African Bird Club

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African Bird Club

The African Bird Club aims to:

- provide a worldwide focus for African ornithology
- encourage an interest in the conservation of the birds of the region
- liaise with and promote the work of existing regional societies
- publish a twice-yearly colour bulletin
- encourage observers to visit lesser known areas of the region
- encourage observers to actively search for globally threatened and near-threatened species
- develop a Conservation Research Fund

Registered Charity No 1053920

ABC Web site
http://www.netlink.co.uk/users/aw/abchome.html

Membership of the ABC
Membership of the ABC is open to all and costs, per annum, UK£15 *Individual (Africa & Europe)*, UK£17 *Individual (Rest of the World)*, UK£18 *Family (Africa & Europe)*, UK£20 *Family (Rest of the World)*, UK£25 *Libraries/Institutions*, UK£25 minimum *Supporting Member*, or UK£300 *Life Member*. To join or for further details please write to the Membership Secretary, African Bird Club, c/o BirdLife International, Wellbrook Court, Girton Road, Cambridge CB3 0NA, UK.

The Bulletin of the African Bird Club

The *Bulletin of the ABC* provides a forum for news, letters, notices, recent publications, preliminary expedition results, reviews and preliminary or interim publication of studies on African birds by contributors from all parts of the world. Publication of interim results in the *Bulletin of the ABC* does not preclude publication of final results as journal papers either by the ABC or elsewhere. No material should, however, be submitted simultaneously to the *Bulletin of the ABC* and to any other publication.

Notes for Contributors

The ABC welcomes original contributions on all aspects of the birds of Africa. Africa is here defined as the area covered by Collar, N.J. and Stuart, S.N. 1985. *Threatened birds of Africa and related islands: the ICBP/IUCN Red Data Book*, Part 1. Cambridge, UK: International Council for Bird Preservation, namely continental Africa, Indian Ocean islands west of 80°E, eg Madagascar, the Mascarene Islands and Socotra; Atlantic Ocean islands on or east of the mid-Atlantic ridge, eg the Tristan da Cunha group, the Azores and the Canaries.

Contributions will be accepted subject to editing and refereeing by independent referees, where appropriate. The material published is divided into *Papers, Short Notes, News & Comment, Discoveries, Reviews, Literature Gleanings, Recent Reports* and *Letters*. The Editorial Team will be happy to advise authors on the acceptability of material at draft stage if desired.

Submissions
Two copies of contributions should be submitted. Typewritten manuscripts should have double-spaced lines, on one side of the paper only, with wide margins all round. Clear handwritten manuscripts are also acceptable. All submissions will be acknowledged.

Contributions will be accepted in English or French: French summaries, as well as table and figure captions, will be printed for all major papers published in English, and vice versa. Those submitting major papers should supply a summary for translation into English, or French, as appropriate.

If possible, please submit your contribution on floppy disk and state computer (eg IBM compatible PC, Macintosh) and word-processing package (eg Word, WordPerfect) used: please note that Amstrad PCW disks are not acceptable.

When you send your contribution on disk, please do not key anything in ALL CAPS (ie with the CAPS LOCK key depressed) unless the combination always occurs in that form (eg 'USA'). Do not use the carriage return key at the end of lines, and do not right justify the margins. When formatting tables use one tab, and not spaces, between each column. Please always send two hard (printed) copies in addition.

Preferred names
With the current instability over worldwide lists of bird names, authors are requested to follow those used in *Birds of Africa* Vols 1–4. For species not yet covered, please use appropriate regional handbooks and checklists eg Roberts for Southern Africa, Britton for East Africa. Deviation from such works should be noted and the reasons given. The Editorial Team will keep abreast of changes in nomenclature and when an agreed list of African names is available, will consider switching to follow it.

Unless a sketch map is provided as part of the article, the names of places should, if possible, follow those on standard or readily available maps.

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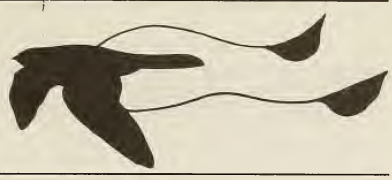


News & Comment

Front cover plate

Adult Little Sparrowhawk *Accipiter minullus* plucking a Grey-headed Sparrow *Passer griseus by Doug Goode*

Illustrations

Mark Andrews

Photographs

Neil Baker, Christine Dranzoa, Tom Evans, Laurent Esselen, Stephen J. Kings, C.A.E. Kirtland, G. Neal, David Pearson, R.J. Safford, Laura Watson, Volker Salewski, Colin Taylor and Rob Timmins

Feature articles

Club News

ABC membership exceeds 1000

By 29 June 1997, the number of current ABC members stood at 1010, a new record for this point in the year. However, there are still a number of subscribers from last year who have not yet renewed their subscription. If you know of any lapsed members, or indeed any potential new members, please encourage them to subscribe by showing them this bulletin.

New subscription rates confirmed

As previously announced Club subscription rates will increase for 1998. This is the first increase in four years and is largely due to increased Bulletin production costs. Also, for practical reasons, all Bulletins sent to addresses outside the UK will now be dispatched by airmail. Council hopes that further subscription increases can be avoided for at least another four years.

We believe the aims of African Bird Club would be best served if membership rates were the same for everyone regardless of where they live. Eventually we aim to eliminate differences between subscription rates for members around the world due to overseas postal charges. The new subscription rates mark the first step towards this goal, a process which will be completed as the Club's finances become more robust.

Supporting and Life membership rates remain the same, and the proportional difference between individual and family rates is maintained.

- Individual Member, Africa and Europe, including UK: UK£15.
- Individual Member, Rest of the World: UK£17.
- Family Member, Africa and Europe, including UK: UK£18.
- Family Member, Rest of the World: UK£20.
- Libraries/Institutions: UK£25.
- Supporting Member: UK£25 minimum.
- Life Member: UK£300.

1998 Membership renewal details

Members who renew their membership on an annual basis will find a membership renewal form enclosed with this Bulletin. Please renew as soon as possible and save us the expense of having to send out reminders later. To save postage costs, subscription payments will not be acknowledged unless a receipt is specifically requested.

Members who pay their subscription by Direct Debit will find enclosed a notification of the revised amount, which will be collected from their bankers at the beginning of January. Those who renewed their membership for three years this year will find enclosed a reminder to that effect and need take no further action. Please send membership enquiries to Bill Quantrill at the Club's address or directly by E-mail: wquantrill@msn.com.

Supported Membership scheme

The Supporting Members scheme is a key part of the Club's strategy of encouraging the spread of knowledge and understanding of birds as widely as possible throughout Africa. The scheme enables Africans to become members of the Club who would not otherwise have the resources to join.

The scheme is funded by Supporting Members who pay a minimum of UK£25 to cover their own membership and the subscription of at least one African member. The money they contribute over and above their own subscription is placed in a special fund which is used to cover the membership expenses of African members whom they have nominated, or who have been nominated by other Club members. We hope that more members will agree to support this scheme. Although we have suggested a minimum figure of UK£25 to become a Supporting Member, all contributions are welcome.

All members of the Club, even if they do not feel able to become Supporting Members themselves, are invited to nominate candidates for supported memberships. Candidates should be nationals of any African country, with a genuine interest (not necessarily scientific or academic) in birds but without the resources to become members in their own right. Our Supported Membership at present includes post-graduate students, teachers, national park guides and civil servants, but there is no reason why somebody from almost any background should not be considered. Africans who think they may qualify are very welcome to put their own names forward, supported by a suitable letter of recommendation from someone such as their employer, teacher or an office-holder in a local wildlife organisation.

1997 London meeting

More than 100 members attended the Club's 1997 London Meeting and AGM at the Friend's Meeting House, Euston on 8 March. Members were treated to some excellent illustrated presentations. David Tomlinson stepped in at short notice to start the proceedings with a talk entitled Wild Africa. After lunch, Lincoln Fishpool gave a presentation on BirdLife International Projects in Cameroon. Finally Barry Wright talked us through a very successful trip to Uganda, illustrated with some particularly memorable photographs.

As the meeting closed, the traditional raffle prize draw was made. After the formal proceedings closed many members retired to the nearby Royal George Public House for refreshments and further lively discussions. The Club would like to thank all the exhibitors, who donated a percentage of their sales to the Club.

Full details of the AGM, held in the early afternoon, are published as the Minutes of the AGM elsewhere in this Bulletin. However, several Council members stood down at the AGM and deserve a special mention, including Guy Eldridge, Paul Green, Annie Harrap, Colin Humpage, Iain Robertson and Richard Webb. All were involved in the formation and launch of ABC and each made a significant contribution to the Club's success to date.

Richard Webb

At the moment of Richard's departure from ABC Council we would like to pay special tribute to his contributions both during the Club's formation and

in the first four years of its existence. Richard was part of the small group which initially conceived a bird club of this nature but, more importantly, he set about the more difficult task of making it a reality.

In this sphere Richard's contribution was massive. As the Club's initial secretary he kept track of most of the day-to-day developments, often overseeing many of the actual tasks himself. He was a key member of the editorial committee, and eventually assumed the position of managing editor alongside his existing workload as secretary.

Quite simply, without Richard's input ABC may well never have existed, and it would certainly never have flourished so quickly. The best testament to the strong foundations which he has helped lay is that ABC can now look to the future without him.

New venue for 1998 London meeting and AGM

The Club's 1998 London Meeting and AGM will be held at the School of Oriental and African Studies, Russell Square, London on Saturday 7 March 1998. Details of the speakers, the AGM programme and how to reach the venue will be posted to members early in 1998.

In order to save on the considerable postal costs involved, Council proposes to send the AGM programme only to members based in the UK. A report on the AGM will be published in the following Bulletin. Overseas members who do wish to receive the AGM agenda should notify the Club secretary at the Club's address.

ABC Autumn Meeting

On Saturday 27 September 1997, ABC will be holding a joint meeting with the Norfolk Bird Club at Blakeney Village Hall, Norfolk. Doors open at 19.30 hr when refreshments and ABC sales items will be available along with a licensed bar. Entry is free to ABC members. At 20.00 hr Tony Marr will present a talk on Senegal Seabirds: an account of spring and autumn visits.

ABC Conservation Fund news

The ABC's first Conservation Fund award has been made to the Ornithological Association of Zimbabwe (OAZ), who plan to run a training course for A-level or undergraduate students interested in birds and conservation. The course is to be held at the Rifa Education Centre and will include lectures on a number of different aspects of birdwatching: early morning birding sessions, use of field guides and tapes, basic bird biology, migration, bird–human relationships, problem birds (eg quelea control), conservation and law. It will last six days and places will be available for 15 students. This course will be a great opportunity for people to follow-up an interest and, given the success of other such courses, often leads to the development of some very good ornithologists who have gone on to become leading conservationists.

ABC Representative Scheme

The following is the current list of ABC Representatives:

Australia: Alan McBride, PO Box 190, Newport Beach, NSW 2106.
Fax: 2 9973 2306.
E-mail: mcbird@zip.com.au.
Belgium: Paul van Daele, Kazemattenstraat 30, 9000 Gent.
Tel/Fax: 9 223 6948.
E-mail: pvdaele@uia.ua.ac.be.
Botswana: Chris Brewster, Matshekge Hill School, Private Bag 24, Bobonong.
Tel: 819272. Fax: 819544.
Cameroon: O'Kah Ebwekoh Monya, Mount Cameroon Project, PO Box 437, Limbe.
Denmark: Lars Dinesen, Sjallandsgade 37, 3 tv., 2200 Copenhagen N.
Tel/Fax: 35 36 71 64.
E-mail: regulus@inet.uni-c.dk.
Egypt: Sherif and Mindy Baha El Din, 3 Abdalla El Katib St. Apt. 3, Dokki, Cairo. Tel/Fax: 3608160. E-mail: 103257.1554@compuserve.com.
Ethiopia: Ato Yilma Dellelegn and Ato Mengistu Wondafrash, Ethiopian IBA Programme, Ethiopian Wildlife and Natural History Society, PO Box 60074, Addis Ababa.
Finland: Annika Forsten, Hantverkareg. 14 D 9, FIN-20100 Åbo.
Tel: 40 5150510.
E-mail: aforsten@aton.abo.fi.
Gabon: Patrice Christy, BP 2240, Libreville, Gabon.
Fax: c/o ECOFAC, 775534.
Ghana: Samual Kofi Nyame, Ghana Wildlife Society, PO Box 13252, Accra.
Kenya: Colin Jackson, c/o Dept of Ornithology, National Museum of Kenya, PO Box 49658, Nairobi.
Magadascar: Frank Hawkins, World Wide Fund for Nature, BP 738, Antananarivo 101.
Tel: 2 34885 (work), 2 31622 (home).
E-mail: mesite@bow.dts.mg.
Namibia: Chris Hines, PO Box 22527, Windhoek.
São Tomé and Principe: Angus Gascoigne, CP 289, São Tomé. Fax: 23912-23406.
Seychelles: Rob and Vicki Lucking, BirdLife International, Fregate Island, PO Box 330, Victoria.
Tel: 225655. Fax: 323126. E-mail: magrob@mail.seychelles.net.
South Africa: Deon Coetzee, PO Box 782937, Sandton, 2146. Fax: 011 884 2739. Tel: 082 490 1212.
Steve Evans, PO Box 505, Ngodwana, 1209. Tel: 734 4973.
Tanzania: Maurus Msuha, PO Box 70919, Dar-es-Salaam, Tanzania.
The Gambia: Clive Barlow, The Atlantic Hotel, PO Box 296, Banjul.
Fax: 227861.
Uganda: Prof. Derek Pomeroy, Makerere University Institute of the Environment and Natural Resources, PO Box 7298, Kampala.
USA (West coast): Joe Thompson, 4070 Sea View Avenue, Los Angeles, California 90065.
E-mail: Jcthom1956@aol.com.
Zambia: Pete Leonard, Kafue Fisheries, Box 31522, Lusaka. Fax: 1 30128.

The ABC Representative scheme aims to support existing members by providing a local point of contact in their region, for example, to answer queries concerning the Club, to solicit submissions for the Bulletin, and possibly to arrange meetings for local members. Existing ABC members can contact their local Representatives, in the first instance, with queries relating to the Club.

ABC Representatives help to recruit new members in their region, for example, by distributing ABC posters and arranging local advertising. In Africa, ABC Representatives help to identify opportunities to invest the ABC Conservation Fund and candidates for the supported membership scheme.

The Club aims to appoint many further ABC Representatives. If you are interested in supporting and promoting ABC in your region, please contact the Club at our postal address or contact our newly appointed Representative scheme coordinator Stan Davies directly by e-mail: StanDavies@compuserve.com.

ABC Corporate Sponsorship

The Club is delighted to announce that Wildwings has become an ABC Corporate Sponsor with effect from January 1997.

Under the terms of the Corporate Sponsorship scheme a minimum

payment of £300 entitles a sponsor to benefits under the scheme for a five year period. Corporate sponsors are entitled to a full page advertisement in two bulletins during the five years and can also use the Club's corporate sponsorship logo in adverts and stationery. Contributions under the scheme are allocated directly to the ABC Conservation Fund.

Any company or individual with enquiries or suggestions about the scheme should please write to Tony Stones at the Club's address.

ABC sales items

The following items are currently available from ABC Sales.

1. NEW! ABC T-shirt in white. Design by Mark Andrews featuring African Rollers. Available in medium, large, extra-large and extra extra-large sizes: UK£11, airmail UK£12.
2. ABC T-shirt in white, featuring a group of Turacos. Available in extra-large size only: UK£9, airmail UK£10.
3. ABC Polo shirt in forest green featuring an embroidered ABC logo and the words 'African Bird Club Working for Birds in Africa'. Available in small, medium, large and extra-large sizes: UK£12.50, airmail: UK£13.50.
4. ABC T-shirt in white featuring an Egyptian Plover illustration by Martin Woodcock. Available in medium size: UK£11, airmail: UK£12.
5. BOU T-shirt in grey or unbleached featuring Udzungwa Forest Partridge, Rufous Sunbird and Bulo Burti Boubou: UK£11, airmail £12.
6. ABC caps in black or green featuring an ABC embroidered ABC logo: UK£5, airmail: UK£6.
7. ABC enamel badge featuring a Slender-billed Curlew design: UK£1.
8. ABC car and 'scope stickers: UK£1.
9. Locally designed cards on hand-made paper, produced by the paper making co-operative of the BirdLife International-supported Kilum Mountain Forest Project in Cameroon. A selection of 5 cards in a hand-woven wallet: UK£5, airmail: UK£6.
10. Cameroon trip report. Dec 1994–Jan 1995 by Richard Webb: UK£6, airmail: UK£7.
11. Cape Verde trip report. March 1996 by Theo Bakker and Klaus van Dijk: UK£6.50, airmail UK£7.50.
12. Ethiopia trip report. Dec 1995–Jan 1996 by Richard Webb: UK £6.50, airmail: UK£7.50.
13. Birding Ghana report. Feb 1996 by Mindy & Sherif Baha El Din: UK £6.50, airmail: UK£7.50.
14. Kenya trip report. Feb–Mar 1995 by Mike Hunter and Graham Speight: UK £8, airmail: UK£9.
15. The Gambia trip report. Dec 1992–Jan 1993 by Chris Gibbins: UK £5, airmail: UK£6.
16. Uganda trip report. June–August 1995 by Henk Hendriks: UK £6.50, airmail: UK£7.50.
17. Usambara Mountains, Tanzania. Jan–Feb 1996 by Eddie Williams: UK £4.50; airmail: UK£5.50.
18. Wakkerstroom (South Africa) Bird and Nature Guide. By Warwick and Michèle Tarboton: UK £6, airmail: UK£7.
19. Nightjar A4 colour prints by Martin Woodcock from *Bull. ABC* 2.2: one print illustrates Mountain and Rwenzori Nightjars, the second depicts Black-shouldered and Fiery-necked Nightjars: UK£3.50 each.
20. White-winged Apalis A4 colour print by Nik Borrow from *Bull. ABC* 2.2: signed and numbered limited edition of 50 at UK£10; also available unsigned at UK£5. Please add UK£0.50 postage and packing (UK£1 airmail) per order for artwork.
21. *Bull. ABC*, volume 1, 1994, numbers 1 and 2: UK£5 each; UK£6 airmail.
22. *Bull. ABC*, volume 2, 1995, numbers 1 and 2: UK£6 each; UK£7 airmail.
23. *Bull. ABC*, volume 3, 1996, numbers 1 and 2: UK£6 each; UK£7 airmail.

Trip reports needed

We would like to remind members that we are keen to collect and distribute African trip reports on your behalf as part of our information service. Comprehensive reports on Cameroon, Cape Verde Islands, Ethiopia, Ghana, Kenya, The Gambia and Uganda, plus regional guides to Usambara Mountains (Tanzania) and Wakkerstroom (South Africa) are already available through ABC sales (see above). We are keen to offer similar reports for other African countries. Information for Egypt, Mali, Morocco, Namibia, South Africa, Tanzania and Zimbabwe is currently most frequently requested. Please write to Alan Wilkinson at the Club's address for details of distribution arrangements.

Acknowledgements

We are grateful to BirdLife International for the continued use of their offices as a mailing address and for committee meetings, the British Trust of Ornithology for use of their offices for editorial meetings, and Alcedo Publishing of Colorado Springs, USA and Crowes of Norfolk, UK for their assistance in producing the bulletin.

Errata

The Editorial Team would like to apologise to Amberley Moore for the omission of part of the penultimate sentence of her letter (*Bull. ABC* 4: 46), which should have read thus: 'Reichenow (1899) in his description of the type-specimen taken at Victoria (Limbe) remarked on the discovery of such a conspicuous bird in what was, even then, a very well worked area.' We apologise for any confusion which resulted from the unintelligible copy which appeared.

Africa Round-up

General

World Birding Conference: 4–6 April 1997

As Chairman of the steering committee responsible for organising the conference during its seemingly never-ending gestation period, I am bound to be somewhat biased about the success of the conference, although I feel that I speak for all attendees in declaring the conference an overwhelming success, financial considerations apart! Why so many people stayed away is beyond me, and those who did missed a thoroughly enjoyable weekend. There is considerable interest in arranging a follow-up conference, so feedback from people on why they did not attend would be greatly appreciated, in order to ensure a bigger turn-out next time. Was it the timing so close to Easter, the venue, the cost or some other factor?

The conference opened on the Friday evening with an entertaining talk by Tony Marr on the "agony and ecstasy" experienced by him and others as a result of their enthusiasm for seabirds. The talk covered not only the highs and lows of seawatching, but also the more serious question of man's effect on the oceans with particular reference to the effects of ecotourism on Antarctica.

Saturday morning saw the start of the 'serious stuff' with Graham Wynne from the RSPB leading off with a thought-provoking session on the ways in which birders can contribute to conservation. Graham highlighted the importance of gathering data to conservation policy, comparing the benefits of mass participation surveys with the benefits of expeditions collecting information in more remote areas. The importance of birders submitting trip reports to the relevant national organisation and to BirdLife International was emphasised, as far too much important data remains buried in notebooks. All travelling birders please take note!

In my view, Graham's contribution was the most important single talk of the whole weekend, highlighting, as it did, how travelling birders can make a real contribution to bird conservation on a worldwide basis. It was also a pleasure to listen to a natural speaker who knew his subject inside out, providing a thought-provoking talk without constant reference to notes.

Stephen Moss followed Graham, discussing the effect of climate on biodiversity and conservation. Global warming was identified as probably the single factor likely to have the greatest effect on bird distributions and populations over the next few decades, with Stephen speculating that the desert areas of northern Africa may become even less hospitable resulting in a northward shift by bird populations into adjacent Mediterranean areas, with an additional knock-on effect on birds currently inhabiting those areas.

The second session of the day comprised three talks on migration, with Bill Clark, Tony Prater and David Wells tackling raptor migration in the northern hemisphere, wader migration hotspots and migration through Malaysia respectively.

Saturday afternoon covered Birding and Conservation: South America, Asia and Madagascar all received attention. Research for Bird Conservation in Madagascar was eloquently covered by Frank Hawkins.

The importance of BirdLife International's Important Bird Areas (IBAs) and Endemic Bird Areas (EBAs) projects was clearly demonstrated in these sessions. The session was completed by Martin Davies's wide-ranging appraisal of the potential benefits and drawbacks of ecotourism. There is no question that birders can help conservation by visiting areas and contributing to the local economy by hiring local guides, staying in local hotels etc. By drawing the attention of the local population to the potential financial benefits of preserving birds and their habitats, we can hope to preserve at least some habitats.

Saturday afternoon concluded with a surprisingly low-key debate on the pros and cons of collecting courtesy of Jim Rising (University of Toronto) and David Parkin (University of Nottingham). The debate was expected to provoke a lot of audience response, but although there did appear to be slightly greater support for David Parkin's views, the anticipated anti-collecting view never really surfaced. The main concerns about collecting centred on the collection of scarce species, examples from South America being widely quoted.

Saturday evening's conference dinner saw the presentation of the British Ornithologists' Union Medal to Dr John Ash. John's contribution to African ornithology is immense and the award most justified. His work in Ethiopia and Somalia in particular is second to none and his forthcoming book on the birds of Somalia eagerly awaited.

The Saturday evening post-dinner talk by Kees Hazevoet on species concepts generated, if anything, more reaction than the scheduled debate. David Parkin in particular expressed his concerns about Kees' views.

The Sunday morning talks on Bird Studies around the world again emphasised the value and importance of BirdLife International's IBA & EBA projects with talks on the European Atlas Project, Peru, Yemen, raptors again (Bill Clark kindly stepping in to cover for Asad Rahmani who had unfortunately been 'bumped off' his flight from Delhi) and East Africa's important bird areas and their conservation (by Leon Bennun).

The conference itself was concluded by Colin Bibby, who emphasised the need for the four regional bird clubs to work closely with BirdLife International to develop better ways of focusing effort, and supporting the collection and distribution of relevant information. He also made a plea for the birding community to encourage more women to come aboard, to remove the current 'northern middle-aged male bias' and to 'support, encourage, nurture and befriend birders and aspiring birders of all nations' in order to achieve a global influence.

Although the talks clearly make up the main part of the conference, the shops, displays, quizzes etc away from the conference hall were all an important part of the event and thanks are due to those organisations who contributed in this way, the sponsor-

ship from the trade stands being an important part of the conference funding. Thanks must also be given to the British Trust for Ornithology whose organisational expertise was invaluable during the course of the weekend.

Finally, the conference provided the opportunity for over 200 birders from over ten nations to discuss the contribution that we can all make to conservation, renew old acquaintances and make new friends. Roll on the next one, although someone else can organise it!

Contributed by Richard Webb

African Waterfowl Census

The annual census of African waterfowl always proves an interesting read. The survey for 1995 was published toward the end of 1996, and provides a summary of counts from 25 sub-Saharan countries. Flood levels were high in West Africa and reflected in high counts, whereas droughts in southern Africa produced low numbers.

Impressive counts included 30,000 Black-tailed Godwit *Limosa limosa* and 563 Marsh Harriers *Circus aeruginosus* in Mali, 7,700 Knob-billed Duck *Sarkidiornis melanotus* in a field in Niger, 48,000 White-faced Whistling Duck *Dendrocygna viduata* and 99,000 Garganey *Anas querquedula* in the Hadejia–Nguru wetlands of Nigeria and 108,000 Ruff *Philomachus pugnax* on the Mauritanian side of the Senegal River, were some of the highlights in West Africa. Just under 2 million Greater Flamingos *Phoenicopterus ruber* were counted in eastern and southern Africa, 1,068 Wattled Cranes *Bugeranus carunculatus* were at Blue Lagoon National Park, Namibia and 2,600 Black-necked Grebe *Podiceps nigricollis* at Cape Cross saltworks was considered to be the highest concentration in Africa.

These censuses are an important contribution to our understanding of waterfowl in Africa and are useful in examining the effects of droughts and floods in different regions of the continent. They also provide an early warning system, permitting declines in waterfowl numbers to be monitored.

Southern Africa

Barlow's Lark – a new endemic species in southern Africa

Lark taxonomy is complex and frequently confusing to the field birder. Many African species are sedentary and have small geographic ranges. Consequently, over time, small changes in plumage and morphology have developed and it is difficult to identify geographic boundaries between species. The 'red-backed lark' complex is one such problem group, which occurs from Walvis Bay in Namibia south to Cape Town in South Africa. Various taxonomic reviews have taken place, attempting to make sense of differing colours and sizes. These have identified between one and six different species in this group, but in the 1980s consensus was reached over three different species, Karoo Lark *Certhilauda albescens*, Dune Lark *C. erythrochlamys* and Red Lark *C. burra*. Alternatively these could be considered as one polytypic species (a species that occurs in more than one form).

Dr Peter Ryan's article in *Africa Birds & Birding* presents a fresh analysis of this complex, presenting a convincing argument for retaining the existing three species and recognising a fourth, Barlow's Lark *C. barlowi*. These larks vary in colour and this is closely associated with the colour of the landscape in which they occur, so even within a species coloration can vary. However, Barlow's Lark differs not only in colour but also in size and shape, and perhaps most importantly possesses a different song to the other three species. All of these species are sedentary and given the lack of overlap in their ranges it seems sensible to accord Barlow's Lark species status.

Source: Africa Birds & Birding, *October/November 1996, pp 65–70*

Long-tailed Pipit – a new species of pipit in southern Africa

Another new species, in this case Long-tailed Pipit *Anthus longicauda*, has been described by Richard Liversidge in a recent issue of *Bull. BOC*. Pipits have always proved difficult to classify and various authors have grouped the 'plain-backed' or 'streaked' pipits, or used a classification system based on length and emargination of primaries and colouring. None have been wholly satisfactory and given the propensity of some pipits to be sedentary, slight changes in colour and size can take place over a 'species' range.

However, in 1994 two pipits were collected in the Kimberley area of South Africa. It had been noted that during the southern Africa winter these birds turned up regularly in flocks of 10–40 birds, sometimes intermixed with local pipits. Specimens of these birds were found to be distinct from other local pipits; Buffy Pipit *A. vaalensis*, Grassveld Pipit *A. cinnamomeus* and Long-billed Pipit *A. similis*.

The author presents measurements which show it to be distinct from other local pipits, both structurally and vocally and presents it as a new species. Its breeding areas are unknown but are presumably north of Kimberley.

Source: Bull. BOC *114, pp 211–224*

Reprieve for the Okavango Delta

Over recent months, conservationists in southern Africa have become increasingly concerned about emergency plans by the Namibian government to construct a pipeline to take water from the Okavango River for drought stricken central Namibia and the capital, Windhoek. Although an Environmental Impact Assessment (EIA) was to have been undertaken, this was not originally to have addressed the downstream impact, on the Delta in Botswana, even though the Okavango Delta is undoubtedly the most important wetland in southern Africa. In mid-October 1996, mounting pressure led the Namibian government to announce that it would undertake an EIA in the delta. However, there was still concern about the very short timescale for this assessment, which had to be completed by the end of January 1997, to allow the 250 km pipeline to proceed in February. Moreover, the EIA had no 'independence', as the body appointed to carry it out was the consulting firm commissioned to undertake the feasibility study for the pipeline scheme. Conservation bodies, notably the Kalahari Conservation Society and Conservation International, urged that the EIA should come under close scrutiny of an Independent Review Panel including NGOs and the government.

The irony was that governments of Botswana, Namibia and Angola which share the Okavango, formed a tripartite water commision OKACOM in 1994. This commission had agreed to conduct a joint study, carrying out an environmental assessment of the whole Okavango River Basin, and to develop an integrated water resource management strategy. The study was to have commenced in 1997.

On 3 February, news that the

Namibian government had put on hold the pipeline scheme for two years was warmly welcomed. Good rains have alleviated the problems in Namibia and it is now hoped that the original OKACOM study can be completed before any decisions are made on diverting water from the Okavango. A series of low rainfall years in the Angolan highlands has already meant that the Delta is suffering from low flows and that the rivers which formerly flowed to the south are dry.

Contributed by Stephanie Tyler, c/o Room 106, Dept. Animal Health, Private Bag 0032, Gabarone, Botswana.

SAFRING annual report

Ringing reports always make interesting reading and the latest offering in SAFRING News is no exception. South Africa has the largest ringing scheme in Africa and always turns up a few surprises. A few notable recoveries which caught the eye include movements by an Jackass Penguin *Spheriscus demersus* from the Cape of Good Hope to Namibia, a distance of 1021 km in 83 months, a Shy Albatross *Diomeda cauta* from Tasmania, Australia to the Eastern Cape, a 31-year old Arctic Tern *Sterna paradisaea* found in Germany, White Storks *Ciconia ciconia* recovered from Hungary, the Czech Republic and Lithuania and a Ruff *Philomachus pugnax* from Zimbabwe to Russia. Passerines, both Afrotropical and Palearctic feature; a Red-backed Shrike *Lanius collurio* ringed in Guteng in December 1994 and recovered in Yemen in May 1995 was an astonishing recovery, but not unexpected, and a Red-billed Quelea *Quelea quelea* ringed in North-west Province in September 1993 was killed for food in Malawi in October 1995, a distance of 1617 km.

Source: SAFRING News *25, pp 31–38*

A new species of vanga from south-west Madagascar

The Red-tailed Vanga *Calicalicus madagascariensis* is widespread across Madagascar but it is apparently absent in south-west and north-west areas of the island. It was thought to be the only member if its genus, until research by Steve Goodman, Frank Hawkins and Charles Domergue showed that specimens of a *Calicalicus* vanga collected in 1948 in fact belonged to a new species, which they have described under the English name of Red-shouldered Vanga *Calicalicus rufocarpalis.*

These specimens (both females) were collected by Milton, who realised that the brick-red wing coverts were unusual for Red-tailed Vanga. The specimens were used to describe the new species; no specimen of a male is known. There has also been a more recent record of this species. A male photographed at a nest 22 km south-east of Toliara proved to be a Red-shouldered Vanga, but there have been no further records in the areas where the specimens were collected.

Source: Bull. BOC *117, pp 5–10*

Update to the list of Madagascar birds

With the discovery of two new species, the total number of species recorded in Madagascar comes to 279, 205 of which are resident.

Working group on the birds in the Madagascar region *7(1), pp 24–26*

East Africa

Ethiopian IBA book published

The Important Bird Areas (IBA) project was established by BirdLife International to identify areas of high conservation importance for bird species. The Ethiopian project, started in April 1995 is now complete, the *Important Bird Areas of Ethiopia* having been published. It contains a wealth of information about areas and habitat types which are important for the conservation of Ethiopia's bird species

The country holds three Endemic Bird Areas, 31 restricted-range and globally threatened birds, major concentrations of waterfowl in the Rift Valley, migration routes for many European–African migrants, and a unique montane grassland avifauna, making Ethiopia's IBAs of international biological significance.

Many of these areas are threatened and the IBA surveys assessed the threat level to each site. Habitat destruction, encroachment of undesirable plant species, conflicts in land-use, use of agro-chemicals, shrinkage of lakes due to industrial development, expansion of seasonal cultivation and persecution of cranes and geese were identified as problems in the areas covered by the project. This baseline study has highlighted those areas that are most threatened, and it is now up to the relevant authorities to act if they choose to.

The book is the result of a huge undertaking and will be of interest to anyone visiting Ethiopia. As the first IBA country book to be published in Africa, it sets a very high standard for others to emulate, but is only the first step in ensuring that the areas identified are protected.

Source: Tiliahun, S., Edwards, S. & Egziabher, T.B.G. (1996) Important Bird Areas of Ethiopia. *Addis Ababa: Ethiopian Wildlife and Natural History Society.*

Survey of Ethiopian wetlands

The Ethiopian IBA (Important Bird Area) programme has commenced its second phase by initiating bird surveys in wetlands in the northern part of the country. The EWNHS (Ethiopian Wildlife and Natural History Society) is carrying out wetland surveys in collaboration with the Norwegian Ornithological Society. Two volunteers are helping EWNHS staff to assess the species and the numbers present at various sites. Already, two sites have been identified as possible IBAs, Lakes Hayk & Horodito, due to the large numbers of Great Crested Grebes *Podiceps cristatus* which were found to be breeding. This species is uncommon in Ethiopia and its range is decreasing.

Source: EWNHS Newsletter *February/March 1997, p 3*

Somali Courser – another split?

The taxonomy of waders, although perhaps more advanced than that for African pipits and larks is still open to discussion. Two forms of courser occurring in Ethiopia and Somalia have recently attracted attention. The two forms have variously been treated as subspecies of Cream-coloured Courser *Cursorius cursor* or Burchell's Courser *C. rufus.* In *Birds of Africa* they were treated as subspecies of the former with *C. c. somaliensis* ocurring in Ethiopia and northern Somalia, and the slightly darker form *littoralis* occurring in southern Somalia and Kenya.

David Pearson and John Ash, writing in *Bull. BOC*, have studied skins of these forms and concluded that they represent a new species, *Cursorius somaliensis.* This obviously has conservation implications, as yet another species has been added to the Somalia/Ethiopia region.

Source: Bull. BOC *116, pp 225–229*

Stripe-breasted Tits use nest boxes

The Stripe-breasted Tit *Parus fasciiventer* is one of 40 species of bird whose distribution is limited to the

Stripe-breasted Tit *Parus fasciiventer*
by Mark Andrews

Albertine Rift area of endemism. This area includes a series of forests in the former Zaïre, Rwanda, Burundi and Uganda. The best known site in East Africa is Bwindi Impenetrable National Park (BINP), where the species mainly occurs above c2000 m, although it is occasionally seen at lower altitudes. Around Ruhija, where the Institute of Tropical Forest Conservation (ITFC) has its base, the species is common and easily observed. The rather uncommon Dusky Tit *P. funereus* is one of 300 other species which also occur in Bwindi, as well as half of the remaining Mountain Gorillas *Gorilla gorilla*.

The commoner European species of tits (the family Paridae) have been extensively studied over the years but very little is known about most of the African species, including the Stripe-breasted. In an attempt to find out more, we erected nest boxes within 500 m of the ITFC station in 1995. As far as we know, nobody has recorded passerine birds using nest boxes in tropical Africa, so we consulted Professor Christopher Perrins of Oxford University, a world authority on the genus *Parus*. Using dimensions of 25–30 mm for the hole, we had some boxes made which are c30 cm deep, with a hinged sloping roof, and a small perch below the hole. These were made of local hardwoods and attached to trees at heights between three and ten metres with local ropes; most appeared comparatively inconspicuous to us.

In March and April 1996, at least two and possibly three boxes were used by the birds (so we hereby claim a first!). One and two young were produced, although in neither case are we certain that they fledged successfully. We were anxious not to disturb the birds, and so did not inspect nest contents whilst the parents were bringing food to the chicks. Most interesting was the fact that the first box to be used was c5 m from one of the most frequently used buildings at ITFC, in full view of frequent passers-by.

However, 1997 has been an unsuccessful year. The boxes were attractive to the local (and certainly native) rats and squirrels, as well as the birds. Nearly half of the boxes were enlarged, despite being made of hardwood. Other boxes were in need of repair. We believe that the experience thus far gained can be used to form the basis of a serious study of these birds; but neither of us has the time to achieve this. We are therefore keen to hear from any birder (no formal qualifications are required) who would be interested in spending a few months at ITFC in 1998, between February and May. Ideally, daily observations should be made. By then, we plan to have c40 boxes in place, in areas where both species of *Parus* occur. Unfortunately, as you may have guessed, no funds are available for this – but one can live at ITFC for a very modest sum, and it is a wonderful place. If you are interested please write to us: Robert Bitariho & Derek Pomeroy, Makerere University Institute of Environment and Natural Resources, Box 7298, Kampala (Fax: 256 41 530134; E-mail: muienr@imul.com) or to: Christopher Perrins, EGI, Department of Zoology, South Parks Road, Oxford OX1 3PS, England (Fax: 01865 310447; E-mail: chris.perrins@zoology.oxford.ac.uk).

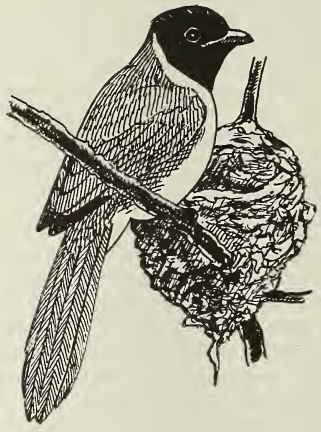
Contributed by Christopher Perrins

New taxon of small shearwater from the Indian Ocean

In the Indian Ocean, two races of Audobon's Shearwater *Puffinus lherminieri* are generally recognised: *bailloni* includes those populations with white undertail coverts (from the Mascarene islands), and *nicolae* those with brown undertail coverts. While studying shearwater skins, Hadoram Shirihai and David Christie noticed that birds collected from the atoll of Aldabra were similar to the Mascerene *baillioni* in general size, bill proportions, and several aspects of plumage coloration. However, they had dark undertail coverts as opposed to the white ones from the Mascerene population.

These birds, along with the Mascerene birds, differed markedly from the other populations of Audubon's Shearwater in the Indian Ocean, and have been described as a new taxon, *P. l. colstoni*, which is restricted to Aldabra.

Source: Bull BOC *116, pp 180–186*



Seychelles Black Paradise Flycatcher
Terpsiphone corvina
by Mark Andrews

More threats to Seychelles birds

The Seychelles are host to a number of critically endangered birds. The Seychelles Black Paradise Flycatcher *Terpsiphone corvina* is a species found on only one island, La Digue. The population has remained stable at c80 pairs, an area had been set aside as a reserve and so this species was not considered threatened. The flycatcher inhabits woodland and concern has been expressed over a wilting disease which affects the Takamaka trees, although this disease has only rarely been found on the island. Pressure on woodland is increasing. Between 1978 and 1992, forest cover declined by 28% and continuing development on La Digue means that the forest area is much reduced and severely fragmented.

The numbers of invertebrates on different species of tree have been monitored since 1990 to predict suitable breeding habitat for flycatchers. Numbers of invertebrates remained relatively stable until the first half of 1996, when a large decline was noted. The causes of this collapse in the invertebrate fauna are not proven but may be related to an enormous increase in the water lettuce, *Pistia stratiotes*, which now covers most of

the marsh area. The lack of invertebrates can have several effects, but it seems unlikely that adult flycatchers themselves will starve, although the number of young birds raised each year could be reduced as a result. Measures will now be taken to clear water lettuce from the island, and the possibility of moving birds and creating new populations has to be considered. The only possible introduction site is Sillhouette, the only large granitic island free of water lettuce. It has 18 ha of woodland suitable for flycatchers and closely resembles La Digue habitat. Invertebrate numbers are similar to La Digue before the invasion of water lettuce. It appears that the area of suitable habitat could support up to 120 pairs of the flycatcher, thus ensuring the long-term survival of this species.

