

Birds recorded from surveys in Ghana's Central and Brong-Ahafo regions

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Summary

We present a list of birds with their relative abundance from 2000 and 2003 surveys of two sites in Ghana's Upper Guinea forests. We recorded 111 species during the 2000 survey and 118 during the 2003 survey. We recorded several species considered nationally rare (*e.g.* Blue-headed Bee-eater *Merops muelleri*, Willcocks's Honeyguide *Indicator willcocksii*, White-tailed Ant-thrush *Neocossyphus poensis*, Olivaceous Flycatcher *Muscicapa olivascens*, Grey-throated Flycatcher *Myioparus griseigularis*) or of global concern (Yellow-headed Picathartes *Picathartes gymnocephalus*, Green-tailed Bristlebill *Bleda eximia*, Rufous-winged Illadopsis *Illadopsis rufescens*) and include additional details for these species. We made the first bird specimen collections in decades of many species from Ghana, including several for which there were few or no previous specimens from the country (*e.g.* Blue-headed Bee-eater, Olivaceous Flycatcher, Tessman's Flycatcher *Muscicapa tessmanni*, Rufous-winged Illadopsis).

Résumé

Oiseaux notés dans des rapports sur les régions Centrale et Brong-Ahafo du Ghana. Nous présentons une liste d'oiseaux avec leur abondance relative

à partir d'études réalisées en 2000 et 2003 sur deux sites de forêts haut-guinéennes du Ghana. Nous avons noté 111 espèces au cours de l'étude de 2000 et 118 au cours de l'étude de 2003. Nous avons observé plusieurs espèces considérées comme rares sur un plan national (par ex. Guêpier à tête bleue *Merops muelleri*, Indicateur de Willcocks *Indicator willcocksii*, Néocossyphé à queue blanche *Neocossyphus poensis*, Gobemouche olivâtre *Muscicapa olivascens*, Gobemouche à gorge grise *Myioparus griseigularis*) ou dont la conservation est jugée préoccupante à l'échelle internationale (Picatharte de Guniée *Picathartes gymnocephalus*, Bulbul à queue verte *Bleda eximia*, Akalat à ailes rousses *Illadopsis rufescens*) et nous incluons des informations nouvelles sur ces espèces. Nous avons constitué les premières collections depuis des décennies de spécimens d'oiseaux de nombreuses espèces du Ghana, dont plusieurs pour lesquelles il y avait peu ou pas de spécimens provenant de ce pays (par ex. Guêpier à tête bleue, Gobemouche olivâtre, Gobemouche de Tessmann *Muscicapa tessmanni*, Akalat à ailes rousses).

Introduction

The Upper Guinea Forest, one of Africa's major lowland rainforest regions, originally covered most of the region from Sierra Leone to SW Ghana. However, c. 77 % of this area is now deforested and the remaining forest is being rapidly degraded and fragmented by logging and agricultural encroachment, and relatively little is known about the status and distribution of many of the restricted-range Upper Guinea Forest bird species (Allport 1991, Stattersfield *et al.* 1998).

Ghana contains c. 10 % of the remaining wet forest in West Africa (Allport 1991). A long history of research has contributed to our current knowledge of the status and distribution of birds in Ghana (Grimes 1987). However, many areas within the country are still unexplored and the status and distribution of many species are poorly known (Moyer 1996, Dowsett *et al.* 2008), and there are few recently published studies documenting the distribution and relative abundance of forest birds (Dutson & Branscombe 1990, Ntiamoa-Baidu *et al.* 2000a, 2000b, Beier *et al.* 2002, Holbech 2005, Dowsett-Lemaire & Dowsett 2007). None of these recent surveys has involved the collection of specimens, tissues and associated data. In addition to providing verifiable documentation of distributional records, specimens and their ancillary materials can provide important data for studies of avian systematics, biogeography, morphology, annual cycles, population biology, energetics and wildlife management (Hustler 1996, Remsen 1995, Payne & Sorenson 2003, Bates *et al.* 2004). More extensive collections of African forest birds would enhance our understanding of African tropical diversity and biogeographic history (Mayr & O'Hara 1986, Bates *et al.* 2004).

Here, we present a complete list of the birds encountered on two collecting expeditions to two rainforest sites in Ghana, with estimates of the frequency with which we encountered them. Observations and specimen data include some poorly known species and add significantly to our knowledge of Ghana's rainforest birds. We discuss the importance of our records of species that are considered uncommon to nationally or globally rare.

Methods

From 12 to 29 Feb 2000, JDW, BDM, RGM, JB and JA surveyed the birds near the village of Assin Kynso, c. 30 km south of Assin Foso (5.34°N, 1.23°W), Central Region, which we refer to as the Foso site (Fig. 1). This site consisted of a mix of shifting agriculture, cocoa plantation, oil palms, secondary evergreen moist forest remnants with some scattered large emergent trees and the border of a heavily logged forest reserve. There was extensive fragmentation and logging taking place.

