MALIMBUS

Journal of West African Ornithology
Revue d'Ornithologie de l'Ouest Africain

VOLUME 39 Number 2 **October 2017**
ISSN 0331-3689

published by: **West African Ornithological Society**
publiée par: **Société d'Ornithologie de l'Ouest Africain**

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

Site internet: http://malimbus.free.fr/ inclut le texte complet de tous les volumes du *Bulletin of the Nigerian Ornithologists' Society* et de *Malimbus* à l'exception de ceux des cinq dernières années, ainsi que les tables des matières, les résumés, les index interrogeables d'espèces et d'auteurs, et des listes pays avec, pour chacun des pays d'Afrique de l'Ouest, les références des mentions dans la revue.

La correspondance doit être adressée comme suit:
— au Rédacteur en Chef, pour les articles à soumettre à *Malimbus* (Dr A. Tye, IUCN, COI Blue Tower 3rd floor, Rue de l'Institut, Ebène, Mauritius; <alantye@gmail.com>);
— au Trésorier, pour les abonnements (Hundland, Papa Westray, Orkney KW17 2BU, U.K.; <tim@timdodman.co.uk>);
— au Secrétaire du Conseil, pour les demandes des Bourses de Recherches (Wildekamp 32, 6721 JD Bennekom, The Netherlands; <brouwereac@orange.nl>);
— au Secrétaire adjoint, pour la présence aux réunions ou des suggestions pour celles-ci (APLORI, c/o P. Hall, A.G. Leventis Ltd, West Africa House, Hanger Lane, Ealing, London W5 3QR, U.K.; <manushiiwua@gmail.com>)
— au Webmestre, pour les questions du site web: <ivande.sam@gmail.com>;
— au Président, pour les questions du politique de la Société (2 rue Rivière, F-10220 Rouilly Sacey, France; <jm.thiollay@wanadoo.fr>).

La Société tire son origine de la "Nigerian Ornithologists' Society", fondée en 1964. Son but est de promouvoir l'ornithologie ouest-africaine, principalement au moyen de sa revue *Malimbus* (anciennement *Bulletin of the Nigerian Ornithologists' Society*).

Les demandes d'adhésion sont les bienvenues. Les cotisations annuelles sont de £15 ou de €22 pour les Membres Ordinaires et de £35 (€44) pour les Sociétés (les cotisations peuvent être payées en £ sterling au Trésorier ou en Euro à M. ou Mme N. Robin, 35 rue Bonaparte, 75006 Paris, France; <nils-robin@orange.fr>. Il est recommandé aux adhérents de la Zone Euro, hors France, de procéder par virement bancaire SEPA (gratuit), l'encaissement des chèques émis hors de France étant très coûteux. Un RIB leur sera adressé sur demande. Également, les cotisations peuvent être payées en ligne sur notre site internet <http://malimbus.free.fr/>. Les Membres Ordinaires reçoivent Malimbus par courrier ordinaire et les Sociétés par courrier aérien, gratuitement. Un supplément est exigé des Membres Ordinaires pour le courrier aérien (demander au Trésorier le tarif).

Numéros anciens: Aucun exemplaire original n'est disponible à l'exception de quelques numéros récents. Cependant, un pdf de l'un des numéros (numéro complet) de *Malimbus* ou du *Bull. Nigerian Orn. Soc*. peut être fourni au prix de 50 % du coût de l'abonnement de l'année en cours. Merci d'adresser vos requêtes au Trésorier.

Bourses de Recherches de la S.O.O.A.: Les conditions à remplir pour les candidatures se trouvent dans *Malimbus* 25: 72–75 et sur le site web, ou peuvent être obtenues auprès du Secrétaire du Conseil (adresse ci-dessus).

Moltoni's Warbler *Sylvia subalpina* in Senegal and West Africa

by Bram PIOT[1] & Jean-François BLANC[2]

[1]Cité Ndiatte Almadies, Ngor, Dakar, Senegal <bram.piot@gmail.com>
[2]Le Veau d'Argent, 72400 La Ferté-Bernard, France

Received 3 June 2017
Revised 21 September 2017

Summary

Moltoni's Warbler *Sylvia subalpina* was recently elevated to species rank following a taxonomic revision of what used to be known as Subalpine Warbler *S. cantillans*. While Moltoni's Warbler has been extensively studied on its breeding grounds, its winter range is largely unknown and few records from West Africa exist. Following recent observations in Senegal, where it has been recorded annually since 2013, we review the West African records, which suggest that the species has a broad winter range in the Sahel from Senegal to Nigeria. Greatest numbers may be found in the east of this range, but more research is needed to define the range and abundance more precisely, and to understand moult and migration strategies.

Résumé

La Fauvette de Moltoni *Sylvia subalpina* au Sénégal et en Afrique de l'Ouest. La Fauvette de Moltoni *Sylvia subalpina* a récemment été élevée au rang d'espèce après la révision taxonomique de ce que l'on connaissait sous le nom de Fauvette passerinette *S. cantillans*. Alors que la Fauvette de Moltoni a été largement étudiée dans ses zones de reproduction, son aire d'hivernage est en grande partie inconnue et il existe peu d'observations en Afrique de l'Ouest. A la suite d'observations récentes au Sénégal, où sa présence a été enregistrée annuellement depuis 2013, nous passons en revue les observations faites en Afrique de l'Ouest. Les données suggèrent que l'espèce est largement repartie dans le Sahel, du Sénégal au Nigéria. Il semble que l'espèce soit plus abondante à l'est de cette zone, cependant l'aire de répartition précise et son abondance nécessitent plus de recherches, tout comme ses stratégies de mue et de migration.

Introduction

Moltoni's Warbler *Sylvia subalpina* has recently been recognised as a distinct species (Brambilla *et al.* 2008, Svensson 2013a and 2013b, Sangster *et al.* 2015). It was previously treated as a subspecies of Subalpine Warbler *S. cantillans*, but differences in plumage, moult strategy and vocalisations led to its elevation to species rank. The current taxonomy of this group can be confusing owing to different scientific names having been applied in recent years (*cf.* Baccetti *et al*. 2007): what used to be the single species Subalpine Warbler *S. cantillans* is now widely regarded as three separate species: Western Subalpine Warbler *S. inornata*, with subspecies *iberiae* (Iberian Peninsula, southern France, Italy) and *inornata* (Maghreb); Moltoni's Warbler *S. subalpina* (monotypic, Sardinia, Corsica, Balearic Islands, and parts of central and northern Italy, where locally sympatric with *inornata*); Eastern Subalpine Warbler *S. cantillans* with sspp. *cantillans* (southern Italy) and *albistriata* (Slovenia to western Turkey).

Field identification of Moltoni's Warbler is delicate as the species closely resembles Western Subalpine Warbler in all plumages. Adult males have a pale pink wash on the underparts (not orange as in Western or brick-red as in Eastern Subalpine Warblers), with on average a shorter and narrower sub-moustachial stripe. The only diagnostic feature, however, is its distinctive rattle call, which is not unlike that of the Wren *Troglodytes troglodytes*. Birds examined in the hand may be identified by moult pattern (Duivendijk 2010).

Subalpine Warbler in the old sense is a common non-breeding visitor in many parts of the Sahel and is often one of the most abundant Palaearctic passerines during the northern winter (*e.g.* Morel & Roux 1966), but little is known about the distribution and abundance of the various taxa as per the new taxonomic order. Recent observations of Moltoni's Warbler in northern Senegal prompted us to examine the occurrence of this species in its non-breeding range. This note documents those records and summarises current knowledge about the species' distribution in winter and during migration in West Africa.

Occurrence in Senegal and West Africa

There are few references in the literature to the occurrence of Moltoni's Warbler on its wintering grounds. Shirihai *et al.* (2001) wrote "the precise winter range of *moltonii* [is] unknown but birds with moult patterns typical of this race have been ringed near Kano (Nigeria)", while for Svensson (2013b) the range "probably extends at least to northern Nigeria and Niger", but no further details are given in either publication.

Senegal

The species is not mentioned by Morel & Morel (1990), Rodwell *et al.* (1996) or Sauvage & Rodwell (1998), though this is hardly surprising given that at the time

Moltoni's was considered only a little-known subspecies of Subalpine Warbler. Likewise, Ottosson *et al.* (2001) did not mention the subspecies involved in the 3,394 "Subalpine Warblers", out of a total of 5,607 *Sylvia* warblers, that they captured in Djoudj National Park between 1987 and 1996.

The first reported sighting of Moltoni's Warbler in Senegal is from 2013, after which it has been recorded every year. All records are from the north-west in the Saint-Louis Region, and mainly refer to birds from which the diagnostic rattle call was heard (one bird was examined in the hand). The records, in date order, are:

Near Richard-Toll, one, early Dec 2013 (Birdquest tour report by C. Kehoe).

Djoudj NP, two observations of perhaps two different males, 22 Mar 2014 (JFB).

South of Djoudj NP, one male, 7 Apr 2015 (JFB).

Near Gandiol, at least one, 11 Sep 2016, sound-recorded (recording deposited at <http://www.xeno-canto.org/334592>) (BP).

Langue de Barbarie NP (Gandiol), one male captured in response to playback of Moltoni's Warbler's song, 2 Dec 2016 (R. Benjumea, B. Pérez & Langue de Barbarie NP staff, Tougoupeul project).

Near Richard-Toll, one or two males, 11 Mar 2017 (JFB).

Elsewhere in sub-Saharan Africa

The only other published records of Moltoni's Warbler are listed below, from west to east (all shown on Fig. 1, together with the above records in Senegal). There are no known records from The Gambia, Guinea-Bissau, Mali, Burkina Faso and Chad (C. Barlow, J. Brouwer, M. Crickmore, M. Lecoq *in litt.*).

Mauritania, Tichît (Tagant region), at least one mist-netted, 11–12 Sep 2003 (Isenmann *et al.* 2010), identified as Moltoni's Warbler based on moult pattern (V. Salewski *in litt.*).

Figure 1. Records of Moltoni's Warbler in West Africa.

Niger, 'W' National Park, one, late Dec 2016 (Demey 2017).
Benin, Kandi, Kargui and Karimama (département Alibori), "singing individuals producing the characteristic rattle call", 18–21 Nov 2015 (the first country records) (Dowsett & Dowsett-Lemaire 2016); 'W' National Park, one seen during fieldwork between Dec 2016 and Feb 2017 (Demey 2017).
Nigeria, Dagona Bird Sanctuary, "among the Subalpine Warblers *Sylvia cantillans* mist-netted ... in February 2007, the great majority proved to be of the subspecies *moltoni* … with the rest being of the nominate race. Whereas the latter were very fat and not in moult, the former lacked any fat and were moulting their wing feathers" (Micheloni 2008). Most Subalpine Warblers caught in the vicinity of Kano during 1978–82 (Aidley & Wilkinson 1987) were still moulting in January and February and were therefore probably Moltoni's Warblers (Shirihai *et al.* 2001).
Cameroon, Waza National Park, one collected (MNHN 1967.748, Paris Natural History Museum), 25 Feb 1966; identified by Lars Svensson (*in litt.*).

