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A contribution to the ornithology of Mount Oku forest, Cameroon

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Summary

The Mt Oku bird list is incomplete, but with a total of 217 species observed, including 37 of the 53 species considered to be characteristic of the montane forest ecosystem and 11 of the 20 known endemics of the highlands of western Cameroon, the avifauna of the region is rich and diverse. At least one species (Great Blue Turaco *Corythaeola cristata*), last seen in the region in 1984, may have disappeared due to forest clearing. Some of the species reported in the literature appear to have been misidentified.

Résumé

La liste des oiseaux du Mt Oku n'est certainement pas encore complète. Cependant, avec un total de 217 espèces recensées, y compris 37 des 53 espèces considérées comme caractéristiques des écosystèmes des forêts de montagne, et 11 des 20 espèces endémiques de l'archipel montagnard de l'ouest du Cameroun, l'avifaune de la région apparaît très riche et diversifiée. Au moins une espèce (Touraco géant *Corythaeola cristata)*, encore présente dans la région en 1984, aurait déjà disparue, à cause de la déforestation. Il apparaît également qu'un certain nombre d'espèces signalées dans la littérature avaient été mal identifiées.

Introduction

The avifauna of the Cameroon Mountain forests has been well surveyed by Serle (1950, 1954, 1965, 1981), Eisentraut (1963, 1973), Stuart (1986) and Smith & McNiven (1993). About 256 species have been listed as present in the region, including some 53 which are restricted in their distribution to the mountain forest ecosystem. Twenty of these are endemic to western Cameroon and adjacent E Nigeria (Louette 1981, Collar & Stuart 1985, Thiollay 1985).

The most diverse and important areas in the region appear to be Mt Cameroon, Mt Kupe and the Bamenda Highlands (Collar & Stuart 1988). The distribution and status of many species are still poorly known and recent changes in habitats and consequent changes in bird species composition (Decoux & Fotso 1988), lead to a need for the species list for the region to be updated.

I started this project in 1990, with the aim of examining bird species diversity and population status in the Oku mountain forest. The survey was carried out between January 1990 and July 1991, with further observations in 1992, 1995 and 1996. Observations by Dowsett-Lemaire & Dowsett (1998) are also included.

Study area and methods

The Oku region (6°12′N, 10°31′E; Fig. 1), is situated in the northern section of the Bamenda Highlands, close to the contact zone between the mountain forest and the savanna in the north. The study area of about 200 ha on the northern slope of Mt Oku holds one of the best-preserved fragments of montane forest in the region. The vegetation associations include moist montane forest, degraded forest, and stands of bamboo *Arundinaria alpina*. This forest shows structural and floristic changes according to altitude: at lower altitudes it is dominated by *Schefflera abyssinica* and *Carapa grandiflora*, while higher it is dominated by *Syzygium guineense, Rapanea melanophloeos* and *Podocarpus latifolius* (Thomas 1987). The forest understorey is dominated in places by *Ardisia cymosa, Psychotria peduncularis* and *Brillantaisia sp.*. Between 2400 and 2700 m altitude, *Arundinaria alpina* becomes increasingly common and forms species-poor stands, especially on steep slopes. Above 2600 m, the forest changes character, becoming much more open, and is dominated by *Podocarpus latifolius* and stands of *Arundinaria alpina*. This is the western-most and only W African location for this botanical association, which is well developed in E Africa (Letouzey 1968).

Few trees are permitted to grow on cultivated land, and the majority of these are of exotic origin (mainly *Eucalyptus*). There is no transition zone between the forest and farms, nor between forest and savanna at the mountain summit.

The Oku forest plays an important role in the local economy and culture, as it provides a wide range of forest products for the local people, including firewood, bamboo, honey and medicinal plants (Macleod 1987). Many footpaths have been created in the forest, running from its edge at around 2200 m up to the top of the mountain at 2900 m. Four of these footpaths were selected for use in this study, and marked with beacons at altitudinal intervals of 10 m.

Census trips through the forest were made chiefly between 07h30 and 11h00, since many birds species seem to be more active during this period of the day (*e.g.* Decoux & Fotso 1988). For a census, I walked along the path from the farm border at 2200 m up to 2800 m, stopping near each beacon to record all bird species heard or

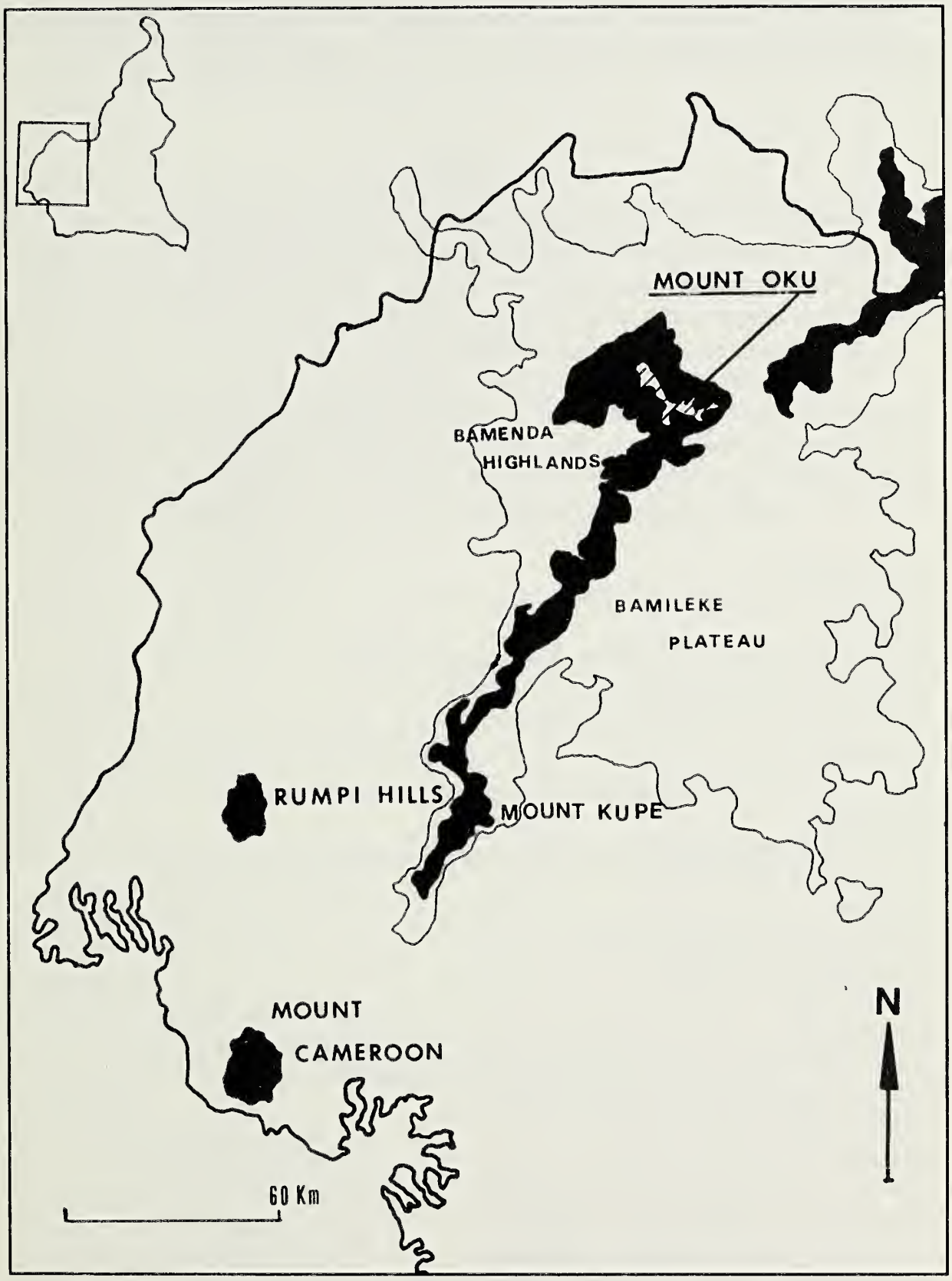

Figure 1. The Cameroon mountain ridge and the range of the Afro-montane vegetation district (black). The narrow line indicates the 900 m contour.

seen. Thirty-eight censuses were made during the periods Jan–May 1990, and Feb–Jul 1991. Areas dominated by savanna type vegetation at lower altitude (1600–1800 m) and several other patches of forest in the region were also explored.

Results

Two hundred and seventeen bird species have been reported in the Oku area forest, including 37 characteristic of the montane forest ecosystem, 11 of which are endemic to western Cameroon and adjacent E Nigeria, while 17 are Palaearctic migrants. During the study period, I was able to confirm the presence of 159 species, including several not mentioned by previous authors.

The species list indicates abundance as follows: 1 = very few sightings (usually less than 10) over the whole period; 2 = frequent (often seen or heard); 3 = common (seen heard virtually every visit to suitable habitat). Endemics (E) and species characteristic of montane forest (F) are also indicated. [ ] indicates species unlikely to be present; brackets sibling species difficult to tell apart in the field.

Podicipedidae
Tachybaptus ruficollis Little Grebe. 2.
Ardeidae
Nycticorax nycticorax Night Heron. Stuart *et al.* (1986).
Ardea cinerea Grey Heron. 2.
A. melanocephala Black-headed Heron. 1.
Scopidae
Scopus umbretta Hamerkop. 2.
Ciconiidae
Ciconia nigra Black stork. 1.
C. abdimii. Abdim's Stork.
Anatidae
Nettapus auritus Pygmy Goose. 1.
Anas sparsa Black Duck. 3.
Accipitridae
Pernis apivorus Honey Buzzard.
Machaerhamphus alcinus Bat Hawk. Stuart *et al.* (1986).
Elanus caeruleus Black Shouldered Kite. 3.
Milvus migrans Black Kite. 3.
Gypohierax angolensis Palmnut Vulture. 2.
Necrosyrtes monachus Hooded Vulture. 3.
Gyps africanus White-backed Vulture. 3.
G. rueppellii Ruppell's Griffon Vulture. 2.
Aegypius occipitalis White-headed Vultue. 3.
Circaetus gallicus beaudouini Beaudouin's Eagle. Stuart *et al.* (1986).
Polyboroides typus Harrier Hawk. 3.

Circus macrourus Pallid Harrier. 1.
C. aeruginosus Marsh Harrier. Stuart *et al.* (1986).
C. pygargus Montagu's Harrier.
Accipiter tachiro toussenelii West African Goshawk. 1.
A. melanoleucus Great Sparrowhawk. 2.
A. badius Shikra.
Kaupifalco monogrammicus Lizard Buzzard. 2.
Buteo buteo Common Buzzard Wilson (1989).
B. auguralis Red-tailed Buzzard. 2.
Aquila rapax Tawny Eagle. 1.
A. wahlbergi Wahlberg's Eagle. 1.
Lophaetus occipitalis Long-crested Hawk Eagle. 2.
Spizaetus africanus Cassin's Hawk Eagle. 2.
Stephanoaetus coronatus Crowned Eagle. 2.
Polemaetus bellicosus Martial Eagle.
Falconidae
Falco tinnunculus Kestrel. 3.
F. alopex Fox Kestrel. 2.
F. ardosiaceus Grey Kestrel. 2.
F. subbuteo European Hobby.
F. cuvieri African Hobby. 2.
F. biarmicus Lanner. 2.
F. peregrinus Peregrine. 1.
Phasianidae
Francolinus squamatus Scaly Francolin. 2.
F. bicalcaratus Double-spurred Francolin. 3.
Coturnix chinensis Blue Quail. Dowsett-Lemaire & Dowsett (1998).
Rallidae
Sarothrura rufa Red-chested Flufftail. Dowsett-Lemaire & Dowsett (1998).
S. elegans Buff-spotted Flufftail. 1.
Heliornithidae
Podica senegalensis Finfoot.
Scolopacidae
Gallinago gallinago Common Snipe.
Tringa ochropus Green Sandpiper. 2.
Actitis hypoleucos Common Sandpiper. 2.
Columbidae
Treron calva Green Pigeon. 2.
Turtur tympanistria Tambourine Dove. 2.
T. afer Blue-spotted Wood Dove. 3.
Columba larvata Lemon Dove. 2, F.
C. arquatrix Olive Pigeon. 3, F.
[*C. unicincta* African Wood Dove. Wilson (1989).]
Streptopelia senegalensis Laughing Dove. 2.

Musophagidae
Corythaeola cristata Great Blue Turaco. Stuart *et al.* (1986).
Tauraco persa Green Turaco. 2.
T. bannermani Bannerman's Turaco. 3, F, E.
Cuculidae
Clamator glandarius Great Spotted Cuckoo.
Cuculus solitarius Red-chested Cuckoo. 2.
C. clamosus Black Cuckoo. Stuart *et al.* (1986).
C. canorus Common Cuckoo. Stuart *et al.* (1986).
C. gularis African Cuckoo. 2.
Chrysococcyx klaas Klaas's Cuckoo. 3.
Centropus monachus Blue-headed Coucal. 3.
Tytonidae
Tyto alba Barn Owl. 2.
Strigidae
Otus scops European Scops Owl.
O. leucotis White-faced Owl. 1.
Bubo africanus Spotted Eagle Owl. 2.
B. poensis Fraser's Eagle Owl.
B. lacteus Giant Eagle Owl.
Ciccaba woodfordi African Wood Owl. 2.
Asio capensis Marsh Owl. J.R. Parrott (pers. comm.).
Caprimulgidae
Caprimulgus tristigma Fleckled Nighjar. 2.
C. europaeus European Nightjar. J.R. Parrott (pers. comm.).
C. rufigena Rufous-cheeked Nightjar.
Macrodipteryx longipennis Standard-wing Nighjar. 1.
Apodidae
Apus pallidus Pallid Swift. Stuart *et al.* (1986).
A. apus European swift. Stuart *et al.* (1986).
A. batesi Bates's Swift. Stuart *et al.* (1986).
A. barbatus African Black Swift.
A. caffer White-rumped Swift. 2.
A. affinis Little Swift. 3.
Tachymarptis aequatorialis Mottled Swift. Stuart *et al.* (1986).
Coliidae
Colius striatus Speckled Mousebird. 3.
Trogonidae
Apaloderma vittatum Bar-tailed Trogon. 2, F.
Alcedinidae
Halcyon leucocephala Grey-headed Kingfisher. 2.
H. malimbicus Blue breasted Kingfisher. 3.
H. chelicuti Striped Kingfisher. 2.
Corythornis leucogaster White-bellied Kingfisher. 3.
Ceyx pictus Pygmy Kingfisher.

Meropidae
Merops variegatus Blue-breasted Bee-eater. 3.
M. albicollis White Throated Bee-eater. 3.
M. apiaster European Bee-eater. 1.
M. nubicus Carmine Bee-eater. 2.
Phoeniculidae
Phoeniculus bollei F White-headed Wood-hoopoe. 3.
Upupidae
Upupa epops Hoopoe.
Lybiidae
Gymnobucco calvus Naked-faced Barbet.
Pogoniulus coryphaeus Western Green Tinkerbird. 3, F.
P. chrysoconus Yellow-fronted Tinkerbird.
P. bilineatus Yellow-rumped Tinkerbird. 2.
Buccanodon duchaillui Yellow Spotted Barbet. 3.
Lybius bidentatus Double-toothed Barbet.
Indicatoridae
Indicator conirostris Thick-billed Honeyguide. Stuart *et al.* (1986).
I. indicator Greater Honeyguide.
I. minor Lesser Honeyguide.
Picidae
Campethera tullbergi Tullberg's Woodpecker. 2, F.
Dendropicos fuscescens Cardinal Woodpecker. 3.
D. elliotii Elliot's Woodpecker. 2, F.
D. goertae Grey Woodpecker. 3.
Alaudidae
Mirafra africana Rufous-naped Lark. 2.
Hirundinidae
[*Psalidoprocne obscura* Fantee Roughwing.]
P. pristoptera Black Roughwing. 3.
Pseudohirundo griseopyga Grey-rumped Swallow. Wilson (1989).
Hirundo abyssinica Striped Swallow. 3.
H. daurica Red-rumped Swallow. 3.
H. fuligula African Rock Martin. 3.
H. rustica Barn Swallow. Holyoak & Seddon (1989).
Delichon urbica House Martin. 3.
Motacillidae
Motacilla flava Yellow Wagtail. 3.
M. clara Mountain Wagtail. 2.
Anthus novaeseelandiae Richard's Pipit. 3.
A. similis Long-billed Pipit. 2.
A. trivialis Tree Pipit. 2.
A. cervinus Red-throated Pipit.
Macronyx croceus Yellow Throated Long-claw. 3.

Campephagidae
Campephaga phoenicea Red-shouldered Cuckoo-shrike.
C. petiti Petit's Cuckoo-shrike. 1.
Coracina caesia Grey Cuckoo-shrike. 2, F.
Pycnonotidae
Andropadus montanus Cameroon Mountain Greenbul. 2, F, E.
A. tephrolaemus Moutain Greenbul. 3, F.
Phyllastrephus poensis Cameroon Olive Greenbul. 2, F, E.
Chlorocichla flavicollis Yellow-throated Leaflove.
Pycnonotus barbatus Common Bulbul. 3.
Turdidae
Luscinia megarhynchos Nightingale.
Cossypha isabellae Mountain Robin-Chat. 3, F, E.
C. niveicapilla Snowy-crowned Robin-Chat. 2.
Saxicola torquata Stonechat. 3.
S. rubetra Whinchat. 2.
Myrmecocichla cinnamomeiventris Mocking Cliff-Chat. 2.
Turdus pelios African Thrush. 3.
Alethe poliocephala Brown-chested Alethe.
Sylviidae
Bradypterus lopezi bangwaensis Evergreen-Forest Warbler. 3, F.
Chloropeta natalensis African Yellow Warbler. 3.
Cisticola brunnescens Pectoral-patch Cisticola. 3.
C. robustus Stout Cisticola. Dowsett-Lemaire & Dowsett (1998).
C. cantans Singing Cisticola.
C. chubbi Chubb's Cisticola. 3, F.
Prinia subflava West African Prinia. 3.
Urolais epichlora Green Longtail. 3, F, E.
Apalis pulchra Black-collared Apalis. 3, F.
A. jacksoni Black-throated Apalis. 2, F.
A. cinerea Grey Apalis. 3, F.
Poliolais lopezi White-tailed Warbler. F, E. Wilson (1989).
Camaroptera brevicaudata Grey-back Camaroptera. 3.
Phylloscopus trochilus Willow Warbler. 2.
P. sibilatrix Wood Warbler. 3.
Sylvia borin Garden Warbler. 1.
S. atricapilla Blackcap. 1.
Muscicapidae
Ficedula hypoleuca Pied Flycatcher.
Muscicapa adusta Dusky Flycatcher. 3.
Elminia albiventris White-bellied Flycatcher. 3, F.
Terpsiphone viridis Paradise Flycatcher.
Platysteira peltata laticincta Black-throated Wattle-eye. 3, F, E.
Batis senegalensis Senegal Batis. 1.
B. minor Black-headed Batis. 2.

Timaliidae
Illadopsis abyssinica African Hill Babbler. 3, F.
Kakamega poliothorax Grey-chested Illadopsis. 1, F.
Paridae
Parus albiventris White-bellied Tit. 3.
Zosteropidae
Zosterops senegalensis Yellow White-eye. 3.
Nectariniidae
Nectarinia oritis Cameroon Blue-headed Sunbird. 3, F, E.
N. verticalis Green-headed Sunbird. 3.
N. bouvieri Orange-tufted Sunbird. 3.
N. preussi Northern Double-collared Sunbird. 3, F.
N. coccinigaster Splendid Sunbird. 3.
Laniidae
Lanius mackinnoni Mackinnon's Shrike. 3.
L. collaris Fiscal Shrike. 3.
L. senator Woodchat Shrike. 1.
Malaconotidae
Laniarius ferrugineus Bell Shrike. 3.
L. atroflavus Yellow Breasted Boubou. 3, F, E.
L. fuelleborni Fülleborn's Black Boubou. 3, F.
Telophorus gladiator Green-breasted Bush-shrike. F, E. Stuart *et al.* (1986).
Corvidae
Corvus albus Pied Crow. 3.
Oriolidae
Oriolus nigripennis Black-winged Oriole. 3.
Sturnidae
Onychognathus walleri Waller's Chestnut-winged Starling. 3, F.
O. morio Crag Chestnut-wing Starling. 3.
Lamprotornis splendidus Splendid Glossy Starling. 3.
Ploceidae
Passer griseus Grey Sparrow. 3.
Ploceus bannermani Bannerman's Weaver. 3, F, E.
P. baglaflecht Baglafecht Weaver. 3.
P. ocularis Spectacled Weaver. 2.
P. melanogaster Black-billed Weaver. 3, F.
P. cucullatus Village Weaver. 3.
P. insignis Brown-capped Weaver. 2, F.
P. preussi Preuss's Golden-backed Weaver.
Euplectes capensis Yellow Bishop. 2.
E. gierowii Black Bishop. C. Bowden (pers. comm.).
E. ardens Red-collared Whydah.
Estrildidae
Nesocharis ansorgei Little Olive-back. 2, F.
Cryptospiza reichenowii Red-faced Crimson-wing. 3, F.

Pytilia melba Green-winged Pytilia. 1.
Lagonosticta senegala Red-billed Firefinch. 2.
Estrilda astrild Waxbill. 3.
E. nonnula Black Crowned Waxbill. 3.
Lonchura cucullata Bronze Manninkin. 3.
L. bicolor Red-backed Mannikin.
Fringillidae
Serinus mozambicus Yellow-fronted Canary. 3.
S. burtoni Thick-billed Seedeater. 3, F.
Linurgus olivaceus Oriole Finch. 3, F.
Emberizidae
Emberiza cabanisi Cabanis's Yellow Bunting. 2.