Source: Birdwatch *20 pp 18–21*

Why is the Seychelles Grey White-eye so rare?

The Seychelles Grey White-eye *Zostreops modesta* is on the verge of extinction (see *Bull. ABC* 4(1): 13). The forests of Mahé are severely degraded through clearance and invasion of introduced species, the c30 remaining individuals are restricted to secondary habitats. The other small insectivore to show a similar pattern is the Seychelles Sunbird *Nectarinia dussumieri*, which is also commonest in secondary habitats.

Food availability may be an issue, a study has shown that invertebrate size and abundance decrease with increasing altitude. The data predict that insect eating birds would be commonest at lower altitudes. However, white-eyes do not occur in this habitat and this may be due to the fact they can not feed on the large (>5mm) invertebrates that occur at low altitudes, preferring the smaller invertebrates found at higher elevations. 1–5 mm-long invertebrates predominate at 200–600 m, corresponding with the localties at which white-eyes have been observed. If prey size does limit the bird's distribution, it is predicted that it would be present in degraded forest with abundant clove trees.

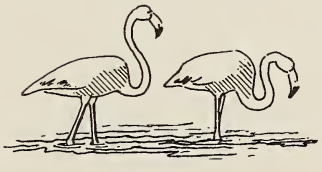
The future for this species is not rosy. Silhouette Island has suitable habitat and had a population of an unknown white-eye species, until it disappeared due to forest clearance. The forest has now regrown and seems suitable for white-eyes. Translocation is not an option with such a small population and captive breeding has to be considered if this species is to survive.

Source: Birdwatch *20, pp 21–24*

Greater Flamingo breeding on Aldabra

Raymond Rainbolt and co-workers, writing in the latest edition of *Wilson Bulletin*, described the discovery of a 25–39-day-old Greater Flamingo *Phoenicopterus ruber* chick in the Takamaka region of Grande Terre island, Aldabra atoll in the Seychelles on 13 April 1995. It was accompanied by two adult birds and three completed and three incomplete nests, of which only one appeared to have been used, were discovered in the same area. All three birds were still present on 15 June 1995. The only previous reference to the species breeding in the Seychelles is the discovery of a single egg on 25 September 1967 in the Grand Basin Takamaka. This record was not accepted as conclusive proof of breeding as no nest mound was located. The present authors speculate that the flamingo population on Aldabra is resident, although there are no observations from the atoll between May and August, presumably due to a lack of birdwatching coverage.

Source: Wilson Bulletin *109, pp 351–352*



Greater Flamingo
Phoenicopterus ruber
by Mark Andrews

Polygyny in the Seychelles Sunbird

Aride Island in the Seychelles is well known for its seabirds and the Seychelles Magpie-robin *Copsychus sechellarum*. Less well known is a small population of Seychelles Sunbirds *Nectarinia dussumieri* which has recently become established on this granitic island. Aride has had unsuccessful reintroductions of Magpie-robins in the past and this has shown that introductions can be problematic. The sunbirds, another species endemic to the Seychelles, naturally colonised and this chance to monitor the natural establishment of an endemic species was too much to resist for Robert Lucking, who was working on the island.

The sunbird has been established on the island since at least 1987; a female, which was ringed, came from Cousin Island 20 km to the south. The aim of the study was to describe the spread of this newly colonising species, as lessons could be learnt for future reintroduction projects, if needed. At the end of the study, 75% of the 16 birds on the island were marked and territory sizes, home ranges, individual nests and breeding success had been monitored in four territories.

An unexpected side of male sunbird behaviour came to light. Polygyny had not been noted in this species, but one male was found to be paired with two different females in adjacent home ranges. The following year, a previously monogamous male was found with two females with nesting territories approximately 300 m apart which he vigourously defended. Although the monogamous male sunbirds typically took no part in the rearing of the chicks, the polygynous males delivered 16% of food items and raised more chicks on average than the monogamous males. However, the study could not be undertaken over the entire life span of a sunbird, and so it was not possible to conclude if the number of chicks produced by polygynous males was greater than that by monogamous birds.

Source: Bull. BOC *116, pp 178–179*

North Africa

Occurrence of Ruddy Duck in Morocco

Ruddy Ducks *Oxyura jamaicensis* have been seen continously in Morocco since November 1992, with a maximum of 16 at one site. Although breeding has not been proven, the fact that birds appear to be resident is an issue of concern. Territorial behaviour

and courtship have been observed and breeding may occur in the next few years. Given that Ruddy Ducks are implicated in the decline (through hybridisation) of the threatened White-headed Duck *Oxyura leucocephala*, Moroccan ornitholigists are concerned as to what the future holds. Shooting is seen as the only way forward to reduce the risk of birds hybridising.

Lac d'Aleg under threat in Mauritania

The Lac d'Aleg is a semi-permanent wetland in Mauritania, approximately 250 km south-east of Nouakchott and 70 km from the Senegal river. The 4,300 ha wetland holds large numbers of resident African waterfowl as well as migrants from Europe. The last count in 1987 produced, amongst others, 150 White Storks *Ciconia ciconia*, 91,000 Garganey, *Anas querquedula*, 9,000 Ruff *Philomachus pugnax*, 3,000 Black-tailed Godwit *Limosa limosa* and 3,000 Knob-billed Duck *Sarkidiornis melanotus*, making it one of the most important wetlands in western Africa for resident African, as well as migratory, wildfowl. The area is especially important in autumn as water birds stop off at the lake (if water is present) after crossing the Sahara and before continuing to wintering areas around the Senegal river.

The area is dominated by Phragmites reeds and is heavily grazed. Reports of 6,000 cows, 3000–4,500 horses and 1,000 donkeys, and areas of cultivation indicate that over-grazing and land clearance may be threatening this ecosystem. A plan to manage water levels for cultivation will reduce the area of marshland, and increasing agriculture would mean a large input of pesticides, threatening the area still further. If the plan proceeds then this scale of habitat loss could be similar to that of the ancient Lac R'kiz which, in January 1996, consisted of only a few ha of biologically uninteresting marsh in a sea of cultivation.

Source: Alauda *64, pp 455–457*

West Africa

WABSA donates bird study materials to schools

The West African Bird Study Association (WABSA) has recently donated study materials to five schools in The Gambia. WABSA has several aims including inspiring students in birdwatching and conservation of the environment, conducting research into the local names of birds and setting up clubs in schools. The Royal Society for the Protection of Birds (RSPB) which is the United Kingdom BirdLife partner has supported WABSA, and the chairman of WABSA is appealing to donor agencies, the government and tourists to help the organisation secure its own secretatiat in order to carry out its programmes more effectively.

Source: Daily Observer, *Thursday March 13 1997, p 3*

Senegal seabird conservation

The SOS project, which has lain dormant since 1991, due to a lack of funding has been resurrected with support from Vogelbescherming and Schweizer Vogelschutz (BirdLife partners in the Netherlands and Switzerland) and Vereniging Natuurmonumenten from the Netherlands. The project will be organised by the French LPO (Ligue pour la Protection des Oiseaux) and aims to halt the widespread capture of terns and other seabirds, through a partnership with the Senegalese National Parks Board. Since 1995, LPO has given slide shows in schools to show the traditional importance of terns to fishermen in locating fish shoals. Children were also shown terns and gulls on the beach and performed short plays, demonstrating their understanding of the importance of terns for fishing.

Source: World Birdwatch *19 (1), p 4*

Updates to the Cape Verdean avifauna

Two recent publications from C. J. (Kees) Hazevoet and co-workers highlight additions to the Cape Verdean avifauna (since the publication of the British Ornithologists' Union Check-list in 1995), new distributional data from the archipelago and summarise recent studies concerning the systematics of the endemic Procellarids. A total of nine species new to the islands are reported: Pintail *Anas acuta*, Least Sandpiper *Calidris minutilla*, Snipe *Gallinago gallinago*, Red-necked Phalarope *Phalaropus lobatus*, Gull-billed Tern *Gelochelidon nilotica*, Royal Tern *Sterna maxima*, Red-rumped Swallow *Hirundo daurica*, African Sand Martin *Riparia paludicola* and Song Thrush *Turdus philomelos*. In additon, interesting new data on distribution and status are presented for 58 species, principally seabirds, waterfowl and waders. These reviews, which are apparently to be produced annually (given sufficient material) will provide fascinating reading for visitors to the Cape Verdes.

Source: Bull. Zoöl. Mus., Univ. Amsterdam *15 (3), pp 21–28; 15 (13): pp 89–100*

Waterfowl in the Burkina Faso part of the West African Sahelian zone

In the West African Sahelian zone there are three areas that support large numbers of wildfowl: the river basins of the rivers Senegal, Niger and Tchad. Burkina Faso is part of the Niger basin system.

Burkina Faso is poorly known ornithologically and a recent paper by Peter Weesie summarises the important sites and the numbers, density and diversity of the waterfowl in each area. This is the result of eight visits to the area between 1989 and 1993, and is an important contribution to our knowledge of the Sahelian zone, on which so many resident and migratory birds depend.

Source: Alauda *64, pp 307–332*

Planting of non-native trees causes problems for Palearctic migrants

In West Africa, Whitethroats *Sylvia communis* occur in areas with shrubs and trees, generally in savannah and farmland. Drought in the Sahel region has had an effect on habitat in the Sahel, reducing crop yields and also it is thought to have contributed to a decline in the number of breeding Whitethroats in Britain.

Shrubs and trees are an integral part of agriculture in the Sahel region, providing soil stability, timber, fruit, medicines and fuel. Increased pressure on these resources has led to the planting of fast growing, drought tolerant species such as *Eucalyptus* sp. and Neem *Azadirachta indica*. Neem has been widely planted and used for firewood and timber. It is coppiced on an 8–10 year cycle and interplanted with crops in the early stages of the coppice.

The widespread planting of non-native plants can have serious problems for native species. A small study carried out by Chris Stoate looked at both bird and invertebrate densities in Neem plantations and natural savanna. The results were quite startling. Whitethroats occurred at densities of 1.28 birds per ha in areas

with native shrubs and trees but were absent from Neem plantations. Invertebrate numbers were significantly lower in Neem plantations as well. Other sylviids, eg Tawny-flanked Prinia *Prinia subflava* and Subalpine Warbler *Sylvia cantillans* were also absent from Neem plantations.

The widespread planting of Neem gives cause for concern. It seems to have an effect on both Palearctic migrants and resident Afrotropical insectivores. As drought concerns increase, the need for drought resistant plants will increase and the use of these non-native species on a large scale may pose a new threat to both resident and migrant birds in West Africa.

Source: Malimbus *19, pp 7–11*

More species added to Cameroon list

A visit in November and December 1993 by Uffe Sorenson *et al* recorded seven new species to the Cameroon list including two Afrotropical species, Augur Buzzard *Buteo augur* and Fire-bellied Woodpecker *Thripias pyrrhogaster* and five Palearctic species.

This trip highlighted the lack of information from the northern part of the country, especially in the early dry season. Future visits would be worthwhile.

Source: Bull. BOC *116, pp 145–155*

Wattled Cranes in Guinea-Bissau!

The Wattled Crane *Bugeranus carunculatus* is a scarce and declining Afrotropical species which occurs in the Ethiopian highlands and in central and southern Africa. A record in West Africa would, therefore, be astonishing. However, there is a record of three birds at Cufada Lagoon, near Fulacunda in Guinea-Bissau on 26 March 1948. The record comes from Major Júlio de Araújo Ferreira, an army officer and naturalist stationed in Bissau at the time. He collected one bird and took a published photograph of the flock. The specimen could not be preserved, only the skull and a leg were salvaged and their whereabouts are now unknown. However, the record does not appear to be in doubt and the only confusion is to whether they were vagrants, escapes from captivity or from a tiny relict breeding population in western Africa.

This unprecendented record is investigated by C. J. Hazevoet in a fascinating article, which speculates that when a much more humid climate occurred in the western part of the Sahara and the Sahel, Wattled Cranes may have extended across West Africa and these birds could have been the last remnants of this population. Alternatively, and also plausibly, they may have been vagrants; Wattled Cranes being nomadic. Escape from captivity cannot be ruled out, but seems unlikely given the year and the location, and evidence points to these being truly wild birds.

Source: Bull. BOC *117, pp 56–59*

Requests for Information

Cuckoos and Turacos

Johannes Erritzoe and Richard Fuller are working on a new monograph, 'Cuckoos and Turacos of the world' (including Anis, Roadrunners, Couas and Coucals). This work will summarise all published and unpublished information for each species in this surprisingly little-known order, never before monographed. Colour plates will depict each species and a bibliography of the group will be compiled. An inventory, in electronic format, of museum holdings of type-specimens and study skins will be released with the work. The authors would welcome any published or unpublished information, trip reports or field observations of eg habitat preferences, identification tips, vagrancy, mortality, vocalisations, breeding records, descriptions of parasitic behaviour, eggs, nests and their sites, information on juvenile plumages, behaviour and diet. Particularly useful is information on the current status of cuckoo populations throughout the world and threats to their continued survival. Details of captive birds are also welcome. Photographs loaned for reference will be returned in due course and all contributions will be gratefully acknowledged in the work. Please send any information to: **Johannes Erritzoe, Taps Old Rectory, House of Bird Research, DK-6070 Christiansfield, Denmark, Fax: 00 45 7557 3255, E-mail: erritzoe@cybernet.dk)** or **Richard Fuller, 33 Plough Road, Epsom, Surrey KT19 9RA, UK (E-mail: fuller02@premier.co.uk).**

Turkey bird report 1992–1996

The Turkey bird report, covering the above period, is now being compiled. If you have unpublished observations from 1992–1996, or significant records from prior to 1991, which have not previously been submitted to either OSME or DHKD, please forward these, as soon as possible, to the editors: **Guy Kirwan & Rod Martins, 6 Connaught Road, Norwich NR2 3BP, UK (E-mail: GMKirwan@aol.com)**. All observers will be credited in the finished report. Reprints of published work which clarify our knowledge of Turkish bird distribution and status are also welcomed and will be acknowledged.

Minutes of the third AGM of the African Bird Club

held on 8 March 1997 at The Friends Meeting House, Euston Road, London at 14.00hr

Present

The following members registered their attendance at the meeting: Richard Allen, Kevin Allenby, Richard Allison, Mark Andrews, John Archer, Phil Atkinson, David Barker, Keith Betton, N Binstead, Mike Blair, Richard Bosanquet, C F Brooks, Paul Bryant, Dennis Buisson, Mr and Mrs P J Bull, Clive Byers, D R Calder, R A Cheke, Nigel Cleere, Chris Collins, Simon Davidson, Nigel Driver, Richard Eden, Dr P J Edwards, Guy Eldridge, Brian Field, Lincoln Fishpool, Jim Flanagan, Simon Fogg, Paul Fuller, Neil Gartshore, Paul Gascoigne, F M Gauntlett, Brian Gee, Tony Gibbs, Davis Griffin, Mrs R Hargreaves, Vicki Harley, Stephen Harrington, David Harris, J M Harrop, Peter Headland, Jo Hemmings, Alistair Henderson, David Hennessy, Mr and Mrs A Holcombe, Nigel Jarman, J M B King, Michael Kings, Paul Lascelles, Ann Lawson, Dr T Lawson, Russell Leavett, Alan Lewis, Clive Mann, Mr and Mrs Mason, John Mason, Duncan McNiven, Amberly Moore, Tony Morris, Andrew Plumptre, David Porter, Bill Quantrill, Rowena Quantrill, Geoff Randall, Nigel Redman, Andy Rhodes, John Richardson, Steve Rooke, P A S Rowse, A W Seymour, Dr J T R Sharrock, John Showers, Neville Skinner, Steve Smith, E F G Smith, M P Stanyer, Tony Stones, Anne Thain, N Thomas, J M K Thomas, A J Todd, David Tomlinson, Keith Turner, C Undrill, Richard Webb, Alan Wilkinson, Roger Williams, Barbara Woodcock, Martin Woodcock, and Barry Wright.

Apologies for absence

Apologies were received from: John Hammick, Richard Howard, Joan Howie, Paul Salt and Bob Scott.

Minutes of the last meeting

The minutes of the second AGM held on 9 March 1996 were taken as read and approved unanimously.

Matters arising from the minutes

There were no matters arising.

Report of the Council for 1996

Introducing the Council report, which had been circulated at the meeting, the Chairman commented on the disappointing attendance at the two meetings organised during the year jointly with *Birding World* and the Norfolk Bird Club. On the other hand, the Club's participation at the British Birdwatching Fair at Rutland Water in August and at the Pan African Ornithological Congress in Accra in December had both been highly successful. The Council were now planning the Club's participation at the International Ornithological Congress to be held in Durban in August 1998. The Chairman paid tribute to Richard Webb, Guy Eldridge, Paul Green, Annie Harrap and Iain Robertson all of whom were standing down from the Council after having been involved in the running of the Club since its inception. He also recorded the Club's gratitude to Colin Humpage who was having to resign as Treasurer because of the pressure of other commitments.

Presentation of the Accounts for 1996 and Treasurer's report

In the Treasurer's absence, Richard Webb presented the 1996 Accounts. For the first time, there was a deficit during the year. Partly this resulted from the increasing costs of producing the Bulletin, but it also needed to be borne in mind that we had spent money on our participation at the Pan-African Ornithological Congress and had disbursed £800 from the Conservation Fund. We had also adjusted the way in which we valued our stock of back issues of the Bulletin, which had resulted in a nominal loss of over £2000. Overall our financial position remained sound.

There being no questions, the accounts were approved unanimously.

Election of Officers

The following were elected to form the African Bird Club Council for 1997:

Gary Allport, Mark Andrews, Phil Atkinson, Jacquie Bridges, Mark Cocker, John Fanshawe, Lincoln Fishpool, Peter Lack, Duncan Macdonald, Bill Quantrill, Rowena Quantrill, Geoff Randall, Tony Stones, Alan Wilkinson, Barbara Woodcock and Martin Woodcock.

The Chairman also informed the meeting that the following had indicated their willingness to serve on the Council. However, the nominations had been received too late for their names to be circulated with the requisite three weeks notice before the AGM. They will therefore be co-opted onto the Council, and their formal appointment will be confirmed at the next Annual General Meeting:

Keith Betton, Stan Davies and Peter Headland.

Election of Executive Officers

The following were elected as Executive Officers of the Club for 1997:

Chairman – Martin Woodcock
Secretary – Bill Quantrill

Since the notice of the AGM was published, Colin Humpage had been obliged to withdraw his candidacy for re-election to the post of Treasurer. In his place, Council propose to co-opt Jonathan Gibbons to serve as a member of Council and Club Treasurer for 1997.

Election of Country Representatives

The following were elected to represent the Club in their respective countries:

Australia:	Alan McBride
Belgium:	Paul van Daele
Cameroon:	O'Kah Ebwekoh Monya
Denmark:	Lars Dinesen
Ethiopia:	Ato Yilma Dellelegn and Ato Mengistu Wondafrash
Finland:	Annika Forsten
Gabon:	Patrice Christy
Gambia:	Clive Barlow
Ghana:	Samuel Kofi Nyame
Kenya:	Colin Jackson
Madagascar:	Frank Hawkins

Seychelles:	Rob and Vicki Lucking
South Africa:	Deon Coetzee and Steven Evans
Tanzania:	Maurus Msuha
Uganda:	Derek Pomeroy
USA:	Joe Thompson
Zambia:	Pete Leonard
Zimbabwe:	John Paxton

Appointment of Auditor

Colin Humpage FCA was elected as Auditor for 1997.

Any Other Business

The Chairman informed the meeting that, after long discussion, Council had agreed to appoint Guy Kirwan as Managing Editor of the Bulletin, on a fee-paid basis. It was of utmost importance that the quality of the Bulletin should be maintained at the high standard achieved hitherto but it was becoming increasingly difficult to do this on the basis of purely voluntary labour. Guy Kirwan, who is a professional editor, would normally charge £1000 for the work involved in producing an issue of the Bulletin. He had however offered to produce the next two editions for £400 each. If we were satisfied with his work and wanted to continue to use his services thereafter, we would be expected to pay the full commercial rate for the third and subsequent issues. Council were confident that these costs could be met from within our projected income over the coming years.

In response to questions from the floor about whether it was really necessary to pay these quite considerable sums to a professional editor, the Chairman stressed the importance of continuing to ensure the very best quality for the Bulletin. For many members the Bulletin was their only contact with the Club, and if the standard fell members would leave and the Club would cease to be viable.

Richard Webb urged as many members as possible to sign up for the World Birding Conference which would be taking place at Swanwick in Derbyshire from 4–6 April. The Club was one of the six organisations underwriting the Conference and stood to lose a considerable sum if insufficient people attended.

The Chairman agreed that the Council should look into the possibility, now that the Club was a registered charity, of allowing members to pay their subscriptions by covenant. The membership renewal form will also be revised to include a box inviting members to make a donation over and above their basic subscription.

There being no other business, the Chairman declared the meeting closed at 14.50hr

African Bird Club *Conservation Fund*

The ABC Conservation Fund has been set up to support small conservation-based projects in Africa. The Club has allocated £2,000 ($3,000) for 1997 and aims to encourage as wide a range of ideas as possible. Many different types of projects will be considered as long as there is a clear conservation benefit. These could include:

- survey and research into African birds
- production of guides to the common birds of a country in local languages
- educational materials
- leaflets / posters with conservation messages
- interpretation boards at nature reserves
- design and production of T-shirts with local / international conservation slogans
- other ideas will be considered

Applications can be made at any time to the Club address. The maximum grant in any one case will be £500 but it is likely to be smaller. Requests should be made by letter and should include the following details:

- plan of proposed project and why it is important
- budget
- amount requested from the fund
- details of how payment can be made

As the fund is small, restrictions will apply:

- applicants must be African nationals
- the requested grant from ABC should be a substantial part of the proposed budget ie contributions to very large projects will not be considered
- projects which reach a wide audience will be favoured

Applications should be sent to:

ABC Conservation Fund,
African Bird Club,
c/o BirdLife International,
Wellbrook Court,
Girton Road,
Cambridge CB3 0NA,
UK.

Field identification of African *Accipiter* species and similar-looking hawks

David G. Allan

The field identification of African *Accipiter* species and similar-looking hawks presents one the continent's more difficult identification challenges. One obvious problem is the high diversity of lookalike species, many of which overlap widely in distribution and habitat. Another problem is their secretive habits. They rarely allow a leisurely examination, forcing identification based on typically fleeting glimpses of these dashing killers. Reliable identification also requires attention to key relevant details, frequently ignored or inaccurately portrayed in the main field guides and handbooks covering the region. The radically different appearance of adults and juveniles, the presence of all-black melanistic forms in four species, and geographical variation in certain morphological features intensify the challenge. The 16 species covered in this article are:

> African Goshawk *Accipiter tachiro*, Chestnut-flanked Sparrowhawk *A. castanilius*, Red-thighed Sparrowhawk *A. erythropus*, Little Sparrowhawk *A. minullus*, Little Banded Goshawk (Shikra) *A. badius*, Levant Sparrowhawk *A. brevipes*, Ovambo Sparrowhawk *A. ovampensis*, Red-breasted Sparrowhawk *A. rufiventris*, European Sparrowhawk *A. nisus*, Black Sparrowhawk *A. melanoleucus*, Northern Goshawk *A. gentilis*, Pale Chanting Goshawk *Melierax canorus*, Dark Chanting Goshawk *M. metabates*, Gabar Goshawk *Micronisus gabar*, Lizard Buzzard *Kaupifalco monogrammicus* and Cuckoo Hawk *Aviceda cuculoides*.

Most of the species covered here carry the name 'sparrowhawk' or 'goshawk' but this distinction has little biological significance and was inherited from the western European situation, where only two species occur, the smallest originally termed the "Sparrowhawk" and the largest the "Goshawk". These two terms were then applied in a somewhat arbitrary fashion to the wider diversity of 'barred hawks' occurring in Africa. The 16 species in the genus *Accipiter* are the true sparrowhawks and goshawks, and form the core of this article, with a few other lookalike species also treated. The Pale and Dark Chanting Goshawks and Gabar Goshawk are closely related, with the last having converged closely on an *Accipiter*-like appearance and habits. The misnamed Lizard Buzzard is probably also closely related to these three species; it has a similar loud and repetitive call to the two chanting goshawks. The Cuckoo Hawk superficially resembles these other 'barred hawks' in plumage features but is a member of the 'bazas', a forest-dwelling group of raptors, with other representatives in Asia and traditionally allied with the kites.

The only other African bird of prey that could arguably have been included in this article is the Long-tailed Hawk *Urotriorchis macrourus* of the equatorial forests of Central and West Africa. The taxonomic affinities of this unique raptor may lie with the guild of species represented by the Chanting and Gabar Goshawks, and Lizard Buzzard. Its inordinately long tail, however, immediately distinguishes it from any other African bird of prey.

The critical features to note when identifying these species are their relative sizes (see above), colours of the soft parts (eyes, cere and legs), the precise pattern of markings on the underparts, and the presence or absence of white markings on the rump and upper surface of the tail. The value of body size, however, is compromised by the marked sexual dimorphism in most of these birds. As in most birds of prey, females are larger than males and this is most pronounced among *Accipiter* species. Several other features, usually concerning the head region, and especially the presence or absence of eyebrow stripes and throat stripes, can also be useful in some cases. It is most important to immediately distinguish whether an adult or juvenile bird is being examined. In all these species, the initial juvenile plumage is replaced by full adult plumage, probably within 12–18 months, with no intermediate immature plumages. Adults are typically plain grey above and barred below, while juveniles are brown above, with characteristic pale buff tips to the feathers, and streaked or spotted on the underparts. There are some exceptions, as outlined below. Knowledge of habitat and distribution can also be useful in many instances.

Table 1 Summary of the key identification features of African *Accipiter* species and similar-looking hawks

Species	Size	Underparts	Rump	Uppertail*	Eye	Cere	Legs
ADULTS							
African Goshawk	36–47 cm	plain rufous (lower Guinea) barred (elsewhere)	dark	white spots (male)	yellow	grey	yellow
Chestnut-flanked Sparrowhawk	28–35 cm	barred	dark	white bars (male)	yellow	yellow	yellow
Red-thighed Sparrowhawk	23–28 cm	rufous wash/ faint barring	white	broken white bars	orange	yellow/orange	yellow/ orange
Little Sparrowhawk	23–27 cm	barred	white	white spots	yellow	yellow	yellow
Little Banded Goshawk	28–30 cm	barred	dark	central plain	red (male) orange (female)	yellow	yellow
Levant Sparrowhawk	32–38 cm	barred	dark	central plain	red	grey (male) yellow (female)	yellow
Ovambo Sparrowhawk	31–40 cm	barred	dark	white flecks	wine red	yellow/orange/ red	yellow/ orange/red
Red-breasted Sparrowhawk	33–40 cm	plain rufous	dark	white flecks	yellow	yellow	yellow
European Sparrowhawk	28–38 cm	barred	dark		orange (male) yellow (female)	yellow	yellow
Black Sparrowhawk	46–58 cm	black 'waistcoat'	dark		wine red	yellow	yellow
Northern Goshawk	43–61 cm	barred	dark		yellow/orange	yellow	yellow
Pale Chanting Goshawk	46–63 cm	plain upper, barred lower	white		brown	red	red
Dark Chanting Goshawk	43–56 cm	plain upper, barred lower	dark		brown	red	red
Gabar Goshawk	28–36 cm	plain upper, barred lower	white		brown	red	red
Lizard Buzzard	35–37 cm	plain upper, barred lower	white	black with 1 or 2 white bars	brown	pink	pink
Cuckoo Hawk	38–41 cm	plain upper, barred lower	dark		yellow/ orange/red	yellow	yellow
JUVENILES							
African Goshawk		spotted	dark	white spots (male)	brown	grey	yellow
Chestnut-flanked Sparrowhawk		spotted	dark	white bars (male)	brown	yellow	yellow
Red-thighed Sparrowhawk		spotted, barred flanks	dark	broken white bars	yellow	yellow	yellow
Little Sparrowhawk		spotted	dark	white spots	yellow	yellow	yellow
Little Banded Goshawk		spotted upper, barred lower	dark		yellow	yellow	yellow
Levant Sparrowhawk		spotted/streaked	dark		brown	yellow	yellow
Ovambo Sparrowhawk		mottled	dark	white flecks	brown	yellow/orange	yellow/ orange
Red-breasted Sparrowhawk		mottled	dark	white flecks	yellow	yellow	yellow
European Sparrowhawk		mottled (male) barred (female)	dark		yellow	yellow	yellow
Black Sparrowhawk		streaked	dark	white edging to bars	brown	yellow	yellow
Northern Goshawk		streaked	dark	white edging to bars	yellow	yellow	yellow
Pale Chanting Goshawk		mottled upper, barred lower	white		yellow	grey/orange	yellow
Dark Chanting Goshawk		mottled upper, barred lower	dark		yellow	grey/orange	yellow
Gabar Goshawk		streaked upper, barred lower	white		yellow	grey/yellow/ orange	yellow/ orange
Lizard Buzzard		plain upper, barred lower	white	black with 1 or 2 white bars	brown	pink	pink
Cuckoo Hawk		plain upper, barred lower	dark	yellow		yellow	yellow

* uppertail otherwise barred with black and grey as in all species (except Lizard Buzzard) and without any distinctive features

Small- to medium-sized *Accipiter* species and Gabar Goshawk – adults

The African Goshawk is widespread in forested and well-wooded regions. An otherwise secretive bird, it is highly conspicuous when flying high above its forested home giving a characteristic 'clicking' call. The grey cere colour is unusual and shared only with the male Levant Sparrowhawk in this group. The eyes and legs are yellow. The underparts are barred throughout and the rump is plain grey. The upper surface of the tail has white spots in the male; these are absent in the female. The populations found in the equatorial forests of Central and West Africa may constitute a separate species, the Red-chested Goshawk *A. toussenelii*, which apparently lacks the distinctive vocal display flight characteristic of the species elsewhere in Africa. Those in the lower Guinea forests of Central Africa also have a distinctively different plumage pattern, with unbarred plain rufous underparts (sometimes with faint barring on the thighs only) and plain grey throats contrasting clearly with the remainder of the underparts.

The richly coloured Chestnut-flanked Sparrowhawk is a poorly-known species of the equatorial forests of Central Africa. The eyes, cere and legs are yellow. The underparts are heavily barred with grey and brown, and the rump is dark. There are white bars on the upper surface of the tail in males. It is smaller, darker, more heavily barred and has a longer tail than African Goshawk which shares its habitat.

The Red-thighed Sparrowhawk is another little-known *Accipiter* of the equatorial forests and is closely related to the Little Sparrowhawk. The eyes are orange, and the cere and legs are orange or yellow. The upperparts are very dark grey, almost black, and the underparts have a rufous wash or faint barring. The rump is white and the upper surface of the tail has broken white bars.

The Little Sparrowhawk is the smallest of all the raptors considered here and inhabits forest, thickets and well-developed woodland but avoids the equatorial forests, where it is replaced by the Red-thighed Sparrowhawk. The eyes, cere and legs are yellow. The upperparts are grey and the underparts are barred throughout. The rump is white and the upper surface of the tail has white spots. Little Sparrowhawk and African Goshawk overlap widely and are similar in appearance but differ in size, and cere and rump colour.

The Little Banded Goshawk (or Shikra) is one the most widespread and abundant of the 'barred hawks' found in African woodlands. The eye colour is cherry-red in males and orange in females. The cere and legs are yellow. The upperparts and rump are pale dove-grey, and the underparts are barred throughout. The central tail feathers are unbarred plain grey, a feature shared only with Levant Sparrowhawk, and when the bird is seen at rest from behind no barring is visible in the tail. The other tail feathers are boldly barred though, as in most of the other raptors covered in this article.

The Levant Sparrowhawk is closely related, and similar in appearance, to the Little Banded Goshawk. It is a non-breeding migrant to north-east Africa which is rarely recorded, although large numbers migrate into Africa through the Middle East. It differs from Little Banded Goshawk in its larger size, longer pointed wings, and, especially in the males, very pale unbarred flight feathers (appearing 'silvery' in colour) contrasting with the distinctive black wing-tips. Males differ further in having a grey cere and only faintly barred underparts, and females in having a brown throat stripe. Both sexes have red eyes.

The Gabar Goshawk, although most closely related to the chanting goshawks, resembles the small- to medium-sized *Accipiter* species in appearance and habits. It is found in most woodland types but penetrates deeper into arid country than any of the true *Accipiter* species. The cere and legs are a distinctive red and the eyes brown. The underparts have a two-tone pattern: the upper chest is plain grey, and the lower chest and belly is barred. The rump is broadly white but there are no white markings on the upper surface of the tail.

The Ovambo Sparrowhawk is another denizen of Africa's woodlands, especially where there is a mosaic of open areas and tall woodland. It is rare throughout its range, except in the Gauteng Province of South Africa, where it is one of the commonest breeding raptors. It is particularly slim in appearance, with a small head and relatively long wings. The eyes are wine-red and the colour of the cere and legs varies between red, orange and yellow. The underparts are barred throughout. The rump is grey and the upper surface of the tail has white flecks on the central tail shafts between the dark bars.

The Red-breasted Sparrowhawk is largely restricted to the Afromontane regions of the continent where there is a mosaic of montane grassland and forest, although it also occurs widely in the fynbos biome (and adjacent parts of the semi-arid Karoo shrublands) in extreme southern Africa, wherever there are tall copses of trees for it to nest in. Within its range it is the only *Accipiter* with plain rufous underparts. The eyes, cere and legs are yellow, and the upperparts and rump are a distinctive slate grey. The

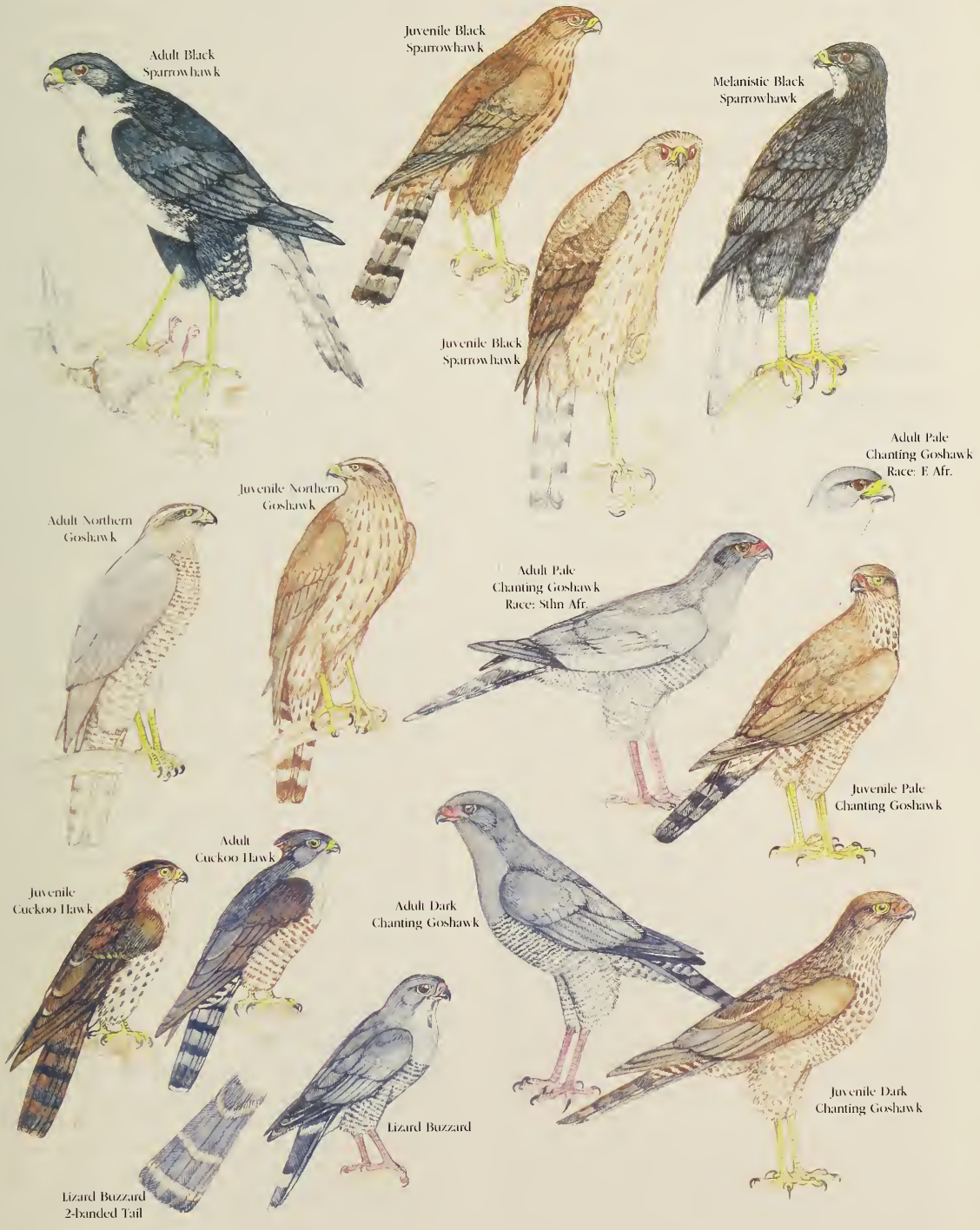


Plate 1: Plumages of Black Sparrowhawk, Northern Goshawk, Pale Chanting Goshawk, Cuckoo Hawk, Dark Chanting Goshawk and Lizard Buzzard.

upper surface of the tail has white flecks, similar to those found in the Ovambo Sparrowhawk but not as well developed. The head has a hooded appearance caused by the contrast between the dark crown and face, and paler throat.

The European Sparrowhawk, like the Levant Sparrowhawk, is a non-breeding migrant to north-east Africa, although it also breeds along the southern rim of the Mediterranean in North Africa. The cere and legs are yellow. The underparts are barred throughout, the rump is dark and the upper surface of the tail lacks any white markings. The male has orange eyes and female yellow eyes. The female is grey-coloured, with an eyebrow stripe. The male has a rufous wash on the cheeks and underparts, and lacks any eyebrow stripe.

Small- to medium-sized *Accipiter* species and Gabar Goshawk – juveniles

Juvenile African Goshawk has brown eyes, a grey cere and yellow legs. The underparts are spotted (but only very lightly in the lower Guinea forest populations) and their rumps are dark. Males have white spots on the upper surface of their tails; this is lacking in the females. They have a broad white eyebrow stripe and a vertical dark throat stripe.

The juvenile Chestnut-flanked Sparrowhawk has a faint pale eyebrow stripe, brown eyes and a yellow cere and legs. The underparts are lightly spotted with large dark spots and the rump is dark. Males have white bars on the upper surface of the tail. It has dark rufous thighs, unlike the white or only light rufous thighs of African Goshawk which shares its habitat.

Juvenile Red-thighed Sparrowhawk has yellow eyes, cere and legs. The underparts are only lightly spotted, with barred flanks, unlike the wholly, and heavily, spotted underparts of the similar sized Little Sparrowhawk. The rump is dark and the upper surface of the tail has broken white bars.

The juvenile Little Sparrowhawk has yellow eyes, cere and legs. Its underparts are spotted and the rump is dark (unlike the white rump of adults). The upper surface of the tail has white spots. It can always be distinguished from African Goshawk which shares its habitat by size, cere colour and the absence of the throat stripe and broad eyebrow stripe found in that species.

Juvenile Little Banded Goshawk has yellow eyes, cere and legs. The underparts have a two-tone pattern, with rust-coloured spots on the chest and a barred belly. The rump is dark. The two central tail feathers, plain in adults, are barred but not as distinctly as the other tail feathers. It has a faint eyebrow stripe and a throat stripe.

The juvenile Levant Sparrowhawk has a pale nape, brown eyes and a yellow cere and legs. Its underparts are densely spotted or streaked throughout and its rump is dark. It has dark vertical throat stripe. It differs from the Little Banded Goshawk in its pale nape, eye colour, underpart pattern and the absence of an eyebrow stripe.