Discussion

Moltoni's Warbler's non-breeding range stretches through the western and central Sahelian and Sudano-Sahelian zones from northern Senegal to northern Nigeria and Cameroon, so it might also occur in Chad. This range largely overlaps with that of Western Subalpine Warbler (both sspp. *iberiae* and *inornata*), and in the east it may also overlap with Eastern Subalpine Warbler. The regular winter range of Moltoni's Warbler extends into Benin, although it is not clear how common it is there, and it could therefore also occur in northernmost Côte d'Ivoire, Ghana and Togo.

The scant records suggest that Moltoni's Warbler is a regular yet scarce visitor to Senegal throughout the non-breeding season, between September and April, and possibly restricted to the north of the country, where it occurs in much smaller numbers than the common to abundant Western Subalpine Warbler. Further evidence of its presence is provided by data collected by the Swiss Ornithological Institute in the Djoudj NP (autumn 1995) and in Mauritania (autumn 2003, spring 2004): an adult Subalpine Warbler caught on 28 Nov 1995 was actively moulting primaries, which fits Moltoni's Warbler, while at least five additional birds showed signs of interrupted moult (including the bird listed for Mauritania above) (V. Salewski *in litt.*). We also examined the nine specimens labelled as *S. cantillans* in the collection of the Institut de Recherche pour le Développement (IRD) at Mbour, Senegal, all of which were obtained by Gérard Morel in the Richard-Toll area between the early 1960s and late 1980s; none of these showed characteristics of Moltoni's Warbler.

Senegal and Mauritania probably do not receive a large proportion of the population of Moltoni's Warbler. The species is considered as vagrant in Morocco, where there are just three accepted records between 2008 and 2016, all in March (Fareh *et al*. 2017), with several additional unconfirmed records from April and

early May. Probably only a few Moltoni's Warblers, likely those that winter in Senegal and adjacent southern Mauritania, migrate north through northwest Africa, while those that winter further east cross the Sahara through Algeria and Tunisia, where they are "common" during migration, being recorded from late March (Svensson 2013b). Moltoni's Warbler is probably present in greater numbers further east, as suggested by the fact that most birds present in northern Nigeria are thought to be Moltoni's. In addition, perhaps not all Moltoni's Warblers migrate to winter quarters south of the Sahara, as suggested by specimens collected at Tunis, Tunisia, on 12 Feb 1915 (ZMA/NL 43270, Leiden Natural History Museum) and Tamanrasset, southern Algeria, on 29 Dec 1953 (ZFKB 54412, A. König Museum, Bonn) (L. Svensson *in litt*.).

Moltoni's Warbler arrives on its Mediterranean breeding grounds approximately three weeks later than Western Subalpine Warbler (Barriocanal & Robson 2011) and has developed a complex moult strategy which differs from that of Western and Eastern Subalpine Warblers (Shirihai *et al.* 2001). The Nigerian records seem to confirm that Moltoni's Warblers depart later from West Africa than Western Subalpine Warblers, as the latter had completed moult and were "very fat" in February, whereas many Moltoni's Warblers were still moulting in Jan–Feb (Aidley & Wilkinson 1987, Shirihai *et al.* 2001, Micheloni 2008).

The limited number of records of Moltoni's Warbler from its winter range probably relates primarily to the fact that few bird-watchers are aware of the criteria that distinguish it from Western Subalpine Warbler, and most will identify the species with confidence only if the characteristic rattle call is heard or the bird is caught. In Senegal, several birds showing characteristics of Moltoni's have been observed by JFB, but only a few of them called.

Questions remain as to how widespread and abundant Moltoni's Warbler is in its winter quarters, whether its range overlaps completely with that of Western Subalpine Warbler, whether they have different habitat requirements and how different are their migration routes and timing. More historic records may surface, while bird-watchers and ringers are encouraged to pay more attention to the subalpine warbler complex, particularly the moult patterns of captured birds. Information is similarly lacking on the wintering grounds of some other recently split taxa that must regularly occur in the region, such as Atlas and European Pied Flycatchers *Ficedula speculigera* and *F. hypoleuca*, Common and Iberian Chiffchaffs *Phylloscopus collybita* and *P. ibericus*, and Western and Eastern Olivaceous Warblers *Iduna opaca* and *I. pallida*.

Acknowledgments

We are grateful to Clive Barlow, Rafa Benjumea, Joost Brouwer, Peter Browne, Simon Cavaillès, Mary Crickmore, Ron Demey, Jacques Laesser, Miguel Lecoq, Pier Francesco

Micheloni, Volker Salewski, Lars Svensson, Daouda Sylla (IRD Mbour), Marco Thoma, Tim Wacher and Raffael Winkler for their various contributions. Ron Demey and Volker Salewski provided useful comments on an earlier draft of this paper.

References

AIDLEY, D.J. & WILKINSON, R. (1987) Moult of some Palearctic warblers in northern Nigeria. *Bird Study* 34: 219–225.

BACCETTI, N., MASSA, B. & VIOLANI, C. (2007) Proposed synonymy of *Sylvia cantillans moltonii* Orlando, 1937, with *Sylvia cantillans subalpina* Temminck, 1820. *Bull. Brit. Ornithol. Club* 127: 107-110.

BARRIOCANAL, C. & ROBSON, D. (2011) Subalpine and Moltoni's Warblers *Sylvia cantillans* and *Sylvia moltonii*. *Monogr. Mus. Ciènc. Nat.* 6: 182–189.

BRAMBILLA, M., VITULANO, S., SPINA, F., BACCETTI, N., GARGALLO, G., FABBRI, E., GUIDALI, F. & RANDI, E. (2008) A molecular phylogeny of the *Sylvia cantillans* complex: cryptic species within the Mediterranean basin. *Mol. Phylogenet. Evol.* 48: 461–472.

DEMEY, R. (ed.) (2017) Recent Reports. *Bull. Afr. Bird Club* 24: 229–252.

DOWSETT, R. & DOWSETT-LEMAIRE, F. (2016) Benin. Pp. 106–108 *in* DEMEY, R. (ed.) Recent Reports. *Bull. Afr. Bird Club* 23: 104–123.

DUIVENDIJK, N. VAN (2010) *Advanced Bird ID Guide, the Western Palearctic*. New Holland, London.

FAREH, M., CHERKAOUI, S., I., FRANCHIMONT, J. & MAIRE, B. (2017) Les oiseaux rares au Maroc. Rapport de la Commission d'Homologation Marocaine numéro 22 (2016). *Go-South Bull.* 14: 88–100.

ISENMANN, P., BENMERGUI, M., BROWNE, P., BA, A.D., DIAGANA, C.H., DIAWARA, Y. & EL ABDINE OULD SIDATY, Z. (2010) *Oiseaux de Mauritanie / Birds of Mauritania.* Société d'Études Ornithologiques de France, Paris.

MICHELONI, P. (2008) P. 134 *in* DEMEY, R. (ed.) Recent Reports: Nigeria. *Bull. Afr. Bird Club* 15: 125–139.

MOREL, G.J. & MOREL, M.-Y. (1990) *Les Oiseaux de Sénégambie*. ORSTOM, Paris.

MOREL, G.J., & ROUX, F. (1966) Les migrateurs paléarctiques au Sénégal II. Passereaux et synthèse générale. *Terre Vie* 2: 143–176.

OTTOSSON, U., RUMSEY, S. & HJORT, C. (2001) Migration of four *Sylvia* warblers through northern Senegal. *Ringing Migr.* 20: 344–351.

RODWELL, S.P., SAUVAGE, A., RUMSEY, S.J.R. & BRAUNLICH, A. (1996) An annotated check-list of the birds occurring at the Parc National des Oiseaux du Djoudj in Senegal, 1984–1994. *Malimbus* 18: 74–111.

SANGSTER, G., COLLINSON, J.M., CROCHET, P.-A., KIRWAN, G.M., KNOX, A.G., PARKIN, D.T. & VOTIER, S.C. (2015) Taxonomic recommendations for Western Palearctic birds: 10th report. *Ibis* 157: 193–200.

SAUVAGE, A. & RODWELL, S.P. (1998) Notable observations of birds in Senegal (excluding Parc National des Oiseaux du Djoudj), 1984–1994. *Malimbus* 20: 75–122.

SHIRIHAI, H., GARGALLO, G. & HELBIG, A. J. (2001) Sylvia *Warblers, Identification, Taxonomy and Phylogeny of the Genus* Sylvia. Christopher Helm, London.

SVENSSON, L. (2013a) A taxonomic revision of the Subalpine Warbler *Sylvia cantillans*. *Bull. Brit. Ornithol. Club* 133: 240–248.

SVENSSON, L. (2013b) Subalpine Warbler variation and taxonomy. *Brit. Birds* 106: 651–668.

Local density, behaviour, food and moult of the Fox Kestrel *Falco alopex*

by Rob G. BIJLSMA[1] & Willem VAN MANEN[2]

[1]Doldersummerweg 1, 7983 LD Wapse, The Netherlands. <rob.bijlsma@planet.nl>
[2]Talmastraat 112, 9406 KN Assen, The Netherlands

Received 26 March 2017; revised 28 August 2017

Summary

During short visits to central Mali (between Sévaré and Somadougou) in Febuary 2004 and Febuary 2005, territorial Fox Kestrels *Falco alopex* were found on two rocky outcrops of 4 km² and 5.5 km², which held respectively one pair, and six pairs plus two solitary birds. At the latter site, nearest-neighbour nest distances averaged 586 ± 407 m ($\bar{x}$ ± SD) and occupied nesting sites averaged 830 ± 285 m from the nest site of a Lanner Falcon *Falco biarmicus*. Nests were not in use at the time, but pairs displayed territorial behaviour. Approach by humans (on foot) and a Pied Crow *Corvus albus* elicited alarm-calling and flight, but Lanner Falcons were avoided silently or ignored. Alert and flight initiation distances at the approach of a person averaged 71 m and 43 m. Hunting was observed up to 1.5 km away from both rocky outcrops, in harvested rice and millet fields riddled with rodent burrows. Food (based on pellets and observations) consisted almost entirely of Orthoptera (Acrididae), but also included Coleoptera. Fox Kestrels foraged via sallies from exposed perches (trees and rocks) to capture locusts on the ground, then dismembered them back at the sitting post or in flight. A short bout of hovering was noted once. Five out of nine Fox Kestrels showed moult in primaries and/or rectrices.

