Ecography

E4344

Dillon, S. and Fjelså, J. 2005. The implications of different species concepts for describing biodiversity patterns and assessing conservation needs for African birds. – Ecography 28: 682–692.

Appendix

The appendix includes a list of the 'genuinely new' species, taxa which have been removed from the analysis, taxa which have proved to be invalid and a table of the biological species split into 'new' phylogenetic species. Underlined taxa are treated as threatened by IUCN, or (in the case of 'new' phylogenetic species or taxa not yet evaluated by IUCN) we treat them as threatened due to their limited distribution.

Genuinely new species since the 'Atlas of Speciation' (Hall and Moreau 1970, Snow 1978). The validity of some genuinely new species have been questioned by adherents of the BSC (primarily Dowsett in unpublished communications). These taxa are therefore treated as genuinely new phylogenetic species and biological subspecies, and are marked with 'PSC' in the following list: Xenoperdix udzungwensis (Dinesen et al. 1994); Melignomon eisentrauti (Louette (1981) in Fry et al. (1988)); Glaucidium albertinum (Prigogine (1983) in Fjeldså (2003)); Caprimulgus prigoginei (Louette 1990) and *C. solala* (Safford et al. 1995); *Melaenornis an*namarulae (Forbes-Watson 1970); Stiphrornis sanghensis PSC (Beresford and Cracraft 1999); Sheppardia aurantiithorax PSC (Beresford et al. 2004); Laniarius liberatus (Smith et al. 1991); Chlorocichla prigoginei (De Roo (1967) in Fjeldså 2003); Phyllastrephus leucolepis (Gatter 1985); Cisticola dorsti (Chappuis and Erard 1991) C. restrictus (Traylor 1967) and Two unnamed Cisticola 1 PSC (Stevenson and Fanshawe 2002); Acrocephalus avicenniae PSC (described as new subspecies by Ash et al. (1989), but treated as a full species by Leisler et al. (1997)); <u>Mirafra ashi</u> (Colston 1982) and <u>M. degodiensis</u> (Erard 1975b); <u>Heteromirafra sidamoensis</u> (Erard 1975a); <u>Nectarinia rufipennis</u> (Jensen 1983); <u>Anthus longicaudatus</u> (Liversidge 1996) and <u>A. pseudosimilis PSC</u> (Liversidge and Voelker 2002); <u>Ploceus burnieri</u> (Baker and Baker 1990) <u>P. victoriae</u> PSC (Ash 1986) and <u>P. ruweti</u> (Louette and Benson 1982); <u>Malimbus ballmanni</u> (Wolters 1974); <u>Lagonosticta sanguinodorsalis</u> PSC (Payne 1998); <u>Vidua raricola</u> (Payne 1982) (but see endnote ⁸⁹) <u>V. larvaticola</u> (Payne 1982) (but see endnote ⁸⁹) and <u>Vidua maryae</u> ² (Payne and Payne 1994); <u>Serinus ankoberensis</u> (Ash 1979).

Species that have been deleted from the analysis, because their range south of the Sahara is marginal, compared to their total distribution: *Pterocles senegalus*; *Charadrius alexandrinus*; *Monticola solitarius*; *Riparia riparia*; *Sylvia nana*; *Acrocephalus stentoreus*; *Ammomanes cincturus*.

Excluded taxa that have been suggested as phylogenetic species, but found to be invalid: *Indicator meliphilus narokensis* ³; *Phoeniculus purpureus damarensis* ⁴; *Zoothera cameronensis kibalensis* (Dowsett and Dowsett-Lemaire 1993); *Cisticola ruficeps mongalla* (Dowsett and Dowsett-Lemaire 1993, Urban et al. 1997); *Eremomela icteropygialis salvadorii* ⁵.

Chappuis and Erard (1993) have split *Bleda notatus* (incl. *ugandae*) from *Bleda eximius* following the BSC. *B. notatus* (incl. *ugandae*) is therefore treated as both a biological and phylogenetic species.