Juvenile Gabar Goshawk has yellow eyes, a grey, yellow or orange cere, and yellow or orange legs. The underparts are streaked on the chest and barred on the belly. The rump is boldly white, and there are no white markings on the upper surface of the tail. There is a faint eyebrow stripe and the head is streaked in appearance.

The juvenile Ovambo Sparrowhawk has brown eyes and yellow or orange cere and legs. Its underparts can be either white or rufous with indistinct darker mottling or streaking. The rump is dark and the upper surface of the tail has distinct white flecks on the central tail shafts. It has a pale, streaked head with a broad white eyebrow stripe and a dark patch on the ear coverts. Its upperparts are distinctly 'scaled' in appearance, caused by the broad pale tips to the feathers.

Juvenile Red-breasted Sparrowhawk is very similar to, and easily confused with, rufous-coloured Ovambo Sparrowhawks. They differ in their yellow eyes and uniformly darker upperparts and head, with only a faint pale eyebrow stripe restricted to the area behind the eye and the absence of the distinct ear patch found in that species. The white tail flecks are also less well developed.

The juvenile male European Sparrowhawk has mottled underparts. The juvenile female has barred underparts, which is unusual as this is similar to the pattern found in the adults. Their eyes, cere and legs are yellow, and they have broad white eyebrow stripes. The rump is dark and the upper surface of the tail lacks any white markings.

Black Sparrowhawk and Northern Goshawk

The large size of these two species should rule out confusion with any other species considered here (except for the similar-sized, but differently plumaged, chanting goshawks).

The Black Sparrowhawk is widespread in sub-Saharan Africa, occurring virtually wherever there are tall trees, from closed forest to open environments with isolated copses. It is a fearsome predator, taking

prey as large as guineafowl *Numida* sp. Like several of the other *Accipiter* species in Africa, it has benefitted from the spread of alien trees and the increase, brought about by crop farming, in its main prey species (pigeons, doves and gamebirds), and has increased in distribution and numbers.

The adult has a unique pied appearance and the amount of white on the underparts is highly variable but usually forms a 'waistcoat' extending from the flanks towards the centre of the chest and belly. The juvenile can be either white or rufous on the underparts, with long and narrow streaks down the chest and belly. The dark bars in the tail are fringed with white, a feature shared only with juvenile Northern Goshawk. In flight, it shows a white patch in the primaries on the upper wing.

The Northern Goshawk in Africa occurs regularly only in Morocco, where it is uncommon. It inhabits oak, cedar and conifer woodlands and forests. This is the most powerful *Accipiter* and regularly overpowers prey as large as hares. Its distribution overlaps only with European Sparrowhawk. These two species are best distinguished on the basis of size. A small adult male Northern Goshawk could be confused with a large adult female European Sparrowhawk, but the former is greyer, has relatively narrower and longer wings and a shorter tail. The deep rufous underparts with bold streaks of juvenile Northern Goshawk should always differentiate it from juvenile European Sparrowhawk, which has paler underparts with barring or mottling.

Pale and Dark Chanting Goshawks and Lizard Buzzard

The two chanting goshawks are noticeably larger than the other raptors discussed here (except for Black Sparrowhawk and Northern Goshawk). They are the least secretive of these birds of prey, often perching in exposed positions with a distinctive upright stance. Their distributions overlap only marginally at the edges of their respective ranges.

The Pale Chanting Goshawk has a disjunct distribution, occupying dry deserts and *Acacia* woodlands in southern and East Africa, the two populations being separated by the miombo woodlands of Central Africa. The East African race may comprise a separate species, Eastern Chanting Goshawk *M. poliopterus*. Dark Chanting Goshawk inhabits the moist, well-developed broadleaved woodlands of the continent and there is an interesting isolated population in Morocco.

The two species are similar in appearance. The Pale Chanting Goshawk, however, is slightly larger and appears longer-legged. The adult Pale Chanting Goshawk has a pure white rump. In flight, it shows white secondaries contrasting strongly with the black primaries, although the East African race has greyer secondaries than southern African birds. East African birds differ further in having a yellow cere and orange legs, compared with the red cere and legs of their southern cousins. Adult Dark Chanting Goshawks have finely barred rumps, appearing uniformly grey at a distance, and grey secondaries and primaries. The white secondaries of the southern African birds result in a pale, freckled patch in the folded wing, absent in both the East African birds and Dark Chanting Goshawk. The juveniles are even more similar and can only safely be told apart by their rump coloration: white with faint, rust-coloured V-shaped markings in the Pale Chanting Goshawk (appearing white at a distance), and broadly barred with grey in the Dark Chanting Goshawk (appearing uniformly grey at a distance). Otherwise, juveniles of both species have yellow eyes and legs, grey or orange cere, and underparts lightly streaked or mottled on the upper chest, and barred on the lower chest and belly.

The Lizard Buzzard is widespread in woodland, especially moister broadleaved woodlands. It is 'goshawk-like' in overall appearance but is rather stocky, with a large head, short stout legs and talons, and a short tail. It has a unique white throat patch with a vertical black stripe. The cere and legs are a distinctive coral pink in colour. It has a broad white rump and the black tail has one or two white bars. It is unusual among these raptors, in that the juvenile is similar in appearance to the adult, only somewhat browner in colour.

Cuckoo Hawk

The Cuckoo Hawk is similar to the sparrowhawks and goshawks in general appearance, although noticeably longer winged and more sluggish in flight. Forests and well-developed woodland comprise its habitat. The slight crest at the back of the head (bordered below with a chestnut patch in the adults) is unique among these raptors. The head is dove-like, the eyes prominent, and the bill and feet relatively weak. The eye colour of adults varies between yellow, orange and deep red. The upper chest is plain grey and the barred lower chest and belly are unusual in their deep chestnut colour and broad and irregular nature. The underwing coverts are also rich chestnut. The cere and legs are yellow and the rump is dark. The juvenile has a broad eyebrow stripe and its underparts are spotted. It has a dark rump, and yellow eyes, cere and legs. It is easily confused with

Plate 2: Plumages of African Goshawk, Chestnut-flanked Sparrowhawk, Ovambo Sparrowhawk, Red-breasted Sparrowhawk and European Sparrowhawk.

Plate 3: Plumages of Red-thighed Sparrowhawk, Gabar Goshawk, Little Sparrowhawk, Little Banded Goshawk and Levant Sparrowhawk.

juvenile African Goshawk but its shape, crest, lack of a throat stripe and yellow (not grey) cere differentiate the two.

Melanistic forms

Four of the species discussed here have melanistic forms, where the plumage is largely or entirely black. In the Gabar Goshawk, this condition can be relatively common, especially in higher rainfall regions, and up to 15% of birds can be melanistic. The condition is usually rarer in Black Sparrowhawks but in some regions melanistic birds can predominate, for example in the extreme south of the species' range, in the Eastern and Western Cape provinces of South Africa. Melanistic Ovambo Sparrowhawks are extremely rare (perhaps 1–2% of birds). Melanism in African Goshawk appears restricted to the East African race and little is known of its extent in this population.

Melanistic Gabar Goshawk lacks the bold white rump otherwise typical of the species, but have boldly black-and-white barred wings and tails, and unique black 'scales' on the front of their legs and toes. Melanistic Black Sparrowhawk shows no barring in the wings and tail, and usually have some white on the throat. Melanistic Ovambo Sparrowhawk exhibit little barring in the wings and tail but retain the white flecks on the upper surface of the tail. Melanistic African Goshawk also shows some barring in the wings and tail but are noticeably browner than melanistics of the other three species, and the males lack the white spots on the upper surface of the tail typical of males of the usual form. Melanism in these species masks many of the usual clues used in differentiating them and particular attention must be paid to size and shape comparisons, and to the colours of the soft-parts which remain the same as in the normal birds (bearing in mind adult and juvenile differences in soft-part coloration).

Durban Natural Science Museum, Private Bag 4085, Durban 4000, South Africa.

The Tanzanian race of Swynnerton's Robin
Swynnertonia swynnertoni rodgersi

Guy Q.A. Anderson[a], Tom D. Evans[b] and Laura G. Watson[c]

Summary: The globally threatened Swynnerton's Robin *Swynnertonia swynnertoni* is restricted to a few widely separated, forested mountain blocks in Tanzania, Zimbabwe and Mozambique[3]. Three races have been described. This article clarifies and expands published information on the Tanzanian subspecies, *S. s. rodgersi*, and assigns the recently discovered lowland East Usambara population to this race.

The globally threatened Swynnerton's Robin *Swynnertonia swynnertoni* is restricted to a few widely separated, forested mountain blocks in Tanzania, Zimbabwe and Mozambique[3] (see Fig 1). Three races have been described: the nominate discovered in 1905 in Chirinda forest, Zimbabwe[18] and since found in other small forest patches in the Eastern Highlands of Zimbabwe; *S. s. 'umbratica'* (considered conspecific with the nominate race by Keith *et al*[13]) endemic to Mount Gorongosa, Mozambique[2]; and *S. s. rodgersi*, described on the basis of two male specimens taken in 1981 at Mwanihana in the Udzungwa Mountains, Tanzania (a range extension of 1,300 km)[20]. There have been subsequent records from two other sites in the Udzungwas[3]: Chita, in the Udzungwa Scarp Forest Reserve[12], and the Ndundulu Mountains, in the West Kilombero Scarp Forest Reserve[7].

The first records in the East Usambaras were in 1990, a further range extension of c400 km[9,10]. There have subsequently been many records in the foothills of these mountains[1,8]. This population was initially believed to represent another new race, since it differed from the type description of *rodgersi* [1,9,10,11]. However, the type description and type-specimen of *rodgersi* were not wholly representative of the Udzungwa form, and it is apparent that both the Udzungwa and Usambara populations belong to *rodgersi*, whose characteristics, as now understood, are described below.

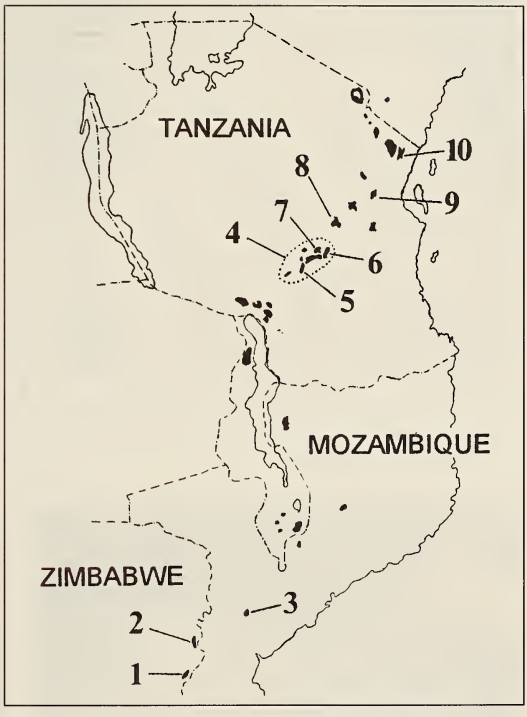


Fig 1. East Africa showing locations mentioned in the text. Shaded areas are forested mountain blocks.
1 = Chirinda, 2 = Vumba Highlands (Seldomseen), 3 = Mt Gorongoza, 4 = Udzungwa Mts., 5 = Chita, 6 = Mwanihana, 7 = Ndundulu Mts, 8 = Rubeho Mts, 9 = Ngurus, 10 = East Usambara Mts.

Material examined

Specimens and photographs of live birds in the hand were compared by the authors at the Natural History Museum, Tring, UK. More than 30 specimens of the nominate form were examined, including males, females and juveniles, from various localities. Table 1 shows the origin, age and sex class of all Tanzanian birds examined. J Fjeldså kindly took notes on two males in the Copenhagen collection, one each from Mwanihana and Chita, and these birds are included in the figures in Table 1. No specimens from the Ndundulu

Table 1. Origin, age and sex class of all museum specimens and photographs of Swynnerton's Robin examined from the Udzungwas and East Usambaras, Tanzania (photographed birds in brackets).

Origin	Adult Males	Adult Females	Juveniles
East Usambaras:	0 (3)	1 (2)	0 (1)
Udzungwas: Mwanihana	2*	1	0
Udzungwas: Chita	4	1	2

*Including the holotype of *rodgersi*.

Plate 1. Adult male (left) and adult female (right) Swynnerton's Robin *Swynnertonia swynnertoni rodgersi*, East Usambara lowlands, 1992 (Laura Watson)

Plate 2. Adult male Swynnerton's Robin *Swynnertonia swynnertoni rodgersi*, showing grey upper-tail coverts and lower rump, East Usambara lowlands, 1992 (Laura Watson)

Plate 3. Adult female Swynnerton's Robin *Swynnertonia swynnertoni rodgersi*, showing pale chin and throat, East Usambara lowlands, 1992 (Laura Watson)

Mountains or of *S. s.* '*umbratica*' were available for comparison.

Adults were taken as those which lacked any trace of juvenile spotting or scaling. Specimens were sexed according to the collectors' notes throughout. For live birds caught and photographed, all brighter, darker-headed individuals were assumed to be male and all duller, pale-headed birds female (for the latter assumption, see the caveat within the description of juvenile birds below). This consistent division fits the sexual dimorphism described for the nominate race[13].

Racial status of the Tanzanian populations

No consistent plumage differences were found between the East Usambara and Chita birds of either sex, which are therefore considered to be the same subspecies, *S. s. rodgersi*. The one Mwanihana adult female specimen is also inseparable from the single adult females from Chita and the Usambaras.

However, the two male specimens (including the holotype) and type description of *rodgersi* from Mwanihana differ slightly from males from Chita and the Usambaras. Although it is conceivable that the Mwanihana birds are racially distinct from those of Chita and the Usambaras, this would be very unexpected for four reasons: (i) Mwanihana lies between Chita and the Usambaras, (ii) Chita and Mwanihana lie much closer to each other than either does to the Usambaras, (iii) Chita and Mwanihana are part of the same mountain range, and (iv) no other bird subspecies are known to differ between Mwanihana and Chita. The last point is in contrast with the Usambaras, where many subspecies and allospecies of montane forest bird differ from those present in the Udzungwas[21]. For these reasons it seems far more likely that only a single race is currently known from Tanzania. The two male specimens from Mwanihana may be slightly anomalous, or the main plumage difference (rump and uppertail covert colour) may be a variable feature in all known populations of *S. s. rodgersi*. A detailed examination of further individuals from the Usambaras and the Udzungwas is required, especially from Mwanihana.

The ageing of the holotype from Mwanihana is in doubt. It has fine olive fringes to the breast feathers, especially at the breast sides, a feature apparently characteristic of a young bird, as it appears on all immature/juvenile specimens of the nominate race (aged by the collectors). Thus the type specimen of *rodgersi* may not be a full adult, although it was described as such (the specimen label indicating that the testes were enlarged when collected, implying a male in breeding condition[6]). It is possible that the type-specimen was a first-year bird, sexually mature but retaining subadult plumage. If it was not fully adult, it may be invalid to compare its other plumage features with adults from other populations. The second male specimen from Mwanihana does not show these fringes to the breast feathers (J Fjeldså *in litt*) and is thus a more typical adult.

The race of birds in the Ndundulu Mountains could not be reassessed, but was listed as *rodgersi* by the finders[7]. This seems likely as the Ndundulus are only 15 km from Mwanihana.

Distinctive plumage features of *S. s. rodgersi*

The following discussion contrasts *rodgersi*, in the broad sense justified above, with the nominate race (described and illustrated by Keith *et al*[13]) and *umbratica* (see Clancey[2]).

Males of the nominate race and *rodgersi* may be inseparable except by direct comparison. The best feature for diagnosing male *rodgersi* appears to be the yellow, rather than orange-yellow, breast. The other diagnostic features given in the type description,[20] a more olive crown and a greyer, less olive back than the nominate race are both variable and do not apply to most specimens. The undertail coverts of *rodgersi* are indeed 'almost white' as stated in the type description, but so are those of several specimens examined of the nominate race. A grey rump, if present, may be diagnostic in adult male *rodgersi* (see Plate 2) but not all individuals show this feature.

The type description of *rodgersi* does not include females, but, as described below, these are more distinctive than males, on account of their pale throats.

Although no direct comparisons were made with specimens of *S. s.* '*umbratica*', its type description[2] suggests that both sexes have darker and browner upperparts, and even richer orange on the breast than the nominate race (and thus also *rodgersi*).

The different age and sex classes of *S. s. rodgersi* show the following features:

Adult males (illustrated in plates 1 and 2):

- The head of *rodgersi* is slate-grey, with the face and ear coverts slightly paler than the crown and centre of the throat. Some specimens from the Udzungwas have an olive tint to the crown and nape, giving a slight 'capped' appearance. The head of the nominate race is pure grey, slightly darker in tone.
- The mantle, upper rump and scapulars of *rodgersi* are bright olive, contrasting with grey head, nape,

tail, uppertail coverts and lower rump (see Plate 2). The nominate race shows slightly less contrast between the duller mantle and head than *rodgersi*, and the uppertail coverts and rump are the same olive colour as the mantle. This grey rather than olive rump and uppertail coverts would form a valuable diagnostic feature of *rodgersi* except that, curiously, the two Mwanihana specimens have these feathers olive (with grey bases), like the nominate race.

- The wings of *rodgersi* are almost pure slate-grey, with paler fringing to the remiges, and slight olive-tinting on the coverts on some specimens. The nominate race shows very slight olive-tinting to all wing feathers.
- Below, *rodgersi* shows a rich yellow breast and yellow belly fading to pure white undertail coverts. A thin white gorget, bordered black on the lower edge, separates the yellow breast from the grey throat. The nominate race has a richer orange-yellow breast, paling over the belly to buff or white undertail coverts, and the black edging to the throat gorget is wider than on most *rodgersi*.

Adult females (illustrated in Plates 1 and 3):

- The crown, nape and sides of head of *rodgersi* are slightly paler and more olive-grey than in the nominate race, and the mantle is a slightly brighter olive. Unlike the adult male, the uppertail coverts and lower rump of female *rodgersi* are concolorous with the upper rump and mantle. In the latter respect they resemble females of the nominate race.
- On *rodgersi* the chin and throat above the gorget are creamy-white or buff, compared with slate grey (concolorous with the crown) on specimens of the nominate race. This gives *rodgersi* a much less well defined upper border to the throat gorget. The dark lower margin of the white gorget is thinner on *rodgersi* than on the nominate race and dark grey rather than black.

Juveniles:

- The single juvenile individual caught in the Usambaras resembled juveniles of the nominate race, which are variable according to exact age and sex. The only noteworthy difference is a contrast between the dull olive crown, scaled with black, and the slightly rufous, mid-brown forehead, lores, supercilium and ear coverts of the East Usambara bird. Juveniles of the nominate race have only the forehead slightly paler and more rufous then the crown, the rest of the face being pale olive-brown.
- Post-juvenile immature birds from Zimbabwe and Mozambique are described as having adult female-like plumage but with paler breast and belly[13], and a paler grey throat[2]. There is no published record or specimen of this plumage from Tanzania. If an equivalent plumage does exist for *rodgersi*, it is possible that one or more of the birds from the East Usambaras treated as an adult female may be an immature individual of either sex. However, the consistency of plumage of all adult female-type birds caught in the East Usambaras, and their common occurrence in a pair with an adult male-type individual (see section on the species' ecology, below) would suggest that these individuals are indeed adult females and that the plumage characteristics described above are valid.

Biometrics

Only limited biometric data are available from Tanzania (see appendix). Also, caution should be used in comparing measurements from specimens with those from live birds, as some shrinkage in bone material can occur in dry specimens. The data do not suggest any clear differences in wing length, tail length or weight between the populations. If slight differences in means exist, they are undetectable in such small sample sizes, and the overlap of values is clearly large. Birds of the nominate race appear, on average, to have smaller bills and larger tarsi then *S. s. rodgersi*, but since Manson[14] did not specify the methods used to measure these, it is possible that the measurements are not equivalent.

Vocalisations

The call given by birds in the East Usambaras is a soft, ticking rattle, often in alarm. This matches the call described from other populations, reported as a 'descending squeaky trill or purr'[13], a 'thin trill'[7] and a 'high-pitched, monotonous, purring noise of no great volume'[14]. The song, most frequently heard around dawn and dusk in the East Usambaras, varies geographically[13]. In the East Usambaras it was a sweet, high, leisurely whistle of four notes with the first note or pair of notes higher in pitch and the last note sometimes omitted, or a fifth added[1]. All permutations could be heard from a single individual in some cases. A recording has been deposited at the Wildlife Section, National Sound Archive, 29 Exhibition Road, London, UK. In Chirinda, Zimbabwe, the song has three or four notes[13]; in Seldomseen, Zimbabwe, three notes, sometimes two[14]; and in the Ndundulus three notes, occasionally four[7].

Ecology

Swynnerton's Robin in the East Usambaras apparently only inhabits lowland evergreen forest from 130–550 m. Breeding at these altitudes is suspected[12]. The species is almost certainly absent from submontane forests in the East Usambaras at 800–1,500 m, which have been intensively studied[5,9,10,15,16,17]. This is in stark contrast to all other known populations, including the three Udzungwa populations, which are found at 850–1,750 m in montane forest[3]. This remarkable difference in habitat is currently unexplained.

Birds in the East Usambaras were seen singly or in pairs, keeping largely to the forest floor. On several occasions, pairs were mist-netted together. The species was found on both gently-sloping and very steep terrain, and in a variety of forest habitats from relatively undisturbed forest with canopy up to 40 m, to shorter, logged forest with an understorey dominated by the bamboo-like grass *Olyra latifolia*. However, it appears to occur principally in the least-logged areas where there is a high, closed canopy and a relatively open understorey without extensive thickets of *Olyra* or other species[8]. Accounts from other populations also indicate that they are principally ground-feeders favouring areas of leaf litter in evergreen forest with an open understorey[7,12,14].

Distribution and conservation status

The species is listed as Vulnerable because of the small, fragmented and declining extent of its habitat[3]. High densities occur in the very small areas of habitat occupied by the nominate race[4]. The status of forest birds on Mount Gorongosa is unknown[4]. *Rodgersi* is common at Chita[12] and in parts of the Ndundulus[7], but scarcer at Mwanihana[12]. However, neither the area of habitat at suitable altitudes, nor the degree of human pressure on the habitat in these areas are clear.

There are c140 km^2 of forest in the East Usambaras within the altitudinal range in the area from which Swynnerton's Robin is known (TDE, unpublished data). Almost all of this is within existing Forest Reserves, but virtually all has been degraded to some extent and large areas, including Manga Forest Reserve and the north part of Longuza Forest Reserve, may no longer support more than isolated pairs of birds. The excellent forests in Kwamgumi and Segoma Forest Reserves probably have much larger populations, and Marimba, Kambai, Semdoe and Mtai Forest Reserves are also important. Some clearance for agriculture occurs in the limited areas of forest outside Forest Reserves, but the greatest threat to the Usambara population of Swynnerton's Robin is probably habitat degradation from illegal pitsaw logging, which continues apace in some areas[1,8,10].

Two major international conservation projects operate in the area. The East Usambaras Conservation and Development Project (EUACDP) is a governmental project focusing on agriculturists and village-run forests, which receives technical support from IUCN-The World Conservation Union. The East Usambaras Catchment Forest Project (EUCFP) concentrates on Forest Reserves, and is funded and technically advised by the Finnish aid agency, FINNIDA, and undertaken by the governmental Division of Forestry and Bee-keeping. A third venture, the Kambai Forest Conservation Project, is a smaller scheme, based in villages near the main lowland forest areas, and is supported by the Tanzania Forest Conservation Group. Potential alternatives to forest products are being developed and there are plans to plant habitat corridors to reduce the effects of forest fragmentation.

It seems possible that other populations of Swynnerton's Robin remain undiscovered, since there are a number of lowland and montane forest blocks which have yet to be surveyed.

Acknowledgements

The many individuals and organisations who assisted in the fieldwork referred to in this paper are thanked in the relevant expedition reports[1,8,9]. Neil and Liz Baker, the staff of the Wildlife Conservation Society of Tanzania, Dr Alan Tye, Dr Neil Burgess, Norbert Cordeiro, Alex Hipkiss, Jacob Kiure, Andy Perkin and the staff and volunteers of Frontier-Tanzania all deserve special mention for their help with the ornithological studies. Peter Colston, Robert Prys-Jones and Michael Walters at the Natural History Museum (Sub-department of Ornithology), Tring, gave advice and access to specimens and Jon Fjeldså of the Zoological Museum, Copenhagen kindly loaned several specimens in his care and took notes on others. Louis A Hansen provided biometrics on birds mist-netted in the Udzungwas. Norbert Cordeiro, Matthew Denny and Fiona Hunter provided helpful comments on the manuscript.

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Appendix: Biometrics of mist-netted Swynnerton's Robins from the East Usambaras in 1990 and 1992, the Udzungwas in 1991 (Louis A Hansen *in litt*), Zimbabwe from 1977 to 1985[14] and museum specimens from the Udzungwas. (Mean values only given for sample sizes greater than two.)

Age/Sex	Area	Live/Specimen	Wing (mm)[a]			Tail (mm)[b]			Tarsus (mm)[c]		
			Range	*Mean*	*n*	*Range*	*Mean*	*n*	*Range*	*Mean*	*n*
Male	Udzungwa	Live	69.5–72.0	-	2	44.0–47.0	-	2	24.0	-	1
	Udzungwa	Specimen	73.0–75.0	74.0	4	-	-	-	24.7–25.1	25.0	4
	Zimbabwe	Live	66.0–73.0	70.4	106	43.5–52.0	49.8	98	23.0–28.0[f]	26.1[f]	164[f]
Adult	Usambara	Live	67.0–69.0	67.7	6	43.0–45.0	43.8	5	22.5–23.0	22.7	3
Female	Udzungwa	Live	67.0	-	1	45.5	-	1	24.0–25.1	-	2
	Udzungwa	Specimen	64.0–69.0	-	2	-	-	-	22.7–23.3	-	2
	Zimbabwe	Live	65.0–70.0	67.3	41	41.0–47.0	44.2	37	-	-	-
Juvenile	Usambara	Live	67.0	-	1	43.0	-	1	-	-	-
	Udzungwa	Live	67.0–69.5	-	2	42.0–46.5	-	2	24.0–27.7	-	2
	Udzungwa	Specimen	71.0–72.0	-	2	-	-	-	24.1–26.0	-	2
	Zimbabwe	Live	63.0–69.0[e]	65.5[e]	19[e]	40.0–46.0[e]	42.6[e]	18[e]	-	-	-

Age/Sex	Area	Live /Specimen	Bill (mm)[d]			Weight (g)		
			Range	*Mean*	*n*	*Range*	*Mean*	*n*
Adult	Usambara	Live	16.5–17.0	16.7	3	15.2–17.1	16.3	6
Male	Udzungwa	Live	16.3–17.3	-	2	14.4–15.9	15.4	3
	Udzungwa	Specimen	15.7–17.4	16.7	4	-	-	-
	Zimbabwe	Live	12.0–16.0[f]	14.0[f]	164[f]	13.8–20.4	15.8	105
Adult	Usambara	Live	16.0–17.0	16.4	4	14.9–18.0	15.9	5
Female	Udzungwa	Live	17.7	-	1	14.8	-	1
	Udzungwa	Specimen	16.0–17.3	-	2	-	-	-
	Zimbabwe	Live	-	-	-	14.4–19.5	16.3	44
Juvenile	Usambara	Live	-	-	-	16.8	-	1
	Udzungwa	Live	16.0–17.0	-	2	15.0–16.5	-	2
	Udzungwa	Specimen	16.8–18.4	-	2	-	-	-
	Zimbabwe	Live	-	-	-	13.0–20.0	15.5	20

[a] 'Maximum chord' method used for Usambara and Udzungwa birds

[b] Measured as base of tail feathers to tip of longest tail feather for Usambara and Udzungwa birds

[c] Measured as distance from notch on tarsal joint to lowest fixed scale on tarsus for Usambara and Udzungwa birds

[d] Measured as tip of bill to skull for Usambara and Udzungwa birds

[e] Separate values for males and females from Manson[14] pooled here

[f] Manson[14] pools all age/sex classes for these measurements

A survey of Nahan's Francolin *Francolinus nahani* in two tropical rainforests of Uganda

C. Dranzoa[a], E. Sande[a], I. Owiunji[a], and A. Plumptre[b]

Summary: Surveys of Nahan's Francolin *Francolinus nahani* were carried out in Budongo and Mabira forests in September and October 1996 respectively. Playbacks of the recorded calls formed the main survey method. Calls of this species were recorded for the first time, in 1995[6], when it was rediscovered in Mabira forest after having been 'missing' for 74 years! Positive responses were obtained in the two localities, at a total of 17 sites distributed in different forest types. Group size ranged between 2–5 individuals. Further detailed research into the conservation status, ecological requirements and monitoring, and other biological data of the Nahan's Francolin is strongly recommended.

Nahan's Francolin *Francolinus nahani* is one of 36 species of endemic African francolins. In Uganda, it is reported to occur in five different forests[5]. Very little is known of its basic biology, ecology and its conservation status is of global concern, although, as yet, insufficient data on its conservation status is available to assign it to a threat category, so it is described as 'data deficient'.

A recent report on the nesting[6] and calls (I Owiunji, pers obs) of this little known bird from Budongo Forest Reserve formed the basis to this survey. All previous information obtained from sight records was compiled during the colonial era in the early 1900s[1, 4]. It was therefore important that a survey be undertaken to determine the current status of this species in Uganda, and its occurrence in different forest blocks and types. This preliminary survey aimed to determine the response of the species to call playback, which might prove an adequate census method for longer term monitoring and ecological studies.

Study area and methods

Budongo and Mabira are part of the remnant Lowland Tropical Rain Forests in Uganda. Both are managed under the Uganda Forestry Policy which serves a dual purpose. Under the forestry policy of sustainable utilisation, timber logging takes place in both reserves.

Budongo is a medium altitude reserve located on the west edge of the west arm of the rift valley, covering c430 km^2. Budongo has been selectively logged since the 1940s and this continues to the present. Three main areas were surveyed in two days: site N3 was selectively logged in the 1950s–1968, W21 has been logged since the 1950s and was still being logged at the time of the survey, and N15 (Nyakafunjo) is unlogged Nature Reserve.

Mabira forest reserve covers 320 km^2 and is located 58 km west of Kampala along the road to Jinja. Some parts of this reserve were harvested in the early 1900s. Until 1988, intensive coffee/banana agriculture encroachment claimed large chunks of Mabira. Currently, c21% and 26 % of the reserve have been designated as strict Nature Reserve and Buffer Zone respectively.

Surveys were conducted by playback of recorded calls of Nahan's Francolin, using tapes

Forest site W21, where timber was being pit-sawn during the survey (Christine Dranzoa)

Timber obtained from W21 being loaded (Christine Dranzoa)

previously made in Budongo by I Owiunji and A Plumptre and soliciting responses through counter-calling and/or calling them out. A similar procedure has been used for monitoring rails in Aldabra[3]. In both study areas, existing trails served as transect lines. Budongo and Mabira forests were surveyed from 28–29 September 1996 and from 15–22 October 1996 respectively. Along each trail system, calling stations were established at 200 m intervals and calls played for 2–3 mins. Replays were made at least five times at each station while adjusting the volume alternately from high to low and vice versa. Five minutes were spent at each site waiting for counter-calling. If a response was elicited, we tried to attract the birds by playing the tape continuously for at least ten minutes to bring them into view. Individuals within each group attracted to playback were counted whenever possible and their location noted.

Results and discussion

Recorded calls

Nahan's Francolin responded to playback in both forest surveys. The call can last up to 16–20 s, becoming gradually louder approximately halfway through the call, particularly if there is another bird calling nearby. Fig 1 shows the call.

At all sites, where counter-calling was encountered, responses varied from instantaneous to a lag of c5–7 mins (total for which response time was noted = 15). Birds usually remained concealed. Two groups in Budongo, one in swamp forest and another in mixed forest, answered long after the tape had been stopped. In Mabira, a similar situation was observed in birds near Butuku. Dense vegetation usually in secondary forest or gaps and swampy areas appear to be favoured by the species. Five sites in which positive responses were registered were in swampy areas. This survey provided the first records of Nahan's Francolin in Mabira Forest since those by van Someren in 1916 and 1922[1].

Group size

Nahan's Francolin is elusive in dense vegetation. Only 23% (n=17) of groups were seen sufficiently well to count accurately the number of birds. Number of individuals was 2–5, mean = 3.5 (n=4) (Table 1). Plumptre[6] recorded a group of seven birds in Budongo in 1995.

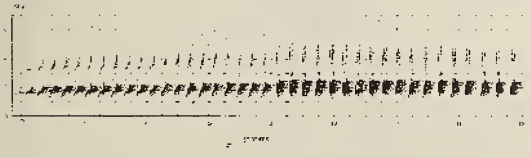

Fig 1. Sonogram of the territorial call of Nahan's Francolin *Francolinus nahani*

These surveys have revealed that Nahan's Francolin population estimates can be made using playback, and that they are still present in Mabira and Budongo forests despite active logging in Budongo, especially at site W21. We tried inducing birds to cross open areas in Budongo but were unsuccessful; four birds at Butuku (Mabira) did cross a track. Other birds appeared shy, upon reaching an open area they moved away from it.

Table 1 Different sites, number of sample points (SP), positive group responses (+Ve) and number of individuals seen in a group (IG); NS = not seen

Site	SP	+Ve	IG
BUDONGO			
N3 selectively logged	27	5	2
N3 Swamp	3	3	NS
N15 unlogged	18	0	-
W21 logging continues	7	2	5,3
MABIRA			
Gangu Valley	10	1	NS
Namusha Hills	7	2	NS
Butuku Buffer zone	7	4	4
Grassland	9	1	NS
Nature Reserve	8	0	-
Radio Hill	5	0	-

Future studies

This survey is part of a major study of the ecology and assessment of the population and conservation status of Nahan's Francolin in Uganda. It is hoped, with financial support, to produce a management strategy for the species in Uganda. Data will be gathered on the impact of selective logging of Budongo Forest on the long-term conservation of Nahan's Francolin, their distribution in all remnant forests, forest types, breeding, feeding behaviour and other ecological requirements.

Acknowledgements

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Mapping Afrotropical birds: links between atlas studies and conservation priority analyses

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Maps of bird distribution intrinsically appeal to scientists and birders alike, but are also fundamental for attempts to assess the distribution of avian biodiversity. Distributional maps of African birds are found in many field guides[2], in major studies on the avifauna of Africa[11,21,28], and in a number of country bird-based atlases[16]. Bird mapping is also being turned into a scientific art-form in the Atlas of the Birds of Southern Africa, to be produced by the Avian Demography Unit in the University of Cape Town in South Africa, and the data generated are being used for analytical studies[12,30].

Bird distributional data have featured strongly in analyses of vertebrate distributional patterns[3, 5]. Such data were also used in the groundbreaking work by BirdLife International (formerly the International Council for Bird Preservation), which has identified those areas of Africa important for bird conservation, based on concentrations of species with pre-assumed ranges of less than 50,000 km^2. The areas identified were termed Endemic Bird Areas; 19 were found in Africa south of the Sahara[13].

Although the EBA approach had provided the first methodologically consistent attempt to produce a map of avian endemism's distribution, and has been highly praised in some quarters, it has also been criticised within Africa[4]. This was largely due to the failure to identify areas of endemism for arid-adapted species with marginally larger ranges than the critical area defined, a problem which is inevitable with any discontinuous/threshold approach. A more general shortcoming of the EBA approach was that it used data from a predetermined list of bird species, and not all birds in Africa. Using data from all bird species had the advantage of allowing the identification of a minimum set of areas capable of achieving the objective of protecting all the birds in Africa in one, two, or another predefined number of areas[19,20,24,32].

Use of bird distributional data to understand bird distributional patterns and further refine conservation priority setting

In 1993, Tim Crowe and Helen de Klerk of the Percy FitzPatrick Institute in South Africa initiated a programme to map the distributions of all Afrotropical birds. In 1995 they were joined by members of the Danish Centre for Tropical Biodiversity who were aiming to map biodiversity patterns in Afrotropical vertebrates (mammals, birds, snakes, amphibians), butterflies and some plant groups. The aims of the combined programme are to present data on species-richness and species-endemism in these groups and investigate the potential causes of the patterns found, to look at the degree to which these patterns are congruent, see to what extent the biodiversity is protected (in conservation areas) or threatened (eg in areas of high human population) within Africa. In part, this effort is designed to be the first large-scale test of the extent to which the priorities for bird conservation are a good indication of the priorities for other groups of organisms[13], which has been challenged by other preliminary studies at a regional level[2]. However the programme also hopes to provide some insights into why the distribution pattern of Afrotropical birds is like it is, and what may be the underlying causes of the patterns. Thus the mapping exercise is closely coupled with various projects where general biodiversity hypotheses will be tested using molecular studies of population structure and species relationships.

Adequate maps of bird distribution are essential to this project, and the Percy FitzPatrick Institute in Cape Town and the Centre for Tropical Biodiversity in Denmark have been jointly producing these over the past three years. The maps produced so far build on those found in classical works[11,14,21,28], in regional Atlases[16], and from papers in the last 10 years issues of regional ornithological journals, eg *Malimbus* and *Scopus*. BirdLife International has also permitted the inclusion of information from their database of restricted-range species (<50,000 km^2 range) found in Africa, which considerably refines the distributions of these rare species. The personal knowledge of observers in South Africa and Denmark has also been utilised. However, it is apparent that, there are scores of ornithologists in Africa and elsewhere, with many years of field experience, who have not had the opportunity to assess the accuracy of the maps which have been produced. The authors would be delighted to receive input from ornithologists willing to check the accuracy of maps for countries/regions, or for particular groups of birds.

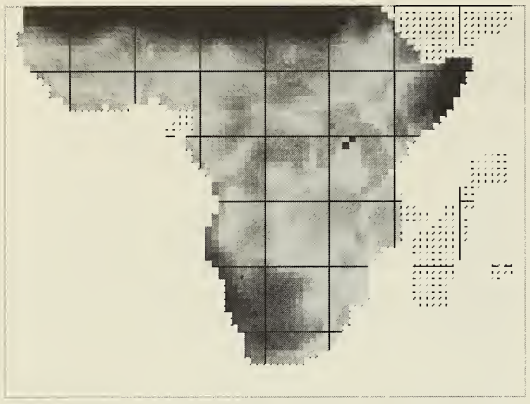

Fig 1a. Map of bird species-richness in Afrotropical Africa (based on computerised bird species distribution maps compiled from a variety of sources). Darkest areas = areas of low richness for birds (blue in original colour map, grading through green, yellow and finally red for the areas of increasing species richness).

Distributional data comprise both point locality records for all those species which have 'restricted range' in Africa, and interpolated range maps for the remaining species. Distributions are being mapped at the scale of a one degree square (approx. 110 km x 110 km). Maps for rare and range-restricted species consist of all known localities, whereas for more widespread and common species the distributional range has been conservatively mapped. The one degree square unit was selected by considering of the density of survey results from the poorest known regions of Africa (eg in the Congo Basin).

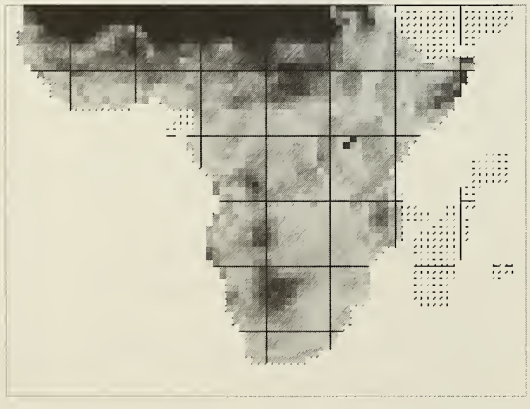

Fig 1b. Map of bird species-endemism in Afrotropical Africa (based on computerised maps compiled from a variety of sources). Darkest areas = areas of low endemism scores for birds (blue in original colour map, grading through green, yellow and finally red for the areas of increasing endemism scores).