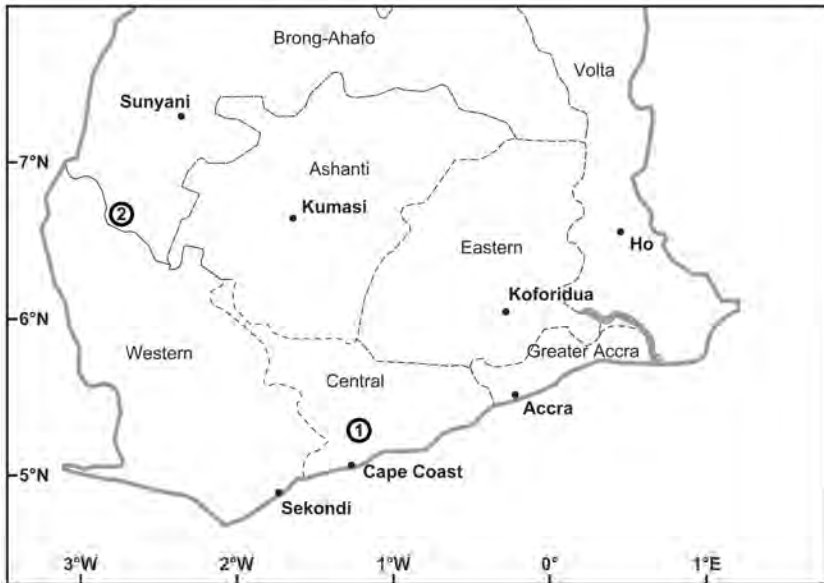


Figure 1. Map of Ghana showing the Foso (1) and Goaso (2) sites.

From 14 to 30 Mar 2003, JDW, BDM, KPJ, MJM, JB and JO conducted a similar survey in the Subim and Ayum Forest Reserves near the village of Asumura, 26 km

southwest of Goaso (6.71°N, 2.73°W), Brong-Ahafo Region, which we refer to as the Goaso site (Fig. 1). This site straddled the border between the two forest reserves. The surrounding forest had undergone varying amounts of logging, with some patches more recently logged than others. At this site we recorded dominant tree species, which included *Celtis* spp., *Pterogota macrocarpa*, *Ceiba pentandra*, *Trilepisium* sp., *T. madagascariense*, *Cola* spp., *Musanga cecropioides*, *Trichilia* sp., *Piptadeniastrum* sp., *Entandrophragma angolense*, *Ficus* spp., *Terminalia superba*, *Distemonanthus benthamianus*, *Triplochiton scleroxylon*, *Albizia zygia*, *Entandrophragma utile*, *Bombax buonopozense*, *Myrianthus aboreus*, *Alstonia boonei*, *Khaya anthotheca*, *Tetrapleura* sp., *Nesogordonia papaverifera*, *Pycnanthus angolensis*, and *Mansonia altissima*. The forest understorey had many large boulders and rocky outcrops.

We surveyed birds at both sites using mist-nets and visual observations and when possible JDW recorded bird songs using a Sony TCM-5000EV and a Sennheiser ME-66 short shotgun microphone. At the Foso site we ran two consecutively strung lines each of ten 12-m mist-nets along trails between forest fragments and a forest reserve, near the village of Assin Kynso. At the Goaso site we ran a line of 26 consecutively-strung 12-m mist-nets along the boundary line between Ayum and Subim Forest Reserves, in forest that had not been recently logged, and we also surveyed and collected birds with shotgun along logging roads in more recently logged forest. At both sites the team usually split early morning duties, with one group opening and running nets starting at sunrise and the other group surveying birds visually. Netted birds were either examined and released or were killed and prepared as museum skins. For all of these specimens, we recorded soft part coloration (iris, maxilla and mandible, tarsus and toes), moult condition (wing, tail, and body), extent of skull ossification, absence or presence of bursa of Fabricius (measured if present), gonad condition and size, amount of fat, and stomach contents, to maximize the potential usefulness of these specimens (Remsen 1995). For each specimen with a full stomach, contents were preserved in ethanol. Small samples of heart, liver and pectoral muscle were removed and flash frozen in liquid nitrogen. The specimens and their associated stomach contents and tissues were deposited in the Louisiana State University Museum of Natural Science (LSUMNS), The Field Museum of Natural History (FMNH) and the University of Science and Technology in Kumasi, Ghana (USTKG). Where we refer to specimens deposited in USTKG we have identified specimens by preparator initials and specimen preparation number followed by [USTKG] because USTKG accession numbers were not available. We also collected ectoparasites, mostly chewing lice (Insecta: Phthiraptera), from freshly killed birds using the post-mortem ethyl acetate fumigation and ruffling method (Clayton *et al.* 1992, Clayton & Drown 2001). These specimens are housed at the Illinois Natural History Survey.

For complete data on localities mentioned, see gazetteers in Grimes (1987) and Dowsett (2005). English and scientific bird names are taken from Borrow & Demey (2001).

Results

At Foso we recorded 111 bird species, several of them considered nationally rare by Grimes (1987), including Green-tailed Bristlebill, Red-tailed Bristlebill, White-tailed Ant Thrush, Blue-headed Flycatcher and Red-fronted Antpecker. One of these, the Green-tailed Bristlebill, is considered of global concern (Birdlife International 2000).

