New records for Guyana, with description of the voice of Roraiman Nightjar *Caprimulgus whitelyi*

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Following Guyana's independence from British rule and the publication of Snyder's *The birds of Guyana*, both of which occurred in 1966, ornithological exploration of the country stagnated for almost 30 years. In 1984 the Smithsonian Institution created the Biodiversity of the Guianas (BDG) Program. Under the auspices of this programme, and in conjunction with the University of Kansas Natural History Museum (KUNHM), ornithological surveys commenced in 1994 and have occurred almost annually since, resulting in several publications documenting new species for the country (e.g., Braun *et al.* 2003, Robbins *et al.* 2003, 2004). Other individuals and organisations have also added to our knowledge of Guyana's avifauna over the past decade (e.g., Mees 2000, Barnett *et al.* 2002, Ridgely *et al.* 2005). Although Braun *et al.* (2000) removed 13 species listed by Snyder (1966), for lack of documentation, the number of bird species known to occur in Guyana has increased by *c.*100 over the past 10 years—from 720 in Snyder (1966) to over 800 today. Here we report two additional new species for Guyana and provide notes on some species poorly known in the country.

The information presented here results from a joint Smithsonian Institution and Louisiana State University expedition, on 12 July–6 August 2004. We visited two localities in west-central Guyana (Fig. 1). The first was near Kopinang Village, in the southern portion of the Pacaraima Mountains (Potaro-Siparuni region; 04°56'N, 59°54'W; 12–28 July). Our base camp was at *c.*850 m elevation; the surrounding landscape was tall forest interspersed with patches of savanna, some quite large (Fig. 2). We were also able to ascend nearby Kopinang Mountain, permitting access to montane forest at 1,400 m. A second camp along the Ireng River (Upper Takutu-Upper Essequibo region; 03°53'N, 59°35'W; 1–6 August) was in gallery forest in the North Rupununi savanna near the eastern edge of the rio Branco drainage. From this camp we were able to survey gallery forest, savanna grassland and light savanna woodland.

Methods

Birds were sampled with shotguns and mist-nets during most days at each camp. Collecting activity was concentrated in the morning hours. Nets were generally opened at dawn and closed in late afternoon. Specimens were preserved as study

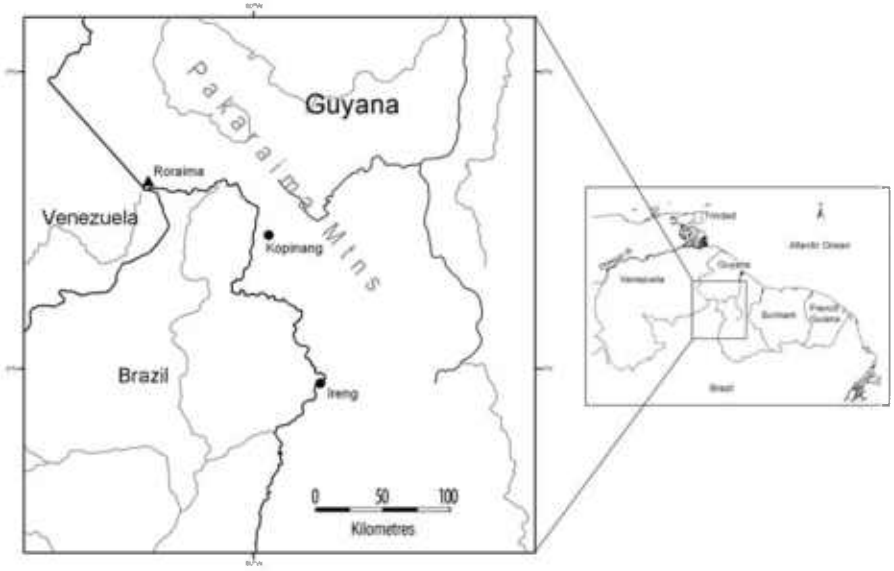

Figure. 1. Map of collecting localities in Guyana.

skins, skeletons or fluid samples in 10% Formaldehyde. Tissue samples were taken from all specimens and preserved in liquid nitrogen. Qualitative observations of the avifauna were made by most observers during morning walks. We used tape-recorders to further document the avifauna at each locality. Specimens are deposited at the National Museum of Natural History, Smithsonian Institution, Washington DC (USNM); Louisiana State University Museum of Natural Science, Baton Rouge (LSUMZ); and the University of Guyana Centre for the Study of Biological Diversity, Georgetown (CSBD). Tape-recordings will be deposited at the Macaulay Library, Cornell Lab of Ornithology, Ithaca, New York.

