2002, Fitzsimons 2010). The Speckled Boobook *Ninox punctulata* is one of four *Ninox* species that are endemic to Sulawesi and its satellite islands, although the recent discovery by Madika *et al.* (2011) could bring up this number to five. It occurs throughout the island and inhabits forests and disturbed lowland habitats (White & Bruce 1986, Coates & Bishop 1997). König *et al.* (2008: 469) stated it to be 'widespread and common within its restricted range'.

Despite being one of the commoner *Ninox* species on Sulawesi, little is known about its diet. Marks *et al.* (1999: 236) suggested that there is 'almost no information on diet'. König *et al.* (2008: 469) described its food as 'presumably mainly insects' and that 'the biology and ecology...of this species needs study'. Coates & Bishop (1997: 363) noted it 'has been recorded foraging along narrow streams within primary forest'. Rozendaal & Dekker (1989) reported a bird killing a Swift Fruit Bat *Thoopterus nigrescens* 'in a net over a river in dense primary forest'.

Here we describe components of the diet of the Speckled Boobook based on prey remains and pellets collected at a sheltered roost site in north Sulawesi, with a view to increasing ecological understanding of this species, and possibly helping predict its sensitivity to ecological disturbance.

## Methods and study area

Pellets of the Speckled Boobook were located by JAF and JLT on 19 July 2009 in an abandoned, dilapidated but sheltered dwelling at the headquarters of Bogini Nani Wartabone National Park at Toraut, north Sulawesi (0°34'N 123°54'E; 220 m asl). The site borders the extensive rainforest that makes up the 287,000 ha national park, a river and an area of agricultural land in the Dumoga

Valley (for a description of rainforest at Toraut see Whitmore & Sidiyasa 1986).

This dwelling was a known roost site for Speckled Boobook (e.g. Farrow 2008), and an individual of this species was heard by JAF, JLT and park rangers within metres of the dwelling on the night of 18 July 2009. Both Sulawesi Masked Owl *Tyto rosenbergii* and Sulawesi Scops Owl *Otus manadensis* also use habitat in this area, and both were heard on the night of 18 July 2009. Sulawesi Masked Owl is known to roost in one of the large rainforest trees near the park headquarters (Fitzsimons 2010). Based on various forms of evidence (known roost site, presence of Speckled Boobook feathers, pellet size and composition), we determined that the pellets were those of *Ninox punctulata* and not the other species.

Approximately ten separate piles of pellet material (each pile most likely consisting of multiple pellets) in varying states of decomposition were located throughout the dwelling, with only one pellet seemingly intact. Ants were removing insect material from these pellet remains at the time and moth pupae were also causing disintegration of the material.

Prey remains were analysed by EM, in consultation with Sulawesi small mammal expert Guy Musser, by visually comparing the lower mandibles within the sample. We compared these to descriptions in the taxonomic literature for small mammals in Sulawesi (e.g. Musser 1972, 1981a,b, 1982, 1991, Ruedi 1995). Tooth cusp patterning was also examined for distinguishing features. The minimum number of prey individuals was recorded (by counting skulls and matching left and right jawbones) and weights sourced from the published literature.

Although the remains of invertebrates were in a degraded state at the time of analysis and could not be systematically or accurately assessed, we identified key distinguishing features such as beetle wings.