At Goaso we recorded 118 species, several of them considered nationally rare by Grimes (1987), including Olive Long-tailed Cuckoo, African Dwarf Kingfisher, Blue-headed Bee-eater, Spotted Honeyguide, Willcocks's Honeyguide, Green-tailed Bristlebill, Red-tailed Bristlebill, Icterine Greenbul, White-tailed Ant Thrush, Olivaceous Flycatcher, Tessmann's Flycatcher, Grey-throated Flycatcher, Lead-coloured Flycatcher, Blue-headed Flycatcher, Rufous-winged Illadopsis, Yellow-headed Picathartes and Red-fronted Antpecker. Of these, Green-tailed Bristlebill, Rufous-winged Illadopsis and Yellow-headed Picathartes are considered of global concern (Birdlife International 2000). For several species, the specimens that we collected are among the few or only known specimen records of these species from Ghana. For these records we have included additional information on records previously reported in the literature.

We use the following abundance definitions: rare (one or two records); uncommon (a few records); frequent (encountered often, but not every day); common (1–10 encountered daily); abundant (> 10 encountered daily). In cases where we have included every record for rare or uncommon species we have omitted these abundance definitions. We have included additional details for globally or nationally rare species and have noted where our frequency of encounter suggests that abundance is different from that published by Grimes (1987).

Ardeidae

Bulbulcus ibis Cattle Egret. Uncommon. Seen at Foso.

Accipitridae

Gypohierax angolensis Palm-nut Vulture. Uncommon. Seen at Foso.

Necrosyrtes monachus Hooded Vulture. Common. Seen at Foso and in cities or villages around Goaso.

Polyboroides typus African Harrier Hawk. Uncommon. Seen at Foso and Goaso.

Accipiter tachiro African Goshawk. Rare. Mist-netted at Foso and Goaso.

Urotriorchis macrourus Long-tailed Hawk. Seen and heard once at Goaso.

Buteo auguralis Red-necked Buzzard. Frequently seen at Foso and rarely at Goaso.

Milvus migrans Black Kite. Frequently seen at Foso and rarely at Goaso.

Phasianidae

Francolinus achantensis Ahanta Francolin. Uncommon. Heard and seen at Goaso, where three specimens collected (LSUMZ 174478–80).

Rallidae

Himantornis haematopus Nkulengu Rail. Heard 10–15 times from a low wet area in a forest fragment at Foso on the night of 26 Feb 2000.

Sarothrura pulchra White-spotted Flufftail. Rare. Heard along forest trail at Goaso campsite.

Columbidae

Streptopelia semitorquata Red-eyed Dove. Uncommon. Seen at Foso. Heard and seen at Goaso near the village of Asumura, where three specimens collected (LSUMZ 174488–90).

Treron calva African Green Pigeon. Frequent to common. Two specimens (FMNH 396404, LSUMZ 168415) collected at Foso and ten at Goaso (LSUMZ 174516–24, 174806).

Turtur afer Blue-spotted Wood Dove. Frequent. Seen at Foso.

T. brehmeri Blue-headed Wood Dove. Frequently heard at Foso, where two specimens collected (FMNH 396410, LSUMZ 168414). Common at Goaso, where tape-recorded and four specimens collected (LSUMZ 174512–5). Grimes (1987) considered it an uncommon and secretive resident.

T. tympanistria Tambourine Dove. Frequent. Seen at Foso.

Psittacidae

Poicephalus gulielmi Red-fronted Parrot. Uncommon at Goaso. Large groups seen on several occasions; one specimen collected (LSUMZ 174527).

P. senegalus Senegal Parrot. Frequent. Seen at Foso.

Psittacus erithacus Grey Parrot. At Foso, heard on 16 and 22 Feb 2000, and one bird heard and seen as it flew over calling on 17 Feb 2000. At Goaso, JDW and BDM observed c. 12 individuals on 15 Mar 2003, and heard c. 5–10 every afternoon, 16–19 Mar 2003.

Musophagidae

Corythaeola cristata Great Blue Turaco. At Goaso, heard at dusk, 14 Mar 2003 (BDM, JDW, JO); c. five individuals seen in recently selectively-logged forest, 28 Mar 2003 (KPJ, MJM, JB). Declining in Ghana (Sutton 1965, Grimes 1987).

Tauraco macrorhynchus Yellow-billed Turaco. Frequent. Heard at Foso and Goaso (tape recorded). Five specimens collected at Goaso (LSUMZ 174532–5, KPJ 145 [USTKG]).

Cuculidae

Cercococcyx olivinus Olive Long-tailed Cuckoo. One immature male specimen collected at Goaso (LSUMZ 174538).

Chrysococcyx cupreus Emerald Cuckoo. Frequent. Heard, seen and tape recorded at Foso and Goaso. One specimen collected at Foso (LSUMZ 168425), three at Goaso (LSUMZ 174536–7, JDW 583 [USTKG]).

C. klaas Klaas's Cuckoo. Frequent. Seen and heard at Foso and Goaso. Four specimens collected at Foso (FMNH 396426, LSUMZ 168423–4, JDW 404 [USTKG]).

Oxylophus levaillantii Levaillant's Cuckoo. Seen once at Foso.

Cuculus solitarius Red-chested Cuckoo. Frequent. Heard singing at Goaso.

Ceuthmochares aereus Yellowbill. Frequent. Seen and heard at Foso and Goaso. One specimen collected at Goaso (LSUMZ 174539).