Species accounts

Notes on selected species of interest from both camps follow. Taxonomy and nomenclature follow the South American Classification Committee of the American Ornithologists' Union (Remsen *et al.* 2006).

SOLITARY EAGLE *Harpyhaliaetus solitarius*

One was observed at our Kopinang camp on 18 July by CMM, soaring over one of the small savannas for *c.*2 minutes. It was recognised by its massive size, dark colour, broad wings and relatively short tail. It also called once, giving a series of repeated short notes (*keer-keer-keer-keer-keer*). This is consistent with published descriptions of this species' voice (e.g., Hilty 2003). Overall, confusion was only

Figure 2. Savanna–forest ecotone near base camp at Kopinang (B. K. Schmidt)

possible with Great Black-hawk *Buteogallus urubitinga.* This bird was considerably larger than a *Buteogallus* and differed from *B. urubitinga* in proportions and voice. The species is generally considered a rare resident of foothill and montane forest in southern Central America, the Andes and the northern coastal cordilleras of Venezuela (Hilty 2003). In the Guiana Shield, there is a Venezuelan record from Cerro de la Neblina (Willard *et al.* 1991) and several for French Guiana (Tostain *et al.* 1992). Ours is the first published observation for Guyana. *H. solitarius* may be a low-density resident of forested hilly regions throughout the Guiana Shield.

BLUE-CHEEKED PARROT *Amazona dufresniana*

Considered Near Threatened by BirdLife International (2004), this was the only *Amazona* parrot observed around Kopinang camp, where it was common. Its range in Guyana is incompletely understood, and it appears absent from large areas. Our observations and data from the wild bird trade suggest that, in Guyana, the species may be commonest in the vicinity of the Pacaraima Mountains (C. K. Hanks pers. comm.). It was reported to be a rare resident of Iwokrama Forest by Ridgely *et al.* (2005) and has also been observed in the Acari Mountains on Guyana's southern border (USNM and KUNHM unpubl. data).

FIERY-SHOULDERED PARAKEET *Pyrrhura egregia*
This species was abundant at all elevations at Kopinang. Specimens were generally in moult. Large groups were frequently observed at fruiting and flowering trees; in particular, it seemed fond of a *Dimorphandra* sp. (Leguminosae: Caesalpinoideae). Indeed, the flowers of this common tree attracted large numbers of birds, especially Tepui Parrotlets *Nannopsittaca panychlora*, Green Honeycreepers *Chlorophanes spiza* and Red-legged Honeycreepers *Cyanerpes cyaneus. P. egregia* was observed infrequently up to 1,500 m on Mt. Roraima in March–April 2001, and the species' overall status in Guyana is unclear. Despite this, 120 individuals may be legally exported from Guyana annually for the international bird trade (Duplaix 2001).

VERMICULATED SCREECH-OWL *Megascops guatemalae*
Encountered occasionally at our Kopinang site. BJO obtained a recording of a singing bird, at dawn on 19 July, at 850 m, and heard another on a different day, *c.*90 minutes before sunrise, at 1,200 m. These individuals presumably represent the subspecies *M. g. roraimae*, first reported for Guyana by Braun *et al.* (2003); our records constitute a small range extension for this taxon.