Distributions are being computerised within the computer programme WORLDMAP Version 4.1 for Windows '95, developed by Paul Williams of The Natural History Museum in London, UK. This is a specialised platform for analysing species-richness, range-size endemism and the selection of priorities for conservation. WORLDMAP has been previously used to assess priorities for antelope conservation in Africa[15], and has been recently utilised in the production of a bird atlas for the United Kingdom[33].

Research possibilities

1. Visualising species-richness and species-endemism

By overlaying the individual maps, visual representations of species-richness and species-endemism can be produced. Such analyses illustrate broad patterns in the distribution of avian biodiversity in the Afrotropical Region.

The map of overall species-richness (Fig 1a) shows the well known high species-richness in eastern Africa, which is notable in comparison with the relatively low species-richness in the centre of the Congo rainforest and, especially, in the African deserts. Species-richness in northern parts of Mozambique, and in much of northern Angola are also low. This may merely be a reflection of the low effort made by ornithologists in these areas. Further data may produce species-richness scores in northern Mozambique similar to southern Tanzania.

The map of overall endemism (inverse range sizes) (Figure 1b) shows areas where species with restricted distributions concentrate. There is considerable overlap in the areas identified here with the Endemic Bird Areas map of BirdLife International, which was based on a sub-sample of Afrotropical birds. Statistical treatments of the computerised data are also possible and some possibilities being explored are outlined below.

2. Can bird data be used to understand evolutionary processes?

One of the aims for the bird map database is to attempt to map areas where species evolution is occurring (Type II refugia *sensu*[3]), and where species have persisted over long periods of time without giving rise to new species (Type I refugia *sensu*[3]). Birds are the only group of animals where such studies might be possible at the present time, because there has been considerable research into bird DNA, which provides an idea of the relative 'age' of the different bird species[26]. Provisional maps, illustrating the distribution of newly evolved and more ancient bird species

have already been produced for Africa[8]. A more comprehensive database of bird distributions, and further interpretation of DNA data, could lead to the identification of areas of Africa important for the evolution of new species.

3. Can patterns of bird biodiversity be explained in terms of environmental variables?

A recurring theme of research into Afrotropical bird faunas, is discussion of whether biotic (vegetation) and abiotic (climate, topography etc) factors can be used to explain patterns of species-richness and endemism in Afrotropical birds. The authors' work aims to build on previous studies[3,29], by using computerised species-distributional databases and the vast quantities of digitised data on biotic and abiotic attributes of Africa available, from the interpretation of satellite-derived information. Questions to be investigated using these data-sources are:

1) can the pattern be explained by topographical variation within Africa ?
2) can the pattern be explained by rainfall, temperature, humidity, seasonality in Africa?
3) is the pattern a reflection of productivity in Africa?

The degree to which these variables explain biodiversity patterns may help to understand their underlying causes. Also, the degree to which these variables do not explain the patterns may cast further light on whether the distribution of birds today is related to historical changes in the African continent, such as climatic change during the Ice Ages, or the emergence of volcanoes. Such studies are at an early stage, but initial results[9] show promise that satellite-derived climatic data may provide information relevant to explaining the distribution of narrowly endemic forest species.

Conservation possibilities

Identification of key areas for conservation

There are various approaches to the identification of the key areas for conservation. BirdLife's Endemic Bird Areas (EBA) and Important Bird Areas (IBAs) provide catalogues of areas requiring conservation attention. However, there are alternative approaches to defining conservation priorities. One such is complementarity, which selects areas based on their complement of species within a predefined objective, eg protecting all the birds of Africa in at least one area. This method produces a set of areas where conservation action is vital, if avian biodiversity is to be safeguarded.

Step-wise complementarity

The step-wise approach to complementarity creates a list of areas by selecting the most important area (in terms of species-richness or endemism), then excluding it from consideration (and all species it contains) and then selecting the next most important area. Although this approach makes a useful sequential selection of areas, it does not take account of statistical efficiency[31]. The highest ten ranked areas, identified using the step-wise complementarity approach, for bird richness (Table 1) and bird endemism (Table 2) identifies areas within those previously defined as EBAs by BirdLife International[13].

Table 1. Sequential list of the top ten areas (one degree grids) selected for richness using step-wise complementarity (of total 94 areas selected to represent all species in Africa).

Area	Grid Centre	Country	Geographical name	BirdLife EBA site
1	2.5°N 30.5°E	Zaïre	Northern Albertine Rift	yes – parts C19 & C20
2	4.5°S 39.5°E	Tanzania	East Usambaras	yes – parts C23 & C24
3	24.5°S 29.5°E	South Africa	Kruger National Park	yes – C28/C27 transition
4	4.5°N 9.5°E	Cameroon	Cameroon highlands /lowlands	yes – parts C04 & C05
5	15.5°N 39.5°E	Eritrea	Asmara area	yes – C16
6	12.5°S 14.5°E	Angola	Angola Scarp	yes – C08
7	0.5°S 36.5°E	Kenya	Mt.Kenya to Naivasha	yes – C21 (perhaps +C22)
8	7.5°N 8.5°W	Guinea/Liberia	Mt. Nimba	yes – C03
9	33.5°S 18.5°E	South Africa	Cape area	yes – C29
10	3.5°S 28.5°E	Zaïre	Southern Albertine Rift	yes – C20

Table 2. Sequential list of the top ten areas (one degree grids) selected for endemism using greedy complementarity (of total 84 areas selected to represent all species in Africa).

Area	Grid Centre	Country	Geographical name	BirdLife EBA site
1	3.5°S 28.5°E	Zaïre	Southern Albertine Rift	yes – C20
2	4.5°N 9.5°E	Cameroon	Cameroon highlands /lowlands	yes – parts C04 & C05
3	4.5°S 39.5°E	Tanzania	East Usambaras	yes – parts C23 & C24
4	12.5°S 14.5°E	Angola	Angola Scarp	yes – C08
5	7.5°S 37.5°E	Tanzania	Uluguru Mountains	yes – C24
6	9.5°N 39.5°E	Ethiopia	Shewa area	yes – C17
7	2.5°N 30.5°E	Zaïre	Northern Albertine Rift	yes – parts C19 & C20
8	0.5°S 36.5°E	Kenya	Mt. Kenya to Naivasha area	yes – C21 (perhaps +C22)
9	8.5°S 35.5°E	Tanzania	Udzungwa Mountains	yes – C24
10	6.5°N 8.5°W	Guinea/Liberia	Mt. Nimba	yes – C03

The areas are ascribed a name according to the most obvious recognisable place, or biologically unique area within the square selected.

Minimum set complementarity and assessments of the degree to which avian biodiversity is protected or threatened

The minimum set approach to complementarity is more efficient than the step-wise method in that it is able to choose fewer areas in order to achieve the same objective of representing all species in the distributional database. The iterative algorithms involved in such a process have been discussed widely elsewhere[7,19,23,32] and are the basis of considerable efforts being invested in conservation-priority setting in South Africa[6,18] and elsewhere in the world[10]. The minimum set approach for Afrotropical birds defines fewer areas which require protection, compared to the step-wise approach, but the highest priority areas selected are similar.

In terms of assessing the protection of biodiversity, there is currently great interest in attempting to assess the extent to which the current system of Protected Areas (typically IUCN category National Parks) conserve overall biodiversity. Several studies in South Africa[17, 18, 25], Australia[22] and South America[10] have demonstrated that existing Protected Areas, established over many years, typically using ad hoc and opportunistic approaches, are not wholly effective in protecting all species. These areas seem best for protecting populations of large mammals and less useful for protecting areas with greater levels of endemism, which also occur in smaller habitat blocks where the species have smaller, less visible and commercially less important populations.

A preliminary assessment of the degree to which the Afrotropical avifauna is well-protected indicates that the major (large scale) 'gaps' in the network of protected areas are in the Cameroon highlands, the Angola Scarp, the Eastern Arc Mountains of Tanzania, and the Albertine Rift Mountains of Central Africa. These areas have considerable overlap with those outlined in Tables 1 and 2.

The degree to which biodiversity is threatened is also important to determine when making conservation priorities and strategies. Various indices of threat are being developed around the world but the simplest is the human population pressure of an area. Human population data are of variable quality throughout Africa, and are often compiled in terms of large political units which makes them difficult to relate to biological data. However, threats data can be extracted from maps by looking for areas with 'high' and 'low' levels of human disturbance (eg density of road networks, numbers of settlements etc). Such data can then be used as an index of threat which can be compared to the species-richness and endemism of the same grid. Results of analyses being undertaken in Copenhagen and Cape Town indicate that bird endemism is very noticeably located in areas where human population density is highest. This is mainly because, in many places in Africa the endemic birds are found in forested areas on the tops of hills, which are also good places for water catchments required by large human populations at lower elevations where there is enhanced potential for food production and stable lifestyles.

Links between mapping biodiversity and atlas production

This paper outlines current developments in continuing attempts to map Afrotropical biodiversity. It is expected that considerable refinement of the birds database could be made using existing knowledge, and that useful analyses for scientists and conservationists can be undertaken using the database.

All such studies rely on the compilation of distributional data from existing literature and collaboration with the experts on the biodiversity of the area. The authors hope that more help can be enlisted to produce the best possible maps of Afrotropical bird distribution. However, this project only provides a starting point for what could be done with existing knowledge and unpublished information held by individuals, if these data were collected and input into a suitable point-locality database.

A project to atlas Afrotropical birds, either at the one degree or 0.5 degree level, for the Afrotropical Region or all Africa would be a major step forward in attempts to understand Afrotropical bird distribution and plan conservation. Such a study is a scientifically defensible goal for completion within the next 10 years. An atlas project requires cooperation between ornithologists throughout the continent, and would thus be a marvellous opportunity for collaboration, mutual training and learning.

Conclusions

- Existing knowledge on bird distribution can be used for both conservation planning and scientific research if distributional data are computerised. There is also potential to refine considerably available distributional data to make such analyses of greater use.
- Preliminary analyses of computerised bird data show the major centres of bird endemism and bird

species-richness. For endemism, the approach broadly confirms the areas selected as priorities by BirdLife International in their work on Endemic Bird Areas. However, if all the birds are considered in a minimum-set analysis, some other areas are also seen to be essential for Afrotropical bird conservation. Having the data on computer also permits further analyses to be performed which can indicate, in broad terms, areas with the greatest need for conservation action, and also where the birds are most threatened by human populations.

- The authors would be pleased to hear from ornithologists interested in Afrotropical bird distribution and conservation, particularly African Bird Club members. The greatest assistance would be from people willing to check our maps for an entire group of birds, or geographical region or country.
- We would also be pleased to lend our support to a scientific endeavour in Africa to compile distributional data for the production of an Atlas of Afrotropical birds. We believe this proposal has both scientific and conservation merit, and is a logical development of existing programmes in southern Africa and various other regions of Africa. It could also provide a new ornithological challenge for those scientific ornithologists involved with the current work on the production of a directory of African sites of high importance for bird conservation (Important Bird Areas), coordinated by BirdLife International. An Afrotropical Atlas would also provide an excellent opportunity for training additional ornithologists, something which is particular relevant in many tropical African countries where there may be as few as a single trained ornithologist.

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A comparative study of the forest avifauna in Mount Elgon National Park

Stephen J. Kings

In June–September 1996, Project Elgon '96, an Aberdeen University expedition, studied human impact on the flora and fauna of Mt. Elgon's montane forest, east Uganda. Mt. Elgon, Africa's eighth highest mountain at 4,321 m, is an extinct volcano straddling the Ugandan–Kenyan border (Fig 1). The mountain plays an important role, supplying water, timber and other forest products to the inhabitants of the area. Recently established as a National Park (Fig 2), it also supports a rich flora and fauna, in need of conservation. Prevention of habitat degeneration and species loss is particularly vital as pressure increases on the park to provide water, timber and tourist income, for an increasing population.

Fig 1. Map of Africa showing position of Mt. Elgon in Uganda (inset).

Over a six week period, the expedition investigated the conflicting environmental and human factors contributing toward changes in the montane forest environment and land use, assessed human impact on vegetation, diversity and abundance of small mammal communities, and compiled an inventory of the forest avifauna.

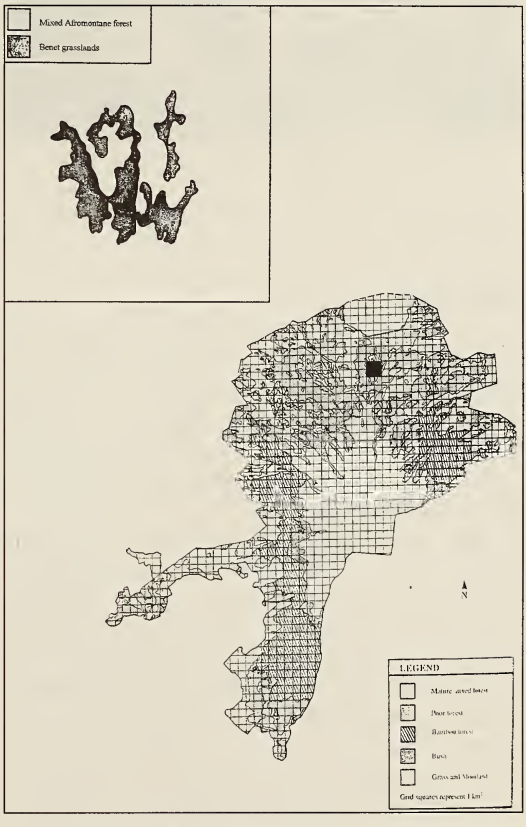

Fig 2. Map of Mt. Elgon with position of study area (inset) from Howard[4] and van Heist[15].

African forest habitats have been subdivided into montane and lowland types[8]. However, Diamond & Hamilton[2] suggest a broad overlap exists between the two forest habitat types separated by an altitudinal gradient. The only montane forest in eastern Uganda exists on Mt. Elgon[6] and, perhaps in consequence, some west and south African birds reach their eastern and northern limits on the mountain[3]. The area's avifauna is well known, although much previous research was based in Kenya[3] and many bird species await confirmation in Uganda, while some are unrecorded in Mt. Elgon National Park.

Avifaunal communities often provide a strong indication of environmental change. Many species are indicative of their habitat and much information can be derived from avifaunal community composition. This paper is a brief account of the

Lowland forest on Mt. Elgon, Uganda (Stephen J. Kings)

birds surveyed in forest habitats in Mt. Elgon National Park.

Study Area

From Kapchorwa (outside the park), the expedition established camp in the Benet (the local tribe) grassland at Piswa (c2,800 m) on the boundary between montane grassland and forest. The upper montane forest avifauna (2,850 m) was surveyed at two study sites, c1ha in size and c3.2 km from Piswa, designated 'disturbed' and 'undisturbed' forest.

The disturbed forest had been intensively grazed until 1983 and only lightly grazed since. At this low-gradient site, there was a closed canopy, dominated by *Afrocrania volkensii*, a tree species restricted to the Afromontane region, and fruiting at the time of this study. The understorey vegetation was 1–2 m in height, dominated by the shrub *Mimulopsis alpina* and the ground layer was dominated by *Pilea tetraphylla*.

The second site was steep-gradient undisturbed forest, characterised by sparse tree cover, a dense 2–3 m shrub layer, dominated by *Mimulopsis alpina* and the bamboo *Arundinaria alpina*, and a sparse ground layer. A forest stream flowed through it.

Methodology

A combination of mist-netting and timed species-count techniques were used to sample the avifaunal composition of the two study areas. The two methods were performed separately on alternate days.

Mist-netting

A total of eight mist-nets were erected at each site. All were opened at c08.00 hr and closed at c18.00 hr. The length of time open varied, depending on rainfall. When open they were checked every 30–45 mins. To prevent a decline in catch rate, nets were moved to new locations, within the study area, every 2–3 days. Each net was four m in height and therefore only sampled understorey birds. Birds caught were identified, weighed, measured and photographed before release.

Timed species-counts

Mist-netting sampled only birds in the ground and shrub strata. Therefore, timed species-counts were used to sample the wider forest bird community. To reduce over-representation of conspicuous species, a list of birds within 20 m of the observer and a full list were made[11]. This technique was used at the same study sites in all weather conditions. A one-hour count was made at both sites four times a day. Both auditory and visual identifications were made.

The bird inventory was also compiled from observations made during the expedition's trek through lowland forest and at Piswa (see Appendix).

Results

Mist-netting

Of the 13 species captured in mist-nets, two were caught only in disturbed forest: White-throated Greenbul *Phyllastrephus albigularis* and Uganda Woodland-Warbler *Phylloscopus budongoensis*, both of which are dense forest specialists[1,14]. Seven species were caught in both disturbed and undisturbed forest. The most frequently caught were the endemic race of White-starred Robin *Pogonocichla stellata elgonensis* (distinguished by the absence of yellow margins to the outer tail feathers[7]), Olive Thrush *Turdus olivaceus*, Yellow White-eye *Zosterops senegalensis senegalensis* and Streaky Seedeater *Serinus striolatus*. Mountain Yellow Warbler *Chloropeta similis*, White-eyed Slaty Flycatcher *Melaenornis fischeri* and Abyssinian Crimsonwing *Cryptospiza salvadorii* were less frequently caught at both sites.

Birds indicative of the undisturbed forest ground strata were Abyssinian Ground-Thrush *Zoothera piaggiae*, Brown Woodland-Warbler *Phylloscopus umbrovirens*, Mountain Illadopsis *Illadopsis pyrrhoptera* (another forest specialist) and Oriole-Finch *Linurgus olivaceus*. All these species are typical representatives of the undergrowth avifauna.

White-starred Robin *Pogonocichla stellata* (Stephen J. Kings)

Timed species-counts

Timed species-counts produced a greater variety of birds, as they sampled the entire forest bird community. Three additional species were recorded in disturbed forest: Rufous-chested Sparrowhawk *Accipiter rufiventris*, Mountain Buzzard *Buteo oreophilus* and Olive Pigeon *Columba arquatrix*. A further eight species were observed in the undisturbed forest: Lanner Falcon *Falco biarmicus*, Scaly Francolin *Francolinus squamatus*, Hartlaub's Turaco *Tauraco hartlaubi*, Forest Wood-hoopoe *Phoeniculus castaneiceps*, White-headed Wood-hoopoe *Phoeniculus bollei*, Yellow-billed Barbet *Trachyphonus purpuratus*, Brown-backed Scrub Robin *Cercotrichas hartlaubi* and White-browed Crombec *Sylvietta leucophrys*, another inhabitant of the ground strata.

Benet Grassland, Piswa

The most striking and spectacular birds were Black-and-white Casqued Hornbills *Ceratogymna subcylindricus*, which were displaying, Long-crested Eagle *Lophaetus occipitalis* and Verreaux's Eagle *Aquila verreauxii*. Other species frequently recorded were: Speckled Mousebird *Colius striatus*, Common Stonechat *Saxicola torquatus axillaris* (a partial migrant which breeds at higher altitudes and disperses to lower areas in the non-breeding season[9]), Cape Robin-chat *Cossypha caffra*, Hunter's Cisticola *Cisticola hunteri*, Northern Double-collared Sunbird *Nectarinia preussi*, Golden-winged Sunbird *Nectarinia reichenowi*, Olive Sunbird *Nectarinia olivacea*, a pair of scavenging White-necked Ravens *Corvus albicollis* and Black-crowned Waxbill *Estrilda nonnula*.

Most interesting was the opportunity to study the two races of Baglafecht Weaver *Ploceus baglafecht reichenowi* and *P. b. stuhlmanni* side-by-side! Individuals of these taxa were observed in the heathland and grassland at Piswa and were distinctive in the field; it was possible to compare adults of both sexes. Adult males of the race *reichenowi* have a small black eye patch, extending down the cheek and a black nape, neck and mantle. The rest of the face is ochre yellow. Females have a black face, crown, nape, neck and mantle. There was no yellow above the moustachial except on the chin. Females are very similar to the males and females of the race *stuhlmanni*, although the latter have a grey-brown nape, neck and mantle.

Kapchorwa–Piswa

The lower forest provided sightings of Eastern Bronze-naped Pigeon *Columba delegorguei*, White-crested Turaco *Tauraco leucolophus*, Black Saw-wing *Psalidoprocne pristoptera*, Common Bulbul *Pycnonotus barbatus*, Brown-chested Alethe *Alethe poliocephala*, White-bellied Tit *Parus albiventris*, Tacazze Sunbird *Nectarinia tacazze*, Pied Crow *Corvus albus* and Black-headed Waxbill *Estrilda atricapilla*.

Discussion

The most remarkable finding was the observation of two races of Baglafecht Weaver in the same area of scrub. Several races of Baglafecht Weaver are recognised[5]. Race *reichenowi* is found in Kenya and northern Tanzania, whereas *stuhlmanni* ranges from east Zaïre and western Tanzania to southern Uganda. It is possible that the distribution of two intermediate forms of the Baglafecht Weaver overlap at Mt. Elgon. If this is the case, it may provide evidence that the mountain lies at the distributional limits of two distinctive subspecies.

Although Uganda Woodland-Warbler has previously been recorded on Mt. Elgon[15], it is regarded as endemic to the Central African highlands[12].

Lanner Falcon and Long-crested Eagle were the only species recorded during this study previously considered to require confirmation[15]. Another finding was the presence of two specialist forest species in disturbed forest only and many generalist forest species found in both undisturbed and disturbed forest habitats. One may predict that the two specialist species would have a smaller distribution than the generalist species and would conform to the hypothesis that generalist species are more widely distributed than specialist species[10].

This survey elucidated only presence or absence of species in the study areas. Very little data exist on montane avifaunal communities and their ecology, with the exception of altitudinal distribution[14]. One can only speculate that differences in the forest avifaunal composition may be due to human activities in the area. No conclusive evidence for potential differences in the avifauna of undisturbed and disturbed forest habitats could be gleaned from our study.

It is necessary to develop an understanding of any negative effects arising from local human activities on Mt. Elgon's environment and to develop measures to reduce them. There is an urgent need to collect more information on forest communities and their ecology and it is hoped that further research can aid their conservation.

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This paper is dedicated to the memory of Sabila George Paul, who died during a field expedition at the end of 1996.

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Appendix: List of birds recorded on Mt. Elgon by the expedition

Rufous-chested Sparrowhawk *Accipiter rufiventris*
Verreaux's Eagle *Aquila verreauxii*
Mountain Buzzard *Buteo oreophilus*
Long-crested Eagle *Lophaetus occipitalis*
Lanner Falcon *Falco biarmicus*
African Hobby *Falco cuvieri*
Scaly Francolin *Francolinus squamatus*
Olive Pigeon *Columba arquatrix*
Eastern Bronze-naped Pigeon *Columba delegorguei*
Hartlaub's Turaco *Tauraco hartlaubi*
White-crested Turaco *Tauraco leucolophus*
Speckled Mousebird *Colius striatus*
White-headed Wood hoopoe *Phoeniculus bollei*
Forest Wood hoopoe *Phoeniculus castaneiceps*
Black-and-white Casqued Hornbill *Ceratogymna subcylindricus*
Yellow-billed Barbet *Trachyphonus purpuratus*
Black Saw-wing *Psalidoprocne albiceps*
White-throated Greenbul *Phyllastrephus albigularis*
Common Bulbul *Pycnonotus barbatus*
Brown-chested Alethe *Alethe poliocephala*
Brown-backed Scrub Robin *Cercotrichas hartlaubi*
Cape Robin-Chat *Cossypha caffra*
White-starred Robin *Pogonocichla stellata*
Common Stonechat *Saxicola torquata*
Northern Olive Thrush *Turdus abyssinicus*
Abyssinian Ground Thrush *Zoothera piaggiae*
Mountain Yellow Warbler *Chloropeta similis*
Hunter's Cisticola *Cisticola hunteri*
Uganda Woodland Warbler *Phylloscopus budongoensis*
Brown Woodland Warbler *Phylloscopus umbrovirens*
White-browed Crombec *Sylvietta leucophrys*
White-eyed Slaty Flycatcher *Melaenornis fischeri*
Mountain Illadopsis *Illadopsis pyrrhopterum*
White-bellied Tit *Parus albiventris*
Yellow White-eye *Zosterops senegalensis*
Olive Sunbird *Nectarinia olivacea*
Northern Double-collared Sunbird *Nectarinia preussi*
Golden-winged Sunbird *Nectarinia reichenowi*
Tacazze Sunbird *Nectarinia tacazze*
Common Fiscal Shrike *Lanius collaris*
White-necked Raven *Corvus albicollis*
Pied Crow *Corvus albus*
Grey-headed Sparrow *Passer griseus*
Baglafecht Weaver *Ploceus baglafecht*
Pin-tailed Whydah *Vidua macroura*
Abyssinian Crimsonwing *Cryptospiza salvadorii*
Black-headed Waxbill *Estrilda atricapilla*
Black-crowned Waxbill *Estrilda nonnula*
Oriole-Finch *Linurgus olivaceus*
Streaky Seedeater *Serinus striolatus*

The Queen Elizabeth National Park Bird Observatory: a new avian research project in Uganda

Tim Lewin

East Africa is home to c1,350 bird species, including approximately 200 migratory species from the Palearctic. Over the last decade the diversity of this avifauna has attracted increasing levels of interest within both professional and amateur circles. Uganda had had comparative political stability over the last decade and progressive policy-making regarding the understanding and conservation of biodiversity, but lack of skilled personnel and funding have tended to hinder the translation of this interest into constructive field research. Steamlining in governmental departments and flagship projects such as the Important Bird Area (IBA) programme (conducted by BirdLife International in partnership with the East Africa Natural History Society-Uganda) are doing much to redress this research deficit; however, the quality of such programmes may be considerably enhanced through long-term systematic field-studies[9].

The Queen Elizabeth National Park Bird Observatory (QENPBO) is an ambitious new project designed to obtain and supply such information to larger national programmes for management and conservation of the environment. It will also supply a training programme for Ugandan nationals in all areas of project operations described below.

The study location

Queen Elizabeth National Park straddles the equator in its northern part, extending inland from the north-east shore of Lake Edward in south-west Uganda. The park is typical of much of Uganda, in that it contains a variety of habitat types reflecting the convergence of ecological communities that are more uniform in other parts of Africa[3,7] (most notably the major communities of the West African Forest and East African Savanna). The park's avian community corresponds to this integration of habitat types. Encompassing diverse reedbeds, heavily grazed *Euphorbia–Capparis* thicket, grasslands, *Acacia* Woodland, Moist Tropical Forest, and saline crater lakes; QENP has the greatest bird species list of any national park in the country: 550 in total[8], including 11 on the IUCN Red List of endangered species[1]; it also has the largest number of mammals[8]. Already a Biosphere Reserve, and likely to meet BirdLife International's IBA selection criteria (L. Fishpool pers comm), the park is of extreme interest to conservation and science.

Project overview

The major focus of the observatory will be to conduct a continuous systematic baseline survey of the distributions and densities of QENP's Afrotropical and Palearctic bird species over a minimum of three years. Survey techniques will include trapping, timed species counts, transects, and flushing species in quadrats.

Preliminary research is already being conducted to establish which survey techniques are most effective for any given habitat type (at least two will be employed for all habitats throughout the survey). The findings for any given area will be overlaid on an existing digital map of vegetation structure[6], thus yielding a habitat-specific profile of the fluctuations through time in those populations monitored.

All data collected will be contained in a relational database that will enable rapid selective downloading of information for analysis, translation to Geographic Information System for digital mapping, and submission to relevant institutions.

Due to the wide range of data that may be obtained from the 'bird in the hand', trapping will not be employed solely as a census technique. All birds trapped will be marked with rings, and a wide range of morphological characteristics recorded. Additional trapping will be performed to boost sample sizes. Analysis of the resultant dataset will provide valuable information in a variety of areas including: the spatio-temporal dynamics of local, dispersive, and migratory movements, migratory bio-enegetics, life expectancy, site fidelity, age/sex class structure etc. Blood samples will also be taken from limited numbers of certain species for genetic analysis at Copenhagen University (CU). Needless to say, extreme care will be taken to avoid stressing individuals unduly.

The results of the project will be relevant to a wide range of organisations. Within QENP, location-specific population monitoring is of obvious value to park management; reports concerning the effects of agricultural encroachment into the park, develop-

ment, and tourism will be submitted to the Uganda Institute of Ecology (the research arm of the Uganda Wildlife Authority). Evaluation of the diversity and movements of bird species in the park is significant to bird conservation at national and international levels, and also to overall biodiversity conservation (since overlaying species compositions from different taxa enables the identification of 'hotspots')[4,5].

To ensure that our findings in these areas are of maximum value, the QENPBO has become affiliated with the East Africa Natural History Society-Uganda (EANHS-U). Partnered with BirdLife International and the Royal Society for the Protection of Birds (RSPB), the EANHS-U is involved in coordinating national bird surveys, and has an additional base at Makerere University (MU), Kampala, where QENPBO will conduct periodic lectures. Further, the MU Institute of Environment and Natural Resources manages the Ugandan National Biodiversity Data Bank (to which we shall donate all data on bird species distributions), and has a link-programme with the study of bird evolution being undertaken at CU (mentioned above). Ringing schedules will be submitted to the Ringing Scheme of Eastern Africa, which now covers not only Kenya, Tanzania and Uganda, but also Ethiopia, Somalia and Sudan.

Following a two week intensive feasibility study performed in QENP in April 1996, during which just under 1,000 birds were ringed (12 Palearctic and 58 Afrotropical species), full-time research has now been under way for three months. The preliminary phase is principally based around trapping, as this allows field personnel and trainees to hone identification skills. A further 2,000 birds have now been trapped (adding another 31 species to the database, of which five are Palearctic). Forty two individuals from 17 Afrotropical species ringed in 1996 have been retrapped, and seven Palearctic individuals (two Great Reed Warblers *Acrocephalus arundinaceus*, one Willow Warbler *Phylloscopus trochilus*, two Wood Sandpipers *Tringa glareola*, one Common Sandpiper *Actitis hypoleucos* and one Little Stint *Calidris minuta*). The sightings list is already in excess of 280 species, even though many of the park's habitats have not yet been visited.

The observatory has already added several new species to the park list including: Blackcap *Sylvia atricapilla*, Scaly-throated Honeyguide *Indicator variegatus*, Cliff Chat *Thamnolaea cinnamomeiventris* and Chin-spot Batis *Batis molitor*; but probably the most interesting findings to date are two separate sightings of Bar-tailed Godwit *Limosa lapponica*, the first Ugandan records, although it migrates along the East African coast through Kenya and Tanzania to southern overwintering grounds[2]. Confirmation of acceptance of these records is still awaited.

As at Ngulia in Tsavo West National Park, Kenya (although on a greatly reduced scale!), the QENPBO aims to conduct intensive trapping of Palearctic species during peak migration periods. In order to increase research capacity in this area, without disrupting the survey timetable, the observatory is looking for skilled volunteers. We are keen to hear from anyone interested in becoming involved in this capacity, and also from anyone who wishes to learn more about the project with a view to collaborative research (or sponsorship!).

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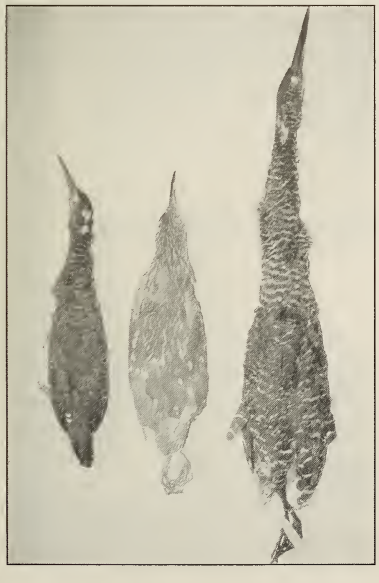
Discoveries

First record and nesting of White-crested Tiger-Heron *Tigriornis leucolophus* in The Gambia

C.A.E. Kirtland and E.P. Rogers

On 16 November 1996, members of an Ornitholidays tour to The Gambia observed two adult and a juvenile White-crested Tiger-Heron *Tirgriornis leucolophus* in the Lower River Division. The birds were in narrow, mangrove-bordered creeks leading into the Gambia river. The first was seen standing amongst the mangrove roots on mud exposed by the receding tide but soon walked off and was lost to sight in the dense vegetation. In another creek at least 400 m distant, we found a second bird, which to our amazement was on a nest. It was seen only briefly before creeping away between the branches. The nest was a shallow platform of loosely woven twigs situated c2 m above the high-water level on a branch of Red Mangrove *Rhizophora* sp overhanging the creek. It was estimated to be c40 cm in diameter and ten cm deep and contained a single juvenile covered in white down, which was considered to be approximately one week old. When left exposed on the nest, the juvenile adopted a typical 'bittern' posture with extended neck and bill pointing skyward. The nest was photographed and we then withdrew to allow the adult to return.

Juvenile White-crested Tiger-Heron *Tigriornis leucolophus* on nest, The Gambia, November 1996 (C.A.E. Kirtland)



Two White-crested Tiger-Heron *Tigriornis leucolophus* and a juvenile Black-crowned Night Heron *Nycticorax nycticorax* (middle) specimen, British Museum (Natural History section) (C.A.E. Kirtland)

On 30 November, EPR and members of another tour also saw two adults in the same location. The first bird was seen on the edge of a muddy creek, where it had just caught an eel-like fish. It carefully washed the fish in the muddy water before arranging it securely in its bill. It then retired slowly a short distance from the water's edge and swallowed the fish whole before slinking off into the security of the dense vegetation. The second bird was again at the nest, which still contained the juvenile, a little larger but still covered in down. The adult was brooding with both wings outstretched, completely covering its offspring. Despite the engine of the boat being cut, the adult was very wary and immediately adopted the upright posture. After a short while it left the nest, creeping low along the stout branch. The juvenile, now exposed, sank into the shallow nest cup with only the white down of the back visible. The observers then left the site in order to disturb the birds as little as possible. There was no evidence to suggest that the two adults were a pair, as on both occasions they were a considerable distance apart.

At the time of the observation, the only description and illustration available to us depicted a bird with no buff barring on the upperparts and quoted a length of 76 cm[5]. The birds observed were conspicuously barred buff and black and also appeared shorter than 76 cm, although they were usually seen with necks retracted. An examination of specimens in the British Museum (Natural History), Tring showed considerable variation in the width of buff barring, from 3–10 mm. The length from bill-tip to tail-tip also varied markedly, more so than could be expected from differences in skin preparation. The largest, a male, was 81 cm; the smallest, a female, was just 56 cm. The white crest was not noted in the field but in the specimens examined, the white feathers were almost entirely overlaid by darker ones and not at all prominent. On neither occasion were any vocalisations heard; both observations occurred between 08.15 hr and 11.30 hr.

Rather surprisingly, only one other nest of this species has been described. Brosset[1] was shown a nest in Gabon on 22 January 1971, which was also situated on branches overhanging a creek, at a height of six m. This nest contained one egg and the adult proved difficult to see, moving away at the approach of observers, who had to conceal themselves for long periods in order to identify the bird.

Although little is currently known about the species' breeding biology, it is said to coincide with the rainy season and to be from May–July in the west of its range and November–January in the east[2,3]. This, however, conflicts with a laying date of September–October quoted for Sierra Leone[2,3] and our Gambian observations. The distribution of this species is in equatorial rain forest between 8°N–5°S and 13°W–25°E, from Sierra Leone east to Cameroon, the Central African Republic, Gabon and the former Zaïre[2,3]. The nearest part of its known range to The Gambia is Sierra Leone, c640 km to the south-west. This is not only the first breeding record in The Gambia but also the first documented record, although a previously rejected claim from 1982[4] should perhaps now be re-examined. The records have been submitted to The Gambia Ornithological Society Records Committee. Such an unobtrusive and retiring species, notoriously difficult to observe in its preferred habitat of dense riverine forest[2,3], could easily be overlooked and it is possible that small populations exist elsewhere outside its known range.

Acknowledgements

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Golden Eagles *Aquila chrysaetos* in Ethiopia

Peter Clement

The recent reference to Golden Eagle *Aquila chrysaetos* in Ethiopia (*Bull. ABC* 2: 61–64) is overdue acknowledgement of the species' presence in north-east Africa, for there have been references to sightings of the species in Ethiopia since the early years of the present century. The earliest published reference is Reichenow[5], who considered that the species might be a winter visitor but gave no details or locations. Zedlitz[6] reported a sighting at Ela Bered (now Eritrea) in February 1908. The next records were 80 years later, in 1988, when it was included in a checklist of Ethiopian birds by F. Petretti[1]. In view of these records lacking substantative details, and that those in the early years of the 20th century may be based on hearsay, they are probably now best regarded as unproven.

Records in the late 1980s

The first of a series of recent sightings from the Bale Mountains, was of two adults and a subadult on 12–13 November 1988 (David Mills/Naturetrek). The following year there were two sightings – three individuals on several dates in November 1989 in the Bale Mountains National Park (David Mills/Naturetrek), and one

Golden Eagle *Aquila chrysaetos* being mobbed by Fan-tailed Raven *Corvus rhipidurus* (G. Neal)

near Debre Libanos (c180 km north of Addis Ababa) on 19 November 1989 (PC, Martin Davies/Cygnus). The following year, two birds were again seen in November, in the Bale Mountains National Park (Jonathan Eames/Naturetrek).

There were no further sightings owing to the civil war, which engulfed most of northern Ethiopia and the now independent Eritrea, until 1993, when ecotourism tentatively recommenced. However, two unpublished and undated records from 1992–93 by M. Clouet and C. Barrau refer to breeding in the Bale Mountains (but without further details these reports must be regarded as uncertain). In 1993 there were several sightings, again in November, in the Bale Mountains National Park (Naturetrek). In 1994, there were three separate records of birds in the Bale Mountains: two in October (S. Rooke, S. Bayu), three immatures on the Sanetti Plateau (also Bale Mountains) on 8 November (S. Vaughan), and up to three birds on 19 November (Cliff Waller/Naturetrek). There were further sightings in the Bale Mountains by both Naturetrek and Cygnus groups in 1995. In the latter case, birds were seen on two days; on 3 December, an adult or subadult perched on a boulder on the Sanetti Plateau (the most frequent area of sightings within the Bale Mountains National Park), and on 5 December, a subadult watched and photographed in the western pass through the Bale Mountains (outside the National Park). This is probably the only photograph of the species in Africa south of the Sahara.

Interestingly, the bird on 5 December was seen hunting over steep-sided hills and grassy valleys. On one occasion, as it swooped low over a hillside, it disturbed a feeding flock of c50 Wattled Ibis *Bostrychia carunculata* which took flight in panic, giving their hoarse croaking alarm. The scattering ibis flew down the valley in a loose and rapidly dispersing flock with the eagle above them. Swooping low, the eagle closed its wings and plummeted towards one of the ibis on the outer edge of the flock, which it hit, knocking it to the ground c10 m below. The eagle checked itself and landed close by the ibis, which was now struggling in the tall crop of ripening wheat in which it had crash-landed. It finally managed to right itself with the eagle appearing to be unaware of its close proximity, and took off seemingly unharmed, noisily cawing its alarm, in pursuit of the rest of the flock, with the eagle still on the ground. Shortly after, the eagle was seen overhead being pursued by a group of Fan-tailed Raven *Corvus rhipidurus*.

Identification

The photograph shows the typical shape and structure of Golden Eagle, a bird familiar to most observers in Europe and once its main features or characteristics – its jizz – are seen quite easy to identify. Its main features are the huge size, and in flight long wings and tail, the lower edge of the wings pinched-in at the base and a protruding head. The wingshape in flight is particularly distinctive; the primaries slightly narrower than the more bulging secondaries. The flight is also distinctive on long supple or elastic wings, with deep wingbeats and glides on very shallow or flat V, only the primary tips slightly upwardly tilted.

Identification from Imperial Eagle

Confusion species in north-east Africa are Imperial *Aquila heliaca*, Spotted *A. clanga*, Lesser Spotted *A. pomarina*, Steppe *A. nipalensis* and Tawny Eagles *A. rapax*. Imperial is almost as large and as broad of wing but adults are generally darker or black, whilst immatures are conversely paler, a creamy-buff on the body and wings except the black flight feathers and tail, with broad pale panels on the inner primaries. In flight, adults are much heavier-looking and show a long, parallel wingshape with long narrow tail held closed; immatures show subtle differences in flight and wingshape with a bulging edge to the secondaries and, when soaring, a spread tail. Flight silhouette is flat when soaring but often glides with a slightly raised arm and level primaries (hand).