Résumé

Densité locale, comportement, nourriture et mue de la Crécerelle renard *Falco alopex*. Durant de courtes visites au centre du Mali (entre Sévaré et Somadougou) en février 2004 et février 2005, deux affleurements rocheux de 4 km² et 5,5 km² se sont avérés héberger des Crécerelles renard *Falco alopex*, dont respectivement un couple et six couples plus deux solitaires. Dans ce dernier site, les distances des nids par rapport à leur plus proche voisin étaient en moyenne de 586 ± 407 m ($\bar{x}$ ± DS) et les nids occupés à une distance moyenne de 830 ± 285 m du nid d'un Faucon lanier *Falco biarmicus*. Les nids n'étaient pas en usage au moment de la visite, mais les couples affichaient un comportement territorial. Des appels d'alarme ont été suscités par des humains s'approchant à pied et par un Corbeaux pie *Corvus albus*, mais les Faucons lanier étaient évités en silence ou ignorés. Les distances d'alerte et d'envol à

l'approche d'une personne étaient respectivement de 71 m et 43 m en moyenne. La chasse a été observée jusqu'à 1,5 km des deux affleurements, sur des champs récoltées (riz, mil) criblés de terriers de rongeurs. Les aliments (sur la base des pelotes et d'observations) étaient presque entièrement constitués d'orthoptères (acridiens), mais aussi de coléoptères). Les Crécerelles renard se nourrissaient principalement en jaillissant à partir de perchoirs exposés (arbres, rochers) pour attraper les locustes au sol puis les démembraient à leur retour sur le perchoir ou en vol. Un vol stationnaire de courte durée a été noté une fois. Cinq Crécerelles renard sur neuf étaient, au vu de leurs primaires et/ou rectrices, en train de muer.

Introduction

The Fox Kestrel has been little studied in the past century, perhaps partly because of its familiarity as exemplified by this quote from Brown (1971): "I had splendid chances of watching it but never seized them because I thought the bird commonplace." The texts in handbooks contain little or no quantitative information (Brown & Amadon 1968, Brown *et al.* 1982, Cade 1982, Hoyo *et al.* 1994, Ferguson-Lees & Christie 2001), and measurements have been copied from handbook to handbook, lacking sample size and measures of variation. Their origin appears to be Brown & Amadon (1968 p. 10), who described their data as "measurements … often from standard works, such as Friedmann and Hartert." Many common Sudano-Sahelian raptors are still poorly known, although the breeding biology of African Swallow-tailed Kite *Chelictinia riocourii* and Grasshopper Buzzard *Butastur rufipennis* has been studied in detail (Buij *et al.* 2012, Buij *et al.* 2013, Mullié *et al.* 2014). Recent information on Fox Kestrel is limited to snippets, *e.g.* on eggs, chicks, diet, moult and taxonomy (Brouwer & Mullié 2000), hovering (Londei 2002, Buij & Croes 2014), flocking and attending grass fires to catch fleeing insects (Van Zyl *et al.* 2006).

In Mali, the Fox Kestrel has been described as "commun et répandu dans toutes les zones de roches et de falaises … des Monts Mandigues à l'Adrar des Ifoghas, et même sur l'île de Taguilem (Faguibine). Nidification décembre à février; rarement, mars–avril." (Lamarche 1980). Using road counts, Thiollay (1977) observed Fox Kestrels in central Mali westwards as far as Bandiagara (14°25′N, 3°19′E). Later observations within this range do not seem to substantiate Lamarche's "commun et répandu", as Fox Kestrels have mostly been recorded in very small numbers only, or not at all, in suitable rocky habitats (Balança & de Visscher 1993, Moulin *et al.* 2001, Clouet & Goar 2003, Clouet *et al.* 2009).

In light of this scarcity of information, we report on behaviour, disturbance distance, moult, density and food of Fox Kestrels in Mali. Albeit based on limited observations, we present new information on the ecology of this species.

Study area

We surveyed two sites in the Sudano-Sahelian zone of central Mali: near Pérempé (centred around 14°28′N, 4°4′W, just south of Sévaré), and Hamdallaye (14°18′N,

4°5′W), which lies *c.* 25 km south of Sévaré and 2 km NNW of Somadougou. This semi-arid region at an altitude of 270 m comprises small rocky outcrops amidst flatlands. These eroded inselbergs are outliers of the Bandiagara Escarpment (up to 400–500 m altitude) 60 km to the east. Most of the rocky outcrops in the study plots consisted of weathered quartzite without cliffs. Some larger rock formations had cliffs up to 50 m high, with small ravines and gorges.

The Pérempé site, part of a larger rocky outcrop extending eastwards, consisted of a rock formation 2 x 2 km in surface area, with a small cliff. It was surrounded by savanna and dry farmland cropped with millet, and rice fields closer to the Niger River. The isolated rock formation of Hamdallaye, 5 km to the east of the River Niger, is partly surrounded by farmland with millet on the drier ground and rice in wetter fields closer to the River Niger. Although thoroughly eroded (Fig. 1), the formation still has gorges and cliff faces of 10–50 m height, exposed to the west and northwest.

Figure 1. View from the east of the rocky formation of Hamdallaye near Somadougou, central Mali, 11 Nov 2013.

The region has a long dry season, with a single rainy season mainly in July–August). Annual rainfall in 2003 and 2004 was 662 and 457 mm, *i.e.* a wet and a dry year compared to the 2001–2014 average of 557 mm (data from Sévaré airport, with missing values substituted by L. Zwarts using satellite-derived estimates). The vegetation was open savanna with scattered *Acacia nilotica* and *Balanites aegyptiaca* trees, some *Calotropis procera* and many small *Combretum glutinosum*. Near villages

and temporary lakes, small fields were cultivated with millet, sorghum and rice. In February 2005, the harvested fields abounded with rodents: apart from the many burrows observed to be in use, rodents were commonly seen and heard. In the wake of an outbreak of Desert Locust *Schistocerca gregaria* in West Africa from October 2003 (Ceccato *et al.* 2007), many adults of this species were present during our stay in 2004, but numbers nowhere reached swarm densities. In 2005, only non-migratory grasshoppers were present, frequently encountered in fields with millet stubble. These were mostly species typical of sandy soils and rain-fed farmland (Lecoq 1988, Popov 1988), such as *Acorypha clara*, *Oedaleus senegalensis*, *Kraussaria angulifera* and *Diabolocatantops axillaris* (Legg & Togola 1993).

The cliffs were home to small mammalian predators, including African Striped Weasels *Poecilogale albinucha*, whose skulls were found in Barn Owl *Tyto alba* pellets and on nearby Yellow-billed Kite *Milvus migrans parasitus* nests (Bijlsma *et al*. 2005). Two adult Olive Baboons *Papio anubis* were seen and photographed at Hamdallaye on 3 Feb 2005. Both baboons and kites sometimes take eggs or chicks. Other raptors recorded at the Hamdallaye site on 2 and 3 Feb 2005, some of which may have been competitors (for nest sites or food) or predators of fully grown Fox Kestrels, included an adult Short-toed Eagle *Circaetus gallicus*, five adult Booted Eagles *Aquila pennatus* (two dark morph, three light morph), an adult female and a juvenile Montagu's Harrier *Circus pygargus*, a Common Kestrel *Falco tinnunculus* and a territorial pair of Lanners *Falco biarmicus*. An adult Lanner was also seen at the small cliff at Pérempé, on 15 Feb 2004. Sightings, pellets and/or moulted feathers of Barn Owl and Spotted Eagle Owl *Bubo africanus* were obtained at both sites.

Methods

The Sévaré site was visited on 15 Feb 2004 (9h15–15h30). The Hamdallaye farmland was visited on 2 Feb 2005 (11h00–17h30 h), and on 3 Feb 2005 (9h30–17h00), the rock formation itself, covering 2.5 x 2.2 km², was surveyed. At each site we systematically surveyed on foot a plot of 4 x 4 km, centred on each of the rocky outcrops. We checked trees and rock formations for raptor nests, mapped nests and birds with a Global Positioning System, and recorded intra- and inter-specific interactions, foraging, moult, nest sites and roosts. Nest sites were defined as occupied cavities with pellets on ledges, streaks of fresh and discoloured whitewash of uric acid and/or alarm-calling falcons nearby. For birds (including raptors) sitting in exposed positions, we recorded upon approach the detection distance (when the bird was noted), alert distance (AD: bird obviously taking note of the approaching observer) and flight initiation distance (FID: bird taking flight), following the methodology of Blumstein (2006). These distances were measured by the same observer (RGB) pacing (validated against a measured distance) in a straight line towards the target (distance *a*). Height of the sitting post was also recorded and observer's height subtracted from it (= *b*), allowing the flight initiation distances in metres (*c*) to be calculated using Pythagoras's theorem $a^2 + b^2 = c^2$. Heights were estimated by eye, and for trees higher than 6 m sometimes validated with a laser rangefinder.

On 3 Feb 2005, we collected 37 intact pellets and a handful of fragments of pellets, below a daytime roost of a Fox Kestrel, close to a nest site on a cliff in the Hamdallaye mountain range. The pellets were quite fresh, and the bird was seen on the roosting site. Pellets were measured and provisionally assigned to main prey species, but were lost before full identification of prey remains could be made.

Moulting of flight feathers was recorded whenever possible. Of the 16 individual Fox Kestrels observed, seven eluded close observation and were excluded from comments on moult. Remiges and rectrices are numbered descendantly (outwards) in primaries and rectrices, and ascendantly (inwards) in secondaries.

Means are given ± 1 SD.

Results

Habitat and density

In both plots, Fox Kestrels were always recorded near rocky outcrops, either roosting on the cliffs or in trees nearby. The Hamdallaye site held six pairs and two single Fox Kestrels, concentrated in the southern section of the mountain range where cliffs were steepest. Each pair had exclusive occupation of a gully with a cliff face (Fig. 2). Nearest-nest distances at Hamdallaye were 156, 156, 518, 561, 771 and 1352 m (six pairs). The heights of nesting cliffs varied between 11 and 33 m (mean 20.8 ± 6.6 m, n = 6), with all nests situated on ledges in the upper third of the cliff face. The pair of Lanners used one of the steepest cliffs in the central section of the rock formation, where a small stick nest (presumably of Rock Dove) was found on a ledge at a height of 43 m (7 m below the top of the cliff). None of the Fox Kestrel sites faced the nesting site of the Lanners. Fox Kestrel nest sites were on average 830 ± 285 m (range 430–1206 m) away from the Lanners' nest. The pairs avoided the cliff face occupied by the Lanners (Fig. 2). Solitary Fox Kestrels were exclusively recorded on the outskirts of the rock formation where cavities suitable for nesting were lacking, and away from cliffs occupied by congeners or Lanners. On the two days of observation, the Fox Kestrels foraged on farmland and wooded savanna within 1.5 km south and east of the rock formation.

The Pérempé plot held one pair of Fox Kestrels, occupying the only rocky outcrop (in the section surveyed) possessing a sheer cliff *c.* 15 m high. Five smaller rocky outcrops nearby lacked a cliff face, except one which was occupied by a pair of Pied Crows *Corvus albus*. The Fox Kestrels' cliff was sufficiently steep to deter larger predators (and us). It contained several ledges and cavities, with a tell-tale whitewash. At the foot of the outcrop small fields (mostly millet) and sandy dryland extended to the west and south. These fields were used by Fox Kestrels for hunting.

