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The birds of the Lesio-Louna and Lefini Reserves, Batéké Plateau, Republic of Congo

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Summary

This paper summarises all known information regarding the avifauna of the Lesio-Louna and Lefini Reserves of the Republic of Congo. Located in the Batéké Plateau region, the major habitats are open *Loudetia* grassland and lightly wooded *Loudetia* or *Hyparrhenia* grassland, with gallery and swamp forests along water-courses and patches of dry forest on higher ground. Observations and mist-netting were undertaken between 2002 and 2007, with 264 species recorded. One subspecies represents a new record for Congo: the intra-African migrant Pygmy Kingfisher *Ceyx pictus natalensis*, which occurs sympatrically with a resident subspecies. Fifty-nine species are newly published for the reserves, of which the most notable include White-crested Tiger Heron *Tigriornis leucolophus* (on nest), Black-breasted Snake Eagle *Circaetus pectoralis*, African Marsh Harrier *Circus ranivorus*, Chestnut-flanked Sparrowhawk *Accipter castanilius*, Wahlberg's Eagle *Aquila wahlbergi*, Grey Kestrel *Falco ardosiaceus*, Peregrine Falcon *F. peregrinus*, Bronze-winged Courser *Rhinoptilus chalcopterus*, African Skimmer *Rynchops flavirostris*, Horus Swift *Apus horus*, Black-backed Barbet *Lybius minor*, Red-throated Cliff Swallow *Hirundo rufigula*, Orange-tufted Sunbird *Cinnyris bouvieri*, Holub's Golden Weaver *Ploceus xanthops* and Zebra Waxbill *Amandava subflava*. These species additions bring the total of species known for the reserves to 317, which includes 74 Guineo-Congolian and five Zambezian biome species, reinforcing the categorisation of the Batéké Plateau as the northern limit of the Guinea-Congolian/Zambezian transition zone.

Résumé

Les oiseaux des Réserves de Lésio-Louna et Léfini, Plateau Batéké, République du Congo. Cet article résume toutes les connaissances concernant l'avifaune des Réserves de Lésio-Louna et Léfini de la République du Congo. Situés dans la région du Plateau Batéké, les habitats principaux sont la prairie

à *Loudetia* et la savane herbeuse faiblement boisée à *Loudetia* ou *Hyparrhenia*, avec des forêts-galerie et forêts de marécages le long des cours d'eau et des tâches de forêts sèches sur les reliefs. Des observations et la pose de filets de bagueur ont été réalisées entre 2002 et 2007, avec 264 espèces enregistrées. Une sous-espèce est nouvelle pour le Congo: le Martin-pêcheur pygmée *Ceyx pictus natalensis*, migrateur africain, qui est sympatrique avec une sous-espèce résidente. Cinquante-neuf espèces sont publiées pour la première fois pour ces réserves, dont les plus notables incluent l'Onoré à huppe blanche *Tigriornis leucolophus* (au nid), le Circaète à poitrine noire *Circaetus pectoralis*, le Busard grenouillard *Circus ranivorus*, l'Autour à flancs roux *Accipter castanilius*, l'Aigle de Wahlberg *Aquila wahlbergi*, le Faucon ardoisé *Falco ardosiaceus*, le Faucon pèlerin *F. peregrinus*, le Courvite à ailes bronzées *Rhinoptilus chalcopterus*, le Bec-en-ciseaux d'Afrique *Rynchops flavirostris*, le Martinet horus *Apus horus*, le Barbican de Levillant *Lybius minor*, l'Hirondelle à gorge fauve *Hirundo rufigula*, le Souimanga de Bouvier *Cinnyris bouvieri*, le Tisserin safran *Ploceus xanthops* et le Bengali zébré *Amandava subflava*. L'addition de ces espèces porte le total des espèces connues pour les réserves à 317, dont 74 espèces pour le biome Guinéo-Congolais et cinq espèces pour le biome Zambézien, ce qui renforce le placement du Plateau Batéké en limite Nord de la zone de transition Guinéo-Congolaise/Zambézienne.

Introduction

The Lesio-Louna and Lefini Reserves lie c. 140 km north of Brazzaville in the Republic of Congo (hereafter referred to as Congo) (Fig. 1). The two reserves form part of the Batéké Plateau, an area of rolling savanna and patchy forest extending from southeast Gabon across central Congo and extending into the Democratic Republic of Congo (hereafter referred to as DRC). This region is well-known amongst ornithologists for the unique diversity of its avifauna (Dowsett-Lemaire 1997a, 2001, Christy 2001), which may be attributed to the diversity of forest and grassland-woodland habitats in the area. These varied habitats support elements of both the Guinea-Congo forest biome and Zambezian (southern grassland/woodland) biome avifaunas (Fishpool & Evans 2001). The richness of the savanna avifauna of the Batéké Plateau was one of the principle reasons for the classification of the Lesio-Louna and Lefini Reserves of Congo (Dowsett-Lemaire 2001) and the Bombo-Lumene Game Reserve in DRC (Demey & Louette 2001) as "Important Bird Areas" (IBAs), and for the creation of the Batéké Plateau National Park (BPNP) in Gabon.

Despite the internationally recognised diversity and importance of the Batéké Plateau avifauna, in reality very little is known about it. The main reports available for Gabon give 267 species for the zone around Léconi, and 255 species for the BPNP (P.

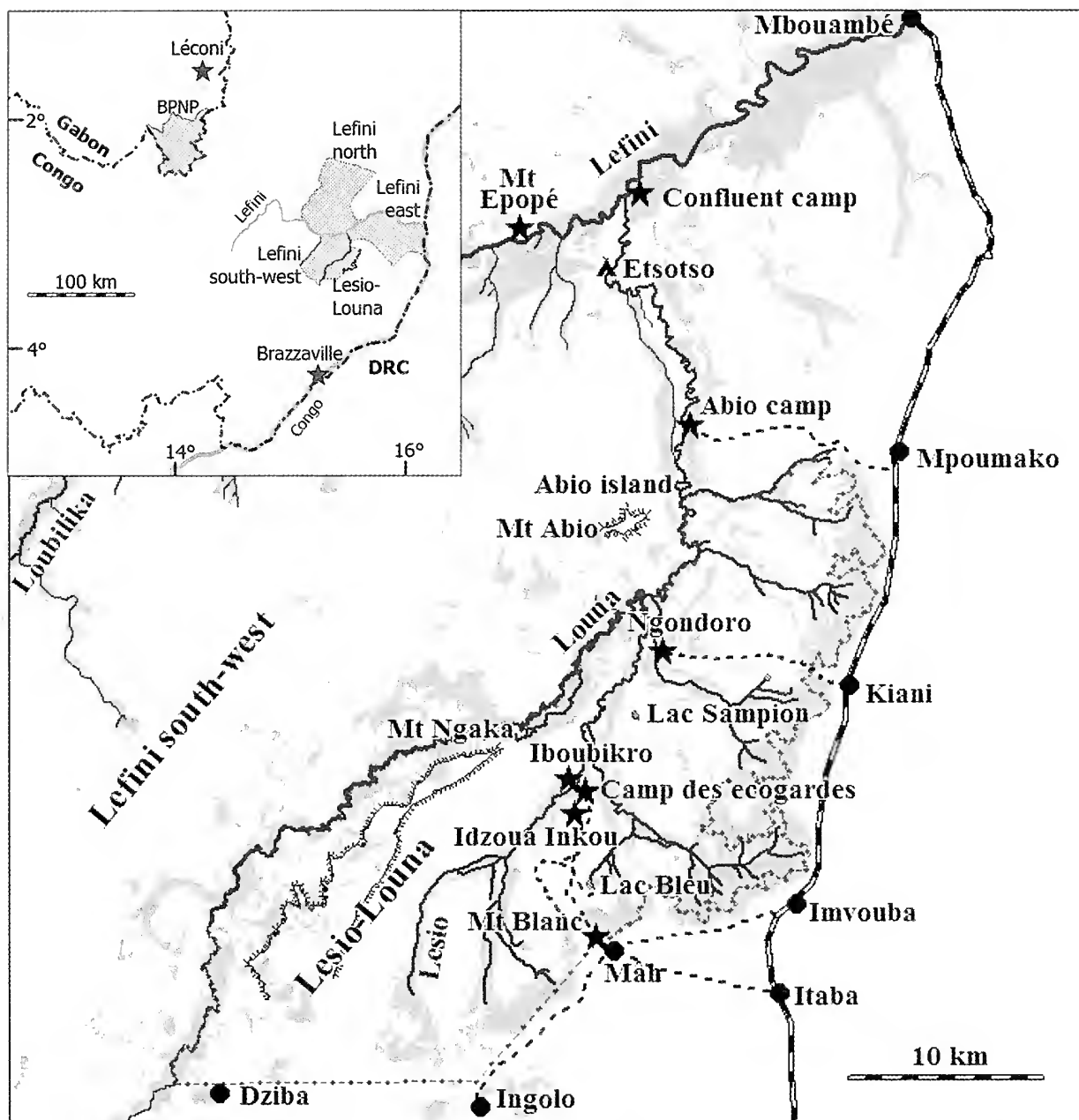


Figure 1. Inset: protected areas (shaded) within the Batéké Plateau region of Congo and Gabon. Main map: survey sites and other localities in the Lesio-Louana and southwest Lefini Reserves, with forest cover shaded in light grey, watercourses in dark grey, selected villages as black spots, tracks as dotted lines, and the major National Road 2 as a thick dashed line to the east of the reserves.

Christy and T. King unpubl.). In Congo, Dowsett-Lemaire (1997a) gave a list of 240 species for the “Lefini Reserve”, in fact based primarily on a week-long visit to the Lesio-Louana Reserve, since when a further 16 species have been published (King *et al.* 2004, King 2007, 2008a, King & Chamberlan 2007, Rainey *et al.* 2009). King *et al.* (2004) also provided information on timing of moult amongst forest and savanna birds, based on a small mist-net survey during 2002.

The aim of this paper is to summarise all known information regarding the avifauna of the Lesio-Louna and Lefini Reserves in Congo, including records of another 59 species newly published for the reserves, with notes on seasonality, breeding, moult and morphological measurements collected during the period 2002–7.

Study sites

The Lefini Reserve was created in 1951, covering *c.* 400,000 ha, and was enlarged to 630,000 ha in 1963, to include a large area east of the previous limits, stretching to the Congo River (Fig. 1). The Lesio-Louna Reserve is an area of 44,000 ha adjacent to the eastern boundary of the southwest portion of the Lefini Reserve (Fig. 1), created in 1993 through an agreement between The Aspinall Foundation of the U.K. and the Ministry of Forest Economy of the government of Congo, as a sanctuary for the reintroduction of gorillas orphaned by the illegal bush-meat trade. It was upgraded to a Natural Reserve by Presidential Decree in 1999.

The two reserves range from 300 m to 750 m in altitude. The major habitats are open *Loudetia* grassland and lightly wooded *Loudetia* or, especially on the remaining plateaus and in damp valley bottoms, *Hyparrhenia* grassland, with gallery and swamp forests along the water-courses and some patches of dry forest on higher ground (Fig. 2, on p. 9; Dowsett-Lemaire 1997a, King *et al.* 2004). Much of the wooded grassland is dominated by *Hymenocardia acida*, while other woody species present include *Annona senegalensis*, *Bridelia ferruginea*, *Gardenia ternifolia*, *Syzygium guineense* var. *macrocarpum*, *Maprounea africana*, *Chaetocarpus africanus*, *Nauclea latifolia*, *Strychnos* spp., *Vitex* spp. and *Albizia adianthifolia*. *Xylopia* spp., *Raphia* sp. and *Uapaca* spp. are amongst the dominant species of gallery and swamp forest, while dry mixed forest is often characterised by *Piptadeniastrum africanum*. The reserves support a mix of forest and savanna mammals (King 2008b, King & Dallimer 2010).

The climate of the reserves is similar to that elsewhere on the plateau, with a dry season from late May to September, the heaviest rains in October–November and March–April, with a drier period around January–February (Dowsett-Lemaire 1997a). Rainfall and temperature were measured from June to mid-December 2002 at Iboubikro (the base camp for the Lesio-Louna Reserve; summary in King *et al.* 2004), and then rainfall was measured from July 2005 onwards at both Iboubikro and the Confluent camp (at the confluence of the Louna and Lefini rivers in the Lefini Reserve) (Fig. 3). A long dry season in 2005, with no rain at all in August and the first big rains of the wet season on 20 September, resulted in savanna fires burning further into forest areas than normal. The year 2006 showed a surprisingly large difference in rainfall between the two sites, with Iboubikro receiving a relatively high 2013 mm, and the Confluent camp 1483 mm. By totalling the mean monthly rainfall for all available data from 2002 to 2006, an average annual rainfall for the two reserves can be estimated as 1660 mm.

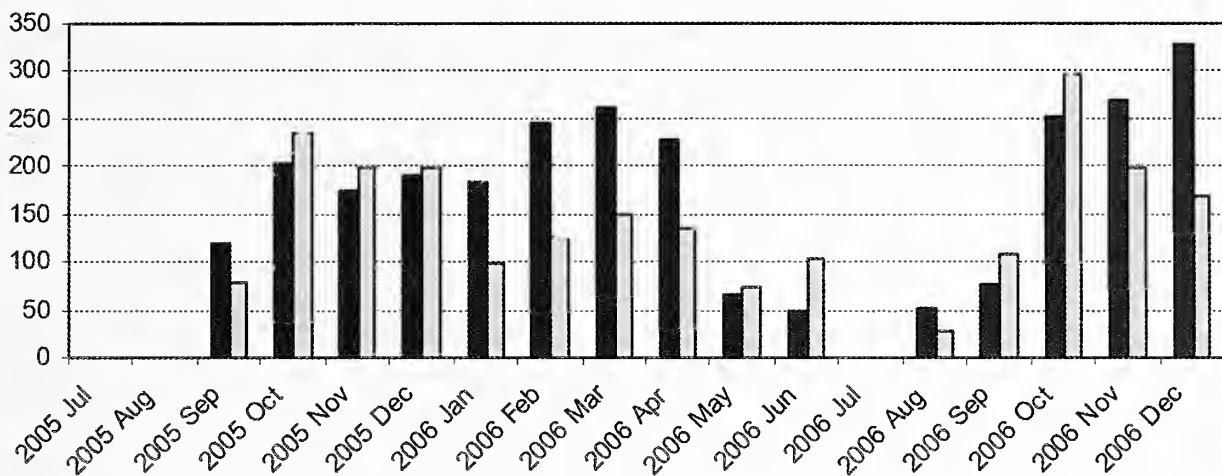


Figure 3. Rainfall (mm) for Iboubikro in the Lesio-Louna Reserve (dark grey bars) and Confluent in the Lefini Reserve (pale grey), July 2005 to Dec 2006.

Methods

Observations were made in the two reserves from February 2002 to April 2007, principally in areas close to the main camps of the Lesio-Louna management project, particularly Iboubikro, Camp des ecogardes, Confluent camp, Abio, Ngondoro and Mt Blanc (Fig. 1), and the vehicle and river access routes between them. Observations included species, maximum group size noted (1, 2, 3–9, 10–29, 30–99, 100+), evidence of breeding (breeding or non-breeding plumage, on nest, feeding juveniles, carrying nest material *etc.*) and any other notable information.

Mist-netting was carried out only in the Lesio-Louna Reserve, in 2002 (results summarised in King *et al.* 2004), very briefly in 2003, then again from late 2005 to early 2007. Most netting was carried out close to Iboubikro (named “Base-Vie” in King *et al.* 2004), and the nearby sites of Camp des ecogardes and Idzoua Inkou (Fig. 1). In 2002 (and briefly in 2003), netting was also carried out at Ngondoro, and briefly at Lac Bleu. Habitats surveyed included gallery forest interior, forest–savanna transition, and lightly wooded savanna. Generally, 3–5 nets (6 x 2.5 m, 38 mm mesh) were set at a time, almost always at 0.5–5 m from the ground. Birds captured were identified (and sexed and aged by plumage characters if possible) using Borrow & Demey (2001). Mass was measured using spring balances to the nearest 1 g, except heavy birds where stated to the nearest 5 g. Wing length was measured to the nearest mm, using a wing-rule and flattening the primaries gently against the rule (following Svensson 1992). Tail length was measured with the reverse side of the wing-rule, to the base of the tail feathers above the under tail-coverts (unless otherwise stated). Other measurements were taken using a pair of dial callipers, such as bill length to feathering, bill length to skull, tarsus, body length and total length, but are not presented in this paper. Notes on brood patch were recorded from November 2005 onwards. Moulting of flight and tail feathers was noted throughout the sampling period. Each flight and tail feather was

assessed, and a bird was recorded as being in moult if at least one primary feather was either growing or still had a sheath. Birds were marked with a water-based pen on the underside of the wings, to allow identification of recaptured birds for up to several weeks after capture (the longest recorded time between captures being 16 weeks).

Sequence and nomenclature follow Borrow & Demey (2001), with some corrections based on Borrow & Demey (2004). Subspecific identifications are given when determined, as the habitat is atypical of the central African region as a whole and therefore range assumptions based on geographic locality can be unreliable. Brief notes are given on distribution, habitat types, seasonality and breeding, plus a summary of information from netted birds (638 netted birds representing 86 species). Measurements are given in mm, except mass which is in g; measurements of four or more birds are summarised as range (mean \pm standard deviation).

All observations are by the author except where otherwise referenced; other information is only included when it adds to an understanding of the species' status, and is always referenced. All species known from the reserves are included; those not recorded by the author are placed in square brackets, and those newly published for the reserves are marked with an asterisk (*i.e.* species not included in Dowsett-Lemaire 1997a, King *et al.* 2004, King 2007, 2008a, King & Chamberlan 2007, or Rainey *et al.* 2009). Photographs of many species are online at http://carpe.umd.edu/resources/Documents/King_2009_PhotoGuide_oiseaux_birds.pdf/view or on request to the author.

Status is assessed as: R = resident, M = intra-African migrant, P = Palearctic migrant, V = rare visitor. An assessment of abundance is given for resident species using the following scale: Abundant (> 10 may be seen or heard in suitable habitat per day), Common (1–10 may be seen or heard in suitable habitat per day), Frequent (often seen but not every day), Uncommon (several records per year), Rare (one record per several years). Site locations are given in Fig. 1 and Table 1.

Results

Podicipedidae

Tachybaptus ruficollis Little Grebe. R. Singles or pairs at Iboubikro seasonal ponds Oct–Nov, Jan–Feb (2004, 2005) and Lac Bleu Nov (2006); small groups at Lac Bleu Jul 2004 (five birds), Jul 2005 (seven); breeding plumage Nov.

Anhingidae

Anhinga rufa African Darter. R/M? Uncommon. Lefini, Louna and Lesio rivers, Feb–Aug. Singly except for a pair resident at Abio island Jul 2006. Also Lac Sampion (Dowsett-Lemaire 1997a).

Ardeidae

Ixobrychus m. minutus Little Bittern. P. One photographed in riverside vegetation at Etsotso on the Louna River, 8 Jan 2007. Also one immature in a marsh in the Lesio-Louna, Nov (Dowsett-Lemaire 1997a).

Table 1. Gazetteer of locations in or near the Lesio-Louna and southwest Lefini Reserves mentioned in the text.

	S	E
Abio camp	3° 6'	15° 31'
Abio island	3° 8'	15° 31'
Camp des ecogardes	3° 16'	15° 29'
Confluent camp (Lefini-Louna confluence)	2° 59'	15° 30'
Dziba	3° 25'	15° 19'
Ekassaka	3° 1'	15° 28'
Epopé	3° 1'	15° 27'
Etsotso	3° 2'	15° 29'
Iboubikro	3° 16'	15° 28'
Idzoua Inkou	3° 17'	15° 28'
Kiani	3° 13'	15° 36'
Lac Bleu	3° 19'	15° 29'
Lac Sampion	3° 14'	15° 30'
Loubilika-Lefini confluence	3° 2'	15° 16'
Mâh	3° 21'	15° 30'
Mbouambé	2° 55'	15° 38'
Mpoumako	3° 7'	15° 37'
Mt Abio	3° 2'	15° 30'
Mt Blanc (near Mâh)	3° 20'	15° 29'
Mt Epopé	3° 1'	15° 27'
Mt Ngaka	3° 15'	15° 26'
Ngondoro	3° 12'	15° 31'
Port Albert	3° 10'	15° 32'

**Tigriornis leucolophus* White-crested Tiger Heron. R. Rare. One on a nest consisting of a few twigs on a fork in a small branch overhanging the Louna River (Fig. 4), c. 3 m above river, near Abio, Oct–Nov 2006, first observed 17 Oct. A single chick hatched 19 Nov (N. Ngoulou pers. comm.). The first record for the Batéké Plateau.

[*Gorsachius leuconotus* White-backed Night Heron. R? Lac Bleu from 15 Jun 1975 (Dowsett & Dowsett-Lemaire 1989). Gallery forest (Dowsett-Lemaire 1997a).]

Nycticorax nycticorax Black-crowned Night Heron. R. Uncommon. Up to three together on the Louna River near Etsotso, 13 Apr and 20 Jul 2003, and Abio island, Mar 2007.

Ardeola ralloides Squacco Heron. P. Singles observed four times, 25 Oct 2006, 2 Dec 2005, 3 Dec 2004, 2 Mar 2004, Iboubikro ponds and Lefini river.

Bubulcus ibis Cattle Egret. R. Widespread, frequent. Breeding plumage Nov.

**Butorides striata* Green-backed Heron. R. Frequent. Singles along Louna River Nov–Jun, also Iboubikro ponds and Lefini river. Juvenile Feb.

Egretta garzetta Little Egret. P. Singles observed twice, Nov, Dec, Iboubikro ponds and Confluent camp.

**E. intermedia* Intermediate Egret. R/M? Singles or small groups, Iboubikro and Louna River, Nov–Dec. First record for Batéké Plateau, but common in Brazzaville (pers. obs.).

E. alba Great Egret. P. Singles: Iboubikro ponds, Dec 2004; Mt Blanc, Jan–Feb 2005.

Ardea purpurea Purple Heron. R. Frequent. Resident on Louna and Lefini rivers; visitor to Iboubikro ponds, Oct–Dec. Juveniles Apr, Oct.