Spotted and Lesser Spotted Eagles

Both Spotted and Lesser Spotted Eagles are smaller in build and body size than Golden, although the latter can appear smaller than in reality, especially lone birds without a size comparison. In flight, Spotted has shorter or more compact, but broader wings (often

appearing almost square-shaped), the tail is also much shorter and broader than Golden. Flight is on flat wings with primary tips raised or with the primaries drooping. Lesser Spotted is slightly smaller and lighter built than Spotted with longer, more uniform wings; the wingshape similar to but longer than Spotted, with downward slanting or arched hand; the tail is generally slightly longer than Spotted but shorter than Golden (which only in fresh plumage can be as long as Lesser Spotted). Both Spotted and Lesser Spotted are best identified by a combination of plumage and structural features. Immature Lesser Spotted shows pale or whitish bases and shafts to the inner primaries and uppertail coverts are pale or whitish. This plumage is similar to immature and subadult Golden but, as can be seen in the photograph, is often more prominent on Golden. Whilst the pale bases to the inner primaries on Golden decrease in size with age, the white base to the tail is often present in birds in their fifth or sixth calendar year.

Steppe and Tawny Eagles

Steppe and Tawny Eagles (both common in Ethiopia) have more slender wingshapes than Golden. Tawny is generally paler on the body and wing coverts, contrasting with the black wings and tail, with large pale panels on the inner primaries and a pale rump. Immature Steppe is distinguished by broad white bases on the underwing primary and greater coverts, which are completely lacking on Golden. Adult Steppe is uniform dark brown, though many show vestiges of immature plumage at the base of the inner primaries and underwing. Flight shape is very similar to Golden but the hand is generally less broad, presenting a more accentuated S-bend to the rear edge of the wing and the pinched-in effect of the rear edge of the secondaries, whilst a more graduated or less prominent gap between the body and the wings is present; the tail is slightly shorter on Steppe, but broader at the base and rarely gives the same impression of length or shape as Golden. The flight silhouette is usually flat and, whilst wings may be parallel, the hand is often bent back from the carpal.

Distribution in Africa and the Middle East

These records represent a considerable extension of the Golden Eagle's range in Africa, and are the most southerly in the world. The species is a scarce resident in mountains from Morocco to Tunisia, principally in the Atlas, and discontinuously through Mauretania and the Air and Ahaggar ranges of southern Algeria. *A. c. homeyeri*, which ranges north into Spain and east to Crete, Turkey, the Caucasus and south to Israel and north-west Saudi Arabia, is slightly smaller, darker and duller than nominate birds, and in north-east Africa are relatively little known. Étchécopar & Hüe[2] report that some birds cross the Sahara; if so, the birds in southern Algeria and Mauretania may only be winter visitors.

The closest area from which the Ethiopian population could have originated is western Saudi Arabia, where it occurs in a small area of the Hejaz mountains, east of Jeddah[1]. Throughout its Middle Eastern range, the species is a scarce and little-known resident; Jennings[3] reported that it was suspected of breeding in North Yemen.

Status, ecology and conservation in Ethiopia

With records from two areas in the central and southern highlands of Ethiopia, it is extremely likely that further fieldwork will reveal more Golden Eagles in other areas. There appears to be an ample supply of prey at high altitude, notably an abundance of rodents *Stenocephalemys albocaudata*, *S. griseicauda*, *Arvicanthis blicki* and *Otomys typus*, with small numbers of Rock Hyrax *Procavia capensis* and Klipspringer *Oreotragus oreotragus*. There is also a variety of suitable bird species prey, most notably Clapperton's *Francolinus clappertoni*, Chestnut-naped *F. castaneicollis* and Montane Francolins *F. psilolaemus*.

The area of the Bale Mountains, which appears to be the eagles' stronghold, is a National Park, but the effects of the former civil war have rendered this status virtually redundant. In recent years fences have been broken, permitting goats and cattle to graze freely over large areas of upland grassland. A small percentage of these animals may also be utilised as prey species by large birds of prey. Species such as the rare Mountain Nyala *Tragelaphus buxtoni* and Bohor Reedbuck *Redunca redunca* are greatly reduced in number and distribution than they were formerly. The additional effects of a lack of immunity to diseases, spread from domestic animals, is unknown.

With the cessation of the civil war in Ethiopia and the rebirth of tourism in parts of the central and southern highlands, it is hoped that further records will add to our knowledge of the Golden Eagle's ecology in Ethiopia, and that detailed work will reveal its true distribution.

Acknowledgements

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New observations of a Zaïrean endemic: Prigogine's Greenbul *Chlorocichla prigoginei*

Tommy Pedersen

Between 1993–1994, Marc Languy, Laurent Esselen and the author were resident in Goma, eastern Zaïre (now Democratic Republic of Congo). Situated in the centre of the Albertine Rift, this base provided an excellent opportunity to visit many sites within the Rift. During 6–8 February 1994, we visited the Lendu Plateau, an isolated highland region, west of Lake Albert (formerly Lake Mobutu) with the specific objective of observing two poorly known species, Chapin's (White-browed) Crombec *Sylvietta (leucophrys) chapini* and Prigogine's Greenbul *Chlorocichla prigoginei*, although the former may prove to be a form of White-browed Crombec *Sylvietta leucophrys*[2]; further field investigation is needed before accepting this form as a valid species. Chapin's Crombec is known only from the Lendu Plateau, whereas Prigogine's Greenbul is principally known from the Beni–Butembo area, north-west of Lake Edward (formerly Lake Idi Amin), where a total of 14 specimens were collected between 1948 and

Plate 1. Prigogine's Greenbul *Chlorocichla prigoginei* site in the Djugu Forest, Lendu Plateau, Zaïre, February 1994 (Laurent Esselen).

Plate 2. Dusky Crimsonwing *Cryptospiza jacksoni*, Djugu Forest, Lendu Plateau, Zaïre, February 1994 (Laurent Esselen).

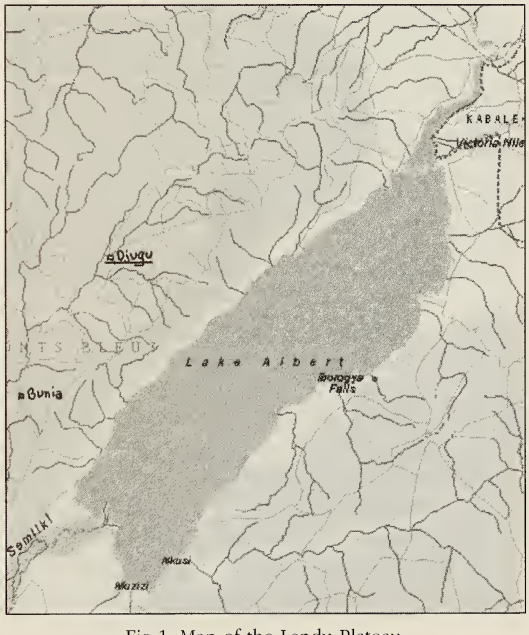

Fig 1. Map of the Lendu Plateau.

1981, and once from the Lendu Plateau, where a specimen was taken in 1926[1].

Prigogine's Greenbul is known only from specimen records. Therefore, any sightings would add enormously to our knowledge of this species. The only other ornithologist to have visited the area is J M Vrijdagh, in 1941–1942[3]. He recorded the superficially similar Joyful Greenbul *Chlorocichla laetissima* only twice, and as Prigogine's Greenbul was undescribed at this time, it is impossible to be certain which species he actually observed.

The Lendu Plateau is bordered by lowland savannah to the north, west and south, and by Lake Albert to the east. On this dry, largely deforested plateau, there are a few isolated forest patches of slightly degraded montane forest under serious threat from encroachment by the surrounding villages. There is a rich diversity of birds in these forest patches. When overflying the Lendu Plateau in 1993, we could see two main forest areas: Djugu Forest, close to Nioka village, and the other close to the plateau edge, east of Nioka, and difficult to access by car. Their size was difficult to estimate, but each could be c10 soccer-fields in total. Djugu Forest is situated at c1,700 m. It appears likely that these forests were once considerably larger than they are today. Logging by local villagers was evident everywhere.

We spent two days on the Lendu Plateau and searched Djugu Forest, near Nioka on 7 February from 12.00–16.00 hr and on 8 February from 09.00–14.00 hr. The first Prigogine's Greenbul, discovered by ML within an hour of entering Djugu Forest, was alone in the understorey of relatively damp forest and no calls were heard from this bird or those seen subsequently. The bird was observed for one minute before flying into dense forest. Another was subsequently found nearby, accompanying a group of 12 very active and noisy Joyful Greenbuls. It stayed with the flock until they disappeared from sight, two minutes later. The flock was observed along a driveable forest path, 1–3 m above the ground and were highly visible. The Joyful Greenbuls were very active, calling frequently and often flicking their wings. This was never observed from the Prigogine's Greenbul. It often perched on the large leaves of an unidentified bush. The following day another Prigogine's Greenbul was found near a small stream, following some very vocal Joyful Greenbuls. Its behaviour was similar to those seen the previous day.

Prigogine's Greenbul is distinguished from the Joyful Greenbul by the clear grey area between the bill and eye, and a distinct pale grey eye-ring. These characters are easy to see in the field through binoculars.

We searched for Chapin's Crombec for two days in Djugu forest and around Nioka, without success. Vrijdagh[3] observed several individuals around the Nioka hotel (now abandoned) in July–November 1941–1942, and once at Djugu in November 1941. None of the threatened Chapin's Flycatcher *Muscicapa* (*Alseonax*) *lendu* were seen during our visit, which is known from only two sites in Zaïre, the other being the Itombwe Mountains[1].

The Lendu Plateau is very rich in birds, and we saw many other interesting species. Black Bee-eater *Merops gularis* was common, Grauer's *Coracina graueri* and Purple-throated Cuckoo-shrikes *Campephaga quiscalina* were seen several times, Mangbettu Sawwing *Psalidoprocne* (*pristoptera*) *mangbettorum* was common and the endemic Bedford's Paradise-Flycatcher *Terpsiphone bedfordi* was seen once. A fuller species list is available on request from the author. Although we only spent a short time in the area, useful data were collected and future visits are urgently required.

Further information on the birds of Zaïre is available on the World Wide Web at http://home.sn.no/~stingray/ or from the author.

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Birding in the Usambara Mountains, Tanzania

Eddie Williams

Containing ten species of birds currently classified as threatened, one critically so, and a further three as near-threatened[1], the Usambara mountains of Tanzania are one of the most important African mainland sites for the conservation of birds. In spite of this they remain firmly off the beaten birding track, possibly due to the belief, true in many cases, that Tanzanian montane areas are difficult to access and devoid of amenities. I visited the Usambaras in January 1996 and, using public transport throughout my trip, found that many of the best sites are easily accessible and in most cases less than eight hours drive from the capital, Dar-es-Salaam. The Usambaras are also easy to reach from Kenya and a visit could easily be incorporated into a Kenya trip. The fact that the area can easily be visited using public transport, both from within Tanzania as well as from Kenya, is an added bonus to those on a tight budget, or those without their own transport.

This article is therefore directed at those visiting birders who plan to see as many of the speciality birds of the area as they can in the shortest possible time. To this end, I have only concentrated on a handful of sites which combine easy access with the potential to see some of the rarest and most enigmatic birds in Africa.

Large areas of the Usambaras remain little known, and there is still a great deal of scope for those with the time and inclination to explore them, as recent notable discoveries in the East Usambaras testify. The main problem is that the natural forest habitat of both the East and West Usambara ranges continues to diminish.

The Usambaras are divided into the East and West ranges by the Lwengera valley. Both possess their own specialities and therefore both should be visited. As regards when to go, it would probably be prudent to avoid the long rainy season, which in Tanzania runs from March to May, as road conditions deteriorate. The short rains in northern Tanzania are in November and December but rain can fall at any time in the mountains and visitors should pack waterproofs just in case.

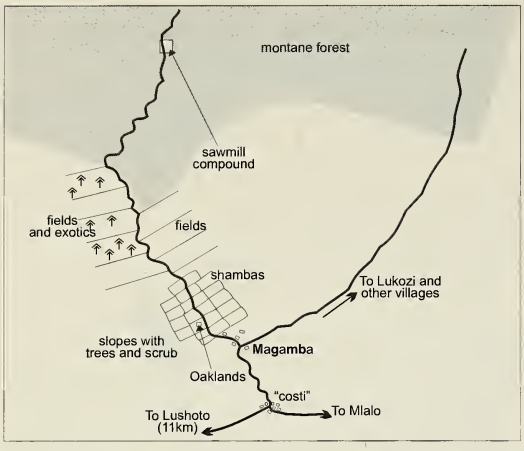
The West Usambaras

This range has now been extensively deforested in favour of cultivation and exotic plantations which are largely devoid of birds. The few remaining areas of natural forest are concentrated at higher elevations with only a couple of isolated pockets elsewhere. Human population pressure here is severe and what is left of the natural forest is continually being whittled away by those desperate for land to cultivate.

The main town in the Wes Usambaras is Lushoto, which is easily reached by road. From Dar-es-Salaam, take the main Moshi and Arusha road via Korogwe to the small town of Mombo, situated at the base of the mountains. From here a paved road leads uphill to Lushoto. Roads continuing into the mountains from Lushoto are all dirt but nevertheless driveable. Lushoto can be reached by bus from Dar-es-Salaam, Tanga and Kenya. From Dar-es-Salaam several daily buses leave from Mnaji Mmoja park starting at c0800 hr. The journey to Lushoto takes eight hours, from Tanga the service is even more regular and takes four hours. From Nairobi there is a regular bus service to Moshi and Arusha via Namanga on the border. From either town there are regular buses to Dar-es-Salaam which can be utilised to get to Mombo which is en route. There are many buses to Lushoto and beyond from Mombo. In Lushoto accommodation is available in the rather overpriced Lawns Hotel. There are a number of other guesthouses in Lushoto, such as the Kimonyu near the market, which are adequate and cheap. Birdlife is limited around Lushoto, although **Red-chested Cuckoo** *Cuculus solitarius*, **Klaas's Cuckoo** *Chrysococcyx klaas*, **Emerald Cuckoo** *C. cupreus* and **Eastern Double-collared Sunbird** *Nectarinia mediocris* are often evident around the larger gardens. It is also worth checking some of the rocky hillsides between Mombo and Lushoto for the very local **Striped Pipit** *Anthus lineiventris*.

Magamba and the Sawmill track

This is the most accessible major site in the West Usambaras. From Lushoto take the dirt road leading uphill to Mlalo for c10 km to a T-junction at a group of stores and houses locally known as Costi. Turn left here, following a sign to Oaklands and continue for c1.5 km to another junction at Magamba. Here turn left, again following the sign for Oaklands onto the dirt road to the sawmill. There is a bus service linking many of the West Usambara villages with Lushoto and buses leave the latter for Magamba and beyond in the afternoons. It is easier to just start walking from Lushoto until someone stops and offers a lift, usually in an unofficial bush taxi. Once on the Sawmill track, the



Map of Magamba area and the Sawmill track

scrub-covered and partially forested slopes left of the track and beyond Oaklands hold **Fülleborn's Black Boubou** *Laniarius fulleborni*, **Black-fronted Bush-Shrike** *Malaconotus nigrifrons*, **Spot-throat** *Modulatrix stictigula* and **White-starred Robin** *Pogonocichla stellata*. **African Wood Owl** *Strix woodfordii* can be found at night around Magamba. From the village, the Sawmill track winds uphill, firstly through cultivation and plantations before entering an extensive area of montane forest leading to the sawmill at c2,000 m. Fortunately, the sawmill appears to be only processing exotic trees. It is c7 km from Magamba to the sawmill and this is driveable in a saloon car. It is worth spending as much time as possible birding in the forest leading to the sawmill. Several major specialties occur here, including the rare **Usambara Weaver** *Ploceus olivaceiceps nicolli*, **Usambara Akalat** *Sheppardia montana* and **Red-capped Forest Warbler** *Orthotomus metopias*. The **weaver** can appear anywhere within the natural forest, preferring the low canopy and mid-level. As in other parts of its restricted range, it is present only in very small numbers and may require a long search. The **akalat** can also be difficult. It is most often seen in the forest immediately below the sawmill at c1,950 m. **Red-capped Forest-Warbler** is common, usually in thick roadside vegetation. Both **Evergreen Forest-Warbler** *Bradypterus mariae* and **Cinnamon Bracken Warbler** *B. cinnaomeus* also occur in such habitat and can be frustratingly difficult to see. Another skulker here is **Spot-throat**, which creeps mouse-like along the forest floor. A host of other interesting species can be found here: **Mountain Buzzard** *Buteo oreophilus*, **African Goshawk** *Accipter tachiro*, **Barred Long-tailed Cuckoo** *Cercococcyx montanus*, **Lemon Dove** *Columba larvata*, **Eastern Bronze-naped Pigeon** *C. delagorguei*, **Cinnamon-chested Bee-eater** *Merops oreobates*, **Silvery-cheeked Hornbill** *Ceratogymna brevis* and **Hartlaub's Turaco** *Tauraco hartlaubi*. Mixed-species flocks are worth searching for and can include: **Olive Woodpecker** *Dendropicos griseocephalus*, **'Mombasa' Woodpecker** *Campethera abingoni mombassica*, **Grey Cuckoo-Skrike** *Coracina caesia*, **Bar-throated Apalis** *Apalis thoracica*, **Yellow-throated Woodland Warbler** *Phylloscopus ruficapilla*, **White-tailed Crested Flycatcher** *Elminia albonotatus*, **Olive Sunbird** *Nectarinia olivacea* and **Forest Batis** *Batis mixta*. A plethora of **greenbuls** is usually in attendance within mixed-species flocks and are fortunately all relatively distinctive. The black-browed Usambara subspecies of **Eastern Mountain Greenbul** *Andropadus nigriceps* should be seen, together with **Stripe-cheeked** *A. milanjensis*, **Yellow-streaked** *Phyllastrephus flavostriatus*, **Shelley's** *A. masukuensis* and **Tiny Greenbuls** *P. debilis*, the latter of the montane race *albigula*. **African Hill Babbler** *Pseudocalcippe abyssinica* also occur in the forest understorey. Both **Waller's Starling** *Onychognathus walleri* and **Kenrick's Starling** *Poeoptera kenricki* occur alongside each other and **Sharpe's Starling** *Cinnyricinclus sharpii* can usually be found in trees bordering the sawmill compound. There are a few trails which lead into the forest interior, these are well worth exploring for **Spot-throat** and **Usambara Akalat**. I would recommend at least three days to adequately cover this site.

Mazumbai Forest Reserve

For those with more time to spare, I would also recommend a visit to Mazumbai. This is a magnificent area of undisturbed and pristine montane forest with an altitudinal range of 1,300 m to 1,900 m. There is also excellent accommodation available in a beautiful mock Swiss chalet and camping is permitted in the grounds, which are very near the forest. To stay in the guesthouse write in advance to: Mr Modest Mrecha, Mazumbai F.R., P O Box 152, Soni, Tanzania. You must bring your own food but no advance booking is required to camp. Modest runs the guesthouse and guards the forest on behalf of the Sokoine University of Agriculture. A number of interesting birds have been recorded at Mazumbai, most notably **Usambara Eagle Owl** *Bubo (poensis) vosseleri*, **Usambara Weaver**, **Usambara Akalat** and **Banded Green Sunbird** *Anthreptes rubritorques*. All are rare here but there is a fine selection of other montane species.

Getting to Mazumbai is easy for those with their own transport. Drive the short distance from Lushoto

to the small town of Soni, which is on the Mombo road, and turn onto a broad dirt road, before turning right onto another dirt road leading to Bumbuli, 25 km away. Mazumbai is signposted from Bumbuli and is 15 km along a scenic mountain road. Buses are frequent between Lushoto and Soni but infrequent from the latter to Bumbuli, although traffic is regular on this route and arranging a lift is usually straightforward. The final 15 km to the reserve is a long hike.

Mazumbai is an impressive place with huge trees echoing to the sound of hornbills. Birding is either from the main track through the reserve to the guesthouse or from a number of trails leading into the forest and accessing different altitudes. For the latter it is advisable to employ a guide. From the main track a number of interesting species can be found including **Crowned Eagle** *Stephanoaetus coronatus*, **Bar-tailed Trogon** *Apaloderma vittatum* and **Barred Long-tailed Cuckoo**, the latter usually detected by its loud and evocative whistle emanating from the canopy. This species is extremely hard to see without resorting to tape playback. Two other skulkers occurring here are **Spot-throat** and **White-chested Alethe** *Alethe fulleborni*, both of which are relatively common and should be seen with a little effort, principally around dawn and dusk. At lower elevations look for the diminutive **Sharpe's Akalat** *Sheppardia sharpei*, yet another undergrowth specialist. A bizarre mammal, the **Black-and-rufous Elephant Shrew** *Rhynchocyon cernei petersi* has occurred here and is also worth searching for.

There are several other sites in the West Usambaras which would repay a visit but which take time to reach and possess no amenities, eg the summit of Shagayn at 2,200 m possesses significant numbers of **Usambara Akalats**. For those intending to visit the more out-of-the-way places English-speaking guides can be hired at the Green Valley restaurant, near Lushoto market.

The East Usambaras

Population pressure on remaining habitat in the East Usambaras is lower than in the western range. There are consequently larger areas of forest which also reach lower altitudes, resulting in a broader range of bird species.

Amani is the main town in the East Usambaras and is an ideal base as many of the area's specialities can be found nearby. To reach Amani from Dar-es-Salaam, take the main road north to Tanga as far as Muheza, where the Amani road branches off left. This dirt road starts to climb beyond the village of Bombani, which is the only major settlement en route, and is passable with care in a saloon car. Amani is c160 km from Lushoto via Mombo, Korogwe and Muheza. By bus from Dar-es-Salaam, take one of the many Tanga-bound vehicles early in the morning, alighting at Muheza. The daily bus from here to Amani leaves the marketplace at approximately lunchtime when full. Try to be on the bus by 12.00 hr; it usually arrives in Amani by 16.00 hr. The daily bus leaves Amani on the return journey at c0700 hr and is usually less crowded. By bus from Lushoto, take one of the several Tanga-bound buses which leave from the market area each morning at c07.30 hr. The Tanga buses also pass through Magamba at c07.00 hr and can be hailed from the roadside. These buses reach Muheza in time to catch the Amani bus.

Amani-Sigi Botanical Gardens

Soon after leaving Bombani village en route to Amani the road enters lowland forest, shortly after which it crosses over the river Sigi. The roadside forest in the area of the botanical gardens at c500 m is worth birding, and a track running alongside the river through forest to the right and scrub on the left is also worth a look. This joins the road just beyond the bridge. The rather uncommon **Half-collared Kingfisher** *Alcedo semitorquata* can sometimes be seen in this area. Many of the birds of this area will be familar to birders who have visited Kenya's Sokoke forest; birds such as **Fischer's Turaco** *Tauraco fischeri*, **Silvery-cheeked** and **Trumpeter Hornbills** *Ceratogymna bucinator*, and **Green Barbet** *Stactolaema olivaceum*. The birds of the mixed-species flocks also mirror this similarity – look for **Scaly-throated Honeyguide** *Indicator variegatus*, **Yellowbill** *Ceuthmochares aereus*, **Drongo** *Dicrurus adsimilis*, **Square-tailed Drongo** *D. ludwigii*, **Retz's Helmet-Shrike** *Prionops retzii*, **Chestnut-fronted Helmet-Shrike** *P. scopifrons*, **Crested Flycatcher** *Trochocercus cyanomelas*, **Little Yellow Flycatcher** *Erythrocercus holochlorus* and **Dark-backed Weaver** *Ploceus bicolor*. Parties of sunbirds may include the rare **Amani Sunbird** *Anthreptes pallidigaster* and **Plain-backed Sunbird** *A. reichenowi*. On the forest floor look for noisy parties of **Pale-breasted Illadopsis** *Illadopsis rufipennis* and the occasional **Red-tailed Ant-Thrush** *Neocossyphus rufus*. Loud liquid calls and nasal gratings from the canopy usually betray the presence of the magnificent **Green-headed Oriole** *Oriolus chlorocephalus*, a species which is surprisingly common here. Keep an eye skyward for **Crowned Eagle** or even **Ayres Hawk Eagle** *Hieraaetus dubius* which has been recorded here. Look out also for **Bat-like Spinetail** *Neafrapus boehmi* and the longer-tailed **Mottle-throated Spinetail** *Telacanthura ussheri*.

From Amani-Sigi the road snakes uphill towards Amani through some interesting forest blocks. It is worthwhile stopping occasionally, especially where trails lead into the forest.

Amani

Amani is a pretty, almost alpine, village situated amongst lush forested hills and tea estates at c900 m. The forest here takes on a submontane character and contains an interesting mix of lowland and montane bird species. Accommodation, including full board, is available at excellent prices at the IUCN guesthouse. To pre-book write to: IUCN, P O Box 1, Amani, Tanga, Tanzania. Camping is permitted in the grounds and there is another guesthouse at Amani run by Malaria Research.

The grounds and forest borders around the IUCN guesthouse are perhaps the best site for the rare **Banded Green Sunbird**, a Tanzanian endemic which is scarce elsewhere in its restricted range. Here, it can be seen without problem, usually high in the trees and often in company with **Collared Sunbird** *Anthreptes collaris* and the local **Uluguru Violet-backed Sunbird** *A. neglectus*. The adjacent Amani Botanical Gardens are also good for **sunbirds**, as well as **Green-headed Oriole**, **Green Pigeon** *Treron calva*, **White-eared Barbet** *Stactolaema leucotis*, **Black-breasted Glossy** *Lamportornis corruscus* and **Kenrick's Starlings**, and **Paradise** *Terpsiphone viridis* and the local **Black-and-white Flycatchers** *Bias musicus*. **Red-faced Crimsonwings** *Cryptospiza reichenovii* haunt the pathways and undergrowth.

A trail leads from the IUCN guesthouse into an excellent forest reserve and it is well worth spending some time here, especially in the early morning and late afternoon. Mixed-species flocks contain a variety of **greenbuls**, including **Tiny** (of the nominate lowland subspecies) and **Cabanis's Greenbuls** *Phyllastrephus cabanisi*, both **drongos**, **White-eared** and **Green Barbets**, **Scaly-throated Honeyguide**, **Grey Cuckoo-Shrike**, **Black-headed Apalis** *Apalis melanocephala*, **White-tailed Crested** and **Paradise Flycatchers**, **East Coast Batis** *Batis soror*, and the possibility of both **Moustached Green** *Pogoniulus leucomystax* and **Green Tinkerbirds** *P. simplex*, here meeting at their lower and upper altitudinal ranges respectively. Look along the forest edge for **Pallid Honeyguide** *Indicator meliphilus*, possibly in company with groups of **Green Barbets**. Listen for the incredibly loud *brrrrup* of the **African Broadbill** *Smithornis capensis*, principally early and late in the day. A number of shy ground-dwellers can also be found here, notably **White-chested Alethe**, **Sharpe's Akalat** and **Dappled Mountain-Robin** *Arcanator orostruthus*, although connecting with the latter species requires time, effort and luck. **Brownbul** *Phyllastrephus terrestris* also occurs, often in thicker undergrowth found in small tree-fall clearings, betraying their presence by harsh chattering calls. **Orange Ground-Thrush** *Zoothera gurneyi* is another possibility here.

When the forest interior becomes quiet mid-morning it is worth following the path upward to the Mbomole viewpoint. At 1,050 m, this offers an excellent vantage point over the forest canopy and is a good spot to observe forest raptors. **African Goshawk**, **Crowned** and **Southern Banded Snake-Eagles** *Circaetus fasciolatus* are all likely, the latter species often heard calling in a series of guttural barks. **Little Sparrowhawk** *Accipter minullus* has been recorded roosting in nearby trees and a dawn or dusk visit could, with luck, produce an **Olive Ibis** *Bostrychia olivacea* flying to or from its roost, or even **Usambara Eagle Owl**.

A very rare and recently described nocturnal mammal, the **Mountain Dwarf Galago** *Galagoides orinus* occurs in this forest reserve. It is a diminutive species, as befits its name, best identified by call, a high-pitched twittering which recalls the alarm call of a Blackbird *Turdus merula* in structure, although it is higher in tone. Look also for the much larger **Greater Galago** *Otolemur garnetti* which call frequently with a high-pitched bark. This species and also **African Wood Owl** often enter the gardens around the IUCN guesthouse after dark.

The Monga Road

Signposted from Amani, this driveable road first leads through a forested section of the Amani Botanical Gardens before continuing past a swampy area on the left. Strips of forest run alongside the road for c4 km before giving way to cultivation. After a short distance the shambas in turn give way to a large area of tea plantations and forest fragments.

The first few km of this road can be especially productive. Listen for the weird, eerie moan of the **Buff-spotted Flufftail** *Sarothrura elegans* from the swampy area left of the road at dawn and dusk. **African Moustached Warblers** *Melocichla mentalis* skulk in the thick waterside vegetation and the dainty **Mountain Wagtail** *Motacilla clara* can usually be found alongside forested streams. The strips of roadside forest often contain mixed-species flocks, often surprisingly late in the morning or early in the afternoon when other forest areas have become very quiet. The species involved are smilar to those found

in the nearby forest reserve, but also include **Little Greenbul** *Andropadus virens*, **Black Cuckoo-Shrike** *Campephaga flava* and **Amani Sunbird**, here at the upper limit of its altitudinal range. The critically endangered **Long-billed Tailorbird** *Orthotomus moreaui*, which is actually related to the Asian tailorbirds, also occurs here but is very rare and elusive. Along roadside verges watch for **Green-backed Twinspot** *Mandingoa nitidula*, which can be surprisingly hard to see despite their bright plumage. Overhead **Southern Banded Snake-**, **Wahlberg's** *Aquila wahlbergi* and **Long-crested Eagles** *Lophaetus occipitalis* all occur.

Of the tea estates situated further along the Monga road, the Karimjee Tea Estate is worthy of mention. An enlightened owner policy has resulted in the preservation of small areas of forest alongside the Kwamkoro river, which is the only regular site for **Long-billed Tailorbird**. The local **Kretschmar's Longbill** *Macrosphenus kretschmeri* also occurs here and **Half-collared Kingfisher** can be found along the river. Permission must be obtained prior to visiting this site – enquire at IUCN, Amani or the estate itself. Another species worth looking for, after dark, along the tea estate's dirt roads is the endemic *guttifer* subspecies of **Montane Nightjar** *Caprimulgus poliocephalus*, treated by some authorities as a species, the '**Usambara Nightjar**'.

Other sites in the East Usambaras

There remains a significant proportion of forest cover at all elevations in the eastern range, some of which is ornithologically unknown. There is, therefore, a great deal of scope for those with time to seek out new sites and add to our knowledge of the area's avifauna. I will briefly mention several areas where recent expeditions[1,5,6] have produced some notable discoveries, although it must be remembered that these areas are difficult to access, lacking in amenities and require considerable planning to visit.

Several lowland forest reserves lie to the north of Amani, the best of these being the Kwangumi-Segoma, Kambai and Marimba reserves. **Usambara Eagle Owl** and **Sokoke Scops Owl** *Otus ireneae* have been found to be frequent in both the former two areas, whilst **Swynnerton's Robin** *Swynnertonia swynnertoni* and **East Coast Akalat** *Sheppardia gunningi* are common in all these reserves[5]. The village of Kambai, c30 km north of Amani, could be used as a base to explore these areas. North of Kambai lies Mt. Nilo, another recently explored area of submontane forest where **Usambara Weaver** has been found[2]. **Spot-throat** and **Red-capped Forest-Warbler** also occur here[6]. **Long-billed Tailorbird** has been recorded in degraded land near Mt. Nilo[3]. I would advise those planning to visit these sites to contact BirdLife International for up-to-date information and see Evans *et al* (this issue).

Acknowledgements

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Birding in and around the East Usambaras, north-east Tanzania

Tom Evans[a], Alan Tye[b], Norbert Cordeiro[c] and Nathalie Seddon[d]

Tanzania is one of the best birding countries in Africa, and the East Usambara mountains one of its ornithological gems. They lie in the north-east, within sight of the Indian Ocean and 50 km from the Kenyan border. Despite severe deforestation they retain evergreen forests of outstanding importance and great beauty. Two Endemic Bird Areas (EBAs) meet here – the montane forests of the 'Eastern Arc' and the lowland or 'Coastal' forests[9]. Recent articles in *Bull. ABC* have covered birding elsewhere in the Eastern Arc[8] and Coastal forests[5] but the East Usambaras are perhaps unique in offering such an array of specialities from both EBAs.

Map 1. Birding areas in Tanzania

The Usambaras actually comprise two ranges, separated by the deep, semi-arid Lwengera Valley. The East Usambaras, the focus of this article, are one of the most important bird areas in Africa. Nine globally threatened species top the bill. One, the **Usambara Eagle Owl** *Bubo (poensis) vosseleri*, was thought endemic to the East and West Usambaras until its recent discovery further south, in the Ulugurus[8]. The neighbouring West Usambaras are also important for threatened birds (and have their own endemic, the **Usambara Ground Robin** *Sheppardia montana*), but are discussed only briefly here.

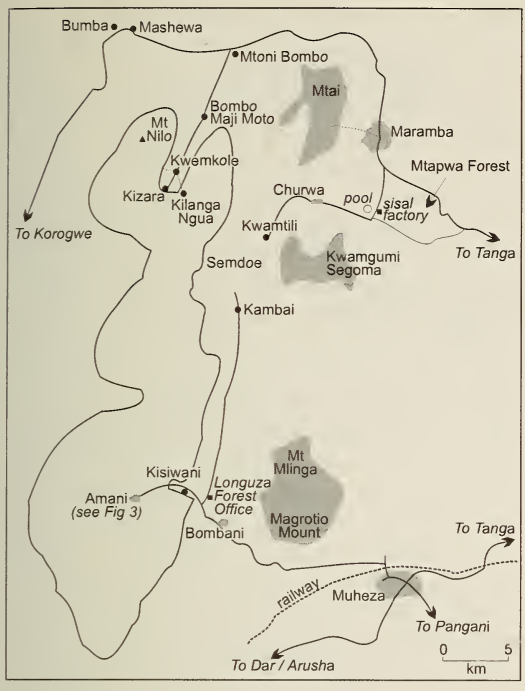
The East Usambaras have a long ornithological history, starting with German collectors before World War I, one of whom, Julius Vosseler, procured the first **Usambara Eagle Owl**. Reg Moreau lived here in the 1930s and 1940s, carrying out much ground-breaking research from Amani. Major surveys, led by Simon Stuart, were undertaken in the late 1970s and early 1980s[13], and followed by various teams in the 1990s[1,2,3,4,12,14]. Few other ornithologists have lived in the area; the tour company BirdQuest has visited in recent years and a trip report was recently produced by a solo visiting birder[15]. Despite earlier work, new discoveries continue: **Sokoke Scops Owl** *Otus ireneae*, **East Coast Akalat** *Sheppardia gunningi* and **Swynnerton's Robin** *Swynnertonia swynnertoni* were found in 1990–92[3,4] and in 1994 the endemic **Usambara Weaver** *Ploceus olivaceiceps nicolli* was rediscovered after 50 years[1].

Few birdwatchers reach the area, which provides logistical challenges in comparison with the popular Tanzanian national parks or Arabuko-Sokoke in Kenya. Nonetheless, the moderately intrepid visitor can expect to see some superb birds amongst truly beautiful scenery, always with the possibility of making another major discovery.

Geography

The East Usambaras are in Tanga Region and include the Amani hills at 800–1,200 m, a series of outlying peaks to the east and north (the highest, Mt. Nilo, reaches 1,504 m) and wide valleys down to 130 m. Forest once reached the surrounding plains, but this has virtually all been cleared.

Annual rainfall at Amani is c1,900 mm, rather less in the foothills, with moderate amounts in every month. The most difficult periods to visit are during the short and long rains. These traditionally fall in October–November and March–May respectively, but the timing varies from year to year. The July–September period is relatively cool and dry and is perhaps the most pleasant time to visit. It is also thought to be the



Map 2. Routes in the East Usambaras

period of least breeding activity, but nesting birds are easy to find in any month. Many submontane species (eg **White-starred Robin** *Pogonocichla stellata*, **Black-fronted Bush-Shrike** *Malaconotus nigrifrons* and **Barred Long-tailed Cuckoo** *Cercococcyx montanus*) are partial altitudinal migrants, and can be seen even at the lowest altitudes at this time of year, whilst some lowland breeders visit the submontane areas only in the warm season.

The birder must visit both lowland (especially below 500 m) and submontane areas (above 800 m) to find the full range of forest species. True montane forests are found above 1,200 m on Mt. Nilo. These three habitats are described below. Although many lowland species occur only below c400 m, the lowland/submontane boundary is not sharp, with a broad overlap between 500–900 m. The least disturbed forests appear to support the highest densities of some key species (eg **Usambara Eagle Owl**, **Sokoke Scops Owl**, **Swynnerton's Robin** and **Dappled Mountain Robin** *Modulatrix orostruthus*) but most also occur in degraded forest, which also has its own specialities. For instance, the invasive, bamboo-like grass *Olyra latifolia* thrives in disturbed areas and is a favourite food of the striking **Red-headed Bluebill** *Spermophaga ruficapilla*.

Access

The nearest big town is Tanga on the coast. There is a small airport, with regular flights to Dar-es-Salaam, Pemba and Zanzibar but no international facilities. The foreign visitor has to fly in to Dar, Kilimanjaro, Zanzibar or Mombasa. Buses are regular between Tanga and Dar, Arusha (near Kilimanjaro) and Mombasa and there is a twice-weekly train from Moshi (also near Kilimanjaro) and Dar. If travelling by bus on the Dar–Tanga, Arusha–Tanga or Mombasa–Tanga–Dar route, you pass through Muheza (a change in Tanga may be necessary if coming from Mombasa), from where a well signposted side road leads to Amani. In Muheza catch one of the daily Tanga–Amani or Tanga–Bulwa minibuses. Hitching may be better: wait at the line of shops just before the railway crossing on the Amani road. If schedules force an overnight in Muheza (almost certain, if coming from Arusha or Mombasa), it may be better to alight in Tanga and catch the Tanga–Muheza–Amani/Bulwa minibus next day. The Muheza–Amani road offers a good chance to see **Yellow Baboons** *Papio cyanocephalus* and **Blue Monkeys** *Cercopithecus mitis* en route. The Bulwa service branches off the road to Amani one km before Amani.

Maramba and Bombo Maji Moto, small towns at the foot of the mountains further north, are served by frequent buses from Tanga on a reasonable road. A few dirt roads served by ancient Land Rover bush taxis run from there into the northern valleys. Reaching sites off these bus routes will require either long walks, a great deal of patience waiting for infrequent vehicles to hitch with, or your own transport. Some roads are challenging even for 4WD vehicles, and become impassable during rains. Cars can be hired in Arusha or Dar-es-Salaam, but 4WD vehicles (essential) are very expensive and of dubious reliability, and most companies insist on providing a driver.

Permission

Most forests belong either to the Government (Forest Reserves) or tea estates and visitors must obtain permission to enter. Many tea estate forests will be incorporated in the new Amani Nature Reserve, and permission for visiting both Forest Reserves and tea estate property should thus be sought from the Tanga Region Catchment Forest Office, and from the relevant local Catchment Forest Offices. The local offices can be contacted from the Tanga office by radio as follows: Kisiwani (for Amani Botanical Gardens, Amani East, Amani-West, Amani-Sigi and the Bulwa tea estate forests); Kwamkoro (for

Kwamkoro, Monga and Ndola); Longuza (for Semdoe and Kambai), Maramba (for Mtai and Kwamgumi) and Kilanga Ngua (for Mt. Nilo). All of the local Catchment Forest Offices are well signposted. For Kwamgumi, it is also necessary to get permission from Kwamtili Cocoa Estate office, since you will need to pass through the cocoa plantation and possibly to camp in it.

Guide books

The Tanga office has an invaluable guide to trails and drives in the Amani area, which should also be available from the Kisiwani and Amani Guest Houses (see below). A guide book to the East Usambaras is in preparation and should be ready by the end of 1997. Visitors to the Tanga office can also use their library, which includes much recent information on the biology of the East Usambaras.