Behaviour

Although not breeding, pairs appeared to be more spaced out than the availability of nesting cliffs would dictate, and showed territorial behaviour when provoked by congeners or humans. Pairs often perched on occupied rocky outcrops and exposed trees, where they were watchful and sometimes preened. Approaching their cliffs elicited

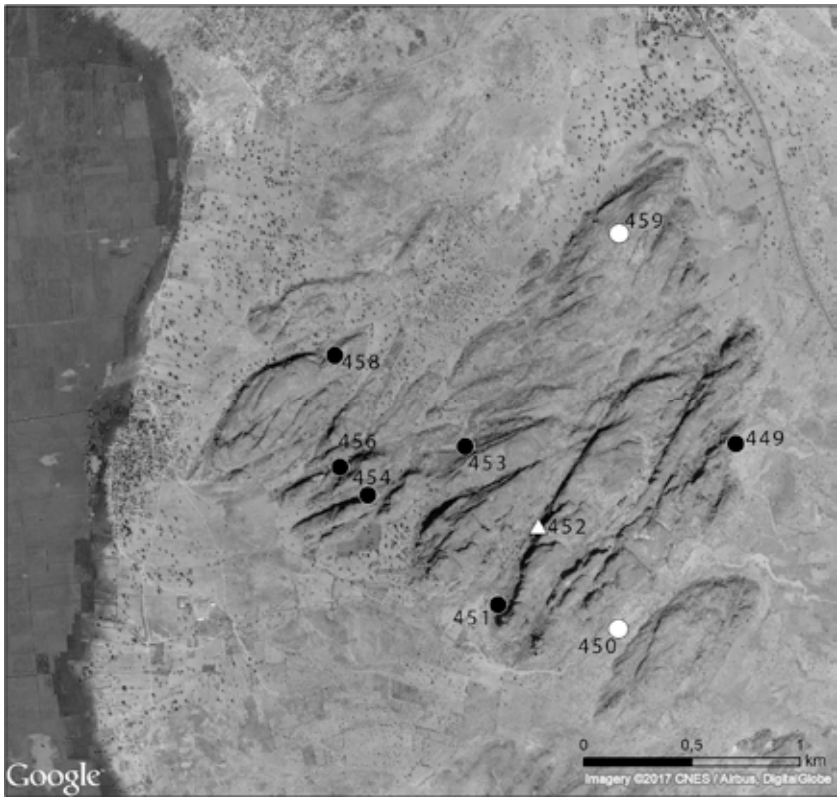


Figure 2. Distribution of Fox Kestrels and Lanner Falcon in the Hamdallaye rock formation near Somadougou, central Mali, on 3 Feb 2005. The flat land in the west is the cultivated floodplain of the Niger River. Circles = Fox Kestrels (black, pairs; white, solitary); triangle = Lanner.

alarm calling in four out of five pairs (not tested for the sixth pair), consisting of a screeching, throaty "krree-krree-krree", harsher than Kestrel *Falco tinnunculus* and less powerful than Lanner. Near nest sites, alarm calling was sometimes accompanied by flights on rapidly beating, stiffly held wings within 20–75 m of the observers. When flushed, birds stayed within sight, watching us from exposed rocks or circling overhead (Fig. 3). None of the nest sites contained eggs or chicks when we searched the plots, but pairs were clearly attached to specific sites and started alarm calling when approached by us or (on 3 Feb 2005) by a Pied Crow.

One intraspecific aggressive interaction was noted at 9h40 on 3 Feb 2005, when a solitary Fox Kestrel (450 in Fig. 3) came within 100 m of pair 451; one member of the

Figure 3. Fox Kestrel on the alert, near its breeding site in the Hamdallaye mountains, central Mali, 3 Feb 2005.

pair flew directly at it, followed by brief talon-locking (35 m high, for perhaps just 1 s), then pursued it away from the rock formation for some 50 m. This interaction was accompanied by fierce calling; although it was not clear which bird was calling. A male–female interaction (pair 449, Fig. 1) also involved talon-locking for a brief moment, at 9h30 on 3 Feb 2005, with both birds calling loudly. This pair, in which the size difference was clearly noted, had been sitting together on a rock before being disturbed by us; the interaction followed almost immediately after the disturbance, and the birds stayed close together afterwards.

At Hamdallaye, the appearance of the local Lanners elicited flight without calling, as seen twice on 3 Feb 2005. The Fox Kestrel pair at Pérempé, conversely, did not noticeably react to the presence of a single Lanner Falcon (within 100 m distance sometimes).

Two FIDs obtained at Hamdallaye measured 33 and 44 m, but ADs were much larger (61 and 81 m). A FID for one Fox Kestrel taken in Burkina Faso (11°42′N, 1°36′E, 7 km east of Arly National Park) at 9h28 on 10 Feb 2016, was 51 m (AD 67 m) (RGB pers. obs.).

Hunting and food

During hunting, which was always solitary, the birds mostly stayed within 500 m of the outcrops, searching wooded savanna and fields of stubble (millet and rice), where they hunted insects, usually obtaining prey within a short time of starting each foray. On 2 Feb 2005, a single Fox Kestrel was recorded 1.5 km from the Hamdallaye rocks, when flushed from the ground in a harvested, rodent-riddled rice field. We did not

register any grasshoppers or crickets in this field, and the bird may have attempted to capture a rodent. During intermittent observation bouts between 16h00 and 17h00, totalling 11 min., it frequently switched sitting posts in tree tops, and was once observed hovering for 5 s before flying back to a tree. When hovering, the body was held almost vertical, with tail hanging (in little wind). During this whole period no capture attempt was witnessed, which suggested hunting for rodents rather than insects. On 3 Feb 2005, another bird made a 30 m sally from a rocky outcrop, caught with its feet a large locust just above the ground, snipped off the wings and ate the prey on the wing. On 15 Feb 2004, at 10h10, two Fox Kestrels near Pérempé used sitting posts to swoop down on *Schistocerca gregaria* (identified from prey remains) from a height of *c.* 10 m; both birds returned with their prey to the rock where the locusts were quickly dismantled and consumed. Distances between rock and site of capture varied between 30 and 50 m (40 ± 8 m, n = 7). During 12 min. of observation, the birds respectively captured three and four large locusts with sallies from the rock, without once missing.

Pellet size ranged from 12.7 x 8.9 mm to 37.3 x 16.9 mm (mean 25.5 x 15.5 mm, n = 37). They were yellowish grey and consisted of compacted insect remains and grass particles, with loose composition and a tendency to fall apart quickly when deposited in exposed places. All 37 pellets were composed of the remains of locusts and grasshoppers (Orthoptera: Acrididae); fragments were very small, mostly from the abdomen, tibia and femur, consistent with the observations of falcons dismembering locusts before consumption. One of the pellets also contained elytra of an unidentified beetle (Coleoptera).

Moult

Of the nine individual Fox Kestrels observed in Feb 2004 and Feb 2005 sufficiently closely to detect moulted flight feathers unambiguously, four were in immaculate plumage without gaps in wing or tail. The other five showed visible moult, of which three lacked a rectrix (the fifth, counted descendantly), one a single primary in the right wing (presumably the first) and another bird simultaneously the first primary (right wing) and a tail-feather (position not pinpointed). Only two moulting birds were tentatively sexed, both as female (based on a small size difference within apparent pairs, with female sex assigned to the bigger bird: Brown *et al.* 1982).

Discussion

Accounts of Fox Kestrel abundance differ widely, from “rare and local” (Brown 1971 p. 123, presumably referring to its entire range) to “commun et répandu dans toutes les zones de roches et de falaises” (Lamarche 1980, for Mali). Such vagueness of published information on Fox Kestrels is exacerbated by the frequent use of secondary sources which, upon inspection of primary sources, sometimes turn out to be erroneous. For example, the statement that the largest known population of Fox Kestrel is in the Mandara Mountains (Buij & Croes 2014), stems from a misquote of Thiollay (1977 p. 278–9, where he does not mention the Mandara Mts) by Thiollay

(2001 p. 178). It shows that detailed observations are needed, and that checking primary sources is crucial; even self-quotes can be wrong. Our data refer to a small, isolated and peripheral breeding site of Fox Kestrels in Mali, and we do not suggest that the information is typical of Fox Kestrels in general. We need more and better data from various parts of the breeding and wintering range, as summarised for northern Cameroon (Buij & Croes 2014). Data collection using stratified random sampling should be relatively easy, as Fox Kestrel has a patchy breeding distribution "owing to the nature of the ground it inhabits" *i.e.* "rock piles and cliffs" (Bannerman 1953).

Breeding occurs during the early part of the rainy season, in March–June, at least in Niger, Nigeria and Cameroon (Elgood 1994, Brouwer & Mullié 2000, Buij & Croes 2014), but may be as late as June–September in Sudan (Brown *et al.* 1982), the latter apparently based on observations of A.D. Forbes-Watson in NW Turkana, Kenya (Brown & Britton 1980). Moult is a reliable secondary cue for timing of breeding, as in small raptors it coincides with gonadal regression (Young *et al.* 2009), hence with incubation or chick stage. Brouwer & Mullié (2000) recorded primary moult, assumed as post-breeding, during July–August at a number of locations in the Dallol Bosso in SW Niger, according with Buij & Croes (2014), who recorded fledglings in the first half of June and noted moult of remiges in June–July. Their photograph of an adult on 10 Jul 2008 shows moult of primaries 5–6, indicating that primary moult must have started during the nestling stage (*cf.* Common Kestrel: Piechocki 1956). Duration of primary replacement scales allometrically with mass, with larger birds requiring disproportionally more time to replace all the primaries (Rohwer *et al.* 2009). Surprisingly, no data on body mass of Fox Kestrels seem to have been published (Brown & Amadon 1968, Brown *et al.* 1982, Dunning 1993), and Cade (1982) assumed a mass of 250–300 g, an estimate subsequently copied by Hoyo *et al*. (1994) and Ferguson-Lees & Christie (2001), but which still needs verification. Assuming that Fox Kestrels weigh 250–300 g (slightly more than Common Kestrels), allows an estimate of moult duration of primaries (as scaled to mass; Rohwer *et al.* 2009) of some 100 days. The few moulting adults at Hamdallaye were in the last stage of primary moult (first primary missing, *i.e.* the last one to be moulted), indicating a start of moult in the last week of October or earlier. This is likely, given that some territorial birds did not show any moult and had probably finished moulting. However, compared to the information on timing of breeding, this would be very late and needs verification.