Table 1. The first column shows the biological species which have been split into more phylogenetic species. These biological species are also treated as phylogenetic species. The middle column shows which biological subspecies have been raised to phylogenetic species status. The new phylogenetic species are separated by semicolon, and when a new phylogenetic species is comprised of several biological subspecies, these subtaxa are listed in parenthesis. When a new phylogenetic species is comprised of several biological subspecies, the first name listed is the name used for that phylogenetic species. Only the biological subspecies which have been split from the nominate species are listed, thus any unlisted subspecies, are still part of the nominate biological species. The final column shows the reference to the split(s). When a biological species has been split into several phylogenetic species, by different authors, the different splits have been divided over several rows, each row corresponding to the splits made by any one author(s). In some instances (e.g. Serinus citrinelloides) various authors and we, have split a biological species in different ways. This results in some of the 'new' phylogenetic species being split into yet more phylogenetic species. In the case of S. citrinelloides Sibley and Monroe (1990) split it into three species, one of which was S. frontalis (incl. brittoni). Since we also treat brittoni as a phylogenetic species both frontalis and brittoni are treated as 'new' phylogenetic species. The order of biological nominate species follows the taxonomy of (Sibley and Monroe 1990), while the order of the biological subspecies follows the order in the 'Birds of Africa' series. Descriptions of problematic splits of taxa or range boundaries are given in the endnotes.

Biological nominate	Phylogenetic species split from Biological nominate	Reference
Struthio camelus	molybdophanes	Freitag and Robinson (1993)
Struthio camelus	australis	Our judgement
Numida meleagris ⁶	galeata (incl. sabyi); reichenowi; mitrata (incl.	Our judgement
0	marungensis +damarensis +coronata))
Guttera plumifera	schubotzi	Our judgement
Guttera edouardi ⁷	verreauxi; sclateri; barbata	Our judgement
Francolinus lathami	schubotzi	Our judgement
Francolinus coqui	hubbardi (incl. maharao +spinetorum)	Our judgement
Francolinus albogularis ⁸	buckleyi; dewittei	Our judgement
Francolinus levaillantii	kikuyuensis	Our judgement
Francolinus levaillantoides	lorti	Sinclair and Ryan (2003)
Francolinus levaillantoides	gutturalis; jugularis	Our judgement
Francolinus psilolaemus	elgonensis	Our judgement
Francolinus shelleyi	whytei	Our judgement
rancolinus sephaena ⁹	rovuma (incl. spilogaster)	Our judgement
rancolinus ahantensis 10		O : 1
Francolinus squamatus 11	usambarae (incl. uzungwensis +doni)	Our judgement (skins at MNHN)
Francolinus castaneicollis	atrifrons	Our judgement
Francolinus afer ¹²	cranchii (incl. harterti); castaneiventer; melanogaster; swynnertoni; leucoparaeus	Our judgement
Coturnix coturnix	erlangeri	Our judgement
Ptilopachus petrosus	major	Our judgement
Kenoperdix udzungwensis 13	<u>obscurata</u>	Our judgement (Fjeldså and Kiure 2003)
Plectropterus gambensis 14	niger	Our judgement
Inas undulata	rueppelli	Our judgement
Anas sparsa ¹⁵	leucostigma (incl. maclatchyi)	Our judgement
urnix hottentotta	nana	Sibley and Monroe (1990)
Symnobucco peli	sladeni	Short and Horne (2001)
Symnobucco bonapartei	cinereiceps	Our judgement
tactolaema anchietae	rex	Our judgement
tactolaema olivacea	woodwardi	
		Clancey (1979)
Pogoniulus bilineatus ¹⁶	leucolaima	Our judgement (Short and Horne 2001)
Fricholaema hirsuta	flavipunctata (incl. angolensis +ansorgii)	Sinclair and Ryan (2003)
Tricholaema hirsuta	ansorgii	Our judgement
Fricholaema melanocephala ¹⁷	flavibuccalis	Our judgement
ybius leucocephalus ¹⁸	leucogaster; senex; albicauda (incl. lynesi)	Our judgement
ybius torquatus ¹⁹	zombae	Our judgement
ybius minor	macclounii	Our judgement
rachyphonus purpuratus	goffinii; togoensis	Our judgement
Frachyphonus darnaudii	usambiro	Sibley and Monroe (1990)
Trachyphonus darnaudii	bömhi (incl. eminî)	Our judgement
ndicator maculatus ²⁰	stictothorax	Our judgement
Campethera bennettii	scriptoricauda	del Hoyo et al. (2002)
Campethera abingoni	mombassica	del Hoyo et al. (2002)
Campethera cailliautii ²¹	permista	Our judgement
Campethera tullbergi	taeniolaema (incl. hausburgi)	Our judgement
Dendropicos gabonensis	lugubris	del Hoyo et al. (2002)
Dendropicos elliotii	johnstoni	Our judgement (skins at NHM)
Dendropicos goertae	spodocephalus	del Hoyo et al. (2002)
Dendropicos griseocephalus	ruwenzori; kilimensis	Our judgement
Phoeniculus castaneiceps	brunneiceps	Our judgement
Rhinopomastus cyanomelas	aterrimus	Fry et al. (1988)
Rhinopomastus cyanomelas ²²	schalowi 	Our judgement (skins at NHM)
Tockus albocristatus	macrourus; cassini	Our judgement
Tockus hartlaubi	granti	Our judgement
Tockus erythrorhynchus	rufirostris; damarensis; kempi; ruahae	Kemp and Delport (2002)