Discussion

Several species listed in the literature were not seen. I may have missed some that are rare or difficult to see (*Indicator conirostris*, *Telophorus gladiator*, *Poliolais lopezi*), and also some of the migrants (*Circus aeruginosus*, *Caprimulgus europaeus*) or vagrants (*Circaetus gallicus beaudouini*, *Cuculus clamosus*) that fly across the region. Other species may have been missed because they are difficult to identify in the field (*Buteo buteo*, *Apus apus*, *A. pallidus*, *A. batesi*, *A. barbatus*, *Psalidoprocne obscura*). However it is unlikely that I simply missed *Corythaeola cristata*, *Halcyon badia*, *Alethe poliocephala*, *Cossypha roberti*, *Nectarinia olivacea*, and *N. ursulae*. *Corythaeola cristata* is very vocal and easy to see where present. It was last seen in the region in 1984 (Stuart 1986) and seems to have disappeared due to forest clearing.

Several of the Palaearctic migrants (*Ciconia nigra*, *Circus aeruginosus*, *C. macrourus*, *Lanius senator*), were seen only on very few occasions, indicating that they were on passage or scarce winter visitors. There are very few records of *Ciconia nigra* in Cameroon, and no evidence of wintering there. I saw one well in Feb 1991 in farmland.

Some of the species reported in the literature may have been misidentified (see also Dowsett-Lemaire & Dowsett 1998). *Halcyon badia*, mentioned by J.R. Parrott (pers. comm.) might have been a mistake for *H. chelicuti*. *Cossypha roberti* (Wilson 1989) was possibly a mistake for *C. isabellae*, whose ssp. *batesi* is fairly common in the region. *Nectarinia olivacea* and *N. ursulae* (Wilson 1987) may have been female *N. verticalis* or another species, seen in poor light. According to Dowsett-Lemaire & Dowsett (1998), other species such as *Aquila rapax* and *Columba unicincta* (Wilson 1989) are unlikely to be found in the Oku area, as is *Phyllastrephus poliocephalus* (reported by Wilson 1989); *Batis minima* reported by Stuart *et al.* (1986) was probably *B. minor*. Holyoak & Seddon (1989) claimed to have seen *Buteo buteo* near Lake Oku. Another observation of the species by Germain *et al.* (1973) was considered by Louette (1981) to be doubtful, since the range of this species is not

supposed to extend into Cameroon. I did not find it, and believed these observations might have been juvenile *B. auguralis*, which is now known to breed in the area (Serle 1981, Fotso 1996). However, Dowsett-Lemaire & Dowsett (1998) have recently mentioned *B. buteo* from the area as a passage migrant.

The Mt Oku bird list is incomplete, but with a total of 217 species observed , including 37 of the 53 species considered characteristic of the montane forest ecosystem and 11 of the 20 known endemics of the highlands of western Cameroon, the avifauna of the region is rich and diverse. Two species (*Tauraco bannermani* and *Platysteira laticincta*) are restricted in distribution to the Bamenda Highlands, with viable populations probably now only found in the Oku forest. These results show the importance of the Oku forest to the conservation of biological diversity in the Cameroon highlands and W Africa.

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The birds of Mount Kupe, southwest Cameroon

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Summary

A total of 335 bird species has now been recorded on Mt Kupe. All records for the forest and surrounding farmland have been collated in this checklist both from before and after my own study period of 1991–4. Of 29 restricted-range species, confined to the Cameroon Mountains Endemic Bird Area, 19 occur on Mt Kupe, including the Mt Kupe Bush-shrike *Malaconotus kupeensis*, which is otherwise known only from the neighbouring Bakossi Mountains. The high species diversity arises from the presence of these endemics, together with at least 25 other montane species and a high diversity of lowland forest birds.

Résumé

Un total de 335 espèces d'oiseaux est maintenant répertorié pour le mont Kupé. Toutes les observations relatives à la forêt et aux cultures avoisinantes données dans cette liste ont été faites avant et après la période de mon étude 1991–4. Des 29 espèces de distribution réduite, limitées à la Zone d'Oiseaux Endémiques des Monts Camerounais, 19 se trouvent sur le mont Kupé, y compris le Gladiateur du Kupé *Malaconotus kupeensis* qui est par ailleurs connu seulement des monts Bakossi voisins. La grande richesse d'espèces provient de la présence de ces endémiques ainsi que d'au moins 25 autres espèces de montagne et d'une riche variété des espèces forestières de plaine.

Introduction

This checklist summarises all known bird observations from Mt Kupe. It gives information on breeding seasonality, migration, abundance, habitat and altitudinal range for each species. Few forest areas in the Lower Guinea region have been as intensively studied year-round as was possible in this 1991–4 study.

Mt Kupe straddles the boundary between Southwest and Littoral Provinces of SW Cameroon (Fig. 1). It supports a unique avifauna (Serle 1949, 1950, 1951, 1954, 1965, Collar & Stuart 1985) that includes 11 species of conservation concern as well as 19 restricted range species (Stattersfield *et al.* 1998). There are also important populations of primate species including the "Endangered" Drill *Mandrillus leucophaeus* (Lee *et al.* 1988) and a newly described nocturnal prosimian *Pseudopotto martini* (Schwartz 1996, C. Wild pers. comm.). There are over 80 amphibians and 70 reptiles, including four highly restricted chamaeleons, notably *Chamaeleo pfefferi*, known only from Kupe and the adjacent mountains (Wild 1993), and a newly discovered Skink *Panaspis chriswildi*. The flora is also important, including eight recently discovered species (Cheek & Cable 1996). The aim of the BirdLife Mt Kupe Forest Project is to secure the future of the forest, by working with local people towards sustainable use of the area's resources. The mountain has important cultural significance for the Bakossi people (the majority of the villagers), who believe it to be the home of the ancestral spirits and the source of all wealth (Bowden & Bowden 1993).

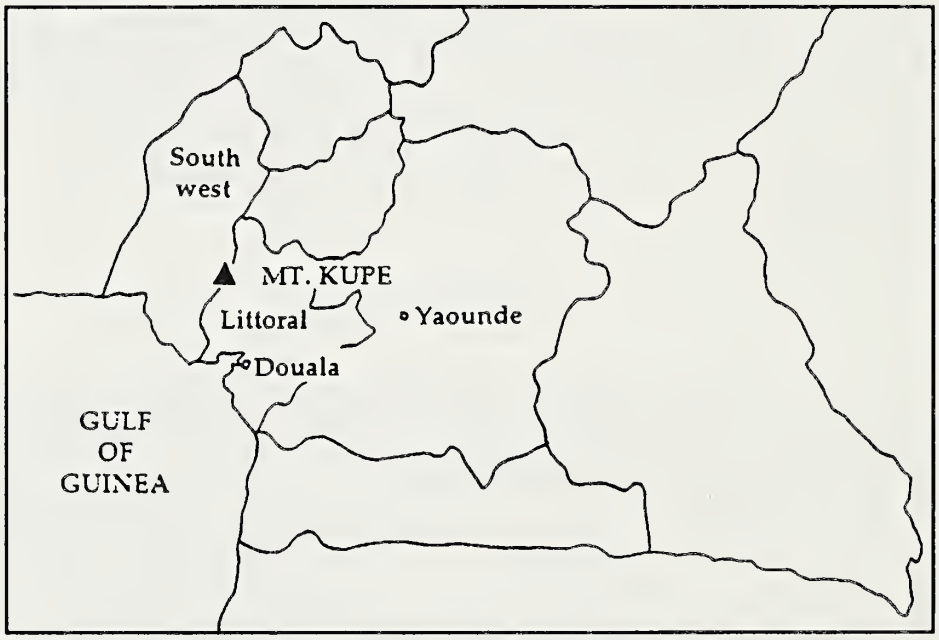

Figure 1. Map of SW Cameroon, showing location of Mt Kupe.

The Cameroon–Nigeria–Bioko mountain chain supports many endemics of all studied taxa, and qualifies as an "Endemic Bird Area" (Bibby 1992). Many endemic species occur throughout the chain, whilst others only occur on certain peaks within restricted altitudinal ranges. Kupe lies centrally within the chain, and supports many of the endemic birds, including the highly localised and rare Mt Kupe Bush-shrike. The species composition is similar to that of Mt Nlonako and of the Bakossi Mountains on either side, but has less in common with Manenguba Mountain which, although equally close by, is slightly higher with more grassland (see Dowsett-Lemaire & Dowsett 1999 for more detailed comparison).

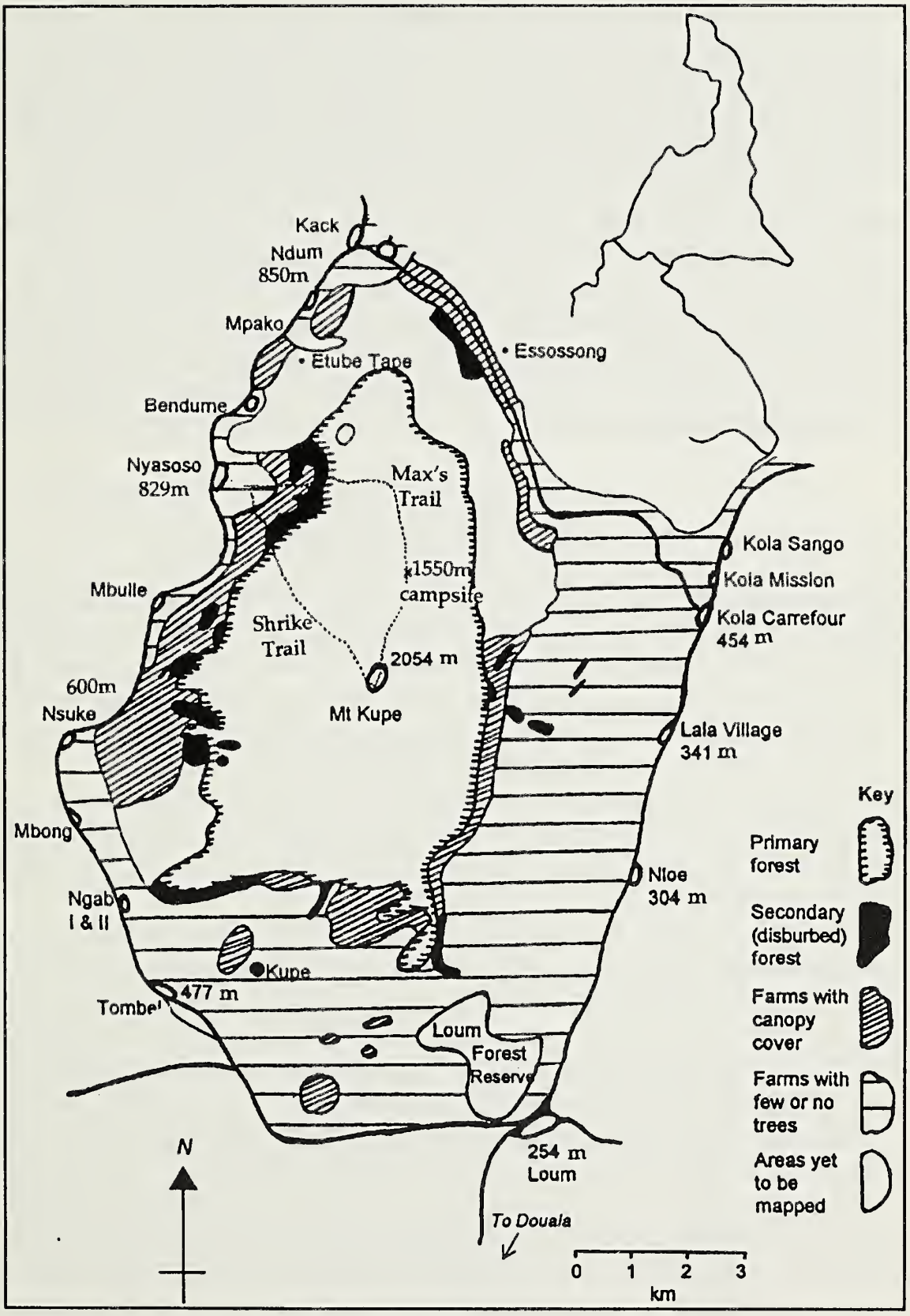

Figure 2. Vegetation map of the Mt Kupe study area showing all adjacent settlements and trails referred to in the text. Adapted from vegetation map compiled by author in 1992 (BirdLife International 1993).

A habitat map of Mt Kupe was produced in 1992, which showed 30 km^2 of primary forest, surrounded by cultivation and damaged forest (BirdLife International 1993). Loum Forest Reserve in the south is covered by secondary forest at 350 m and, although there are other fragmented areas of degraded forest at low altitudes, most areas below 1000 m are farmland with variable amounts of tree cover (Fig. 2).

The great diversity of bird species in a relatively small area of mainly sub-montane forest mosaic within surrounding cultivated and degraded forest habitats, combined with its relatively easy access, makes Kupe an ideal location to see a wide variety of birds. The montane component is of great international importance but it is the lowland forest component that is largely responsible for the high diversity. Nineteen of the 29 Cameroon mountains restricted range species occur here, as well as three of the six species confined to the Cameroon and Gabon lowlands Endemic Bird Area (Stattersfield *et al.* 1998).

Area covered and methods

This study summarises all ornithological work carried out in the area, with particular reference to observations within the 3.25 yr period (Mar 1991 to Jun 1994, subsequently termed the "study period") when I was resident in Nyasoso. All of my records during this time were recorded in a log-book, to which visiting birdwatchers also contributed, and which is held at the Mt Kupe Forest Project headquarters in Nyasoso. An effort has been made to include all subsequent records up to the time of publishing.

The study area included all of the forest on Mt Kupe and the surrounding areas of farmland, to the roads connecting Kolla, Loum, Tombel and Ndum and the track between Ndum and Kolla (Fig. 2). The settlements around the mountain range from small villages to small towns.

Although most parts of the mountain were visited several times during the study period, there was a strong emphasis on the forest areas adjacent to Nyasoso; coverage has not been even, and the eastern slopes have been poorly covered. These include the Loum Forest Reserve, which I visited twice and which has been more recently visited by F. Dowsett-Lemaire and R.J. Dowsett. Between Apr and Jul 1994, Richard Stone and O'Kah Ebwekoh did point-count censusing along trails covering the north, south, east and west slopes within the forest, providing quantitative data on the relative abundance of many key species, particularly in relation to altitude. These results will be published elsewhere, but their observations are incorporated here. This paper also includes some results of my mist-netting programme at three sites above Nyasoso: at 900 m on the Nature Trail, at 1200 m on the Shrike Trail, and at 1550 m on Max's Trail (shown on Fig. 2). At least two full days mist-netting were carried out at each of these sites in each month of the year, with at least 400 m of four-panel mist-nets. Birds were given individually numbered metal rings, standard measure-ments taken and brood patch and moult recorded. Over 2000 birds were captured.

Climate

Kupe is hot and humid, with one long wet season (Mar–Nov). The wettest months are normally Jun–Sep but with considerable variation from year to year. The dry season (Dec–Feb) can be almost rainless in some years. Mean figures for several years combined are given in Table 1. Most of the rain arrives from the southwest, producing a rain shadow on the lower eastern side. Being inland from Mount Cameroon, the whole area is in a larger rain shadow. The rainfall data are from just three locations, and none is available for the upper slopes of the mountain. Temperature data are even scarcer, but Tombel shows similar average temperatures for all months (23.4–25.8 C), with no clear seasonal trends. This may be misleading, as temperatures during the dry season are somewhat higher during the day and lower at night. Relative humidity is high throughout the year, rarely falling below 80%.

Table 1. Rainfall data (mm) (from Ejedepang-Koge 1986)

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Tombel	53	121	248	240	267	507	489	480	554	474	160	65	3657
Nyasoso	21	107	230	182	298	402	822	720	645	453	77	45	4045
Essosong	48	87	223	253	270	383	416	453	459	478	139	44	3253

History of ornithological research

The first ornithological research carried out on Mt Kupe was by William Serle, between 1948 and 1952 when he discovered both the Mt Kupe Bush-shrike and Gilbert's Babbler *Kupeornis gilberti* in the forest above Nyasoso. He lived in Kumba, and stayed at the Government Rest House in Nyasoso, visiting the forest from there, with his assistant Gilbert Nkwocha, who did the majority of the skin preparations. Some of his specimens came from Tombel and Essosong but most are from Nyasoso (Serle 1949, 1950, 1951, 1954, 1965).

Martin Eisentraut made collections of birds and bats using mist-nets in the 1960s (Eisentraut 1968, 1973). The International Council for Bird Preservation (now BirdLife International) carried out a survey of the birds of the west Cameroon mountain chain which included two visits to Kupe in early 1984 (Stuart 1986a); I was a member of that team.

After Serle's discovery of the Mt Kupe Bush-shrike (Serle 1950), it was not seen again until 1989, by Duncan McNiven. It has been seen by over 40 other observers since then.

Since the initiation of the Mt Kupe Forest Project in 1991 and improved visitor facilities, more visiting birdwatchers including regular bird-tour groups have come to the area. This increase in observer activity has greatly contributed to the information

presented here. Recent findings include the discovery of Zenker's Honeyguide *Melignomon zenkeri* (Bowden *et al.* 1995), White-naped Pigeon *Columba albinucha* (Williams 1995), and Bates's Weaver *Ploceus batesi* (Bowden & Andrews 1994). Françoise Dowsett-Lemaire and Bob Dowsett have visited the mountain several times since I was there, and their findings (published and unpublished) are incorporated.

Conservation status and threats

Mt Kupe has had no statutory protection apart from two small Forest Reserves (Loum F.R. and a small area near the summit), a status that has not given effective protection to other forests in Cameroon. With the greater awareness of the biological significance of Mt Kupe in recent years, the Ministry of Forest and Wildlife (MINEF) has recently proposed that the area be designated a Community Forest.

The main threats to the forest are encroachment by farming, small-scale timber extraction, and heavy hunting of the larger mammals. Other more localised problems are unregulated exploitation of the bark of *Prunus africanus* for sale to drug companies; this often kills the trees, and adjacent forest is often damaged in the process of extraction. The local communities have shown a growing commitment to conserving the forest and its wildlife since the benefits of doing so have emerged. A voluntary hunting ban within the forest was imposed in 1993 by several of the villages, and has been largely respected. More recently though, some forest clearance as high as 1500m has taken place, showing that project activities and collaboration with community leaders need to be well maintained if the good will to conserve the forest is to be effective.

Species list

Codes used in the species list

Status:

R = Resident
PM = Palaearctic migrant
AM = Intra-African migrant
LM = Local migrant
? = Status unknown or uncertain

Abundance:

r = rare (1–3 records)
u = uncommon (more than 3 records, but not usually recorded)
f = frequent (usually recorded when relevant area visited)
c = common (1–10 recorded/day in suitable habitat)
a = abundant (10–100 usually seen per day in suitable habitat)

v = very abundant (>100 usually seen per day in suitable habitat)
? = abundance uncertain

Habitat:
P = primary forest
S = secondary or disturbed forest
F = farmbush (cultivation) with significant tree cover
O = open farms with little or no tree cover
G = grassy knolls around summit

Altitude range (m) is given in parentheses. Threat status is taken from BirdLife International (2000).

Observers:
The following (in order of last initial) have contributed records; their initials are given for the most significant records.
Mark Andrews (SMA); Chris Bowden (CGRB); J Bech (JB); Nik Borrow (NB); Thieri Bara (TB); Peter Dolton (PJD); Bob Dowsett (RJD); Lincoln Fishpool (LF); Chris Gibbins (CG); Peter Hayman (PVH); Steve Jones (SJ); E. Krabbe (EK); Epie Ngoe Kingsley (ENK); Steve Keen (SK); Françoise Dowsett-Lemaire (FDL); Rod Leslie (RL); O'kah Ebwekoh (OEM); Rod Martins (RPM); Andrew Ngwene (AN); Duncan McNiven (DMN); Simon Ngwese (SN); Iain Robertson (IR); Paul Rodewald (PWR); Chris Sykes (CS); Liz Smith (EMS); Richard Stone (RES); U. Sorensen (UGS); Chris Wild (CW); Eddie Williams (EW); Richard Webb (RW). The BirdLife IBA survey team consisted of Kevin Yana Njabo, Bobo Kadiri Serge, Dennis Anye Ndeh, Njeh Francis and CGRB.

Ardeidae

Bubulcus ibis Cattle Egret. AM (mid-Nov to mid-Apr) u O (400–600). Most records are of 1–6 individuals in Tombel area.

Butorides striatus Green-backed Heron. R? S (400). One record, Kolla Songo along Ekouk River, Jun 1992. Status unclear since this area rarely visited.

Ciconidae

Ciconia abdimii Abdim's Stork. AM O (300). One record: flock of 10 on farmland between Loum and Tombel, 23 Apr 1991.

Accipitridae

Aviceda cuculoides Cuckoo Falcon. ? r F (800–900). Recorded above Nyasoso 18 Sep 1992 (SK, RES), 18 Oct 1992 (CGRB) and one Nyasoso village Dec 1999 (BirdLife IBA team).

Pernis apivorus Honey Buzzard. PM (Sep–Apr, occasionally to May), f, FP (350–1600).

Macheiramphus alcinus Bat Hawk. R? F (750–850). Four records, Feb–Mar 1992–3.