From the fact that our Fox Kestrels were still present on the presumed breeding cliffs in February (well into the dry season), we surmise that this species is sedentary (as suggested by Elgood *et al.* 1973 for Nigeria). This contrasts with statements that the species, after breeding, descends to lower-lying areas south of the breeding haunts in the dry season (Thiollay 1978, perhaps based on Thiollay 1977: "…une dispersion se produit en saison sèche qui mène régulièrement quelques individues dans le nord de la Côte d'Ivoire et du Ghana entre 8° et 10°"). In northern Cameroon, Buij & Croes (2014) recorded small flocks near irrigated fields, apparently in agreement with Thiollay's (1978) remark, but only sometimes > 1 km away from breeding sites and never in the nearby Waza Logone floodplain (R. Buij pers. comm.). Without results

from ringing or tracking, the extent of distant dispersal remains uncertain. We observed Fox Kestrels during years with high abundance of locusts (Ceccato *et al.* 2007) or rodents (pers. obs. in 2005). Under such conditions, the drive to search for "greener pastures" in the dry season may have been absent. However, subsequent visits to the eastern edge of Hamdallaye, albeit for short periods of time (40 min. on 8 Feb 2012, 15 min. on 11 Nov 2013), did not reveal any Fox Kestrels. If they were truly absent, there was no obvious relationship with rainfall in the previous year, as 2011 was even drier than 2005 (488 mm) and 2013 much wetter than 2004 (742 mm) (L. Zwarts pers. comm.). Although Fox Kestrels may disperse, nomadic movements like those of Grasshopper Buzzards and African Swallow-tailed Kites (Buij *et al.* 2012, 2013) are apparently lacking (Elgood *et al.* 1973). Where Fox Kestrels breed close to farmland, dry season survival may be improved by high food abundance, such as we found at Hamdallaye in 2005, and as suggested by Buij & Croes (2014) for northern Cameroon. Since the extent of farmland is increasing across the Sahel (Zwarts *et al*. 2009 p. 49) and Fox Kestrels are not particularly shy, their use of inaccessible breeding and roosting cliffs close to farmland for foraging may have diminished the movement tendency during past decades.

To end with another quote from Leslie Brown: "…a season's observation in a good area for the particular species would advance our knowledge in to the 'Very well known' class." (Brown 1971 p. 256). We encourage others to make detailed observations of Fox Kestrel, noting abundance, including absence from well-visited areas, age and sex of birds observed, habitat (available versus used), behaviour, nesting including egg and chick measurements, moult, food and foraging.

Acknowledgments

Our thanks go to Jan van der Kamp & Leo Zwarts (Altenburg & Wymenga ecological consultants) and Wetlands International for support and logistics. Joost Brouwer, Ralph Buij, Ulf Ottosson and Leo Zwarts kindly commented on the manuscript.

References

BALANÇA, G. & DE VISSCHER, M.-N. (1993) Notes sur les oiseaux observés sur le Plateau Dogon au Mali. *Malimbus* 14: 52–58.

BANNERMAN, D.A. (1953) *The Birds of West and Equatorial Africa*, vol. 1. Oliver & Boyd, London.

BIJLSMA, R.G., VAN MANEN, W. & VAN DER KAMP, J. (2005) Notes on breeding and food of Yellow-billed Kite *Milvus migrans parasitus* in Mali. *Bull. Afr. Bird Club* 12: 125–133.

BLUMSTEIN, D.T. (2006) Developing an evolutionary ecology of fear: how life history and natural history traits affect disturbance in birds. *Anim. Behav*. 71: 389–399.

BROUWER, J. & MULLIÉ, W.C. (2000) Description of eggs and young of the Fox Kestrel *Falco alopex* in Niger. *Bull. Brit. Orn. Club* 120: 196–198.

BROWN, L. (1971) *African Birds of Prey*. Houghton Mifflin, Boston.
BROWN, L. & AMADON, D. (1968) *Eagles, Hawks and Falcons of the World*. Country Life Books, Feltham.
BROWN, L.H. & BRITTON, P.L. (1980) *The Breeding Seasons of East African Birds*. East African Natural History Society, Nairobi.
BROWN, L.H., URBAN, E.K. & NEWMAN, K. (1982) *The Birds of Africa*, vol. 1. Academic Press, London.
BUIJ, R. & CROES, B. (2014) Raptors in northern Cameroon, December 2005–December 2010. *Bull. Afr. Bird Club* 21: 26–63.
BUIJ, R., CAVAILLES, S. & MULLIÉ, W.C. (2013) Breeding biology and diet of the African Swallow-tailed Kite (*Chelictinia riocourii*) in Senegal and Cameroon. *J. Raptor Res*. 47: 41–53.
BUIJ, R., KORTEKAAS, K., FOLKERTSMA, I., VAN DER VELDE, M., KOMDEUR, J. & DE IONGH, H.H. (2012) Breeding biology and nestling development of the Grasshopper Buzzard. *Ostrich* 83: 137–148.
CADE, T.J. (1982) *The Falcons of the World*: 168-169. Cornell University Press, Ithaca.
CECCATO, P., CRESSMAN, K., GIANNINI, A. & TRZASKA, S. (2007) The desert locust upsurge in West Africa (2003–2005): information on the desert locust early warning system and the prospects for seasonal climate forecasting. *Int. J. Pest Managem.* 53: 7–13.
CLOUET, M. & GOAR, J.-L. (2003) L'avifaune de l'Adrar Tirharhar /Adrar des Iforas (Mali). *Alauda* 71: 469–474.
CLOUET, M., GOAR, J.-L. & BOUSQUET, J.-F. (2009) Note sur l'avifaune des massifs d'Hombori et Douentza (Mali). *Malimbus* 31: 47–54.
DUNNING, J.B. (1993) *CRC Handbook of Avian Body Masses*. CRC Press, Boca Raton.
ELGOOD, J.H., FRY, C.H. & DOWSETT, R.J. (1973) African migrants in Nigeria. *Ibis* 15: 1–45.
ELGOOD, J.H., HEIGHAM, J.B., MOORE, A.M., NASON A.M., SHARLAND, R.E. & SKINNER, N.J. (1994) *The Birds of Nigeria*. Checklist 4, 2nd ed., British Ornithologists' Union, Tring.
FERGUSON-LEES, J. & CHRISTIE, D.A. (2001) *Raptors of the World*. Christopher Helm, London.
HOYO, J. DEL, ELLIOTT, A. & SARGATAL, J. (eds.) (1994) *Handbook of the Birds of the World*, vol. 2. Lynx, Barcelona.
LAMARCHE, B. (1980) Liste commentée des oiseaux du Mali, 1ère partie: Non-passereaux. *Malimbus* 2: 121–158.
LECOQ, M. (1988) *Les Criquets du Sahel*. Collection Acridologie Opérationnelle 1, CIRAD-PRIFAS, Montpellier.
LEGG, J.P. & TOGOLA, A. (1993) Practical assessment of pearl millet (*Pennisetum glaucum*) crop loss caused by grasshopper pests (Orthoptera: Acrididae) — a major outbreak in north-west Mali. *Bull. Ent. Res.* 83: 395–403.
LONDEI, T. (2002) The Fox Kestrel (*Falco alopex*) hovers. *J. Raptor Res*. 36: 236–237.
MOULIN, S., DOBIGNY, G., CORNETTE, R. & AG SIDYÈNE, E. (2001) Observations ornithologiques dans l'Adrar des Iforas (Mali). *Alauda* 69: 527–532.

MULLIÉ, W.C., CAVAILLÈS, S., KOMDEUR, J. & BUIJ, R. (2014) Nestling development and post-juvenile moult of the African Swallow-tailed Kite *Chelictinia riocourii*. *Malimbus* 36: 1–12.

PIECHOCKI, R. (1956) Über die Mauser eines gekäfigten Turmfalken (*Falco tinnunculus*). *J. Ornithol*. 97: 301–309.

POPOV, G.B. (1988) Sahelian Grasshoppers. *Overseas Devel. Nat. Resour. Inst. Bull.* 5: i–vi, 1–87.

ROHWER, S., RICKLEFS, R.E., ROHWER, V.G. & COPPLE, M.M. (2009) Allometry of the duration of flight feather molt in birds. *PLoS Biol.* 7(6) e1000132.

THIOLLAY, J.-M. (1977) Distribution saisonnière des rapaces diurnes en Afrique occidentale. *Oiseau Rev. fr. Orn*. 47: 253–294.

THIOLLAY, J.-M. (1978) Les migrations de rapaces en Afrique occidentale: adaptations écologiques aux fluctuations saisonnières de production des écosystèmes. *Terre Vie* 32: 89–133.

THIOLLAY, J.-M. (2001) Long-term changes of raptor populations in northern Cameroon. *J. Raptor Res*. 35: 173–186.

VAN ZYL, A., BOIX-HINZEN, C., FULTON, I., FITZPATRICK, T., GEESON, J. & GEESON, J. (2006) Foraging of the Fox Kestrel *Falco alopex* in Cameroon. *Gabar* 17: 10–13.

YOUNG, G.R., DAWSON, A., NEWTON, I. & WALKER, L. (2009) The timing of gonadal development and moult in three raptors with different breeding seasons: effects of gender, age and body condition. *Ibis* 151: 654–666.

ZWARTS, L., BIJLSMA, R.G. & VAN DER KAMP, J. (2009) *Living on the Edge: wetlands and birds in a changing Sahel*. KNNV Publishing, Utrecht.

Short Notes — Notes Courtes

First proof of Sooty Shearwater *Puffinus griseus* in The Gambia, May 2012

The Sooty Shearwater *Puffinus griseus* is a common pelagic species in all oceans, breeding (laying) Nov–Dec in the southern hemisphere and with a trans-equatorial migration from May to Sep (Onley & Scofield 2007). Off West Africa its presence is considered possible in offshore waters in any season and most likely in Oct–Jan (Borrow & Demey 2001). Off the coast of northern Senegal it is the shearwater species most frequently observed from land. Off Dakar it is common in Oct (Borrow & Demey 2014) and probably regular from mid-Sep to the end of Nov or early Dec in most years: earliest observation dates were 6 Sep in 2015 and 9 Sep in 2016, and it was recorded on 25 of 28 observation days between early Oct and late Nov 2016, with an average of 16 birds per h and a maximum of 131 in 45 min. on 26 Sep (B. Piot pers. comm.). However, it is also present off Senegal in Mar–Apr, *e.g.* four birds moving northeastwards on 25 Mar 2017 (Peter van Erijk pers. comm.), at least 80 observed moving northeast in 45 min. on 19 Apr 2015 (B. Piot pers. comm.), a singleton reported on 24 Apr 2017 (B. Piot pers. comm.), and two flying north on 22 Apr 1992 (Marr *et al.* 1998). There are two records off the Cape Verde Islands in 1976 and 2001, both in April (Clarke 2006). There have been no prior reports of live or dead Sooty Shearwaters in Gambian waters, but the continental shelf lies *c.* 75 km off the Gambian coast, so the numbers of pelagic species detected near land are low (Fox *et al.* 2015), while pelagic birds further off the Gambian coast remain uninvestigated.

On 22 May 2012, during a visit to the Bijol Islands (13°23′7.8″N 16°48′49.3″W; *c.* 2 km off the mainland coast), which are part of the Tanji Bird Reserve, the fresh carcass of a dark shearwater was discovered, no photographs of it were taken and the specimen was left *in situ*; it was reported to me some days later (R. Cosgrove pers. comm.). I visited the islands on 9 Jun 2012 and found the sun-dried parts of a specimen at the same position, when it comprised closed wings, head, some feathers and vertebrae (Fig. 1), which were collected. The bird was identified as a Sooty Shearwater, which has white under the wings (Fig. 2), unlike the all-dark Bulwer's Petrel *Bulweria bulwerii* (unreported in Gambian waters, rare off Dakar), which is much smaller, with a wing chord of 183–214 mm (Olney & Scofield 2007) versus the 310 mm of the Bijol specimen.