Accommodation

Most people recommend avoiding the cheapest accommodation around the bus station in Tanga. There are some better cheap hotels, including the Planters and the Bandarini, near the market square. The Bandarini is more pleasant and offers mosquito nets and a sea view. More luxurious and expensive hotels with air-conditioning, include the Marina (central), Phoenix (next to Uhuru Park) and, on Ras Kazone (the headland running east from Tanga), the Inn by the Sea, Makonde Beach Hotel and Panori. The last has the best menu.

In Muheza, the basic Ambassador Hotel on the main road is the best of a rather limited selection. In Maramba the Mlinga Guest House is recommended. Otherwise take your pick from various cheap and simple guest houses (but don't let the frequent 'hoteli' signs fool you as this means 'restaurant'). In Amani, there is a guest house run by the Amani Medical Research Centre (AMRC). The AMRC guest house is comfortable and serves food, but prices are high (around US$ 30 per person per night) unless you are a Tanzanian citizen, have a residence permit, or business with the medical station. It is sometimes full, so it is wise to book ahead by letter. Camping on the lawn is permitted for a small fee. There is also a guest house at Bulwa run by the East Usambara Tea Company. Similar conditions apply as at Amani. A new guest house will open during 1997 at the Amani Nature Reserve Information Centre near Kisiwani: bookings should be made via the East Usambaras Catchment Forest Project in Tanga but tariffs have not been finalised. This will be an ideal base for access to both submontane forest around Amani and lowland forest around Kisiwani, all within the Nature Reserve.

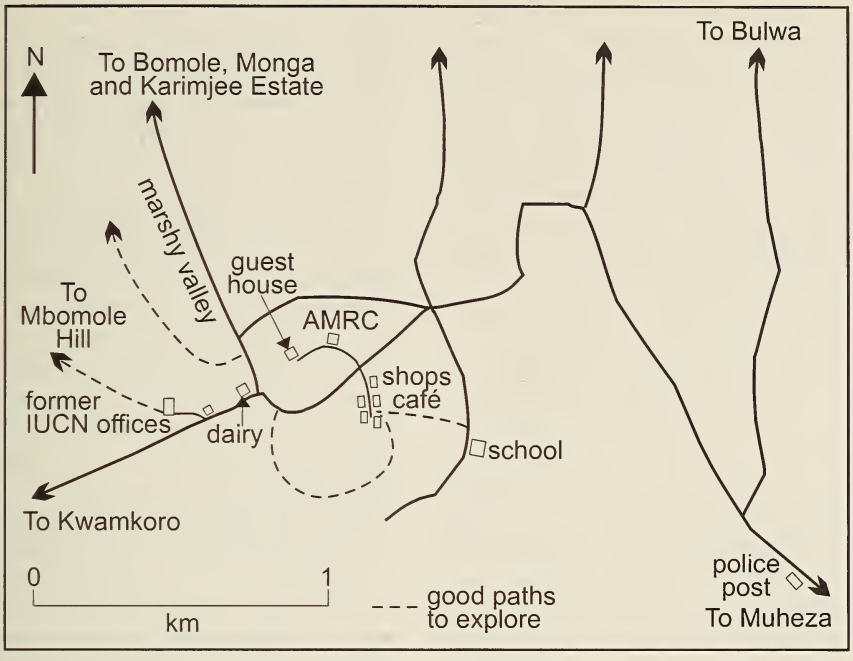
Elsewhere, it will be necessary to camp or arrange to stay with families in villages near the forest. These are quite remote and visitors, while politely and hospitably received, may be viewed with some concern. Knowledge of Swahili would of enormous use in explaining who you are and what you want to do. It is vital to ask permission from the Village Chairman or his/her representative when you arrive. You should also make yourself known to the local Forest Officer. A few semi-official camp sites are available. Birdquest and bird researchers have camped on a site belonging to the Karimjee tea estates at Monga. Another site owned by the tea estates is at a former tea nursery on the road between Kwamkoro and Monga near some excellent submontane forest. Three more camp sites are scheduled for development as part of the Amani Nature Reserve facilities: at Kisiwani, near the new guest house and two on the forest trail leading from the Forest Office at Kwamkoro, one of which has a spectacular view over the Lwengera Valley to the West Usambaras. Permission for all these sites, and directions to them, should be requested from the Tanga Region Catchment Forest Office. In the lowlands away from Kisiwani it may be easiest to stay with staff of the Kambai Forest Conservation Project or camp on Kwamtili Cocoa Estate next to Kwamgumi Forest Reserve.

Food and equipment

If camping, you will need to take most food with you, although there are shops at Amani, Bulwa, Kwamkoro, Monga, Bombani, Kisiwani, Bombo Maji Moto, Kwemkole, Maramba and Muheza, where basic groceries including bread and potatoes can be bought. The small tea rooms in most villages can often serve bread, buns and bean stew. Be prepared for cool weather in the highlands and sudden heavy rainstorms throughout.

Health

The lowlands are a very high risk area for malaria and both *falciparum* (the severe, potentially fatal cerebral form) and other drug-resistant strains are common. The risk is lower but still quite high in montane areas. Take precautions against being bitten, including long-sleeves and trousers, permethrin-treated mosquito nets and a good repellent (the new lemon-smelling Mosi-Guard was field-tested here!). Follow the malaria drug-regime recommended by your doctor. Bear in mind that the malaria research station at Amani has no facilities for treatment. Bilharzia is another common disease in the area, so avoid swimming in still



Map 3. Amani

water where possible.

The submontane forests

These are tall and lush, with many epiphytes, mosses and lianas and an outstanding diversity of plant species. Groups of the introduced timber-tree *Maesopsis eminii*, native to Central Africa, can be seen in many areas of degraded forest (look for the whitish, mottled bark and pinnate leaves).

Most visitors are likely to start birding in the Amani hills; the cool climate and beautiful landscape, a patchwork of tall forest among tea plantations, streams and small farms, are a delightful relief from the heat and dust of Dar-es-Salaam and the savannas. The best first base would be Amani itself, with a useful second option being Bulwa or one of the campsites. The Amani hills can easily be reached by road from any of these so if you have your own transport only one base is necessary, you could even base yourself at the new guest house in Kisiwani.

The trail guide available from the Catchment Forest Office in Tanga includes probably the best all-round selection of walks, designed to give visitors a flavour of the scenery, history, biology and human use of the area. They are not specifically for birders but by following them the visitor should be able to find the majority of the area's specialities. Perhaps the most rewarding areas are the Amani Botanical Garden, the trail leading from Kwamkoro Forest Office, and the steep hike from the Nature Reserve HQ at Kisiwani into submontane forest, to the ridge-top Amani-Sigi Forest Reserve.

The Botanical Garden can be explored around the AMRC and Kisiwani. There is also a trail from behind the IUCN Amani office (which may soon be abandoned) through forest to a spectacular clifftop viewpoint at Mbomole Hill, overlooking the forest canpy. It is an easy 30–60 min climb – just ask at the guest house for directions. The Kwamkoro trail is easily found by asking directions to Kwamkoro Forest Office ("Misitu Kwamkoro"); it follows an old logging road past the front of the office and into the forest. The Amani-Sigi trail accesses an area where the transition from lowland to submontane can be observed. It cannot be followed without a guide at the time of writing, but knowledgeable guides can be found at Kisiwani who will proceed slowly and quietly for birdwatching. The trail guide also includes three driving routes, which give a thorough tour of the main tracks of the Amani hills, and pass other forest blocks which may be worth exploring.

Many of the East Usambara specialities frequent the forest canopy or "edge" habitats such as tree-fall gaps and gardens. Many occur in the grounds of the AMRC where you can wander more or less at will. Often seen here are **Amani** *Anthreptes pallidigaster*,

Banded Green *A. rubritorques* and **Uluguru Violet-backed Sunbirds** *A. neglectus*, **Green-headed Oriole** *Oriolus chlorocephalus* and **Southern Banded Snake-Eagle** *Circaetus fasciolatus* with its distinctive, chicken-like *koh-koh-koh-kah-ko* call. The **Uluguru Violet-backed Sunbird** is more of an insectivore than its two relatives and is usually seen hunting through low bushes in small parties. The **Amani** and **Banded Green Sunbirds** prefer higher treetops, but they may join commoner species, especially **Olive** *Nectarinia olivacea* and **Collared** *Anthreptes collaris*, and also occasionally **Scarlet-chested** *Nectarinia senegalensis*, **Amethyst** *N. amethystina*, and **Purple-banded Sunbirds** *N. bifasciata*, at smaller ornamental flowering trees in gardens.

The AMRC is also the easiest place to find **'Mombasa' Woodpecker** *Campethera abingoni mombassica*, **Moustached Green Tinkerbird** *Pogoniulus leucomystax*, and **Kenrick's** *Poeoptera kenricki*, **Black-bellied** *Lamprotornis corruscus* and **Waller's Starlings** *Onychognathus walleri*. Although the Centre is in relatively open habitat, the predominant **drongo** there is the **Square-tailed** *Dicrurus ludwigii*, a forest bird. **Fischer's Turaco** *Tauraco fischeri* and the monotonously popping **Green Barbet** *Stactolaema olivaceum* can also be heard from the grounds, although they rarely venture from the surrounding forest. The forest-canopy **Forest Batis** *Batis mixta* and the open-country **East Coast Batis** *Batis soror* occur side-by-side in forest edge habitats at Amani, sometimes with flocks of **Yellow White-eye** *Zosterops senegalensis*. Other commoner species around the Centre include **Crowned Eagle** *Stephanoaetus coronatus* (heard calling high overhead almost daily), **Long-crested Eagle** *Lophaetus occipitalis*, **Ayres's Hawk-Eagle** *Hieraeetus ayresii*, **Great Sparrowhawk** *Accipiter melanoleucos* and the abundant and noisy **White-eared Barbet** *Stactolaema leucotis*. Flocks of **Silvery-cheeked Hornbill** *Ceratogymna brevis* are commonly seen all year, while **Trumpeter Hornbills** *C. bucinator* only reach this altitude during the warmer half of the year. **Black Saw-wing** *Psalidoprocne pristoptera* is sure to be seen flying gracefully overhead or prospecting roadside banks. **Emerald Cuckoo** *Chrysococcyx cupreus* is common; in season, its loud hello *geoor-gie* call can't be missed.

Other forest specialities are more difficult. They include **Dappled Mountain Robin**, **White-chested Alethe** *Alethe fuelleborni*, several species of forest **bulbul**, all restricted to the dimly-lit understorey, and the **owls**. The **alethe** is common throughout and its loud, monotonous song (like a Mistle Thrush *Turdus viscivorus*) is heard most early mornings, and during the day in the wetter seasons, but it is extremely shy. The forest **robins**, including **White-starred Robin** and **Sharpe's Akalat** *Sheppardia sharpei* are even more difficult, as they have much quieter songs, but are less likely to fly long distances if disturbed. Among the **bulbuls**, **Stripe-cheeked** *Andropadus milanjensis* and **Yellow-streaked** *Phyllastrephus flavostriatus* are fairly often seen at the forest edge. **Yellow-streaked** draws attention by its frequent calls and habit of raising one wing, while the distinctive *ukkeri-ukkeri-ukkeri* song of **Stripe-cheeked** is a monotonous feature of the damp seasons. **Little Greenbuls** *Andropadus virens* burble away almost constantly, but can be hard to see. **Cabanis's (Olive Mountain)** *Phyllastrephus cabanisi* and **Shelley's Greenbuls** *Andropadus masukuensis* are fairly common within the forest, and sometimes seen in mixed-flocks at the edge. **Grey-backed Camaropteras** *Camaroptera brachyura* are common, occurring with small numbers of the green-backed form. **Pale-breasted Illadopsis** *Illadopsis rufipennis* is also quite common and can be traced by its quiet churring calls. **Lemon Dove** *Aplopelia larvata* can usually be found when it flushes a short distance from the forest floor to sit quietly on a low branch, peering at the observer. **Eastern Bronze-naped Pigeon** *Columba delegorguei* is more difficult, as it usually keeps to the canopy (the call is rather like European Woodpigeon *Columba palumbus*), while **Olive Pigeons** *Columba arquatrix* are scarce but can sometimes be found sitting in the open, high in small patches of forest or isolated clumps of trees near the western escarpment. **African Broadbills** *Smithornis capensis* are common but elusive except when calling at dawn and dusk. It is worth stalking their strange, upward-inflected *brrrrUP* to find the source, since the sound is made during an extraordinary display sequence.

The forest interior prize is the rare **Dappled Mountain Robin**, found only in virtually undisturbed sites. One site where it has been mist-netted is the Karimjee estate, and Eddie Williams lured one in with a tape on Mbomole Hill[15]. The other local speciality (otherwise found only on the Njesi Plateau in Mozambique) is the elusive and extremely rare **Long-billed Tailorbird** *Orthotomus moreaui*. Its song is said to resemble hitting a metal peg with a mallet[11]. It was reported by Birdquest from a site at the edge of forest belonging to Karimjee Tea Estates, although AT is doubtful that the sound-recording is of this species. It was also found in the early 1980s

where streams emerge from forest along the Amani–Monga road, within easy walk of the Research Centre, and recently on Mt. Nilo (see below). The call recorded by Birdquest was also heard along the Amani–Monga road in 1996[15].

Commoner birds of the submontane forests, although not necessarily easier to find, include the **Yellow-throated Woodland Warbler** *Phylloscopus ruficapilla*, **Red-headed Bluebill**, **Green-backed Twinspot** *Mandingoa nitidula* and **Red-faced Crimsonwing** *Cryptospiza reichenovii*. All keep to the lowest levels, often in dense undergrowth near the forest edge. The latter three, all estrildid finches, may be glimpsed as small groups fly across an open space early in the morning or late in the evening. In similar areas you may find the uncommon, more open-country **Yellow-bellied Waxbill** *Estrilda quartinia*. Other forest species which should not be so difficult include **Dark-backed Weaver** *Ploceus bicolor*, **Bar-tailed Trogon** *Apaloderma vittatum*, **Olive Woodpecker** *Dendropicos griseocephalus*, **Grey Cuckoo-shrike** *Coracina caesia*, **Black-headed Apalis** *Apalis melanocephala*, **Yellowbill** *Ceuthmochares aureus*, **Black-fronted Bush-Shrike** and the noisy **White-tailed Crested Flycatcher** *Trochocercus albonotatus*, all common members of mixed parties. **Scaly-throated Honeyguides** *Indicator variegatus* endlessly repeat their whining, mechanical buzz, and the long call sequence of **Barred Long-tailed Cuckoo** is also often heard, but both are very hard to see.

Kretschmer's Longbill *Macrosphenus kretschmeri* is not likely to be found at Amani. The best area in the Amani Hills is along the western escarpment, eg at Ndola, where it hides in dense vine tangles whilst endlessly repeating its 4-note song, which is uncannily like that of the **Common Bulbul** *Pycnonotus barbatus*. It is commoner in the lowlands.

On the tea estates, a selection of open-country highland specialities can be found, including the endemic race of **Common Stonechat** *Saxicola torquata* and **Cabanis's Bunting** *Emberiza cabanisi*, both of which sit obligingly on telephone lines, **Dark-capped Yellow Warbler** *Chloropeta natalensis* and a variety of **swallows** especially at migration times.

The lowland forests

The lowlands are much hotter than the Amani hills. The forest is naturally lower and there are few epiphytes. Cycads, pandans and, on rocky outcrops, the candelabra tree *Euphorbia*, are striking features of the understorey and the very tall, smooth, yellow trunk of *Sterculia appendiculata* is a common sight. These forests naturally invite comparison with Arabuko-Sokoke[5], with which they share specialities such as **East Coast Akalat** and **Sokoke Scops Owl**. While the East Usambaras lack three of Sokoke's star birds (**Sokoke Pipit** *Anthus sokokensis*, **Spotted Ground Thrush** *Zoothera guttata* and **Clarke's Weaver** *Ploceus golandi*), several lowland species which do not occur in Sokoke (eg **Uluguru Violet-backed Sunbird** and **Kretschmer's Longbill**) along with a great variety of typically submontane species, among them **Swynnerton's Robin** do occur. In its three other far-flung localities this bird occurs only above 850 m, but in the East Usambaras it has only been found below 550 m.

The most accessible lowland forest, although not the best, is in the Kihuhwi-Sigi Forest Reserve straddling the Amani road near Kisiwani. The 2–3 km stretch downhill of the village can easily be birded from the main road. There is little traffic, tall trees overhang the road on both sides and a couple of paths enter the forest, which is very steep and dense, with many rocky outcrops. You have another chance here to find **Southern Banded Snake-Eagle**, **Fischer's Turaco**, **'Mombasa' Woodpecker**, **Amani Sunbird**, **Uluguru Violet-backed Sunbird**, **Kretschmer's Longbill** and several other species that may have been missed higher up. **Banded Green Sunbirds** have been found nesting in a treetop beside the road here. There are also many lowland specialists. **Little Yellow Flycatchers** *Erythrocercus holochlorus* predominate in many mixed-species flocks, along with **Blue-mantled Crested** *Trochocercus cyanomelas* and **Ashy Flycatchers** *Muscicapa caerulescens*, **Green-backed Woodpeckers** *Campethera caillauti*, **Narina Trogons** *Apaloderma narina*, **Fischer's Greenbuls** *Phyllastrephus fischeri*, **Plain-backed Sunbirds** *Anthreptes reichenowi* and a dozen other species. The **sunbird** is common, but only below 400 m, and can be quite elusive until the insistent *toi-toi-toi-toi* call is learnt.

Mixed-flocks are also the best place to find **Southern Hyliota** *Hyliota australis*, here a bird of forest and forest-edge, rather than miombo woodland. This isolated race is endemic to the East Usambaras (mainly below 400 m) and may be a full species. Only one female specimen is known and, unlike every other female of the genus, it shares the male's coloration. If this is true for the whole population it would probably justify specific status, but observations so far have been inconclusive. Kisiwani is one of the easiest places to find them feeding quietly in the crowns of tall trees, alone or in pairs.

The long whistle and Mistle Thrush-like rattle of

Red-tailed Ant Thrush *Neocossyphus rufus* are common sounds, often announcing that the bird itself is about to rocket past. **Black-and-white Flycatchers** *Bias musicus* are common, especially in forest-edge and riverine habitats. Large parties of **Chestnut-fronted Helmet-shrikes** *Prionops scopifrons* are also a feature, clacking their bills like castanets as they tumble through the canopy. They may be joined by the superficially similar **Retz's Helmet-shrike** *P. retzii*, though both mainly roam in monospecific flocks. The lucky observer may also find **Pallid Honeyguide** *Indicator meliphilus*, **Eastern Honeybird** *Prodotiscus zambesiae*, **Eastern Bearded Scrub Robin** *Cercotrichas quadrivirgata*, **Four-coloured Bush-shrike** *Malaconotus quadricolor* or **Eastern Green Tinkerbird** *Pogoniulus simplex* here. **Emerald Cuckoos** are quite common, but outnumbered by the similar **Klaas's Cuckoo** *Chrysococcyx klaas*, which calls *hoooee-jiu, hoooee-jiu*. **Bat-like Spinetails** *Neafrapus boehmi* sometimes hawk over the canopy, as do the commoner **Mottled Spinetails** *Telacanthura ussheri*. **Lead-coloured Flycatchers** *Myioparus plumbeus* and **Peter's Twinspots** *Hypargos niveoguttatus* are common but often hard to see. The colourful **Red-headed Bluebill** (an endemic race) is commoner in the lowlands, but quiet and furtive. **Half-collared Kingfishers** *Alcedo semitorquata* are quite common on wooded streams and rivers, with **Giant Kingfisher** *Megaceryle maxima* and **African Finfoot** *Podica senegalensis* along the Sigi River itself.

The principal lowland species which cannot be seen in Kisiwani are **Swynnerton's Robin**, **East Coast Akalat** and **Sokoke Scops Owl**. The other area of lowland accessible by public transport is the Forest Reserve on the east slope of Mt. Mtai, a three km walk from Maramba (past the school and a water tower amongst the coconut plantations, over a wide stream and up the hill). A large path leads to the summit ridge. **Swynnertons' Robin** is known on this slope. Both **Banded Green Sunbird** and **Usambara Eagle Owl** occur on the summit ridge, where there is submontane forest.

The best lowland site is the Kwamgumi-Segoma Forest Reserve. These forests escaped the worst logging, which damaged much of the East Usambaras until the 1980s, and are tall, lush and well-structured. Densities of many birds are high and the variety of species is the greatest of any lowland site thus far studied. Access is easiest from the north, via Maramba, Churwa and Kwamtili Cocoa Plantation. A road runs through the cocoa to the forest edge. It formerly ran through the forest, but after a clampdown on illegal logging in 1992 it has become very overgrown. There are a few other paths, including one along the west edge near the river, but they can be indistinct and hard to follow.

Swynnerton's Robins and **East Coast Akalats** are common here. The former prefer the least disturbed patches, where the ground layer is devoid of small plants and deeply shaded by several strata of trees and shrubs. The latter appear less choosy and occur in selectively logged areas. Both are best detected by their songs and respond well to playback. The **East Coast Akalat** has a high, thin quavering song a few seconds in duration. Reasonable views are needed to separate it from **Sharpe's Akalat** which is only recorded above 600 m (but may occur lower) and has an ochraceous, rather than yellow chest and no slaty panel on the wing coverts. **Swynnerton's Robin** has a slow, sweet 3–5 note whistle, first high, then low, typically *di di du du*. **Sokoke Scops Owl** and **Usambara Eagle Owl** are easy to hear at this site, but seeing them is another matter altogether! As well as the lowland specialities, some largely submontane species, eg **Silvery-cheeked Hornbill**, **Waller's Chestnut-wing Starling** and **Grey Cuckoo-shrike** are also common here.

Of the other lowland sites, Mtapwa was once the easiest place to see **East Coast Akalat** and **Plain-backed Sunbird**, but it was being stripped for charcoal production in 1992 and may now be unsuitable. It lies a few km from Maramba towards Tanga and is visible 100 m south of the main road. Access is via a network of footpaths. Semdoe and Kambai have some tall forest and many of the best species, although **Usambara Eagle Owl** has not been heard at Semdoe. Kambai village is the base for the Kambai Forest Conservation Project, which aims to slow the clearance and degradation of nearby lowland forests. Access is via the road from Muheza, via Bombani and Longuza and then along the west bank of the Sigi. There is virtually no traffic, and it is a hot, five-hour walk to Kambai village from Longuza, the nearest bus stop. It may be possible to arrange a lift with the project staff.

Among the many lowland birds to be seen in open country are **Palm-nut Vulture** *Gypohierax angolensis*, **Lizard Buzzard** *Kaupifalco monogrammicus*, **African Fish Eagle** *Haliaeetus vocifer*, **African Jacana** *Actophilornis africanus*, **Zanzibar Sombre Greenbul** *Andropadus importunus*, **Zanzibar Red Bishop** *Euplectes nigroventris*, **Purple-banded Sunbird**, **Kurrichane Thrush** *Turdus libonyanus* (here at its northernmost limit), **Magpie Mannikin** *Lonchura fringilloides*,

African Golden Weaver *Ploceus subaureus*, **Grosbeak Weaver** *Amblyospiza albifrons* and, intermittently, **Violet-backed Starling** *Cinnyricinclus leucogaster*. **Crested Barbet** *Trachyphonus vaillantii* has been recorded.

Mt. Nilo

The mountain is reached via a poorly marked junction at Mtoni Bombo, c25 km from Maramba on the main road north of the Usambaras. From Mtoni Bombo, a road leads south through scrub and woodland along the Bombo valley. After passing Bombo Maji Moto, you reach Kwemkole and Kizara, from where you can walk another one km to Kilanga Ngua. Access to the higher parts of Mt. Nilo Forest Reserve can be facilitated by contacting the forest guard station at Kilanga Ngua. In order to explore this area properly you must camp, either on the Lutindi ridge to the north-west or the Kilanga ridge to the south-east. Kilanga, reached via Kizara, is lower, lusher and an easier climb but the terrain is more rugged and it is hard to find a suitable stream to camp by. The birds are similar on the two ridges and resemble those at Amani, with the loss of some lower-altitude species and the addition of a few specialities.

The two-hour hike up a fairly steep, cultivated valley side from Kwemkole north-west to Mt. Nilo may produce **Mountain Buzzard** *Buteo oreophilus*, **White-necked Raven** *Corvus albicollis*, **Crowned Eagle** and perhaps an **Ayres's Hawk-Eagle** gliding overhead, with **Black-throated Wattle-eye** *Platysteira peltata* and **Black-and-white Flycatcher** in the trees. **Southern Hyliota** hase been seen at the forest edge. A path along a small ridge north-east of the last hut in which livestock are kept leads to a bracken-dominated glade; the site of a recent, as yet unpublished record of **Long-billed Tailorbird**.

A well-trodden path heads south–south-west along the side of the Hundu valley into lush forest dominated by the feathery-leaved trees *Newtonia buchananii* and *Albizia* spp, with an often dense understorey of the familiar pot-plant *Dracaena*. There are at least two small streams where you could camp.

The rare **Usambara Weaver** was not seen in the East Usambaras for over 50 years until its rediscovery on Mt. Nilo in 1994. There have been several recent records in the Forest Reserve of small groups alone or associated with mixed-flocks. They are quite vocal but occur at low densities, so finding this species may require several days. Other canopy species likely to be seen include **Amani** and **Banded Green Sunbirds**.

In the undergrowth lurk several inconspicuous species, including the **Spot-throat** *Modulatrix stictigula*, which may be found digging quietly through litter, although it is best located initially by its high-pitched series of whistles. **Olive** *Turdus olivaceus* and **Orange Ground Thrushes** *Zoothera gurneyi* also occur, and occasionally visit more open areas. They also betray their presence by their melodious, far-carrying songs. A recent addition to the East Usambara avifauna, although it is common in the West Usambaras, is the **African Hill Babbler** *Alcippe abyssinica*. The otherwise uncommon **Oriole-Finch** *Linurgus olivaceus* may also be found. **Usambara Eagle Owl** has been heard. Fruiting trees attract **Bronze-naped** and **Olive Pigeons**, and **Kenrick's**, **Waller's Chestnut-winged** and **Red-winged Starlings** *Onychognathus morio*, while **Lemon** and **Tambourine Doves** *Turtur tympanistria* eat fallen fruit.

Higher, above 1,400 m, the forest near the peak is often covered in mist for much of the day. Bird activity here is greatest when the sun emerges. **Bar-throated Apalis** *Apalis thoracica* and, perhaps seasonally, **White-starred Robins** haunt the undergrowth of the stunted forest, and **Eastern Double-collared Sunbird** *Nectarinia mediocris* is quite common. Tree-ferns provide feeding areas for **Red-capped Forest-Warbler** *Orthotomus metopias* and the retiring **Sharpe's Akalat**.

How to find the nocturnal birds

Great care should be taken not to disturb nocturnal (or indeed any other) birds by repeated use of play-back in their territories. Care should also be taken not to get lost – all too easy at night. Carry a compass and wear stout boots to protect against the risk of snake bite

The most sought-after bird is probably **Usambara Eagle Owl**. Sometimes considered conspecific with the West African **Fraser's Eagle Owl**[6] it is, at least, an incipient species. The far-carrying call is a deep, slow, resonant drumming. A recording from the Ulugurus is in the National Sound Archive (Wildlife Section) in London, UK. In the early 1990s, one often sat after dark on the main Muheza–Amani road at c650 m, near Amani Police Post. Despite this, a couple captured in mist-nets, and a few young birds found below their nest holes, it remains one of the most poorly-known birds in Africa and a great prize for any observer.

Sokoke Scops Owl has been found in most East Usambara forests below 400 m, except Kisiwani. A tape is useful to elicit calls (there is a published recording[10]), but an alternative is to whistle the monotonous *hoo, hoo, hoo* call. Birds do not seem to

approach playback, so off-the-path stalking is required, although they are not shy and will continue to call even when caught in the torch beam. They often call from the canopy, 10–20 m up, making them harder to see than in Arabuko-Sokoke, where densities are higher and they call 3–6 m above ground.

During searches for these two species, you can expect to hear **African Wood Owl** *Strix woodfordii*. On the forest edge or in degraded forest, **Spotted** *Bubo africanus* and **Verreaux's Eagle Owls** *Bubo lacteus* also occur. **Spotted** is rather similar to **Usambara Eagle Owl** but **Usambara** is more golden-brown, has more widely separated bars below and deep brown eyes, whilst **Spotted** is greyer with yellow eyes. At a few places in the lowlands **Barred Owlet** *Glaucidium capense* has been found, and they may prove to be quite common. Another lowland bird is **Fiery-necked Nightjar** *Caprimulgus pectoralis*, which makes its *good-lord-deliver-us* call as it flies over both forest and scrub. The authors have heard them in September–October in the East Usambaras, but they may call in other months. An incentive for going out on foggy or drizzly nights is the chance of hearing **Buff-spotted Flufftail** *Sarothrura elegans*. Living in dense undergrowth, often far from water, these rails make a deep humming sound like the note from a tuning fork, or by blowing over the mouth of a bottle. So unlike a bird does this sound that local people insist it is the call of a chamaeleon. Finally, the elusive **Olive Ibis** *Bostrychia olivacea* is also active from dusk to dawn, announcing its presence with a guttural honking flight call, which is often heard, for example, along roads near Amani.

Other animals and plants

In the forests, **Blue Monkeys** (listen for the bird-like *chick* alarm call) and **Black-and-White Colobus** *Colobus polycomos* are common. The latter are among the most beautiful of all monkeys, and since monkeys are not heavily hunted except when raiding crops (which **colobus** do not), they can be watched with ease, even along the roads near Kisiwani or around Amani.

Several species of squirrel occur in the forests: the grey-mantled **Red-legged Sun Squirrel** *Heliosciurus rufobrachium* with its very long, faintly-banded tail often joins mixed-flocks of insectivorous birds. In the lowlands, the all-red **Red Bush Squirrel** *Paraxerus palliatus* occurs, while higher the rarer **Tanganyika Mountain Squirrel** *Funiscuirus lucifer* can be seen. They are joined on the tree trunks by the technicolour **Blue-tailed Tree Lizard** *Holaspis guntheri*. The best place to look is on medium-sized trees with smooth pale bark in direct sunlight – eg by small clearings – but they can be found on fallen logs or even coconut palms.

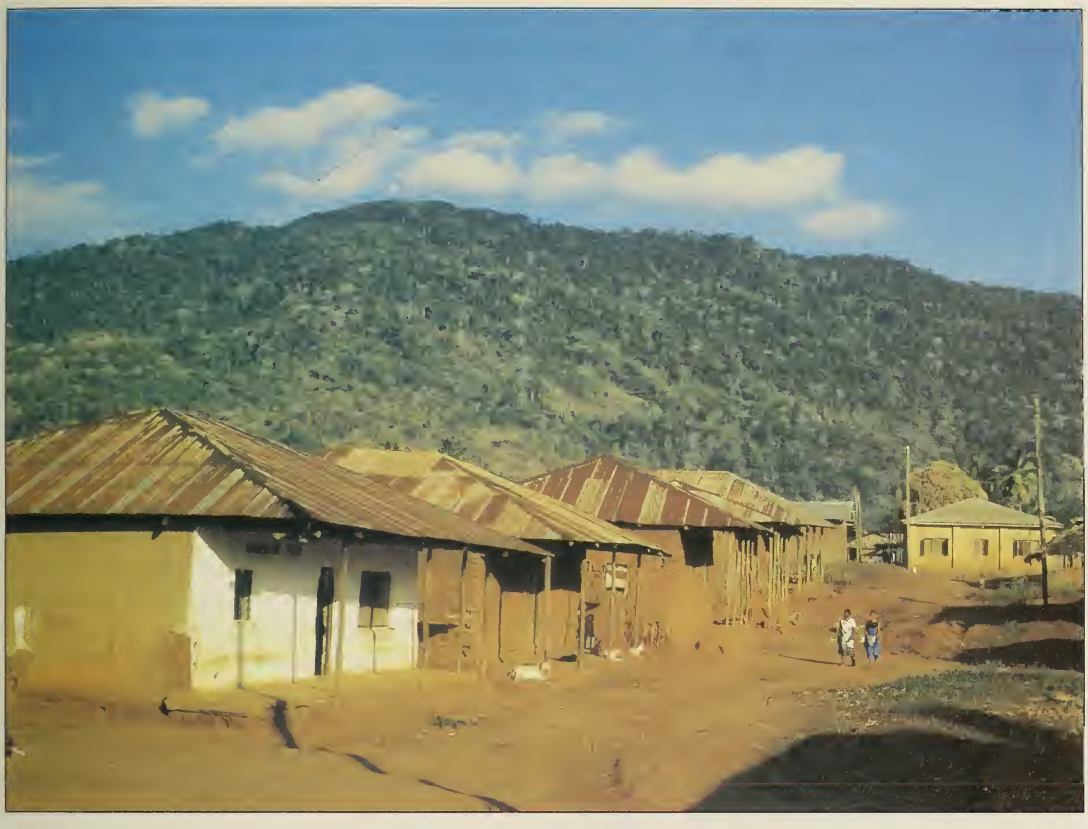
The **Black-and-rufous Elephant Shrew** *Rhynchocyon cirnei*, like a big dark rat with a red face and yellow tail, is most often seen when flushed. A stationary observer is sometimes rewarded with prolonged views of them tottering about the leaf litter. **Banded** *Mungos mungo*, **Eastern Dwarf** *Helogale undulata*, **White-tailed** *Ichneumia albicauda* and **Marsh Mongooses** *Herpestes paludinosus* are all possible. There are also some specimens from Mtai of **Sokoke Bushy-tailed Mongoose** *Bdeogale crassicauda omnivora*, one of the rarest small carnivores in Africa. Other mammals are largely nocturnal – **Bush Pig** *Potamochoerus porcus*, **African Civet** *Viverra civetta*, **Blotched** *Genetta tigrina* and **Common Genets** *G. genetta*, **Two-spotted Palm Civet** *Nandinia binotata*, **Eastern Tree Hyrax** *Dendrohyrax validus*, **duikers** and **bushbabies**. **Bushbabies** come in a range of sizes and recent research on calls[7] suggests that there may be one large species (**Garnett's Galago** *Otolemur garnetti*) and two newly described small species (**Mountain Galago** *Galagoides orinus* at higher altitudes and **Matundu Galago** *G. udzungwensis* lower). **Four-toed Elephant Shrews** are common and can often be stalked and seen by torchlight.

There is an outstanding reptile and amphibian fauna, which is still incompletely known. For example, previously undescribed species of snake and toad were found in Kwamgumi in 1992. The **treefrogs** are particularly attractive, and although mainly seen at night may be spotted by day, glued to the rubbery leaves of understorey plants. Nightwalks are also the best time to find the endearing **pygmy chamaeleons** *Rhampholeon* spp, which feed in the leaf litter and climb a few inches off the ground to sleep in the tops of seedlings. Perfectly camouflaged by day, they turn pale yellow when sleeping. **Nile Crocodile** *Crocodilus niloticus* is common in the Sigi River and occasionally kills bathers. There is reportedly one large individual in the pond on Kwamtili estate – so don't go swimming!

Other sites nearby

Mount Tongwe

Mount Tongwe (not to be confused with the village of Tongwe, north of the Muheza–Amani road), is an outlier of the East Usambaras, south of the Tanga–Muheza road. It holds important Coastal Forest and is of historical interest: a tiny summit fort, constructed by the Sultan of Zanzibar was visited by both Speke and Burton on their journeys into the interior. Tongwe is



Mt. Mtai behind Maramba village, East Usambaras (Tom Evans)

Usambara Eagle Owl *Bubo (poensis) vosseleri* (Laura Watson)

Mt. Mlinga, East Usambaras (Tom Evans)

a Forest Reserve, permission to enter should be obtained from the Catchment Forest Office at Tanga.

The "mountain" (it rises to only 648 m) can be reached via the Muheza–Pangani road, which leaves the main Tanga–Muheza road just west of the Amani junction. Fork right after c5 km and after c8 km the road enters a sisal estate. Continue south and just after emerging from the sisal turn right past a small dam. This road brings you almost to the foot of the mountain, which is clearly visible.

The forest contains species such as **Little Yellow Flycatcher**, **Plain-backed Sunbird** and **Chestnut-fronted Helmet-shrike**, but has been little studied ornithologically and there is the chance of finding something new, possibly even **Sokoke Scops Owl** or **Sokoke Pipit**.

Amboni Caves

This site is known for its extensive limestone cave system, but worth visiting also for its attractive, tranquil location in a formerly wooded limestone gorge of the Mkulumuzi River. The woodland has been reduced to scattered remnants on cliffs. However, **Black-and-white Colobus** still occurs, and the river valley is a superb birding spot with many of the coastal open-country species. **Bat-like Spinetail** is virtually guaranteed, along with **African Golden Weaver**. The caves are six km from Tanga, four km along the Mombasa road (look for the black and yellow "Amboni Caves" antiquities sign on the left), then two km down the side road. After 1.3 km, the track turns sharp left (another antiquities sign) in Kiomoni village. The guardian lives in the village and will intercept you or follow you to the caves. For a small fee, he will give a guided tour, full of anecdotes (some more credible than others). A taxi will take you cheaply from Tanga, and wait for your return, or you can catch a Maramba bus; ask to be dropped at the junction. Bicycles can be hired in Tanga.

Coastal habitats near Tanga

There are several spots within reach of Tanga which offer the possibility of seeing **waders**, including **Crab Plover** *Dromas ardeola*. South of Tanga Bay the shoreline becomes more open, with mudflats at low tide. The easiest place to find is Mwambani: walk, cycle or take the Pangani bus c6 km south (of Tanga bus station) along Pangani Road, looking for a concrete plinth on the left for the defunct Baobab Beach hotel. Follow the track, which winds two km through coconut plantations, to the coast, following the Baobab Beach markers at junctions. You can swim here at high tide, and watch waders at low tide.

Even better, but further afield, are the salt pans, mangroves and shore at Moa. You can reach these by bus along the Mombasa road (ask for a bus to Horohoro), or by taxi, but without your own transport will probably have to walk a few km. Moa village is easy to find, the turning being 40 km north on the Tanga–Mombasa road, just north of Kastam. The salt pans of Kibo Match Co are reached by staying on the Mombasa road until the right turn to Mkomazi Estates (a defunct sisal estate), c2 km after the Moa junction. Walk the four km to the pans, following signs if in doubt. You will need to ask permission to enter the pans, but this will almost certainly be forthcoming if you explain your interest.

West Usambaras

To reach the highlands, take the bus to Mombo on the road to Arusha, from Muheza, Tanga or Dar. From here a surfaced side road leads into the mountains, with regular buses from Mombo through Soni to Lushoto. There is good accommodation at Soni and Lushoto, and several Forest Reserves are within a few km of both, accessible by local bus. Permission is required to enter the reserves (from the office in Lushoto or Tanga) but a number of quiet public roads pass through some. From Soni, the easiest to reach is Ndelemai, which has roads through it. From Lushoto, try Shume–Magamba, either on the road north towards Mlalo or on that north-west to Manolo and Shume (on both, drop off the bus at the pass head, c12 km north of Lushoto, in forest). At Mazumbai, on the eastern escarpment, the University of Dar-es-Salaam maintains a field station (visitors welcome) and its own forest reserve. Mazumbai is reached by local bus from Lushoto, via Bumbuli. Finally, at Ambangulu, in the south-east corner of the West Usambaras, the tea estate protects good forest. Accommodation might be arranged by contacting the offices of George Williamson and Co in Dar-es-Salaam. Buses from Lushoto also go via Bumbuli, but the road is often impassable during the rains.

The West Usambaras reach greater altitudes than the East, and have some different vegetation types, including tree heath. Therefore true montane species may be seen, including **Rufous Sparrowhawk** *Accipiter rufiventris*, **Mountain Buzzard**, **Cinnamon-chested Bee-eater** *Merops oreobates*, **African Hill Babbler**, **Mountain Greenbul** *Andropadus nigriceps*, **Fülleborn's Black Boubou** *Laniarius fuellebornei* and **Sharpe's Starling** *Cinnyricinclus sharpii*; some of these may be seen in the East Usambaras but are more difficult there. The West Usambaras are also the only home of the **Usambara Alethe** (reportedly common in the understorey of Shume–Magamba Forest Reserve) and there are some

interesting species replacements between East and West Usambara, eg the **turaco** in the West Usambaras is **Hartlaub's** *Tauraco hartlaubi*. **Usambara Eagle Owl**, **Usambara Weaver** and **Banded Green Sunbird** are known from Mazumbai.