Milvus migrans Black Kite. AM (Nov–Apr, occasionally late Aug to early Jun) f O (350–1200). Only *M. m. parasitus* recorded.
Gypohierax angolensis Palm-nut Vulture. R f OFSP (350–2050). More records Mar–Apr and Sep–Nov than rest of year.
Necrosyrtes monachus Hooded Vulture. AM? F (600–1000). Singles 7 Apr 1992 (EW) and 4 Dec 1999 (BirdLife IBA team).
Gyps africanus White-backed Vulture. AM? F (1000). One sighting, 20 Nov 1992 (SK). This was a time when many migrant species were recorded.
Dryotriorchis spectabilis Congo Serpent Eagle. R FP (850–1600). Four sight records.
Polyboroides typus Harrier Hawk. R f FSP (350–1600). Nest-building begins Oct; birds observed sitting in Nov, usually in Silk-cotton *Ceiba* trees.
Accipiter melanoleucus Great Sparrowhawk. R f FS (700–2000). Seen every month, but more records in Nov may indicate the breeding season: it breeds in the late wet season in W Africa generally (Brown *et al.* 1982).
A. erythropus Red-thighed Sparrowhawk. R FP (800–1000). Four records, all in farms and forest around Nyasoso. A bird seen at 2000 m in Feb 1984 was almost certainly this species (CGRB).
A. castanilius Chestnut-flanked Sparrowhawk. ? F (800). One sighting, Oct 1998 (LF).
A. tachiro African Goshawk. R f FSP (350–1500). The small size of the race *macroscelides* has led to some confusion with *A. castanilius*. All mist-netted individuals were *A. tachiro* (wing length: 185, 195, 199, 201, 229, 237 mm; weight 198, 204, 216, 230, 299, >300 g).
Kaupifalco monogrammicus Lizard Buzzard. R u OF (350–1050). Most common between Kolla, Loum and Tombel, the lower and more intensively cultivated areas.
Buteo auguralis Red-necked Buzzard. AM (Nov–May) u OF (700–2000). Nesting observed on southern edge of Nyasoso.
Aquila wahlbergi Wahlberg's Eagle. AM F (850–950) F. Three records: 18 Sep 1992 (SK, RES), 18 Mar 1993 (EW), 23 Nov 1993 (CGRB). All probably passage birds (although Nov record, near Mpako, is late), as this species generally prefers more open grassland habitats.
Hieraaetus ayresii Ayres's Hawk Eagle. ? FSP (1000). Two records, both immature birds in the same area, where farms meet forest above Nyasoso: 29 Feb 1992, 27 Feb 1993. The difficulty of separating immatures from those of *Spizaetus africanus* (F. Dowsett-Lemaire & R.J. Dowsett pers. comm.) led to these records originally being treated with caution, but Clark (1999) had four sightings of adults in 1998, so it may be more common, with some records attributed to *S. africanus* actually being *H. ayresii*.
Spizaetus africanus Cassin's Hawk Eagle. R u FSP (450–1550). Recorded almost every month. See identification comment for *Hieraaetus ayresii*.
Lophaetus occipitalis Long-crested Eagle. R u OF (350–950).
Stephanoaetus coronatus Crowned Eagle. R u SP (850–2000). Recorded most months, displaying Jan–Apr. An immature seen from Nature Trail at Nyasoso, 18 Jul 1993 was following with interest a full-grown dog.

Falconidae

Falco subbuteo Eurasian Hobby. PM SF (900). One seen above Nyasoso 5 Oct 1991 is the only confirmed record. Two other hobby sightings at 1550m 26 Dec 1993 and at the summit 28 Apr 1994 may relate to this species or African Hobby *F. cuvieri*.

F. biarmicus Lanner. AM (Nov to early May) u O (350–850). May breed in the area. Strongly associated with habitation where it preys on chickens. Seen in Nlohe, Tombel and Nyasoso.

Phasianidae

Francolinus squamatus Scaly Francolin. R f OF (400–2000). Nest with eggs reported in Nyasoso, Feb.

Rallidae

Sarothrura pulchra White-spotted Flufftail. R f FSP (750–1600). Heard all months, most frequently in secondary forest.

S. elegans Buff-spotted Flufftail. R? u FS (800–1550). Its eerie call (mainly heard at night) was believed by many local people to be that of a chamaeleon. Heard from onset of rains, in neglected thickets and stream beds within cultivated areas. First dates of calling in the study period were between 9 and 16 Mar, and not heard after 26 Jul).

Crex egregia African Crake. AM O (850). A migrant caught by hand on a foggy night on Nyasoso main street, 27 Nov 1991.

Gallinula angulata Lesser Moorhen. LM? (800) F. A sub-adult caught in a trap by schoolboys on the Ngusi side of Nyasoso, 17 Jan 1993, was released unharmed.

Columbidae

Columba unicincta Afep Pigeon. ? P (1350–1500). Two records of this generally lowland forest species: two birds on 28 Feb 1950, one of which was collected (Serle 1954); a sighting on 29 Nov 1995 (CGRB).

C. albinucha White-naped Pigeon. ? FP (1000–1450) "Near-threatened". First record: three seen at 1000 m above Nyasoso, 30 Mar 1993 (EW). Two seen there some 10 days later (EW, CGRB) and four in the same place, 20 Apr 1994 (EW). Sightings in the same area in Mar 1997 and 1998 of birds eating fruit of *Sapium* (FDL, RJD). Two seen at 1450 m, 21 Sep 1992 (SK). Subsequent records from neighbouring Bakossi Mts (Williams 1995, Dowsett-Lemaire & Dowsett 1999), Manenguba and Santchou (Dowsett-Lemaire & Dowsett 1999, Anon. 2000) so appears similarly distributed within the mountain chain to Gilbert's Babbler *Kupeornis gilberti*, but at lower densities. Prior to the Kupe records, only reported in Cameroon from Rumpi Hills in 1967 (Eisentraut 1968); otherwise known only from montane E Congo-Kinshasa and W Uganda.

C. sjostedti Cameroon Olive Pigeon. R u FSP (900–2000). Most records of this mountain chain endemic are of groups of 2–10 flying above the canopy. More common above 1500 m but occasional records over farm-bush as low as 900 m. Max. 60 at 1000 m, above Nyasoso, 21 Oct 1991.

Aplopelia larvata Lemon Dove. R u P (900–1950). Six mist-netted and, as suggested by Serle (1950), these more closely resembled *C. l. simplex*, the São Tomé race, than

inornata found elsewhere in Cameroon. One of the birds, however, had cinnamon underparts, resembling *C. l. larvata* from southern Africa, but this species has been found to be quite variable in other parts of its range too (A.Tye pers. comm.). Few sightings but probably not uncommon.
Streptopelia semitorquata Red-eyed Dove. R u O (350–400). Only known from Tombel, Loum and the road between them where it is not common.
Turtur afer Blue-spotted Wood Dove. R f O (350–900).
T. tympanistria Tambourine Dove. R f OFSP (450–1850). Less common in primary forest than elsewhere, consistent with findings of Brosset & Erard (1986).
T. brehmeri Blue-headed Wood Dove. R u SP (850–1150).
Treron calva African Green Pigeon. R f FSP (700–1800).

Psittacidae

Psittacus erithacus Grey Parrot. R u OF (350–850). Only small groups (up to 3) recorded Apr–Aug, but flocks of 15–28 flying over Nyasoso to and from roosts in Nov, and flocks of 41 and 50 in Jan. Largest flocks 8–14 in Feb–Mar and Sep–Oct.
Poicephalus gulielmi Red-fronted Parrot. R F (950–1000). Few records: May–Jun 1990 (SMA, PVH) and Mar 1999 (NB).

Musophagidae

Tauraco persa Green Turaco. R f FSP (500–1400). Most frequent in farm-bush with trees; not often recorded in primary forest.
T. macrorhynchus Yellow-billed Turaco. R c FSP (700–2050). Occurs throughout primary forest and in farms with trees.
Corythaeola cristata Great Blue Turaco. R u FS (350–1000). Possibly at reduced densities owing to hunting. Not in primary forest; occurs sporadically in farms with high canopy cover and in secondary forest around many villages including Nyasoso, Nsuke, Kolla and in Loum Forest Reserve. Recorded all months except Dec–Jan.

Cuculidae

Oxylophus levaillantii Levaillant's Cuckoo. AM (late Nov to early Apr) u FS (600–1050).
Cuculus solitarius Red-chested Cuckoo. AM? (Dec–Sep) u SP (700–1550).
C. clamosus Black Cuckoo. R f OFS (500–1000). Perhaps a partial migrant, but recorded every month, mostly in farmbush, and only the non-migratory race *gabonensis* has been confirmed. Call heard mostly Apr–Nov.
C. canorus Common Cuckoo. PM P (1000–1050). Two records above Nyasoso: 25 Nov 1993 (UGS, JB, EK); 23 Mar 1998 (FDL).
Cercococcyx olivinus Olive Long-tailed Cuckoo. R f OFS (500–1500). Only in primary forest and detection usually relies on the far-carrying calls, which were heard throughout the year. Eisentraut (1973) mentions collecting a *C. mechowi* at 1100 m, which has not otherwise been recorded. The two have very different voices but are so similar in plumage that perhaps the specimen should be re-examined.
Chrysococcyx cupreus Emerald Cuckoo. R f FSP (550–1550). A juvenile seen, late Nov. Call heard every month, but less in the first half of the year.

C. klaas Klaas's Cuckoo. R f OFS (400–1000). Call heard every month; juveniles seen Sep and Nov.
C. caprius Didric Cuckoo. R u OF (400–1000). Recorded in cultivated areas in all months except May–Jun, with a peak of calling birds in Jul. Whether there is movement in and out of the area is unclear.
Ceuthmochares aereus Yellowbill. R f FSP (700–1600).
Centropus leucogaster Black-throated Coucal. R u FSP (850–1000). Usually detected by deep resonant call from areas where farms border the forest above Nyasoso.
C. monachus Blue-headed Coucal. R f OF (400–1000).

Tytonidae

Tyto alba Barn Owl. R u O (400–850). Five records, in different months from Nyasoso and the banana plantations at Loum, suggest a small resident population.

Strigidae

Otus icterorhynchus Sandy Scops Owl. R P (1550). One record: one found roosting 1 m above ground on Max's Trail (TB).
Bubo poensis Fraser's Eagle Owl. R u OFSP (850–1600).
Glaucidium tephronotum Red-chested Owlet. R u P (1100–1600). One seen, apparently part of a mixed-species bird-party, Feb 1984; one mist-netted (Stuart 1986b).
G. sjostedti Chestnut-backed Owlet. R u P (1250–1550). First record for Kupe was one mist-netted above Nyasoso, Nov 1992; since heard there and on Max's Trail where one responded to play-back in Nov 1994 (SJ).
Strix woodfordi African Wood Owl. R u P (1000–2000).

Caprimulgidae

Caprimulgus climacurus Long-tailed Nightjar. AM r O (850). One record: in open farms at Nyasoso, Feb 1984. Presumably a passage bird.
C. nigriscapularis Black-shouldered Nightjar. R u OF (750–900). Distinctive call most often heard on moonlit nights in the dry season. Earliest record 15 Aug, but mainly heard late Oct to early Feb (latest 10 Feb). A male killed in Nyasoso, 7 May 1994, was nearing completion of primary moult, suggesting that the species may actually be resident, but quiet during the wet season.

Apodidae

Telacanthura ussheri Mottled Spinetail. LM? r O (850). One record: four birds over Nyasoso, 18 Dec 1993.
T. melanopygia Black Spinetail. AM? r OF (850). Two records, 8 and 10 Feb 1992, both of two birds with other passage swifts and hirundines over Nyasoso. Fry *et al.* (1988) mention only one record for Cameroon, although I have also seen this species near Nguti (Korup), Limbe and Kumba (see Rodewald *et al.* 1994), and there are more recent records from southern Cameroon (FDL, RJD).
Rhaphidura sabini Sabine's Spinetail. LM? u O (800–850). Described as non-migratory by Fry *et al.*. (1988), the nine records are all from times when other species are moving through, but perhaps this represents local wandering (FDL pers. comm.).

The records were: 1–2 on 14 Mar 1994, 20 Mar 1994, 21 Mar 1991, 30 Apr 1992; 2–5 on five dates between 12 and 28 Nov 1992.
Cypsiurus parvus Palm Swift. R f OFSP (350–1500). Most frequent between Kolla and Loum; only occasionally over primary forest.
Apus barbatus sladeniae African Black Swift. LM? r OF (850–2050). Apart from one record mentioned for "Bakossi" and attributed to Nyasoso in Fry *et al.* (1988), SMA and PVH recorded it in Jun 1990, and FDL and RJD saw several near the summit in Mar 1998. Although separation from *A. b. barbatus* in the field is almost impossible, the birds in this part of Cameroon are regarded by some (e.g. Collar & Stuart 1985,) as a separate species *A. sladeniae*, classified as 'Data Deficient' (BirdLife International 2000).
A. apus European Swift. PM u OF (850). Only seen during two-week passage periods both north and south. Records are of groups up to 100, all from Nyasoso, 8–20 Mar and 19 Sep to 3 Oct.
A. batesi Bates's Swift. R? u OFSP (800–1000). Recorded almost every month. Regularly enters the cave on the Nature Trail at Nyasoso; four mist-netted there. Although such a cave is a potential nest-site, none of the birds caught in Aug and Oct had incubation patches or moult in progress.
A. affinis Little Swift. R u OF (350–1950).
Tachymarptis aequatorialis Mottled Swift. ? P (1950–2050). One record: three at the summit, 13 Feb 1984 (Stuart 1986b). Otherwise, Fry *et al.* (1988) record it in Cameroon only from the Bamenda area.

Coliidae

Colius striatus Speckled Mousebird. R f OF (350–1000). Breeding recorded Jan–Feb (Serle 1965).

Trogonidae

Apaloderma narina Narina's Trogon. R u P (950–1300). Despite the difficulty of separating it from *A. aequatoriale*, it seems that this species is the more common, although not recorded at the higher elevations.
A. aequatoriale Bare-cheeked Trogon. R u P (1000–2000). Five records during the period.
A. vittatum Bar-tailed Trogon. R u SP (1000–2000). Mainly in primary montane forest, but also seen in an overgrown Quinine *Cinchona* plantation at Essosong.

Alcedinidae

Halcyon badia Chocolate-backed Kingfisher. ? u SP (900–1450).
H. leucocephala Grey-headed Kingfisher. AM u O (350–850). Passage migrant, seen between Loum and Tombel, 10 Feb to 13 Apr; one stayed in Nyasoso college grounds 23–27 Nov 1992.
H. malimbica Blue-breasted Kingfisher. ? r FP (600–1150).
H. senegalensis Woodland Kingfisher. R f O (350–900).
Ceyx lecontei Dwarf Kingfisher. R u FSP (650–1000). Five mist-netted in areas where rarely sighted; one seen several times in farmland at the roadside between Nsuke and Mbulle.

C. picta Pygmy Kingfisher. R f OF (350–1000).
Alcedo leucogaster White-bellied Kingfisher. R u SP (900–1550). Rarely seen, but mist-netted frequently in the forest. Moult Feb–Mar, suggesting breeding early dry season.
Megaceryle maxima Giant Kingfisher. R? u O (450). Recorded only in farmland near Kolla, near the Dibombe River; most other streams probably too small to support it.

Meropidae

Merops gularis Black Bee-eater. R u FS (650–1050). A nest-burrow was made in the path (Max's Trail) at 950m above Nyasoso from 18–26 Mar 1993, but the nest failed, presumably due to disturbance. Dependent juveniles seen Apr in two years.
M. pusillus Little Bee-eater. LM? r O (350). Owing to confusion with *M. variegatus*, just two acceptable records (both in association with *M. variegatus*) between Tombel and Loum: four on 21 Mar 1994 and one on 3 Apr 1994 (a time when many migrant species were passing through). Louette (1981) suggests there is some dispersal in the dry season away from breeding areas.
M. variegatus Blue-breasted Bee-eater. R? u O (350–850). Probably breeds in the area: dependent juvenile seen 23 Nov 1992; juveniles seen Mar–Apr. Over half of the records are from late Mar and Nov, suggesting some passage at those times.
M. albicollis White-throated Bee-eater. AM f OF (350–900). Dry season migrant with peak numbers at passage times, notably early Apr. Earliest 25 Oct, latest 5 May.
M. apiaster European Bee-eater. PM u OFSP (850–2000). Recorded between 8 Sep and 16 Oct on southward passage (flocks of 6–100), with fewer records on return passage, 21 Mar to 2 Apr.

Coraciidae

Eurystomus gularis Blue-throated Roller. LM? FS (900–1000). Four records between Aug and Nov in the study period.

Bucerotidae

Tockus albocristatus White-crested Hornbill. R u SP (900–1250).
T. fasciatus Pied Hornbill. R f OFSP (350–2000). The commonest hornbill, found in all areas, but favouring farms with tree cover and secondary forest. One seen eating a chamaeleon *Chamaeleo montium*. Usually in groups of 3–8.
Bycanistes fistulator Piping Hornbill. R? u OF (500–1100). Possibly at its upper altitudinal limit at Nyasoso, and more common at lower altitudes nearby. Four records in 1991, one in 1992, none in 1993, one in 1994.
B. cylindricus albotibialis White-thighed Hornbill. LM? FSP (350–900). Nine records during the study period, all between Jul and Jan in groups of 1–10. Does not occur high on the mountain, despite preferring primary forest (Rodewald *et al.* 1994).
B. subcylindricus Black-and-White Casqued Hornbill. ? O (350). One bird seen above Lala, Nov 1998 (Dowsett-Lemaire & Dowsett 1999).
Ceratogymna atrata Black-casqued Wattled Hornbill. LM? SP (850–1300). Two records in the period: groups of three and four in primary forest above Nyasoso. There were however several records during a two week visit in Feb 1984 (Stuart 1986b) suggesting a decline since then.

C. elata Yellow-casqued Wattled Hornbill. ? S (350) "Near threatened". One record: Loum F.R., Nov 1998 (FDL, RJD) is on the edge of its range.

Lybiidae

Gymnobucco calvus Naked-faced Barbet. R a OFSP (350–2050). Found in all habitats including the canopy of primary forest; most numerous in secondary forest. Breeds at least May–Nov (brood patch data), with moult Oct–Apr.

G. peli Bristle-nosed Barbet. ? F (950). Only confirmed records: 15 pairs breeding in Dec 1995 and Jan 1996 low on Max's Trail (NB). Another colony observed nearby at Nyang.

Pogoniulus scolopaceus Speckled Tinkerbird. R f OFSP (850–2050).

P. coryphaeus Western Green Tinkerbird. R f OFSP (850–2050).

P. atroflavus Red-rumped Tinkerbird. R u OFSP (700–2000). One mist-netted in late Nov had a brood patch.

P. subsulphureus Yellow-throated Tinkerbird. R f FSP (350–1100). One mist-netted in May had a brood patch.

P. bilineatus Yellow-rumped Tinkerbird. R f OFS (350–1550). Although common at higher elevations on neighbouring mountains, presumably the closed canopy on Kupe prevents it from penetrating the forest very far.

Buccanodon duchaillui Yellow-spotted Barbet. R f FSP (350–2050). Nest excavation noted in Mar and Apr.

Tricholaema hirsuta Hairy-breasted Barbet. R u SP (850–1500).

Lybius bidentatus Double-toothed Barbet. R u OF (750–900).

Trachyphonus purpuratus Yellow-billed Barbet. R f FSP (350–1900). Nest excavation at 1000 m, mid-May.

Indicatoridae

Prodotiscus insignis Cassin's Honeybird. R? u FS (850–1000). Seven records, all between Mar and Aug.

Melignomon zenkeri Zenker's Honeyguide. R? u FSP (900–1300). At least four individuals recorded above Nyasoso, a major range extension for this species: two singing at the edge of primary forest; one seen in farms with many trees; two mist-netted in secondary forest on the Nature Trail at Nyasoso. Most singing recorded Sep–Oct but also through to Apr. Song consists of a series of c. 20 whistles at a rate of 2 s^{-1}, the pitch and volume gradually increasing and then falling again at the end (described in more detail by Bowden *et al.* 1995). Neither of the birds caught in Nov was moulting, although one seen on 1 Apr 1997 was at least in tail moult (FDL, RJD).

Indicator maculatus Spotted Honeyguide. R? P (900–1700). Recorded three times, above Nyasoso: one with enlarged ovaries, 19 Nov (Serle 1950); one on 10 Apr (Serle 1954); one seen in Nov 1990 (DMN).

I. conirostris Thick-billed Honeyguide. R u/f OFSP (600–1850).

I. exilis Least Honeyguide. R u F (850–950).

I. willcocksi Willcocks's Honeyguide. R? FS (850–1000). Three records during the study period.

Picidae

Sasia africana African Piculet. R u FSP (850–1200). Usually seen on vines in disturbed areas of secondary forest but also occurs in primary; 28 mist-netted on Nature Trail at Nyasoso. Within a few months of being ringed, the alloy ring invariably discolours to a dull orangey surface. Breeds in the dry season: nest-building early Apr; carrying food late Nov; performing butterfly-like display flight in early Mar; brood patches Dec–Mar; moult Jan–May.

Campethera cailliautii Green-backed Woodpecker. R u FSP (850–1200).

C. tullbergi Tullberg's Woodpecker. R u P (900–2000). Usually in mixed-species flocks, high in large trees in open areas. Typically associates with *Phyllastrephus poliocephalus*, *Andropadus tephrolaemus*, *Kupeornis gilberti* and *Ploceus bicolor*. Not often below 1400 m.

C. nivosa Buff-spotted Woodpecker. R u FSP (850–1500). Most frequent in secondary forest and farm-bush with trees, but also enters primary forest. Two mist-netted on Nature Trail at Nyasoso, where often associates with mixed species parties, typically including *Terpsiphone rufiventer, Criniger calurus* and *Ploceus bicolor*. Only record above 1050 m was one collected by Serle (1965).

Dendropicos gabonensis Gabon Woodpecker. R u FSP (700–1200). Usually seen in farms with good tree cover, it is less associated with mixed-species foraging flocks than the previous two species.

D. fuscescens Cardinal Woodpecker. R f OFS (850–1050).

D. ellioti Elliot's Woodpecker. R u P (1250–1950). Strongly associated with thickets in tree-falls, generally occurring low in the vegetation. Not as numerous as *C. tullbergi*, contrary to Stuart & Jensen's (1986) generalisation for mountain chain as a whole. One mist-netted.

D. xantholophus Yellow-crested Woodpecker. R u F (800–950). Seven records of this lowland species in the study period, all from farmland around Nyasoso and Bendume.

Eurylaimidae

Smithornis sharpei Grey-headed Broadbill. R f SP (850–1950). Evenly distributed within the forest. Display flight heard most months, but more frequently Sep–Nov. Brood patches Nov, family parties mist-netted in Jan and Mar, 23 moulting birds May–Jul; suggesting breeding season is the dry season.

S. rufolateralis Rufous-sided Broadbill. R? u P (900–1050). Only three confirmed records in the period, in the lowest undisturbed forest: two displaying males in Feb and one female in Apr.