The skull was prepared as a study specimen (Figs 3, 4) and the following measurements obtained: skull height measured perpendicular to the long axis, from the basioccipital bone (base of cranium) to the high point of the parietal bone (crest of cranium), 24 mm; skull width measured at the widest point between left and right squamosal bones at the aural openings, 23 mm; skull length, from the back of the

skull to the tip of the upper mandible, 95 mm; bill length (with the rhamphothecum absent) from the naso-frontal joint to the tip of the beak, 49 mm; bill width at the naso-frontal joint (posterior point of the nostrils), 14.5 mm.

Figure 1. Sooty Shearwater *P. griseus*, Bijol Islands, The Gambia, 9 Jun 2012. A: the underside of both wings illustrating mostly white primary underwing-coverts, against a 300 mm rule. B: the parts of the carcass, with a 152 mm rule. C, D: Top and side views of skull.

Mr Lamin Gassama, Director of the Department of Parks and Wildlife Management, and staff of Tanji Bird Reserve are acknowledged for allowing access to the Bijol

Islands. Thanks to Robin Cosgrove and Stefano Converti who reported the dead bird. Bram Piot kindly provided 2015–17 field information from Dakar. Jason Waine advised on skull biometrics and Oliver Fox made beneficial suggestions for the note.

References

BORROW, N. & DEMEY, R. (2001) *Birds of Western Africa*. Christopher Helm, London.

BORROW, N. & DEMEY, R. (2014) *Birds of Western Africa*. 2nd ed. Christopher Helm, London.

CLARKE, T. (2006*) Birds of the Atlantic Islands*. Christopher Helm, London.

FOX, O.J.L., BARLOW, C.R., BADJIE, J. & SANYANG, L. (2015) The first photographic evidence for Great Skua *Stercorarius skua* in The Gambia and the occurrence of *Stercorarius* species in West Africa. *Malimbus* 37: 16–25.

MARR, T., NEWELL, D. & PORTER, R. (1998) Seabirds off Senegal, West Africa. *Bull. Afr. Bird Club* 5: 22–28.

OLNEY, D. & SCOFIELD, P. (2007) *Albatrosses, Petrels and Shearwaters of the World*. Christopher Helm, London.

Received 10 March 2017
Revised 21 May 2017

Clive R. BARLOW
Birds of The Gambia, Brusubi Gardens, The Gambia
<birdsofthegambia@hotmail.com>

First record of Common Crane *Grus grus* in Chad

On 2 March 2017, OE was leading a safari group in Zakouma National Park, southern Chad. At Am Douloulou wetland, in the southeastern part of the park, a group of *c.* 1000 Black Crowned Cranes *Balearica pavonina* was encountered. Within the group, OE spotted a single different crane, larger than the crowned cranes and all grey with a white ear patch and red hind crown, clearly a Common Crane *Grus grus* (Fig. 1).

Common Cranes are fairly common to abundant winter visitors to north Africa from northern Morocco to northern Libya (Urban *et al.* 1986, Isenmann & Moali 2000, Isenmann *et al.* 2005, 2016). Outside the Nile Valley (Egypt to Ethiopia), where they can be found in large numbers (Urban *et al.* 1986), Saharan and sub-Saharan records of Common Crane are rare. Isenmann *et al.* (2010) mentioned one record of 30–35 from NW Mauritania, Borrow & Demey (2014) included two records from NW Senegal (in 2010 and 2012), the West African Bird DataBase (<www.wabdab.org>, consulted 21 June 2017) includes one record only, of two Common Cranes from Lake Kero in NW Niger, while Fairon (1972, in Giraudoux *et al.* 1988) mentioned one young female captured in the oasis of Bilma in eastern Niger, near the border with Chad.

Figure 1. Common Crane among a group of Black Crowned Cranes, Am Douloulou, Chad, 2 Mar 2017.

Elgood *et al.* (1994) mentioned five records from far northern Nigeria, some not far from Lake Chad.

Based on the above, the observation in Zakouma NP, the first record of Common Crane from Chad, is perhaps not unexpected. We can only speculate about how the bird arrived in Zakouma, by crossing the Sahara from the north or by flying down the Nile and then west, perhaps in the flock of Black Crowned Cranes. We can also only speculate whether there was any relation between this Common Crane sighting and the unusual numbers of Demoiselle Cranes *Grus virgo* observed in central Chad earlier that same dry season (5–21 September 2016) (<www.wabdab.org>, consulted 21 Jun 2017).

With our thanks to Olivier Girard and Ron Demey for their useful comments on an earlier version of this note.

References

BORROW, N. & DEMEY, R. (2014) *Birds of Western Africa*. 2nd ed., Christopher Helm, London.

ELGOOD, J.H., HEIGHAM, J.B., MOORE, A.M., NASON, A.M., SHARLAND, R.E. & SKINNER, N.J. (1994) *The Birds of Nigeria*. Check-list 4, 2nd ed., British Ornithologists' Union, Tring.

FAIRON, J. (1972) Analyse de contenus stomacaux d'oiseaux provenant de Kaouar (Niger). *Gerfaut* 62: 325–330.

GIRAUDOUX, P., DEGAUQUIER, R., JONES, P.J., WEIGEL, J. & ISENMANN, P. (1988) Avifaune du Niger: état des connaissances en 1986. *Malimbus* 10: 1–140.

ISENMANN, P. & MOALI, A. (2000) *Oiseaux d'Algérie — Birds of Algeria*. Société d'Etudes Ornithologiques, Paris.

ISENMANN, P., GAULTIER, T., EL HILI, A., AZAFZAF, H., DLENSI, H. & SMART, M. (2005). *Oiseaux de Tunisie — Birds of Tunisia*. Société d'Etudes Ornithologiques, Paris.

ISENMANN, P., BENMERGUI, M., BROWNE, P., BA, A.D., DIAGANA, C.H., DIAWARA, Y & EL ABIDINE OULD SIDATY, Z. (2010) *Oiseaux de Mauritanie — Birds of Mauritania*. Société d'Etudes Ornithologiques, Paris.

ISENMANN, P., HERING, J., BREHME, S., ESSGHAIER, M., ETAYEB, K., BOURASS, E. & AZAFZAF, H. (2016) *Oiseaux de Libye — Birds of Libya*. Société d'Etudes Ornithologiques, Paris.

URBAN, E., FRY, C.H. & KEITH, S. (1986) *The Birds of Africa*, vol. 2. Academic Press, London.

Received 23 June 2017, revised 27 July 2017

Owen EVANS[1] & Joost BROUWER[2]
[1]Squack's Africa Ltd. P.O. Box 847-10400, Nanyuki, Kenya.
[2]West African Bird DataBase, Wildekamp 32, 6721 JD Bennekom, The Netherlands.
Correspondence: <brouwereac@online.nl>

Compléments sur l'avifaune de la forêt d'Irangi Bushema, République Démocratique du Congo

La forêt d'Irangi Bushema, dans la province du Sud Kivu à l'est de la République Démocratique du Congo, est proche du Parc National de Kahuzi Biega dans sa partie basse. La forêt fait partie du Rift Albertin, une région d'endémisme pour les oiseaux et importante pour beaucoup d'autres taxa endémiques (Kizungu 2001). Au cours d'une mission scientifique dans la forêt, les inventaires biologiques effectués ont porté sur la botanique, la mammalogie, l'ornithologie, les macro-invertébrés aquatiques et l'herpétologie. L'étude des oiseaux dans les lambeaux forestiers a été conduite précisément sur les terres de l'hameau de Buhaire-Ngokwe, à Lutungulu et à Irangi.

C'est une région essentiellement de forêt ombrophile équatoriale. Les pluies s'étalent sur toute l'année (précipitation 1800–2300 mm) avec une baisse en jan–fév. La température moyenne oscille autour de 25°C avec de faibles amplitudes journalières. La région est caractérisée par des brouillards presque chaque matin qui disparaissent autour de 8h00, affectant cependant l'activité des oiseaux (Kizungu 1996, 2001, 2007, 2011).

La forêt d'Irangi Bushema est située à une altitude de 700 m (à côté de la route Bukavu–Walikale–Kisangani, entre Bunyakiri et Hombo) à 1600 m (Mont Elimu) (Kizungu 2011). Ses forêts primaires sont dominées par des espèces arborescentes *Gilbertiondendron dewevrei*, *Julbernardia sereti*, *Cynometra alexandri* et *Piptadeniastrum africanum*, pendant que la strate arbustive est caractérisée par *Scaphopetalum thonneri* et *Thomandersia laurifolia*, avec *Puelia ciliata* et *Afromomum* sp. comme espèces dominantes de la strate herbacée; ses forêts secondaires sont dominées par les arbres *Uapaca benguelensis* et *Musanga cercopioides,* des arbustes *Macaranga spinosa, Albizia gummifera* et *Harungana madagascareensis,* et les lianes *Alchornea cordifolia* et *A. floribunda* (Kizungu (2001, 2011).

Dans des espaces ouvertes, on observe des étangs piscicoles et des champs de cultures qui attirent d'autres espèces d'oiseaux (Kizungu 2001). Le site de la rivière Lutungulu (1°54′56″S, 28°32′16″E, altitude 1190 m) est une forêt primaire à *Piptadenistrum africanum* et *Annonidium mannii*, avec la canopée semi-ouverte. Le site de Buhaire-Ngokwe (1°45′44″S, 28°30′10″E, altitude 1020 m) est une forêt secondaire ancienne à *Annonidium mannii*, *Uapaca paludicola*, *U. benguelensis* et *Musanga cecropioides*, avec la canopée semi-ouverte et la présence de *Cynometra alexandri*, *Vernonia conferta*, *Urera camerouneensis* et des jachères autour d'habitations abandonnées.

Les travaux sur le terrain ont duré 11 jours du 28 nov au 8 déc 2013. Les méthodes utilisées étaient la capture sur transect à l'aide des filets japonais, et les observations opportunistes. Les observations opportunistes s'effectuaient dans les campements de Buhaire et Irangi juste après avoir installé les filets. Ensuite, d'autres observations se sont déroulées le long de notre voyage à pied dans la forêt, suivant la direction Irangi, Buhaire, rivière Lutungulu, Buhaire, Irangi. Dix filets japonais de 12 m de long et de 2.5 m de hauteur ont été placés sur des perches d'au moins 3 m de haut le long d'un transect de 120 m, pendant six jours à Buhaire (trois sites, deux jours par site) et trois jours à Irangi sur un seul site. Ils ont été ouverts chaque matin à 7h00 et fermés à la fin de la journée d'échantillonnage à 14h00. Le prélèvement des spécimens capturés se faisait toutes les 30 min.. Les oiseaux ont été identifiés par référence aux guides de Stevenson & Fanshawe (2002) et Sinclair & Ryan (2010).