Strigidae

Bubo poensis Fraser's Eagle Owl. Seen once and photographed at Foso. Two flushed from a small logging road in a secondary forest remnant, 29 Feb 2000 (JDW), were rusty brown above with barred plumage on the chest and a dark facial border, dark ear tufts, dark eyes, and a pale bill. They were initially standing next to a small puddle in the road and flew up to perch in trees along the roadside.

Ciccaba woodfordii African Wood Owl. At Foso, two mist-netted and photographed, 15 Feb 2000. Pairs frequently heard calling during the night at Goaso.

Apodidae

Neafrapus cassini Cassin's Spinetail. Seen at Foso, 25 Feb 2000 (JDW). Ten seen at Goaso, 25 Mar 2003, and two on 26 Mar 2003, flying over selectively cut forest (JDW).

Rhaphidura sabini Sabines's Spinetail. At Goaso, five seen on 8 Mar and two on 29 Mar 2003.

Apus affinis Little Swift. Seen once at Foso, 26 Feb 2000, and twice at Goaso, 15 and 20 Mar 2003.

Cypsiurus parvus African Palm Swift. Frequently seen at Foso and rarely at Goaso.

Trogonidae

Apaloderma narina Narina's Trogon. Frequent. Heard, seen and tape recorded at Goaso.

Alcedinidae

Alcedo leucogaster White-bellied Kingfisher. Two specimens collected at Foso (LSUMZ 168431, FMNH 396441), six at Goaso (LSUMZ 174550–4, JO 13 [USTKG]), where our mist-net line crossed a dry creek.

Ceyx lecontei African Dwarf Kingfisher. Two specimens collected at Goaso (LSUMZ 174548, JDW 558 [USTKG]).

C. pictus African Pygmy Kingfisher. Seen frequently at Foso where one male collected (FMNH 396442).

Halcyon badia Chocolate-backed Kingfisher. Frequent. Seen, heard and tape recorded at Goaso, where one collected (LSUMZ 174544).

H. malimbica Blue-breasted Kingfisher. One specimen collected at Foso (FMNH 396445). At Goaso, heard on three occasions.

H. senegalensis Woodland Kingfisher. Common. Seen at Foso and Goaso. Two specimens collected at each site (FMNH 396446, LSUMZ 168430, 174545–6).

Meropidae

Merops albicollis White-throated Bee-eater. Frequently seen at Foso. One female collected at Foso (LSUMZ 168432). Rarely seen at Goaso.

M. gularis Black Bee-eater. Frequent. Seen at Foso, where three specimens collected (FMNH 396453, LSUMZ 168433–4). Seen and tape-recorded at Goaso.

M. muelleri Blue-headed Bee-eater. At Goaso, we observed two individuals sallying for insects from a vine tangle over a logging road, in recently logged, selectively cut forest, 26 Mar 2003 (JDW, BDM, JO); one female was collected (LSUMZ 174555).

Only one previous Ghanaian specimen, collected in “fantee country” during the 1800s (Grimes 1987) and few recent sight records (Grimes 1987, Dutson & Branscombe 1990, Ntiamoah-Baidu *et al.* 2000a, Holbech 2005).

Coraciidae

Eurystomus gularis Blue-throated Roller. Frequent. Seen at Foso and Goaso. Four specimens collected at Foso (FMNH 396463, LSUMZ 168440–1, JDW403 [USTKG]), one at Goaso (LSUMZ 174557).

Phoeniculidae

Phoeniculus bollei White-headed Wood-Hoopoe. One male tape recorded and collected at Goaso (JDW) (LSUMZ 174561).

P. castaneiceps Forest Wood-Hoopoe. Seen twice at Goaso.

Bucerotidae

Bycanistes fistulator Piping Hornbill. Seen once at Foso.

Tockus fasciatus African Pied Hornbill. Common. Seen at Foso and Goaso. One male collected at Foso (LSUMZ 168437) and a female at Goaso (LSUMZ 174565).

Tropicranus albocristatus White-crested Hornbill. Heard once at Foso. Frequently seen, heard and tape recorded at Goaso.

Capitonidae

Gymnobucco calvus Naked-faced Barbet. Frequent. Seen at Foso and Goaso. Five specimens collected at Foso (FMNH 396467 LSUMZ 168442–4, JDW380[USTKG]), two at Goaso (LSUMZ 174566–7).

G. peli Bristle-nosed Barbet. Uncommon. Seen at Goaso, where a female collected (LSUMZ 174568).

Tricholaema hirsuta Hairy-breasted Barbet. Uncommon, heard and seen, at Foso. Frequently heard and seen at Goaso, where one female collected (LSUMZ 174569).

Pogoniulus scolopaceus Speckled Tinkerbird. Commonly heard and seen at Foso, where eight specimens collected (LSUMZ 168457–61, FMNH 396478–9, RGM391 [USTKG]). One left a hole in a dead tree trunk on the edge of shifting agricultural habitat, 19 Feb 2000 (JDW). Uncommon at Goaso, where one collected (LSUMZ 174571).

P. subsulphureus Yellow-throated Tinkerbird. Frequently seen and heard at Foso, where three collected (LSUMZ 168462–3, FMNH 396491). Uncommon at Goaso, where heard and seen.

P. atroflavus Red-rumped Tinkerbird. Frequently seen at Foso, where three collected (LSUMZ 168456, FMNH 396492–3).

Trachylaemus purpuratus Yellow-billed Barbet. Rare. Seen at Foso, where one collected (LSUMZ 168445). Heard at Goaso.