Tockus flavirostris leucomelas Fry et al. (1988) Tockus deckeni iacksonii Sibley and Monroe (1990) Tockus fasciatus semifasciatus Our judgement Tockus nasutus epirhinus Our judgement Tockus pallidirostris Our judgement neumanni albotibialis Ceratogymna cylindricus Sibley and Monroe (1990) Coracias caudata lorti Our judgement Our judgement Merops muelleri mentalis Merops bulocki frenatus Our judgement Merops variegatus 23 lafresnayii; bangweoloensis Our judgement Merops nubicus nubicoides Sibley and Monroe (1990) Halcyon senegalensis 24 cyanoleuca Our judgement Colius striatus 25 nigricollis (incl. leucophthalmus); leucotis (incl. Our judgement hilgerti +erlangeri +kikuyensis +mombassicus +jebelensis +ugandensis +kiwuensis +congicus +cinerascens +affinis +berlepschi) Centropus leucogaster neumanni Sibley and Monroe (1990) Sibley and Monroe (1990) Centropus superciliosus burchelli Oxylophus jacobinus serratus Our judgement Cuculus clamosus 26 gabonensis Our judgement Ceuthmochares aereus Sinclair and Ryan (2003) australis Ceuthmochares aereus flavirostris Our judgement Psittacus erithacus timneh Our judgement Poicephalus robustus fuscicollis (incl. suahelicus) Clancey (1997) in Wirminghaus et al. (2002) Sinclair and Ryan (2003) Poicephalus robustus suahelicus Poicephalus senegalus 27 versteri Our judgement Agapornis lilianae Collar and Stuart (1985) <u>nigrigenis</u> Agapornis lilianae personatus; fischeri Sibley and Monroe (1990) Apus barbatus hollidayi Our judgement Apus horus toulsoni Prigogine (1985) Tauraco livingstonii schalowi Sibley and Monroe (1990) Tauraco macrorhynchus verreauxii Our judgement Our judgement Tauraco leucotis donaldsoni Our judgement Musophaga johnstoni kivuensis Corythaixoides personatus leopoldi Our judgement Dowsett and Dowsett-Lemaire (1993) Otus scops 28 senegalensis Otus leucotis granti Fry et al. (1988) Bubo bubo 29 ascalophus Sibley and Monroe (1990) Our judgement Bubo capensis mackinderi König et al. (1999) Bubo africanus cinerascens Bubo poensis vosseleri Collar and Stuart (1985) Glaucidium tephronotum pycrafti; medje (incl. elgonense) Our judgement etchecopari Glaucidium capense 30 Our judgement (König et al. 1999) Glaucidium capense castaneum König et al. (1999) Glaucidium capense 31 scheffleri; ngamiense Sibley and Monroe (1990) Athene noctua 32 spilogastra; somaliensis Our judgement Caprimulgus nubicus 33 torridus (incl. taruensis) Our judgement nigriscapularis Fry et al. (1988) Caprimulgus pectoralis fervidus (incl. shelleyi +crepusculans) Caprimulgus pectoralis Our judgement Caprimulgus poliocephalus ruwenzorii (incl. guttifer +koesteri) del Hoyo et al. (1999) Caprimulgus poliocephalus guttifer, koesteri Our judgement Caprimulgus climacurus 34 Our judgement nigricans Caprimulgus fossii clarus Cleere and Nurney (1998) Columba delegorguei sharvei Our judgement Streptopelia decipiens 35 perspicillata (incl. elegans +ambigua) Our judgement Sarothrura rufa ³ elizabethae (incl. bonapartei) Our judgement Sarothrura lugens Our judgement lynesi Sarothrura affinis antonii Our judgement Neotis denhami stanleyi Our judgement Ardeotis arabs stieberi (incl. butleri) Our judgement