RORAIMAN NIGHTJAR *Caprimulgus whitelyi*
A male was tape-recorded and collected, on 18 July, in an area of savanna with scattered *Curatella americana* trees, near our Kopinang base camp, at 850 m (LSUMZ 175345). An additional female-plumaged specimen was preserved as a fluid sample (USNM 632437). The species appeared to be a low-density resident of the patchy savannas that characterised the Kopinang site. Five were detected in three large savanna areas near our camp, where they were observed primarily in the vicinity of forest edges and bush islands. Birds were either flushed from the ground or responded to playback before retreating to dense cover. They were extremely difficult to find and observe, in part because they only called for a few minutes at

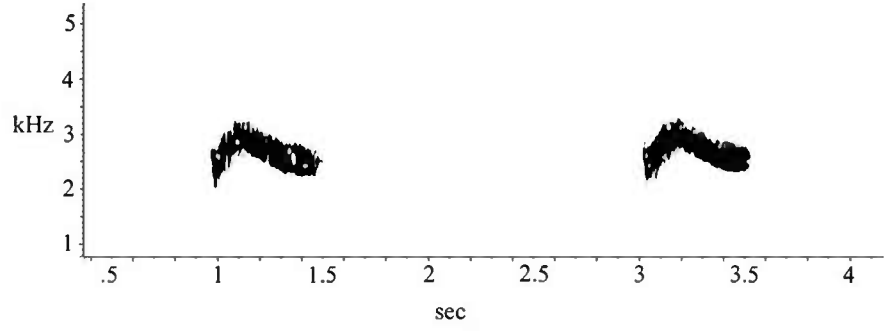

Figure 3. Sonogram of vocalisation of *Caprimulgus whitelyi*. The recording was made with a Sony TCD5-Pro II cassette recorder and Sennheiser ME-66/K5 microphone; the sonogram was generated using RAVEN 1.2 (Charif *et al.* 2004).

first light and were unresponsive to playback over long distances. We heard one call type: a burry *hreeer*, rising then falling in pitch, and repeated at intervals of 1–2 seconds (Fig. 3). *C. whitelyi* is similar in plumage to the sympatric Blackish Nightjar *Caprimulgus nigrescens* and is considered by Cleere (1998, 1999) to form a superspecies with it. However, vocalisations of the two are quite different, and they may not be each others' closest extant relatives. *C. nigrescens* is widespread in the Guiana Shield, but we did not encounter it at Kopinang. We present a sonogram of the first known recording of *C. whitelyi* (Fig. 3); this recording corresponds to the aforementioned specimen at LSUMZ. Our specimens are the first records for Guyana of this elusive and poorly known species. The elevation at which we observed these birds (850 m) is over 400 m lower than the minimum elevation given by Cleere (1999).

GREEN-TAILED JACAMAR *Galbula galbula* /
RUFOUS-TAILED JACAMAR *Galbula ruficauda*

These two species were syntopic in gallery forest at our Ireng River camp. The first specimens of the latter species for Guyana were collected, in 2000, near the Takutu River, along the Brazilian border south-west of our field site (USNM and KUNHM unpubl. data). *G. galbula* occurs throughout the Guianas and replaces *G. ruficauda* east of the rio Branco drainage. Extensive field work by Robbins *et al.* (2004) did not reveal evidence of syntopy along the Takutu and Ireng rivers. However, Haffer (1974) mentioned that they are sympatric over much of Roraima, Brazil. Moskovits *et al.* (1985) reported *G. galbula* west of Boa Vista, at least 170 km south-west of our Ireng River site. At our camp, *G. galbula* appeared to be commoner than its congener. The Brazilian records and our observations suggest that *G. galbula* and *G. ruficauda* do not replace one another abruptly across the rio Branco drainage, but instead maintain a rather broad transition zone within which they are at least locally syntopic. Further investigation of the distribution of jacamars in adjacent Brazil could provide more information on the nature of this transition zone. We could not infer any evidence of hybridisation, interspecific territoriality or habitat segregation during our short visit. Specimens of both species were obtained (*G. galbula*: USNM 632503, 632504, 632774; *G. ruficauda*: USNM 632667, 632845).

WHITE-BELLIED PICULET *Picumnus spilogaster*

Fairly common in gallery forest along the Ireng River, where several specimens were taken (USNM 632482, 632585, 632767), *P. spilogaster* is known from Roraima, Brazil (Winkler & Christie 2002) and supposedly occurs 'eastwards through Guyana' (Winkler *et al.* 1995). Our experience contradicts this supposition, as much of the country's interior is covered with tall humid forest inhabited by Golden-spangled Piculet *P. exilis*. All *Picumnus* specimens taken by recent researchers in the gallery forests and savanna woodlands of south-west Guyana have been of White-barred Piculet *P. cirratus* (USNM and KUNHM unpubl. data). Recent field surveys suggest that *P. spilogaster* occurs primarily in the coastal

region east of the Essequibo River, where it is common; there are no modern specimens from the interior. The occurrence of this taxon in the gallery forests of south-west Guyana provides additional support for the hypothesis that coastal and interior savanna avifaunas were connected in the recent past (Silva 1998, Robbins *et al.* 2004; see Discussion).