Indicatoridae

Indicator maculatus Spotted Honeyguide. One male mist-netted and collected at Goaso (LSUMZ 174573).

I. minor Lesser Honeyguide. One seen at Foso.

I. willcocksii Willcocks’s Honeyguide. One female mist-netted and collected at Goaso (LSUMZ 174572).

Picidae

Campethera nivosa Buff-spotted Woodpecker. Frequent. Seen and mist-netted at Foso and Goaso. Six specimens collected at Foso (LSUMZ 168468–70, FMNH 396507–8, JDW425 [USTKG]), two at Goaso (LSUMZ 174574–5). Considered an uncommon resident by Grimes (1987), but Taylor & Macdonald (1978), Dutson & Branscombe (1990) and Ntiamoa-Baidu *et al.* (2000a, b) also found it frequent or common in appropriate habitat.

Dendropicos fuscescens Cardinal Woodpecker. Seen twice at Foso.

D. pyrrhogaster Fire-bellied Woodpecker. Uncommon. Seen at Foso and Goaso. One specimen collected at each site (LSUMZ 168467, 174576).

Eurylaimidae

Smithornis rufolateralis Rufous-sided Broadbill. Frequent. Heard displaying at both Foso and Goaso. One male collected at Goaso (LSUMZ 174577).

Hirundinidae

Hirundo rustica Barn Swallow. Abundant at Foso, with hundreds seen daily over the forest and six specimens collected (FMNH 396515–6, LSUMZ 168473–5, JDW485 [USTKG]). Frequently seen at Goaso.

H. abyssinica Lesser Striped Swallow. Frequent. Seen at Foso.

H. semirufa Rufous-chested Swallow. Frequent. Seen at Foso, where one collected (LSUMZ 168472).

Motacillidae

Motacilla aguimp African Pied Wagtail. Rare. Seen at Foso and Goaso.

Campephagidae

Coracina azurea Blue Cuckoo-Shrike. Seen once at Foso, a male high in canopy above a cocoa plantation, 16 Feb 2000 (JDW, BDM). Tape recorded at Goaso, where two specimens collected, a female (BDM 831 [USTKG]) on 25 Mar 2003 and a male (LSUMZ 174578) on 26 Mar 2003. Both were with other Blue Cuckoo-shrikes travelling in the canopy of recently logged forest. Before collecting LSUMZ 174578, JDW tape recorded the vocalizations made by a group of *c.* ten. As described in Borrow & Demey (2001) these included long series of short *chup* notes given by multiple individuals, with one or two whistled notes (*pooeet-pooi-pooeet-peeoo*) interspersed. This recording was used to call in and collect the male.

Pycnonotidae

Andropadus virens Little Greenbul. Frequent at Foso, where nine specimens collected (FMNH 396559–61, LSUMZ 168486–90, RGM368 [USTKG]). Uncommon at Goaso, where heard and three collected (LSUMZ 174580–2).

A. gracilis Little Grey Greenbul. Seen twice at Foso, where one collected from a group of five on 22 Feb 2000 (FMNH 396569).

A. curvirostris Cameroon Sombre Greenbul. At Foso, two collected (FMNH 396570–1). Frequent at Goaso, where five collected (LSUMZ 174583–7).

A. gracilirostris Slender-billed Greenbul. Uncommon. Seen at Goaso, where three specimens collected (LSUMZ 174588–9, BDM830 [USTKG]).

A. latirostris Yellow-whiskered Greenbul. Common. Collected 12 specimens at Foso (FMNH 396572–4, LSUMZ 168478–85, BDM516 [USTKG]) and ten at Goaso (LSUMZ 174590–9).

Pycnonotus barbatus Common Bulbul. Frequent. Seen at Foso and Goaso.

Thestelocichla leucopleura Swamp Palm Bulbul. Uncommon. Seen and heard at Foso.

Baeopogon indicator Honeyguide Greenbul. One specimen collected at Foso (FMNH 396558). Uncommon at Goaso, where seen and heard.

Phyllastrephus icterinus Icterine Greenbul. Frequently seen at Goaso, where ten mist-netted and collected (LSUMZ 174610–8, KPJ120 [USTKG]). Grimes (1987) considered it a secretive forest resident, but Dutson & Branscombe (1990), Helsen (1996), Ntiamoa-Baidu *et al.* (2000a, b) and Holbech (2005) found it fairly common in several reserves and parks in Ghana.

P. albigularis White-throated Greenbul. Frequent. Ten specimens collected at each of Foso and Goaso (FMNH 396527–9, LSUMZ 168491–6, 174600–9, BDM572 [USTKG]).

Nicator chloris Western Nicator. Uncommon at Foso, where seen and heard. Frequently seen and heard at Goaso, where three collected (LSUMZ 174647–8, MJM048 [USTKG]).

Criniger calurus Red-tailed Greenbul. At Goaso, heard on 29 Mar 2003, and two collected, 19–20 Mar 2003 (LSUMZ 174653–4).

C. barbatus Western Bearded Greenbul. Frequently seen and mist-netted at Goaso, where five specimens collected (LSUMZ 174649–52, JB8 [USTKG]).