Mkomazi Game Reserve

This reserve is rarely visited by tourists, although there are two places to stay. Large mammals have been severely reduced by recent hunting, but you will certainly see **antelope**, with the possibility of **African Elephant** *Loxodonta africana* and others. The birds are superb, with a number of species reaching their southern limit here including **Hartlaub's Bustard** *Eupodotis hartlaubii*, **Three-streaked Tchagra** *Tchagra jamesi* and **Pink-breasted Lark** *Mirafra poecilosterna*. **Pygmy Batis** *Batis perkeo* and **Northern Crombec** *Sylvietta brachyura* have recently been found. A wide range of dry-country birds can easily be seen, including montane species eg **Verreaux's Eagle** *Aquila verreauxii*, as well as plains-dwellers eg **Kori Bustard** *Ardeotis kori*.

To reach the reserve, take the bus from Tanga or Dar to Same on the road to Arusha, then a local bus to Kisiwani. There are small hotels in Same if an overnight stop is necessary. Ask to be dropped at the turning for the reserve HQ (which is also the road to "Tony Fitzjohn's camp"). Same has a Rest House (take your own bedding and food; cooking facilities available), Tony Fitzjohn's a camp site only (water and pit latrine provided). Both sites are several km from the main road, requiring a long walk, which may or may not be permitted by the gate staff, or your own transport (4WD if wet).

Pemba Island

Pemba can be reached by plane from either Dar via Zanzibar or direct from Tanga (the low prices make it also worth considering chartering a small plane if in a party of 3–4), by dhow from Tanga (they sink regularly), or by twice-weekly (as of mid-1995) passenger ferry from Zanzibar or Tanga. In Tanga, bookings can be made at Karimjee Travel, on the market square.

Pemba is rarely visited by tourists. It has four endemic species: **Pemba Scops Owl** *Otus pembaensis*, **Pemba Green-Pigeon** *Treron pembaensis*, **Pemba Sunbird** *Nectarinia pembae* and **Pemba White-eye** *Zosterops vaughani*, plus several other endemic subspecies. Try to reach Ngezi Forest, in the north-west, where all the endemics can be seen. Most can also be found in less attractive surroundings in the towns. At Ngezi you may be lucky to spot the endemic flying fox, **Pemba Fruit Bat** *Pteropus pembaensis*. Other birds commoner or easier to see than on the mainland include sea- and shorebirds, **Palm-nut Vulture**, **Dickinson's Kestrel** *Falco dickinsoni*, **Brown-headed Parrot** *Poicephalus cryptoxanthus*, **Madagascar Bee-eater** *Merops superciliosus*, **Java Sparrow** *Pada oryzivora* (!), **Grosbeak Weaver** and **Black-bellied Starling** (endemic race). Pemba has been poorly studied by ornithologists and almost every visit turns up useful new records. A trail map and brochure for Ngezi is available from the Forest Office on Pemba.

There are small hotels in Chake-Chake, Wete and Mkoani, from where trips to the north and east coasts can be made by hiring a small car with driver: ($15–20/day in 1994). Boats can also be hired for snorkelling trips, and the reefs off Pemba are truly superb. Ask at the hotel in Chake-Chake for Chili, a helpful tourist guide who has a boat and Suzuki jeep.

Records

Interesting records should be submitted to The Recorder, EANHS Ornithological Sub-Committee, Box 48019, Nairobi, Kenya, and to the Tanga Region Catchment Forest Office in Tanga. The authors would also appreciate receiving a copy of any trip reports from visitors to the area.

Useful contact addresses

Tanga Region Catchment Forest Project (for permission to enter or camp in the forests) PO Box 1449, Tanga,Tanzania. Tel: 255 53 43453/46907; Fax: 255 53 43820.

Forest Project Officer (currently Mr M. Katigula). **East Usambaras Catchment Forest Project** (for information about the Amani Nature Reserve and enquiries about the guest house at Kisiwani) PO Box 5869 Tanga, Tanzania. Tel: 255 53 43453/43820; Fax: 255 53 43820; E-mail: usambara@twiga.com Offices of both the above are beside the second major roundabout when entering town from Dar and heading towards Mombasa, not far from the Marina Restaurant.

East Usambara Tea Company (EUTCO) PO Box 5707, Tanga, Tanzania. Fax: 255 53 43124.

Amani Medical Research Centre Guest House c/o Amani PO, Tanga, Tanzania.

Kambai Forest Conservation Project, PO Box 23410, Dar-es-Salaam, Tanzania. Fax: 255 51 150387.

Kwamtili Cocoa Estate (run by Mrs Jane Thamé, offices in Tanga just off the crossroads at the north-east corner of the football stadium).

George Williamson and Co, Kelvin House, Samora Avenue, PO Box 2667, Dar-es-Salaam, Tanzania. Tel: 255 51 31179 (Mr B Patel).

Narina Trogon *Apaloderma vittatum* (Laura Watson)

Barred Long-tailed Cuckoo *Cercococcyx montanus* (Laura Watson)

Spot-throat *Modulatrix stictigula*, Ukaguru Mountains, central Tazania (Tom Evans)

East Coast Akalat *Sheppardia gunningi* (Rob Timmins)

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Little-known African Birds

Mascarene Paradise Flycatcher *Terpsiphone bourbonnensis*

Roger Safford

One of the most attractive of the endemic birds of the Mascarene Islands (Mauritius, Réunion and Rodrigues) is Mascarene Paradise Flycatcher *Terpsiphone bourbonnensis*. Its two subspecies occur on Mauritius (*desolata*) and Réunion (*bourbonnensis*). The former taxon is highly threatened, but attracts little attention due to its subspecific status. Its Réunion counterpart is also rarely mentioned because it is common. As a result, the whole species avoids both Red Data books and lists of single island endemics. The Mauritius form is slightly larger and darker both above and below; the purple gloss on the head is also more intense and extends further on to the nape[2]. The differences are not striking, and until recently few would have suggested calling them separate species, although Salomonsen did so[5]. However, the current debate concerning the Phylogenetic Species Concept (under which Mauritius would have an endemic species, *T. desolata*) is helping to focus some attention on such forgotten taxa.

Male Mascarene Flycatcher *Terpsiphone bourbonnensis bourbonnensis*, Roche Plate, Réunion, May 1991 (R.J. Safford)

Plumage

Males lack the long tail streamers of the paradise flycatchers *Terpsiphone* spp of mainland Africa, Madagascar and Seychelles. The broad blue orbital ring, glossy blue-black crown and otherwise rufous and steely blue-grey plumage are all typical of the genus, but there is no obviously close relationship to any other species. Juveniles are distinctively plumaged, with whitish underparts and all-rufous upperparts until they moult, after which they resemble adult females.

Status and conservation

The author studied Mauritian birds in 1989–1993, and the information given here draws on these studies; the status of the flycatcher on Mauritius was summarised recently[4]. It has one of the most puzzling distributions of any Mauritian bird. In the upland forests of the south-west and central east, it seems to be heading for extinction, the available evidence pointing to a 50% decline since 1975. Pairs are widely scattered, leaving most habitat unoccupied, but at a few sites in this area, clusters of several pairs are found. One of these is in a grove of introduced Japanese Red Cedar *Cryptomeria japonica*, mixed with and surrounded by native forest in the coldest, wettest part of Mauritius. The grove is known as Pigeon Wood, as it was the last breeding site of the Pink Pigeon *Columba mayeri*, which has, however, been reintroduced elsewhere. Exceptionally low nest predation rates have been found for the Mauritius Fody *Foudia rubra* in Pigeon Wood, and it seems certain that other species like the pigeon and flycatcher profit from this too.

A much larger subpopulation of flycatchers is found at Bras d'Eau, in the hot dry lowlands of the north-east, far from native forest. The birds inhabit a unique patchwork of experimental plantations of broadleaved species, and also the conifer *Araucaria cunninghamii* (all introduced). Population densities in Bras d'Eau and Pigeon Wood appeared similar. The Mauritian population was estimated to be 100–223 pairs, of which 66–89 pairs were at Bras d'Eau; no other site was known to hold more than five pairs. This seems strange: Bras d'Eau does not support any other native passerines except the Mascarene Grey White-eye *Zosterops borbonicus*, which is abundant throughout the island. Surely we would expect native

bird species to do best in the same areas, usually native forest; and if, like flycatchers, they are widespread, should their densities not indicate some preference for either uplands or lowlands, wet areas or dry? Evidently not!

The situation deserves further study, but the occupied areas do have factors in common, which might make them suitable for flycatchers: a relatively open but shaded understorey, perfect for flycatching, and abundance of flying insects (especially mosquitoes). Crucially but speculatively, I suggest that the exotic plantations at Bras d'Eau, like Pigeon Wood, are very poor habitat for introduced mammals (rats *Rattus* spp. and Crab-eating Macaques *Macaca fascicularis*), which are the major predators of Mauritian birds' nests. Consequently, predator densities are low, and nesting success high. If these conditions are met, other factors like climate and plant species composition may not matter. For native birds, there is nothing magical about native vegetation.

Flycatchers are much commoner on Réunion than on Mauritius, numbering perhaps 50,000 pairs[1]. The absence of macaques is one factor favouring the flycatchers (and all other native birds), but population limiting factors are not known.

Ecology and breeding

The basic details of the biology of the Mauritius subspecies, summarised here, are provided by Anthony Cheke[3] and France Staub[6], and my own data. Flycatchers are typically monogamous, with adults remaining on territory and singing all year. The egg-laying season extends from September to at least January at both Bras d'Eau (13 clutches) and Pigeon Wood (six clutches or broods). In both uplands and lowlands, the clutch and brood sizes are usually three (including both clutches and three out of four broods that I saw), but occasionally two (one brood seen by me).

Both sexes nest-build, incubate and feed the young. The only nest I monitored for the entire breeding period took 29 days from clutch completion to the brood fledging. From this, and other nests monitored for parts of the cycle, the incubation and fledging periods must be 15–16 days and 13–14 days respectively. The young become independent c4–6 weeks after fledging, and appear to complete their post-juvenile moult (a partial one) at about the same time. None of eight fledged birds colour-ringed in three nests in Pigeon Wood was seen after independence. Similar observations have been made at Bras d'Eau, and juvenile dispersal is the most likely explanation. Second broods may be laid soon after: I saw one laid 6–7 weeks after the first brood fledged. Third broods have not been recorded; perhaps the breeding season is too short. After one nest was robbed by a predator, a new nest was started within two days and the first egg of the repeat clutch was laid eight days later. Following the breeding season, adults undergo a complete moult.

Hints for visitors

Visitors to Mauritius may have great difficulty finding flycatchers in the south-west, and should head for Bras d'Eau. The *Araucaria* plantations are visible from afar and accessible via public roads. An hour or two should guarantee a sighting. Any sightings outside this area should be reported to the Mauritian Wildlife Foundation (formerly Mauritian Wildlife Fund) in Tamarin. On Réunion, flycatchers are common above St-Denis, the home of the Réunion Cuckoo-Shrike *Coracina newtoni*, among other places.

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Male Mascarene Flycatcher *Terpsiphone bourbonnensis desolata*, Pigeon Wood, Mauritius, November 1990 (Colin Taylor)

Friedmann's Lark *Mirafra pulpa* (David Pearson)

Friedmann's Lark *Mirafra pulpa* (Neil Baker)

Friedmann's Lark *Mirafra pulpa* – an enigma

Peter C. Lack

Friedmann's Lark *Mirafra pulpa* remains something of an enigma. Its similarity to other species, most notably Singing Bush Lark *Mirafra cantillans*, has presumably led to its being overlooked; however its call is distinctive, very obvious and far-carrying. This note principally seeks to alert observers to its possible presence, in order that they may be able to add significantly to our knowledge of the species. It should occur in some of the areas visited by birdwatching tourists, although is unrecorded by them. Nobody knows, for example, whether or not it is endangered or vulnerable, nobody has ever found it breeding and indeed rather few people have even seen it at all.

The species was described in 1930 by Herbert Friedmann[1] from a specimen collected in southern Shoa Province of Ethiopia by E A Mearns in May 1912. Three birds (an adult and two young individuals) were also collected by the same expedition near Archer's Post in northern Kenya and described originally as *Mirafra candida*[2]. It is now generally agreed that these taxa are conspecific. The species was then lost until the early 1970s when single birds killed themselves against the walls of Ngulia Safari Lodge in Tsavo West National Park in December 1972 and November 1974, and were collected by the Ngulia ringing team.

I lived in Tsavo East National Park for just over two years from late 1974 and during that time saw, or more correctly heard, a lark fairly regularly which was not in any of the books available to me. Although very similar to Singing Bush Lark it had a 'song' totally unlike that species and it occurred in rather different habitat, it preferring areas with quite thick grass (relatively rare in Tsavo East National Park) with some bushes and/or small trees present. The call was a characteristic and very far-carrying *hoo-ee-oo* with emphasis on the second part (almost *hwee-oo* at times). My records were in December or January, in and immediately after the short rains, and again in April. I had no records during the dry season. This was not just that it was not singing, as I had no records of any lark resembling the species at that time. For the period of my stay in Tsavo I retained records of this 'species' on the basis of its song. About a week before I left, the then warden, Tony Carn, collected one in order to prove that it was indeed *Mirafra pulpa*. For a full description of the bird and more details of my records at this time see Lack[3].

Since then, there has been one further bird caught and ringed at the lights of Ngulia, in December 1978. A bird tape-recorded by Rowland McVicker at Kiboko, near the north-west corner of Tsavo East in June 1974 has been confirmed as the species[4]. During the next 15 years there were several claims, from parts of northern Kenya in particular, but none have been substantiated, and several of those initially accepted in East African Bird Reports have subsequently been withdrawn by the observers concerned. It was also looked for regularly in Tsavo, but without success, until December 1992, when the Ngulia ringers found up to c150 birds in a small area near Kilaguni Lodge in Tsavo West National Park[4]. The birds were singing and displaying although no concrete evidence of breeding was found.

Subsequent to this, the only records I am aware of are the following. In September 1994, Neil Baker photographed one in Mkomazi Game Reserve in northern Tanzania. My own visit to Mkomazi in July–August 1993 failed to produce the species, but when I returned in December 1995, I heard the characteristic song on four mornings. In two and a half weeks in the reserve I recorded at least ten individuals in three separate locations, one with seven individuals in earshot at once. Subsequently, Neil Baker has recorded it again in Mkomazi in March 1996.

So what is its status? The short answer is that nobody really knows. It is clearly not a common bird anywhere and may warrant classification in one of the rare and endangered categories of Red Data books, but as so little is known it is difficult to be sure.

Most records are from the Tsavo area of south-east Kenya and extending into northern Tanzania, and from December, January and April. As three have now been attracted to the lights of Ngulia Safari Lodge, it would appear that it is principally a migrant, arriving in the Tsavo area for the rainy season. However, the two records in June and September indicate that at least some birds appear to remain for the dry season. The lack of records from Tsavo East in the dry season may be due to habitat requirements. During the rainy season in Tsavo East the preferred conditions are met in several places but as the grass dries out and disappears for the dry season, the area becomes much less suitable for the species. Mkomazi and Kiboko are situated in areas with higher rainfall and may therefore have enough grass to sustain it through other seasons. However, the species remains very difficult

to distinguish in the field when not calling. Zimmerman *et al*[5] note that it is richer-coloured than the sympatric Singing Bush Lark and with more heavy streaking on the upperparts, rather less prominent white superciliary stripe, and usually more reddish brown central tail feathers (not greyish brown or sepia). Also Singing Bush Lark prefers more open habitat and does not need bushes or trees.

Birders are requested to search for the species and report all possible sightings. The call should be easy to pick out, and once learnt is not forgotten. Don't forget to have your bedroom window open either, as it often sings at night, especially with a full moon!

Acknowledgements

I am very grateful to the Royal Geographical Society for inviting me to participate in the Mkomazi Ecological Research Programme and for facilitating my visits there.

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Short Notes

The status of Pel's Fishing Owl *Scotopelia peli* in the Togo–Bénin Gap

Patrick M. Claffey

Cheke & Walsh[1] state that Pel's Fishing Owl *Scotopelia peli* is probably extinct in Togo, noting a lack of records, despite the authors' extensive helicopter flights throughout the Togolese river systems during 1979–1990. The only known record of the species in Togo dates from 1902 at 09°12'N 01°25'E[9].

The species has, however, been observed in the Pendjari and Arli National Parks, in neighbouring Bénin and Burkina Faso, where it is described as rare in riparian habitat, presumably along the Pendjari River[6]. It is resident on several river systems in Park W, Niger, which also encompasses part of northern Bénin, and a pair was regularly noted along the Mekrou River, which forms the border between Niger and Bénin[7]. It was also recorded during the 1996 African Waterfowl Census, in southern Bénin[2], although it appears that these observations may be doubtful. It is now thought that Pel's Fishing Owl was probably being confused with African Marsh Owl *Asio capensis* and it is expected that this error will shortly be corrected in print. Pel's Fishing Owl is an uncommon resident in Nigeria, with a small number of breeding records[4], and a resident in Ghana[3].

The author recently attempted to establish whether the species was present in gallery forest along the Ouémé River in central Bénin. The habitat along the river, which is largely undisturbed, had been covered during onchocerciasis research (in which Cheke and Walsh participated) but appeared particularly suitable. There is dense gallery forest along the river, both north and south of Bétérou (09°19'N 02°16'E) and the river flows through the Forêt Classée of the Ouémé Supérieur to the north of the town and the largely unpopulated Forêts Classées of Ouari Maro and Monts Kouffés to the south. The river has many large permanent pools and apparently sufficient fish stocks to support the fishing owl. Gibbon's recording[5] was memorised but several evenings in early April 1997 were spent in this area without success. Then, at dusk on 12 April 1997, as I was leaving the river after a swim, the unmistakeable call was heard: a very deep, soft sonorous horn-like boom, first on a single note, followed by a continous higher-pitched *hu-hu-hu*. This lasted some minutes before the bird fell silent, but the performance was repeated the next evening at exactly the same time, and for the same short duration. Although the surrounding gallery forest was searched on 13 April, I was unable to locate the bird. Local Gambari fisherman have since confirmed that they have seen the species on the river relatively frequently.

The only possible confusion species, due to size, habitat and, to a certain extent, voice is Giant Eagle Owl *Bubo lacteus*, which I have also observed in Bénin. However, the voice of the latter is quite different, there was no 'gruff' quality to the vocalisations heard at the Ouémé River, which corresponded perfectly with the recording by Gibbon[5] and the description of Maclean[8].

From this observation, it may be surmised that the species may still be extant in Togo; given that Cheke & Walsh's[1] observations made after arrival in a helicopter can scarcely have been favourable for encountering a largely nocturnal species which is unlikely to be flushed by such means.

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B.P. 302, Parakou, Bénin.

The immature plumage of Sun Lark *Galerida modesta*

Volker Salewski

During a stay in Comoé National Park, Côte d'Ivoire in January 1995, a lark was observed and photographed in a recently burnt area of savannah. The identification of this bird caused some problems. Four lark species have been recorded in the park: Flappet Lark *Mirafra rufocinnamomea*[2], Dusky Lark *Pinarocorys nigricans*[2], Sun Lark *Galerida modesta*[2] and Chestnut-backed Sparrow-Lark *Eremopteryx leucotis*[6]. It was clear that the bird was not Dusky Lark or the sparrow-lark. From the photograph it was identified as a Sun Lark (presumably, on distributional grounds, of the nominate subspecies[4]), due to its prominent supercilium and black stripe between the bill and eye. The superficially similar Flappet Lark in the area, *M. r. buckleyi*, lacks a dark stripe between the bill and eye, whilst the illustration of this species in Keith *et al*[4] shows only a faint supercilium which is described as 'poorly marked'. Identification problems were caused by the broad whitish tips to the wing coverts which formed two distinct wing bars in the bird observed in Comoé, although this feature is not illustrated in Keith *et al*[4]. Nevertheless, the text in this work states 'scapulars and upper wing coverts...tipped whitish'. In the description of the field characters, this feature is not mentioned[4]. This implies that the whitish tips are not usually very obvious, unlike those on the bird in the photograph. Another feature which is not described in the text or shown in the illustration[4] are the whitish tips to the feathers on the back, head and ear coverts. Such features are however described for immature birds of the similar Flappet Lark[4]. The plumage of immature Sun Lark is apparently undescribed[1,4,7], although Jones[3] mentions finding a recently fledged juvenile in The Gambia, she does not describe the plumage. Mackworth-Praed & Grant[5] in their text description of Sun Lark state that 'the young bird has white spots on the tips of the feathers of the upperparts'. This, and the fact that immatures of some other larks, eg Flappet Lark, show this white spotting leads to the conclusion that the bird photographed is an immature Sun Lark.

Sun Lark *Galerida modesta* (Volker Salewski)

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Reviews

A photographic guide to birds of prey of southern, central and eastern Africa

David Allan. 1996. New Holland, London. 171 colour photographs. £7.99.

Birds of prey have always held a fascination for anyone visiting these regions of Africa. Whether a visitor with a casual interest in wildlife, or a keen birder, it is difficult not to be impressed by the sheer abundance and diversity of species. In this book, David Allan has managed to assemble 171 photographs portraying 88 of the 102 species occurring within the region covered. These vary from full page to approximately 2 cm x 2 cm. Only 15 of the photographs are of birds in flight; and since many raptors are only ever seen in flight, many of the species have supplementary colour illustrations by Peter Hayman.

A slim introduction provides brief details of each of the major groups covered; the best places to find birds of prey; and the problems of identification. Following this are the species accounts. Here the author has grouped together species which he considers to be easily confused, rather than following strict taxonomic order. Species accounts vary from half a page to two pages, and include a thumbnail distribution map, description of the bird (with key features in italics), illustrations and photographs. The species accounts are followed by some suggestions for further reading, a habitat map and a glossary of terms.

My slight criticisms are as follows. Distribution maps are too small, as are some of the photographs, eg the immature Red-breasted Sparrowhawk *Accipiter rufiventris* (Pallid Harrier *Circus macrourus* on the other hand warrants two photographs). There are 14 species apparently omitted from the guide but we are not informed what they are. Whilst many of the photographs are of excellent quality, it is a shame that more do not depict birds in flight. I personally find the quick reference tabs of little or no use, and wonder why the publishers persist with these.

On the positive side, the book is truly pocket-sized and a useful supplement to a good field guide when visiting the region. At a time when most books are now in the £25 plus bracket, this book represents extremely good value for money, and a worthwhile addition to any birder's bookshelf.

Brian Field

Oiseaux de la Réunion

N. Barré, A. Barau and C. Jouanin. 1996. Les Éditions du Pacifique, Paris. 208 pp, colour plates. No price details.

This is a greatly updated edition of the book published under the same title in 1982 by Nicolas Barré and Armand Barau. The well-received 1982 volume has been out of print since 1990. Following the death of Barau, Christian Jouanin joined Barré to produce this new edition, which incorporates much new information. This excellent book is essential for anyone interested in the birds of the Malagasy region, and birdwatchers visiting Réunion must get a copy.

The 75 pages of background make fascinating reading, starting in the preface with a quick résumé of recent ornithological developments on the island. The physical background and vegetation of the island are described and illustrated with very well reproduced photographs and figures. Accounts of the early visitors (since the 17th century), along with recent interpretations of sub-fossil material, are summarised. These include the discovery of the extinct ibis named *Borbonibis latipes*, the descriptions of the mysterious "dodo" or solitaire of Réunion (*Ornithaptera solitaria*), and the realisation that the two were one and the same: the solitaire was not a dodo at all, but an ibis. Finally, the ibis has been considered congeneric with the Sacred Ibis *Threskiornis aethiopicus*, so the bird is now called *Threskiornis solitarius*: a lesson in scientific nomenclature as well as in detective work! The present avifauna and its conservation, including the developments since 1982 (such as the slaughter of Barau's Petrels *Pterodroma barauí* – quickly stopped, thank goodness – and the progress towards protected area establishment) are then discussed.

In the species accounts, the authors have sensibly included only species of regular occurrence, but mention in the text other species that have occasionally turned up, or might do so in the future. The species texts are generally of one or two pages, and are not intended to be comprehensive. They contain sections on identification, behaviour, nesting and status–distribution. Key identification points are usefully in bold type, but calls are very sketchily described. In traditional field guide fashion, the plates are irritatingly scattered through the text section; they should all be together. The quality of the plates does not quite match those of many recent guides, but most features are satisfactorily shown (although the Réunion Bulbul *Hypsipetes borbonicus* has lost its startling white iris), and visitors with this book should be able to identify all they see. The notes opposite the plates are only in French and Créole; it would be useful to have scientific names there too (and perhaps even English).

Errors and inconsistencies are few. A table of native birds on the Mascarene islands contains several, such as referring to the Rodrigues Warbler as *Bebrornis rodericanus* (it has long been placed in *Acrocephalus*) and linking it to *Nesillas typica* of Madagascar (where *A. newtoni* is surely the closest relative). In the same table, the *Hypsipetes* bulbuls of Mauritius and Réunion are lumped; in the rest of the text, they are rightly split. No mention is made of the recent sightings at sea of the Réunion (Black) Petrel *Pseudobulweria aterrima*; nor of the rumours and reports about a surviving owl (see *Bull. ABC* 2: 54 and 3: 36). However, thanks to the history section we can deduce that if the latter exists it is probably *Mascarenotus grucheti*. One final complaint to the publishers: the tough, one-piece plastic cover of the 1982 edition was far more practical than the dust-jacket and imitation canvas of the new

edition.

Roger Safford

Pheasants of the world: their breeding and management

Keith Howman. No date. 184pp, over 330 colour photographs. Hancock House Publishers Ltd. No price.

As the title suggests, this is a book aimed largely at aviculturists and as such is likely to be of limited interest to ABC members, especially when one considers that only one species included, Congo Peacock *Afropava congensis*, occurs in the ABC region. However, the superb collection of photographs, mainly of captive birds, are mouthwatering and will undoubtedly encourage members to consider trips to Asia in search of this attractive group.

Richard Webb

The Birds of Togo. An annotated Check-list

Robert A. Cheke and J. Frank Walsh. 1996. 212pp. BOU Check-list No. 14. British Ornithologists' Union, Tring.

Coastal West Africa is becoming increasingly well served with the extremely useful BOU Check-list series. The Gambia, Nigeria, Ghana and, stretching a geographical point, Cape Verde Islands have been covered so far, and one for São Tomé, Príncipe and 'Pagula' – as the cover of this book has it – is in preparation. Now comes the current volume on Togo, and what a scholarly and extremely thorough examination of the avifauna of this ornithologically poorly-known country it is.

As an erstwhile resident of Côte d'Ivoire, at a time immediately following publication of the Ghana volume, I have personal experience of just how helpful these Check-lists can be. Comparatively speaking, the avifauna of Côte d'Ivoire was less well documented, so to have information of what was where in neighbouring and ecologically similar Ghana was a great advantage. This included the fun of inferring what species, apparently absent from Côte d'Ivoire, 'ought' to be where and then trying to find them in comparable habitat. Mostly fruitless but occasionally not, which left one feeling quite unreasonably smug.

The current volume follows the established format. The Introduction comprises sections of political history, the history of ornithological exploration, geography, climate, vegetation etc, analyses of migration and breeding data, a consideration of the zoogeographical origins of the avifauna relative to the Dahomey gap and the status of conservation in the country. The authors have had to wrestle with the complex colonial history and consequent shifting borders of Togo, which they clearly explain but which, equally clearly, has caused them considerable headache and extra work in trying to establish whether 19th Century records from German Togoland now lie over the border in Ghana. An informative map is provided, showing these confusing changes, but could have been made more so by indicating where present day borders lie.

The section on the ornithological exploration of Togo is fascinating. One striking feature here was how much collecting and study took place under German rule between the 1880s and 1914 and how little in the half century that followed, until a series of Belgian expeditions began in the late 1960s.

The lengthy section on vegetation, based largely upon satellite imagery work from the mid-1970s, goes into considerable detail and shows Togo to be surprisingly ecologically diverse: five 'eco-floristic zones' in fact. Outlines of these are shown on one map and in detail on a second in colour, based upon the satellite images themselves. Fifteen different habitat types are shown here, through subdivision of the eco-floristic zones, and one has to work quite hard in some places to decide which of the six shades of yellow/orange or five of green applies where. This is a minor complaint, however, about what is a considerable advance on the more generalised vegetation maps seen elsewhere in the series. Of the vegetation of the country as a whole the authors say that its 'most distinctive feature....today is its extremely degraded state'.

The bulk of the book is devoted to the Systematic List, giving details on the status and assessments of relative abundance of the 624 species so far recorded from within its borders. This seems, on the face of it, a surprisingly large total, given the small size of the country, but is a consequence of those five eco-floristic zones. I was impressed by the number of lowland forest species on the list – one doesn't think of Togo as having much forest but this was not the case. It is, however, sadly true today – some 3000 km^2 remain, less than 8% of its historical extent, of which only about 470 km^2 were considered undisturbed in 1980. The future for the likes of the Lagden's Bush-Shrike *Malaconotus lagdeni* in the country must, consequently, be bleak.

The number of the authors' own records in the list is also striking, reflecting just how large a contribution they have made to our knowledge of the avifauna of the country. Their involvement with Togo dates back to the 1970s, and during the next decade they spent much time living in the country, working on a World Health Organisation onchocerciasis control programme, which enabled them to visit many remote parts of the country – often by the unsporting means of a helicopter!

The book includes 53 good quality colour photographs by the authors – because they are in colour (and many taken from the helicopter!) the 36 or so habitat shots are more useful than such things often are. The remainder are bird photographs, most which are of non-passerines; the four of headlamp-dazzled nightjars stand out.

Finally, a complaint. This complaint applies equally to the book under review and to the others in the series with which I am familiar, and concerns the maps. A specific example serves to illustrate the point. An extremely important collecting locality in Togo is Misahöhe – much of the early German material comes from this site, and for many passerine species, eg Green-backed Twin-spot *Mandingoa nitidula* and Little Green Sunbird *Nectarinia seimundi*, it remains one of the few places in the country from which the species have been recorded. The Introduction contains seven maps of Togo but on none of these does the name Misahöhe appear – unlike the other main German collecting locality, Bismarckburg, which is shown. To attempt to locate it, one has to refer to the Gazetteer at the back of the book, return to the front, map reference lodged in short-term memory or written on a separate piece of paper, and try to assess its location using a map of one's choice. It is, in fact, very close to the Ghana border, immediately NE of the (mapped) town of Kpalime. None of the maps come with

latitude and longitude marked more helpfully than by marginal indications at 1° intervals. This makes things difficult enough in relatively small Togo; on maps in the companion volume for Nigeria (Elgood *et al* 1994. BOU Check-list no. 4, 2nd ed), these range up to 5° intervals! So, come on BOU, make an excellent production even better by ensuring that, henceforth, the main localities referred to in the text appear, where possible, on at least one map. Where overcrowding might become a problem, print faint gridlines across the map at, say, fifteen minute intervals or something equally appropriate. Now, what would be even better, would be the inclusion of altitudes in the Gazetteer as well.

Dr L. D. C. Fishpool

Munias and Mannikins

Robin Restall. 1996. 264 pp, 80 colour plates, 145 line drawings, 44 distribution maps. Pica Press. UK £28.

The line of striking black, chestnut and white munia and mannikin species perched on plant fronds against the white dust jacket of this book provides an arresting cover design, which prepares the reader well for the remainder of the book.

Robin Restall would appear to be uniquely placed to write and illustrate this particular book, having dedicated 45 years of his life to the world of finches. Such dedication involved lengthy research and correspondence with ornithologists, zoologists and aviculturalists from around the world, and Robin himself kept many of these species in captivity, including several poorly known species. A seven-year stay in Hong Kong permitted Robin to observe species in the field in many Asian countries.

The book opens with a couple of pages on taxonomy and relationships of the munias and mannikins. Restall uses the genus *Lonchura* throughout, which differs from some authors. Sibley & Monroe[2], for example, recognise four genera. Restall encourages the reader to delve further into the history of these relationships and provides dendrograms of genetic variation of species given by two other authors.

There follows five pages on the natural history of munias and mannikins, which introduces the following topics – general distribution, habitat (chiefly birds of arid savannah and open grassland), morphology, plumage and colour, sexual dimorphism, the effects of captivity, vocalisations, nesting and behaviour.

The 16 plates at the front of the book illustrate all of the world's species of munias and mannikins, and many of the races. Amongst the six African species represented in the book, the only omissions are illustrations of the Somali race of Black-and-white Mannikin *Lonchura bicolor minor* and, perhaps rather more surprisingly, Southern Magpie Mannikin *Lonchura fringilloides pica*, given this subspecies' relatively extensive distribution in southern and eastern Africa. This series of plates is rather regimented and stylised, but does allow comparisons between species and subspecies.

The main text of the book occupies 124 pages. The layout and design is attractive and the text itself readable and well-referenced. The breakdown of large chunks of text into appropriately headed paragraphs makes for easy reference.

Each species account is divided into the following sections – field characters, status, habitat, habits and behaviour, food and feeding, movements, call, song, courtship and display, breeding, distribution and a more detailed plumage description. In addition to this compartmentalised and readable text, there is a liberal scatter of Restall's vignettes throughout. The vignettes vary from species to species but typically include a behavioural aspect (eg bird singing, various features of courtship and display), differences in plumage features (eg between male and female or interracial identification feature) and a sketch of some aspect of the ecology of each species eg nest structure, food items, palate markings of nestlings or egg size comparison. Clear distribution maps are given for each species, showing the range for each race; major river systems are helpfully shown, permitting an idea of range to be ascertained through a fairly cursory inspection of each map, provided one has some familiarity with the geography of the range in question. Barely a page passes which isn't broken up by a one or more vignettes. That Robin Restall's research is meticulous and thorough is demonstrated through both text and sketches – for example, one of the more diverting sketches is of a Java Sparrow *Lonchura oryzivora* attempting to roost under a Barbary Dove.

Following the main text there are a further 62 colour plates! These are measured drawings of each species contained within the book, and for me are one of the its highlights. The plates are less stilted and more jizzy than the illustrations at the front of the book. Each depicts the species lying face down with right wing extended to illustrate the upperwing, mantle, rump and uppertail pattern. Similarly, adjacent to this is the bird depicted lying on its back, with right wing extended illustrating underwing pattern, undertail pattern and underside pattern and coloration. This two-diagram feature is repeated at the bottom of each page and depicts, variously according to species, juveniles and/or females.

Additionally, most species are given a sketch map showing the origins of the individuals illustrated. Other informative thumbnail sketches typically include bill shape and size with measurements (eg for male and female) and breast and flank feather patterning and coloration. The accompanying, handwritten text is clear, concise and engineered to be broken up by the individual illustrations, giving this final lengthy section a very personalised, notebook feel.

This book includes the six African species in this genus – Madagascar Mannikin *Lonchura nana*, Bronze Mannikin *L. cucullatus*, Black-and-white Mannikin, Magpie Mannikin, African Silverbill *L. cantans* and Pearl-headed Mannikin *L. caniceps* (absent from plates at rear of book). The information given for these species compares favourably with the much scantier information provided within Finches and Sparrows[1].

With the wealth of information incorporated in such a text, it seems churlish to carp, but one feature which I feel adds visual information to such a book is a modest series of photographs showing the habitats various species are likely to occupy. This certainly helps conjure a 'sense of place' for the reader, and has, for example, been recently used to good effect in Zimmerman *et al*[3]. I presume inclusion of such photographs incurs additional costs and work pressure upon already publishers.

The genus *Lonchura* has previously been covered by Finches and Sparrows[1] in the Helm series. However, the volume and detail of

information provided by Robin Restall far surpasses that included within the latter guide, which is intended more as as a ready reference and identification guide. For example, Restall gives a larger number of more closely referenced sources for each species with far more text for each. Throughout, Restall's work offers a more thorough treatment of the genus.

Although the avid Afro-ornithological bibliophile may not see the necessity for this purchase, due to the rather few *Lonchura* species occurring within the continent, this book really is a tremendous achievement by the author, and provides a remarkable example of just how far the production of specialist bird books has progressed. In terms of content, layout and presentation, this sets a still higher standard for others to emulate. Any birder or ornithologist gradually collecting this series of books will surely want to obtain the latest addition to this series.

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2. Sibley, C.G. and Monroe, B.L.Jnr 1990. *Distribution and Taxonomy of Birds of the World*. New Haven & London, UK: Yale University Press.
3. Zimmerman, D.A., Turner, D.A. and Pearson, D.J. 1996. *Birds of Kenya and northern Tanzania*. London: A. & C. Black.

Tony Stones

Cranes: their biology, husbandry and conservation

David H. Ellis, George F. Gee and Claire M. Mirande (eds) 1996. 307pp, colour photographs. Hancock House Publishers Ltd. No price given.

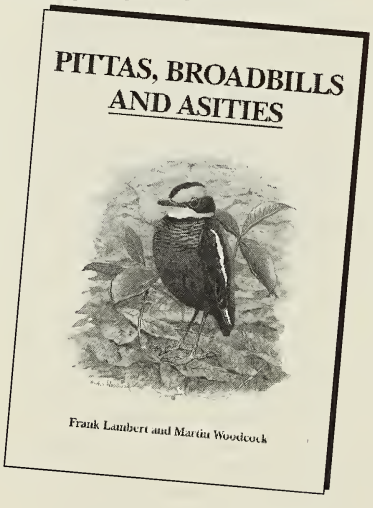
This book deals with all aspects of crane biology, captive breeding and reintroduction that has been learned through captive breeding programmes and field studies, mainly carried out by the International Crane Foundation and Patuxent Wildlife Research Center. The book thus tends to lean towards the two North American species, partly due to their being perhaps the most studied and partly due to all the contributing authors being resident in the USA. An impressive quantity of knowledge is very well presented, covering all aspects of crane biology and population management, from suitable diets for captive birds to artificial insemination techniques, cryptopreservation and genetic management of populations. The final chapter covers the ecology, status and conservation of all species, providing population estimates for populations of all species and a reasonably detailed conservation assessment. The book is the definitive work on crane biology and rearing and as such is not intended for the general birdwatcher or naturalist; however if you have a special interest in cranes or plan to raise or release a few it would be invaluable.

Robert S. R. Williams

Pittas, Broadbills and Asities

Frank Lambert and Martin Woodcock. 1996. 267pp, 24 colour plates, 51 maps, 21 line drawings and 12 sonograms. Pica Press, The Banks, Mountfield, Nr Robertsbridge, East Sussex TN32 5JY. UK£26.00.

This is one of the latest additions to the rapidly growing series of 'family



handbooks' which have been brought out by a variety of publishers over the last 14 years and is the fourth to have originated from Pica Press. Covering two families, the Pittidae (Pittas) and Eurylamidae (Broadbills and Asities), the author and artist have been privileged to describe and illustrate 51 of the most sought-after species in the Old World. The author has largely followed the classification and sequence in Sibley & Monroe[1]. The addition of a couple of species, such as the re-splitting of the 'wattled broadbills' in the Philippines will not be frowned upon by followers of the Phylogenetic Species Concept and indeed the comprehensive coverage given to subspecies (including illustrations) will prove most valuable if this trend continues. In view of the treatment of the Garnet Pitta *Pitta granatina* complex, for how much longer will the three vocally and morphologically distinct 'forms' of Banded Pitta *P. guajana* be treated as one species, not to mention the even more diverse Red-bellied Pitta *P. erythrogaster* group?

The book follows a similar format to other volumes and can be broken down into three main sections: the introductory chapters; a series of 24 full colour plates by Martin Woodcock depicting all 51 species, and a systematic section with detailed text for each species. Having described the style and layout of the book there is an 18 page introduction to the families, which is both well written and informative, if a little brief in parts, and covers phylogenetic relationships, classification, biogeographic history and distribution, evolutionary ecology of broadbills and asities, distinguishing characteristics of pittas and broadbills, food and foraging, social and breeding behaviour, nesting and care of young, migration and other movements, and threats and conservation.