A. cinerea Grey Heron. P. Singles at Iboubikro ponds and Louna River, Feb–Mar 2003.

Scopidae

Scopus umbretta Hamerkop. R. Singles or pairs all year along Louna River and at Iboubikro ponds; groups of 3–5, Jul–Oct. Common on Louna River, less so on Lefini River, confirming preference for open rather than forested habitats (Brown *et al.* 1982).

Ciconiidae

Ciconia abdimii Abdim's Stork. M. Large migratory flocks, sometimes of thousands of birds, Feb–May (earliest 6 Feb 2007; latest 14 May 2005), especially along Louna and Lefini rivers.

**C. episcopus* Woolly-necked Stork. V/M? One observed on a small sand bank along the Lefini River opposite Confluent camp, 22 Nov 2004. A pair reported from Lesio-Louna Reserve, probably Iboubikro, 5–12 Jul 1998 (M. Akangala unpubl.).

C. ciconia White Stork. V. Two birds in freshly burnt grassland half-way up the escarpment of Epopé, along the Lefini River, 21 Dec 2004 (Rainey *et al.* 2009). First record for Batéké Plateau, the second for Congo (Mokoko Ikonga & Bokandza-Paco 2001, Rainey *et al.* 2009).

Threskiornithidae

Bostrychia rara Spot-breasted Ibis. R. Frequently heard at dawn and dusk flying over gallery forests.

Anatidae

**Pteronetta hartlaubii* Hartlaub's Duck. R/V? One flushed along Lefini River *c.* 3 km west of the confluence with the Louna, 15 Oct 2003.

Sarkidiornis melanotos Knob-billed Duck. R/V? Two at Iboubikro ponds, 5 Jun 2006. One along the Louna River, 20 Nov 2004 (C. Chamberlan pers. comm.). Also reported at Iboubikro in Aug (Dowsett-Lemaire 1997a).

Nettapus auritus African Pygmy Goose. R/V? Group of three on Lefini River east of Confluent camp, 29 Dec 2002. One male and two females on an ox-bow lake at Abio, 7 Jan 2007. Also reported at Iboubikro, Apr (Dowsett-Lemaire 1997a).

Pandionidae

**Pandion haliaetus* Osprey. P. One fishing at Lac Bleu, 31 Jan 2005. One perched along the Louna River south of Abio island, 16 Oct 2006.

Accipitridae

**Aviceda cuculoides* African Cuckoo Hawk. R. Uncommon. Singles along Louna River, Jun and Oct 2005, and at Camp des ecogardes, Dec 2005.

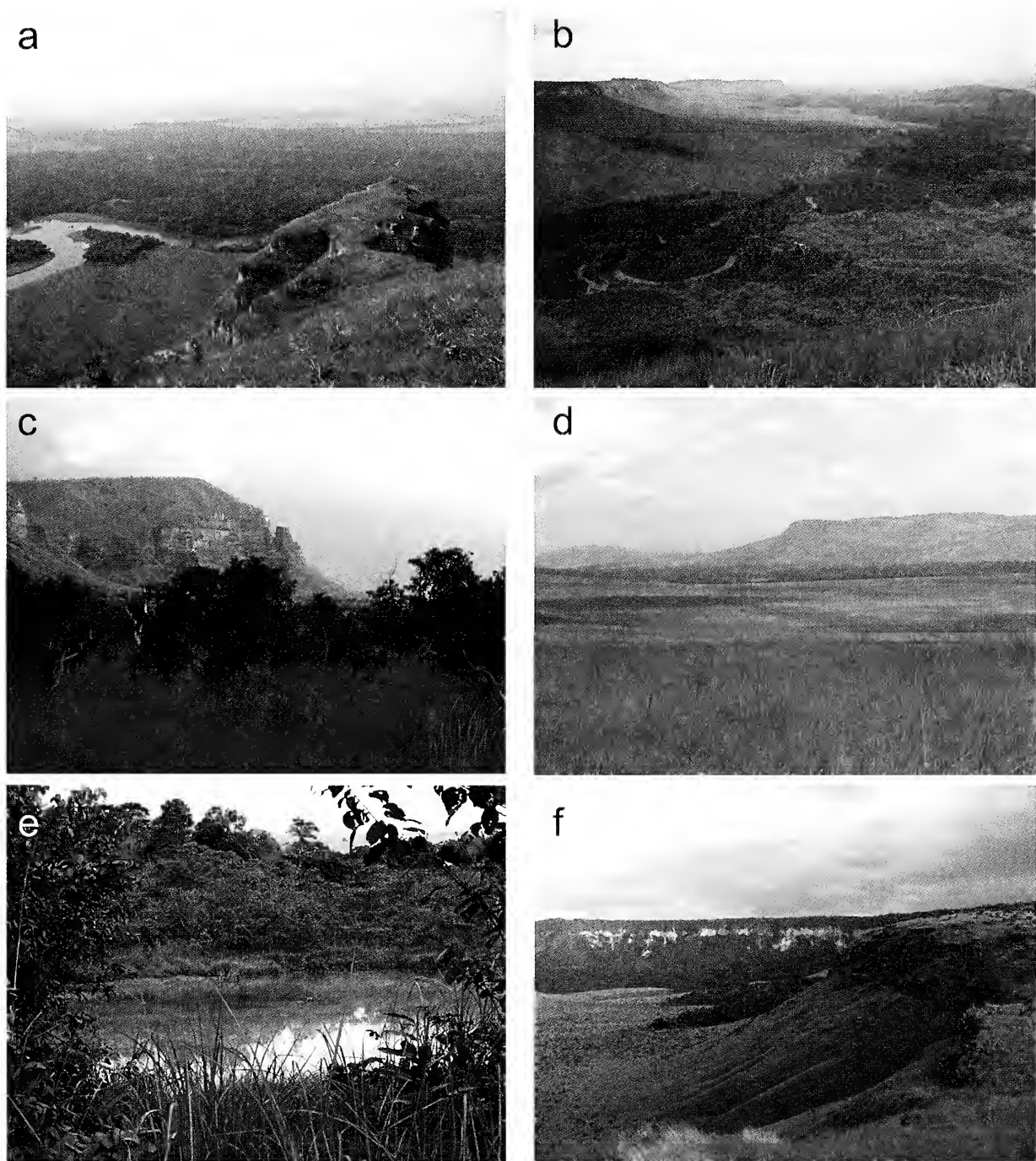


Figure 2. Views of the Lesio-Louna and Lefini Reserves: (a) Lefini gallery forest looking southeast from Mt Epopé; (b) Louna gallery forest looking north from Mt Ngaka towards Mt Abio; (c) *Loudetia* grassland with scattered *Hymenocardia acida* trees near Mt Epopé; (d) *Loudetia* grassland between Mpoumako and Abio; (e) seasonal ponds at Iboubikro; (f) cliff forests near Mâh from ridge above Lac Bleu. Photos: (a) A. Sully, (b–e) T. King, (f) P. King.

**Pernis apivorus* European Honey Buzzard. P. One adult in typical plumage feeding in a tree at the confluence of the Lefini and Louna rivers, 15 Nov 2003. Further observations in the same area during Dec 2003 and Jan 2006.



Figure 4. White-crested Tiger Heron on nest overhanging the Louna river, near Abio island, 2006. Photo: T. King.

**Macheiramphus alcinus* Bat Hawk. R? Two at Idzoua Inkou, 25 May 2006.

Elanus caeruleus Black-shouldered Kite. R. Singles frequently observed Sep–Mar, especially on Mâh plateau.

Milvus migrans Black Kite. R/M? Frequent. Widespread, singly or in small groups, all year (except May, Nov–Dec).

Haliaeetus vocifer African Fish Eagle. R. Uncommon along the Louna and Lefini rivers, all year. Juveniles Oct and Feb.

Gypohierax angolensis Palm-nut Vulture. R. Frequent. Singly or in groups of two, along the Lefini, Louna and Lesio rivers, Dec–Jul. Juveniles Feb–Mar, May.

**Circaetus pectoralis* Black-breasted Snake Eagle. R/M? One photographed soaring over open grassland between Abio and Mpoumako, 5 Feb 2007. Few records in Congo: one collected Brazzaville, 15 Sep 1939 (Malbrant & MacLatchy 1949), and a pair in SW Congo, Sep and Nov 1990 (Dowsett-Lemaire *et al.* 1993).

Terathopius ecaudatus Bateleur. R. Uncommon. Singles or pairs in the Abio area, Sep–Dec, Mar. Juvenile with two adults, Oct.

Polyboroides typus African Harrier Hawk. R. Frequent. Singles or pairs in wooded grassland and gallery forest throughout, Jun–Jan. Juvenile Dec. One adult landed on a

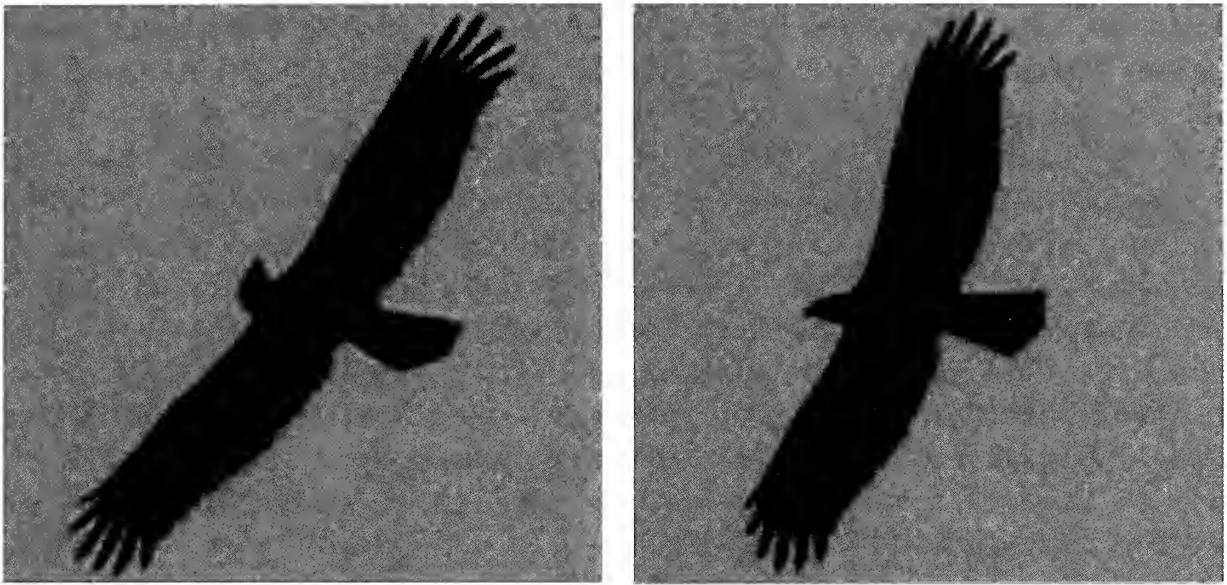


Figure 5. Wahlberg's Eagle over the Louna River, 31 Mar 2007. Photos: T. King.

dead tree in Lesio gallery forest to investigate holes of a colony of Sladen's Barbets, Nov 2006.

[*Circus pygargus* Montagu's Harrier. P? One observation in Jan (Dowsett-Lemaire 1997a).]

**C. ranivorus* African Marsh Harrier. R/V? Singly at Mt Blanc marsh, 5 and 7 Jan 2006. Barred tail and rufous rump clearly seen. First record for Batéké Plateau, known in Congo only from the southwest (Loudima: Dowsett & Dowsett-Lemaire 1989) and the north (Odzala, one pair passing in Feb: Dowsett-Lemaire 1997b).

**C. aeruginosus* Eurasian Marsh Harrier. P. Singles observed four times, two males and two females, at Mt Blanc marsh, Confluent camp, Abio and Etsotso marsh, 13 Jan



Figure 6. Peregrine Falcon at Confluent camp, 6 Feb 2007. Photos: T. King.

and 2 Dec 2004, 6 and 8 Feb 2007. Already recorded from the southwest (Kouilou region: Dowsett-Lemaire *et al.* 1993) and north (Odzala and Nouabalé-Ndoki: Dowsett-Lemaire 1997b, 1997c) of the country.

Melierax metabates Dark Chanting Goshawk. R. Singles frequently observed in wooded grassland near Idzoua Inkou. Carrying nesting material late Mar 2006. Pair Oct 2005.

Accipiter tachiro African Goshawk. R. One in heavily wooded grassland between Iboubikro and Mâh, 4 Jul 2005. Also in forest (Dowsett-Lemaire 1997a).

**A. castanilius* Chestnut-flanked Sparrowhawk. R? One flying low over *Hymenocardia acida* trees in grassland between two gallery forest patches of the Lefini River, mobbed by Lesser Striped Swallows, 29 Dec 2003. Few records from Congo, known from the southwest (Goumina: Dowsett-Lemaire *et al.* 1993) and north (Odzala: Dowsett-Lemaire 1997b), while the closest record is probably Loukolela on the Congo River in DRC (Chapin 1932).

**Urotiorchis macrourus* Long-tailed Hawk. R. Uncommon. Five singles observed, all at Confluent, Feb, Jun and Nov. Very vocal juvenile, several days in Nov 2004.

Kaupifalco monogrammicus Lizard Buzzard. R. Frequent. Singles in wooded grassland throughout, Jul, Dec–Feb.

Buteo auguralis Red-necked Buzzard. R. Frequent. Singles or pairs throughout, all year. In moult Feb.

[*Aquila rapax* Tawny Eagle. R. Breeding resident (Dowsett-Lemaire 1997a).]



Figure 7. Finsch's Francolin, Lesio-Louna Reserve, Mar 2006. Photo: T. King.

**A. wahlbergi* Wahlberg's Eagle. M. One soaring above Louna River near Abio island, 31 Mar 2007 (Fig. 5): distinctive silhouette unmistakable. Few records in Congo. Satellite tracking demonstrated that a female of this species tagged in Namibia passed over Congo on both legs of her annual migration, in Apr and Aug 1994 (Meyburg *et al.* 1995), and an immature was seen in Odzala, 17 Aug 1994 (Dowsett-Lemaire & Dowsett 1998).

[*Lophaetus occipitalis* Long-crested Eagle. R? Forest (Dowsett-Lemaire 1997a).]

Polemaetus bellicosus Martial Eagle. R? Uncommon. One immature perched beside Louna River near Port Albert, 21 Jul 2006; two sightings of adults at Epopé (Lefini River) and Abio, Nov 2006 (Rainey *et al.* 2009). First records for Congo (Rainey *et al.* 2009), although already known from the Batéké Plateau in Gabon (Borrow & Demey 2001, pers. obs. Feb 2007).

Falconidae

Falco tinnunculus Common Kestrel. R (and P?). Frequent. Singles and pairs in grassland and around rocky escarpments throughout, all year except May–Jun. Group of three Aug. The resident subspecies is richly coloured and thought to be *rupicolus* (Dowsett-Lemaire & Dowsett 1998). One bird perched in a savanna tree along the track between Mpoumako and Abio, 11 Mar 2007, appeared to have a plain (not barred) grey tail, and may have been of the Palaearctic race *F. t. tinnunculus*, which is not yet confirmed for Congo but of which a specimen was collected in Kinshasa, DRC (Malbrant & Maclatchy 1949).

**F. ardosiaceus* Grey Kestrel. R? One perched on a *Hymenocardia acida* tree in lightly wooded grassland near Lac Bleu, 4 Oct 2004. Few records in Congo, but known from the Batéké Plateau in Gabon (Borrow & Demey 2001).

**F. peregrinus* Peregrine Falcon. R? One juvenile photographed at dusk at Confluent camp, 6 Feb 2007 (Fig. 6). The colours of the underparts and head (with apparent rufous nape) indicate the resident ssp. *minor*, while the highly vocal behaviour also suggests a local bird (D. Forsman *in litt.*). No resident populations previously reported in Congo, but considered resident in the Batéké Plateau in Gabon (Borrow & Demey 2001).

Phasianidae

Francolinus finschi Finsch's Francolin. R. Frequent. Singles or pairs in *Loudetia* grassland, particularly on both tracks towards Mâh from Iboubikro, but also Mpoumako–Abio region and Camp des ecogardes (Fig. 7). Dowsett-Lemaire (1997a) estimated the species density in open *Loudetia* grassland at *c.* 1 pair/km².

[*F. squamatus* Scaly Francolin. R. Forest and thickets (Dowsett-Lemaire 1997a).]

F. afer Red-necked Francolin. R. Frequent. Singles and pairs in grassland throughout, all year. Group of three Oct.

Numididae

[*Guttera pucherani* Crested Guinea fowl. R. Forest (Dowsett-Lemaire 1997a).]

**Numida meleagris* Helmeted Guinea fowl. R. Frequent. Singles and pairs in wooded grassland. Small group Jun. Regularly recorded by Reserve staff during monitoring activities. A group of nearly 50 reported in Lesio-Louna Reserve in 1998 (M. Akangala unpubl.).

Turnicidae

Turnix sylvatica Little Buttonquail. R? Frequent in grassland.

[*T. hottentotta* Black-rumped Buttonquail. R? Moist grassland (Dowsett-Lemaire 1997a).]

Rallidae

[*Sarothrura pulchra* White-spotted Flufftail. R. Gallery forest (Dowsett-Lemaire 1997a).]

[*S. rufa* Red-chested Flufftail. R. Marsh (Dowsett-Lemaire 1997a).]

Crex egregia African Crake. R/M? Frequent. Singles and pairs, especially in rank grassland along roads on plateau, Nov–May.

Amaurornis flavirostris Black Crake. R. One at Lac Sampion, 28 Aug 2002.

Heliornithidae

Podica senegalensis African Finfoot. R. Frequent. Singles all year, Louna River. Also on Lefini and Lesio rivers.

Otididae

Eupodotis senegalensis White-bellied Bustard. R. Common. Singles, pairs and small groups (usually 3–4) in grassland all year, especially Mpoumako to Abio. Small chicks Sep 2005. Side-striped Jackals *Canis adustus* often observed near family groups, probably hunting young birds.

E. melanogaster Black-bellied Bustard. R. Frequent. Singles and pairs in grassland all year (except May–Jun).

Jacanidae

Actophilornis africana African Jacana. R. Frequent. Singles and pairs all year, Iboubikro ponds (especially Jan–Jun) and Louna River; also Lefini River. Juveniles Feb–Jun.

Glareolidae

Cursorius temminckii Temminck's Courser. R/M? Frequent. Singles, pairs and groups (< 10) in grassland, often in recently burnt areas, Apr–Nov.

**Rhinoptilus chalcopterus* Bronze-winged Courser. M? A pair in non-woody savanna between Kiani and Ngondoro, just before dusk, 21 Jan 2004. A singleton on the same savanna track around 19h30, 23 Jan 2004. Both sightings within several hundred metres of more heavily-wooded savanna. Few records in Congo, known only from Odzala, Dec–Jan (Dowsett-Lemaire 1997b) and a specimen in Brazzaville University from the “route du nord”, 20 Dec 1970 (Dowsett & Dowsett-Lemaire 1989). Malbrant & Maclatchy (1949) record it from “côte de Loango”, but Dowsett (1991) considers this location to be in Cabinda (Angola).

Charadriidae

Vanellus lugubris Lesser Black-winged Lapwing. R (and M?). Frequent. Grassland throughout. Singles and pairs all year; flocks (7–20), Dec–Apr.

Scolopacidae

**Gallinago media* Great Snipe. P. One in a grassy marsh at Ngondoro, flushed four times, 8–9 Jan 2004. On each occasion flew silently and landed in the same marsh. Already known from the Batéké Plateau, Oct–Feb (Salvan 1972, Dowsett & Dowsett-Lemaire 1989).

**Tringa nebularia* Common Greenshank. P. Singles, Iboubikro ponds, 28 Oct 2006, and Louna River, 6 Jan 2007.

[*T. glareola* Wood Sandpiper. P? Marsh (Dowsett-Lemaire 1997a).]

**Actitis hypoleucos* Common Sandpiper. P. Singles, Louna and Lefini rivers and Iboubikro ponds, Jul–Apr, commonly from Sep. Group of three, Aug 2004.

Rynchopidae

**Rynchops flavirostris* African Skimmer. V. One pair skimming along the Lefini River at Confluent, 15 Jun 2003.

Columbidae

Treron calva African Green Pigeon. R. Common in forest. Singles all year, small groups Oct–Jun, calling Aug–May. One netted in primary moult, Dec 2005: mass 190; wing 167; tail 89.

**Turtur brehmeri* Blue-headed Wood Dove. R. Uncommon. Five singles observed along forested rivers: Loubilika River, 24 Aug 2003; Lefini River near Loubilika, 24 Aug 2003; near Confluent, 16 Feb 2006; Louna River near Abio island, 12 Jul 2006 and 14 Feb 2007.

T. tympanistreria Tambourine Dove. R. Uncommon. Singles and pairs, Confluent and Iboubikro. One male netted in primary moult, Aug 2006: mass 80; wing 119; tail 90.

T. afer Blue-spotted Wood Dove. R. Common. Singles in wooded grassland and forest edges throughout, all year. Pairs Jan, Feb. Three netted: mass 59, 60, 68; wing 109, 111, 111; tail 85, 88, 91. In primary moult Feb.

[*Oena capensis* Namaqua Dove. V. One male, Sep (Dowsett-Lemaire 1997a).]

Columba iriditorques Western Bronze-naped Pigeon. R. Common. Singles and pairs in forest throughout, all year. Calling Oct–Feb. One female netted, Feb 2006: mass 125; wing 152; tail 102. Tail considerably longer than measurements given by Urban *et al.* (1986).

C. uncinata Afep Pigeon. R. Uncommon. Eight observations of singles, pairs or small groups, Lefini and Louna rivers, Confluent camp, Jan, Mar, Jul–Aug, Nov–Dec.

Streptopelia semitorquata Red-eyed Dove. R. Common. Singles, pairs and groups in wooded grassland and forest edges throughout, all year. One adult netted Jan 2006, in primary moult: mass 220; wing 180; tail 125.

**S. capicola* Ring-necked Dove. R/V? Two singles: on track from Mâh to Imvouba, 19 Feb 2004; Camp des ecogardes, 13 Nov 2006. Resident elsewhere in the Batéké Plateau (Borrow & Demey 2001).

Psittacidae

Psittacus erithacus Grey Parrot. R. Common. Singles, pairs, flocks up to 60, all year, in forest throughout, but especially Lefini River.

[*Agapornis pullarius* Red-headed Lovebird. V? Occasional flocks (Dowsett-Lemaire 1997a).]