Nous avons identifié 61 espèces d'oiseaux dans les sites d'étude, dont 39 observées et 22 capturées aux filets. Parmi elles, ont été inventoriées 17 espèces endémiques du biome Guinéo-Congolaise, déjà inventoriées par Kizungu (2011), (Pigeon à nuque bronzée *Columba iriditorques*, Perroquet jaco *Psittacus erithacus*, Coucou de Mechow *Cercoccyx mechowi*, Calao à huppe blanche *Tropicranus albocristatus*, Calao pygmée *Tockus camurus*, Barbion grivelé *Pogoniulus scolopaceus*, Barbion à croupion jaune *P. bilineatus*, Hirondelle à queue courte *Psalidiprocne nitens*, Bulbul pie-grièche *Nicator chloris*, Bulbul à dos vert *Criniger chloronotus*, Bulbul moustac *Bleda syndactyla*, Bulbul ictérin *Phyllastrephus icterinus*, Gobe-mouche de Cassin *Muscicapa cassini*, Tchitrec de Bedford

Terpsiphone bedfordi, Loriot à tête noire *Oriolus brachyrhnchus*, Hylia verte *Hylia prasina*, Nigrette à ventre roux *Nigrita bicolor*) y compris deux espèces figurant sur la Liste rouge (<www.iucnredlist.org>, consultée 24 juil 2017): *Psittacus erithacus* (en danger) et *Terpsiphone bedfordi* (endémique des basses terres du Rift Albertin, quasi menacée).

Ce travail ajoute les six espèces suivantes qui n'étaient pas connues dans la région d'Irangi Bushema, ce qui ramène la liste des espèces connues à 238 (*cf.* Kizungu 2011).

***Cuculus solitarius* Coucou solitaire.** Un individu observé à Buhaire, 3 déc.

***Cisticola erythrops* Cisticole à face rousse.** Deux observés à Irangi, 2 déc.

***Deleornis axillaris* Souimanga à tête grise.** Une femelle adulte (Fig. 2) capturée à Buhaire, 7 déc, sur une pente dans une forêt secondaire ancienne à canopée fermée à 80 %, dominée par des espèces telles que *Musanga cecropioides*, *Tabernaemontana johnstoni*, *Uapaca paludicola* et *U. benguelensis*, et avec présence d'espèces de forêt primaire telles que *Grossera multinervis*, *Tetrapleura tetraptera*, *Syzygium guineense* et *Chrysophyllum gorungosanum*. Espèce endémique du bassin du Congo, la femelle est phénotypiquement semblable au mâle, c'est-à-dire à tête grise (Cheke & Mann (2001), contrairement à ce qu'affirment Sinclair & Ryan (2010), selon lesquels la femelle aurait une tête vert olive. La seule différence avec le mâle est qu'elle n'a pas la tache pectorale rouge-orange.

***Onychognathus tenuirostris* Rufipenne à bec fin.** Un individu observé à Lutungulu, 3 déc.

***Poeoptera stuhlmanni* Rufipenne de Stuhlmann.** Un individu observé à Buhaire, 3 déc.

***Lonchura cucullatus* Capucin nonnette.** Quatre individus observés à Irangi, 2 déc.

Figure 1. Femelle adulte de *Deleornis axillaris* (photo: CM).

Au vue de nos résultats, l'intérêt reste majeur de conserver la forêt d'Irangi Bushema pour sa valeur biologique et écologique.

Nos sincères remerciements à: World Wildlife Fund, en partenariat avec la Jeunesse pour la Protection de l'Environnement et le Centre de Recherche en Sciences Naturelles de Lwiro, qui ont organisé et financé la mission scientifique dans la forêt d'Irangi Bushema; Sandy Ayer. Augustin Basabose, R.A. Cheke et Joshua Engel pour leurs corrections sur le manuscrit; Chance Bahati Muhigirwa notre laborantin avec qui nous avons été sur le terrain.

Bibliographie

CHEKE, R.A. & MANN, C.F. (2001) *Sunbirds*. Christopher Helm, London.
KIZUNGU, R.B. (1996) Inventaire des oiseaux nuisibles en agronomie au Sud Kivu. *Tropicultura* 14: 110–114.
KIZUNGU, R.B. (2001) Birds of Irangi forest, Albertine Rift, DR Congo. *Malimbus* 23: 77–86.
KIZUNGU R.B. (2007) Altitudinal distribution and abundance of hornbill species in Mukowa primary forest (Irangi area) eastern Democratic Republic of Congo. Pp. 92–103 *in* KEMP, A.C. & KEMP, M. (eds) *The Active Management of Hornbills and their Habitat for Conservation*. Naturalists & Nomads, Pretoria.
KIZUNGU, R.B. (2011) Action plan for conservation of hornbill species in Irangi forest, eastern Democratic Republic of Congo. *Raffles Bull. Zool.* 24: 27–35.
KIZUNGU, R.B. & BEYERS, R. (1994) Contribution à l'étude écologique de l'avifaune des régions vicinales du Parc National de Kahuzi Biega. *Rev. Sci. nat. Belg.* 2: 51–57.
STEVENSON, T. & FANSHAWE, J. (2002) *Field Guide to the Birds of East Africa*. Poyser, London.
SINCLAIR, I. & RYAN, P. (2010) *Birds of Africa south of the Sahara*. Random House, Cape Town.

Reçu 18 février 2016; revu 25 juillet 2017

Claude A. MAGADJU[1,2], Robert B. KIZUNGU[1], Bertin C. MURHABALE[3] & Charles M. KAHINDO[3]

[1]Laboratoire d'Ornithologie, Département de Biologie, Centre de Recherche en Sciences Naturelles de Lwiro, DS/Bukavu, Sud Kivu, Rép. Démocratique du Congo.
[2]Correspondance: <claudemagadju@gmail.com>
[3]Département de Biologie, Faculté des Sciences, Université Officielle de Bukavu, Rép. Démocratique du Congo

Forest Chestnut-winged Starling *Onychognathus fulgidus* near Awolo village, Kwara State, Nigeria

On 5 Feb 2017, while approaching Awolo village (8.5369°N, 4.4767°E), which lies on the northwest edge of the city of Ilorin, Kwara State, we saw and photographed a pair of Forest Chestnut-winged Starlings *Onycho-gnathus fulgidus* on a mango tree *Mangifera indica*, which was *c.* 11 m tall. The tree was *c.* 5 m away from school buildings and located within a farm plot, which comprised mainly cassava, maize and weeds. The birds were sighted on the lowest branch of the tree at *c.* 4 m height. Both birds were glossy purple-black, the head with bluish reflections, and a chestnut wing patch was noticed on one of the pair, as seen in Fig. 1. They were carrying grass stems and other nesting materials in their beaks, an indication that they were probably nesting nearby.

This is the most northerly sighting of this species in Nigeria, some 25 km north of the range as previously reported (Elgood *et al*. 1994, Perlo 2002, Borrow & Demey 2004, T. Adeyanju & A. Awoyemi pers. comm.). The general vegetation composition of the surrounding area is similar to that of savanna, with scattered trees and gallery forests.

Figure 1. Forest Chestnut-winged Starling near Awolo, Nigeria, 5 Feb 2017 (photos: BA).

We are grateful for the support of Dr Talatu Tende, Dr Taiye Adeyanju and the entire Nigeria South-West Atlas Team. The Nigeria Bird Atlas Project provided the logistics for the survey during which this observation was made.

References

BORROW, N. & DEMEY, R. (2004) *Birds of Western Africa*. Christopher Helm, London.

ELGOOD, J.H., HEIGHAM, J.B., MOORE, A.M., NASON, A.M., SHARLAND, R.E. & SKINNER, N.J. (1994) *The Birds of Nigeria*. 2nd ed., British Ornithologists' Union, Tring.

PERLO, B. (2002) *Birds of Western and Central Africa*. Princeton University Press, Princeton.

Received 13 June 2017; revised 17 September 2017

Babajide AGBOOLA[1], Adewale G. AWOYEMI[2] & Bamidele OLAJUYIGBE[3]
[1]Dept of Wildlife and Ecotourism Management, Faculty of Agriculture and Forestry, University of Ibadan, Nigeria. <babajide.agboola@gmail.com>
[2]Forest Unit, International Institute of Tropical Agriculture, Ibadan, Nigeria
[3]Dept of Forest Resources and Wildlife Management, Ekiti State University, Ado-Ekiti, Nigeria

News & Comment — Nouvelles & Commentaires

African Wildlife Poisoning Database

The African Wildlife Poisoning Database is now accessible, at <www.africanwildlifepoisoning.org>. There you can find basic information on all incidents in the database, which already contains 272 records of poisoning incidents that have killed over 8000 animals of 40 species, from 15 countries. This new service makes it easy for conservationists to understand the magnitude of the poisoning problem and to work collectively to address it.

The database also has a simple interface that permits you to enter data on any recent or historical poisoning incidents, and there is an app in development to facilitate entry while in the field. The database accepts all records of poisoning involving any species, no matter how big or small the incident. Please contribute any records you are aware of and encourage others in your countries to do the same. The more the database grows, the more useful it will be. Most importantly, we hope that you will help us to publicise this database among your colleagues.

The website, currently available only in English, has been a joint initiative of the Endangered Wildlife Trust and The Peregrine Fund, with technical support from The Gadfly Project.

Darcy OGADA[1], Andre BOTHA[2] & Lizanne ROXBURGH[2]
[1]The Peregrine Fund <ogada.darcy@peregrinefund.org>
[2]Endangered Wildlife Trust

Reviews — Revues

Les Paysages de l'Afrique de l'Ouest — une Fenêtre sur un Monde en Pleine Évolution, par le Comité Inter-États de Lutte contre la Sécheresse dans le Sahel (CILSS) (2016), x + 219 pages, bien illustré avec cartes et photos. U.S. Geological Survey EROS, Garretson. A télécharger gratuitement en français ou en anglais sur <https://eros. usgs.gov/westafrica/atlas-document-downloads>.

L'évolution dans l'occupation et l'utilisation des terres est un facteur majeur qui affecte la distribution et le statut de conservation des oiseaux. Cet atlas des dynamiques d'occupation et d'utilisation des terres couvre tous les pays d'Afrique de l'Ouest, le Niger et le Nigéria étant ceux situés le plus à l'Est tandis que le Mali et le Sénégal sont ceux situés le plus au Nord. L'archipel du Cap Vert est inclus.

L'introduction couvre les paysages et la géographie physique, les régions bioclimatiques et écologiques, les aires protégées (avec mention spéciale de la Réserve Transfrontalière du W-Arly-Pendjari), l'approche de suivi des ressources terrestres, les facteurs d'évolution dans l'utilisation et l'occupation des terres (principalement, la population et le climat), la productivité des terres et les tendances régionales dans l'occupation des terres de 1975 à 2013.

La deuxième partie contient le profil de 17 pays de 6–12 pages pour chacun. Chaque profil contient des cartes thématiques (aires protégées, écorégions, relief), ainsi que des cartes basées sur la télédétection qui montrent la couverture des terres en 1975, 2000 et 2013. Les comparaisons entre 1975 et 2013 sont particulièrement impressionnantes, avec l'extension des surfaces cultivées et la réduction du couvert végétal naturel. Beaucoup de photos du même paysage à l'époque et plus récemment montrent d'évolution dans le temps de la couverture des terres. Leurs légendes brèves illustrent les changements, dont certains des plus récents ont été positifs, même du point de vue écologique. A noter qu'entre 1975 et 2013 la population dans beaucoup de pays d'Afrique de l'Ouest a été multipliée par 3 ou 4.