Bleda canicapilla Grey-headed Bristlebill. Frequently heard and mist-netted at Foso and Goaso. Collected 10 specimens at each site (FMNH 396547–9, LSUMZ 168497–503, 174619–28).

B. eximia Green-tailed Bristlebill. Four mist-netted and collected at Foso (FMNH 396544, LSUMZ 168508–9, JDW371 [USTKG]), but our nets were not placed in good quality forest. Nine mist-netted and collected at Goaso (LSUMZ 174629–36, MJM 61 [USTKG]). Grimes (1987) considered it a rare resident of mature forest and until recently the only specimens from Ghana were collected in the 1800s. However, other records (Dutson & Branscombe 1990, Ntiamoa-Baidu *et al.* 2000a, b, Holbech 1992, 1996, 2005, Birdlife International 2000) suggest that this species is more widespread and abundant in Ghana, although Vulnerable owing to its limited distribution and the rapid destruction of its rainforest habitat (Birdlife International 2000).

B. syndactyla Red-tailed Bristlebill. Frequent. Seven collected at Foso (LSUMZ 168504–7, FMNH 396537–8, BDM567 [USTKG]) and 11 at Goaso (LSUMZ 174637–46, BDM 769 [USTKG]). Grimes (1987) considered it a rare resident of mature and secondary forest, but Dutson & Branscombe (1990), Ntiamoa-Baidu *et al.* (2000a), Beier *et al.* (2002) and Holbech (2005) found it more common than suggested by Grimes.

Turdidae

Stiphornis erythrorhox Forest Robin. Frequent. Ten specimens collected at Foso (FMNH 396602–4, LSUMZ 168535–40, BDM517 [USTKG]) and nine at Goaso (LSUMZ 174680–8).

Alethe diademata Fire-crested Alethe. Frequent. Ten specimens collected at each site (FMNH 396616–8, LSUMZ 168529–34, 174668–77, BDM559 [USTKG]).

Neocossyphus poensis White-tailed Ant Thrush. At each site we mist-netted and collected two males (LSUMZ 168521, 174679, FMNH 396631, KPJ 129 [USTKG]). One seen in recently logged forest at Goaso, 25 Mar 2003 (JDW). Prior to 1987 there were only two specimen records (Grimes 1987).

Stizorhina finschi Finsch's Flycatcher Thrush. Frequent. Four specimens mist-netted and collected at Foso (LSUMZ 168522–3, FMNH 396626, RGM 411 [USTKG]), and one at Goaso (LSUMZ 174678). Heard or saw 1–6 on at least nine out of 17 field days at Goaso. Grimes (1987) considered it an uncommon but probably overlooked forest resident.

Cercotrichas leucosticta Forest Scrub Robin. Two specimens collected at Goaso (LSUMZ 17466, MJM 52 [USTKG]).

Sylviidae

Hylia prasina Green Hylia. Frequent to common. Seen, heard, and mist-netted at Foso and Goaso. Seven specimens collected at Foso (FMNH 396661–2, LSUMZ 168548–51, JDW 373 [USTKG]) and eight at Goaso (LSUMZ 174709–16).

Eremomela badiceps Rufous-crowned Eremomela. Uncommon. Seen at Foso.

Sylvietta virens Green Crombec. Uncommon. Seen at Goaso.

Camaroptera superciliaris Yellow-browed Camaroptera. Uncommon. Seen at Foso.

C. chloronota Olive-green Camaroptera. Frequent. Seen, heard, and mist-netted at Foso and Goaso. Four collected at Foso (LSUMZ 168552–3, FMNH 396654–5) and three at Goaso (LSUMZ 174705–7).

C. brachyura Grey-backed Camaroptera. Uncommon. Seen at Foso, where one collected (LSUMZ 168554).

Macrosphenus concolor Grey Longbill. At Foso, four mist-netted and collected (LSUMZ 168556–7, FMNH 396657, RGM 442[USTKG]). Seen and heard on two occasions at Goaso.

Muscicapidae

Muscicapa olivascens Olivaceous Flycatcher. Two males mist-netted and collected at Goaso (LSUMZ 174719, JDW 599 [USTKG]) on 27 Mar 2003. Only one previous specimen record for the country, and Grimes (1987) suggested that this rare forest undergrowth resident was probably overlooked. Recently mist-netted in one of 28 Ghanaian forest reserves surveyed by Ntiama-Baidu *et al.* (2000a) and two of 14 Ghanaian forest reserves surveyed by Holbech (2005).

M. tessmanni Tessman's Flycatcher. One male collected at Goaso (LSUMZ 174718), 25 Mar 2003. Differentiated from *M. comitata* by its larger size, lighter under-tail coverts, lighter underparts and stouter bill (Fig. 2). Grimes (1987) considered it a rare forest resident.

M. comitata Dusky-Blue Flycatcher. Uncommon. Seen at Foso, where two collected (FMNH 396670, LSUMZ 168543).

M. ussheri Ussher's Flycatcher. One specimen collected at Foso (LSUMZ 168542).

Myioparus griseigularis Grey-throated Flycatcher. An adult male mist-netted and collected at Goaso, 17 Mar 2003 (LSUMZ 174730). Recently discovered in Ghana (Grimes 1987) and in general rarely encountered, in mature forest and forest clearings. Three previous specimens from Ghana, an adult and a juvenile collected in a cocoa plantation at Tafo (Grimes 1987) and a female collected in the Boin River Forest Reserve near Enchi, Western Region, 29 May 1994 (LSUMZ 160471). Mist-netted during surveys of an unidentified Ghanaian forest reserve (Ntiama-Baidu *et al.* 2000a) and in six forest reserves by Holbech (2005).