Musophagidae

Corythaeola cristata Great Blue Turaco. R. Uncommon. Singles or pairs in gallery forest along Louna, Lefini and Loubilika rivers, and at Lac Bleu. Pair Apr.

Tauraco persa Green Turaco. R. Frequent. Heard in forest throughout, seen occasionally, mainly along Louna river. Small group Nov.

[*Crinifer piscator* Western Grey Plantain-eater. V? One on Lesio River, Feb (Dowsett-Lemaire 1997a).]

Cuculidae

Oxylophus levaillantii Levaillant's Cuckoo. M? Three singles, gallery forest and forest edge at Lefini River, hill above Lac Bleu and Camp des ecogardes, Jul, Sep, Dec.

Cuculus solitarius Red-chested Cuckoo. R. Singing in forest throughout, Sep–Mar.

C. clamosus gabonensis Black Cuckoo. R? One photographed along Louna River 9 Jan 2007.

C. gularis African Cuckoo. R/M? Two singles in wooded grassland, Jul, Nov.

[*Cercococcyx mechowi* Dusky Long-tailed Cuckoo. R. Forest (Dowsett-Lemaire 1997a).]

[*C. olivinus* Olive Long-tailed Cuckoo. R. (Dowsett-Lemaire 1997a).]

Chrysococcyx cupreus African Emerald Cuckoo. R. Singing in forest throughout, Aug–Feb.

[*C. klaas* Klaas's Cuckoo. R. Forest (Dowsett-Lemaire 1997a).]

**C. caprius* Didric Cuckoo. R. Six singles in wooded grassland, Jan, Mar, Sep, Nov–Dec. Two males and two females netted, male in primary moult Nov: mass (m) 26, 32, (f) 36, 39; wing (m) 106, 112, (f) 114, 119; tail (m) 77, 77, (f) 80, 83. The two males showed great variation in the amount of white in the plumage (Fig. 8).

Ceuthmochares aereus Yellowbill. R. Frequent. Singles and pairs in forest or forest edge throughout, Mar, May, Sep–Oct, Dec.

Centropus anselli Gabon Coucal. R. Uncommon. Four singles in forest or forest edge, Iboubikro and Louna River, Jan, Mar, Oct.

C. grillii Black Coucal. R? Uncommon. Singles and pairs in dense grassland on Mâh plateau, Feb, Nov. Also near Etsotso marsh, Jan.

C. senegalensis Senegal Coucal. R. Frequent. Singles in wooded grassland and forest edges throughout, although no observations May–Aug.

**C. monachus* Blue-headed Coucal. R? One juvenile at Iboubikro ponds, 3 Jul 2005. It was small for a coucal, with black tail, rufous back, streaky brown head and pale dirty white throat. First record for Batéké Plateau, although widespread in southern Congo (Dowsett & Dowsett-Lemaire 1989).

Tytonidae

**Tyto alba* Barn Owl. R? One between Mâh and Mt Blanc, 14 Dec 2005.

Strigidae

[*Otus senegalensis* African Scops Owl. R? Included in an unpublished 1996 report by K. Bailey, D. Daramani, R.J. Dowsett and F. Dowsett-Lemaire.]

Bubo africanus Spotted Eagle Owl. R. Pair at Idzoua Inkou, 1 Mar 2004.

[*Scotopelia peli* Pel's Fishing Owl. R. Forested rivers (Dowsett-Lemaire 1997a).]

[*S. bouvieri* Vermiculated Fishing Owl. R. Swamp forest (Dowsett-Lemaire 1997a).]

[*Strix woodfordii* African Wood Owl. R. Forest (Dowsett-Lemaire 1997a).]

Caprimulgidae

Caprimulgus natalensis Swamp Nightjar. R. Abundant in grassland throughout. Three netted in 2002; mass (to nearest 5 g) 50, 50, 50; wing 141, 142, 142; tail 87, 88, 92. Smaller than measurements given in Fry *et al.* (1988) for *C. n. natalensis*, although they note that “Gabon birds are small”.

C. climacurus Long-tailed Nightjar. R/M? Camp des ecogardes, Nov 2005; grassland near the confluence of the Lefini and Louna rivers, Jun 2005.

[*C. fossii* Square-tailed Nightjar. R? Included in an unpublished 1996 report by K. Bailey, D. Daramani, R.J. Dowsett and F. Dowsett-Lemaire.]

[*C. pectoralis* Fiery-necked Nightjar. R. Forest edges and ponds (Dowsett-Lemaire 1997a).]

Macrodipteryx vexillarius Pennant-winged Nightjar. M. Common in grassland, Jul–Aug.

Apodidae

Cypsiurus parvus African Palm Swift. R. Common. Singles, pairs and small groups throughout, all year.

Apus apus Common Swift. P. Large flocks throughout, Sep–Mar; earliest 20 Sep, latest 29 Mar.

[*A. caffer* White-rumped Swift. R/V? Uncommon (Dowsett-Lemaire 1997a).]

**Apus horus* Horus Swift. R/M? Small numbers at Abio camp, with large flock of Common Swifts and a few Little Swifts, 29 Mar 2007; probably previously overlooked. Known from the Batéké Plateau in Gabon (Borrow & Demey 2001, pers. obs. Feb 2007).

**A. affinis* Little Swift. R. Large breeding colony at bridge over Lefini River in Mbouambé, on nest Feb; small numbers observed throughout reserves.

Coliidae

Colius striatus Speckled Mousebird. R. Small groups common around Mâh.

Trogonidae

[*Apaloderma narina* Narina’s Trogon. R. Forest (Dowsett-Lemaire 1997a).]

Alcedinidae

Halcyon badia Chocolate-backed Kingfisher. R. One in forest at Iboubikro, 8 Apr 2006.

H. albiventris Brown-hooded Kingfisher. R. Frequent. Singles in wooded grassland and forest clearings at Mt Blanc, Idzoua Inkou, Ekassaka, Confluent, and plateau near Mpoumako, Jan–Feb, Nov.

H. leucocephala pallidiventris Grey-headed Kingfisher. M. Singles in wooded grassland throughout, including Iboubikro camp, Idzoua Inkou, Mt Blanc, Etsotso. Of the 18 observations, 17 were during the period mid-Apr to early Aug, the other in Dec. Photos from Apr, May and Aug are clearly of the southern race *pallidiventris*, which has been reported as a non-breeding visitor in S Congo (Borrow & Demey 2001). No photo or description is available for the one observation in Dec 2005 at Idzoua Inkou.

H. m. malimbica Blue-breasted Kingfisher. R. Common. Calling in forest throughout, Oct–Apr. Three netted: mass (to nearest 5 g) 75, 80, 85; wing 106, 115, 117; tail 70, 79, 79.

H. senegalensis fuscopilea Woodland Kingfisher. R. Common. Singles and pairs all year, vocal and conspicuous at forest edges, especially along Louna and Lefini rivers and Iboubikro ponds. Groups of three Jan–Feb, Jun, Nov. Juvenile Nov. Three netted: mass 54, 55, 58; wing 95, 101, 104; tail 60, 65, 65.

H. c. chelicuti Striped Kingfisher. R. Frequent in wooded grassland in Lesio-Louna and on Mâh plateau. Singles all year except Apr–Jun; pair Dec.

Ceyx lecontei African Dwarf Kingfisher. R. One at Iboubikro ponds, 2 Dec 2006.

C. pictus African Pygmy Kingfisher. R and M. Common. Mostly the resident ssp. *ferruginus* or *pictus*, but also the migratory southern African *natalensis* (Fry *et al.* 1988). Forest edges throughout, including Iboubikro, Idzoua Inkou, Mt Blanc, Confluent. Singles all year; pairs Feb, Nov. Hunting dragonflies Feb. Sixteen *C. p. ferruginus* or *pictus* netted (all Aug–Feb, see Fig. 9 left): primary moult Dec; active brood patch Oct; juvenile Oct. Fifteen adults: mass 11–14 (12.3 ± 0.9); wing 50–54 (52.3 ± 1.4); tail 22–26 (24.9 ± 1.0); one juvenile (dark bill): mass 14; wing 54; tail 25. Four recaptured (including one twice), maximum distance *c.* 600 m. One *C. p. natalensis* netted (Fig. 9 right), identified by blue spot above the white blaze on side of neck, orange superciliary stripe broad at the rear, and deep bill (C.H. Fry, *in litt.*), apparently a young bird as it had dark markings at the base of its bill, 16 May 2006: wing 55 (longer than the *C. p. ferruginus/pictus*); mass 12; tail 23. First record of this subspecies in Congo.

[*Alcedo leucogaster* White-bellied Kingfisher. R. Swamp forest (Dowsett-Lemaire 1997a).]

A. c. cristata Malachite Kingfisher. R. Uncommon. One perched by ox-bow lake behind Abio camp, 8 Dec 2006; one at puddles in road along the northern limit of the Lefini Reserve, Feb 2007.

A. quadribrachys guentheri Shining-blue Kingfisher. R. Frequent. Lefini, Louna and Lesio rivers, Iboubikro ponds; singles throughout year. One male netted, 4 Nov 2005: mass 32; wing 79; tail 36; recaptured seven weeks later, same net.

Megaceryle maxima Giant Kingfisher. R. Singles and pairs, all year. Common along Lefini and Louna rivers, also Loubilika River and Iboubikro ponds.

Ceryle r. rudis Pied Kingfisher. R. Singles and pairs all year. Common along Lefini and Louna rivers. One aggressive interaction with a swimming cobra, Epopé, Lefini River, Jun 2005. Occasional visitor to ponds and lakes in the Lesio-Louna (Dowsett-Lemaire 1997a).

Meropidae

Merops breweri Black-headed Bee-eater. R. Frequent. Singles and pairs all year. Small groups Feb, Jun, Nov. Forest edges, Louna and Lefini rivers, Iboubikro.

M. gularis australis Black Bee-eater. R. Frequent. Singles and pairs all year. Small groups Jan, Apr. Forest edges, Lefini, Louna and Lesio rivers, Iboubikro. Often at sandbank at Camp des ecogardes, Aug (nesting?). One netted, Jun 2002: mass 33; wing 99; tail 75. The large size of the netted bird confirmed the subspecific identity, with a distinct but ill-defined green superciliary stripe (Fig. 10), as Chapin (1939)

noted to occur occasionally in this subspecies. Recent texts claim the head of *australis* to be all black, except in W Africa towards the boundary of the subspecific limit with nominate *gularis*, which exhibits a clear blue supercilium (Fry *et al.* 1988, Hoyo *et al.* 2001, Borrow & Demey 2001).

M. pusillus meridionalis Little Bee-eater. R. Frequent in grassland from Iboubikro to Mâh. Singles and pairs all year, small groups Jan, May–Jun, Dec, juveniles Nov–Jan. Netted three adults, one in primary moult Nov, one with possible active brood patch Aug, and one juvenile in primary moult, Dec: mass 13, 15, 15 (ad), 14 (juv); wing 78, 78, 79 (ad), 78 (juv); tail 59, 61, 62 (ad), 63 (juv).

M. v. variegatus Blue-breasted Bee-eater. R. Common in grassland throughout, including Iboubikro to Mâh, Ngondoro, Abio, Etsotso, all year. Small groups all year except Mar–May; juveniles Nov–Jan. Eight adults netted: mass 18–21 (20.1 ± 1.1); wing 80–86 (82.9 ± 2.6); tail 59–64 (61.6 ± 1.9); possible brood patch Aug. Smaller than measurements in Fry *et al.* (1988) for ssp. *bangweoloensis*, and by Chapin (1939) for ssp. *loringi*.

M. albicollis White-throated Bee-eater. M. Flocks up to 30, occasionally more, in wooded grassland and forest edges throughout, Nov–Apr; earliest 7 Nov 2006, latest 2 Apr 2007. One adult in primary moult netted, 2 Dec 2005: mass 23; wing 95; tail 76.

[*M. persicus* Blue-cheeked Bee-eater. P/V. One observation, Feb (Dowsett-Lemaire 1997a).]

M. apiaster European Bee-eater. P. Flocks up to 100 in wooded grassland and forest edges throughout, Sep–Apr; earliest 26 Sep 2006, latest 3 Apr 2007.

M. malimbicus Rosy Bee-eater. R/M? Flocks up to 100, Nov–Jan, smaller groups Jan–Feb, Jun, Aug–Sep, Dec. Forest edges near Louna and Lefini rivers.

Coraciidae

**Coracias garrulus* European Roller. P. One perched in wooded grassland between Mâh and Ingolo, 16 Feb 2007.

C. c. caudatus Lilac-breasted Roller. R. Frequent. Singly or in pairs in wooded grassland between Mpieri forest (just west of Idzoua Inkou) and Mâh, and between Mpoumako and Abio, all year. Pair copulating Aug.

Eurystomus gularis neglectus Blue-throated Roller. R. Uncommon. Singles and pairs in gallery forest from Abio to Confluent, Sep, Jan. Pair investigating hole in dead tree in forest clearing at Confluent, Jan 2007. Probably commoner and overlooked.

E. glaucurus Broad-billed Roller. R (and M?). Common. Singles and small groups all year in wooded grassland and forest edges throughout. Large flocks Dec–Jan.

Phoeniculidae

[*Rhinopomastus aterrimus* Black Wood-hoopoe. R? A pair occasionally seen on the edge of gallery forest along the Lesio river, 1994–1996 (Dowsett-Lemaire 1997a, Dowsett-Lemaire & Dowsett 1998).]

Upupidae

Upupa epops Hoopoe. M? Seven observations, singly or in groups of 3–5, in wooded grassland between Camp des ecogardes and Mâh, and between Mpoumako and Abio, 21 Sep to 14 Oct 2006. Otherwise only a single undated observation in 2002.

Bucerotidae

[*Tropicranus albocristatus* White-crested Hornbill. R? Forest (Dowsett-Lemaire 1997a).]

**Tockus camurus* Red-billed Dwarf Hornbill. R? One in gallery forest at Iboubikro, 31 Oct 2005.

T. f. fasciatus African Pied Hornbill. R. Common and conspicuous in gallery forest throughout. Singles, pairs and small groups all year. Carrying nest material Feb.

**Bycanistes fistulator sharpii* Piping Hornbill. R. Frequent in gallery forest along Lefini and Louna rivers, also Iboubikro and Idzoua Inkou. Singles, pairs and small groups all year. Large flocks Feb (seven pairs), Jul (nine birds), Dec (11 birds).

B. albotibialis White-thighed Hornbill. R. Three above forest canopy at base of Mâh cliffs, 7 Nov 2006.

Capitonidae

Gymnobucco b. bonapartei Grey-throated Barbet. R. Common. Singles, pairs and small groups in forest and forest edge, Iboubikro. One adult netted, active brood patch and in primary moult, Oct 2006: morphometrics and photograph in King & Chamberlan (2007).

G. sladenii Sladen's Barbet. R. Small groups in gallery forest at Iboubikro all year. Nesting colony preyed upon by African Harrier Hawk, Oct 2006. Flocks of *c.* 20–30 feeding on fruit, Nov 2006. One caught an insect in flight. Six netted, primary moult Aug, Nov, active brood patch Aug: morphometrics and photographs in King & Chamberlan (2007). The only records for Congo.

Pogoniulus scolopaceus flavisquamatus Speckled Tinkerbird. R. Common. Forest edges throughout. Singles all year, pairs Jun, Dec. Five netted, primary moult Nov–Jan, possible active brood patch Dec–Jan: mass 15–17 (15.8 ± 0.8); wing 57–60 (57.8 ± 1.3); tail 31–34 (33.2 ± 1.3). One recaptured four weeks later, close to original net.

P. atroflavus Red-rumped Tinkerbird. R. Frequent. Forest edge Iboubikro, Aug, Dec–Jan, Mar. Three netted: mass 18, 18, 18; wing 62, 64, 66; tail 30, 32, 32.

P. subsulphureus flavimentum Yellow-throated Tinkerbird. R. Common. Forest edges throughout. Singles all year, pairs Jun, Oct, Dec. Observed feeding on small flying termites. Twelve netted (including at least 1 juvenile, Oct): mass 8–10 (9.3 ± 0.7); wing 47–52 (48.8 ± 1.5); tail 22–24 (22.6 ± 0.8 , $n = 10$).

P. bilineatus leucolaima Yellow-rumped Tinkerbird. R. Common. Forest edges throughout, all year. Three adults netted, possible active brood patch Feb: mass 11, 11, 11; wing 51, 53, 53; tail 26, 27, 27.

P. chrysoconus extoni Yellow-fronted Tinkerbird. R? One adult netted in wooded grassland at Idzoua Inkou, 30 May 2006; morphometrics and photo in King & Chamberlan (2007). First record for Congo.

Tricholaema hirsuta Hairy-breasted Barbet. R. Uncommon. Camp des ecogardes and Iboubikro camp (King 2008a). Apparently intermediate between race *ansorgii* and either *flavipunctata* or *angolensis* (King 2008a).

T. frontata Miombo Pied Barbet. R. Wooded grassland at Idzoua Inkou, Jul 2005 to May 2006 (King & Chamberlan 2007). Feeding nestlings in a hole in a dead branch of

a *Hymenocardia acida* tree, Oct. One adult netted, 3 Oct 2005: morphometrics and photos in King & Chamberlan (2007). First records for Congo.

**Lybius minor* Black-backed Barbet. R? One in wooded grassland at Mt Blanc 28 Nov 2006. Subspecies unclear: yellowish bill, whitish head sides, grey crown and nape.

Indicatoridae

**Indicator indicator* Greater Honeyguide. R? An adult male on the trunk of a dead tree in a burnt area of gallery forest at the confluence of the Lefini and Louna rivers, 21 Jan 2004. Few records in Congo, only from the coast (Dowsett-Lemaire *et al.* 1993), although known from the Batéké Plateau in Gabon (Borrow & Demey 2001).

I. conirostris Thick-billed Honeyguide. R? One netted in degraded forest at Camp des ecogardes, Nov 2005: mass 29; wing 94; tail 60.

Picidae

[*Jynx ruficollis* Red-throated Wryneck. R? Open wooded grassland (Dowsett-Lemaire 1997a).]

Campethera cailliautii permista Green-backed Woodpecker. R. Frequent. Singles and pairs in forest edge, Ngondoro and Iboubikro. One female (in primary moult Oct) and two males netted: mass (m) 43, 46, (f) 48; wing (m) 92, 98, (f) 97; tail (m) 54, 57, (f) 63.

**C. n. nivosa* Buff-spotted Woodpecker. R. Two netted in forest and forest edge: one male, 19 Dec 2005, one female with active brood patch, 7 Oct 2006: mass (m) 35, (f) 38; wing (m) 82, (f) 90; tail (m) 42, (f) 45.

C. caroli Brown-eared Woodpecker. R. Uncommon. Singles or pairs in burnt clearing in forest at Confluent Mar–Apr, Dec 2004. Also gallery forest edge at Iboubikro, Mar 2007.

Dendropicos fuscescens sharpii Cardinal Woodpecker. R. Frequent. Singles in wooded grassland, especially near Idzoua Inkou, Jan, May–Jun, Oct–Nov. Two males netted, in primary moult Nov, Dec: mass 22, 24; wing 79, 80; tail 40, 41.

**D. xantholophus* Yellow-crested Woodpecker. R. Uncommon. Singles, pairs and small groups in degraded forest, Confluent and Iboubikro, Feb–Mar, Jun, Oct–Dec. Male in hole in tree Dec.

[*D. elliotii* Elliot's Woodpecker. V? One in gallery forest, Iboubikro, 12 Dec 2002 (King *et al.* 2004).]

Alaudidae

[*Mirafraga africana* Rufous-naped Lark. R. *Loudetia* grassland (Dowsett-Lemaire 1997a).]

M. rufocinnamomea Flappet Lark. R. Abundant. Conspicuous display flight common above grassland throughout, including Mt Blanc, all year. One netted: mass 29; wing 79; tail 52.

Hirundinidae

[*Psalidoprocne nitens* Square-tailed Saw-wing. R. Forest (Dowsett-Lemaire 1997a).]

P. pristoptera Black Saw-wing. R. Frequent. Singles, pairs and small groups at Mt Blanc, Confluent, Lac Bleu and Epopé, especially Nov–Apr, also Jun, Sep.

Phedina brazzae Brazza's Martin. V. One along wooded grassland ridge above Lac Bleu, 20 Jun 2005 (King 2007).

Riparia cincta Banded Martin. R. Abundant. Singles, pairs and small groups over grassland throughout, all year. Flock of ≥ 12 , Dec. Carrying nest materials, Mt Blanc, Nov. Visiting holes in large sand bank along Louna River, Nov.

Hirundo semirufa Rufous-chested Swallow. R/M? Grassland throughout. Singles and pairs Jul–Feb, flock Jul. Investigating buildings at Camp des ecogardes, Aug, Nov.

H. senegalensis Mosque Swallow. R? Two at Ngondoro, 8 Jan 2004.

H. abyssinica Lesser Striped Swallow. R. Frequent. Grassland throughout, all year. Large flocks at the village of Mbouambé. Carrying nest material Jan. Nesting Mt Blanc, Jun, Sep. Juveniles Jan.

**H. rufigula* Red-throated Cliff Swallow. M? Large flocks in various grassland habitats at Ngondoro, 8–9 Jan 2004, associated with other swallows and swifts. A huge flock of hundreds or even thousands in moist grassland south of Abio along the Louna River, 6 Dec 2006; two at Mt Abio the next day. Apparently expanding northwards (Borrow & Demey 2001), and recorded from coastal Congo (Dowsett & Dowsett-Lemaire 1989) and central and southeast Gabon (Borrow & Demey 2001).

H. fuligula Rock Martin. R. Frequent. Rocky outcrops throughout (Mt Abio, Epopé, Ngaka, above Lac Bleu), Feb, Jun, Sep, Nov–Dec.

H. nigrita White-throated Blue Swallow. R. Abundant along Lefini and Louna rivers, also occasionally at Ngondoro camp and Camp des ecogardes. Singles and pairs all year, flocks (≥ 10) Dec–Feb, Apr. Nest-building Jan. On nest Feb, Apr. Juveniles Mar, Sep–Oct.

H. rustica Barn Swallow. P. Uncommon, only seven observations in the reserves. Usually singly, Nov–Dec, Apr; latest 3 Apr 2007. Abundant elsewhere on Batéké Plateau in both Congo and Gabon, Feb 2007 (pers. obs.).

**Delichon urbicum* Common House Martin. P. Four observations of pairs or small groups, 20 Sep 2006, Dec–Jan, 10 Mar 2007.