Outre le fait que l'on voudrait toujours en savoir plus, j'aurais pour ma part surtout aimé voir inclus les changements dans les zones humides d'Afrique de l'Ouest au cours des 40 dernières années. La majorité des zones humides, si importantes pour la biodiversité et la population en Afrique de l'Ouest, a subi une énorme pression durant les 50 dernières années. La biodiversité qui dépend des zones humides d'Afrique de l'Ouest comprend beaucoup d'espèces d'oiseaux migrateurs que la région partage avec le reste de l'Afrique, avec toute l'Europe et avec l'Asie du Nord et de l'Ouest. Peut-être les zones humides et leurs modifications en Afrique de l'Ouest pourront-elles être l'objet d'un prochain atlas? Si l'USGS pouvait sur ce sujet réaliser un atlas aussi bon que celui décrit ici, j'en serais heureux.

Un grand merci à Geoffroy Citegetse et Nils Robin pour la traduction en français.

Joost BROUWER

Society Notices — Informations de la Société

Le conseil de notre Société s'élargit

Afin de répondre aux enjeux d'un développement de la Société Ornithologique de l'Ouest Africain, le conseil a jugé opportun de compléter ses compétences en sollicitant deux nouveaux membres qui ont accepté sans hésitation.

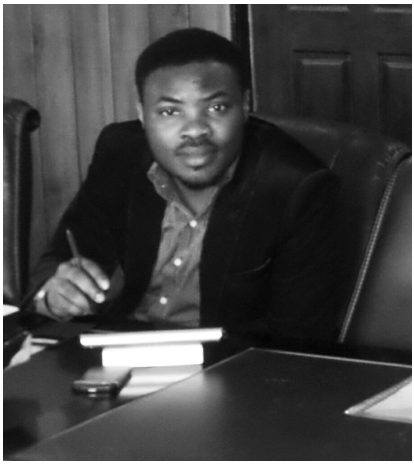
Geoffroy Citegetse, de Birdlife International basé à Dakar, est Manager du projet *Conservation des Oiseaux Migrateurs en Afrique de l'Ouest*. Il a pour objectif particulier: de recruter de nouveaux membres parmi surtout les jeunes ornithologistes locaux qui sont de plus en plus nombreux; de solliciter des publications dans *Malimbus* de la part notamment des chercheurs qui mènent des programmes de recherche ou de conservation dans notre région; de tenir au courant les lecteurs de *Malimbus* des projets de conservation et de recherche en cours dans l'Ouest Africain ou de toute actualité liée aux oiseaux en Afrique de l'Ouest.

Samuel T. Ivande, chercheur enseignant à l'APLORI (A.P. Leventis Ornithological Research Institute) de Jos (Nigeria), remplacera comme webmaster de notre site internet son très dévoué prédécesseur à ce poste, Peter W.P. Browne, qui a tenu ce rôle jusqu'à 90 ans. Sam a notamment pour mission de mettre à jour, moderniser et alimenter notre site. Il a préparé un nouveau site qui est presque prêt à être lancé.

Que tous deux soient vivement remerciés et encouragés pour leur aide ainsi que Peter Browne pour sa très longue collaboration.

J.-M. THIOLLAY, Président

Geoffroy Citegetse



Sam Ivande

W.A.O.S. Council expands

In response to the developing needs of the West African Ornithological Society, Council has judged the moment opportune to increase its capacities by recruiting two new members, who have accepted without hesitation.

Geoffroy Citegetse, Manager of BirdLife International's *Conservation of Migratory Birds in West Africa* project, based in Dakar, has the following specific responsibilities: recruiting members, particularly among the growing numbers of young local ornithologists; encouraging publication in *Malimbus*, especially those stemming from conservation programmes in the region; keeping *Malimbus* readers up to date on conservation and research projects in West Africa and other news related to West African birds.

Samuel T. Ivande, researcher and lecturer at APLORI (A.P. Leventis Ornithological Research Institute, Jos, Nigeria), is replacing as our webmaster his staunch predecessor Peter W.P. Browne, who has fulfilled this role beyond his 90th birthday. Sam has the particular mission of updating, modernising and developing our web site, and has prepared a new site which is almost ready for launch.

May both be warmly thanked and encouraged for their help, as well as Peter Browne for his very long contribution.

J.-M. THIOLLAY, President

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

New members — Nouveaux membres

BROOK, R., 59 Crest View Drive, Petts Wood, Orpington BR5 1BX, **U.K.**
HULME, M., 69a Wallace Street, Stirling FK8 1NX, **U.K.**
TCHANKPAN, C.B.M., BP 471 Abomey-Calavi, **Benin**

Resignations — Renonciations

DEGAUQUIER, R.; REDMAN, N.; SIKKEMA, M.

Address changes and corrections — Changements et corrections d'adresse

OTTOSSON, Dr U., Gränsvägen 30, SE-31260 Mellbystrand, **Sweden**
WALL, J.W., PO Box 146, Scarsdale, New York 10583-0146, **U.S.A.**
AFRICAN BIRD CLUB, c/o BirdLife International, The David Attenborough Building, Pembroke Street, Cambridge CB2 3QZ, **U.K.**
BIRDLIFE INTERNATIONAL, c/o The A.G. Leventis Library, The David Attenborough Building, Pembroke Street, Cambridge CB2 3QZ, **U.K.**
ZOOLOGICAL RECORD. Clarivate Analytics, Attn: Publication Processing, 1500 Spring Garden Street, 4th Floor, Philadelphia, PA 19130, **U.S.A.**

Tim DODMAN, Treasurer and Membership Secretary

Instructions aux Auteurs

Malimbus publie des articles de recherche, des revues de publications et des nouvelles traitant de l'ornithologie ouest-africaine.

Les **Articles** et les **Notes Courtes** doivent être des apports originaux; ceux déjà publiés ailleurs, en partie ou en totalité, seront normalement refusés. Les Notes Courtes sont des articles de moins de 1500 mots (références comprises) ou de quatre pages imprimées. Autant que possible, les manuscrits auront été au préalable soumis à au moins un ornithologue ou biologiste pour un examen minutieux. Les manuscrits seront envoyés pour critique à au moins un lecteur spécialiste.

Les textes des **Nouvelles & Commentaires** ne devraient pas dépasser 1000 mots.

Les **textes** sont acceptés en anglais et en français; la Rédaction pourra aider les auteurs dont la langue maternelle n'est pas l'une de celles-ci. Nous préférons les envois de manuscrits par email (en pièce jointe). Consultez le Rédacteur pour plus de détails, par ex. les logiciels compatibles.

Tous les Articles (mais non les Notes Courtes) comporteront un **Résumé**, n'excédant pas 5 % de la longueur totale. Le Résumé mentionnera brièvement les principaux résultats et conclusions de l'Article et ne sera pas un simple compte rendu de ce qui a été fait. Les résumés seront publiés à la fois en anglais et en français (ou dans la langue officielle du pays dans lequel le travail a été réalisé) et seront traduits au mieux par la Rédaction.

La **présentation** des tableaux, chiffres, unités métriques, références, *etc*. doit correspondre à celles des numéros récents. A notez, en particulier: Les noms des auteurs doivent être listés en faisant précéder le nom de famille par le prénom ou des initiales (ex. John A. Smith); les dates seront écrites "2 fév 1990" mais les mois seuls pourront être écrits en entier; les heures seront écrites "6h45", "17h00"; les coordonnées "7°46′13″N" (pas de zéros en tête) ou en degrés décimaux jusqu'à cinq décimales (ex. 1.23456°N), mais non en minutes décimales; les nombres jusqu'à dix seront écrits en toutes lettres, excepté devant une unité de mesure (ex. 6 m); les nombres à partir de 11 seront écrits en chiffres sauf au début d'une phrase. Toutes les références citées dans l'article, et aucune autre, doivent figurer dans la bibliographie.

La **séquence taxonomique** et les **noms scientifiques** (et de préférence les **noms vernaculaires**) doivent suivre Borrow & Demey (2001, *Birds of Western Africa*, Christopher Helm, London) avec des noms (main ne pas la séquence) rectifiés de Borrow & Demey (2014, *Birds of Western Africa*, Bloomsbury, London), ou *The Birds of Africa* (Brown *et al*. 1982, Urban *et al*. 1986, 1997, Fry *et al*. 1988, Keith *et al*. 1992, Fry & Keith 2000, 2004, Academic Press, London), à moins de donner les raisons de s'écarter de ces auteurs. Cependant, les termes "Commun" et "Africain" ne doivent être utilisés que s'ils font partie d'un nom commun employé de longue date.

Les **articles sur l'avifaune** doivent comprendre une carte ou un index géographique, incluant tous les endroits cités. Ils doivent comporter quelques brèves indications sur le climat, la topographie, la végétation et les circonstances ou événements inhabituels avant ou pendant l'étude (ex. pluies tardives, *etc*.). Les **listes d'espèces** ne doivent contenir que des enregistrements importants: les listes complètes ne sont justifiées que pour les régions encore non étudiées ou délaissées pendant longtemps. Autrement, ne citer que les espèces sur lesquelles l'étude fournit une information nouvelle sur la répartition, la période de séjour, la reproduction, *etc*. Pour chaque espèce, indiquer l'extension de l'aire de répartition, une estimation d'abondance (*Malimbus* 17: 38) et les données datées sur la reproduction; indiquer le statut migratoire et la période de séjour seulement tels qu'ils ressortent de l'étude. Eventuellement, replacer les données dans le contexte en les comparant brièvement avec une liste régionale de référence. Les longues listes d'espèces peuvent être présentées sous la forme de tableaux (ex. *Malimbus* 25: 4–30, 24: 15–22, 23: 1–22, 1: 22–28, or 1: 49–54) ou sous la forme rédigée des numéros récents. Un **guide plus complet à l'intention aux auteurs** d'articles sur l'avifaune, comprenant l'échelle d'abondance des espèces conseillée, a été publié dans *Malimbus* 17: 35–39 et une version augmentée de celle-ci mise sur le site internet (http://malimbus.free.fr/instmale.htm). La Rédaction se fera un plaisir de donner des conseils pour les études spécifiques.

Pour le dessin des **Figures**, et en particulier la taille des caractères, tenir compte des dimensions de la page de *Malimbus*. On préfère les figures préparées sur logiciel graphique et sauvegardées en haute définition. Les fichiers de basse résolution et les impressions de mauvaise qualité seront refusés. Les auteurs sont encouragés à soumettre des **photographies** qui illustrent des points importants de leur article. Les photographies doivent être en couleurs et de haute définition. Les figures et les photographies doivent être envoyées comme fichiers de logiciel graphique (par ex. jpg ou tif), et non pas être incluses dans un fichier de Word. Consulter le Rédacteur pour tout renseignement.

Un fichier pdf des Articles et des Notes Courtes, et une copie du numéro de publication seront envoyés gratis à l'auteur ou à l'auteur principal.

MALIMBUS 39(2) October 2017

Contents — Table des Matières