Pittidae

Pitta reichenowi Green-breasted Pitta. ? S (900–950). First confirmed record, 22 Feb 1992 (SMA). Call heard, 2 Mar 1993 (TB). Both at forest edge above Nyasoso.

Hirundinidae

Psalidoprocne nitens Square-tailed Saw-wing. R f OFSP (600–1050).

P. pristoptera Black Saw-wing. R c OFSP (350–1100). The commonest saw-wing. Local race *petiti* sometimes regarded as specifically distinct. Nests found high in a

volcanic ash quarry bank, beside the road at Mboh (550 m). Juveniles seen there in Aug (paler rumps and shallowly forked tails) bore superficial resemblance to Mountain Saw-wing *P. fuliginosa* of further west. Serle (1954) recorded three nests with young near Nyasoso, Apr.

P. obscura Fanti Saw-wing. AM? OF (850). Only certain record, Apr 1991 (EW) possibly a migrant.

Hirundo semirufa Red-breasted Swallow. ? u O (350–850). Most noticeable when collecting mud from puddles for nest-building in Mar.

H. abyssinica Lesser Striped Swallow. LM (late Sep–Jun) f OF (350–950). Breeds in the villages Mar–May but absent Jul–Aug, returning late Sep. Larger numbers noted late Oct and Nov and late Mar, when flocks of up to 60 roost in Elephant Grass *Pennisetum purpureum* at Nyasoso.

H. fuliginosa Forest Swallow. R f OFSP (750–1550). Usually in loose groups of up to ten, feeding around large emergent trees in secondary forest and farms or above the canopy of primary forest. Roosts and breeds in the cave on Nyasoso Nature Trail where 23 mist-netted. One with a brood patch, May; starting primary moult in Aug, finishing in Oct. No evidence of seasonal movements.

H. fuligula Rock Martin. ? u G (2000). Only recorded around the summit in Feb 1984 (Stuart 1986b), in Jun 1994 (RES, OEM) and in Mar 1998 (FDL, RJD).

H. rustica Barn Swallow. PM f OFSPG (350–2050). First arrivals between 19 Sep and 27 Oct, and last departures between 11 and 21 Apr during the study period.

Delichon urbica House Martin. PM OF (850–2000). Two Nyasoso records: 20 on 19 Sep 1991; one on 29 Feb 1992 (CGRB). Several near summit 24–25 Mar 1998 (FDL).

Riparia riparia Sand Martin: PM OF (850). 25 passed over Nyasoso with other migrants on 19 Sep 1991.

Motacillidae

Motacilla flava Yellow Wagtail. PM (late Nov to Apr) u O (350–850). Passage migrant in small numbers, with 1–2 spending several weeks in the area. Arrived apparently later than in other parts of Cameroon, the first being between 23 Nov and 5 Dec, and the last sightings from 11 Mar to 23 Apr.

M. clara Mountain Wagtail. R u FSR (600–1050).

Anthus trivialis Tree Pipit. PM (late Nov to Mar) u O (850).

A. novaeseelandiae cameroonensis Cameroon Pipit. AM r O (850). Two records of singles on the college sports field in Nyasoso 22–23 Oct 1993 and 9–18 Jan 1994.

Campephagidae

Coracina caesia Grey Cuckoo-Shrike. R f P (1100–1950). Most common above 1400 m.

C. azurea Blue Cuckoo-Shrike. R? SP (900–1200) SP. Four records in the study period.

Campephaga petiti Petit's Cuckoo-Shrike: R f FSP (800–1050). Most often seen in disturbed forest where often joins mixed-species flocks. Attended nest and recent fledglings recorded in Nov and Apr respectively.

C. phoenicea Red-shouldered Cuckoo-Shrike. AM? F (800). One record: a male in moult on the Ngusi side of Nyasoso, 30 Jan 1994 (CGRB). A savanna bird, wandered

into the forest belt during its non-breeding season. No previous records in the forest belt (*e.g.* Louette 1981, Keith *et al.* 1992) but one seen well to the north of Kupe on Mt Oku (Williams 1992).

C. quiscalina Purple-throated Cuckoo-Shrike. R? u FSP (850–1200). Probably resident but no records between mid-Jun and Oct. One breeding record at 950 m, Nov (SJ).

Pycnonotidae

Andropadus virens Little Greenbul. R a FSP (350–1950). Commonest in secondary forest and farms with trees; in primary forest only occurs in natural clearings. An altitudinal migrant, absent above 1400 m during the wet season, and generally scarce above 1100m. Brood patches recorded Mar–Jul, juveniles Feb–Jul, moult Feb–Oct with all birds moulting by Aug. Breeding season is therefore clearly defined as the early wet season.

A. gracilis Little Grey Greenbul. R f FSP (350–1300). Usually seen in secondary forest, in middle strata or canopy, but five mist-netted on Nyasoso Nature Trail and one at 1200 m. One with brood patch in Nov, when a juvenile was also caught.

A. curvirostris Plain Greenbul. R u FS (700–1100).

A. gracilirostris Slender-billed Greenbul. R u FSP (850–1500). Not recorded above 1100 m except by Serle (1965).

A. latirostris Yellow-whiskered Greenbul. R a FSP (350–1950). Altitudinal migrant, absent above 1300 m Apr–Sep, but occurs almost to the summit in the dry season. Much less common above 1300 m, even in the dry season. The most numerous species mist-netted in secondary and low-altitude primary forest. Brood patches (n=315) indicate breeding May–Oct (apart from one brood patch at 1200 m in Feb), and moult starts from early Sep into the dry season. Some evidence that juveniles tend to move to higher altitudes during the dry season, but no records of breeding there. Individuals have moved between 900 and 1250 m above Nyasoso, and one from Nyasoso to Ndum (7 km).

A. ansorgei Ansorge's Greenbul. ? u S (850–950). Several records from the Nature Trail above Nyasoso (FDL, RJD, SMA, NB).

A. tephrolaemus Mountain Greenbul. R a SP (900–2050). Above 1400 m often forms a large proportion of mixed-species flocks. Much less common lower down and relatively rare at 900–1000 m. Birds seen on nests in mid-Apr, which is also when Serle (1954) recorded a nest with young, but brood patches recorded only Oct–Feb.

A. montanus Cameroon Montane Greenbul. R u SP (900–1600), "Near-threatened". Eisentraut (1968, 1973) found it at 900 m. No other records until nine caught at 1550 m, including two juveniles in Feb and Apr. All three birds caught in Jan had brood patches. Inhabits the dense shrub layer of relatively open areas within the forest, mostly tree-falls.

Calyptocichla serina Golden Bulbul. R u FSP (850–1200).

Baeopogon indicator Honeyguide Bulbul. R f FSP (850–1100). Most song heard Mar–Apr.

Ixonotus guttatus Spotted Bulbul. R u OFS (850–900).

Chlorocichla flavicollis Yellow-throated Leaflove. R u OF (850–900). Recorded in farms and gardens near Nyasoso.
C. simplex Simple Leaflove. R u OF (450–1000).
Thescelocichla leucopleurus Swamp Palm Bulbul. R u OF (550–1000).
Phyllastrephus poensis Cameroon Olive Greenbul. R f P (1050–2000). Occupies the lower and middle vegetation strata, often in pairs or as part of mixed species foraging flocks typically comprising *P. poliocephalus, Andropadus tephrolaemus* and *Kupeornis gilberti*. More numerous above 1300 m. Brood patches Nov–Feb.
P. icterinus Icterine Greenbul. R? u SP (900–1100). Because of confusion between this species and *P. xavieri*, only three records confirmed, including one heard calling by PWR, who is familiar with both species from Korup.
P. xavieri Xavier's Greenbul. R f SP (900–1200). Measurements of eight birds mist-netted referred them to this species. Usually associated with mixed-species foraging flocks and not seen above mid-storey vegetation. Brood patches Jan–Mar.
P. poliocephalus Grey-headed Greenbul. R f SP (850–2000), "Near-threatened". Noisy and almost always in mixed-species flocks, usually with *Campethera tullbergi, Kupeornis gilberti, Andropadus tephrolaemus, Phyllastrephus poensis* and *Ploceus bicolor*. Most numerous 1200–1800 m and distinctly less so in secondary forest and above 1800 m. Brood patches Jan–Feb. A nest with young, 10 Apr, at 2000 m; a female collected on 9 Feb was about to lay eggs (Serle 1954).
Bleda notata Grey-headed Bristlebill. R u FS (750–900). A lowland species at its upper altitudinal limit. Three records, including one mist-netted on Nyasoso Nature Trail.
Criniger chloronotus Eastern Bearded Bulbul. ? P (900–950). A female collected at 900 m (Serle 1965). N records during the study period but more recent records at the base of the Shrike Trail and Nyasoso Nature Trail (EW, FDL, RJD).
C. calurus Red-tailed Bulbul. R f SP (700–1100). Separation of this species from *C. ndussumensis* has caused considerable discussion. Birds with bill dimensions suggesting both species have twice been caught together, apparently a pair, on Nyasoso Nature Trail. They had similar plumage with no suggestion of the pale lores of *ndussumensis*. Usually forages in middle and lower strata in fairly dense vegetation, often in mixed-species flocks with *Campethera nivosa, Phyllastrephus xavieri, Anthreptes fraseri* and *Ploceus bicolor*. More numerous in disturbed forest with more understorey than in true primary forest. Despite the problems of identification, this is the more common of the two species.
C. ndussumensis White-bearded Bulbul. ? u P (950). Recently confirmed at 950 m on the Shrike Trail (FDL); cautious reports of the call (EW, SK) based on Chappuis (1975).
Pycnonotus barbatus Common Bulbul. R a OFSP (350–1200). Less numerous with greater tree cover and only enters primary forest at tree-fall gaps.

Turdidae

Neocossyphus poensis White-tailed Ant Thrush. R f SP (850–1950). No juveniles recorded among 16 caught, but moult noted at 900 m in Nov, suggesting wet season breeding.

N. fraseri Rufous Flycatcher-Thrush. R f FSP (750–1950). Most vocal towards end of dry season. Occupies middle strata in primary and disturbed forest. A recent fledgling collected 23 Jan (Serle 1965).
Turdus pelios West African Thrush. R c OFS (350–1000). Breeding at least Mar–Jul.
Zoothera crossleyi Crossley's Ground Thrush. R u P (1000–2050), "Near-threatened". Song heard mostly Mar–May but, among seven caught, brood patches recorded Sep and Jan and another was finishing wing moult in Nov (which accords with three birds moulting on Mt Cameroon in Dec–Jan: Bowden 1986). These limited data imply that breeding occurs during the wet and early dry seasons.
Alethe diademata Fire-crested Alethe. R u SP (850–1350). Among 13 mist-netted, one juvenile in Nov and birds in moult Oct–Dec, suggesting a breeding season similar to that of *A. poliocephala* for which there are more data.
A. poliocephala Brown-chested Alethe. R f SP (800–2000). Mist-netting has shown this species to be more numerous than field observations would suggest (180 captures). Brood patches recorded Jul–Sep at 950–1250 m but only in Jan (two individuals) at 1550 m, supporting Tye's (1992) suggestion of a reversed breeding season at higher altitudes in this species. One bird ringed as an adult at 1200 m on 5 Feb 1984 was recaptured in the same area in Nov 1992 and again on 24 May 1994.
Sheppardia bocagei Bocage's Akalat. R f P (850–1700). Relatively common up to 1400 m, above which it is markedly less so. Juveniles recorded May–Jul at 900 m; two brood patches at 1200 m in Feb. A juvenile caught at 1550 m in Dec is suggestive of a reversed breeding season at higher altitudes.
Luscinia megarhynchos Nightingale. PM O (850). One migrant stayed on the school campus at Nyasoso, 18–20 Mar 1992.
Cossypha roberti White-bellied Robin-chat. R u P (900–2000). Juveniles been seen Mar; brood patches recorded Nov and Feb (1550 and 1850 m) so certainly a dry season breeder at high altitudes.
C. isabellae Mountain Robin-chat. R f P (1350–2000). Common above 1500 m, associated with dense low shrubs. Brood patches recorded Nov–Feb, juveniles Dec–Mar, and moult Mar–Apr.
C. cyanocampter Blue-shouldered Robin-chat. ? C (850). One record, from a thicket in Nyasoso village, Mar–Apr 1997 (FDL).
C. niveicapilla Snowy-crowned Robin-chat. R f O (600–850).
Saxicola rubetra Whinchat. PM r O (850). Three records from open areas at Nyasoso: Feb 1984, 25 Dec 1992 (PJD), 27 Feb 1993. Generally inhabits drier areas, which may explain why none seen for more than one day.

Sylvidae

Bradypterus baboecala Little Rush Warbler. R f O (450–900). Found exclusively in areas of tall Elephant Grass *Pennisetum purpureum*, which is mostly in recently abandoned cultivated areas. Difficult to observe, but mist-netting suggests fairly common.
Bathmocercus rufus Black-faced Rufous Warbler. R c FSP (700–1600). Occupies low shrubby vegetation, notably stands of Acanthaceae, where it skulks close to ground

level. Only penetrates primary forest at major treefalls. A brood patch recorded Apr and young juveniles caught May.
Acrocephalus rufescens Greater Swamp Warbler. R c O (350–1000).
Hippolais polyglotta Melodious Warbler. PM F (950). One record, 28 Nov 1994 (SJ).
Eremomela badiceps Rufous-crowned Eremomela. R f FSP (850–1200). Usually in mixed species flocks (typically with *Apalis nigriceps*), gleaning insects from the outer leaves of middle and higher strata branches. Family parties including young juveniles recorded in Jan, Apr and May.
Sylvietta virens Green Crombec. R f OFS (750–1550).
S. denti Lemon-bellied Crombec. ? S (850). Two sightings of pairs; birds singing near Nyasoso (FDL, RJD). Probably under recorded.
Macrosphenus concolor Grey Longbill. R f FSP (900–1200).
M. flavicans Yellow Longbill. R u SP (850–1300).
Phylloscopus trochilus Willow Warbler. PM (mid-Nov to early Apr) u OFG (750–1950). Small numbers, mainly on passage in Nov and Feb–Apr. Frequents open farms and joins mixed species flocks in more enclosed areas. Recorded on open grassy knolls near the summit, but not inside primary forest.
P. sybilatrix Wood Warbler. PM (mid-Nov to Apr) f OFSP (350–1100). Abundance appears to vary between years, but more numerous than *P. trochilus* and more often enters forest. Often in mixed species flocks; tends to forage in upper half of taller trees.
P. herberti Black-capped Woodland Warbler. R f SP (900–2000). Alone, in small parties or in mixed species flocks; common throughout primary forest and slightly less so in secondary forest, and in all strata of relatively open vegetation. In addition to the song described by Stuart (1986a), has another common call, a clear, drawn out, slightly ascending trill lasting about 2 s. Brood patches recorded Nov–Dec. Some suggestion of altitudinal migration: the only birds caught at 900 m were in May–Jun, with sightings there from 31 Mar (FDL).
Hyliota flavigaster Yellow-bellied Hyliota. R u FS (850–1000). A canopy-dwelling species of disturbed areas, usually in mixed species flocks. Slightly more numerous than *H. violacea*.
Hyliota violacea Violet-backed Hyliota. ? u SP (950–1100). Only three records during the study period, in disturbed forest (RES) but several sightings in Jun 1990 (SMA, PVH). One other record from Southwest Province, in a clearing at Korup (Rodewald *et al.* 1994).
Hylia prasina Green Hylia. R f FSP (850–1550).
Sylvia borin Garden Warbler. PM F (850–950). Five records: 10 Nov 1992 (SK); several singing 20 and 22 Mar 1998 (FDL, RJD); 19 Mar 1999 (NB); 29 Mar 2000 (NB).
S. atricapilla Blackcap. PM r S (850). One record: Nyasoso Nature Trail 14 Jan 1995 (CG, CS).
Cisticola anonymus Chattering Cisticola. R c O (350–950).
C. erythrops Red-faced Cisticola. R u O (350–850). In areas with stands of Elephant Grass *Pennisetum purpureum*.

C. chubbi Chubb's Cisticola. R u SG (900–2050). Recorded near Essossong, with a nest with young at 1050 m nearer to Nyasoso, 10 Apr (Serle 1954); this is low for this species. The only other records have been on grassy outcrops near the summit (Stuart & Jensen 1986, RES in 1994). Much more numerous on nearby mountains with more grassland.

Prinia subflava Tawny-flanked Prinia. R f O (350–900). Birds carrying nest material mid-Nov.

P. leucopogon White-chinned Prinia. R c OF (350–1000).

P. bairdii Banded Prinia. R c OFS (350–1550). Frequents dense shrubby vegetation, only entering forest where large treefalls have created such habitat. Fledglings noted late Nov.

Urolais epichlora Green Longtail. R c FSP (850–2000). Prefers openings and gaps in the canopy, which perhaps explains why it is more numerous on other nearby mountains than on Kupe. Most records are from above 1200 m, with lower ones all Feb–Jul, suggesting seasonal movement. Brood patches Dec–Jan; seen feeding young mid-Apr; family parties mid-Apr and early Jun.

Apalis binotata Masked Apalis. R? u FS (750–1000). Three records during the study period, in dense secondary thicket. One had only a narrow black stripe down the throat, broad white cheeks and yellow sides to the breast, unlike any available fieldguide illustrations, but comparison with skins at the British Museum (Natural History) revealed that it was certainly this species and probably a sub-adult female.

A. jacksoni Black-throated Apalis. R u FS (850–1350). Montane species of clearings and disturbed vegetation, sometimes joining mixed species flocks.

A. nigriceps Black-capped Apalis. R c FS (750–1250). Invariably in mixed species flocks, even as family groups. Juveniles noted in Jan and May.

A. cinerea Grey Apalis. R c P (950–2050). Montane species. Pair breeding in dense vegetation near ground level a tree-fall gap, late Dec. One with brood patch, Oct. Juvenile collected 10 Apr (Serle 1965).

A. rufogularis Buff-throated Apalis. R f FSP (850–1100). One in wing moult, May.

Camaroptera brachyura Grey-backed Camaroptera. R c OFS (350–1550). Common in cultivation and gardens; one record in a tree-fall gap at 1550 m inside primary forest. The local name translates to 'man who lives by the fence': an apt habitat description.

C. superciliaris Yellow-browed Camaroptera. R u FS (700–1150).

C. chloronota Olive-green Camaroptera. R f FSP (750–1300). Brood patches Nov–Mar.

Poliolais lopezi White-tailed Warbler. R u SP (850–1900) "Near threatened". Occurs in stands of dense low shrubby vegetation, notably Acanthaceae (mainly *Oreacanthus mannii*), which is found typically at higher elevations where the canopy is less continuous but also in disturbed areas lower down. Brood patches Oct–Feb.

Muscicapidae

Fraseria ocreata Fraser's Forest Flycatcher. R u FSP (750–1200).

Muscicapa striata Spotted Flycatcher. PM u O (650–1000). Mainly 1 Oct to 28 Nov (18 records); 3 records 26 Mar to 1 Apr.
M. adusta Dusky Flycatcher. ? F (850–900). Two records in farms at the edge of the forest above Nyasoso. Also scarce on Manenguba and in the Rumpi Hills, but common on Mt Cameroon and in the Bamenda Highlands (Stuart & Jensen 1986).
M. olivascens Olivaceous Flycatcher. ? S (850–1050). Three records: one mist-netted on Nyasoso Nature Trail, 24 Nov 1992; one seen nearby, 20 Mar 1993, and again in 1998 (FDL).
M. cassini Cassin's Grey Flycatcher. ? u S (400). Seen on the Dibombe River at Kolla Songo, apparently the only river large enough for it on Kupe.
M. epulatus Little Grey Flycatcher. ? u FS (850–1000).
M. sethsmithi Yellow-footed Flycatcher. R f FSP (850–1950). A bird of tree-fall gaps, small forest clearings and recently cleared farms. Brood patches Feb and Jul; nest building late Feb; fledglings seen late Jul and Oct; suggest protracted breeding season.
M. caerulescens Ashy Flycatcher. R u FS (850–950).
M. comitata Dusky Blue Flycatcher. R u FS (750–1050).
M. fuliginosa Sooty Flycatcher. R u F (850–1050). Juveniles seen in late Nov.
Myioparus plumbeus Grey Tit-Flycatcher. ? O (400). One seen above Lala, Nov 1998 (Dowsett-Lemaire & Dowsett 1999).

Platysteiridae

Megabyas flammulata Shrike Flycatcher. R u FSP (850–1250). Usually in pairs or small parties in the canopy at forest edge, but occasionally penetrates primary forest. An immature seen late Apr.
Bias musicus Black and White Flycatcher. R f FS (800–1000). Two active nests, Jan.
Batis minor Black-headed Batis. R u FS (850–1050).
B. poensis Bioko Batis. R FS (850–1050). Four records from mixed species flocks in disturbed areas. A nest with eggs, Mar 1998 (Dowsett-Lemaire & Dowsett 1999).
Platysteira concreta Yellow-bellied Wattle-eye. R f SP (900–1950). Unobtrusive but reasonably common in small groups; sometimes joins mixed species flocks, where mainly below 3 m. Brood patches Dec–Mar; moult Jul–Aug.
P. chalybea Black-necked Wattle-eye. R u SP (900–1950). Uncommon below 1400 m. Usually in a well developed shrub layer and often close to the forest floor. Joins mixed species flocks but more often in pairs or family parties. Brood patches at 1550 m, Jan–Feb.
P. castanea Chestnut Wattle-eye. R u FSP (850–1250). An active nest, late Feb.
P. tonsa White-spotted Wattle-eye. R SP (850–1200). Five records during the period. Joins mixed species flocks.
P. cyanea Scarlet-spectacled Wattle-eye. R c OFS (350–1050).

Monarchidae

Erythrocercus mccalli Chestnut-capped Flycatcher. R u SP (350–1300).
Elminia longicauda Blue Fairy Flycatcher. R c OFS (350–1100). Open cultivation, occasionally entering secondary forest. Carrying food, late Mar; fledglings mid-Jun.