Motacillidae

Motacilla flava Yellow Wagtail. P. One at Camp des ecogardes, 30 Nov 2005. Also Iboubikro ponds (Dowsett-Lemaire 1997a).

[*Anthus cinnamomeus* Grassland Pipit. R? Local (Dowsett-Lemaire 1997a, as *A. richardi*).]

A. nyassae Woodland Pipit. R. Common, wooded grassland.

A. leucophrys Plain-backed Pipit. R. Common, Ngondoro, Lac Bleu.

**A. pallidiventris* Long-legged Pipit. R? Iboubikro ponds, Jul and Sep 2005. Very plain pipit, greyish head, pale supercilium, bobbing tail.

[*A. brachyurus* Short-tailed Pipit. R. Short grassland (Dowsett-Lemaire 1997a).]

Macronyx croceus Yellow-throated Longclaw. R. Common. Grassland throughout. Singles and pairs all year; groups of three Mar, Nov. Carrying nest material Jan, Feb.

Pycnonotidae

Andropadus virens Little Greenbul. R. Abundant in forest throughout, all year. Small groups Jun–Jul, Nov. Of 164 netted: active brood patch Dec; primary moult all year but especially Oct–Feb; juveniles Oct–Dec, Mar–Jun. Adults: mass 20–30 (24.7 ± 1.8 ,

n = 130); wing 69–84 (76.8 ± 2.9 , n = 130); tail 62–77 (70.7 ± 3.1 , n = 128). Juveniles and immatures: mass 19–26 (23.6 ± 1.9 , n = 34); wing 70–80 (75.0 ± 2.6 , n = 34); tail 63–75 (70.0 ± 2.7 , n = 32).

A. gracilis Little Grey Greenbul. R. Frequent. Forest throughout, Mar, Jun, Oct, Dec. Two adults netted, in primary moult Apr, Aug; mass 18, 21; wing 73, 74; tail 68, 69.

A. gracilirostris Slender-billed Greenbul. R. Pair, Iboubikro, 6 Apr 2007.

Baeopogon indicator Honeyguide Greenbul. R. A pair regularly in mixed species flocks, Iboubikro camp, Jun 2006.

**Chlorocichla simplex* Simple Leaflove. R? One, Iboubikro camp, 15 Jan 2004.

[*C. flavicollis* Yellow-throated Leaflove. R. Gallery forest and thickets (Dowsett-Lemaire 1997a).]

Thescelocichla leucopleura Swamp Palm Bulbul. R. Common. Small, vocal groups in gallery forest along Lefini and Louna rivers, and Ngondoro, all year. Carrying nest material Jan. Three netted at Ngondoro, 2002: mass (to nearest 5 g) 50, 50, 55; wing 100, 109, 112; tail 97, 102, 105.

[*Pyrrhurus scandens* Leaflove. R. Forest (Dowsett-Lemaire 1997a).]

Bleda notatus ugandae Lesser Bristlebill. R. Forest understorey, Iboubikro (Rainey *et al.* 2009). Six netted, including one female: mass 44, wing 99, tail 88. Five larger birds, primary moult Dec: mass 45–50 (48.0 ± 2.3); wing 102–106 (103.8 ± 1.5); tail 91–97 (95.2 ± 2.5).

Pycnonotus barbatus tricolor Common Bulbul. R. Abundant and conspicuous. Singles, pairs and small groups in wooded grassland and forest edges throughout, all year. Carrying nest material Jul. Among 39 netted (including two juveniles), active brood patches Aug, Oct, many in primary moult Oct–May, juveniles Oct–Nov. Adults: mass 30–42 (26.4 ± 2.2 , n = 37); wing 85–103 (94.2 ± 4.3 , n = 37); tail 78–92 (83.8 ± 3.5 , n = 36). Juveniles: mass 36, 37; wing 89, 89; tail 74, 82. One recapture, four days and *c.* 600 m away (Iboubikro to Camp des ecogardes).

Neolestes torquatus Black-collared Bulbul. R. Frequent. Wooded grassland at Ngondoro, Mt Blanc and Camp des ecogardes, Dec–Feb. One female netted, Camp des ecogardes, 25 Dec 2005, with active brood patch: mass 25, wing 76, tail 63.

Nicator chloris Western Nicator. R. Frequent. Forest at Iboubikro, Confluent. One male, three females (based on size) and one juvenile netted: mass (m) 61, (f) 43, 46, 47, (j) 41; wing (m) 112, (f) 92, 94, 96, (j) 94; tail (m) 114, (f) 92, 95, (j) 94.

Turdidae

Cossypha natalensis larischi Red-capped Robin Chat. R? Four adults netted in gallery forest understorey, Iboubikro, Jun 2002, Nov–Dec 2005, primary moult Dec, probable active brood patch Dec: mass 31–35 (32.8 ± 1.7); wing 90–91 (90.3 ± 0.5); tail 66–68 (67.0 ± 0.8). The short tail is typical of ssp. *larischi* (Keith *et al.* 1992). These are the only records for the Batéké Plateau (King *et al.* 2004).

[*C. niveicapilla* Snowy-crowned Robin Chat. R. Thickets (Dowsett-Lemaire 1997a).]

**Alethe diademata castanea* Fire-crested Alethe. R? One adult netted, gallery forest understorey, Iboubikro, 22 Dec 2005: mass 33; wing 85; tail 66.

Stizorhina fraseri Rufous Flycatcher Thrush. R. Frequent and vocal in forest, Iboubikro.

Cercotrichas leucophrys White-browed Scrub Robin. R. Frequent. Singles and pairs in wooded grassland, Idzoua Inkou. Five adults netted match ssp. *munda* in coloration, including extensive brown band on tail (Fig. 11); primary moult Feb; mass 15–17 (16.0 ± 1.0); wing 60–66 (62.6 ± 2.6); tail 52–64 (57.4 ± 4.4).

Saxicola torquatus salax Common Stonechat. R. Uncommon. Rocky grassland above Lac Bleu, 25 Jan 2004, 11 Apr 2007; sand bank on Lefini River at Epopé, 12 Nov 2006.

Myrmecocichla tholloni Congo Moor Chat. R. Common in non-wooded grassland throughout. Singles and pairs all year; small groups Sep–Mar, Jun. Dowsett-Lemaire (1997a) estimated densities of up to 6 pairs/km² near Mâh.

M. nigra Sooty Chat. R. Common in wooded grassland throughout. Singles, pairs and small groups all year. Nine netted, active brood patch Aug, primary moult Nov–Dec. Seven males: mass 39–46 (41.3 ± 2.3); wing 95–100 (97.6 ± 1.5); tail 52–60 (57.1 ± 2.8). Two females: mass 36, 40; wing 94, 95; tail 55, 57. Tails shorter than those cited by Keith *et al.* (1992).

Sylviidae

[*Melocichla mentalis* African Moustached Warbler. R? Tall rank grassland (Dowsett-Lemaire 1997a).]

Cisticola lateralis Whistling Cisticola. R. Frequent at Idzoua Inkou.

C. rufilatus Tinkling Cisticola. R. One singing in wooded grassland at Idzoua Inkou, Oct.

C. galactotes Winding Cisticola. R. Common. Grassy marshes, ponds and rivers throughout. Vocal all year. Three netted, primary moult Dec: mass 17, 19, 19; wing 60, 61, 63; tail 50, 51, 56.

C. natalensis Croaking Cisticola. R. Frequent in grassland throughout. Vocal Sep–Apr. One adult (Aug) and one juvenile (Apr) netted: mass 26 (a), 22 (j); wing 74 (a), 66 (j); tail 61 (a), 57 (j). Long tail of adult suggests non-breeding plumage (Urban *et al.* 1997).

C. brachypterus Short-winged Cisticola. R. Frequent in wooded grassland at Idzoua Inkou and Camp des ecogardes. One netted: mass 8; wing 48; tail 32.

C. fulvicapillus Piping Cisticola. R. Common in wooded grassland throughout. Vocal Dec–Jun.

C. juncidis Zitting Cisticola. R. Common in grassland throughout. Vocal Sep–May.

C. brunnescens Pectoral-patch Cisticola. R. Ngondoro, Jan 2004.

[*C. cinnamomeus* Pale-crowned Cisticola. R? Grassy marsh, Mâh, June 1989 (Dowsett-Lemaire 1997a).]

Prinia subflava Tawny-flanked Prinia. R. Common in wooded and rank grassland throughout. Singles and pairs all year, small groups Dec–Jan. Carrying nest material Feb. Six netted (but no data for one). One small bird: mass 6, wing 48. Four larger, primary moult Dec–Jan: mass 8–10 (9.3 ± 0.96), wing 52–55 (53.3 ± 1.5), tail 52–56 (53.3 ± 2.31 , $n = 3$). Short tails indicate all birds (Dec–Jan, Mar, Jul) were in breeding plumage (Urban *et al.* 1997).



Figure 8. Two male Didric Cuckoos netted in the Lesio-Louna Reserve: left, Nov 2005; right, Dec 2005. Photos: C. Chamberlan.

Schistolais leucopogon White-chinned Prinia. R. Small, vocal groups frequent in rank grassland and forest edge, Idzoua Inkou; also Mt Blanc.

[*Apalis rufogularis* Buff-throated Apalis. R. Forest (Dowsett-Lemaire 1997a).]

Camaroptera brachyura tincta Grey-backed Camaroptera. R. Common in forest edge, Iboubikro and Idzoua Inkou. Ten netted, brood patch Aug, Oct (same bird), primary moult May: mass 11–14 (12.4 ± 1.17); wing 50–56 (54.1 ± 2.51); tail 31–40 (37.6 ± 3.16 , $n = 8$).

[*C. superciliaris* Yellow-browed Camaroptera. R. Forest clearings (Dowsett-Lemaire 1997a).]

Eremomela salvadorii Salvadori's Eremomela. R. Frequent in wooded grassland, Mt Blanc and Idzoua Inkou. One netted: mass 8; wing 56; tail 27.

E. scotops congensis Green-capped Eremomela. R. Small, vocal groups common in wooded grassland, Idzoua Inkou; also Camp des ecogardes. All year.

[*Sylvietta ruficapilla* Red-capped Crombec. R. Wooded grassland (Dowsett-Lemaire 1997a).]

S. virens tando Green Crombec. R. Common. Forest edge, Iboubikro. Singles and pairs all year, small group Mar. Twelve netted, primary moult May, Oct–Nov: mass

8–10 (8.9 ± 0.7); wing 48–53 (50.3 ± 1.7); tail 12–20 (16.9 ± 2.2). Several with small yellow streak on belly.

**Phylloscopus trochilus* Willow Warbler. P. Singles at Iboubikro, 17 Sep 2005, 1 and 18 Oct 2006.

**Sylvia borin* Garden Warbler. P. One adult netted 2 Dec 2005: mass 18; wing 79; tail 54; plumage worn.

Hyliota flavigaster Yellow-bellied Hyliota. R. Frequent in wooded grassland, especially Idzoua Inkou.

Hylia p. prasina Green Hylia. R. Frequent in forest, Iboubikro. Three netted: mass 12, 16, 16; wing 58, 67, 69; tail 40, 48, 49. The smaller individual probably a female, the others probably males (Urban *et al.* 1997).

Muscicapidae

Fraseria o. ocreata Fraser's Forest Flycatcher. R. Frequent. Small, vocal groups in forest canopy, Iboubikro, Confluent, Loubilika. All year.

F. cinerascens ruthae White-browed Forest Flycatcher. R. Frequent. Forest understorey, Iboubikro and Lefini River. Three netted: two males, primary moult Dec (mass 23, 22; wing 82, 83, tail 67, 68) and one female with active brood patch (Jan) (mass 19, wing 79, tail 63).

Malaenornis pallidus murinus Pale Flycatcher. R. Common in wooded grassland throughout. Singles and pairs all year; small groups Nov–Dec. Six netted, primary moult Dec: mass 24–31 (27.7 ± 2.7); wing 89–105 (96.7 ± 6.1); tail 72–82 (77.3 ± 4.5).



Figure 9. African Pygmy Kingfishers netted in the Lesio-Louna Reserve: left, resident subspecies *ferruginus* or *pictus*, Oct 2005; right, migrant subspecies *natalensis*, May 2006. Photos: C. Chamberlan.



Figure 10. Black Bee-eater *Merops gularis australis* netted in the Lesio-Louna Reserve, Jun 2002. Photo: C. Chamberlan.

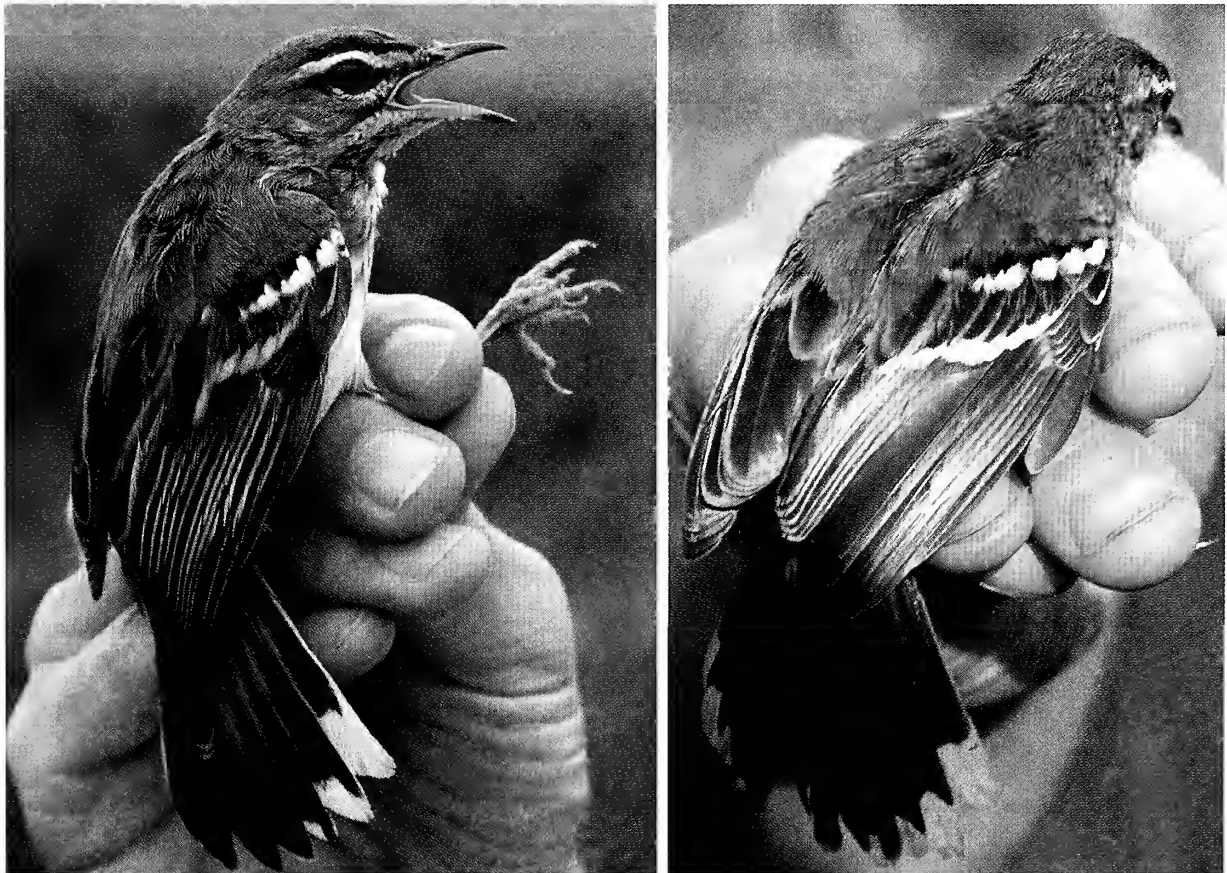


Figure 11. Two White-browed Scrub Robins, netted in the Lesio-Louna Reserve, Nov 2005 (left) and Feb 2006. Photos: C. Chamberlan (left) and T. King.



Figure 12. Bates's Paradise Flycatcher, ssp. *bannermani*, Lesio-Louna Reserve: left, male, Aug 2006; centre, male on nest, Dec 2005; right, female, Dec 2006. Photos: C. Chamberlan (left) and T. King.

**Muscicapa striata* Spotted Flycatcher. P. Wooded grassland throughout (Camp des ecogardes, Idzoua Inkou, Abio). Singles, pairs and small groups; Sep (four, earliest 19 Sep 2005), Nov (one), Mar (one), 7 Apr 2006 (one). One adult netted, 5 Nov 2006: mass 14; wing 88, tail 62. Probably ssp. *striata*: larger than *balearica*, streaked rather than spotted breast eliminates *tyrrenhica*, and unlikely to be *neumanni* due to locality.

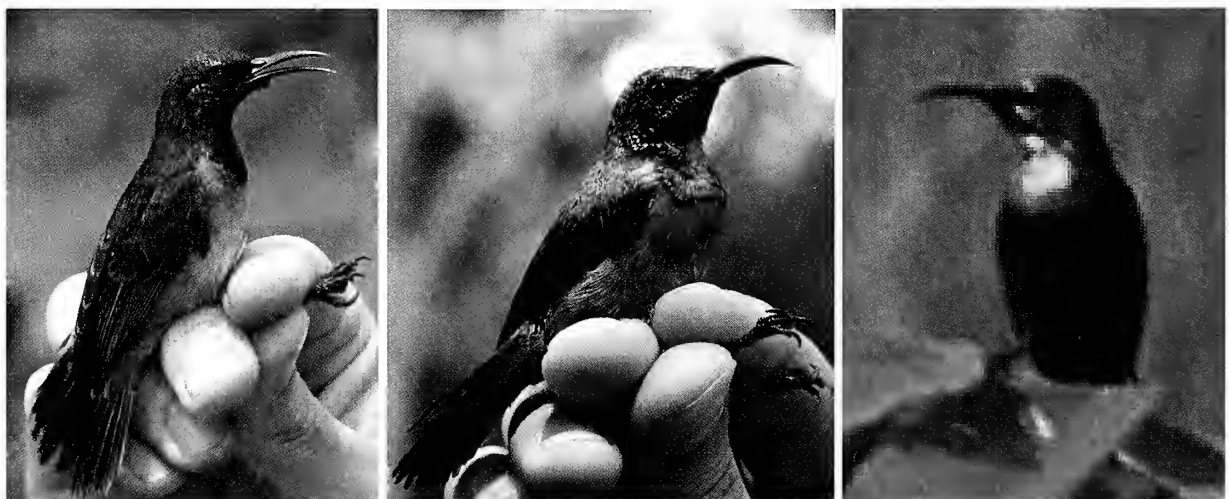


Figure 13. Left: Reichenbach's Sunbird, Lesio-Louna Reserve, Jan 2006 (photo: D. Hayman). Centre: male Olive-bellied Sunbird, Lesio-Louna Reserve, Oct 2005 (photo: C. Chamberlan). Right: Orange-tufted Sunbird, Lefini north, 1 Mar 2007 (photo: T. King).

M. cassini Cassin's Flycatcher. R. Common on Lefini, Louna and Lesio rivers. Singles and pairs all year. Nest-building Feb; on nest Jan–Feb, Sep.

Myioparus p. plumbeus Lead-coloured Flycatcher. R. Frequent. Singles or pairs in wooded grassland and forest edges, Iboubikro, Idzoua Inkou, Ngondoro, Aug, Oct, Dec–Mar. Juvenile Feb. Seven netted. Six adults: mass 12–18 (14.5 ± 2.1); wing 62–67 (64.3 ± 2.0); tail 53–61 (57.8 ± 3.3 , $n = 5$). One juvenile: mass 11; wing 63; tail 61.

Monarchidae

[*Trochocercus nitens* Blue-headed Crested Flycatcher. R. Forest (Dowsett-Lemaire 1997a).]

Terpisphe viridis African Paradise Flycatcher. R? Uncommon, forest edge, Iboubikro and Ngondoro.

T. batesi bannermani Bates's Paradise Flycatcher. R. Common. Singles and pairs in forest interior and forest edge, Iboubikro. On nest (both sexes) Oct, Dec–Jan. Nestlings Oct, Dec. Thirteen netted, active brood patch Aug (possibly), Oct, Dec, primary moult Dec. Six males: mass 15–16 (15.3 ± 0.5); wing 77–83 (79.0 ± 2.3); tail (T2) 82–89 (84.4 ± 2.70 , $n = 5$); projection of central tail feathers (T1–T2) 15, 19, 20, 25, 63. Six females: mass 13–16 (14.2 ± 1.0); wing 72–77 (74.8 ± 2.3); tail (T2) 72–77 (74.5 ± 2.1); projection of T1–T2 0–9 (4.5 ± 3.3). One unsexed (female or young male): mass 15, wing 80, tail (T2) 82, projection of T1–T2 7. The combination of the long central tail feathers and uncrested head (Fig. 12) are diagnostic of ssp. *bannermani*, but the measurements appear closer to those of *T. rufocinerea* than of other races of *T. batesi*, as given by Urban *et al.* (1997). Often (Fig. 12 left) but not always (Fig. 12 right), the head appeared significantly darker than the rest of the underparts, a characteristic also considered more typical of *T. rufocinerea* than of *T. batesi* (Urban *et al.* 1997).

Platysteiridae

Bias m. musicus Black-and-white Flycatcher. R. Frequent. Singles and pairs near forest edges throughout, Nov–Mar, Jul. One male netted 6 Nov 2005: mass 22; wing 88; tail 50.

Dyaphorophya c. castanea Chestnut Wattle-eye. R. Frequent in forest understorey, Iboubikro. One male and two females netted: mass (m) 15, (f) 13, 15; wing (m) 62, (f) 59, 60; tail (m) 28, (f) 24, 26.

Platysteira cyanea Common Wattle-eye. R. Pair, Idzoua Inkou 25 Feb 2004.

Batis minor erlangeri Black-headed Batis. R. Frequent in wooded grassland at Idzoua Inkou, also Camp des ecogardes. Singles and pairs all year, small group Jul. One female netted Dec 2005; mass 11; wing 58; tail 43.

B. minulla Angola Batis. R. Frequent, Idzoua Inkou and Camp des ecogardes.

Paridae

Parus leucomelas White-winged Black Tit. R. Common in wooded grassland throughout Lesio-Louna. Singles and pairs all year, small groups Aug–Feb, May. Four adults netted, active brood patch Aug: mass 21–28 (24.8 ± 3.0); wing 80–89 (84.8 ± 3.8); tail 66–72 (69.0 ± 2.6).