HOARY-THROATED SPINETAIL *Synallaxis kollari*
A scarce or at least inconspicuous resident in gallery forest along the Ireng River; our one specimen (USNM 632517), taken in a dry scrubby area adjacent to savanna at the edge of a narrow gallery forest, was our only observation despite extensive effort using playback. Robbins *et al.* (2004) also reported finding this species at low density in this region.

SHARP-TAILED STREAMCREEPER *Lochmias nematura*
Early specimen records of *L. nematura* from Guyana were subsequently considered to have been taken in Venezuelan territory (Snyder 1966). The species was recently reported for Guyana by Barnett *et al.* (2002) based on observations from Mt. Kowa, *c.*30 km east-southeast of Kopinang. We observed *L. nematura* on several occasions beside a small stream at 1,400 m on Kopinang Mountain. A specimen collected on 24 July (LSUMZ 175389; smooth ovary 4 × 3 mm, bursa of Fabricius 3 × 3 mm, skull 0% ossified) is the first for the country.

OLIVACEOUS WOODCREEPER *Sittasomus griseicapillus*
Fairly common at higher elevations (1,200–1,400 m) on Kopinang Mountain, with one observation at 850 m, this species was a frequent member of mixed-species flocks. The range of this species in Guyana is poorly understood. It appears to occur over much of western Guyana, but details are generally lacking (see Barnett *et al.* 2002). *Sittasomus* has been recorded from the extreme south (USNM and KUNHM unpubl. data) and in mature forest on islands in the Essequibo River (Ridgely *et al.* 2005), but is unknown from the eastern half of the country and has never been recorded in Suriname (Haverschmidt & Mees 1994). Specimens collected at 1,400 m on Kopinang Mountain (LSUMZ 175363, 175364) agree with the characters of *S. g. axillaris,* the same subspecies found in the neighbouring north-east Amazonian lowlands.

PLAIN ANTVIREO *Dysithamnus mentalis*
Common at and above 1,000 m on Kopinang Mountain, but conspicuously absent at lower elevations, *D. mentalis* was occasionally observed to follow understorey mixed-species flocks. This species is known from few localities in Guyana; it occurs in the Acari Mountains on Guyana's southern border (USNM and KUNHM unpubl. data), but was not found during an extensive survey of Mt. Roraima (Braun *et al.* 2003). It does not appear on the Potaro Plateau list of Barnett *et al.* (2002), nor was it found in Iwokrama Forest by Ridgely *et al.* (2005).

PLAIN-WINGED ANTWREN *Myrmotherula behni*
Fairly common above 1,200 m on Kopinang Mountain, our three specimens (USNM 632469, 632473; LSUMZ 175410) may be the first for the country, and certainly represent the first modern specimens and genetic material from Guyana. Though specimens of *M. behni* have been reported from several localities in Guyana (Cory & Hellmayr 1924, Snyder 1966), these were either misidentified females of Long-winged Antwren *M. longipennis* or were collected in Venezuelan territory. At Kopinang, pairs were regularly seen and heard in the subcanopy and understorey, at 1,200–1,400 m. They often followed mixed-species flocks, often with Chapman's Bristle-tyrants *Phylloscartes chapmani*, Two-banded Warblers *Basileuterus bivittatus* and Plain Xenops *Xenops minutus*. *M. behni* appeared to replace *M. longipennis* abruptly at 1,200 m. No tape-recordings were obtained, but contact calls and behaviour were similar to *M. longipennis*.