 Sarothrura lugens
 lynesi
 Our judgement

 Sarothrura affinis
 antonii
 Our judgement

 Neotis denhami
 stanleyi
 Our judgement

 Ardeotis arabs
 stieberi (incl. butleri)
 Our judgement

 Ardeotis kori
 struthiunculus
 Our judgement

 Eupodotis ruficrista
 savilei; gindiana
 del Hoyo et al. (1996)

 Eupodotis afra
 afraoides (incl. etoschae + damarensis)
 Crowe et al. (1994a)

 Eupodotis afra
 etoschae; damarensis
 Our judgement

 Eupodotis senegalensis
 barrowii
 Sinclair and Ryan (2003)

Eupodotis senegalensis erlangeri (incl. canicollis) Our judgement
Podica senegalensis ³⁷ camerunensis (incl. somereni) Our judgement
Balearica pavonina regulorum Urban et al. (1986)
Balearica pavonina ³⁸ ceciliae Our judgement

Pterocles exustus ³⁹ olivascens Our judgement (Madge and McGowan 2002)

Pterocles lichtensteinii 40 sukensis Our judgement

Charadrius pallidus venustus Our judgement Vanellus tectus 41 latifrons Our judgement (Urban et al. 1986, Hayman et al. 1986) Vanellus senegallus Our judgement lateralis Vanellus coronatus 42 Our judgement demissus Our judgement Burhinus vermiculatus buttikoferi Smutsornis africanus 43 bisignatus; gracilis (incl. raffertyi +hartingi) Our judgement Rhinoptilus cinctus 44 seebohmi Our judgement Cursorius cursor somalensis (incl. littoralis) Pearson and Ash (1996) Glareola nuchalis 45 Our judgement liberiae Falco tinnunculus 46 rupicolus Sinclair and Ryan (2003) Circaetus pectoralis beaudouini del Hoyo et al. (1994) Dryotriorchis spectabilis 47 Our judgement hatesi Kaupifalco monogrammicus 48 meridionalis Our judgement (skins at ZMUC) del Hoyo et al. (1994) Accipiter tachiro toussenelii (incl. canescens +macroscelides +lopezi) Accipiter tachiro Our judgement macroscelides Accipiter badius 49 sphenurus; polyzonoides Our judgement Accipiter minullus erythropus Brown et al. (1982) Buteo oreophilus Sinclair and Ryan (2003) trizonatus Buteo augur archeri del Hoyo et al. (1994) Podiceps cristatus 50 infuscatus Our judgement Podiceps nigricollis Our judgement gurneyi Sibley and Monroe (1990) Our judgement Egretta gularis dimorpha Scopus umbretta minor Lanius collaris 51 Our judgement (Harris and Franklin 2000) subcoronatus; humeralis; smithii Lanius collaris marwitzi Lefranc and Worfolk (1997) Corvus ruficollis Madge and Burn (1999) edithae percivali Oriolus larvatus Fry et al. (2000) Dicrurus ludwigii sharpei Our judgement Dicrurus adsimilis modestus Fry et al. (2000) Erythrocercus livingstonei Our judgement (skins at NHM) thomsoni Terpsiphone rufiventer bedfordi Urban et al. (1997) Terpsiphone rufocinerea batesi (incl. bannermani) Urban et al. (1997) Terpsiphone rufocinerea Nilaus afer ⁵² Our judgement bannermani nigritemporalis (incl. miombensis); affinis Our judgement (skins at ZMUC and NHM) anchietae Tchagra minuta Sibley and Monroe (1990) Tchagra australis 53 Our judgement (skins at NHM) souzae Laniarius luehderi castaneiceps Our judgement Fry et al. (2000) Laniarius luehderi brauni; amboimensis Laniarius aethiopicus 54 major (incl. mossambicus +limpopoensis); erlangeri; Our judgement (skins at MNHN) ambiguous (incl. sublacteus) Rhodophoneus cruentus cathemagmenus Our judgement Our judgement Malaconotus lagdeni <u>centralis</u> Malaconotus monteiri perspicillatus Our judgement Our judgement (skins at NHM) Prionops plumatus concinnatus; cristatus (incl. vinaceigularis); poliocephalus Prionops caniceps rufiventris (incl. mentalis) Fry et al. (2000) Prionops caniceps Our judgement (skins at NHM) harterti Batis mixta 55 'crypta' Fjeldså (in prep) Sibley and Monroe (1990) Batis capensis reichenowi; dimorpha (incl. sola) Batis capensis sola Our judgement Batis minima ituriensis Urban et al. (1997) Batis poensis 56 occulta Sibley and Monroe (1990). Platysteira peltata Collar and Stuart (1985) <u>laticincta</u> Platysteira castanea hormophora Our judgement Platysteira blissetti chalybea; jamesoni Sibley and Monroe (1990) Platysteira concreta Our judgement <u>kungwensis</u> Chaetops frenatus aurantius Sibley and Monroe (1990) Our judgement