The 24 colour plates not only illustrate all species but a high proportion of the subspecies, and in most cases depict immature plumages. The overall standard of the plates is extremely high, though at times they lack the precision of some modern artists. There are also a few inexplicable anomalies such as the discrepancies in juvenile and immature plumages of the same species depicted on different plates (eg Blue-naped *P. nipalensis* and Gurney's Pittas *P. gurneyi*), the rump of the flying Blue-winged Pitta *P. moluccensis* is depicted as lilac instead of glistening blue and the 'wry-billed' Mindanao Wattled Broadbill *Eurylaimas steerii* on plate 22 looks slightly strange! The production of the plates and paper quality are both excellent, bringing to life the stunning colours of the pittas in what are unquestionably the best set plates of these families to date.

The systematic section gives a comprehensive summary of existing knowledge for each species broken down into the following headings: taxonomy (where relevant); field

identification; voice; distribution (which includes a detailed map produced at a sensible scale but sadly lacking country boundaries); geographical variation; habitat; status; food; habits; breeding; description and measurements. The species' texts are extremely comprehensive and the wealth of information gleaned by the author from a vast list of references (which run to 13 pages), as well as from a long list of personal correspondents and an impressive personal knowledge is highly commendable. Interspersed in the text are more than 20 line drawings depicting various subjects including nests, detailed head patterns and display postures. Although generally useful, a few of these appear a little rushed.

Of the ten species covered which occur within the African Bird Club region, six have been recently covered in Volume 4 of *The Birds of Africa*[2] and it seems natural to compare the two. Although the plates in both volumes were painted by the same artist, the plates in this, the more recent of the two, are a significant improvement, especially the two pittas which are far neater and more life-like. Overall, more subspecies are illustrated than in *The Birds of Africa*. Although the text in *The Birds of Africa* is adequate for most purposes and certainly more comprehensive than in previous literature, Lambert has managed to expand and update the available information, has filled many of the gaps in our knowledge of these little known species and has provided better, more detailed and accurate range maps.

The final group occurring in the ABC region, the asities, were previously considered to constitute an endemic family in their own right. Being confined to Madagascar, they are not covered in *The Birds* of *Africa* and most people's knowledge of this fascinating group will have been gleaned from the coverage given in Langrand[3]. The plate of asities, although by far the best anywhere, is to me a little disappointing and fails to capture the jizz and astounding bare part colours of the species' (see photographs of Schlegel's Asity[1]). Interestingly, the two species of sunbird-asities which occur sympatrically in Madagascar probably present the greatest identification challenge of any species pair in the entire book. The careful analysis of available data and clear presentation of plumage differences between the two species should go a long way toward eliminating misidentifications in the future. I do, however, feel that it is a pity that all four asities are depicted on one plate, inevitably resulting in very small paintings of sunbird-asities which lack some detail.

If I had to rank the 'family handbooks' produced to date, this volume would certainly score highly and be near to the top. The excellently researched and comprehensive text backed up by a very pleasing set of plates, mean that anyone with an interest in these groups, be they amateur birders or serious researchers, should not be without this book and I can highly recommend it.

References

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Pete Morris

A Birdwatchers' Guide to the Canary Islands

Tony Clarke and David Collins. 1996. Prion Ltd., Perry. 110 pages, 15 line drawings, 48 maps. £10.75.

The Canary Islands are ideal for this type of book: the area covered is relatively small, the species list, although short, includes several 'must-see species' found in a selection of well defined sites. Does this guide live up to expectations?

The bulk of the book deals with the different islands and their most important sites, as well as several minor ones. Thus, Tenerife, the prime island for birding, is covered in 25 pages and 37 sites. Each site is covered by a clear, lucid and easily understood map, largely guiding you to the site in question, but sometimes giving details of the site itself. A minor flaw is that not all maps are shown with north facing upwards. Thus, I was initially confused by the Punta de la Rasca map, which appeared as if it was on the north coast (whereas it is on the Tenerife south coast). Consequently, this map does not recreate the 'feeling' of this great site. The usually short but adequate text chiefly deals with how to get to the site and strategy once there, what time of day and year is preferrable, where to walk, to look out for golf balls etc. Birds of special interest are listed and details are given of how to find the more difficult or essential ones. Thus, the book could be characterised as 'rather brief texts but a wealth of localities'. Given the detailed and accurate maps, this is entirely satisfactory.

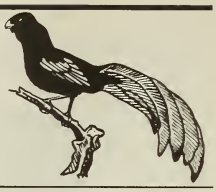
Following the main section, there is a chapter on Selected Bird Species, which gives perspicuous data concerning abundance and on which islands the species in question is found. This is a short and informative summary of the islands essential avifauna. However, I would have wished that the main sites for species such as Blue Chaffinch *Fringilla teydea*, Canary Islands Chat *Saxicola dacotiae* and the pigeons were listed in detail, to aid the planning of a trip. Although it could easily be argued that a successful visit requires reading through all of the 110 pages of this booklet, such a list would be handy. A full species list, giving details of abundance and seasonal occurrence of all 350 birds recorded on the islands, together with lists of mammals, dragonflies, reptiles, amphibians and butterflies end the book.

Introductory paragraphs deal with visa, currency, car hire and similar phenomena, which are generally better treated in other fora. However, the paragraph on the Los Christianos–Gomera ferry, essential for seawatchers, is worthwhile, although the addition of a telephone or fax number would have been appreciated.

I have found some of the titles in the Birdwatchers' Guides series 'adequate'. The Canary Islands volume, however, deserves the greatest praise. Although there are a lot of privately published Canary birding reports around, it would be inadvisable for anyone to visit these fascinating islands without Tony Clarke and David Collins' book. Nice line drawings by Phil Jones cover most of the Canary specialities. The chat drawing is actually excellent!

Magnus Ullman

Recent Reports



These are largely unconfirmed records mainly covering the previous six months; all dates refer to 1997 unless otherwise stated. We urge that contributors submit full details to the relevant national or regional organisations. It is suggested that observers who are unfamiliar with the status of birds in a particular country refer to R.J. Dowsett and A.D. Forbes-Watson *Checklist of Birds of the Afrotropical and Malagasy Regions* or more recent relevant literature before submitting records.

Botswana

A **Basra Reed Warbler** *Acrocephalus griseldis* trapped at Phakalane sewage lagoons, 15 km north of Gaberone on 28 January constitutes the first record of this species for Botswana. Also caught on the same day were 20 **Great Reed** *A. arundinaceus* and 15 **European Reed Warblers** *A. scirpaceus*, the latter were formerly considered scarce in the country (*ST, LT, JL*).

Cameroon

Interesting records produced during visits to the country in March–May include: a **Little Buttonquail** *Turnix sylvatica* and two **Quail Plovers** *Ortyxelos meiffrenii* near Mora on 20 March, two **Schlegel's Francolins** *Francolinus schlegelii*, two **Bronze-winged Coursers** *Rhinoptilus chalcopterus*, two **Brown-chested Wattled Plovers** *Vanellus superciliosus* and two **Whiskered Terns** *Chlidonias hybridus* at Ngaoundaba Ranch in late March, ten **Grey Pratincoles** *Glareola cinerea* on Sanaga River on 13 April, and more than 1,000 **Black Terns** *Chlidonias niger* at La Digue also in late March–early April. Two young **Brown-chested Wattled Plovers** watched at Ngaoundaba on 25 March was indicative of breeding there. Two adult **Damara Terns** *Sterna balaenarum* were seen: one at Limbe on 11 May and another at Kribi on 14 May (*SMA, HWH*), and two **White-naped Pigeons** *Columba albinucha* were in farm bush on Mount Kupe in mid-April and early May (*SMA/Sunbird, HWH*). A **Sandy Scops Owl** *Otus icterorhynchus* was sound-recorded in Korup in mid-April. More than 1,000 swifts seen after heavy rain at Nyasoso on 11 April were thought to be **African Black Swifts** *Apus barbatus*. Single **Bare-cheeked Trogons** *Apaloderma aequatoriale* were encountered on three occasions at Korup National Park on 26–28 March and a leucistic **Black Bee-eater** *Merops gularis*, one of a pair, was at Nyasoso on 12 April. A **Swallow-tailed Bee-eater** *M. hirundineus* was at Benoue National Park in late March, and two **African Pittas** *Pitta angolensis* were in Korup National

African Pitta *Pitta angolensis*
by Mark Andrews

Park on 9 May (*SMA, HWH*). A **Willcocks's Honeyguide** *Indicator willcocksi* was at Ngaoundaba Ranch on 25 March. Mount Kupe yielded its well-known endemic: an adult and a pair of **Mount Kupe Bush Shrike** *Malaconotus kupeensis* on Max's and Shrike Trails in early April (*SMA/Sunbird*), whilst an adult and an immature were encountered on Max's Trail at 1,350 m on 8 April, another individual was seen the next day at Max's Camp at 1,550 m (the highest ever altitudinal record), whilst two adults and two immatures were seen at 950 m on the Shrike Trail in early May (*SMA, HWH*). Two **Green-breasted Bush Shrikes** *M. gladiator* at over 1550 m were present in early April and early May (*SMA/Sunbird, HWH*) whilst a **Monteiro's Bush Shrike** *M. monteiri* was heard and glimpsed on Max's Trail at 1450 m on 5 May (*SMA, HWH*). Other interesting species recorded on the mountain included: **Long-tailed Hawk** *Urotriorchis macrourus* (one at 800 m on 11 April), **Zenker's Honeyguide** *Melignomon zenkeri* (one on Shrike Trail on 5 April and one on Max's Trail), **Crossley's Ground-Thrush** *Zoothera crossleyi* (up to three, principally on Max's Trail on 7–11 April), **White-throated Mountain Babbler** *Kupeornis gilberti* (three on Shrike Trail and up to ten on Max's Trail on 7–11 April) and **Red-headed Antpecker** *Parmoptila woodhousei* (one on Max's Trail on 6 April and another feeding a juvenile on 8 April). Five **Grey-necked Picathartes** *Picathartes oreas* were observed at Korup on 26 March and up to ten were there on 8 May (*SMA, HWH*); at the same site a **Grey Ground-Thrush** *Zoothera princei* was seen on 5 April and a **Black-eared Ground-Thrush** *Z. cameronensis* on 9 May (*SMA, HWH*). No less than 50 **Black-capped Speirops** *Speirops lugubris melanocephalus*, among which was an albino, were seen on Mt. Cameroon (*all uncredited records SA, BG, NG, JH, SS & KT*).

Canary Islands

Interesting late records from 1996 include the first **Sharp-tailed Sandpiper** *Calidris acuminata* for the archipelago, at Roquito del Fraile on 9 November. Firsts for Tenerife were a juvenile **Greater Flamingo** *Phoenicopterus ruber* at Roquito del Fraile from 16 to at least 24 November and a first-winter **Slender-billed Gull** *Larus genei* at the same site on 6 and 9 November. Firsts for La Palma were a **White-rumped Sandpiper** *Calidris fuscicollis* at the airport pools on 16 October, and a **Spotted Sandpiper** *Actitis macularia* at Punta Fuencaliente on 17 October. A first-winter **Mediterranean Gull** *Larus melanocephalus* was a first for La Gomera. A **Yellow-browed Warbler** *Phylloscopus inornatus* was observed in the gardens of Hotel Sol Gorriones, Costa Calma, Fuerteventura, on 10 November (*TC & EGR* per *Birding World* 9: 430 & 466). An **American Golden Plover** *Pluvialis dominica* was at Corrales de la Torre, Fuerteventura, on 10–12 September (*DO* per *Birding World* 9: 404).

In 1997, at sea, between Tenerife and La Gomera, 22 **Bulwer's Petrels** *Bulweria bulwerii* were seen on 19 May (*TC*). A **Leach's Storm Petrel** *Oceanodroma leucorhoa* was seen off Caleta de Fuestes, Fuerteventura on 3 January. A **Little Grebe** *Tachybaptus ruficollis* was at Embalse de Los Molinos, Fuerteventura on 23 Janaury–14 February at least; at the same site a record number of 19 **Marbled Ducks** *Marmaronetta angustirostris* was seen on 27 January, with nine still there on 25 March. Of the six **Ring-necked Ducks** *Aythya collaris* discovered on 26 November 1996 at Presa de Curbelo, Tenerife, five were still there on 8 March, while a female was at Embalse de Los Molinos until at least 25 March; the male at Los Silos, Tenerife, first seen in December 1996, was still at the same site on 3 March (*TC* per *Birding World* 10: 55, 92, 135). Four **Ruddy Shelducks** *Tadorna ferruginea* were on Fuerteventura during February and a pair with five nearly fledged young were seen at Barranca de la Torre on 16 May. A **Honey Buzzard** *Pernis apivorus* at San Sebastian, La Gomera, on 19 May, was the first island record (*TC*). A **Booted Eagle** *Hieraaetus pennatus* was seen on 16 February, at Betancuria, Fuerteventura. The third **Merlin** *Falco columbarius* for the archipelago was reported from Araguayo, Tenerife on 28 January, and a **Lanner Falcon** *F. biarmicus* was spotted from Bar La Carbonera, La Gomera on 7 March. Three **Royal Terns** *Sterna maxima* flying north-east past Punta de Abona, Tenerife on 28 March constitute the second Canarian record and the first for Tenerife (*TC* per *Birding World* 10: 55, 92, 135). A **Namaqua Dove** *Oena capensis* at Golf del Sur, Tenerife on 19 May, would be the first record for the Canaries if accepted. Also there on the same day, a **Little Swift** *Apus affinis* constituted the fifth Canarian record (per *TC*). A **White Stork** *Ciconia ciconia* was at Teno Natural Park, Tenerife on 13 March, two **Sacred Ibis** *Threskiornis aethiopicus* at Morro Jable, Fuerteventura on 8 February, and a **Eurasian Spoonbill** *Platalea leucorodia* at Guargacho Pond, Tenerife on 17 March. **Little** *Porzana parva*, **Baillon's** *P. pusilla* and **Spotted Crake** *P. porzana* were observed at Tejina Ponds, Tenerife between 5–15 March. Three **Red-throated Pipits** *Anthus cervinus* foraged at Amarilla golf course, Tenerife on 18 February and a single on 21 March (*EGR* per *Birdwatch* 59: 56). The first **Olive-backed Pipit** *A. hodgsoni* for the Canary Islands stayed at Ten Bel, Tenerife from 28 November 1996 to at least 8 March. A **Hoopoe Lark** *Alaemon alaudipes* in the dunes south of Corralejo, Fuerteventura on 21 February was the first for the island and only the second record for the archipelago (*TC & KM* per *Birding World* 10: 9, 92). Also of note was a male **Stonechat** *Saxicola torquata* in the Tejina area and up to four **Sedge Warblers** *Acrocephalus schoenobaenus* at Bajamar, Tenerife from 5–22 March at least (*EGR* per *Birdwatch* 59: 560. An **Aquatic Warbler** *A. paludicola* at Amarilla golf course, Tenerife on 5 March, constituted the fourth Canarian record and the first for Tenerife. The second and third **Desert Warblers** *Sylvia nana* for the archipelago were in Playa de las Americas, Tenerife on 3 March and San Sebastian, La Gomera on 7 March (*TC* per *Birding World* 10: 92). A **Yellow-browed Warbler** *Phylloscopus inornatus* was at Costa Teguise, Lanzarote on 18 December–30 January (*TC & KM* per *Birding World* 10: 9, 55). A **Great Tit** *Parus major* near Poris de Abona, Tenerife on 16 March, was the first confirmed record for the Canary Islands (*TC* per *Birding World* 10: 92).

Comoros

An expedition to Anjouan (Ndzuani) from the University of Newcastle-upon-Tyne, UK in August–September 1995 produced a number of interesting records including two new species for the Comoros: **Bat Hawk** *Machaeramphus alcinus* (one at Hombo on 14 August) and **Harlequin Quail** *Coturnix delegorguei* (a male calling in the early hours of 20 and 24 August near Lake Dzialandze). A grebe showing features of **Madagascar Little Grebe** *Tachybaptus pelzelni* was seen in the company of Little Grebes *T. ruficollis* on Lake Dzialandze between 20–28 August; the former species is sedentary and confined to Madagascar but it readily hybridizes with the more migratory Little Grebe. At sea, several observations of **Greater Frigatebirds** *Fregata minor* were made: a female off Domoni on 31 August, 12 at the same place on 3 September, and a pair off Bimbini and another in Mutsamudu Bay on 4 September. Three individuals of the locally rare **Frances's Sparrowhawk** *Accipiter francesiae* were seen: an adult and immature male in Oitmutsamudu valley on 26 August and an adult male near Col de Patsi on 3 September. A flock of 20+ **Greater Sand Plover** *Charadrius leschenaultii* were on Gallowa beach on 7 September. The records of a single **Eurasian Curlew** *Numenius arquata* that flew over Mutsamudu on 2 September and of five **Sanderlings** *Calidris alba* on Gallowa beach on 7 September appear to be the first records for the island. An adult **Terek Sandpiper** *Xenus cinereus* in breeding dress was also on Gallowa beach on 7 September. Over 80 **Brown Noddies** *Anous stolidus* were seen at sea off Domini, a further 30 off Mutsamudu on 3 September and 30+ off Bimbini the next day; although the presence of noddies around the islands had been established, these appear to be the first definite records (sightings of the species at sea between Moheli and Grande Comore on 9 November 1995 were reported in *Bull. ABC* 3 (1): 60). In total, 18 **Anjouan Scops Owls** *Otus capnodes* were heard calling, of which one was seen, at the following localities: primary forest around Lake Dzialandze (up to six between 20–23 August), Houngouni (two on 25 August), Oimutsamudu valley (four on 26 August) and Col de Patsi (six, date unclear). It was estimated that another 30 individuals may still occur on the island. A flock of 20 **African Black Swifts** *Apus barbatus* was seen at Col de Patsi on 27 August, where one bird was also trapped; the species was also recorded from Domoni (several on 31 August and 3 September) and Sima (six on 4 September).

Egypt

A **Pink-backed Pelican** *Pelecanus rufescens* and six **Kittlitz's Plovers** *Charadrius pecuarius* were at Abu Simbel on 3 April (*KR* per *Birding World* 10: 135). A flock of 730 **Ferruginous Ducks** *Aythya nyroca* was observed between Dendera and Edfu on 3 March (*PA* per *Birding World* 10: 92). In January, tens of **Armenian Gulls** *Larus* (*argentatus*) *armenicus* were at Suez and Al Sukhna (*MBD* per *Birding World* 10: 10). A record number of ten **Great Black-headed Gulls** *L. ichthyaetus* was at Suez on 7 February; the species was also seen at Lake Nasser, Abu Simbel (singles on 10 and 17 February) and Lake Qarun (more than five in January and a single on 24 February). A **Mediterranean Gull** *L. melanocephalus* was at Suez

African Skimmer *Rynchops flavirostris* by Mark Andrews

on 7 February (*MBD* per *Birding World* 10: 55), a first-summer **Kittiwake** *Rissa tridactyla* at Hurghada on 9 April and 17 **Crested Terns** *Sterna bergii* also there on 10 April (*KR* per *Birding World* 10: 135). Three **African Skimmers** *Rynchops flavirostris* were at Kom Ombo on 19 February (*MBD* per *Birding World* 10: 55) and two on 2 March (*PA* per *Birding World* 10: 92). At least five **Egyptian Nightjars** *Caprimulgus aegyptius* were at Abu Simbel on 16 February; an **Eagle Owl** *Bubo bubo asacalaphus* at the same site on 18 February and another at the regular site of Sakara on 23 February. Two pairs of **African Pied Wagtail** *Motacilla aguimp* were also reported from Abu Simbel on 16–17 February (*MBD* per *Birding World* 10: 55) and again on 3 April (*KR* per *Birding World* 10: 135), while a **Red-tailed Wheatear** *Oenanthe xanthoprymna* wintered at Saqqara in January. A **Cyprus Warbler** *Sylvia melanothorax* was at Wadi Zalaga on 12 January (*MBD* per *Birding World* 10: 10). Three **Desert Warblers** *S. nana* were wintering at Gilf Kabir in February and another at Gabel Uweinat in the southern Western Desert (previously unknown in winter in this area). **Spanish Sparrows** *Passer hispaniolensis* were seen nest-building at Dahkla Oasis on 17 February (third breeding record for Egypt) (*MBD* per *Birding World* 10: 55). Eight to ten **Syrian Serins** *Serinus syriacus* were near Ras El Nakab, south Sinai on 11 January (*MBD* per *Birding World* 10: 10).

Ethiopia

Four **Ankober Serins** *Serinus ankoberensis* were seen along the road five km west of Chennek Camp, Simien National Park, at 3,500 m on 3 December 1996. A flock of 50+ was observed, of which some were photographed, in the same area on a cliff ledge two km north of Bhawit at 4,250 m on 6 March. This constitutes a considerable extension of the species' known range, which was formerly believed to be a small area in the central highlands of Shoa province (*HP*).

Madeira

At least five **Ring-billed Gulls** *Larus delawarensis* were at Funchal harbour in January: four first-winters (two on at least 7–19th, two more on 17th and one on 19th) and an adult on 9th (*NN* per *Birding World* 10: 135).

Malawi

A **Rufous Scrub Robin** *Cercotrichas galactotes* was seen in Nyika National Park on 10 March, possibly only the second country record (*AB, JH*).

Morocco

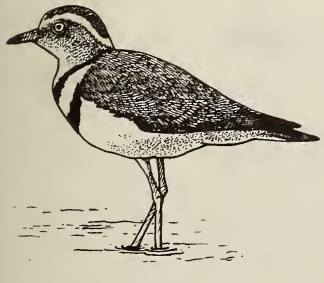
At the end of December 1996, c1,500 **Leach's Storm Petrels** *Oceanodroma leucorhoa* and 35+ **Grey Phalaropes** *Phalaropus fulicarius* flew past Larache in strong NW winds on 24th, a male **American Wigeon** *Anas americana* and a female **Blue-winged Teal** *A. discors* were at Lac de Sidi Bou Ghaba on 22nd, a pair of **Ruddy Ducks** *Oxyura jamaicensis* was at Merdja Barga and a first-winter **Ring-billed Gull** *Larus delawarensis* at Lixus saltpans on 23rd (*HD & MS* per *Birding World* 10: 10).

A **White-faced Storm Petrel** *Pelagodroma marina* was seen off Agadir on 31 March (*MF* per *Birding World* 10: 135). The very rare dark morph of **Little Egret** *Egretta garzetta* was photographed at Merzouga Lake, Tafilalt on 22 April (*AvdB* per *Dutch Birding* 19: 83). A group of 36 **Glossy Ibis** *Plegadis falcinellus* was at Larache marshes on 22 February (*MP* per *Birding World* 10: 55); the species was reported breeding at Oued Massa in April. The last two genuine colonies of **Northern Bald Ibis** *Geronticus eremita* held more than 185 birds in early 1997 (*HD & AvdB* per *Dutch Birding* 19: 83). At least 320 **Ruddy Shelducks** *Tadorna ferruginea* were at Ouarzazate on 20 April (*HD & EH* per *Birdwatch* 60: 59). Approximately 500 **Marbled Ducks** *Marmaronetta angustirostris* were at Oarzazate on 4 April and 370 at Merzouga on 18 April. The first **American Golden Plover** *Pluvialis dominica* for Morocco was at Oued Sous on 24–25 April (*HD & AvdB* per *Dutch Birding* 19: 85). The same site yielded a **Grey Phalarope** on 23 April and five **Marsh Sandpipers** *Tringa stagnatilis* on 24 April. A **Broad-billed Sandpiper** *Limicola falcinellus* was at Oued Massa on 4 January (*HD & MS* per *Birding World* 10: 10). An adult **Long-billed Dowitcher** *Limnodromus scolopaceus* moulting into breeding plumage was observed at Oued Sous on 27 (*HD*) and 30 March (*MF* per *Birding World* 10: 135), and again on 22–26 April (*HD* per *Dutch Birding* 19: 85); this is possibly only the third record for Morocco. The lake east of Ouarazate, 265 km from the nearest sea coast, held two adult **Audouin's Gulls** *Larus audouinii* on 20 April and a single on 24 April. A first-summer **Common Gull** *L. canus* was at Oued Sous estuary on 22–25 April and two singles on 26 April (*HD & AvdB* per *Dutch Birding* 19: 85). A **Lesser Crested Tern** *Sterna bengalensis* was observed at the same site on 31 March (*CN*) and on 22 April (*HD & EH* per *Birdwatch* 60: 59). A total of 134 **Royal Terns** *S. maxima* was recorded in the Dakhla area on 16–17 February and a **Jack Snipe** *Lymnocryptes minimus* on 16 February. A presumed **Senegal Thick-knee** *Burhinus senegalensis* was heard calling from the top of a building at Laayoune at 21.00 hr on 17 February (*MP* per *Birding World* 10: 55). One **Laughing Dove** *Streptopelia senegalensis* was seen near Tamri in March, while several others were still at Oued Massa (*MF* per *Birding World* 10: 135). At least eight **Double-spurred Francolins** *Francolinus bicalcaratus* were calling at Ben Slimane on 2 March (*LM* per *Birding World* 10: 92). Other March records include a pair of **Egyptian Nightjar** *Caprimulgus aegyptius* south of Merzouga, a pair of **Desert Warbler** *Sylvia nana* between Merzouga and Rissani, several **Isabelline Wheatears** *Oenanthe isabellina* (at Merzouga, Tagdilt Track and Goulimime) and over 100 **Crimson-winged Finches** *Rhodopechys sanguinea* at Oukameiden (*MF* per *Birding World* 10: 55). The first **Thrush Nightingale** *Luscinia luscinia* was discovered 10 km east of Touroug, Erfoud area on 17 April (*HD & EH* per *Birdwatch* 60: 59). Four **Dupont's Larks** *Chersophilus duponti* were claimed from Tagdilt Track, Boumalne-du-Dadès, on 11 April. A recently fledged **Tristram's Warbler** *Sylvia deserticola* was being fed by an adult as early as 20 April at Gorge du Todra, Tinerhir. At Erg Chebbi, near Merzouga, more than 55

Desert Sparrows *Passer simplex* were observed at Café Yasmina in the first week of March; up to eight were still there on 9 April, while several were present at Café du Sud (*AvdB* per *Dutch Birding* 19: 86).

Nigeria

Surveys, conducted by the Nigerian IBA team, produced the following interesting records. A **Brown-backed Scrub Robin** *Cercotrichas hartlaubi* seen near Gashaka, in Gashaka-Gumti National Park on 25–26 February is the first record for Nigeria. In the same Park, a pair of **Melba Finches** *Pytilia melba* was observed; this appears to be well south of its known range in the country. Species recorded in the highlands of the park on 28 February–1 March included a pair of **White-chinned Prinias** *Prinia leucopogon* (apparently only the fourth record for Nigeria, cf *Bull. ABC* 2: 126), two **Dusky Flycatchers** *Muscicapa adusta*, two male **Bannerman's Weavers** *Ploceus bannermani* and at least five **Dybowski's Twinspots** *Euschistospiza dybowskii*. Above the montane forest of Ngel–Nyaki at least four hirundines matching the description of **Mountain Saw-wing** *Psalidoprocne fuliginosa* were seen in the company of a dozen **Black Saw-wing** *P. pristoptera petiti*. On 15 March, a nest of **Brown-chested Wattled Plover** *Vanellus superciliosus* containing one egg was found on a bare, burnt field next to the river at Sanga River Forest Reserve, where two pairs were observed; few nests of this uncommon intra-African migrant have ever been found, of which all have previously been in Nigeria (see Cameroon). At the same site a **Three-banded Plover** *Charadrius tricollaris*, a little-recorded species in Nigeria, was observed. The Niger delta produced



Three-banded Plover
Charadrius tricollaris
by Mark Andrews

Hartlaub's Duck *Pteronetta hartlaubii* (a flock of 50, of which four were shot by a hunter, on 14 February), **Cassin's Hawk Eagle** *Spizaetus africanus* (one on 15 February) and **Congo Serpent Eagle** *Dryotriorchis spectabilis* (one on 17 February). The Hadejia–Nguru wetlands in the north still held relatively important numbers of the scarce and local **Lesser Jacana** *Microparra capensis*: up to 100 were seen on 19 March, with more than 60 at a single site. At Wase Rock, the spectacle of 2,500 **Mottled Swifts** *Apus aequatoralis* coming in to roost was observed on 7 March (all *RD*).

Seychelles

A **Swinhoe's Storm Petrel** *Oceanodroma monorhis* was found alive at Cote d'Or, Praslin in February but later died and is now at the British Museum (Natural History), Tring; this is the first record for the Seychelles. An **Osprey** *Pandion haliaetus* at Fond de L'Anse, Praslin on 12 September 1996 was also the first record for the islands. Single **European Turtle Doves** *Streptopelia turtur* were recorded on Bird Island on 5 November 1996 and Aride Island on 5–6 November 1996, the second and third records for the archipelago. Other noteworthy records included a series of seven sightings of falcons on Aride Island. Not all were identifiable to species, but they included a juvenile **Red-footed Falcon** *Falco vespertinus* on 28–29 November 1996, a pale morph **Eleonora's Falcon** *F. eleonorae* on 18 December 1996 and a **Eurasian Hobby** *F. subbuteo* on 29 November–7 December 1996 (all per *AS*).

Socotra

Three new species have been recorded recently: a juvenile **Little Bittern** *Ixobrychus minutus* was at Wadi Matruh on 21–22 December 1996, four **Squacco Herons** *Ardeola ralloides* were at Hadibu marsh in late March 1996 and a female **Blue Rock Thrush** *Monticola solitarius* was photographed at Ras Momi on 23 and 25 December 1996 (all per *GK/OSME*).

Tunisia

In December 1996, at least 2,200 **Marbled Ducks** *Marmaronetta angustirostris* were on a small lake between Douz and Zaafrane, with a further 50 on another lake in the same area, probably representing more than 10% of the world population (*TB* per *Birding World* 10: 10); with 270 at the same site on 29 January (*PB* per *Birding World* 10: 55), 520 at the same site on 22 February (*TB* per *Dutch Birding* 19: 85) and 21 at Sidi Jdidi on 1 February.

Interesting records include two **Glossy Ibis** *Plegadis falcinellus* at Sebkhet Kelbia on 31 January, a **Squacco Heron** *Ardeola ralloides* at Barrage Haouareb on the same date, 180 **Cattle Egrets** *Bubulcus ibis* coming to roost at Barrage Lebna on 26 January, 40 **Ruddy Shelduck** *Tadorna ferruginea* at Jemma in mid-January, with 21 there on 30 January, ten **Ferruginous Ducks** *Aythya nyroca* at Sidi Jdidi on 1 February, 352 **White-headed Ducks** *Oxyura leucocephala* at Barrage Haouareb on 31 January and eight at Sidi Jdidi on 1 February, 330 **Kentish Plovers** *Charadrius alexandrinus* at Metbasta also on 31 January, a **Temminck's Stint** *Calidris temminckii* at Oued en Nakhla, between Gabes and Kebili on 29 January, two **Wood Sandpipers** *Tringa glareola* at Zaafrane on the same date and one at Barrage Haouareb on 31 January (*PB* per *Birding World* 10: 55). A **Northern Goshawk** *Accipter gentilis* was seen at Tamerza on 23 February (*TB* per *Dutch Birding* 19: 85).

Records were collated by Ron Demey from contributions supplied by Peter Allard (PA), Mark Andrews (SMA), Simon Aspinall (SA), Mindy Baha el Din (MBD/The Travelling Naturalist), A. Banwell (AB), Arnoud B. van den Berg/Dutch Birding (AvdB), Theo Bakker (TB), Pat Bonham/Pingrum Tours (PB), Tony Clarke (TC), Ron Demey (RD), Hugues Dufourny (HD), Magnus Forsberg/AviFauna (MF), Eduardo Garcia del Rey (EGR/Aves Ecotours), Nick Gardner (NG), Brian Gee (BG), Erik Hirschfeld (EH), H. Wood-Homer (HWH), Jon Hornbuckle (JH), Guy Kirwan (GK), Jerry Lewis (JL), Laurent Majorel (LM), Karno Mikkola (KM), Christian Neumann (CN), Nisse Nilsson (NN), Daniele Occhiato (DO), Håkan Pohlstrand (HP), Mike Powell (MP), Kris de Rouck (KR), Matthias Schlevning (MS), Adrian Skerrett (AS), Steve Smith (SS), Keith Turner (KT), Lindsay Tyler (LT) and Stephanie Tyler (ST). Contributions for Recent Reports can be sent to Ron Demey, Van der Heimstraat 52, 2582 SB Den Haag, The Netherlands and also by e-mail: 106706.603@compuserve.com

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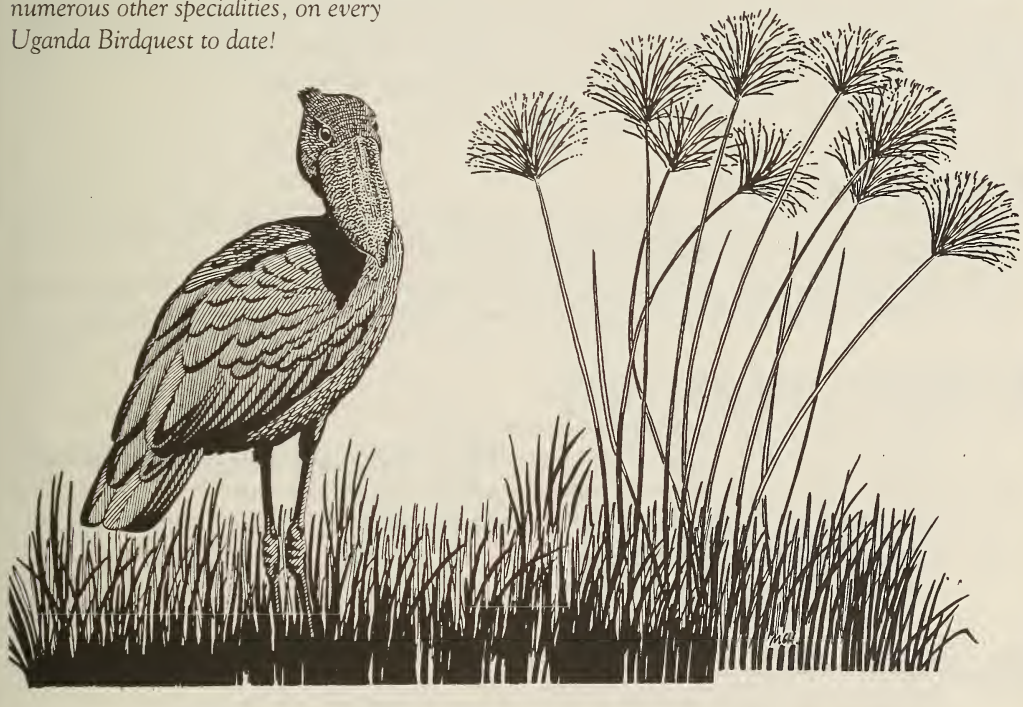

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Notes for contributors *(...continued from inside front cover)*

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Authors are asked to follow the conventions used in The *Bulletin of the African Bird Club* and to refer to a recent issue for guidance.

dates: 23 September 1993 (note the order, no comma, not 23rd).

names of birds: use the vernacular name for birds, followed by the scientific name, viz White-necked Raven *Corvus albicollis* (with hyphen, no comma, no parentheses, no author's name). Underline for italics if you submit typed or handwritten copy, but please format with italics if you submit your contribution on disk with accompanying hard copy. Only the first (generic) name should have an initial capital. English names of birds and other animals require initial capitals except after a hyphen (eg White-headed Vulture, Black-backed Jackal), but for group names use lower case for initial letter (eg bustards, crows). Both English or French and scientific names should be given when the species is first mentioned, thereafter only one name, preferably the English or French, should be used.

units: use metric units with the following abbreviations: length (mm, cm, m, km); area (m^2, ha); mass (mg, g, kg); time (s, min, hr, day, month, year). Time of day should be given in the 24-hour clock form (eg 06.30 hr). Speed (m/s, km/hr). The time system used should be the zonal time closest to solar time. Except at the beginning of a sentence or when ten or less, numbers should be given as numerals, not spelled out. All fractions should be decimalised and written as numerals.

punctuation: full points (= full stop, period) should be omitted from well-known initials, such as ABC and also from 'eg', 'ie', and 'et al'. Include a full point after each initial of person's name. Quotation marks, if used, should be 'single', not "double".

references: these should be indicated in the text by superscript Arabic numbers corresponding to the numbers in the reference list. For example: '...confirming earlier work[3,4-7]'; 'Lack and Webb[15] stated that...' or 'eg Safford et al[3]'. Reference lists should be in alphabetical order, and appear at the end of the paper or short communication, following the format below:

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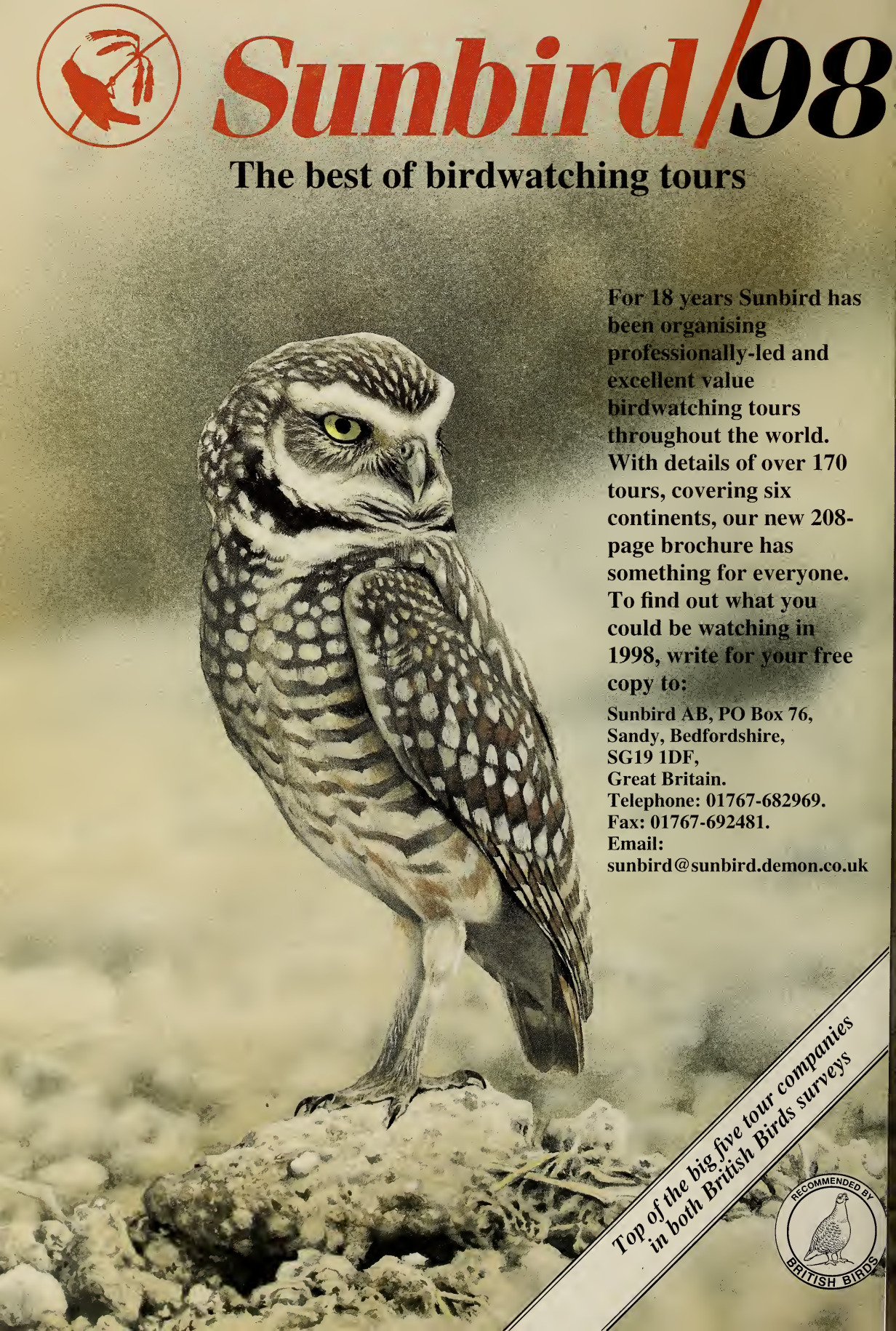

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