RIO BRANCO ANTBIRD *Cercomacra carbonaria*
An uncommon, local resident at the Ireng River site, where we heard it singing sporadically in gallery forest. It seemed to be restricted to taller, wider sections of forest with dense thickets and vine tangles, i.e., it was absent from areas where cattle had extensively grazed the understorey or where the forest was less than *c.*50 m wide. We used playback to sample extensive areas of the river, but males did not always respond and it was difficult, therefore, to judge accurately the density of the population. We only observed one female, but we suspect that the species lives in pairs in dense vegetation, much like other *Cercomacra* (Morton *et al.* 2000). We collected four specimens, which represent the first for Guyana (USNM 632490–92; LSUMZ 175414).

SHORT-TAILED ANTTHRUSH *Chamaeza campanisona*
Fairly common at 1,400 m on Kopinang Mountain; two specimens were obtained (USNM 632452, LSUMZ 175431) which match the characters of *C. c. fulvescens*, the subspecies of adjacent tepuis. Our records constitute the first specimen records for Guyana since the species was reported in Snyder (1966), who listed it from the Merume Mountains and Mt. Ayanganna. *C. campanisona* was not observed by Braun *et al.* (2003) on Mt. Roraima, but it was found on the crest of the Iwokrama Mountains by Ridgely *et al.* (2005). Barnett *et al.* (2002) also had a sight record from Mt. Kowa. This species, inconspicuous when not singing, is perhaps widespread at higher elevations in the Pacaraima Mountains.

YELLOW-LEGGED THRUSH *Platycichla flavipes*
Uncommon at 1,400 m on Kopinang Mountain, where it was observed feeding on fruiting Melastomataceae, and several specimens, all juveniles, were taken, the first for the country (USNM 632458, 632756, 632762). A singing bird seen and tape-recorded on Mt. Roraima in 2001 (Braun *et al.* 2003) was the only previous Guyana record.

RUFOUS-COLLARED SPARROW *Zonotrichia capensis*
Uncommon around our Kopinang camp, where we collected several specimens (USNM 632649, 632650, 632706, 632707, 632782), the first to be taken by the Smithsonian BDG Program in almost ten years of field surveys in Guyana. The range of this species in Guyana appears to be limited to savanna patches in the Pacaraima Mountains, and possibly scrubby habitats on the flat tops of those mountains. Although abundant in most parts of its vast range, *Z. capensis* seems much scarcer in the Guiana Shield.

TWO-BANDED WARBLER *Basileuterus bivittatus*
One of the most conspicuous birds at upper elevations on Kopinang Mountain, where it was observed down to *c.*1,000 m. Family groups formed the nucleus of understorey mixed-species flocks; all such flocks that we observed above 1,200 m contained a group of *Basileuterus.* We sometimes observed family groups foraging alone, especially below 1,200 m where many small highland passerines were absent. Overall, *B. bivittatus* appeared much commoner on Kopinang Mountain than on Mt. Roraima. We believe that the prevalence of conspicuous family groups on Kopinang only partially accounts for the difference; e.g., *B. bivittatus* was not a nuclear species in mixed-species flocks on Roraima, and indeed was rarely encountered at all during our six-week survey in 2001.

TROUPIAL *Icterus icterus*
Common along the Ireng River and was singing persistently. It was also observed away from the river in open woodland on hillsides near our camp. *I. icterus* was previously thought rare and local in Guyana, occurring no further east than the Ireng and Takutu rivers. However, there are recent reliable sight records from as far east as Annai (C. Edwards pers. comm.), suggesting that it is more common and widespread in the Rupununi savanna than previously recognised.

Discussion

We recorded 229 species at our Kopinang site. The avifauna represented a diverse mix of savanna, lowland forest and montane forest species. Kopinang Mountain is part of the Wokamung Tepui massif and rises to *c.*1,600 m. We frequently observed such montane species as Roraiman Antwren *Herpsilochmus roraimae*, Tepui Greenlet *Hylophilus sclateri* and Golden-tufted Mountain-grackle *Macroagelaius imthurni* in forested areas around our base camp at 850 m. At this elevation we also mist-netted many Orange-bellied Manakins *Lepidothrix suavissima* and Scarlet-horned Manakins *Pipra cornuta*, two common species of higher elevations in the tepui region. Several tepui endemics were found above 1,200 m, including Tepui Spinetail *Cranioleuca demissa*, White-throated Foliage-gleaner *Automolus roraimae*, Plain-winged Antwren *Myrmotherula behni* and Chapman's Bristle-tyrant *Phylloscartes chapmani*. Most of these were associated with mixed-species foraging flocks and were not found below 1,200 m. However, overlap was