M. plumbeus Lead-coloured Flycatcher. Seen only once: two in shifting agricultural habitat near Goaso, 20 Mar 2003 (JDW, KPJ).

Fraseria ocreata Fraser's Forest Flycatcher. One specimen collected at Goaso (LSUMZ 174717).

Monarchidae

Terpsiphone rufiventer Red-bellied Paradise Flycatcher. Frequent to common. Seen, heard and mist-netted at Foso and Goaso. Ten collected at Foso (FMNH 396688–9, LSUMZ 168568–74, RGM 432 [USTKG]) and nine at Goaso (LSUMZ 174734–42).

Erythrocerus mccallii Chestnut-capped Flycatcher. One specimen collected at each locality (LSUMZ 168564, 174729).

Trochocercus nitens Blue-headed Crested Flycatcher. Three specimens mist-netted and collected at each site (LSUMZ 168576, 174731–3, FMNH 396686, BDM556 [USTKG]). LSUMZ 174732 was a juvenile with skull 75 % ossified and bursa of Fabricius 3 x 1 mm.

Platysteiridae

Bias musicus Black-and-White Flycatcher. Frequent. Seen, heard and one collected at Foso (LSUMZ 168567).

Megabyas flammulatus Shrike Flycatcher. Seen twice at Goaso.

Dyaphorophyia castanea Chestnut Wattle-eye. Frequently seen, heard and mist-netted at Foso and Goaso. Two collected at Foso (FMNH 396682, LSUMZ 168565) and four at Goaso (LSUMZ 174725–7, KPJ 123 [USTKG]).

Timaliidae

Illadopsis fulvescens Brown Illadopsis. Uncommon at Foso, where heard and two mist-netted and collected (LSUMZ 168560–1). Heard once at Goaso (BDM).

I. cleaveri Black-cap Illadopsis. At Goaso, three males mist-netted and collected, including one juvenile (LSUMZ 174691–2, JDW 584 [USTKG]).

I. rufipennis Pale-breasted Illadopsis. At Foso, four mist-netted and collected (FMNH 396638, LSUMZ 168562–3, RGM 427 [USTKG]). Frequently seen, heard and mist-netted at Goaso, where five specimens collected (LSUMZ 174694–8).

I. rufescens Rufous-winged Illadopsis. One male mist-netted and collected at Goaso (LSUMZ 174693, Fig. 3). The only other specimen from Ghana was collected at Mampong in Ashanti Region during the 1930s (Lowe 1937). LSUMZ 174693 had pinkish white legs and feet (BDM). the iris was brown, maxilla black, mandible grey

at the base with black tip, and yellow tomiium. The crown and the nape were rich rufous brown and the underparts creamy white. The throat did not markedly contrast with the rest of the underparts as they do in *I. rufipennis*, and it was larger, with longer legs than that species (Fig. 3). These and other characteristics match those listed by Allport *et al.* (1996).

Picathartidae

Picathartes gymnocephalus Yellow-headed Picathartes. One bird was mist-netted, photographed, and released at Goaso, 26 Mar 2003 (Marks *et al.* 2004, Fig. 4). On 30 Mar 2003, a local hunter took us to a large boulder that had two nests attached to it (Fig. 4, see Marks *et al.* 2004 for details). Had not been recorded in Ghana since the 1960s. Considered Vulnerable (Birdlife International 2000), because of rapid fragmentation and destruction of lowland forest and trapping (for zoos and for food). Nineteenth-century specimen localities include Denkera, Abetifi, Fantee, and Kumasi (Collar & Stuart 1985). During the 20th century, not recorded in Ghana until the 1950s, when several colonies were found (Collar & Stuart 1985), with the distribution thought to be mainly along the Kwahu escarpment, from Mampong, Ashanti, to the Akwapim hills. Also found in several reserves northwest of Kumasi and south and southwest of the escarpment near Bekwai and Fumso (Grimes & Darku 1968). Subsequently, more individuals and nest sites have been discovered and are currently being monitored (Owusu & Asamoah 2008).

Remizidae

Pholidornis rufiae Tit-Hylia. Seen once at Foso.

Zosteropidae

Zosterops senegalensis Yellow White-eye. Uncommon. Seen at Foso and Goaso.

Nectariniidae

Deleornis fraseri Fraser's Sunbird. Three mist-netted and collected at Foso (FMNH 396703, LSUMZ 168601, BDM 530 [USTKG]) and four at Goaso (LSUMZ 174743–6).

Hedydipna collaris Collared Sunbird. Frequently encountered at Foso, where one collected (FMNH 396704). Uncommonly seen at Goaso.

Anthreptes seimundi Little Green Sunbird. A small group foraging in the mid-storey of recently logged forest at Goaso, 18 Mar 2003 (JDW, KPJ). Two males collected, one (LSUMZ 174747) travelling with another individual in the low scrub of recently logged forest, 26 Mar 2003, and the other (LSUMZ 174748) from a mid-storey mixed-species flock that included at least two other Little Green Sunbirds, in older selectively logged forest, 27 Mar 2003.