Remizidae

Anthoscopus caroli ansorgei Grey Penduline Tit. R. Iboubikro, 5 Nov 2004 and 1 Oct 2006.

Nectariniidae

Anthreptes aurantium Violet-tailed Sunbird. R. Frequent along Lefini, Louna and Lesio rivers, also Lac Bleu. Singles and pairs all year, also small groups. Nest-building Apr, Jul. At nest Nov. Feeding nestlings Dec. Feeding juveniles Jan, Jul, Oct. Juveniles Dec–Jan, Mar, Jun–Jul, Oct. Cooperative breeding observed (King & Cheke 2009). Two males, three females and one juvenile netted, primary moult Jan: mass (m) 12, 13, (f) 12, 13, 13, (j) 13; wing (m) 65, 66, (f) 62, 62, 62, (j) 64; tail (m) 46, 48, (f) 42, 43, 44, (j) 45.

**A. rectirostris tephrolaemus* Green Sunbird. R. Uncommon. Seven observations at Iboubikro, Oct–Dec, Mar. Almost always in pairs.

**A. seimundi* Little Green Sunbird. R? One, Confluent, 8 Mar 2005; small group, Abio island, 30 Mar 2007.

[*Deleornis fraseri* Fraser's Sunbird. R. Forest (Dowsett-Lemaire 1997a).]

Anabathmis reichenbachii Reichenbach's Sunbird. R. Common. Singles, pairs and small groups at Lefini, Louna and Lesio rivers, Iboubikro ponds, and Ngondoro marsh. Often aggressive towards other sunbirds, especially *A. aurantium*. Carrying nest material Mar. Nesting Mar, Jun, Nov–Dec. Feeding nestlings and fledglings Nov. Feeding juvenile Feb. Juveniles Feb, Jul, Oct–Nov. Seven adults (Fig 13 left) and one juvenile netted, active brood patch Dec, primary moult Mar, Jul: mass (a) 7–12 (8.8 ± 1.72 , $n = 6$), (j) 10; wing (a) 53–60 (56.2 ± 2.8 , $n = 6$), (j) 58; tail (a) 40–50 (44.0 ± 4.4 , $n = 5$), (j) 46. First records in the Batéké Plateau region of Congo (King *et al.* 2004). Given its apparent abundance and conspicuousness, it is surprising that it has been previously overlooked, unless it has increased in recent years. Recently recorded from the BPNP, Batéké Plateau in Gabon, Jun 2007 (P. Christy pers.comm.), and in Franceville, Sep 2007 (pers. obs.).

Cyanomitra verticalis bohndorffi Green-headed Sunbird. R. Common in forest edges, Iboubikro and Idzoua Inkou, also Mt Blanc and Confluent. Singles and pairs all year, juveniles Feb–Mar. Four males and five females netted, active brood patch Feb, head moulting from juvenile to female plumage Dec: mass (m) 10–15 (13.5 ± 2.4), (f) 10–16 (12.6 ± 2.2); wing (m) 64–67 (65.3 ± 1.3), (f) 58–62 (60.6 ± 1.7); tail (m) 44–49 (46.3 ± 2.06), (f) 39–45 (41.3 ± 2.63 , $n = 4$).

C. cyanolaema Blue-throated Brown Sunbird. R. Uncommon in forest and forest edge, Iboubikro. One male netted: mass 14, wing 71, tail 54.

C. olivacea cephaelis Western Olive Sunbird. R. Abundant in forest and forest edge throughout. Singly or in pairs, all year. Netted 38 males, 14 females, five juveniles (May, Nov–Dec), one immature male, probable brood patches Dec, primary moult Jul–Dec, Feb: mass (m) 10–14 (11.4 ± 0.9 , $n = 37$), (f) 9–12 (10.0 ± 0.8), (j/i) 8–11 (10.2 ± 1.3 , $n = 6$); wing (m) 61–68 (65.1 ± 1.9 , $n = 37$), (f) 56–60 (57.4 ± 1.3), (j/i) 56–64 (59.7 ± 3.2 , $n = 6$); tail (m) 47–60 (53.2 ± 2.9 , $n = 36$), (f) 40–44 (42.5 ± 1.4 , $n = 13$), (j/i) 39–47 (44.3 ± 3.1 , $n = 6$). Four recaptured: maximum distance *c.* 600 m (Iboubikro to Camp des ecogardes).

**Chalcomitra r. rubescens* Green-throated Sunbird. R. Common in forest edge throughout, including Mt Blanc. Singles and pairs all year, also small groups. Nest-building Sep (using parts of old nest and spiders web). At nest high in forest edge tree and harassing Woodland Kingfisher, Mar. Pair with juvenile Oct. Feeding on flying termites Sep. Three males (one adult; two immature, Nov) and one female netted, primary moult Oct–Nov: mass (ad m) 11, (imm m) 11, 11, (f) 10; wing (ad m) 68, (imm m) 66, 67, (f) 60; tail (ad m) 46, (imm m) 41, 41, (f) 36.

C. amethystina deminuta Amethyst Sunbird. R. Common in wooded grassland throughout, especially Idzoua Inkou. Singles and pairs all year, also small groups. Juvenile Feb, immature males May, Aug, Nov. Five males (two adult, three immature) and three females netted, primary moult Feb (female), May and Aug (immature males): mass (m) 12–14 (13.2 ± 0.8), (f) 11, 13, 14; wing (m) 69–71 (69.8 ± 0.8), (f) 63, 64, 65; tail (m) 41–45 (43.2 ± 1.5), (f) 38, 38, 40.

Hedydipna collaris somereni Collared Sunbird. R. Frequent in forest edge throughout (but not Idzoua Inkou or Mt Blanc). Singles and pairs all year, also small groups. Carrying nest material April. Feeding on flying termites Sep. One male and two females netted, active brood patch Dec, primary moult Oct: mass (m) 8, (f) 8, 8; wing (m) 53, (f) 50, 51; tail (m) 33, (f) 29.

Cinnyris c. chloropygius Olive-bellied Sunbird. R. Common in forest edge throughout, including Mt Blanc, but not Idzoua Inkou. Singles all year, pairs Dec–Apr, also small groups. Five males (Fig. 13 centre), two females and three juveniles (Oct–Nov) netted, active brood patch Nov, primary moult Dec: mass (m) 6–7 (6.4 ± 0.5), (f) 6, 6, (j) 5, 6, 7; wing (m) 50–52 (50.8 ± 0.8), (f) 47, 48, (j) 47, 50, 50; tail (m) 31–36 (33.0 ± 2.0), (f) 32, 32, (j) 30, 32, 33. These measurements are slightly larger than those given by Fry *et al.* 2000 for ssp. *chloropygius*, but smaller than those given for ssp. *orphogaster*.

[*C. congensis* Congo Sunbird. V? One male between Lefini River and Ngo, 1 Feb 1994 (Dowsett-Lemaire 1997a).]

**C. bouvieri* Orange-tufted Sunbird. R? One photographed, perched conspicuously on an *Annona senegalensis* shrub in rank grassland beside the road along the northern boundary of Lefini north ($2^{\circ}24'S$ $15^{\circ}25'E$), 1 Mar 2007. The only sunbirds known from western and west-central Africa with the combination of green head, throat and mantle, dark purple breast band and dark belly are Palestine *C. osea*, Purple-banded *C. bifasciata* and Orange-tufted; of these only Orange-tufted has a dark brown, rather than black, belly, and the small bluish forehead and throat patches apparent in Fig. 13 (right).

[*C. johannae* Johanna's Sunbird. R. Forest (Dowsett-Lemaire 1997a).]

C. c. cupreus Copper Sunbird. R. Abundant in wooded grassland and degraded forest throughout. Singles all year, also pairs and small groups. Carrying nest material Feb. At nest Feb. Male and female feeding nestlings Mar. One male and one female netted: mass (m) 8, (f) 9; wing (m) 59, (f) 57; tail (m) 46, (f) 41.

Laniidae

Lanius collaris Common Fiscal. R. Common in wooded grassland throughout Lesio-Louna and adjacent plateau. Singles all year, juveniles Nov–Jan.

[*L. souzae* Sousa's Shrike. R? Local in wooded grassland (Dowsett-Lemaire 1997a).]

Malaconotidae

Bocagia minuta Marsh Tchagra. R. In pairs at Mt Blanc marsh, frequent.

Tchagra senegala Black-crowned Tchagra. R. Common in wooded grassland throughout. Singles and pairs all year; small group Nov.

Dryoscopus gambensis Northern Puffback. R. Three observations: Idzoua Inkou and Mt Blanc.

Laniarius leucorhynchus Sooty Boubou. R. Common at Iboubikro ponds. Three adults netted, primary moult Aug, Dec: mass 54, 57, 57; wing 94, 99, 101; tail 90, 91, 92.

✧ Tail longer than measurements given by Fry *et al.* (2000).

Dicruridae

Dicrurus ludwigii Square-tailed Drongo. R. Frequent in forest edge, Idzoua Inkou.

**D. modestus* Velvet-mantled Drongo. R. Uncommon. Confluent (five observations) and Louna River (once). Always singly, perched high on exposed branch in gallery forest. Widespread in Congo (Dowsett & Dowsett-Lemaire 1989, as *D. adsimilis*), but not previously recorded from the Batéké Plateau (Borrow & Demey 2001), except in the BPNP in Gabon (pers. obs. Feb, Aug–Sep 2007, P. Christy unpubl.).

Corvidae

Corvus albus Pied Crow. R. Mâh village, uncommon. Also one flying high westwards over Confluent, 16 Apr 2004.

Sturnidae

Onychognathus fulgidus Forest Chestnut-winged Starling. R. Frequent in Lefini River gallery forest.

Lamprotornis purpureiceps Purple-headed Glossy Starling. R. Frequent in gallery forest at Iboubikro, Confluent, and Louna River. Pairs, all year.

[*L. nitens* Cape Glossy Starling. V? One pair at Lac Bleu (Dowsett-Lemaire 1997a).]

L. splendidus Splendid Glossy Starling. R. Frequent in gallery forest throughout, Aug–Jan, Apr, Jun. Pairs and small groups. Flock of 24 at Ngondoro, 9 Jan 2004.

Cinnyricinclus leucogaster verreauxi Violet-backed Starling. M. Wooded grassland throughout, especially Idzoua Inkou. All records Feb–Oct (earliest 25 Feb 2004, latest 4 Oct 2004), therefore a non-breeding migrant. Pairs Mar–Sep, small groups Feb–Oct, flocks ≥ 10 Apr–May, Sep. Two males and four females netted, primary moult Dec: mass (m) 38, 39 (m), (f) 40–43 (41.5 ± 1.7); wing (m) 104, 106, (f) 97–103 (100.0 ± 2.4); tail (m) 59, 60, (f) 53–56 (54.5 ± 1.3). The two netted males had white bases to the outer web of their outer tail feathers (T6), a feature diagnostic of ssp. *verreauxi* (Fry *et al.* 2000, Borrow & Demey 2001).

Passeridae

Passer griseus Northern Grey-headed Sparrow. R. Frequent. Singles and pairs in camps and villages, Dec–Jun. One netted Feb 2002: mass 28; wing 85.

Petronia superciliaris Yellow-throated Petronia. R. Common in wooded grassland, especially at Idzoua Inkou. Singles and pairs all year, small groups May, Sep. Feeding juvenile Sep. Juvenile Nov. Sixteen adults and two juveniles or immatures netted,

primary moult Nov–Dec (all), also May; mass (a) 23–28 (24.5 ± 1.5), (j/i) 24, 26; wing (a) 87–95 (90.8 ± 2.7), (j/i) 82, 85; tail (a) 53–60 (56.7 ± 2.1), (j/i) 53, 54.

Ploceidae

Ploceus nigrimentus Black-chinned Weaver. R. Uncommon. Wooded grassland between Iboubikro and Mâh, 13 Jan 2004, 20 Jun 2006, and by sand-pits near Abio camp, 11 Sep 2006.

**P. xanthops* Holub's Golden Weaver. R. Mt Blanc marsh, 28 Feb 2004 (one) and 7 Jan 2006 (pair): large, bright yellow weavers with black bill, one with reddish throat patch. First records for the Batéké Plateau, otherwise known in Congo from only the extreme south (Dowsett & Dowsett-Lemaire 1989, Borrow & Demey 2001).

P. n. nigerrimus Vieillot's Black Weaver. R. Common in wooded grassland, forest edges, rivers, camps and villages. Nesting colonies Aug–Feb. Among 28 netted, primary moult Mar, possible active brood patches Dec–Jan. Seven adult males and 21 females (may include some immature males): mass (m) 35–39 (37.4 ± 1.4), (f) 28–34 (30.3 ± 1.8 , $n = 20$); wing (m) 82–86 (84.1 ± 1.5), (f) 73–81 (76.2 ± 2.1 , $n = 20$); tail (m) 52–55 (53.0 ± 1.4 , $n = 4$), (f) 46–50 (48.0 ± 1.6 , $n = 4$).

**P. cucullatus collaris* Village Weaver. R. Breeding colonies in villages, where abundant. One male in breeding plumage netted 27 Dec 2005, Camp des ecogardes: mass 40; wing 85; tail 51 (Fig. 14). The broad chestnut breast band and only very thin strip of chestnut on the back of the neck indicate ssp. *collaris* (known from coastal Gabon to S Congo: Borrow & Demey 2001), rather than *bohndorffi* (most of Gabon and Congo), although the mantle is not as heavily marked as the figure of *collaris* shown in Borrow & Demey (2001).

**P. tricolor* Yellow-mantled Weaver. R? Uncommon. An adult 19–21 Jan 2004, and a pair 6 Dec 2004, in a burnt clearing in gallery forest at Confluent. Known from the Mayombe region of Congo, but not previously recorded on the Batéké Plateau (Dowsett-Lemaire *et al.* 1993, Borrow & Demey 2001).

**Pachyphantes superciliosus* Compact Weaver. R. Pairs or small groups, Mt Blanc, frequent. Breeding plumage Nov, Jan–Mar.

Malimbus nitens Blue-billed Malimbe. R. Frequent. Singles and pairs in gallery forest and by ponds, Iboubikro and Louna river, Jan–Feb, Nov.

[*M. malimbicus* Crested Malimbe. R. Gallery forest (Dowsett-Lemaire 1997a).]

**M. rubricollis* Red-headed Malimbe. R? Singles high in gallery forest at Confluent 19–20 Jan and 25 Mar 2004. Not previously known from the Batéké Plateau in Congo, although reported in Brazzaville and the Mayombe (Dowsett & Dowsett-Lemaire 1989).

Quelea erythrops Red-headed Quelea. R. Frequent. Flocks in grassland throughout (Ngondoro, Mt Blanc, Camp des ecogardes, Lefini River). Breeding plumage Dec–Mar. Two females or non-breeding males netted, Aug, Nov: mass 15, 16; wing 60, 64; tail 31, 32.

**Euplectes hordeaceus* Black-winged Red Bishop. R. Abundant in tall plateau grasslands in Lefini north, but only two observations from Mâh plateau. Breeding plumage Feb–Mar, May.

E. m. macroura Yellow-mantled Widowbird. R. Abundant. Singles and flocks in grassland throughout. Breeding plumage Nov–May, non-breeding Jul–Nov, in moult Nov. Three males (including two in breeding plumage) and four females netted, active brood patch Feb, male ending primary moult to non-breeding plumage Aug, primary moult finished and tail moult nearly finished to breeding plumage 29 Nov: mass (m) 24, 27, 29, (f) 19–25 (21.8 ± 2.7); wing (m) 81, 81, 81, (f) 66–75 (69.3 ± 4.0); tail (m) 55 (non-breeding), 104 (breeding), (f) 49, 54, 57.

E. albonotatus White-winged Widowbird. R. Two observations at Mt Blanc marsh: 14 Feb 2005 (breeding plumage); 28 Dec 2005 (in moult).

**E. ardens concolor* Red-collared Widowbird. R. Frequent in rank grassland on plateau, especially near Mpoumako, abundant in tall plateau grasslands of Lefini north, one observation at Iboubikro ponds. All-black breeding plumage Feb–May. Previously unreported from the Batéké Plateau, and known in Congo only from the southeast (Loudima and Divénié, Dowsett & Dowsett-Lemaire 1989, Borrow & Demey 2001).

E. hartlaubi humeralis Marsh Widowbird. R. Frequent. Singles, pairs and small groups in moist grasslands throughout, except on plateau. Breeding plumage Nov–Jun, non-breeding Jun–Jul.

Estrildidae

Nigrita canicapillus Grey-crowned Negrofinch. R. Iboubikro camp, 17 and 26 Sep 2005.

N. l. luteifrons Pale-fronted Negrofinch. R. Frequent. Singles and pairs in forest edges throughout (Idzoua Inkou, Iboubikro, Confluent). Nest-building Jan (male, in *Hymenocardia acida* tree). One female netted 16 Aug 2006, possible active brood patch, primary moult: mass 12; wing 56; tail 36.

N. bicolor Chestnut-breasted Negrofinch. R. Iboubikro ponds, 14 Jan 2004; Confluent, 12 Nov 2004.

[*N. fusconotus* White-breasted Negrofinch. R. Forest (Dowsett-Lemaire 1997a).]

Pytilia afra Orange-winged Pytilia. R. Small flocks frequent in wooded grassland at Idzoua Inkou, Camp des ecogardes. Twelve adults and two juveniles (Oct) netted, primary moult Aug, Oct, Feb: mass (a) 14–19 (16.8 ± 1.5), (j) 17, 19; wing (a) 57–63 (60.0 ± 1.5), (j) 61, 61; tail (a) 31–37 (33.7 ± 1.8 , $n = 7$), (j) 32.

Pyrenestes ostrinus Black-bellied Seedcracker. R. Frequent. Singles in bushy vegetation, Iboubikro ponds and Confluent. Singing Jan.

Spermophaga haematina pustulata Western Bluebill. R. Frequent in forest understorey, Iboubikro and Confluent. Four males, one female and one juvenile (Jan) netted, primary moult Dec: mass (m) 23–25 (24.0 ± 0.8), (f) 24, (j) 22; wing (m) 67–75 (71.5 ± 3.4), (f) 66, (j) 70; tail (m) 55–59 (57.5 ± 1.7), (f) 52, (j) 54.

Lagonosticta rubricata congica Blue-billed Firefinch. R. Singles and pairs frequent at Mt Blanc and elsewhere on Mâh plateau. One male netted, Ngondoro, 4 Dec 2002: mass 10; wing 46; tail 40.

Estrilda paludicola Fawn-breasted Waxbill. R. Frequent in moist grassland, Ngondoro marsh, Mt Blanc, Etsotso. Juveniles Jan.

E. m. melpoda Orange-cheeked Waxbill. R. Pairs, small groups and flocks abundant in tall grassland throughout. Juveniles Feb. Four netted: mass 6–8 (7.0 ± 0.8); wing 43–47 (45.0 ± 1.8); tail 43 ($n = 1$).

[*E. astrild* Common Waxbill. V? Moist grassland (Dowsett-Lemaire 1997a).]

**Amandava subflava clarkei* Zebra Waxbill. M? Pairs and small groups in tall grassland, Camp des ecogardes (Fig. 14), Iboubikro, Idzoua Inkou, Ngondoro, Nov–Jan. One noted within a small flock of Bronze Mannikins. First record for the Batéké Plateau, but known from Kouilou and the Brazzaville area (Dowsett & Dowsett-Lemaire 1989, Dowsett-Lemaire & Dowsett 1991, Borrow & Demey 2001).

Ortygospiza locustella Locust Finch. R? Short moist grassland (Dowsett-Lemaire 1997a).

O. gabonensis Black-chinned Quailfinch. R? One at Iboubikro ponds, 1 Jun 2006.

Lonchura c. cucullata Bronze Mannikin. R. Flocks abundant in grassland throughout. Nest-building Jan–Feb. At nest Dec, Feb. Juveniles Feb–May, Sep. Group of seven juveniles without adults, Feb 2007. Five netted, primary moult Apr, Jul: mass 8–9 (8.4 ± 0.5); wing 47–49 (47.4 ± 0.9); tail 25–33 (30.0 ± 3.0).

[*L. bicolor* Black-and-white Mannikin. R? Tall grassland (Dowsett-Lemaire 1997a).]

Viduidae

Vidua macroura Pin-tailed Whydah. R. Common in grassland on plateau; rarely in reserve except non-breeding birds at camps. Breeding plumage Nov–Apr, non-breeding plumage Sep–Nov. One adult netted, non-breeding plumage, in primary moult, Iboubikro, 4 Nov 2006: mass 13; wing 70; tail 50.

Fringillidae

Serinus atrogularis Black-throated Seedeater. R. Pairs and small flocks frequent in wooded grassland throughout. Carrying nest material Feb. Eleven netted: many in primary moult Nov–Dec: mass 9–11 (10.2 ± 0.6); wing 65–70 (66.4 ± 1.6); tail 40–45 (41.3 ± 1.5).

**S. mozambicus* Yellow-fronted Canary. R. Mt Blanc: small group, 15 Jan 2004; single, 11 Feb 2005.

Emberizidae

Emberiza t. tahapisi Cinnamon-breasted Rock Bunting. M. Singles, pairs and small groups in wooded grassland and camps with bare ground, Oct–Apr (earliest 16 Oct 2004, latest 9 Apr 2007). Seven netted (including at least six females), primary moult Mar: mass 12–16 (14.3 ± 1.6); wing 72–78 (74.6 ± 2.2); tail 56–62 (59.2 ± 2.2 , $n = 6$).

E. cabanisi cognominata Cabanis's Bunting. R. One adult netted, Camp des ecogardes, 5 Nov 2005: mass 23, wing 76, tail 64.