considerable between the lowland and highland components of the avifauna on Kopinang Mountain, primarily because many lowland species were common up to at least 1,400 m, far higher than they normally occur elsewhere in their ranges. Some common lowland species at this elevation included White-plumed Antbird *Pithys albifrons*, Scale-backed Antbird *Hylophylax poecilinotus*, Chestnut-rumped Woodcreeper *Xiphorhynchus pardalotus* and Plain Xenops *Xenops minutus*.

Two of us (BJO, CMM) participated in an expedition to Mt. Roraima in March–April 2001 (see Braun *et al.* 2003), and we noted many avifaunal differences between Kopinang Mountain and Mt. Roraima. In general, the avifauna at similar elevations on Mt. Roraima contained a much lower proportion of lowland species, and many more highland species, than we observed on Kopinang. Species regularly encountered in the wet, moss- and epiphyte-laden north slopes of Roraima that were not encountered on the drier southern slopes of Kopinang included Red-banded Fruiteater *Pipreola whitelyi*, Roraiman Barbtail *Roraimia adusta*, Streak-backed Antshrike *Thamnophilus insignis*, Scaled Antpitta *Grallaria guatemalensis*, Slate-crowned Antpitta *Grallaricula nana* and Roraiman Flycatcher *Myiophobus roraimae*. *Roraimia adusta* was one of the most frequently captured birds in mist-nets at 800 and 1,300 m on Roraima during our visit, and thus its apparent absence from Kopinang was mysterious. The north and east slopes of the tepuis intercept moisture-laden trade winds from the Atlantic, and it could be expected that these slopes might have higher rainfall and different plant communities than slopes facing away from the trade winds (D. Clarke pers. comm.). Though rain was frequent on Kopinang Mountain during our visit, the relative lack of epiphytic growth suggests that either annual precipitation levels are comparatively low or that rainfall is highly seasonal. The differences that we observed in the avifaunas of the two mountains suggest that geographic and elevational ranges of montane bird species in the tepui region may be more complex than currently acknowledged. Historical, structural, climatic and elevational influences on the occurrence and abundance of highland tepui birds represents a fertile area for future research.

The narrow, dense gallery forests along the Ireng and Takutu rivers harbour an avifauna unique in Guyana. We observed 128 species over a six-day period near our camp on the Ireng River. Two poorly known species, Rio Branco Antbird *Cercomacra carbonaria* and Hoary-throated Spinetail *Synallaxis kollari*, only occur in gallery forests of the rio Branco drainage, which lies mostly within Roraima, Brazil. As far as is known, these two species do not occur east of the Guyana/Brazil border. As previous researchers have noted (e.g., Mees 2000, Robbins *et al.* 2004), the avifauna in savanna gallery forests of south-west Guyana appears to have strong affinities with that of the Guianan coastal plain rather than with the intervening forested regions of the country. Species common in gallery forest of the Upper Takutu–Upper Essequibo region include Straight-billed Woodcreeper *Xiphorhynchus picus*, Black-crested Antshrike *Sakesphorus canadensis*, Mouse-colored Tyrannulet *Phaeomyias murina*, Pale-tipped Inezia *Inezia caudata*, Brown-crested Flycatcher *Myiarchus tyrannulus*, Yellow-breasted Flycatcher

Tolmomyias flaviventris, Ashy-headed Greenlet *Hylophilus pectoralis*, Greyish Saltator *Saltator coerulescens* and Yellow Oriole *Icterus nigrogularis*. All are common along the coast and some (e.g. *Hylophilus pectoralis*) are among the commonest birds in coastal mangrove forests. However, they appear to be absent from much of the interior of Guyana, which is still mostly covered with contiguous lowland evergreen forest. The strong similarity between the coastal and interior gallery forest avifaunas probably reflects the influence of either historical population connectivity related to periods of expansion of savanna habitats in South America (Haffer 1974) or some recent dispersal by more vagile taxa, or a combination of these factors. More study is needed to clarify the relationships of these apparently allopatric populations.

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