Neocossyphus fraseri vulpina Monticola brevipes pretoriae Zoothera piaggiae tanganjicae Zoothera gurneyi crossleyi

Turdus olivaceus <u>ludoviciae</u> Turdus olivaceus roehli; abyssinicus (incl. baraka +bambusicola + swynnertoni)

<u>helleri</u>

Alethe diademata Bradornis pallidus ⁵⁷

Bradornis microrhynchus Dioptrornis chocolatinus

Turdus olivaceus

deckeni +oldeani); smithi; milanjensis (incl. nyikae +

castanea (incl. woosnami) modestus (incl. erlangeri +subalaris +murinus +

aquaemontis +griseus +divisus +sibilans)

fischeri (incl. toruensis +nyikensis +semicinctus); brunneus

Sibley and Monroe (1990)

Sibley and Monroe (1990)

Sibley and Monroe (1990)

Collar and Stuart (1985)

Bowie et al. (In press)

BirdLife International (Anon. 2000)

Urban et al. (1997)

Our judgement

Sibley and Monroe (1990) Urban et al. (1997)

Dioptrornis chocolatinus Muscicapa olivascens Pogonocichla stellata ⁵⁸

Swynnertonia swynnertoni Stiphrornis erythrothorax Sheppardia bocagei Sheppardia bocagei <u>Sheppardia gunningi</u> 59 Cossypha isabellae Cossypha roberti Cossypha archeri Cossypha polioptera

Cossypha albicapilla 60 Cercotrichas signata 61 Cercotrichas leucophrys 62 Saxicola torquata

Oenanthe lugubris Oenanthe bottae Cercomela scotocerca Thamnolaea cinnamomeiventris

Thamnolaea cinnamomeiventris Onychognathus morio Onychognathus fulgidus 63 Lamprotornis chloropterus Lamprotornis mevesii Lamprotornis purpuropterus

Anthoscopus caroli Anthoscopus caroli Parus leucomelas Parus niger Parus rufiventris Parus afer Parus afer Parus afer 64 Hirundo abyssinica 65

Hirundo semirufa 66 Hirundo senegalensis Hirundo daurica Hirundo preussi Psalidoprocne pristoptera

Pycnonotus barbatus Andropadus masukuensis Andropadus masukuensis Andropadus importunes Andropadus tephrolaemus 67

Andropadus milanjensis Andropadus milanjensis Chlorocichla flavicollis Phyllastrephus fischeri Phyllastrephus fischeri Phyllastrephus baumanni Phyllastrephus flavostriatus Phyllastrephus debilis Bleda notatus Nicator chloris Criniger barbatus Cisticola erythrops

Cisticola lais Cisticola galactotes

Cisticola chubbi

Cisticola chubbi

Cisticola aberrans

Cisticola chinianus

Cisticola robusta Cisticola robusta toruensis; nyikensis; semicinctus

<u>itombwensis</u>

ruwenzorii (incl. elgonensis +keniensis +guttifer); orientalis (incl. macarthuri +helleri)

rodgersi

gabonensis; xanthogaster

poensis <u>kungwensis</u> bensoni; alticola batesi rufescentior kimbutui

nigriceps (incl. tessmanni) giffardi (incl. omoensis)

tongensis

leucoptera (incl. eluta +vulpina +brunneiceps +sclateri)

albofasciata schalowi heuglini

spectatrix (incl. validior)

albiscapulata coronata neumanni hartlaubi elisabeth benguelensis aeneocephalus sylviella (incl. sharpei)

roccatii; rankinei; ansorgei (incl. rhodesiae +pallescens)

guineensis pallidiventris thruppi

cinerascens (incl. orphnus +benguelae)

benguelae

unitatis (incl. ampliformis +maxima +puella +

bannermani) gordoni monteiri domicella rufigula

chalybea; petiti; orientalis; holomelas; antinorii; mangebettorum; oleaginea

tricolor; dodsoni; somaliensis kakamegae kungwensis; roehli

insularis (incl. oleaginus +hypoxanthus) kikuyuensis; bamendae; nigriceps; usambarae;

neumanni; fusciceps; chlorigula olivaceiceps (incl. striifacies)

soror placidus cabanisi hypochloris alfredi albigula ugandae gularis chloronotus discolor nigriloris emini bodessa

striifacies

marginatus (incl. amphilectus +zalingei +nyansae + suahelicus); haematocephalus; luapula (incl. schoutedeni