Trochocercus nigromitratus Dusky Crested Flycatcher. R u FSP (850–1550). Unobtrusive in low dense thicket within forest, but mist-netting has shown it to be numerous. One brood patch at 900 m, Feb.
T. albiventris White-bellied Flycatcher. R u P (1300–2000). Favours openings in the forest which probably explains why it is less common on Kupe than on neighbouring mountains. Generally alone or in pairs, but occasionally joins mixed species flocks.
T. nitens Blue-headed Crested Flycatcher. R? SP (900–1500). Five records in the study period, in forest understorey. Family with dependent young, 1 Apr (FDL, RJD).
Terpsiphone viridis African Paradise Flycatcher. R f OFS (450–1100). Most numerous in open farms and gardens where alone or in pairs. Occasionally joins mixed flocks at the forest edge. Several white males seen.
T. batesi Bates's Paradise Flycatcher. R u FSP (800–1200). More a forest bird than *T. viridis*, usually in mixed species flocks. Females of the two species difficult to separate. Probably the commoner of the two species overall and certainly within forest habitats. Two brood patches, Jan; a juvenile, Jan.
T. rufiventer Red-bellied Paradise Flycatcher. R c SP (700–1700). Most mixed species flocks up to 1400 m contain this species. Breeds throughout dry season; family parties late Nov; brood patches Jan; an active on 1 Mar; moult in progress May.

Timaliidae

Kakamega poliothorax Grey-chested Illadopsis. R f P (1150–2000). Rare below 1400 m. A juvenile mist-netted Oct; moulting Nov–Dec and Feb; suggests breeding late rains.
Illadopsis fulvescens Brown Illadopsis. R u SP (900–1200).
I. rufipennis Pale-breasted Illadopsis. R u FSP (900–1350).
I. cleaveri Black-cap Illadopsis. R u SP (900–2000). Brood patches Jan–Feb at 1550 m and Jun–Jul and Nov at 900 m, which, despite the small sample, suggests a reversed breeding season at higher altitudes.
Kupeornis gilberti Gilbert's Babbler. R f SP (1000–2050) "Endangered". Discovered on Kupe by Serle (1949). Usually frequents the larger boughs of tall trees (canopy and middle strata), searching for food in moss, epiphytes and crevices. Occasionally descend to the understorey. Always in groups of up to 25, usually with *Phyllastrephus poliocephalus* and other species that associate with the latter. Often noisy when excited by snakes or other dangers, but remain quiet for long periods. Breeding recorded Apr and Jun by Serle (1954, 1957, 1981); juveniles seen Nov–Jan, suggesting an extended breeding season. One mist-netted, at 1550 m in Nov; it was starting wing moult.
Picathartes oreas Grey-necked Rockfowl. R u SP (900–2000) "Vulnerable". At low densities throughout the forest. Three mist-netted, two on the Nyasoso Nature Trail, close to the village. Several old nests found at lower altitudes on overhanging rock faces in forest. One old nest was re-used: the two eggs hatched 3 and 5 Apr 1994, but the nest had fallen for unknown reasons eight days later. Hunters in Nyasoso are

familiar with "rockfowl" as they often term them, and believe that they were more numerous twenty years ago. It gets caught in spring-traps (snares) set for mammals, which may have reduced the population.

Remizidae

Pholidornis rushiae Tit-hylia. R u F (850–1000). Alone or in groups of up to six; joins mixed flocks. Favours leguminous trees that are retained in farms for maintaining soil fertility, where it gleans insects from bare branches. Juveniles late Mar.

Nectariniidae

Anthreptes fraseri Fraser's Scarlet-tufted Sunbird. R u SP (850–1550). Usually in mixed species flocks. One with brood patch, Nov.

A. rectirostris Green Sunbird. R f OFS (850–1550).

A. collaris Collared Sunbird. R f FSP (400–1600).

Nectarinia seimundi Little Green Sunbird. ? F (1000). One record, Apr 1997 (FDL, RJD); likely under-recorded.

N. batesi Bates's Sunbird. R u FS (850–1100). Not often seen (easily overlooked); five mist-netted on Nyasoso Nature Trail. In creepers and thicker vegetation, any height.

N. olivacea Olive Sunbird. R a FSP (350–1600). The most numerous sunbird at low altitudes, in all vegetation levels but mostly in the middle strata both in farm-bush with considerable tree cover, and in forest. Brood patches Oct–Apr; most birds moulting in Apr. However, two birds also had brood patches in Jul. Mist-netting suggests altitudinal movements, birds moving down in the wet season.

N. ursulae Ursula's Sunbird. R f SP (900–2000) "Near-threatened". Throughout the forest but less common below 1200 m. In all vegetation strata, but mostly high in the canopy. Birds carrying nest material, late Nov; a family party with fledglings, late Dec; brood patches Dec–Feb; moult Feb–Apr indicating a relatively short breeding season. The only records at 900 m were in Jul, indicating some altitudinal migration.

N. oritis Cameroon Blue-headed Sunbird. R a SP (900–2050). Censuses by RES and OEM showed that this is the most numerous bird species within the primary forest. Above 1400 m it is locally abundant around flowering trees, notably an endemic Rubiaceae with long pendulous flowers near ground level. Breeding season protracted, but mostly towards the end of the wet season: brood patches in almost every month. Moult mainly Nov–Jan.

N. verticalis Green headed Sunbird. R f OF (350–1050).

N. cyanolaema Blue-throated Brown Sunbird. R? u OF (850–1050).

N. fuliginosa Carmelite Sunbird. ? OF (650–950). Two records during the period.

N. rubescens Green-throated Sunbird. R u OFS (350–900).

N. chloropygia Olive-bellied Sunbird. R c OF (350–1000). Status uncertain in view of potential confusion with *N. minulla* (*q.v.*). Building nests late Mar.

N. minulla Tiny Sunbird. ? FS (850–1050). Present in farm-bush low on Max's Trail in 1998 (FDL, RJD). Serle (1950) collected four on farms above Nyasoso. Probably overlooked during the study period, possibly due to potential confusion with *N. chloropygia* (*q.v.*).

N. preussi Northern Double-collared Sunbird. LM? u FSP (1000–2050). Much less common on Kupe than on neighbouring mountains, presumably due to its preference for relatively open areas. Recorded only above 1950 m by Stuart (1986a) in Feb, but also occasionally occurs down to the farms above Nyasoso.
N. bouvieri Bouvier's Sunbird. ? r FP (850–1400). Two records: 850 m, Nov 1990 (DM); 1400 m, 29 Feb 1992 (SMA). Common on neighbouring Mt Manenguba in more open habitats.
N. cuprea Copper Sunbird. LM? OF (350–900). Two records: one between Loum and Tombel, 11 Apr (CGRB); one above Nyasoso, 20 Sep (RES).
N. coccinigaster Splendid Sunbird. R u OF (850–950).
N. superba Superb Sunbird. R u OF (350–950). An active nest, late Nov. Serle (1954) collected one at its nest, 28 Feb.

Zosteropidae

Zosterops senegalensis Yellow White-eye. R f FSP (800–2050).

Oriolidae

Oriolus brachyrhynchus Western Black-headed Oriole. R f FSP (850–1600). Generally regarded as a lowland species (*e.g.* Serle 1950), but three records were from 1050–1600 m.
O. nigripennis Black-winged Oriole. R f FSP (850–2000). Brosset & Erard (1986) regarded it as more of a secondary forest species than *O. brachyrhynchus*, but this is not supported by observations on Kupe. Both species tend to occur in the canopy and occasionally in mixed species flocks, with little altitudinal separation.

Laniidae

Lanius mackinnoni Mackinnon's Shrike. R f O (600–1000). Juveniles early Dec.
L. collaris Fiscal Shrike. ? O (850). Recorded Nyasoso, Feb 1984 (Stuart 1986b) but not since.
L. senator Woodchat Shrike. PM O (850). Three records of passage migrants, all on Nyasoso college campus: Feb 1984, 18 Mar 1993, 18 Nov 1994 (SJ).

Malaconotidae

Dryoscopus senegalensis Red-eyed Puffback. R f FS (750–1300).
D. angolensis Pink-footed Puffback. R u FSP (750–1950). A family party, 1 Apr (FDL).
D. sabini Sabine's Puffback. R u FSP (850–1300).
Laniarius luehderi Lühder's Bush Shrike. R f OF (350–1000).
L. fuelleborni Fülleborn's Black Boubou. R f P (1000–2000). Inhabits areas with dense low shrubby vegetation, which is often on steep slopes or in tree-falls. Such areas are limited on Kupe and it is more numerous on neighbouring mountains.
Malaconotus bocagei Grey Bush-shrike. R f OF (750–1000).
M. multicolor Many-coloured Bush Shrike. R f FSP (750–1300). The far-carrying "whoop" call is often heard in secondary forest. One record from 1300 m on Max's Trail (FDL), but mainly below 1000m. Colour morphs included birds with underparts entirely yellow or mainly orange. Serle did not record any bush-shrike other than *M.*

kupeensis on Kupe; if this represents a real change, it could have implications for competition with *M. kupeensis*.

M. kupeensis Mt Kupe Bush-shrike. R? u P (950–1450) "Endangered". Described by Serle (1952), then not seen until 1989 (Bowden & Andrews 1994). Despite considerable effort, only 13 sightings during the study period; 26 sightings (probably of seven pairs, once two pairs in an apparent territorial dispute), but call heard only 2–3 times, in 1990 (SMA, PVH). Mostly seen in the wet season, especially Jun–Jul; despite greater observer effort in the dry season, no sightings between 10 Oct and 20 Feb. All sightings were along trails above Nyasoso (except a pair at 1300 m above Kupe village: SN), all in primary forest with relatively open understorey. Mostly 1–6 m above the forest floor although occurs almost up to the canopy. There has been forest loss in 1998 in one of the sites at 1250 m on Max's Trail. More detailed descriptions of calls are given by Dowsett-Lemaire (1999); a subsequent recording is a series of harsh accelerating ticks, terminating with some richer but somewhat more husky scalding notes: "tic tic tic tic tic tic tic - cheeow - cheow - cheow cheow" (NB). Scarce, but several birds seen near Lake Edib in the neighbouring Bakossi Mountains (I. Faucher pers. comm., Dowsett-Lemaire & Dowsett 1999).

M. cruentus Fiery-breasted Bush-shrike. R FS (900–1000). Five records in the period. One, mist-netted on Nyasoso Nature Trail, was mid-way through primary moult, Jul.

M. gladiator Green-breasted Bush-shrike. R u P (1100–2000), "Vulnerable". Solitary, at low densities in primary forest. All but one record were above 1400 m where move high in the canopy. Usually detected by call (described by Stuart & Jensen 1986). Records spread evenly through the year.

M. monteiri Monteiro's Bush-shrike. ? P (1450) "Data deficient". One sighting, at 1450 m, 21 Sep 1992 (Andrews 1994). Taxonomic status uncertain (Hall *et al.* 1966, Hall & Moreau 1970, Stuart 1986a, Sibley & Monroe 1990, Williams 1998); perhaps conspecific with *M. gladiator*.

Nicator chloris West African Nicator. R f FSP (500–1250). Highly vocal, occurs in all strata of the vegetation. One with brood patch, Nov.

Prionopidae

Prionops caniceps Red-billed Helmet Shrike. R P (950–1250). Four records during the period, of groups of 2–5 in the canopy of primary forest.

Dicruridae

Dicrurus atripennis Shining Drongo. R f SP (900–2000). The commonest drongo in primary forest, where often leads mixed species flocks.

D. adsimilis Fork-tailed Drongo. R f FSP (850–1450). Open secondary areas but also penetrates primary forest. Sometimes leads mixed species flocks.

D. ludwigii Square-tailed Drongo. R u P (1200–1550) P. Primary forest, perhaps under-recorded. See comment by Dowsetts – did you net any?

Corvidae

Corvus albus Pied Crow. R f O (350–850). Associated with large villages, especially the eastern lowland settlements of Nlohe and Loum where flocks of up to 25 seen.

Sturnidae

Poeoptera lugubris Narrow-tailed Starling. R u OFS (400–1050). Mainly in small parties in farms with high canopy cover. There was a regular roost of up to 40 birds in Nyasoso village in late Nov each year. Birds carrying nest material, 1 Jul.

Onychognathus walleri Waller's Chestnut-winged Starling. R c SP (1000–2050). Common only above 1500 m; very few records below that. Usually in flocks of up to 12, in the canopy. More numerous on neighbouring peaks than Kupe.

O. fulgidus Forest Chestnut-winged Starling. R? u FS (800–1000). Occurs at low densities in secondary habitat, usually singly or in pairs. Largest flock: 18 above Nyasoso, 26 May 1994 (RES).

Lamprotornis purpureiceps Purple-headed Glossy Starling. ? (Apr–Sep) u FSP (850–1450).

L. purpureus Purple Glossy Starling. ? F (850–950). Three records in the period, all in farms above Nyasoso.

L. splendidus Splendid Glossy Starling. ? (Feb–Jun) u F (850–1000).

Passeridae

Passer griseus Grey-headed Sparrow. R c O (350–900).

Ploceidae

Ploceus batesi Bates's Weaver. ? S (900) "Endangered". Two sightings of two birds on the edge of Nyasoso, Jun 1990 (Bowden & Andrews 1994).

P. pelzelni Slender-billed Weaver. LM? OF (350–900). Generally near open water. Three records, presumably passage birds: one near Loum, 11 Apr 1992 (CGRB); two in farms above Nyasoso, 25 Sep 1992 (SK) and 24 Nov 1994 (SJ).

P. nigricollis Black-necked Weaver. R c OFS (350–950). Cultivated areas and villages; sometimes joins mixed-species flocks in secondary forest. Only the olive-backed morphs occur in the area.

P. ocularis Spectacled Weaver. R u OF (350–900). Less numerous than the very similar *P. nigricollis* and less inclined to enter forest. Most records are of birds roosting in Elephant Grass *Pennisetum purpureum* around Nyasoso.

P. melanogaster Black-billed Weaver. R u SP (900–1950). Occurs at low densities in areas with breaks in the canopy. Usually singly or in pairs in low shrubby vegetation. A nest with young at 900 m, 26 Dec.

P. nigerrimus Vieillot's Black Weaver. R c OFS (350–1000).

P. cucullatus Village Weaver. R v O (350–950). Breeds throughout the year, often in mixed colonies with *P. nigerrimus*.

P. albinucha Maxwell's Black Weaver. ? u S (850). One record of a juvenile seen in a mixed species flock below Nyasoso Nature Trail, 9 Apr 1998 (NB).

P. bicolor Dark-backed Weaver. R f SP (850–2000). Building nests late Oct and late Nov; dependent juveniles seen late Feb. Often shows a small black spot in the centre of the breast (not obvious except when displaying), which is not described in field guides.

P. insignis Brown-capped Weaver. ? FP (850–1250). Two records: Feb 1984 (Stuart 1986a); Jun 1990 (SMA, PVH).

P. preussi Preuss's Weaver. R u OFS (850–1050).

Malimbus nitens Blue-billed Malimbe. ? S (950–1000). Two records between Tape Etube and Essosong.
M. malimbicus Crested Malimbe. R u SP (800–1000). Usually in mixed-species flocks unless breeding. Building nests from late Jul to early Oct; nest with young late Nov and the first week of Dec. Seven nests observed, all in palms.
M. rubricollis Red-headed Malimbe. R u FS (900–1000).
M. erythrogaster Red-bellied Malimbe. ? F (950). Two seen above Nyasoso, Jan 1996 (NB).
Euplectes hordeaceus Fire-crowned Bishop. LM? u O (350–850). Occurs in small numbers in areas with Elephant Grass *Pennisetum purpureum*, appearing late Jul and probably breeding Aug–Oct. Not usually seen early Dec but there is one record on 19 Feb. Although much less obvious when not in breeding plumage, may leave the area in non-breeding season.
E. macrourus Yellow-mantled Whydah. LM? u O (350–400). Recorded only along the road between Tombel and Loum, on seven occasions between 2 May and 15 Oct. All records were of breeding males; they may remain in the area but be less obtrusive at other times of year.
Amblyospiza albifrons Thick-billed Weaver. LM u O (350–850). Apparently leaves the area in dry season; breeds wet season in patches of tall Elephant Grass *Pennisetum purpureum*. First records each year generally mid-Jun (once early Apr: FDL); the last, late Oct.

Estrildidae

Parmoptila woodhousei Flower-pecker Weaver-finch. R u FS (700–1050). Seen only in disturbed areas with a dense low herb layer. Occurs singly or in small groups; when enters secondary forest, rarely moves far from the ground or lower strata.
Nigrita canicapilla Grey-crowned Negrofinch. R f OFSP (350–1600). Most numerous in cultivated areas where the mournful song is usually heard.
N. luteifrons Pale-fronted Negrofinch. R u F (750–1000).
N. bicolor Chestnut-breasted Negrofinch. R u SP (350–1000).
N. fusconota White-breasted Negrofinch. R f FS (800–1050).
Nesocharis shelleyi Little Olive-back. R u P (1550–2000). Recorded only from primary forest, in forest edge and tree-falls. Usually in flocks of 2–15.
Cryptospiza reichenovii Red-faced Crimson-wing. R u OFSP (850–1300). Occurs in open areas with herbaceous vegetation, but has been mist-netted in primary forest. One with brood patch at 1200 m, Nov; two juveniles netted at 1850 m, Feb.
Spermophaga haematina Bluebill. R f OFS (350–1950). Found in cultivation, but skulks in dense vegetation so not seen as frequently as mist-netting would suggest. Regularly enters disturbed forest but rare in primary. Brood patches recorded at 900 m Oct–Dec.
Mandingoa nitidula Green Twinspot. R u FSP (850–1200). Usually in low thick cover but occasionally higher, in small groups. Mist-netted in primary forest, but generally seen in secondary habitats including farms. One caught with brood patch, Dec; a juvenile netted Feb.

Estrilda melpoda Orange-cheeked Waxbill. R c O (350–900). Usually with *E. nonnula*.
E. astrild Common Waxbill. LM? O (350–1000). Seven records during the period, all of flocks of 5–20 in grassy areas at roadsides, late Feb to mid-Apr (except one flock at Kack, 11 Jul 1993). Often with *E. melpoda*. Dates suggest local movements.
E. nonnula Black-crowned Waxbill. R a OFS (350–1200). The most numerous waxbill, in flocks up to 120, throughout the year in cultivated areas. Also in farms with high canopy cover and rarely even in gaps in true forest. The relative abundance of this species and *E. melpoda* is the reverse of the situation at Korup (Rodewald *et al.* 1994).
E. atricapilla Black-headed Waxbill. ? u O (850). Four records during the period, in flocks of *E. nonnula*, Aug–Sep. Probably overlooked, but whether it is a migrant remains unclear. Commoner nearer the coast (e.g. Serle 1954, Rodewald *et al.* 1994, pers obs.).
Lonchura cucullata Bronze Mannikin. R a O (350–1000). Usually in flocks of 10–20. Juveniles seen mid-Apr.
L. poensis Black and White Mannikin. R c O (350–900). Widespread but at low densities in cultivated areas, often with waxbills.

Viduidae

Vidua macroura Pin-tailed Widow. LM? (Jul–Nov) u O (350–850).

Fringillidae

Serinus mozambicus Yellow–fronted Canary. R c O (350–900).
Linurgus olivaceus Oriole Finch. R? SG (1050–2000). One record during the period, near Essosong; previously recorded on grassy knolls near the summit by Stuart (1986a).

Emberizidae

Emberiza tahapisi Cinnamon-breasted Rock Bunting. AM O (850). One record: a migrant on Nyasoso college campus, 29 Nov 1992.
E. cabanisi Cabanis's Bunting. ? O (750–900). Two records of singing males in maize fields near Essossong: Nov 1998 (FDL, RJD); Dec 1999 (BirdLife IBA team).

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Bird exploitation for traditional medicine in Nigeria

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Summary

A survey covering most Nigerian fetish markets during Aug–Sep 1999 found 199 species and indicated that just a few thousand birds are sold annually on these markets. The traditional medicinal use of the important fetish species is explained. Information on prices and origin of the birds are given. There is an alarming sign that the forest eagles and larger vultures, owls, hornbills and turaco appear to be severely endangered by the demands for traditional medicine, and urgent conservation action is needed to protect them.

Résumé

Une enquête couvrant la plupart des marchés fétichistes en août-septembre 1999 y trouva 199 espèces et montra que juste quelques milliers d'oiseaux sont vendus annuellemnent sur ces marchés. L'usage médicinal traditionnel des importantes espèces fétiches est expliqué. Sont données également des indications sur les prix et l'origine des oiseaux. Il y a là un signe alarmant que aigles forestiers et grands vautours, chouettes, calaos et touracos apparaissent gravement menacés par la demande de la médecine traditionelle et que des mesures urgentes de sauvegarde sont nécessaires.

Introduction and methods

Wildlife is heavily exploited almost everywhere in W Africa (Martin 1991). In the forest belt, game meat is a common source of protein. In most parts of W Africa the larger game animals have disappeared. Recent studies have been carried out to calculate the extent and effects of traditional hunting, especially on endangered species. (Ziegler 1996). Traditional medicine, known as *wudu*, *juju* or fetish, is still very popular and can be met everywhere (Taylor & Fox 1992, Cocker 1999). Each market has its corner with all kinds of "medicines". Some of these items are from highly endangered mammal and bird species. Many animals offered for sale are especially hunted for this purpose.

To judge the impact of fetish markets on birds and to find out the main species affected, an inventory of many markets was carried out in Nigeria from 22 August to 10 September 1999. Nigeria was selected because the tradition is still very evident and the country has a high species diversity. The strong economy in Nigeria might create an attractive market for animals killed in neighbouring countries such as Cameroon or Niger.

This study covered 24 markets in Nigeria and included almost all well-known fetish markets in the country. Assisted by Mr Babatunde, working as interpreter and driver, it was possible to check each stall offering birds and list them. Most birds were represented by heads only, some by complete skins. Mr Babatunde, being from the same tribe as the fetish traders on the markets, assisted the survey by asking some of the older women about the use of the birds, the prices and the origin of the birds. In some cases, when the identification was problematic, the heads were purchased and properly identified at a later date by comparing with other skulls.