Discussion

In total, I recorded 264 species during the study period. Fifty of the species given by Dowsett-Lemaire (1997a) were not recorded, mainly due to differences in survey

effort and observer experience, although ten of these were based on observations other than her own (Wood Sandpiper, Long-crested Eagle, Montagu's Harrier, Western Grey Plantain-eater, Black Wood-hoopoe, Blue-cheeked Bee-eater, Namaqua Dove, Red-headed Lovebird, Congo Sunbird, Common Waxbill). Fifty-nine species are newly published here, giving a total of 317 species now known from the two reserves (240 given by Dowsett-Lemaire 1997a, 16 more by King *et al.* 2004, King 2007, 2008a, King & Chamberlan 2007 and Rainey *et al.* 2009, and two more in an unpublished 1996 report by K. Bailey, D. Daramani, R.J. Dowsett and F. Dowsett-Lemaire). Sixty-three families are represented, the most species-rich being Sylviidae and Accipitridae (23 species each), followed by Nectarinidae (16), Estrilidae (16) and Ploceidae (15). At least 217 of the species are resident, and another 37 probably are, accounting for 80 % of the species. The remaining species are intra-African migrants (*c.* 4 %), Palaearctic migrants (*c.* 7 %), rare visitors (*c.* 3 %) and undetermined (*c.* 6 %). Four species constitute first records for Congo, details of which have been published elsewhere: Miombo Pied Barbet, Yellow-fronted Tinkerbird, Sladen's Barbet (King & Chamberlan 2007) and Martial Eagle (Rainey *et al.* 2009). One subspecies also represents a new record for Congo, and is newly reported here: the intra-African migrant African Pygmy Kingfisher *Ceyx pictus natalensis*, which occurs sympatrically with the resident subspecies. The Common Kestrel may also be represented by two subspecies, a resident and possibly the Palaearctic migrant *F. t. tinnunculus*. The Grey-headed Kingfisher is represented mostly by the migratory ssp. *pallidiventris*, but there may also be a resident subspecies.

Possible additional species

Staff of the Lesio-Louna management project claim at least another five species for the reserves, which are not included in the present list as they require confirmation: Goliath Heron *Ardea goliath* (Lefini River: F. Ikoli), Saddle-billed Stork *Ephippiorhynchus senegalensis* (Iboubikro ponds, *c.* 2005: P. Mobie), Marabou Stork *Leptoptilos crumeniferus* (Etsotso marsh: B. Ngamouno), Crowned Eagle *Stephanoaetus coronatus* (no specific record but local people have a Téké name for a large, forest-dwelling eagle that eats monkeys: P. Mobie & B. Ngamouno pers. comm.) and Black-casqued Hornbill *Ceratogymna atrata* (Lefini gallery forest: L. Okandza). Additionally, there are surely some species that remain overlooked. The undescribed "Téké *Cisticola*", known only from the Batéké Plateau region of Gabon (Borrow & Demey 2001), is likely to be present in the reserves, and should be searched for by someone familiar with its distinctive song. Similarly, the locally distributed Dambo *Cisticola* *Cisticola dambo* may occur in appropriate habitat (rank grass in valley bottoms, F. Dowsett-Lemaire *in litt.*), but also requires expert identification.

The observations presented here are to a large extent restricted to areas at or near the base camps of the reserves management project. Large areas of the reserves remain unsurveyed and some habitats have received little attention. Future work



Figure 14. Left: male Village Weaver, Lesio-Louna Reserve, Dec 2005 (photo: C. Chamberlan). Right: Zebra Waxbills, Lesio-Louna Reserve, Dec 2006 (photo: T. King).

focussing on such areas is likely to discover further species. Palaearctic migrants appear to be under-recorded, and careful observation of raptors during migration periods may also reveal additional species.

Biogeographical considerations

The list of 317 species presented here for the two reserves includes 74 Guineo-Congolian and five Zambeziian biome species (following Fishpool & Evans 2001), reinforcing the categorisation by Dowsett-Lemaire (2001) of the Batéké Plateau as the northern limit of the Guinea-Congolian/Zambeziian transition zone of White (1983) (King & Chamberlan 2007, Dowsett *et al.* 2008). The five Zambeziian biome species recorded from the reserves are Black-backed Barbet, Miombo Pied Barbet, Red-throated Cliff Swallow, Sousa's Shrike and Red-capped Crombec. Additionally, several other species recorded in the reserves are also distributed primarily in south-central Africa, either with apparently isolated populations in the Batéké Plateau, such as Pale-crowned, Tinkling and Piping Cisticolas, or which reach their northern limit in the Batéké Plateau through apparently continuous distributions, such as Short-tailed Pipit, Grey Penduline Tit, Green-capped Eremomela and Orange-winged Pytilia.

Conservation and management

The mixing of these two major African avifaunas provides a varied bird community, although overall species richness is poor when compared to other sites in Congo with more complete forest avifaunas. For example, of the six IBAs recognised in Congo, the present site is the only one to support less than half of the 200 Guinea-Congolian biome species known from the country (Dowsett-Lemaire 2001). Therefore it is the savanna avifauna of the reserves which is of higher conservation value than that of the forest. As elsewhere on the Batéké Plateau (Christy 2001, Dowsett-Lemaire 2001),

the reserves are an important refuge for Black-chinned Weaver, Finsch's Francolin and Congo Moor Chat. Finsch's Francolin presumably suffers from hunting, although the species most frequently observed for sale in villages were Red-necked Francolin, African Crake, and Little Buttonquail. The other major threats to the birds of the reserves appear to be the excessive burning of savanna areas, often four or five times a year, which surely disrupts grassland nesting activities and perhaps also availability of arthropod and seed food sources, and deforestation of the cliff forests along the eastern boundary of the Lesio-Louna Reserve for charcoal and crop plantations. The joint management project for the reserves (Mathot *et al.* 2006) is tackling deforestation and to some extent the excessive burning of the savannas, but hunting of birds is not generally regarded as a management concern, certainly not to the same extent as hunting of large mammals. With none of the game birds known from the reserves currently considered of global conservation concern, it is debatable whether efforts to reduce hunting of birds would be useful or justifiable. Conservation recommendations for the birds of the area would therefore simply be to continue to assure sustainable management of the various ecosystems of the Lefini watershed, while investigating the impacts of excessive grassland burning on birds and other fauna and flora. Such information would help in developing an extensive fire management strategy for the area, although any such strategy would be extremely difficult to implement in most areas given the high level of human activity within and around the reserves.

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References

- BORROW, N. & DEMEY, R. (2001) *Birds of Western Africa*. Christopher Helm, London.
- BORROW, N. & DEMEY, R. (2004) *Field Guide to the Birds of Western Africa*. Christopher Helm, London.
- BROWN, L.H., URBAN, E.K. & NEWMAN, K. (eds) (1982) *The Birds of Africa*, vol. 1. Academic Press, London.
- CHAPIN, J.P. (1932) The birds of the Belgian Congo. Part 1. *Bull. Am. Mus. Nat. Hist.* 65: 1–756.
- CHAPIN, J. P. (1939) The birds of the Belgian Congo. Part 2. *Bull. Am. Mus. Nat. Hist.* 75: 1–632.
- CHRISTY, P. (2001) Gabon. Pp. 349–356 in FISHPOOL L.D.C. & EVANS M.I. (eds) *Important Bird Areas in Africa and Associated Islands*. BirdLife International, Cambridge.
- DEMEY, R. & LOUETTE, M. (2001) Democratic Republic of Congo. Pp. 199–218 in FISHPOOL L.D.C. & EVANS M.I. (eds). *Important Bird Areas in Africa and Associated Islands*. BirdLife International, Cambridge.
- DOWSETT, R.J. (1991) Gazetteer of zoological localities in Congo. *Tauraco Res. Rep.* 4: 335–340.
- DOWSETT, R.J. & DOWSETT-LEMAIRE, F. (1989) Liste préliminaire des oiseaux du Congo. *Tauraco Res. Rep.* 2: 29–51.
- DOWSETT, R.J., ASPINWALL, D.R. & DOWSETT-LEMAIRE, F. (2008) *The Birds of Zambia: an atlas and handbook*. Tauraco Press, Liège.
- DOWSETT-LEMAIRE, F. (1997a) The birds of the Léfini Reserve, Téké Plateau (Congo). *Tauraco Res. Rep.* 6: 125–134.
- DOWSETT-LEMAIRE, F. (1997b) The avifauna of Odzala N.P. (Congo). *Tauraco Res. Rep.* 6: 15–48.
- DOWSETT-LEMAIRE, F. (1997c) The avifauna of Nouabalé-Ndoki National Park, northern Congo. *Tauraco Res. Rep.* 6: 111–124.
- DOWSETT-LEMAIRE, F. (2001) Congo. Pp. 191–198 in FISHPOOL L.D.C. & EVANS M.I. (eds). *Important Bird Areas in Africa and Associated Islands*. BirdLife International, Cambridge.
- DOWSETT-LEMAIRE, F. & DOWSETT, R.J. (1991) The avifauna of the Kouilou basin in Congo. *Tauraco Res. Rep.* 4: 180–239.
- DOWSETT-LEMAIRE, F. & DOWSETT, R.J. (1998) Further additions to and deletions from the avifauna of Congo-Brazzaville. *Malimbus* 20: 15–32.
- DOWSETT-LEMAIRE, F., DOWSETT, R.J. & BULENS, P. (1993) Additions and corrections to the avifauna of Congo. *Malimbus* 15: 68–80.

- FISHPOOL L.D.C. & EVANS M.I. (eds) (2001) *Important Bird areas in Africa and Associated Islands*. BirdLife International, Cambridge.
- FRY, C.H. & KEITH, S. (eds) (2004) *The Birds of Africa*, vol. 7. Christopher Helm, London.
- FRY, C.H., KEITH, S. & URBAN, E.K. (eds) (1988) *The Birds of Africa*, vol. 3. Academic Press, London.
- FRY, C.H., KEITH, S. & URBAN, E.K. (eds) (2000) *The Birds of Africa*, vol. 6. Academic Press, London.
- HOYO, J. DEL, ELLIOTT, A. & SARGATAL, J. (eds) (2001) *Handbook of the Birds of the World, vol. 6. Mousebirds to Hornbills*. Lynx, Barcelona.
- KEITH, S., URBAN, E.K. & FRY, C.H. (eds) (1992) *The Birds of Africa*, vol. 4. Academic Press, London.
- KING, T. (2007) Brazza's Martin *Phedina brazzae* in the Lesio-Louna Reserve, Congo Republic. *Malimbus* 29: 46–49.
- KING, T. (2008a) Intermediate forms of Hairy-breasted Barbet *Tricholaema hirsuta* in the Lesio-Louna Reserve, Congo-Brazzaville. *Bull. Afr. Bird Club* 15: 245–247.
- KING, T. (2008b) Detectability and conservation of De Brazza's Monkey (*Cercopithecus neglectus*) in the Lesio-Louna and south-west Lefini Reserves, Bateke Plateau, Republic of Congo. *Primate Conserv.* 23: 39–44.
- KING, T. & CHAMBERLAN, C. (2007) First records for Congo-Brazzaville of Miombo Pied Barbet *Tricholaema frontata*, Yellow-fronted Tinkerbird *Pogoniulus chrysoconus* and Sladen's Barbet *Gymnobucco sladeni*. *Bull. Afr. Bird Club* 14: 193–199.
- KING, T. & CHEKE, R. A. (2009) Cooperative breeding in the Violet-tailed Sunbird *Antheptes aurantium*. *Malimbus* 31: 20–27.
- KING, T. & DALLIMER, M. (2010) The fruit bats (Chiroptera: Pteropodidae) of the Lesio-Louna Reserve, Bateke Plateau, Republic of Congo. *Mammalia* 74: 63–69.
- KING, T., TYLER, S. & DALLIMER, M. (2004) Timing of moult and new species records of birds in the Lesio-Louna Reserve, Republic of Congo. *Malimbus* 26: 1–10.
- MALBRANT, R. & MACLATCHY, A. (1949) *Faune de l'Equateur Africain Français. Vol. 1. Oiseaux*. Lechevalier, Paris.
- MATHOT, L., IKOLI, F., KING, T. & PUIT, M. (2006) La réintroduction des gorilles comme moyen de valorisation et de gestion durable du sud-ouest de la Réserve de Faune de la Léfini. *Parcs Réserves* 61: 24–31.
- MEYBURG, B.U., MENDELSON, J.M., ELLIS, D.H., SMITH, D.G., MEYBURG, C. & KEMP, A.C. (1995) Year-round movements of a Wahlberg's Eagle *Aquila wahlbergi* tracked by satellite. *Ostrich* 66: 135–140.
- MOKOKO IKONGA J. & BOKANDZA-PACO, F. (2004) Premières observations de la Cigogne blanche *Ciconia ciconia* au Congo-Brazzaville. *Bull. Afr. Bird Club* 8: 61.
- RAINEY, H.J., MOKOKO IKONGA, J., VERNON, R. & KING, T. (2009) Additions to the avifauna of Congo-Brazzaville. *Bull. Afr. Bird Club* 16: 53–60.

- RAND, A.L., FRIEDMAN, H. & TRAYLOR, M.A. (1959) Birds from Gabon and Moyen Congo. *Fieldiana Zool.* 41: 221–411.
- SALVAN, J. (1972) Notes ornithologiques du Congo-Brazzaville. *Oiseau Rev. fr. Orn.* 42: 241–252.
- SINCLAIR, I. & RYAN, P. (2003) *Birds of Africa South of the Sahara*. Struik, Cape Town.
- SVENSSON, L. (1992) *Identification Guide to European Passerines*. Privately published, Stockholm.
- URBAN, E.K., FRY, C.H., & KEITH, S. (eds) (1986) *The Birds of Africa*, vol. 2. Academic Press, London.
- URBAN, E.K., FRY, C.H. & KEITH, S. (eds) (1997) *The Birds of Africa*, vol. 5. Academic Press, London.
- WHITE, F. (1983) *The Vegetation of Africa*. UNESCO, Paris.

New breeding data on some lowland forest birds in Western Cameroon, and their implications for altitudinal breeding season reversal

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Summary

I review literature and present new breeding records for 37 understory lowland forest bird species in Western Cameroon. New breeding records for March and April were found for at least 11 species. Detailed data on breeding behaviour are presented for two Estrildidae, the Chestnut-breasted Negrofinch *Nigrita bicolor* and the Red-headed Antpecker *Parmoptila woodhousei*. Altitudinal breeding season reversal was confirmed for several species, including one, Red-tailed Bristlebill *Bleda syndactyla*, not before known to show it. Several others appeared to show no well-defined breeding season in the lowlands but only bred in the dry season in montane areas. Three species were found to be dry-season breeders at all altitudes.

Résumé

Nouvelles données sur la reproduction de quelques oiseaux des forêts des basses terres de l'Ouest du Cameroun, et leurs implications dans l'inversion de la saison de reproduction en altitude. Je passe en revue la littérature et les nouvelles observations sur la reproduction pour 37 espèces d'oiseaux du sous-étage des forêts des basses terres de l'Ouest du Cameroun. De nouvelles observations sur la reproduction ont été relevées pour mars et avril concernant au moins 11 espèces. Des données détaillées sur le comportement reproducteur ont été présentées pour deux Estrildidae, la Nigrette à ventre roux *Nigrita bicolor* et le Parmoptile à gorge rousse *Parmoptila woodhousei*. L'inversion de la saison de reproduction en altitude a été confirmée pour plusieurs espèces, dont l'une, le Bulbul moustac *Bleda syndactyla*, n'était pas auparavant connue pour cela. Il a été relevé que sept espèces ne paraissaient pas avoir une

saison de reproduction bien définie dans les basses terres mais se reproduisaient seulement en saison sèche dans les zones montagneuses. Il a été relevé que trois espèces étaient reproductrices de saison sèche quelle que soit l'altitude.

Introduction

The breeding seasons of most tropical lowland forest birds are still poorly known (Tye 1992), this being especially true for West Africa (Serle 1981, Chapman 1995). Many species have no records at all (Fry *et al.* 1988, Keith *et al.* 1992, Urban *et al.* 1997, Fry *et al.* 2000, Fry & Keith 2004). For apparently sedentary species of the forest zones of Western Cameroon, breeding seasons are influenced by altitude and by local weather patterns generated by the presence of Mt Cameroon (Tye 1986, 1992). Serle (1981) reviewed breeding records of West Cameroonian birds, and Tye (1992) discovered there a reversal of breeding seasons by 17 typically lowland birds at higher altitudes. Since then, more breeding records have been published for this area, but these have not been fully reviewed. During a study of lowland forest birds in the Banyang-Mbo Wildlife Sanctuary, SW Cameroon, further new breeding data were collected, which initiated this paper. I concentrate on mist-netted birds for which additional data were obtained during the field study or from recent literature, resulting in some new conclusions on the breeding seasons of certain species.

Study area and methods

The field study was conducted from 11 Mar to 16 Apr 2006 along a 500-m transect at the Nguti field station of the Banyang-Mbo Wildlife Sanctuary (5°20'N, 9°28'E, alt. 240 m), SW Cameroon. The sanctuary is situated in tropical lowland rainforest. The vegetation close to the field station is degraded by selective logging. The most common tree species is *Uapaca guineensis* (Euphorbiaceae) which is mainly accompanied by other Euphorbiaceae and Caesalpiniaceae. The study site was situated in the forest as well as in neighbouring forest plantations. The climate is influenced by the presence of Mt Cameroon and Mt Kupe (Nambu 2001). Mean annual minimum and maximum temperatures recorded for this area are 23.7°C and 30.2°C respectively (Nambu 2001), rainfall ranges from 3497.7 to 4739.0 mm per annum (Nchanji & Plumptre 2001). The wet season runs from about mid-March to the end of October, with a peak in August (Nambu 2001).

Visual observations of attended nests were supplemented by mist-netting on 18 days from 6h00 until 18h00. Nets were closed during night and rainfall. At up to nine separated locations, standard (2.4 m high) mist nets in various lengths totalling 90 m, and one 6 m "canopy net" were used. Brood patches, biometrics (weight, wing, tail and tarsus), and photographs were taken of mist-netted birds, which were identified to

subspecies level. Brood patches were classified into three categories: none (down feathers of ventral surfaces visible), little developed (incubation patch naked but skin normal) and strongly developed (skin of incubation patch thickened and wrinkled).

I reviewed breeding records in the literature for the lowlands of Western Cameroon and for the mountain chain and the eastern slopes of Mt Cameroon to Limbe, thus corresponding to the former British Cameroons. Following Tye (1992), the division between lowland and montane forest taken here is based on climate, vegetation composition and avifaunal distributions, and is lowest on Mt Cameroon, which has montane forest above 500 m. The montane zone comprises the “intermediate” and “high” zone of Tye (1992) who also combined these zones in the appendix of her paper.

Sequence and names follow Borrow & Demey (2001); vernacular names of birds are given in Appendix 1.

Results

All mist-netted birds are listed in Sammler (2007). Breeding indications including brood patches, regressed to month of laying, are given for 37 species including previous records from the literature (Appendix 1). To the best of my knowledge, all papers publishing breeding records in the study area since Serle (1981), are included in Appendix 1, where special attention is given to 15 species that were considered in Tye’s (1992) study on reversed breeding seasons.

For the 11 species listed below, breeding records in March and/or April are the first for these months in the lowland forest of Western Cameroon.

***Pogoniulus scolopaceus* Speckled Tinkerbird.** One caught, 10 Apr. Its little-developed brood patch indicates the beginning of the breeding season. This corresponds well with observations of three females with enlarged ovaries in May and June (Serle 1950, 1981), the only previous breeding records for Western Cameroon.

***Phyllastrephus icterinus* Icterine Greenbul.** One bird showed a strongly developed brood patch, 25 Mar, which contradicts a supposed non-breeding season of Feb–May in the lowland forests of Western Cameroon, based on former records (Appendix 1).

***Nicator chloris* Western Nicator.** One bird showed a strongly developed brood patch, 5 Apr; another a little-developed brood patch, 29 Mar. These data fit well with other breeding records in lowland forest populations (Appendix 1). The records in Appendix 1 (except one from the foothills of Mt Cameroon at 130 m in January: Eisentraut 1963) support reversal of breeding season at higher altitudes (Tye 1992).

***Criniger calurus* Red-tailed Bulbul.** Five birds with brood patches were recorded in Mar–Apr. Serle (1981) did not distinguish between lowland and montane records, thus, the records of breeding activity from Banyang-Mbo are the first (March) and the first confirmed (April) for the lowland area in these months. Assuming Serle’s records to be lowland records, the Apr–Aug breeding season suggested by Appendix 1 would

be prolonged to include March. These new records support a reversal of breeding season with altitude from wet season in lowlands to dry season in montane areas as stated by Tye (1992).

***Stiphornis erythrorhax* Forest Robin.** Two birds with little-developed brood patches, March and April, being the first indication of breeding activity in these months for Western Cameroon.

***Camaroptera chloronota* Olive-green Camaroptera.** Three birds with brood patches, March and April, the latter being the first record for this month in Western Cameroon. Recent data (Bowden 2001) refute a reversal of breeding season as stated by Tye (1992). Results from Appendix 1 indicate breeding from November to April independently of altitude.

***Dyaphorophya castanea* Chestnut Wattle-eye.** Two birds with little-developed brood patches, March and April, the latter being the first record for this month in Western Cameroon. Appendix 1 indicates breeding in both seasons in the lowlands.

***Illadopsis rufipennis* Pale-breasted Illadopsis.** The record of a little-developed brood patch on 11 Apr is the first for this month in Western Cameroon. Appendix 1 indicates a breeding season from March to August in the lowland region. One male found by Eisentraut (1963) at 150 m on the slopes of Mt Cameroon had enlarged testes in December, but he also stated that all other birds were not in breeding condition at that time and altitude. On the other hand, in the montane area, this species is found breeding in the dry season (Bowden 1986, Tye 1992). These records strongly suggest a reversal of breeding season with altitude, but Tye (1992) did not list this species as a definite reversal breeder because of one breeding record in December, almost certainly lowland, from Ghana (Bannerman 1951).

***Parmoptila woodhousei* Red-headed Antpecker.** Of three males and one female captured in April, none showed a brood patch and two males were moulting. One nest was found, in a shrub of *Irvingia gabonensis* overgrown by lianas, in a neglected plantation, 28 Mar. The nest was built of foliage including grass, moss and fibres, 1.4 m above the ground. Its outside diameter measured 30 cm; the side entrance faced NNW. On 5 Apr, four eggs were found, of a washed-out white except at the poles, which were pure white, with tiny dark dots all over. They measured 15.5 x 10.8, 15.05 x 10.7, 15.4 x 10.65 and 15.3 x 10.5 mm. At the beginning of the observation (5–8 Apr), the eggs were not regularly incubated during day-time. During nights, both adult birds stayed in the nest. On 9 Apr, one adult was frequently recorded in the nest during the day. On 16 Apr, two eggs had hatched. This is apparently the first breeding record of this species in Cameroon.