Chalcomitra adelberti Buff-throated Sunbird. Uncommon at Foso where seen and two specimens collected (FMNH 396731, LSUMZ 168596). Seen once at Goaso.

Cyanomitra obscura Western Olive Sunbird. Frequently seen and mist-netted at Foso and Goaso. Collected 13 specimens at Foso (FMNH 396708–10, LSUMZ 168588–95, 172493, BDM 518 [USTKG]) and 11 at Goaso (LSUMZ 174749–59).

C. verticalis Green-headed Sunbird. Seen once at Goaso.

C. cyanolaema Blue-throated Brown Sunbird. One mist-netted and collected at Foso (FMNH 396720).



Figure 2. (A) lateral and (B) ventral views of *Muscicap tessmanni* (left, LSUMZ 174718) and *M. comitata* (right, LSUMZ 168543).



Figure 3. (A) lateral and (B) ventral views of *Illadopsis rufescens* (left, LSUMZ 174693) and *I. rufipennis* (right, LSUMZ 174695).



Figure 4. (A) one of two *Picathartes gymnocephalus* nests at (B) the overhanging boulder nest site, 30 Mar 2003; (C) a *Picathartes gymnocephalus* mist-netted and released on 26 Mar 2003.

Cinnyris chloropygia Olive-bellied Sunbird. Frequent. Seen at Foso.

Nectarinia superba Superb Sunbird. Rarely seen at Foso, where one specimen collected (FMNH 396745) in shifting agricultural habitat.

Prionopidae

Prionops caniceps Red-billed Helmet-Shrike. Rare. Seen at Foso and Goaso. Three specimens collected at Foso (FMNH 396595, LSUMZ 168519, RGM 441 [USTKG]).

Malaconotidae

Dryoscopus sabini Sabine's Puffback. Uncommon. Seen at Goaso.

Oriolidae

Oriolus brachyrhynchus Western Black-headed Oriole. Frequent. Heard, seen, and one collected at Goaso (LSUMZ 174768).

O. nigripennis Black-winged Oriole. Uncommon to frequently heard and seen at both sites, with two collected at Foso (FMNH 396798, LSUMZ 168605) and one at Goaso (LSUMZ 174769).

Dircuridae

Dircurus modestus Velvet Mantled Drongo. Frequent. Seen at Foso and Goaso. One specimen collected at Goaso (LSUMZ 174772).

D. atripennis Shining Drongo. A male mist-netted and collected at Goaso (LSUMZ 174770).

Corvidae

Corvus albus Pied Crow. Abundant at Foso, where one specimen collected (LSUMZ 168609). Uncommon at Goaso.

Ploceidae

Ploceus cucullatus Village Weaver. Common. Seen near villages at Foso and Goaso.

P. albinucha Maxwell's Black Weaver. One collected at Foso (LSUMZ 168634). Uncommon at Goaso, where 10–20 individuals seen on several occasions.

P. tricolor Yellow-mantled Weaver. Approximately 30 birds seen at Goaso, 15 Mar 2003.

Malimbus nitens Blue-billed Malimbe. Frequent at Foso, where seen, mist-netted and four collected (FMNH 396793, LSUMZ 168635–6, BDM 575 [USTKG]). At Goaso, three mist-netted and collected (LSUMZ 174791–793).

M. scutatus Red-vented Malimbe. Rare. Seen at Goaso.

M. rubricollis Red-headed Malimbe. Rarely seen at Foso. Uncommon at Goaso, where one collected (LSUMZ 174790).

Estrildidae

Parmoptila rubrifrons Red-fronted Antpecker. One male (FMNH 396748) and one female (LSUMZ 168610) mist-netted and collected at Foso and one male at Goaso (LSUMZ 174777).

Mandingoa nitidula Green Twinspot. Three mist-netted and collected at Goaso, including one male (JDW 603 [USTKG]), one female (LSUMZ 174775) and one juvenile female (LSUMZ 174776).

Nigrita canicapilla Grey-crowned Negrofinch. Frequently seen at Foso and uncommon at Goaso.

N. bicolor Chestnut-breasted Negrofinch. Seen frequently at Foso and rarely at Goaso.

N. fusconota White-breasted Negrofinch. Rare. Seen at Foso.

Spermophaga haematina Western Bluebill. A single specimen mist-netted and collected at each site (LSUMZ 168612, 174774).

Estrilda melpoda Orange-cheeked Waxbill. Frequent. Seen at Foso in shifting agricultural habitat.

Lonchura bicolor Black-and-white Mannikin. Frequent. Seen at Foso in shifting agricultural habitat.

Viduidae

Vidua macroura Pin-tailed Whydah. Seen once at Foso.

Discussion

These results indicate that there is still much to be learned about the distribution and abundance of Ghanaian forest birds. Our surveys documented new localities for several species considered nationally rare or of global concern (Birdlife International 2000). Some of these species (*e.g.* Green-tailed and Red-tailed Bristlebills) proved to be more common than suggested previously. Status is often determined on little information and, although new findings may change the status of some species, this should not undermine conservation efforts in Ghana's Upper Guinea forests. In fact, our findings, that several rare or threatened species may still have manageable populations in Ghana, make conservation efforts more urgent, while there is still time to secure their future.

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