Results

Who sells the birds?

The sale of local medicines throughout Nigeria is done only by people of the Yoruba tribe from the southwest. The Yoruba believe that witches are generally women, who fly about at night and are associated with birds (especially nightjars: Parrinder 1963). Almost all shops are run by women. The tradition of fetish selling is handed down within a family. Only these people have the power to change a dead bird into a medicinal item, but they are still only the "pharmacy" selling them. Young sellers in particular do not know the use of their goods. The witch doctor sends his clients to these "herb people" and only the which doctor decides which birds, herbs or minerals are needed and how they are to be used.

Which species are involved and what are they used for?

The list below gives all 199 species of birds identified in the markets (plus Ground Hornbill; scientific names may be found in the list below), with the number of individuals recorded. All species linked to fetish tradition are indicated by an asterisk, with their uses. Many of these special medicinal birds are offered as complete skins. Unsurprisingly, there is usually a logical link between some special habit of the bird and its medicinal use. Most bird fetishes are kept by the customers somewhere in the house, shop or office. Examples are birds to attract customers, to have enough money or to make sure that the daughter becomes a beauty. Something against witches is usually hidden near the door. Hooded Vultures are buried in the ground before a new house is built. Parts of others, eagles and large vultures for example, are directly used as medicine in some kind of mixture.

Struthionidae
Struthio camelus Ostrich 6.
Ardeidae
Ixobrychus sturmii Dwarf Bittern 1.
Tigriornis leucolophus White-crested Tiger Heron 4.
Nycticorax leuconotus White-backed Night Heron 2.
N. nycticorax Night Heron 12.
Ardeola ralloides Squacco Heron 1.
**Bubulcus ibis* Cattle Egret 58. Brings money and luck.
Butorides striatus Green-backed Heron 3.
Egretta intermedia Yellow-billed Egret 1.
Ardea cinerea Grey Heron 6.
A. melanocephala Black-headed Heron 21.
Scopidae
Scopus umbretta Hamerkop 8.
Ciconiidae
Anastomus lamelligerus Openbill 3.
**Ciconia abdimii* Abdim's Stork 1. Brings fertility
Leptoptilos crumeniferus Marabou 3.
Threskiornithidae
Bostrychia hagedash Hadada 4.
Lampribis rara Spot-breasted Ibis 2.
Anatidae
Dendrocygna bicolor Fulvous Duck 1.
D. viduata White-faced Tree Duck 12.
Plectropterus gambensis Spur-winged Goose 1.
Pteronetta hartlaubii Hartlaub's Duck 3.
Anas undulata Yellow-billed Duck 1.
A. acuta Pintail 1.
Accipitridae Eagles (all birds of prey) against weakness of body. Large vultures against mental disturbance, epileptic problems, bad eyesight.
**Aviceda cuculoides* Cuckoo Falcon 1.
**Elanus caeruleus* Black-shouldered Kite 5.
**Chelictinia riocourii* Swallow-tailed Kite 2.
**Milvus migrans* Black Kite 23.
**Haliaeetus vocifer* African Fish Eagle 2.
**Gypohierax angolensis* Palm-nut Vulture 23.
**Neophron percnopterus* Egyptian Vulture 1.
**Necrosyrtes monachus* Hooded Vulture 48. To bury in the ground before building a new house to give luck for the future.
**Gyps africanus* White-backed Vulture 5.
**G. rueppellii* Rüppell's Griffon 15.

**Trigonoceps occipitalis* White-headed Vulture 1.
**Circaetus gallicus beaudouini* Short-toed Eagle 1.
**C. cinereus* Brown Harrier Eagle 1.
**C. cinerascens* Banded Harrier Eagle 2.
**Dryotriorchis spectabilis* Serpent Eagle 1.
**Polyboroides typus* Harrier Hawk 10.
**Melierax gabar* Gabar Goshawk 7.
**M. metabates* Dark-chanting Goshawk 2.
**Accipiter tachiro* West African Goshawk 11.
**A. badius* Shikra 10.
**A. erythropus* Western Little Sparrow-Hawk 3.
**Butastur rufipennis* Grasshopper Buzzard 8.
**Kaupifalco monogrmmicus* Lizzard Buzzard 17.
**Buteo auguralis* Red-necked Buzzard 16.
**Aquila wahlbergi* Wahlberg's Eagle 4.
**Lophaetus occipitalis* Long-crested Hawk-Eagle 7.
**Stephanoaetus coronatus* Crowned Eagle 4.
Falconidae Against weakness of body.
**Falco tinnunculus rufescens* Kestrel 9.
**F. ardosiaceus* Grey Kestrel 1.
**F. chicquera* Red-necked Falcon 2.
**F. cuvierii* African Hobby 3.
**F. biarmicus* Lanner Falcon 4.
Numididae
Guttera edouardi Crested Guinea-Fowl 1.
Numida meleagris Helmeted Guinea-Fowl 40.
Phasianidae Against fever (Sodeinde & Soewu 1999)
**Coturnix coturnix* Quail 1.
**C. delegorguei* Harlequin Quail 1.
**Ptilopachus petrosus* Stone Partridge 7.
**Francolinus ahantensis* Ahanta Francolin 2.
**F. bicalcaratus* Double-spurred Francolin 243.
Rallidae
Himantornis haematopus Nkulengu Rail 3.
Porzana egregia African Crake 1.
Amaurornis flavirostris Black Crake 3.
Porphyrio alba Purple Gallinule 3.
Gallinula chloropus Moorhen 1.
G. angulata Lesser Moorhen 1.
Gruidae
**Balearica pavonina* Black Crowned Crane 7. Guarantees a lucky wedding and family future.

Heliornithidae
Podica senegelensis Finfoot 3.
Otididae
Neotis denhami Denham's Bustard 4.
Ardeotis arabs Arabian Bustard 2.
Eupodotis senegalensis White-bellied Bustard 2.
E. melanogaster Black-bellied Bustard 6.
Burhinidae
Burhinus senegalensis Senegal Thicknee 5.
B. capensis Spotted Thicknee 1.
Cursoriidae
Rhinoptilus chalcopterus Bronze-winged Courser 2.
Charadriidae
Vanellus senegallus Senegal Wattled Plover 1.
V. tectus Black-headed Plover 12.
V. crassirostris Long-toed Lapwing 1.
Pteroclidae
Pterocles quadricinctus Four-banded Sandgrouse 1.
Columbidae
Treron australis Green Pigeon 15.
T. waalia Bruce's Green Pigeon 8.
Turtur afer Blue-spotted Wood-Dove 8.
Streptopelia semitorquata Red-eye Dove 2.
S. senegalensis Laughing Dove 9.
Psittacidae
**Psittacus erithacus* Grey Parrot 73. Gives intelligence.
Poicephalus gulielmi Red-fronted Parrot 2.
P. senegallus Senegal Parrot 24.
Psittacula krameri Rose-ringed Parakeet 11.
Musophagidae Attract customers.
**Corythaeola cristata* Great Blue Turaco 43. Protects from poverty.
**Tauraco persa* Green Turaco 18.
**T. erythrolophus* Yellow-billed Turaco 3.
**Musophaga violacea* Violet Turaco 70.
**Crinifer piscator* Grey Plantain-eater 44.
Cuculidae
**Clamator jacobinus* Jacobin Cuckoo 17. If it calls in the forest, a close relative or friend will die. Gives protection.
**C. levaillantii* Levaillant's Cuckoo 6. If it calls in the forest, a close relative or friend will die. Gives protection.
C. glandarius Great Spotted Cuckoo 1.
Cuculus clamosus Black Cuckoo 1.

C. gularis African Cuckoo 1.
Chrysococcyx caprius Didric Cuckoo 3.
Ceuthmochares aereus Yellow-bill 1.
Centropus leucogaster Black-throated Coucal 7.
C. grilli Black Coucal 2.
**C. senegalensis* Senegal Coucal 108. For blessing.
Tytonidae
**Tyto alba* Barn Owl 42. Protection from witchcraft.
Strigidae Protection from witchcraft.
**Otus senegalensis* African Scops Owl 9.
**O. leucotis* White-faced Owl 38.
**Bubo africanus* Spotted Eagle-Owl 15.
**B. poensis* Fraser's Eagle-Owl 1.
**Glaucidium perlatum* Pearl-spotted Owlet 15.
**Strix woodfordii* African Wood-Owl 5.
Caprimulgidae Protection from witchcraft.
**Caprimulgus climacurus* Long-tailed Nightjar 3.
**C. nigriscapularis* Black-shouldered Nightjar 1.
**Macrodipterteryx longipennis* Standard-winged Nightjar 4.
Apodidae Used for blessing.
**Apus caffer* White-rumped Swift 2.
**A. affinis* Little Swift 13.
Trogonidae
Apoloderma narina Narina's Trogon 1.
Alcedinidae
Halcyon leucocephala Grey-headed Kingfisher 2.
H. malimbica Blue-breasted Kingfisher 1.
H. senegalensis Woodland Kingfisher 11.
H. chelicuti Striped Kingfisher 1.
**Ceyx pictus* Pygmy Kingfisher 77. Attracts customers to a shop.
Alcedo cristata Malachite Kingfisher 3.
Megaceryle maxima Giant Kingfisher 1.
Meropidae
Merops pusillus Little Bee-eater 1.
M. albicollis White-throated Bee-eater 1.
M. malimbicus Rosy Bee-eater 3.
M. nubicus Carmine Bee-eater 1.
Coraciidae Give beauty.
**Coracias naevia* Rufous-crowned Roller 10.
**C. cyanogaster* Blue-bellied Roller 2.
**C. abyssinica* Abyssinian Roller 23.
**C. garrulus* European Roller 0.

**Eurystomus glaucurus* Broad-billed Roller 35.
Phoeniculidae
Phoeniculus castaneiceps brunneiceps Forest Wood-Hoopoe 2.
P. purpureus Green Wood-Hoopoe 7.
Upupidae
Upupa epops senegalensis African Hoopoe 1.
Bucorvidae Give protection and security, like protecting the house or farm.
**Tropicranus albocristatus* White-crested Hornbill 13.
**Tockus hartlaubi* Black Dwarf Hornbill 3.
**T. camurus* Red-billed Dwarf Hornbill 1.
**T. erythrorhynchus* Red-billed Hornbill 41.
**T. fasciatus* Pied Hornbill 35.
**T. nasutus* Grey Hornbill 25.
**Bycanistes fistulator* Piping Hornbill 16.
**B. subcylindricus* Black & White Casqued Hornbill 5.
**B. cylindricus* Brown-cheeked Hornbill 5.
**Ceratogymna atrata* Black-casqued Hornbill 15.
**C. elata* Yellow-casqued Hornbill 5.
**Bucorvus abyssinicus* Ground Hornbill 0. Important fetish species, but not found on the markets. The game cannot see the hunter, so that the hunter gets very close.
Lybiidae
**Pogoniulus chrysoconus* Yellow-fronted Tinker-bird 46. Helps if a woman cannot get children.
Lybius vielloti Vieillot's Barbet 2.
L. bidentatus Double-toothed Barbet 1.
L. dubius Bearded Barbet 21.
Picidae
Jynx torquilla Wryneck 1.
**Campethera punctuligera* Fine-spotted Woodpecker 25. Improves business.
**Mesopicos goertae* Grey Woodpecker 4. Improves business.
Hirundinidae Used for blessing.
**Hirundo abyssinica* Striped Swallow 1.
**H. ethiopica* Ethiopian Swallow 12.
**H. rustica* Barn Swallow 2.
**Delichon urbica* House Martin 1.
Motacillidae
**Motacilla aguimp* African Pied Wagtail 3. Gives security.
Pycnonotidae
Pycnonotus barbatus White-vented Bulbul 21.
Turdidae
**Cossypha niveicapilla* Snowy-headed Robin-Chat 16. Against students' examination stress.
**C. albicapilla* White-crowned Robin-Chat 3. Against students' examination stress.

Turdus pelios African Thrush 12.
Sylviidae
Melocichla mentalis Moustached Warbler 1.
Hypergerus atriceps Oriole Warbler 1.
Muscicapidae
Melaenornis edolioides Black Flycatcher 1.
Platysteira cyanea Wattle-eye 1.
Timaliidae
Turdoides plebejus Brown Babbler 4.
Nectariniidae
Nectarinia verticalis Green-headed Sunbird 1.
N. senegalensis Scarlet-chested Sunbird 4.
N. chlorophygia Olive-bellied Sunbird 3.
N. cuprea Copper Sunbird 1.
Laniidae
Corvinella corvina Yellow-billed Shrike 7.
**Tchagra senegalla* Black-crowned Tchagra 9. This musician gives his talent.
L. aethiopicus Tropical Boubou 1.
L. barbatus Gonolek 1.
Malaconotus blanchoti Grey-headed Bush-Shrike 2.
Prionopidae
Prionops plumatus Crested Helmet-Shrike 5.
Dicruridae
Dicrurus adsimilis Fork-tailed Drongo 3.
Corvidae
Ptilostomus afer Piapiac 6.
**Corvus albus* Pied Crow 55. Gives protection from witchcraft.
Oriolidae
Oriolus auratus African Golden Oriole 4.
Sturnidae
Lamprotornis chalybaeus Blue-eared Glossy Starling 1.
L. splendidus Splendid Glossy Starling 4.
L. pulcher Chestnut-bellied Starling 1.
Cinnyricinclus leucogaster Violet-backed Starling 1.
Ploceidae
Passer griseus Grey-headed Sparrow 2.
Sporopipes frontalis Speckle-fronted Weaver 1.
**Ploceus cucullatus* Village Weaver 198. Used for blessing.
**P. nigerrimus* Vieillot's Black Weaver 13. Used for blessing.
Malimbus rubricollis Red-headed Malimbe 1.
Anaplectes melanotis Red-headed Weaver 1.
Euplectes orix Red Bishop 4.

Estrildidae
Spermophaga haematina Blue-bill 1.
Lagonosticta senegala Red-billed Fire-Finch 3.
Estrilda troglodytes Black-rumped Waxbill 1.
Viduidae
Vidua macroura Pin-tailed Whydah 5.
V. orientalis Paradise Whydah 1.

Practically any species can turn up on these markets, but Palaearctic migrants are scarce. The results provide interesting data on the abundance of some rare species in Nigeria. Spot-breasted Ibis is new for Nigeria (Elgood *et al.* 1994). White-crested Tiger Heron, White-backed Night Heron, Yellow-billed Duck, Serpent Eagle, Crowned Eagle, Nkulengu Rail, Red-fronted Parrot and Fraser's Eagle-Owl are little recorded in the country. The absence of records of most storks *Ciconia*, spoonbills *Platalea*, Tawny Eagle *Aquila rapax*, Martial Eagle *Hieraaetus bellicosus*, Red-headed Lovebird *Agapornis pullaria*, Verreaux's Eagle-Owl *Bubo lacteus*, fishing-owls *Scotopelia* and Ground Hornbill *Bucorvus abyssinicus* could be an alarming sign or simply show that the hunting pressure in the savanna is lower.

Where are they sold?
Usually these items are sold in the old markets. Only at Lagos and Kano were there two different markets offering local medicinal products. The really important markets in Nigeria are at Lagos, Oshogbo, Ilorin, Kano, Jos, Onitsha, Ijebu-Ode and Abeokuta. From these, traders also visit smaller markets which are not active every day.

During this survey, the following markets were visited (numbers in brackets stand for birds counted): Lagos I (22), Lagos II (145), Ibadan (68), Ife (51), Ilesa (30), Oshogbo (151), Ilorin (151), Jebba (26), Kaduna (11), Kano I (151), Kano II (130), Jos (297), Akwanga (15), Lafia (0), Makurdi (29), Ikom (0), Calabar (32), Ikot-Ekpene (5), Port Harcourt (39), Onitsha (479), Ore (54), Ijebu-Ode (145), Epe (21) and Abeokuta (194).

What are the numbers involved?
The total number of birds counted on the markets was 2251. Since almost all important fetish markets in Nigeria were checked during this study, a maximum figure of 5000 birds for sale at one time in the whole of the county is realistic. This is the first time a comprehensive study has been carried out to assess the numbers and species involved. The idea that huge numbers of birds, hundreds of thousands or even millions, are possibly involved in W Africa (Cocker 1999), is speculative.

Many of the birds offered have been in the shops a long time, especially the species unimportant in fetish. Even if the number of birds revealed by this study were to be sold and replaced in Nigeria once or twice each year (a turnover rate also suggested by Cocker 1999), the annual toll taken by the markets would not amount to

more than a few thousand, and the toll would be significant only for large raptors, hornbills and other threatened species.

How much money is involved?

Vultures, especially the large species, are the most valuable products sold. Large vultures fetch US$10–20, a lot of money in Nigeria for many people. The problem is that traders cannot find these birds in Nigeria any more and have to obtain them from neighbouring countries like Chad and Niger. Hooded Vultures, eagles, Palm-nut Vultures and the large hornbills cost $5–10, the other real fetish birds $2–5, and normal bird heads $0.2–1, depending on size and quality. The prices are similar in other W African countries like Ivory Coast and Guinea.

Where do the birds come from?

The real fetish birds are hunted for this purpose and are usually kept complete. Game birds, like herons, ducks, francolins, bustards, plovers and doves were always represented by heads only. Hunters sell game birds to customers, but take the unwanted heads to the Yoruba people to get some extra money. Most are not important in the fetish culture. Many road casualties and dead birds from the live-bird markets in Lagos and Kano end up here.

Large vultures were the only birds mentioned to be imported to Nigeria but real fetish birds are sometimes taken far by traders to the important markets to get the best price. From here the Yoruba also take them to the small markets, which are not served daily. A Yoruba woman at Kaduna mentioned that she goes once or twice a month to Ilorin to get items ordered by customers. Kaduna has very little demand, even though it is a very large town. All non-fetish birds are said to be of local origin.

Discussion: are species endangered through fetish?

Many of the species involved are common in Nigeria but the fact that large vultures are very expensive on the markets and "cannot be found in the country any longer" is an alarming sign. Actually not a single live, large vulture was seen on this trip. Phil Hall (pers. comm.) last saw a large vulture about 10 years ago. Some national parks are probably the last remaining sites for them left in Nigeria. Vultures are actually protected in the Nigerian culture and nobody likes to kill one because it brings bad luck for ever. On the other hand, any part of the vulture, especially the eggs, has the greatest of magic powers and is really worth money.

The other species suffering from fetish exploitation are forest eagles, especially Crowned Eagle. Hunting affects resident forest species most, due to the high hunting pressure there. The fact that no Tawny Eagle was found in the markets could mean that they were not available during the rainy season, that hunting has not reached the non-forest areas to great extent, or that they are getting scarce in the country.

The large vultures and eagles are likely to be highly endangered by fetish anywhere in W Africa. If not seriously protected immediately, the last of them will soon end up on these markets. Crowned Eagle and harrier-eagles are also the commonest eagles seen on markets in Ivory Coast and Guinea (pers. obs.), perhaps because of their owl-like heads. Owls, especially the large species, are very important in the fetish culture. Any night bird is linked to witches. To keep an owl or part of it as a fetish in the house makes it impossible for a witch to enter.

Great Blue Turaco and the large hornbills have declined throughout their W African range. Here, habitat destruction and their persecution for fetish markets go hand in hand.

The demand for large vultures, eagles, large hornbills and owls calls for immediate action to save the small populations remaining in the country. Legislation is necessary, but education programs are even more urgently needed. Most of the species concerned probably have a chance to survive only in protected sites.

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Short Notes — Notes Courtes

Black-and-White Mannikin *Lonchura bicolor*, new for Comoé National Park, Ivory Coast

A recently-published list of the birds of Comoé National Park, Ivory Coast, comprises 494 species. An additional species for the park, Black-and-White Mannikin *Lonchura bicolor*, was mist-netted and photographed on 28 Sep 2000, in an isolated, 4-ha forest block surrounded by bush and tree savanna, at *c.* 8°45′N. On 11 Oct 2000, two individuals were observed at the same site. Thiollay (1985) reports the species only south of 8°N.

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The Yellow-billed Duck *Anas undulata* in West Africa

The Yellow-billed Duck *Anas undulata* is common in E and southern Africa, from Ethiopia to the Cape (Brown *et al.* 1982, Scott & Rose 1996). It is not a true migrant but, dispersing in relation to rainfall, may be nomadic within parts of its range. Ringed birds have been recovered up to 1007 km from the ringing site (Oatley & Prŷs-Jones 1986). There have been occasional records in W Africa, well outside the species' normal range (Fig. 1). Robertson (1992) suggested that these occurrences might represent a regular or breeding population. In order to increase awareness of this potentially important population, all known records are detailed below.

1. A single male captured on the Indop Plain, Bamenda Province, Cameroon, by G.M. Durrell, and exported alive to the Severn Wildfowl Trust (now Wildfowl and Wetlands Trust), Slimbridge, UK, sometime in 1949 (Anon. 1950). The exact capture location was not recorded, but was approximately 5°55′N, 10°9′E. the bird was considered to be of *A. u. rueppelli* (which occurs from Kenya northwards) or an undescribed race. See Durrell (1954) for a description of the expedition.

2. Four or five Yellow-billed Ducks observed at Lahore de la Vina (Vina River), Cameroon (7°8′N, 13°50′E: Robertson 1992) in 1951 (Monard 1951). The birds were initially considered to be Black Ducks *Anas sparsa*, but one was shot (specimen dated

29 Jun 1951). This record was given as one bird by Louette (1981) and erroneously mapped in NE Nigeria by Brown *et al.* (1982) (Robertson 1992).

3. Five photographed by Chris Pearson on the Mambilla Plateau, Nigeria (7°30′N, 11°35′E) "about 1978" (Fry 1986). This record was given as Dec 1979 by Elgood *et al.* (1994).