From the lowlands of Nigeria, where the climate is similar to that of Cameroon, breeding was recorded in March (Fry & Keith 2004). Bates (1908b, 1909) published average egg measurements of 13 x 10 mm, based on a clutch of four white eggs. Schönwetter & Meise (1983) and Fry & Keith (2004) misinterpreted this to be measurements of a single egg, resulting in them presenting incorrect average and minimum sizes. Bates (1908b, 1909) also referred to another clutch of one pure white egg measuring

14.5 x 10.5 mm, together with two already hatched juveniles. Thus, the Banyang-Mbo clutch differs from the other descriptions in its larger average egg size and colour.

***Nigrita bicolor* Chestnut-breasted Negrofinch.** Only one individual was netted, 1 Apr, having a brood patch. Three pairs were observed building nests in isolated trees in the clearing around the field station. The globular nests were built between 2.2 and 3.8 m above ground and consisted of leaf skeletons (up to 25 cm long) and grass panicles as described by Serle (1950). One nest entrance faced NNW, the others SSW. All of the trees (*Citropsis* sp. and *Dacryodes edulis*) were occupied by Weaver Ants *Oecophylla longinoda*, as described by Bannerman (1949) for *N. b. bicolor* (in Banyang-Mbo, *N. b. brunnescens* occurs).

One nest remained empty although two adult birds were seen several times in its vicinity. The second nest was found on 2 Apr, with two hatchlings. This nest was observed for two sessions: 14h00–18h00 on 3 Apr and 6h00–14h00 on 4 Apr. The hatchlings were fed every 47 min. on average by both adults who almost always first landed far from the nest in the tree and later climbed up to the nest. Nest visits lasted 18–67 s. Begging calls could be heard when the adults were in the nest. On 8 Apr, one adult tried to lure the fledglings out of the nest. Begging calls could be heard in the area for two more days.

The third pair started building a nest c. 1 m above ground on 27 Mar. On 2 Apr, the same pair built another nest in a neighbouring tree, which was finished on 4 Apr. On 6 Apr, two washed-out white eggs with very tiny light grey dots were laid. They measured 13.85 x 10.95 and 14.85 x 11.5 mm. On 7 Apr, no further egg was added, and no adult was observed. On 14 Apr, however, four eggs were found in the same nest, incubated by one adult.

These are apparently the first breeding observations in March and April for Cameroon. Breeding has been noted in May and June (Serle 1950, 1981), and juveniles in July (Rodewald et al. 1994). Other eggs from Cameroon are slightly greater than the mean observed in Banyang-Mbo (Bates 1911: mean 16 x 11.5 mm (n=5); Serle (1950): 15 x 11.4, 15 x 11.5, 15 x 11.3, 14.5 x 11.3; Schönwetter & Meise (1983): 16.0–16.2 x 11.5–12.0). Egg colour differed from the description by Bates (1911) and Serle (1950) who mentioned “perfectly” and “immaculate” white eggs, respectively.

***Spermophaga haematina* Western Bluebill.** A little-developed brood patch, 6 Apr, is the first indication of breeding for this month in Western Cameroon. Appendix 1 indicates no particular breeding season in the lowlands.

Discussion

Brosset (1990) stated that the start of the rainy season is the proximate factor initiating the annual reproduction of tropical lowland forest birds. But for many montane forest species, nesting activities commence with the onset of the dry season (Tye 1992,

Fotso 1996). Primary and secondary production is likely to be the ultimate factor in both areas (Brosset & Énard 1986, Tye 1992, Fotso 1996). However, breeding seasons of frugivorous and insectivorous birds might be different (Fotso 1996). Whereas most forest birds in southern Cameroon, a region characterized by two annual rainfall peaks, have no distinct breeding season (Bates 1908a), some but not all bird species in the lowland forests of Western Cameroon, breed seasonally (Appendix 1).

The differences of breeding strategies between species might be explained by food requirements and nest structure, as discussed by Tye (1992). Whereas some of the insectivorous species that feed above the ground, like *Terpsiphone rufiventer* and *Camaroptera chloronota*, show a well-defined breeding season in the dry months at all altitudes, insectivorous species feeding on the ground or omnivorous birds, such as *Alethe diademata*, *Criniger calurus* and *Andropadus latirostris*, reverse breeding from the rainy season in the lowlands to the dry season in the montane areas. Others, like *Phyllastrephus icterinus*, *P. xavieri*, *Hylia prasina*, *Illadopsis cleaveri* and possibly *Cyanomitra obscura* and *Dyaphorophya castanea* appear to have no well-defined breeding season at low altitudes but in montane areas breed only in the dry season. Many of these are species living mainly close to the ground, where seasonal climate at least in the lowlands may be buffered by microclimate in the forest understorey. In the montane area, the seasonality may be too strong for such buffering to be effective. However, apparent lack of seasonality in lowland breeding may result from lumping records from different locations and years (Tye 1992), so some of these species could be breeding season reversers. Rainfall in western Cameroon is quite variable in timing between years and has been poorly recorded (Bowden 2001), so combining records from different years may mask the causative effects of climatic factors. On the other hand, future research, especially in the less-studied rainy season, might reveal additional species with more extended breeding seasons than indicated by Appendix 1.

All of the breeding patterns reported here for southwest Cameroon appear to be heavily influenced by climate. The data in Appendix 1 are from this area only, and breeding patterns for these species may be different in other parts of West Africa: for example, *Camaroptera chloronota*, noted here as a dry-season breeder at all altitudes, is known to breed in the wet season elsewhere (Tye 1992). Western Cameroon, with birds exhibiting a range of different breeding strategies, is an excellent site for research on factors constraining the timing of breeding in lowland forest birds.

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References

- BANNERMAN, D.A. (1949) *The Birds of Tropical West Africa*, vol. 7. Crown Agents, London.
- BANNERMAN, D.A. (1951) *The Birds of Tropical West Africa*, vol. 8. Crown Agents, London.
- BATES, G.L. (1908a) Observations regarding the breeding-seasons of the birds in Southern Kamerun. *Ibis* (9)2: 558–570.
- BATES, G.L. (1908b) [Notes on *Parmoptila woodhousei*]. P. 324 in SHARPE, R.B. On further collections of birds from the Efulen District of Camaroon, West Africa. Part 6. *Ibis* (9)2: 317–357.
- BATES, G.L. (1909) Field-notes on the birds of Southern Kamerun, West Africa. *Ibis* (9)3: 1–74.
- BATES, G.L. (1911) Further notes on the birds of Southern Cameroon. Part 2. *Ibis* (9)5: 581–631.
- BORROW, N. & DEMEY, R. (2001) *The Birds of Western Africa*. Christopher Helm, London.
- BOWDEN, C.G.R. (1986) The use of mist-netting for studying forest birds in Cameroon. Pp. 130–174 in STUART, S.N. (ed.) *Conservation of Cameroon Montane Forests. Report of the ICBP Cameroon Montane Forest Survey*. International Council for Bird Preservation, Cambridge.
- BOWDEN, C.G.R. (2001) The birds of Mount Kupe, southwest Cameroon. *Malimbus* 23: 13–44.
- BROSSET, A. (1990) A long-term study of the rain forest birds in M'passa (Gabon). Pp. 259–274 in KEAST, A. (ed.) *Biogeography and Ecology of Forest Bird Communities*. Academic Press, London.
- BROSSET, A. & ÉRARD, C. (1986) *Les Oiseaux des Régions Forestières du Nord-est du Gabon*, vol. 1. Société Nationale de Protection de la Nature, Paris.
- CHAPMAN, A. (1995) Breeding and moult of four bird species in tropical West Africa. *Trop. Zool.* 8: 227–238.
- EISENTRAUT, M. (1963) *Die Wirbeltiere des Kamerungebirges. Unter besonderer Berücksichtigung des Faunenwechsels in den verschiedenen Höhenstufen*. Paul Parey, Hamburg.
- EISENTRAUT, M. (1968) Beitrag zur Vogelfauna von Fernando Poo und Westkamerun. *Bonn. zool. Beitr.* 19: 49–68.
- FOTSO, R.C. (1996) Seasonal breeding in birds and its implications for the conservation of biodiversity in the Oku region, Cameroon. *Bird Conserv. Internat.* 6: 393–399.
- FRY, C.H. & KEITH, S. (2004) *The Birds of Africa*, vol. 7. Princeton University Press, Princeton.

- FRY, C.H., KEITH, S. & URBAN, E.K. (1988) *The Birds of Africa*, vol. 3. Academic Press, London.
- FRY, C.H., KEITH, S. & URBAN, E.K. (2006) *The Birds of Africa*, vol. 6. Academic Press, London.
- FRY, C.H., URBAN, E.K. & KEITH, S. (1992) *The Birds of Africa*, vol. 4. Academic Press, London.
- NAMBU, D.M. (2001) *Botanical Inventory of the Banyang-Mbo Wildlife Sanctuary, South West Province, Cameroon*. Unpubl. rep. to Wildlife Conservation Society, Cameroon Biodiversity Programme, Banyang-Mbo Wildlife Sanctuary.
- NCHANJI, A.C. & PLUMPTRE, A.J. (2001) Seasonality in elephant dung decay and implications for censusing and population monitoring in south-western Cameroon. *Afr. J. Ecol.* 39: 24–32.
- RODEWALD, P.G., DEJAIFVE, P.-A. & GREEN, A.A. (1994) The birds of the Korup National Park and Korup Project Area, Southwest Province, Cameroon. *Bird Conserv. Internat.* 4: 1–68.
- SAMMLER, S. (2007) *Studien zur Avifauna im Tieflandregenwald des Wildlife Sanctuary Banyang-Mbo, Südwestkamerun*. MSc thesis, University of Rostock.
- SCHÖNWETTER, M. & MEISE, W. (1983) *Handbuch der Oologie*, vol. 3, Lieferung 35. Akademie-Verlag, Berlin.
- SERLE, W. (1950) A contribution to the ornithology of British Cameroon. *Ibis* 92: 343–376, 602–638.
- SERLE, W. (1954) A second contribution to the ornithology of British Cameroon. *Ibis* 96: 47–80.
- SERLE, W. (1965) A third contribution to the ornithology of British Cameroon. *Ibis* 107: 60–94, 230–246.
- SERLE, W. (1981) The breeding seasons of birds in the lowland rainforest and in the montane forest of west Cameroon. *Ibis* 123: 62–74.
- SJÖSTEDT, Y. (1895a) Zur Ornithologie Kameruns. Nebst einigen Angaben über die Säugetiere des Landes. *Kongl. Svensk. Vetensk.-Akad. Handl.* 27: 1–120.
- SJÖSTEDT, Y. (1895b) Die Vögel des nordwestlichen Kamerungebietes. *Mitt. deutsch. Schutzgeb.* 8: 1–36.
- TYE, H. (1986) The climate of the highlands of western Cameroon. Pp. 18–19 in STUART, S.N. (ed.) *Conservation of Cameroon Montane Forests. Report of the ICBP Cameroon Montane Forest Survey*. International Council for Bird Preservation, Cambridge.
- TYE, H. (1992) Reversal of breeding season by lowland birds at higher altitudes in Western Cameroon. *Ibis* 134: 154–163.
- URBAN, E.K., FRY, C.H. & KEITH, S. (1997) *The Birds of Africa*, vol. 5. Academic Press, London.
- YOUNG, C.G. (1946) Notes on some birds of the Cameroon Mountain District. *Ibis* 88: 348–382.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Tye 92	now	
<i>Sasia africana</i>	L? ¹¹	L? ¹¹	L1 ¹⁰ , L? ¹¹	L? ¹¹							L? ¹¹	L? ¹¹		Dry	
African Piculet		M2 ^{5,8}													
<i>Andropadus virens</i>	L? ^{5,8}	X1 ⁸	L? ^{5,8} , L1 ^{6,8}	L1 ¹² , L? ¹¹	L1 ^{6,8} , L1 ^{6,8}	L1 ^{6,8} , L1 ^{6,8}	L? ¹⁰ , L? ¹⁰							Poss rev ^a	Poss rev ^b
Little Greenbul	M? ^{5,8}	M1 ⁹	L1 ^{6,8} , L? ¹¹ , (1) ¹² , X1 ^{6,8}		4 ¹¹	5 ¹¹									
<i>Andropadus gracilis</i>					L1 ^{3,8}					L1 ¹¹	L1 ¹¹	L1 ⁵			
Little Grey Greenbul															
<i>Andropadus latirostris</i>		M6 ⁹	L(1) ⁵ , L2 ¹⁰		L1 ^{6,8} , L2 ¹⁰ , L? ¹¹	L1 ^{6,8} , L10 ¹⁰ , L? ¹¹	L7 ¹⁰ , L? ¹¹	L1 ¹⁰ , L? ¹¹	L? ¹¹	L? ¹¹			Rev	Rev	
Yellow-whiskered Greenbul		L1 ¹¹			L? ¹¹		X1 ⁸								
<i>Phyllastrephus icterinus</i>	X1 ⁹	M1 ⁵	L1 ¹²		L1 ⁸ , L1 ¹⁰	L5 ¹⁰	L3 ¹⁰	X1 ⁸		L1 ^{3,8}	L1 ^{3,8}	L1 ⁵ , L1 ^{6,8}	Both/dry	Both/dry	
Icterine Greenbul					L? ¹¹							M1 ⁹			
<i>Phyllastrephus xavieri</i>	L1 ¹¹	M1 ¹¹	M2 ¹¹			L1 ^{3,8} , L1 ¹⁰						L1 ¹¹	Rev ^c	Both/dry	
Xavier's Greenbul															

^a Dry-season breeder at high altitudes, and the only lowland dry-season records were of Eisentraut (1963) and Serle (1981), whose altitude recording seemed questionable (H. Tye pers. comm.).

^b Although Eisentraut (1963) altitudes checked and found reliable (Jan birds collected in "Lager IV" at 130 m = lowland and "Lager V" at 600 m = intermediate), these records were based on enlarged gonads (although heavily enlarged) so indicate only possible breeding. Otherwise only wet-season records in lowlands and only dry-season in highlands.

^c Based on one montane dry-season record with actual month not stated, which was omitted by Bowden 1986 (H. Tye pers. comm.).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Tye 92	now
<i>Nicator chloris</i>	L1 ⁵	M2 ⁵	L1 ¹²	L1 ^{3,8} , 1 ¹²	L1 ^{3,8} , L1 ^{3,8}	X1 ⁸	X1 ⁸	X1 ⁸			L1 ¹¹	M1 ⁹	Rev	Rev ^d
Western Nicator														
<i>Criniger calurus</i>		M1 ⁵	L3 ¹²	L2 ¹²	L1 ^{3,8}	X1 ⁸	X1 ⁸	X1 ⁸				L1 ⁵	Rev	Rev
Red-tailed Bulbul				X2 ⁸								M1 ⁹		
<i>Bleda notata</i>					L1 ^{6,8}	L6 ¹⁰	L5 ¹⁰	L1 ¹⁰				L2 ⁵		
Lesser Bristlebill						X1 ⁸	X2 ⁸							
<i>Bleda syndactyla</i>						L4 ¹⁰	L2 ¹⁰					M2 ⁹	Poss rev ^e	Rev
Red-tailed Bristlebill			L1 ¹⁰ , 1 ¹²											
<i>Stiphornis erythrothorax</i>	L1 ⁵	X1 ⁸	L(1) ¹²	L(1) ¹²	L1 ^{3,8} , 4 ¹⁰	L6 ¹⁰	L4 ¹⁰	L3 ^{6,8}				L1 ⁵		
Forest Robin	M1 ⁵													
<i>Alethe diademata</i>	(M1 ⁹)				L1 ^{3,8}	L5 ¹⁰	L1 ^{6,8} , 5 ¹⁰	L2 ^{6,8}					Rev	Rev
Fire-crested Alethe														
<i>Neocossyphus poensis</i>						L3 ¹⁰	L1 ¹⁰	X1 ⁸ , ? ⁹			L1 ^{6,8} , X1 ⁸	(M1 ⁹)	Rev	Rev
White-tailed Ant Thrush														
<i>Hylia prasina</i>	L? ⁵ , 1 ⁹	M? ⁵	L≥2 ¹⁰ , 1 ¹²	L1 ³ , ? ¹⁰ ,2 ¹²		L2 ^{3,8}	L1 ^{4,8}					L? ⁵ , X1 ^{4,8}		Both/dry
Green Hylia	M≥2 ⁵		X1 ⁸	X? ⁵										
<i>Camaroptera chloronota</i>	L? ⁵ , ? ¹¹	L? ¹¹	L? ⁵ , ? ¹¹ ,2 ¹²	L1 ¹²							L? ¹¹ , X1 ⁸	L? ¹¹	Rev	Dry
Olive-green Camaroptera	M≥3 ⁵		X1 ⁵ ,1 ⁹											

^d The Jan lowland record (Eisentraut 1963) was based on heavily enlarged gonads, indicating only possible breeding. Otherwise only wet-season records in lowlands and only dry-season in highlands.

^e Dry season records at high altitudes; no lowland breeding records available then.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Tye 92	now
<i>Camaroptera brachyura</i> Grey-backed Camaroptera	L1 ^{2,8}		(L1 ⁵) X2 ⁸	L1 ^{3,8}		X3 ⁸			L1 ²	L1 ² , 1 ^{3,8}		L2 ^{2,8}		
<i>Terpsiphone rufiventris</i> Red- bellied Paradise Flycatcher	L1 ¹⁰ , ?1 ¹¹ M1 ^{5,8}	L1 ⁵ M1 ⁹	L1 ^{1,8,3,5} , 1 ^{10,11} , 1 ¹²									L1 ^{6,8} M1 ⁹	Both/dry ^f	Dry
<i>Elminia nigromitrata</i> Dusky Crested Flycatcher		L1 ¹¹	L1 ¹⁰ , 1 ¹²	L1 ¹⁰	X1 ⁸		L1 ¹⁰					L1 ¹⁰		
<i>Dyaphorophya castanea</i> Chestnut Wattle-eye	L1 ⁵ , 1 ¹⁰	L1 ^{1,8} , 1 ¹¹ M1 ^{5,8}	L3 ¹⁰ , 1 ¹²	L1 ¹²	L1 ^{3,8}			L1 ¹⁰				L1 ³ , 1 ^{5,8}		Both/dry ^g
<i>Illadopsis fulvescens</i> Brown Illadopsis		X1 ¹⁰	L1 ⁹		L1 ¹⁰		X1 ⁸			L1 ^{6,8} X1 ⁸			Rev	Rev
<i>Illadopsis cleaveri</i> Black-cap Illadopsis	M2 ⁹ , ?1 ¹¹	L1 ⁹ M?1 ¹¹	L6 ¹⁰ , 1 ¹²	L1 ¹⁰ , 1 ¹²	L3 ¹⁰	L?1 ¹¹ X1 ⁸	L?1 ¹¹	L1 ¹⁰			L?1 ¹¹	L1 ¹⁰ X1 ^{4,8}	Rev	Both/dry ^g
<i>Illadopsis rufipennis</i> Pale-breasted Illadopsis	M1 ⁹		L6 ¹⁰ , 1 ¹² X1 ⁸	L1 ¹²	L3 ¹⁰		L1 ^{4,8} , 1 ¹⁰	L1 ¹⁰ X1 ⁸			X1 ⁸	(L1 ⁵) M1 ⁹	Poss rev ^h	Rev
<i>Deleornis fraseri</i> Fraser's Sunbird		L1 ⁹ , 1 ¹⁰	L1 ¹⁰							L1 ^{3,8} X1 ⁸	X1 ¹¹	L1 ⁵		

^f Dry season records at high altitudes.^g See also Rodewald *et al.* (1994).^h Dry season breeder at high altitudes; all but one lowland record in wet season.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Tye 92	now
<i>Cyanomitra obscura</i>	L1 ¹ ,	L1 ⁵ ,	L ^{2,5} ,	L1 ^{3,8} ,	X1 ⁸	L1 ^{6,8} ,	X1 ⁸ ,	L1 ^{1,8} ,	X ^{7,11}	X ^{7,11}	X ^{7,11}	L ^{2,5}		Both/dry
Western Olive Sunbird	? ⁵	? ¹⁰	? ^{10,11,12}	X1 ⁸ ,		? ¹⁰	2 ¹¹	1 ^{6,8}				X ^{7,11}		
	X2 ⁹ ,? ¹¹	X ^{7,11}	X ^{7,11}	? ¹¹										
	M \geq 2 ⁵	M ^{7,5}	M ^{7,5}											
<i>Hedydipna collaris</i>	L1 ^{4,8} ,	L1 ^{6,8}	L1 ^{6,8}		L1 ^{6,8}	L2 ^{4,8}			L1 ^{4,8} ,	X1 ⁸	X1 ⁸	L2 ^{6,8}		
Collared Sunbird	1 ^{6,8}				X1 ⁸	X2 ⁸			1 ^{6,8}					
<i>Malimbus nitens</i>					L1 ^{6,8} ,	L1 ^{6,8}			X1 ⁸	X1 ⁸		L2 ⁵ ,		
Blue-billed Malimbe					\geq 3 ¹⁰							\geq 2 ¹⁰		
<i>Malimbus racheliae</i>			L2 ¹⁰			L1 ¹								
Rachel's Malimbe														
<i>Parmoptila woodhousei</i>				L1 ¹²										
Red-headed Antpecker														
<i>Mandingoa nitidula</i>	L \geq 2 ⁵ ,1 ¹¹											L \geq 2 ⁵ ,1 ¹¹		
Green Twinspot	M ^{7,5}											M \geq 2 ⁵		
<i>Nigrity bicolor</i> Chestnut-breasted Nigrofinch			M1 ⁵	L2 ¹²	L1 ^{3,8}	L1 ^{4,8}	L1 ¹⁰					L2 ^{3,8}		Poss rev
<i>Spermophaga haematina</i>	L4 ^{5,8}		L1 ⁵	L1 ¹²	X2 ⁸		L2 ¹⁰	L1 ^{3,8}		L ^{7,11}	L ^{7,11}	L1 ⁵		
Western Bluebill								X3 ⁸		M2 ^{5,8}	X1 ⁷	? ¹¹		

Short Notes — Notes Courtes

A record of Black-necked Grebe *Podiceps nigricollis* in The Gambia in 1989 constitutes an addition to the national list

The Palaearctic population of Black-necked Grebe *Podiceps nigricollis nigricollis* reaches coastal West Africa in the northern winter, although as a regular occurrence this appears to be a relatively recent phenomenon. Before the 1990s there were few records of this species south of Morocco, where it winters irregularly and generally in small numbers (maximum counts in the 1990s include 300 at Douyeit in 1992, 206 at Sebkha Bou-Areg in 1995, and 325 at Barrage Mohamed V in 1995: Thévenot *et al.* 2003). However, further east in North Africa it is much more widespread and abundant at suitable wetlands, with counts of up to 850 birds in the 1970s in the El Kala wetlands of Algeria (Isenmann & Moali 2000) and concentrations in Tunisia of up to 3800 at the Lac de Tunis, 5800 at Sidi Mansour and 3100 at Moknine (Isenmann *et al.* 2005). Important non-breeding sites for this population in Egypt are Lake Qarun, where over 10,000 were recorded in 1979 and 1980 (Goodman & Meininger 1989) and Lake Nasser, where 5811 have been recorded (Baha el Din 1999). The first record from Senegal was of three birds at the Parc National des Oiseaux du Djoudj in the Senegal Delta in December 1980 (Morel & Morel 1990). Three birds were also seen in the Parc National du Banc d'Arguin in Mauritania in March 1986 (Isenmann 2006).