4. Two seen at lake near Ngaoundéré, Cameroon (7°5′N, 13°35′E), 25 Dec 1990 (Robertson 1992).

5. Dried head of one dead bird for sale at a fetish stall in Ijebu-Ode market, 100 km east of Lagos, Nigeria (6°50′N, 3°50′E), in September 1999, was unlikely to have been traded in from elsewhere (not being a special fetish species), and local informants said it was of local origin (Nikolaus 2001 and pers. comm.).

6. *C.* 50 seen at Dang Lake, Ngaoundere, Cameroon on (approx. 7°20′ N, 13°35′ E) 10 Apr 1999 ("RD" = R. Demey 1999).

Further records are required to understand fully the status of Yellow-billed Duck in Cameroon and Nigeria. The species is naturally highly dispersive, but the records (so far as is known) are from suitable breeding habitat. The Black Duck subspecies *A. s. leucostigma*, a river specialist, is resident on the Cameroon Highlands and Adamawa Plateau (Scott & Rose 1996); it too has been increasingly recorded on the Mambilla Plateau, Nigeria (Hall 1977, Elgood *et al.* 1994, Walsh 1985), suggesting increased observer coverage or that this species too is expanding its range.

We are grateful to G. Nikolaus for allowing us to include his unpublished observation, and to Alan Tye for permitting the late inclusion of missed records.

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What was Boyd Alexander's Bioko vulture?

The recent exchange between Moore (2000) and Pérez del Val (1996, 2000) seems to have missed two key points which would, I believe, have led them to a decisive conclusion as to the identity of the supposed White-backed Vulture *Pseudogyps africanus* collected by Alexander (1903) on the island of Bioko. An important principle for such records is that they should not be admitted to regional lists unless fully proven.

The Palm-nut Vulture *Gypohierax angolensis* is common and widespread on Bioko (Pérez del Val 1996) and has been so throughout the 20th century (Amadon 1953, Basilio 1963). Most inhabitants were said to consider the brown juvenile as a different species from the pied adult (Basilio 1963). Alexander (1903), however, failed to see it, but determined a vulture specimen to be an adult female White-backed Vulture which, he said, was "locally distributed along the coast-line" and "much prized for food". This species has never since been reported on the island, nor Alexander's field notes corroborated. Yet the species should be well-known if these statements are correct, and could never, *pace* Moore (2000), be considered a "vagrant".

More telling is that White-backed Vultures have not been recorded as flying across water anywhere in Africa, and Bioko is 32 km from the mainland. Their manner of flight may simply not permit them to reach the island.

It seems clear that Alexander made an error in identification. Alexander (1900) similarly saw 100 supposed Egyptian Vultures *Neophron percnopterus* "on migration ... at great altitude" at the Zambezi River. I and others are sure these were White

Storks *Ciconia ciconia* (Mundy 1978). Early explorers were by no means infallible in their identifications.

What then did Alexander have as his Bioko specimen? Probably it was simply an immature Palm-nut Vulture. Although vagrant White-backed Vultures occur in odd places (*e.g.* Brosset & Erard 1977), but on the mainland, the whole tenor of Alexander's remarks is that the species was fairly common on Bioko. This cannot refer to White-backed Vulture, which should be removed from the Bioko (and Equatorial Guinea) list.

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First breeding record of Hadada *Bostrychia hagedash* from Senegal

On 5 August 2000, a nest containing two nestling Hadada *Bostrychia hagedash*, was discovered in a holiday resort at Saly Portudal on the Atlantic coast of Senegal, northwest of Mbour, Thiès Region (coordinates of the nest: 14°26.40′N, 17°0.75′W).

The nest, made of sticks, was rather loosely built on a forked branch of a eucalyptus *Eucalyptus camaldulensis* tree, at a height of *c.* 10 m. The tree was part of a stand of eucalyptus planted between the apartments of the hotel. The nest was small, diameter *c.* 50 cm, with some longer sticks supporting the base (Fig. 1). The nestlings

were feathered and already showed the characteristic white cheek streaks, but with the bill *c.* 80% of adult bill length.

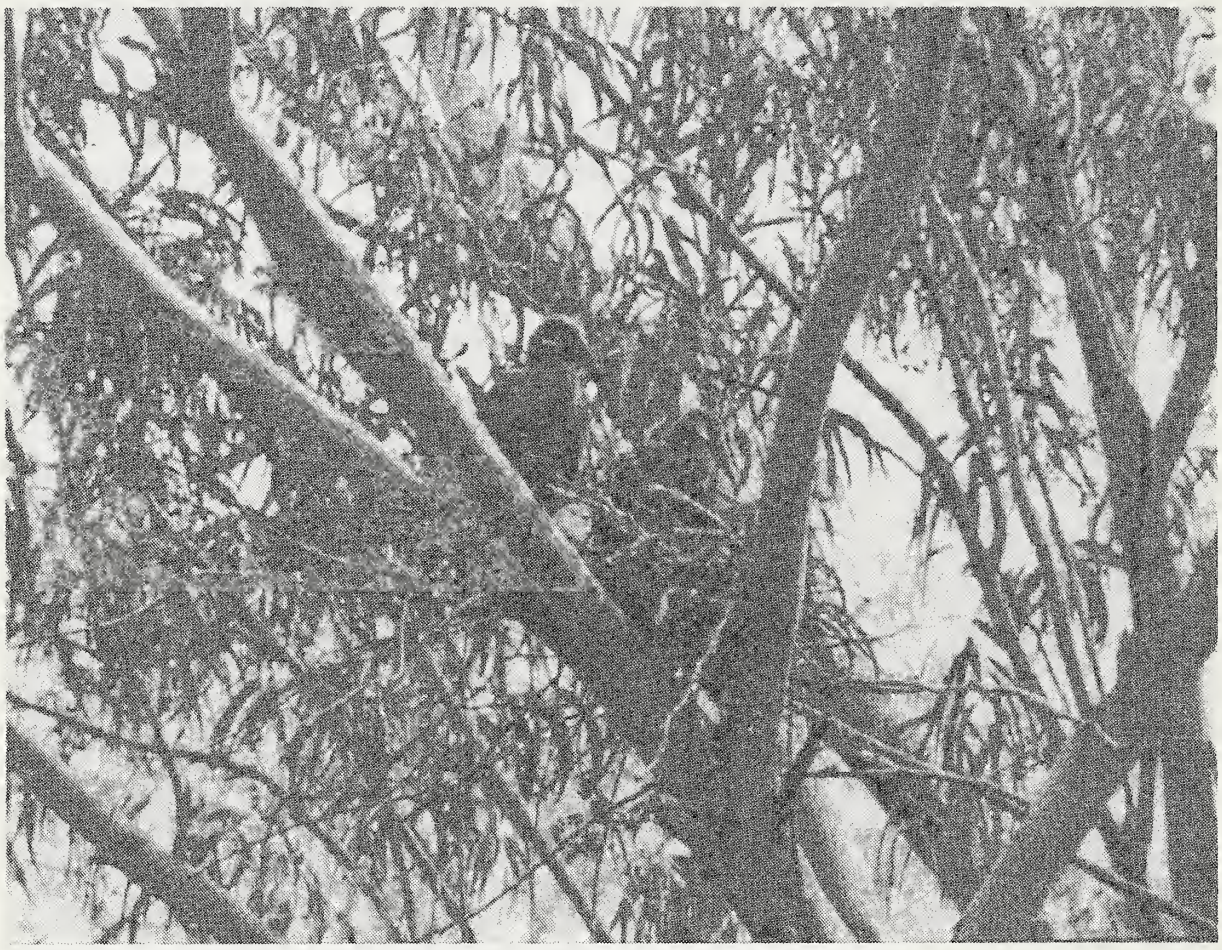

Figure 1. Nest of Hadada in *Eucalyptus* tree, with one adult and one juvenile visible, Saly Portudal, Senegal, 7 Aug 2000.

No adult birds were present when the nest was discovered at 16h00, and the two juveniles were standing or walking on the edge of the nest. At 19h00, one adult bird was on the nest as well. An adult was also present the following day at 9h00, but absent at 12h00. On 7 August an adult was again present between 10h30 and 12h00. It occasionally preened one of the nestlings. Both adult and young were silent. The young birds were never seen to walk off the nest. During the last visit, faeces from under the nest tree were collected for diet analysis. Because the gardens under the trees were regularly worked by gardeners, the faeces were probably not more than two days old.

According to Brown *et al.* (1982) young Hadadas are fully feathered at 27 days, including the white cheek streaks, and they do not walk on surrounding branches before they are 34 days old (Skead 1951). Based on this information, we estimate that our nestlings were about one month old. With an incubation period of 25–28 days (Hancock *et al.* 1992) and a clutch of 2–3 eggs (Brown *et al.* 1982), laid every other

day (Skead 1951), laying must have started between 6 and 11 June. This agrees with laying dates reported from Niger and Nigeria (Brown *et al.* 1982). Both Brown *et al.* (1982) and Hancock *et al.* (1992) mention breeding from The Gambia between January and March. However, neither Jensen & Kirkeby (1980), Gore (1990), Dowsett & Forbes-Watson (1993), nor Barlow *et al.* (1997 and pers. comm.) mention Hadada as a confirmed breeding species for this country. According to E.K. Urban, author of the species' entry in Brown *et al.* (1982) this statement is possibly based on Chapman (1969). However, Chapman only mentioned that the Hadada occurs regularly in The Gambia in "Stink corner" marsh from January to early March, without giving any evidence for breeding. Hancock *et al.* probably simply copied the data from Brown *et al.* (1982). Therefore, breeding in The Gambia should be considered previously unproven.

Hadadas are irregularly observed throughout the year in the southern half of Senegal (Morel & Morel 1990), particularly in Niokolo Koba and elsewhere along the River Gambia (Sauvage & Rodwell 1998), and in The Gambia (Gore 1990, Barlow *et al.* 1997). Breeding has not previously been documented from Senegal, although Morel (1972) stated that it perhaps nested in mangroves of Casamance and The Gambia. Considering their solitary breeding behaviour (Brown *et al.* 1982, Hancock *et al.* 1992) and the rather poor ornithological coverage of Senegal, they may easily have been overlooked. In August and September of 1995 and 1996, a pair of Hadadas was regularly observed at the IRD (formerly ORSTOM) ecological field station of Mbour. The birds usually arrived in the early morning, singly or together. No indication of breeding was obtained (Moussa Sega Diop, pers. comm.). This site is not more than 10 km apart from the actual breeding place. The nest site has been developed in the last 15 years, with many hotels and bungalows constructed and *c.* 100 ha of fenced, park-like landscape created by planting fast-growing eucalyptus trees. Some of these trees have now grown to *c.* 15–17 m and, together with other tree species, form a luxuriant green area in a surrounding landscape where tree densities are ever decreasing, mainly due to over-exploitation.

The faecal analysis revealed many tiny arthropod fragments, many of which, based on leg structure, were identified as dung-beetles Scarabaeidae, and one complete individual was an *Onthophagus* sp. This suggests that the birds fed at fresh livestock faeces, where Scarabaeidae concentrate. Skead (1951) mentions Hadadas searching cow-pats for dung-beetles, especially in dry conditions. According to Hancock *et al.* (1992), Hadadas prefer to feed in moist soil by probing. Except for swimming pools and the sea, we found no water pools, water courses or moist grasslands near the nesting site, but the birds could also feed on the irrigated lawns of the tourist complex, as they do elsewhere (Hancock *et al.* 1992, WCM pers. obs. in Burundi, Uganda and South Africa).

We gratefully acknowledge the assistance of Abdoulaye Danfa and Pape Charles Sow, FAO Locustox Project, Dakar, Senegal, for their help in analysing the Hadada faeces.

Moussa Sega Diop, IRD, Dakar, kindly draw my attention to some earlier observations in the breeding period. For their valuable comments on an earlier version of this note, and for their making some of the cited publications available, we thank Joost Brouwer, Bob Dowsett and Peter L. Meininger, Gerard J. Morel and Emil K. Urban.

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Précisions sur la répartition de la Tourterelle de l'Adamaoua *Streptopelia hypopyrrha* au nord Cameroun

Au Cameroun, la Tourterelle de l'Adamaoua est décrite comme une espèce très localisée; elle est décrite presque uniquement dans les régions de Ngaoundéré, du plateau de l'Adamaoua, et dans certains secteurs de la vallée de la Bénoué et de Garoua, sans autres précisions pour l'ensemble des provinces du Nord et de l'Adamaoua. (Louette 1981, Urban *et al.* 1986). Cependant, on peut l'observer plus fréquemment et sur une aire plus large que ce qui est indiqué jusqu'à présent. J'apporte ici quelques précisions sur son comportement, notamment sur sa

reproduction qui n'avait pas jusqu'alors été infirmée au Cameroun (Dowsett & Forbes-Watson 1993), et sur ses niveaux d'abondance relevés sur le terrain. Ces éléments ont été récoltés lors de séjours répétés de plusieurs semaines dans les régions concernées, sur une présence totale de 19 ans au Cameroun.

L'oiseau recherche aussi bien les habitats légèrement boisés que les zones découvertes, tels que les franges forestières, lisières claires, plantations et cultures en zone arbustive. Il n'est pas rare aux abords des villages, habitations et activités humaines, chemins et routes. Elle se montre généralement peu farouche et sa distance de fuite est faible vis à vis de l'homme. Elle peut être vue loin de tout point d'eau dans la journée, individuellement ou par couple en période de reproduction, en petits groupes hors reproduction ou avec un nombre dominant de juvéniles. Elle ne se montre vraiment à découvert qu'en début de journée ou de soirée; elle passe le reste du temps dans les sous-bois clairs et frais. Les rassemblements de plusieurs oiseaux ne sont pas fréquents. Elle peut être observée dans les groupes d'autres espèces de columbidés, notamment ceux de Pigeons de Guinée *Columba guinea*, de Tourterelles des bois *Streptopelia turtur* et dans une moindre mesure de Tourterelles maillées *S. senegalensis*. Par contre en vol, elle ne semble pas s'associer à d'autres espèces. Je l'ai observée jusqu'à 1200 m (région du Mboum, 7°48′N, 13°30′W). L'espèce semble fréquenter entre octobre et mai les sites d'altitude moyenne (400–800 m), c'est à dire majoritairement le plateau de l'Adamaoua et ses contreforts ou les zones alluviales (Bénoué, Vina, mayos non asséchés), délaissant les plaines et vallées où d'ordinaire (mai–novembre) on l'observe plus abondamment, c'est à dire lorsque les adultes ont quitté les sites de reproduction.

Les effectifs totaux pour l'ensemble du pays ne paraissent pas dépasser 400–600 couples (80 couples pour le Parc de la Bénoué: S. de Kort *comm. pers.*). Cette estimation est réalisée à partir de comptages d'individus (1978–94) dans les zones où j'ai pu l'observer régulièrement, en général de novembre à février (les abondances relevées ont été transposées en densités relatives d'abondance aux territoires de répartition, et pour une période allant de novembre à avril, définis sur Fig. 1). Cette estimation est par ailleurs pondérée par les indications reccueillies auprès de la population. L'aire principale de répartition observée se situe entre Guider au nord et Tibati au sud (*c.* 7–10°N). Elle est assez commune dans la partie sud de la plaine de la Bénoué (de Kontcha à Ngaoundéré); rare à l'est, dans la plaine de la Vina; localisée à peu commune en remontant vers le nord, bien que certains secteurs (Réserve du Faro, massif de Vokre, région de Garoua et Parc de la Bénoué) montrent des concentrations plus importantes tout au long de l'année. Les juvéniles quittent rapidement le territoire des adultes alors que ces derniers entreprennent une deuxième couvée. Cinq jeunes sur sept de première couvée appartenant tous à quatre couples, marqués de nuit avant leur 17ème jour par teinture colorée sur les rectrices externes, n'ont pas été revus sur le territoire de leurs parents qui entreprenaient une deuxième couvée de février à mai (Wak, 7°44′N, 13°45′W, rives de la Bénoué, décembre–mai. 1982). Les adultes quant à eux, semblent se disperser à partir du mois de mai (Urban *et al.* 1986, Hoyo 1997).

L'espèce montre donc des variations d'abondance en fonction des saisons: localisée en période de reproduction (nov–mai), dispersée ensuite.

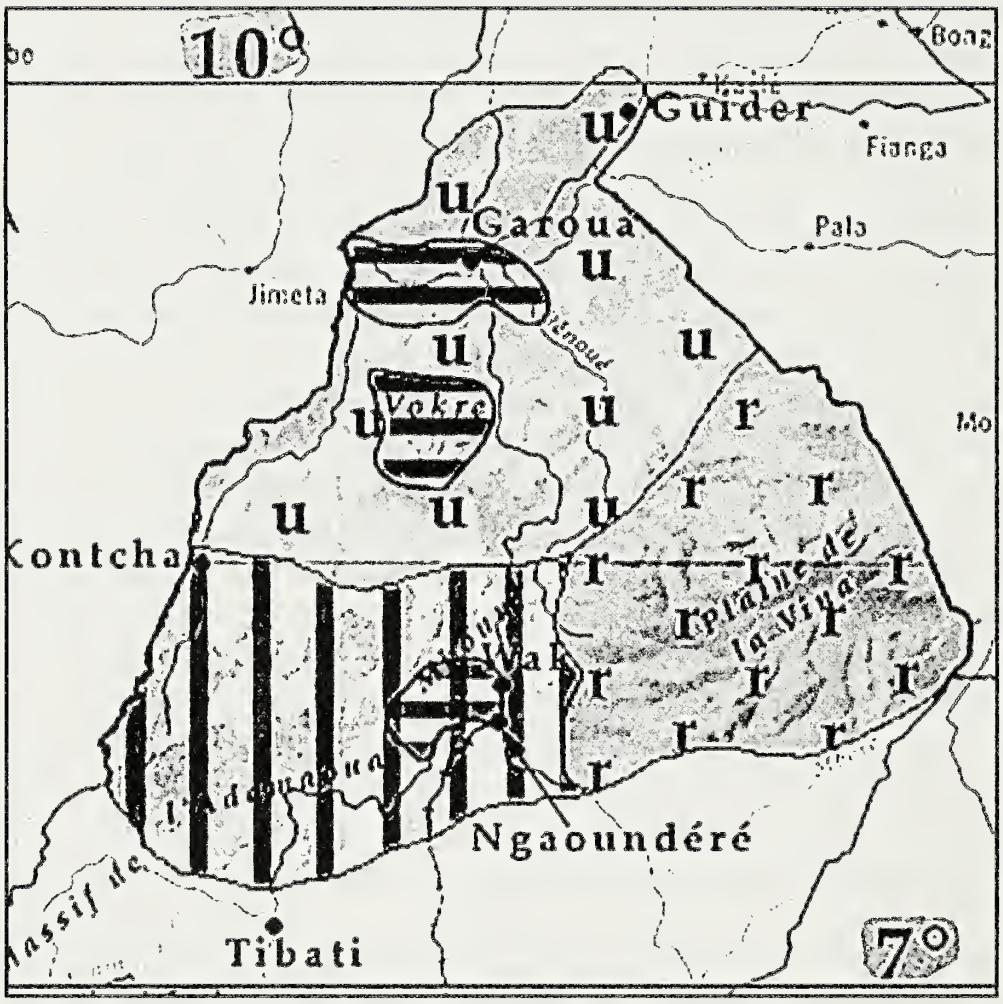

Figure 1. Densités de la Tourterelle de l'Adamaoua dans l'aire d'étude. Barres verticales = commune; barres horizontales = fréquente; u = peu commune; r = rare.

Tous les huit nids observés en nature étaient placés dans l'ombre de la végétation, sur des arbustes solides, à *c.* 2–4 m au-dessus du sol; aucun ne se trouvait à moins de 800 m d'un point d'eau. Ils étaient constitués de brindilles lâches en forme de coupe plate. A l'approche du nid (*c.* 10 m), l'oiseau baisse la tête et reste parfaitement immobile. Je me souviens également de la reproduction de cette espèce dans une collection privée (Mont Fébé, 1967–70) en volière. Le propriétaire indiquait que ses oiseaux se reproduisaient régulièrement tout au long de l'année.

Je remercie Silvano de Kort (Institut d'Evolution et d'Ecologie, Leiden, Pays-Bas) pour avoir partagé avec moi ses informations sur cette espèce au Cameroun, ainsi que Marc Languy (Birdlife, Yaoundé).

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Observations of Böhm's Flufftail *Sarothrura boehmi* in Nigeria

From February 1998 until February 2000 I worked in a rural Primary Health Centre (10°41.2′N, 5°24.4′E) in Hwimo, Niger State, Nigeria. On 16 Aug 1998, I heard an unrecognised bird call from one of the rice fields next to our house, and on 17 and 18 Aug tape-recorded it. The muddy rice field habitat suggested it might be a rail or flufftail (Rallidae). The clinic staff told me it was a tiny bird that was very difficult to see. Comparison with Gibbon (1995) suggested Böhm's Flufftail *Sarothrura boehmi*. On 19 Aug, the bird responded to playback of the *S. boehmi* call from Gibbon (1995) and I managed to catch a glimpse of it, enough to see it was a flufftail. It continued to be heard until 30 Aug. It called for long periods. The call was a quite low "hoo", hardly 1 s long and repeated about 25–30 times per min. Phil Hall (pers. comm.) also compared the call I had recorded with Gibbon (1995), and concurred with the identification.

On 5 Sep 1999 at 21h00, I heard the same call again, from a rice field about 100 m from where it had been heard and seen in 1998. The next day it called again, but now in the same rice field as the previous year. I last heard it on 7 Sep 1999 at 02h00.

Elgood *et al.* (1994) mention only one record of Böhm's Flufftail for Nigeria, a bird captured at Ife University in Feb 1968, though a nocturnal call thought to be from this species was not infrequently heard there. These observations are therefore the second and third for Nigeria.

As in each year the bird was heard for only a short period, it may have been a rainy season visitor from further south and the possibility of breeding is unknown. The clinic staff however, told me that they hear the same bird nearly every year in the same places. They say it is there, but only in small numbers. These observations

suggest that Böhm's Flufftail may have been overlooked in Nigeria, partly because of its nocturnal behaviour, soft call and the low density of birdwatchers.

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A new sight record in Cameroon of the distinctive race *crossensis* of Green-throated Sunbird *Nectarinia rubescens*

On 19 March 2000, while watching birds along the edge of Bali-Ngemba Forest Reserve, near Bamenda, Cameroon (5°50′N, 10°4′E), our attention was drawn to a large number of sunbirds visiting a flowering *Albizia zygia* tree. Amongst some 15 Orange-tufted Sunbirds *Nectarinia bouvieri* were a pair of Northern Double-collared Sunbirds *N. preussi*, a pair of Green-headed Sunbirds *N. verticalis* and a larger, completely dark-looking sunbird. Once the latter's iridescent green forehead was seen, contrasting with the rest of the blackish-brown plumage, the bird was easily identified as a male Green-throated Sunbird *N. rubescens*. However, it lacked the species's eponymous green throat: only the malar stripe was iridescent green bordered by violet, as were the forehead and forecrown. Having observed a similar bird in SE Nigeria, RD recognized it as the distinctive subspecies *crossensis*, in which the throat is concolorous with the rest of the underparts (Mackworth-Praed & Grant 1973). Aware of the importance of this record, we spent an hour at the site and counted four adult males, one immature male and two females. The birds were easily picked out from the other sunbirds present by their larger size and, in the males, their blackish plumage. The immature male was moulting into adult plumage, with blackish-brown feathers breaking through the brownish-olive, female-like plumage.

This appears to be the first documented record of *N. r. crossensis* from Cameroon since Serle collected the specimens from which the subspecies was described (Serle 1963). Only two adult male specimens were secured: the first just west of Bamenda (5°55′N, 10°10′E), in May 1948 (Serle 1950), the second at Mamfe (5°45′N, 9°20′E), in March 1953 (Serle 1963).

The subspecies was recently discovered in E Nigeria, apparently at the north-western edge of its range, where single males were recorded at three sites in 1995–7

(Hopkins *et al.* 1999). Subsequently, several birds have also been reported from Atteh, *c.* 10 km north-west of Buru, Taraba State, on 7–9 January 1999 (M. Hopkins *in litt.*).

Our sighting adds more weight to the argument that *crossensis* is a valid race. The limited number of specimens and the absence of further records have induced some authors to question this (White 1965 p. 297, Eisentraut 1973). Although the glossy forehead suggested otherwise, Hopkins *et al.* (1999) did not entirely rule out the possibility that *crossensis* was an eclipse plumage, or derived from one, because eclipse plumages are known to be highly variable in some sunbird species (Skead 1967). In view of the new record, and the fact that this plumage has now been observed at different times of year, this possibility appears increasingly improbable. It would be interesting to find out the limits of this race's range to the south, between Mamfe and the Bakossi-Bamale area, where it meets nominate *rubescens* (Hopkins *et al.* 1999).

Our visit to Bali-Ngemba Forest Reserve was part of a programme of field surveys conducted for the Important Bird Areas in Cameroon Project of the Cameroon Ornithological Club, funded by GEF-UNDP. BirdLife International gave technical support to the project through funding by Dutch International Co-operation (DGIS). We thank Adolphe Tsesekoua for assistance in the field, M. Languy (BirdLife Cameroon Programme Co-ordinator) for his support, and R.J. Dowsett, L.D.C. Fishpool and A. Tye for comments on a draft of this note.

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Corrigenda

Notes complémentaires sur l'avifaune du Niger (G. Debout, P. Meister & M. Ventelon 2000, *Malimbus* 22: 87–88)

Les noms scientifiquesde deux espèces ont été par erreur abrégées: p. 88, ligne 10, au lieu de "*T. erythrorhynchus*" on lira "*Tockus erythrorhynchus*"; ligne 16, "*P. melanocephalus*" on lira "*Ploceus melanocephalus*".

Observations d'un nid du Coucal noire *Centropus monachus* et attitude de l'homme face à ses oisillons à Irangi, République Démocratique du Congo (B. Kizungu 2000, *Malimbus* 22: 88–90)

Dans tout l'article, y compris le titre, au lieu de "Coucal noire *Centropus monachus*" on lira "Coucal moine *Centropus monachus*".

First records of Tufted Duck *Aythya fuligula* in Cameroon (Bobo Kadiri Serge, Dennis Anye Ndeh, Kevin Yana Djabo & Lesi Nayuoh 2000, *Malimbus* 22: 91–92)

The names of the authors of this paper should read "Serge Kadiri Bobo, Dennis Ndeh Anye, Kevin Yana Njabo & Lesi Nayuoh". In reference to the paper they should therefore be abbreviated: S.K. Bobo, D.N. Anye, K.Y. Njabo & L. Nayuoh.

Reviews — Revues

Oiseaux d'Afrique, par C. Chappuis, 2000. 15 disques et 2 livrets. SEOF (Paris). Vol.1 (4 CD, 423 espèces, livret de 68 pp.): Sahara, Maghreb, Madère, Canaries et îles du Cap-Vert. Vol. 2 (11 CD, 1043 espèces, livret de 192 pp.): Afrique occidentale et centrale. Disponibles séparément ou groupés à la Bibliothèque de la SEOF, 55 rue Buffon, 75005 Paris; e-mail: seof@mnhn.fr. Vol.1 350 +35 FF de port (Euro 50 + 5); vol.2 750 + 35 FF de port (Euro 114 + 5); l'ensemble 980 + 35 FF de port (Euro 149 +5).

Avec la sortie de cette encyclopédie sonore des oiseaux de l'Ouest africain, une étape importante de la connaissance acoustique de l'avifaune de ces régions vient d'être franchie. Un premier volume (4 disques compacts et un livret bilingue français-anglais) présente, pour le Sahara, le Maghreb et les îles atlantiques (Madère, Canaries et îles du Cap-Vert) les chants et cris de 423 espèces (sur les 425 connues) nicheuses et migratrices (soit hivernantes soit en transit vers l'Afrique subsaharienne et qui sont au nombre de 275). Un deuxième volume (11 disques compacts et 1 livret en anglais ou en français, sur demande) donne les émissions sonores de 1043 espèces connues en Afrique occidentale et centrale au sud du Sahara et dans trois des quatre îles du golfe de Guinée (São Tomé, Príncipe et Bioko), région correspondant pratiquement à la couverture géographique de notre Société. Ces deux livraisons regroupent donc les émissions sonores de 1466 espèces d'oiseaux sur les 1550 répertoriées, soit 95% de l'avifaune de ces régions.

Les émissions sonores, de la qualité à laquelle nous a habitués Chappuis, proviennent des enregistrements de l'auteur lui-même (il commença à enregistrer en Afrique de l'Ouest dès 1968) et de 62 preneurs de son pour le volume 1 et 136 pour le volume 2. Le sérieux des informations publiées est attesté par le travail ardu de vérification, comparaison, réflexion que fit l'auteur au laboratoire. Pour le volume 2, par exemple, il retint 3200 enregistrements sur les 5500 disponibles.

Les livrets qui accompagnent ces disques sont d'un format réduit, malgré les 68 pages pour le volume 1 et 192 pour le volume 2, taille modeste qui en permettra un usage aisé sur le terrain (si la reliure est assez solide). Que l'ornithologue travaillant en Afrique de l'Ouest peut être heureux aujourd'hui: il dispose à la fois de ces enregistrements et des guides de Isenmann (2000, *Les Oiseaux d'Algérie — The Birds of Algeria*, SEOF, Paris) et Borrow & Demey (sous presse, *Birds of Western Africa*, A. & C. Black, London) dont le texte renvoie à ces enregistrements. Félicitons les auteurs de cette parfaite collaboration. Ces livrets ne se contentent pas d'expliquer la genèse du travail, les difficultés rencontrées et la façon d'utiliser ces disques, comme c'est habituellement le cas, mais donnent une synthèse de nos connaissances. Tout d'abord, dans le texte même, des clefs acoustiques sont données pour les familles ou les genres difficiles en même temps que des commentaires sur leur systématique

actuelle en relation avec leurs émissions sonores. Dans l'introduction proprement dite du livret globale qui accompagne le volume 2, l'apport de la connaissance de l'acoustique est bien mis en évidence, et résumé de la façon suivante. Au niveau de la systématique, on note une liste des 266 espèces dont les émissions sont publiées pour le première fois et une liste des espèces enregistrées sur les îles périphériques du continent. Ce chapitre comporte aussi la mise en évidence d'espèces non encore décrites ou récemment trouvées par l'acoustique; il résume les cas où la spécificité des taxons serait à envisager ou à refuser en fonction de l'acoustique; les cas de parallélisme ou de divergence entre les évolutions acoustiques et morphologiques; les analogies acoustiques de groupes, qui dans certains cas sont analysés sous forme de clefs ou de tableaux de détermination; et enfin les convergences acoustiques ou coïncidences. Dans le domaine de l'éthologie on signale les chants découverts pour les espèces supposées ne pas en avoir, les duos synchrones, les rapports acoustiques entre oiseaux parasites et leurs hôtes, ainsi que la défense territoriale en hivernage. Dans le domaine de l'écologie sont mises en évidence les caractéristiques propres aux espèces africaines, surtout en forêt, et la structure du signal lié à une contrainte du milieu.

On peut regretter l'absence de toute carte et une lecture attentive permettra certainement aux plus tatillons de trouver (encore) dans ce texte très serré un certain manque d'homogénéité et de rigueur dans l'orthographe de quelques noms de lieu, par exemple.

Cette vaste zone de l'Afrique de l'Ouest et du Centre, jusqu'alors pratiquement *terra incognita* des acousticiens, est dorénavant bien connue. Ce travail prolonge vers le nord ceux de Stjernstedt (1993, *Birdsongs of Zambia*, Wildsounds, Holt) et de Gibbon (1995, *Southern African Bird Sounds*, Southern African Birding, Durban), si bien que la quasi-totalité des émissions sonores entendues entre la Méditerranée et le Cap (à l'exception de l'extrême Est africain) sont maintenant disponibles.

Gérard J. & Marie-Yvonne Morel

The Birds of Africa, vol. 6. Ed. by C.H. Fry, S. Keith & E.K. Urban, 2000. 724 + xvii pp. incl. 36 col. plates, many maps and line drawings. Academic Press, London. ISBN 0-12-137306-1, hardback, £99.

Each volume in this excellent series raises the standards set by previous volumes, and this one is no exception. The volume includes babblers, tits, nuthatches, creepers, sunbirds (25% of the book), white-eyes, sugarbirds, shrikes, orioles, drongos, crows and starlings.

Changes adopted for this volume are both procedural and technical, and have improved the reliability and comparability of the species accounts. The accounts are

written by fewer people, which has helped speed production, and their names are featured on the cover and more prominently inside. Almost all museum measurements for this volume have been taken by one person (David Pearson). All the "Description" sections were written by Pearson, and (as previously) all the "Voice" and "Field Characters" by Keith. Apart from these sections, almost half of the species accounts were written by Fry. The authors have made efforts to incorporate the latest published (up to 1999) and unpublished information, including Neil Baker's Tanzanian atlas data, and the work includes a new taxonomic treatment of the sunbirds by Michael Irwin, at last breaking the group up into more than the two genera that have been lately widely accepted. The maps are noticeably more detailed and accurate, and the "Range and Status" sections more detailed than previously, often with a concluding paragraph on status changes (almost always negative) and threats.

The above praise is general; the following complaints are detail. The book has adopted the awful "English" name illadopsis for what were previously known, at least in West Africa, as akalats. These birds are still called *akalat* in French, and many of us will continue to use that name in English. The fact that "akalat" is used for some chats in East Africa is really not at all confusing. Some references, not just recent ones, have been missed. For example, the Olive Sunbird on Príncipe is not *Cyanomitra o. obscura* (the Bioko race), but is indistinguishable from mainland *C. o. cephaelis* (Tye & Macauley 1993, *Malimbus* 14: 65–66). Still in the Gulf of Guinea, the book calls the island of Annobon "Pagalú", although the inhabitants have always used "Annobón" and Pagalú is the name of the political division, not the island.

The plates are all by Martin Woodcock again, and are good. One could complain about the lack of realism in some of the sunbird and starling plates, but iridescence has always been difficult to convey in paintings. Here, some appear too bright and others not as bright or iridescent as they truly are. However, they do in general show the features required for adequate field identification, when used with the textual descriptions.

What more to say except that this volume and the rest of the series are simply indispensable for all African ornithologists? The quality of this volume warrants that continued reliance.

Alan Tye

Society Notices — Informations de la Société

Editor's Report for the years 1997–2000

Since achieving in 1996 a standard publication schedule (March and September) for the two issues per year, the flow of manuscripts has been sufficient to permit the maintenance of this schedule except for delays of a single month for both issues of 1998. Statistics for the years 1997–2000 are summarized in Table 1.

Table 1. Publication statistics, 1997–2000

	1997	1998	1999	2000
Number of pages	112	132	128	96
Scientific papers received	27	19	18	15
published	21	14	19	16
rejected	2(7%)	1(5%)	1(6%)	0 (0%)
Book Reviews published	10	9	7	5
News & Letters[1] published	5	4	5	3
Society Notices published	6	1	4	4

[1]Including Corrigenda.

Since Volume 1, the average number of pages per volume has been 126. Although the total for 2000 is low, the supply of papers for the coming year appears adequate to maintain the average. However, more worrying is the steady decline in scientific papers received, with the number received during 2000 being about half the annual total during the mid-1990s. No limit is imposed on the number of pages per issue.

All full-length papers and 76% of Short Notes were reviewed by two (occasionally one or three) referees, in addition to the Editor. Referees are acknowledged in each issue as the "Editorial Board".

Four papers were rejected because of poor methodology (2) or lack of new data (2). Rejection took place within nine months of receipt. Of the 70 scientific papers published, 65 (93%) required revision by their authors (beyond minor editorial changes), a process which occupied from four days to 30 months (median two months), a shorter period than in previous years due to increased use of email by authors. The delay between receiving a final acceptable version of a paper and its publication was 1–12 months (median 5), a period difficult to reduce further, given our 6-monthly publication schedule. Altogether, including the time taken for review by referees, editing by me and proof-reading by authors, the delay between first

receipt of a submission and its publication was 2–26 months (median 10), with 73% of papers published within one year of receipt.

No Index has been published since that to Volume 17 (1995). I should like to record here my gratitude to John Elgood, who carefully compiled the annual index until shortly before his death. I should be interested to hear from any member interested to take on this task. Revised Membership Lists were published in 1997 and 2000.

I should like to express my thanks to all referees for sacrificing their precious time and providing their valuable insights, as well as to Geoffrey Field, Gérard Morel, Bob Sharland, Roger Wilkinson and Hazell Thompson for continuing to manage the journal's printing, distribution, and mailing lists.

Alan Tye

Rapport du Rédacteur pour la période 1997–2000

Depuis qu'on est parvenu en 1996 à un rythme régulier de publication (mars et septembre) pour les deux livraisons de l'année, l'arrivée des manuscrits a suffi pour maintenir ce rythme excepté pour les deux parutions de 1998 avec un retard d'un mois. Les statistiques pour les années 1997–2000 sont résumées dans le Tableau 1.

Tableau 1. Statistique de publication 1997–2000

	1997	1998	1999	2000
Nombre de pages	112	132	128	96
Articles scientifiques reçus	27	19	18	15
publiés	21	14	19	16
rejetés	2(7%)	1(5%)	1(6%)	0 (0%)
Analyses de livres publiées	10	9	7	5
Nouvelles et Lettres[1] publiées	5	4	5	3
Informations de la SOOA publiées	6	1	4	4

[1]Corrigenda inclués.

Depuis le Volume 1, le nombre moyen de pages par volume a été de 126. Bien que le total pour 2000 soit faible, la réserve d'articles pour l'année prochaine paraît suffisante pour rester dans la moyenne. Toutefois, plus préoccupant est le constant déclin de la soumission d'articles scientifiques; ainsi la soumission au cours de 2000 a été d'environ la moitié du total annuel pour la moyenne des années 90. Aucune limite n'est imposée pour le nombre de pages par numéro.

Tous les longs articles et 76% des Notes Courtes furent critiqués par deux (parfois un ou trois) lecteurs sans compter le Rédacteur. Les lecteurs sont remerciés pour chaque numéro dans le "Comité de Rédaction".

Quatre articles furent rejetés à cause d'une médiocre méthodologie (2) ou du manque de faits originaux (2). Le rejet eut lieu dans les neuf mois qui suivirent leur réception. Sur les 70 articles scientifiques publiés, 65 (93%) demandaient des révisions par leurs auteurs (c'est-à-dire plus que des corrections de la rédaction), une pratique qui prit de quatre jours à 30 mois (moyenne deux mois), un délai plus court que les années précédentes dû à l'usage accru du courrier électronique par les auteurs. Le délai entre la réception du bon-à-tirer d'un manuscrit et sa publication fut 1–12 mois (moyenne 5 mois), délai difficile à réduire encore, étant donné notre rythme de publication bisannuelle. Au total, si l'on compte le temps demandé par les lecteurs, les corrections par moi-même et la lecture des épreuves par les auteurs, le délai entre la première réception d'un article proposé et sa publication aura été 2–26 mois (moyenne 10), avec la publication de 73% des articles dans moins d'un an du date de leur réception.

Aucun Index ne fut publié depuis celui du Volume 17 (1995). J'aimerais ici exprimer ma gratitude à John Elgood, pour avoir minutieusement compilé l'index annuel jusque peu avant sa mort. Je serais heureux de connaître le nom d'une personne désireuse de reprendre ce travail. Des Listes des Membres remises à jour furent publiées en 1997 et 2000.

Je voudrais exprimer ma gratitude à tous les membres du Comité de Rédaction pour avoir donné de leur temps et fourni d'utiles critiques; je voudrais aussi remercier Geoffrey Field, Gérard Morel, Bob Sharland, Roger Wilkinson et Hazell Thompson pour s'occuper de l'impression de la revue, de sa distribution et de la liste des abonnés.

Alan Tye

West African Ornithological Society

Revenue Account for the year ended 31 December 1999

		1998
Income		
Subscriptions	£2410	£2843
Sales of back numbers	385	305
Interest	159	92
Donations (including voluntary higher subscription)	176	40
	£3130	£3280
Expenditure		
Printing and publication	£1876	£1850
Postage	551	612
Research Grant	250	500
Council expenses	150	–
	2827	2962
Surplus for year	303	318
	£3130	£3280

Balance Sheet as at 31 December 1999

Assets				
Building society balance	£5049		£5112	
Bank balance	342		336	
Debtor	–		28	
		5391		5476
Liabilities				
Creditor	160		500	
Subscriptions in advance	342		390	
		502		890
		£4889		£4586
Accumulated funds				
Balance at 1 January		£4586		£4268
Surplus for year		303		318
		£4889		£4586

R.E. Sharland, Treasurer

Certified that I have verified the Society's bank and building society balances.

G.D. Field

West African Ornithological Society

Revenue Account for the year ended 31 December 2000

		1999
Income		
Subscriptions	£2554	£2410
Sales of back numbers	195	385
Interest	104	159
Donations (including voluntary higher subscription)	165	176
	£3018	£3130
Expenditure		
Printing and publication	£1501	£1876
Postage	436	551
Research Grant	200	250
Council expenses	60	150
	2201	2827
Surplus for year	817	303
	£3018	£3130

Balance Sheet as at 31 December 2000

Assets				
Building society balance	£298		£5049	
Bank balance	5991		342	
		6289		5391
Liabilities				
Creditors	160		160	
Subscriptions in advance	423		342	
		583		502
		£5706		£4889
Accumulated funds				
Balance at 1 January		£4889		£4586
Surplus for year		817		303
		£5706		£4889

R.E. Sharland, Treasurer

Certified that I have verified the Society's bank balances.

G.D. Field

Instructions to Authors

Malimbus publishes Papers, Short Notes, Reviews, News & Letters, and illustrative material covering the field of West African ornithology.

Papers and **Short Notes** cover 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 three printed pages in length. Wherever possible, manuscripts should first have been submitted to at least one ornithologist or biologist for critical scrutiny. 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. Either an electronic copy (e-mail attachment) or two paper copies are required, typed on one side of the paper, with double spacing and wide margins. Consult the editor for further details, *e.g.* for acceptable software.

Conventions regarding tabular material, numbers, metric units, references, *etc.* may be found in this issue and should be adhered to carefully. Note particularly the following: dates should be in the form 2 Feb 1990 but months standing alone in text may be written in full; times of day are written 6h45, 17h32; coordinates are written in the form 7°46′N, 16°4′E; 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 entered 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 migratory status, period of residence (as shown by the study), range extensions, an assessment of abundance (*Malimbus* 17: 36) and dated breeding records. Where appropriate, set data in context by brief comparison with an authoritative regional checklist. Lengthy species lists should be in tabular form (*e.g. Malimbus* 12: 39–51, 1: 22–28, or 1: 49–54) or of the textual format of recent issues (e.g. *Malimbus* 12: 19–24, 12: 61–86, 13: 49–66, 16: 10–29). The **taxonomic sequence** and **scientific names** (and preferably also **vernacular names**) should follow Dowsett & Forbes-Watson (1993, *Checklist of Birds of the Afrotropical and Malagasy Regions*, Tauraco Press, Liège) or *The Birds of Africa* (Brown *et al.* 1982, Urban *et al.* 1986, 1997, Fry *et al.* 1988, Keith *et al.* 1992, Urban *et al.* 1998, 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. A copy may be obtained from the Editor, who will be happy to advise on the presentation of specific studies.

Figures should be prepared as for final reproduction, allowing for 20–50% reduction, using indian ink on good quality white paper or heavy tracing, and adhesive transfer lettering as appropriate. Diagrams produced by computer programs other than specialized graphics packages, and by printers other than laser printers, are rarely of acceptable quality. When designing Figures, pay attention to the page-shape of *Malimbus*.

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 and will be translated as appropriate by the Editorial Board.

Ten **offprints** of Papers (but not of Short Notes) will be sent to single or senior authors, *gratis*. Offprints will not be stapled, bound, or covered; they are merely cut from copies of the journal.

Malimbus 23(1) March 2001
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