Since 1990 it has become a more regular visitor to N Senegal, in Oct–Nov, while there are records of vagrants during the northern winter, in S Niger, N Nigeria and SW Cameroon (Borrow & Demey 2001). Counts of 50 or more in coastal West Africa in 1994, 1995 and 1996 indicate an extension of the non-breeding range to the wetlands of the Senegal Delta during the 1990s (Dodman & Rose 1997), in increasing numbers, *e.g.* 130 at Chatt Boul in Mauritania in Jan 1997 (Dodman *et al.* 1997) and 328 in the delta wetlands of Mauritania in Jan 1999 (Dodman & Diagona 2003). The Palaearctic population is estimated at 159,000–288,000 (Wetlands International 2006).

The Black-necked Grebe is currently not listed for The Gambia (Barlow *et al.* 1997). On 4 Nov 1989, A. Makin (*per* T. Disley pers. comm.) was informed by three birdwatchers of a Black-necked Grebe at Kotu Sewage Farm, Kombo, St Mary Division in coastal Gambia (13°28'N, 16°43'W); the bird had reportedly been seen by others previously. The next day, AM photographed a single Black-necked Grebe swimming with a small group of White-faced Whistling Ducks *Dendrocygna viduata* at the sewage farm (Fig. 1). The bird was referred to by AM as a “typical winter adult”. It was also present on 7 Nov but could not be found on 12 Nov. Black-necked Grebe is easily separated from the widespread resident and also locally increasing Little Grebe *Tachybaptus ruficollis* by its larger size, greyer plumage, pale cheeks and distinctive head shape with slightly upturned bill (Barlow *et al.* 1997).



Figure 1. Black-necked Grebe and White-faced Whistling Ducks, Kotu Sewage Farm, The Gambia, 5 Nov 1989 (photo: A. Makin).

A request for further observations of Black-necked Grebe in The Gambia, made in early 2010 by CRB via the AfricanBirding e-mail discussion list and more generally, drew no response. Therefore, this record constitutes the first and only known record to date for Black-necked Grebe for The Gambia. Given the wintering range expansion of this population to the Senegal Delta in the 1990s, it is perhaps surprising that there have been no further records in the coastal wetlands of The Gambia.

Andrew Makin and Tony Disley kindly furnished the information and made this note possible.

References

- BAHA EL DIN, S.M. (1999) *Directory of Important Bird Areas in Egypt*. Palm Press, Cairo.
- BARLOW, C., WACHER, T. & DISLEY, T. (1997) *A Field Guide to the Birds of The Gambia and Senegal*. Pica Press, Robertsbridge.
- BORROW, N. & DEMEY, R. (2001) *Birds of Western Africa*. Christopher Helm, London.
- DODMAN, T. & DIAGANA, C.H. (2003) *African Waterbird Census / Les Dénombrements d'Oiseaux d'Eau en Afrique 1999, 2000 and 2001*. Wetlands International, Wageningen.
- DODMAN, T. & ROSE, P. (1997) Application of the African Waterfowl Census in estimating the distribution and abundance of African waterfowl. Pp. 23–39 in Dodman, T. (ed.) 1997. *A Preliminary Waterbird Monitoring Strategy for Africa*. Wetlands International, Wageningen.
- DODMAN, T., DE VAAN, C., HUBERT, E. & NIVET, C. (1997) *African Waterfowl Census 1997. Les Dénombrements Internationaux d'oiseaux d'eau en Afrique, 1997*. Wetlands International, Wageningen.

- GOODMAN, S.M. & MEININGER, P.L. (1989) *The Birds of Egypt*. Oxford University Press, Oxford.
- ISENMANN, P. (2006) *Les Oiseaux du Banc d'Arguin*. PNBA, Nouakchott, Mauritanie.
- ISENMANN, P. & MOALI, A. (2000) *Oiseaux d'Algérie / Birds of Algeria*. SEOF, Paris.
- ISENMANN, P., GAULTIER, T., EL HILI, A., AZAFZAF, H., DLENSI, H. & SMART, M. (2005) *Oiseaux de Tunisie / Birds of Tunisia*. Société d'Etudes Ornithologiques de France, Paris.
- MOREL, G.J. & MOREL, M-Y. 1990. *Les Oiseaux de Sénégal*. ORSTOM, Paris.
- THÉVENOT, M., VERNON, R. & BERGIER, P. (2003) *The Birds of Morocco*. Checklist 20, British Ornithologists' Union, Tring.
- WETLANDS INTERNATIONAL. (2006) *Waterbird Population Estimates – Fourth Edition*. Wetlands International, Wageningen.

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Un oiseau nouveau au Burundi: le Moineau domestique *Passer domesticus*

Le Moineau domestique *Passer domesticus* est une espèce d'origine paléarctique, notée dans différents pays de l'Ouest africain jusqu'au Tchad, et devenue commune en Afrique australe (Anderson 2006, Summers-Smith 2009). La sous-espèce *indicus* introduite à Durban en Afrique du Sud vers les années 1900 a connu par la suite une expansion vers tous les pays du sud du continent jusqu'en République Démocratique du Congo, en Tanzanie et jusqu'au Kenya (Anderson 2006). Il est donc observé dans les pays limitrophes du Burundi. Dans la RDC, l'oiseau se trouve dans certaines régions du Sud Est, aux confins de la Tanzanie (Anderson 2006). Dans ce pays, il a été introduit à partir de Dar-es-Salaam en 1984 en provenance de la Zambie et a continué son expansion vers l'Ouest (<http://tanzaniabirdatlas.com/maps/distribution-maps/1204.pdf>, consulté 19 jan 2011). Dès 2008, ce moineau a été signalé au Rwanda, à Gitarama et aux portes de la ville de Kigali (Anonymous 2009, Nsabagasani 2009).

Le Moineau domestique, qui n'avait jamais été signalé sur le territoire burundais (Schouteden 1966) a été observé au moins à trois endroits différents en 2009. La reconnaissance de cette espèce a été faite en notant la calotte grise des mâles, une barre alaire blanche et une bavette noire descendant vers la gorge (Sinclair & Ryan 2003), patron de plumage très distinct de celui du Moineau à tête grise *Passer griseus*.

Dans la plaine de la Rusizi au nord-ouest du Burundi, dans le village de Gatumba, province de Bujumbura Rural (3°20'S, 29°15'E), j'ai vu régulièrement trois couples en mars, soit perchés sur les branches des arbres, soit volaient autour des habitations ou encore se trouvaient dans la cour des maisons. Ce village est constitué de maisons de paysans bordées au sud par le delta de la Réserve Naturelle Gérée de la Rusizi, à l'est, au nord et à l'ouest par les cultures de riz et de tomates. Dans le village, on trouve quelques arbres, notamment des *Eucalyptus* et des Manguiers *Mangifera indica*. A l'occasion d'une excursion organisée par l'Association Burundaise pour la Protection des Oiseaux, nous avons vu un couple de Moineaux domestiques dans les bananeraies situées autour des habitations dans la commune de Mpanda (3°14'S, 29°24'E), province de Bubanza, le 9 mai. Dans cette commune, le milieu est rural et agricole. A proximité des habitations, les bananiers sont dominants, suivis du manioc, du maïs et des haricots. A quelques mètres, on y trouve de grands champs de riz. Enfin, deux mois plus tard (le 4 juillet), j'ai observé une dizaine d'individus mâles et femelles qui entraient et sortaient du haut du toit d'une maison dans un des quartiers nord de la mairie de Bujumbura (3°21'S, 29°23'E). C'est un quartier nouvellement construit dont certaines maisons sont achevées et d'autres sont encore en construction. Il n'y a pas de végétation à proximité sauf l'un ou l'autre arbre se trouvant en bordure de la route voisine. Je n'ai pas pu remarquer quelque indice d'activité de reproduction. Il est donc possible que certains immigrants cherchent à s'établir au Burundi. Le Moineau domestique devient donc le second *Passer* à être recensé au Burundi après le Moineau à tête grise. Il est possible que ces deux moineaux puissent être concurrents et il serait intéressant de surveiller le domestique, son extension géographique et, le cas échéant, comparer son alimentation à celle du Moineau à tête grise.

Bibliographie

- ANDERSON, T. R. (2006) *Biology of the Ubiquitous House Sparrow: from genes to populations*. Oxford University Press, Oxford.
- ANONYMOUS (2009) House Sparrow in Rwanda. *Birdlife Africa Newsletter* 11(2.): 13.
- NSABAGASANI, C. (2009) in Recent reports. *Bull. Afr. Bird Club* 16: 107.
- SCHOUTEDEN, H. (1966) La faune ornithologique du Burundi. *Mus. Roy. Afr. Centrale Doc. Zool.* 11: 1–81.
- SINCLAIR, I. & RYAN, P. (2003) *A Comprehensive Illustrated Field Guide to the Birds of Africa South of the Sahara*. Struik, Cape Town.
- SUMMERS-SMITH, J.D. (2009) Family Passeridae (Old World sparrows). Pp. 760–813 in DEL HOYO, J., ELLIOTT, A. & CHRISTIE, D. (eds) *Handbook of the Birds of the World*, vol. 14.. Lynx, Barcelona.

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Revu 21 janvier 2011

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Errata

Increased abundance of Savile's Bustard *Lophotis savilei* in east-central Nigeria

In this article (2010, *Malimbus* 32: 103–104), the names of two of the authors (T.C. Omotoriogun and J.D. Onoja) were reversed, with one of them incomplete. The authors should have been listed as follows: Samson Andrew Da'an, Taiwo Crosby Omotoriogun, Joseph Daniel Onoja, Talatu Tende & Ulf Ottosson.

Ed.

Extensions of documented distributions for three bird species in Burkina Faso

In this article (Connor, M.J. 2010, *Malimbus* 32: 104–106), on line 15 of the section headed "*Muscicapa aquatica* Swamp Flycatcher", the phrase "the latter authors" should be altered to read "the former authors".

M.J. Connor

News & Letters — Nouvelles & Lettres

Request for information and photos of weaver nests

Weavers are a large and diverse bird family, ranging from granivores to insectivores, colonial breeders to solitary nesters, monogamous or polygynous mating systems, and with brightly coloured to dull brown plumage. Their conservation status ranges from the most abundant land-bird in the world, the Red-billed Quelea *Quelea quelea*, to 13 threatened species.

Many weavers are common and breed in close proximity to humans. This enables their breeding effort to be easily monitored, and the Animal Demography Unit at the University of Cape Town now provides a platform for observers to submit records directly to a web server. The project is a “Virtual Museum” project called PHOWN (PHotos Of Weaver Nests) and the following information is requested: a digital photo of a weaver colony or solitary nest, coordinates, identity of the species, nest count and date. The data submitted to PHOWN will provide information on the distribution, size and geographic variation of nesting colonies of weavers globally. Single records are used to examine nest site choice and the extent of mixed species colonies, while repeated photographs of a colony can track changes within a breeding season and over many years. More applications could be developed; for instance, users could monitor all the weaver colonies in a small area to provide nesting densities.

More details of the project may be found at <<http://weavers.adu.org.za/phown.php>>, including a species list, instructions on participating, a link to the Virtual Museum submissions page and summaries of records that have already been submitted. All weavers in the family Ploceidae are included. Ornithologists and bird watchers in West Africa are warmly invited to participate.

H. Dieter Oschadleus
Animal Demography Unit, University of Cape Town, Rondebosch 7701, South Africa
weavers4africa@gmail.com

Conservation books available free for readers in developing countries

The British Ecological Society (BES) and the NHBS Environment Bookstore together are offering free ecology and conservation books to readers and professionals in developing nations. The aim of this scheme is to provide ecology and conservation books to those from outside Western Europe, North America, Japan, Australia and New Zealand who would otherwise be unable to obtain them, in order to spread ecological knowledge as widely as possible. The scheme is a collaboration between the BES (who pay for the postage), NHBS (who organize the distribution) and the publishers and authors of the books (who provide the books free). For further information, see <<http://www.nhbs.com/conservation/gratis-books.php>>.

Society Notices — Informations de la Société

Gérard J. Morel, deceased 15 February 2011

Council has just learnt, with great regret, of the passing away of Dr. Gérard J. Morel, co-founder of our Society in 1979, then Vice-President, President, and Honorary President. A full obituary and appreciation of Gérard will appear in the next issue of *Malimbus*. We extend our sincere condolences to his wife, Dr Marie-Yvonne Morel, and family.

W.A.O.S. Council

Gérard J. Morel, décès le 15 février 2011

Le Conseil vient d'apprendre, avec immense regret, du décès du Dr Gérard J. Morel, cofondateur de l'Association en 1979, puis Vice-président, Président, et Président d'honneur. Une notice complète paraîtra dans le prochain numéro de *Malimbus*. Le Conseil adresse à son épouse, Dr Marie-Yvonne Morel, ainsi qu'à toute sa famille, ses vives condoléances.

Conseil de la S.O.O.A.

Appeal for abstractors

Since soon after *Malimbus* was launched in 1979, we have been putting a record for each article (paper and short note) on the Ornithological Worldwide Literature (OWL) database. OWL is an indexed compilation of citations that pertain to ornithology and come from the worldwide scientific periodical literature. Ornithologists around the globe access this important resource at no cost via the internet <<http://www.birdlit.org>>.

The more details in a record, the more likely it will be found when searching the database, and thus that the corresponding article will be taken into account by researchers. Unfortunately the majority of the earlier *Malimbus* records are very rudimentary and will only be found by searches for title of the article or authors' names. To increase the chance of *Malimbus* articles being found during searches we need volunteers to add information to each record, especially an abstract, subject codes, keywords and species names. Since all *Malimbus* articles are freely available on the WAOS website, there is no need to have copies of *Malimbus* to do this. Please contact me if you would like to help increase the value and usefulness of *Malimbus* in this way.

Peter Browne
<pbrowne@primus.ca>

Appel aux rédacteurs d'abstracts

Peu après le lancement de *Malimbus* en 1979, nous avons entrepris de mentionner chaque article ou note courte sur la base de données de la Littérature Ornithologique Mondiale (Ornithological Worldwide Literature OWL). OWL est une compilation avec un index de citations se rapportant à l'ornithologie et provenant de la littérature scientifique périodique du monde entier. Les ornithologues dans le monde accèdent gratuitement à cette importante ressource via le site Internet <<http://www.birdlit.org>>.

Plus il y a d'informations dans la mention, plus il y a de chances qu'elle puisse être trouvée par ceux qui consultent la base de données, et ainsi que l'article correspondant soit pris en compte par le chercheur. Malheureusement, la majorité des mentions anciennes de *Malimbus* dans la base de données sont très rudimentaires et ne seront trouvées qu'en cherchant un titre d'article ou les noms des auteurs. Pour augmenter la probabilité qu'un article soit trouvé au cours d'une recherche, nous avons besoin de volontaires pour ajouter des informations à chaque mention, en particulier un abstract, les codes par sujets, les mots-clés et les noms d'espèces. Depuis que tous les articles sont accessibles gratuitement sur le site Internet de la SOOA, il n'est plus nécessaire d'avoir des exemplaires de *Malimbus* pour le faire. Veuillez me contacter si vous êtes disposé à nous aider à accroître ainsi la valeur ajoutée et l'utilité de *Malimbus*.

Peter Browne
<pbrowne@primus.ca>

W.A.O.S. membership changes Changements dans la liste d'adhérents de la S.O.O.A.

New members and reinstatements — Nouveaux membres et réintégrations

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Name and address changes and corrections — Changements et corrections de nom ou adresse

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T. Dodman

West African Ornithological Society
Société d'Ornithologie de l'Ouest Africain

Revenue Account for the year ended 31 December 2010

Income	£ Sterling	€ Euro	Total (£)	2009 (£)
Subscriptions	1550	647	2104	2205
Interest and donations	<u>5</u>	<u>0</u>	<u>5</u>	<u>37</u>
	<u>1555</u>	<u>647</u>	<u>2109</u>	<u>2243</u>
 Expenditure				
<i>Malimbus</i> production and distribution	1703	0	1703	2598
Bank charges and office costs	4	14	16	21
W.A.O.S. Research Grants	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
	<u>1707</u>	<u>14</u>	<u>1719</u>	<u>2618</u>
Surplus/deficit per account for year	<u>-153</u>	<u>633</u>	<u>389</u>	<u>-376</u>

Balance Sheet as at 31 December 2010

Bank balances at 1 January	1657	3036	4173	4549
Surplus/deficit for year	<u>-153</u>	<u>633</u>	<u>389</u>	<u>-376</u>
Bank balances at 31 December	<u>£1504</u>	<u>€3669</u>	<u>£4647</u>	<u>£4173</u>

Notes

The first two columns relate to the society's Sterling and Euro bank accounts, while the third shows the combined accounts in Sterling, at €1 = £0.8565 on 31 Dec 2010. All figures are individually rounded to the nearest £/€.

The surplus during 2010 was largely due to lower costs for *Malimbus* printing and distribution compared to 2009. The total balance increased by £474, a result of the surplus of £389 plus a profit of £85 on the Euro balance of 1 Jan 2010 due to an increase in the value of the Euro against the Pound, from 0.8287 on 1 January to 0.8565 on 31 December.

An electronic payment system was established during 2010, so members can now pay subscriptions via PayPal on the Society's website (<http://malimbus.free.fr/>).

After managing the Society's Euro account for many years, Marie-Yvonne Morel handed over this task to Nils and Marine Robin, who have opened a new Euro account for the Society. On behalf of Council I thank Marie-Yvonne for managing the Euro account so well for many years, and Nils and Marine for taking over this important role.

T. Dodman

I certify that I have verified the bank balances.

J.N. Rendall
Treasurer, Papa Westray Community Co-operative

Instructions to Authors

Malimbus publishes research articles, reviews and news about West African ornithology.

Papers and **Short Notes** must be original contributions; material published elsewhere, in whole or in part, will not normally be accepted. Short Notes are articles not exceeding 1500 words (including references) or four printed pages in length. Wherever possible, manuscripts should first have been critically scrutinised by at least one other ornithologist or biologist before submission. Manuscripts will be sent for critical review to at least one relevant authority.

Items for **News & Letters** should not exceed 1000 words.

Contributions are accepted in English or French; editorial assistance will be made available to authors whose first language is not one of these. Submission by email (attached file) is preferred. Consult the editor for further details, e.g. acceptable software.

All Papers (but not Short Notes) should include a **Summary**, not exceeding 5% of the paper's length. The Summary should include brief reference to major findings of the paper and not simply review what was done. Summaries will be published in both English and French (or in the official language of the country in which the work was done) and will be translated as appropriate by the Editorial Board.

Format of tabular material, numbers, metric units, references, *etc.* should match recent issues. Note particularly: authors' names should be listed with surname (family name) last, with given names or initials preceding it (e.g. John A. Smith); dates are written 2 Feb 1990 but months standing alone may be written in full; times of day are written 6h45, 17h32 and coordinates in the form 7°46'N, 16°4'E (no leading zeros); numbers up to ten are written in full, except when followed by abbreviated units (e.g. 6 m), numbers from 11 upwards are written in figures except at the beginning of a sentence. All references mentioned in the article, and only such, must be listed in the bibliography.

Avifaunal articles must contain a map or gazetteer, including all localities mentioned. They should include brief notes on climate, topography, vegetation, and conditions or unusual events prior to or during the study (e.g. late rains *etc.*). **Species lists** should include only significant information; full lists are justified only for areas previously unstudied or unvisited for many years. Otherwise, include only species for which the study provides new information on range, period of residence, breeding *etc.* For each species, indicate range extensions, an assessment of abundance (see *Malimbus* 17: 36) and dated breeding records; indicate migratory status and period of residence only as shown by the study. Where appropriate, set data in context by brief comparison with an authoritative regional checklist. Lengthy species lists may be in tabular form (e.g. *Malimbus* 25: 4–30, 24: 15–22, 23: 1–22, 1: 22–28, or 1: 49–54) or in the textual format of recent issues. **Taxonomic sequence** and **scientific names** (and preferably also **vernacular names**) should follow either Borrow & Demey (2001, *Birds of Western Africa*, Christopher Helm, London, with names as amended in Borrow & Demey 2004, *Field Guide to the Birds of Western Africa*, Christopher Helm, London), or *The Birds of Africa* (Brown *et al.* 1982, Urban *et al.* 1986, 1997, Fry *et al.* 1988, Keith *et al.* 1992, Fry & Keith 2000, 2004, Academic Press, London), unless reasons for departure from these authorities are stated. A **more complete guide for authors** of avifaunal papers, including the preferred abundance scale, appeared in *Malimbus* 17: 35–39 and an augmented and updated version of this may be found on the web site (<http://malimbus.free.fr/instmale.htm>); a copy may be obtained from the Editor, who will be happy to advise on the presentation of specific studies.

When designing **Figures**, and particularly font size, pay attention to *Malimbus* page shape and size. Figures prepared in or scanned into an appropriate graphics package and saved at high resolution are preferred. They should be supplied as graphics files, and not pasted into a Word file. Low-resolution files and poor-quality printouts will not be accepted. Authors are encouraged to submit **photographs** that illustrate salient points of their articles. Photographs should be high-contrast and high resolution (at least 600 dpi). They should be supplied in graphics file format (e.g. jpg or tif) and not pasted into a Word file. Consult the Editor for further advice.

A pdf file of Papers and Short Notes, and one copy of the issue in which they appear, will be sent to single or senior authors, *gratis*.



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