+stagnans); lugubris

angolensis <u>aberdare</u>

Our judgement (skins at NHM)

Urban et al. (1997)

Our judgement (Bowie et al. In press)

Our judgement

Beresford and Cracraft (1999)

Prigogine (1987) Our judgement

Our judgement (Fjeldså et al. 2000) Our judgement (skins at NHM)

Our judgement Our judgement Our judgement

Our judgement (skins at NHM)

Our judgement Our judgement Our judgement Sinclair and Ryan (2003) Sibley and Monroe (1990)

Our judgement Our judgement

Sibley and Monroe (1990) Fry et al. (2000) Sinclair and Ryan (2003) Sibley and Monroe (1990) Our judgement (skins at NHM)

Our judgement

Sibley and Monroe (1990)

Our judgement

Sibley and Monroe (1990) Harrap and Quinn (1996) Sibley and Monroe (1990) Harrap and Quinn (1996) Clancey (1996a) Our judgement Our judgement

Our judgement

Our judgement (skins at ZMUC) Sibley and Monroe (1990) Turner and Rose (1989) Prigogine (1985)

Sibley and Monroe (1990) Sibley and Monroe (1990)

Our judgement

Our judgement (skins at ZMUC) Our judgement (see endnote 67)

Sibley and Monroe (1990) Sinclair and Ryan (2003) Our judgement Keith et al. (1992) Sibley and Monroe (1990) Keith et al. (1992) Sibley and Monroe (1990) Our judgement (skins at ZMUC)

Beresford (2002) Fry et al. (2000) Keith et al. (1992) Sibley and Monroe (1990) Sibley and Monroe (1990) Urban et al. (1997) Sibley and Monroe (1990) Urban et al. (1997) Sibley and Monroe (1990) Sinclair and Ryan (2003)

Sibley and Monroe (1990)

Urban et al. (1997)

Cisticola fulvicapillus Cisticola brunnescens Prinia subflava Prinia maculosa Prinia leucopogon Prinia bairdii Apalis thoracica

Apalis thoracica Apalis thoracica Apalis nigriceps Apalis jacksoni Apalis binotata Apalis flavida Apalis sharpei Apalis rufogularis Apalis porphyrolaema Apalis porphyrolaema Camaroptera brevicaudata Calamonastes simplex Calamonastes simplex Calamonastes fasciolatus Zosterops senegalensis Zosterops senegalensis Zosterops poliogaster Zosterops poliogaster Zosterops abyssinicus Zosterops pallidus Zosterops pallidus Br*adypterus b*aboecala 68 Bradypterus barratti

Bradypterus barratti Bradypterus barratti

Poliolais lopezi Eremomela pusilla Sylvietta leucophrys Sylvietta ruficapilla

Phylloscopus ruficapillus 69 Hyliota australis Modulatrix stictigula 70 Illadopsis rufipennis Illadopsis fulvescens Pseudoalcippe abyssinica Pseudoalcippe abyssinica

Turdoides rubiginosus Turdoides leucopygius Turdoides jardineii Phyllanthus atripennis Sylvia lugens Mirafra africana

Kakamega poliothorax 7

Mirafra africana Mirafra africana Mirafra apiata 72 Mirafra africanoides Mirafra sabota Heteromirafra ruddi Certhilauda curvirostris Certhilauda albescens Certhilauda albescens Certhilauda albescens

Calandrella cinerea Calandrella somalica Anthreptes fraseri Anthreptes longuemarei

Chersomanes albofasciata

angusticauda cinnamomeus fluviatilis hypoxantha <u>leontica</u> melanops

griseiceps; uluguru; fuscigularis; youngi (incl. murina); whitei (incl. arnoldi +rhodesia +quarta); flaviventris (incl. spelonkensis +lebombensis +drakensbergensis);

venusta (incl. darglensis); griseopyga

flavigularis; lynesi <u>pareensis</u> collaris bambuluensis personata viridiceps bamendae; goslingi

angolensis (incl. brauni +nigrescens +kigezi)

chapini <u>kaboboensis</u> harterti

undosus (incl. cinereus +huilae +katangae)

cinereus (incl. huilae); katangae

pallidior stenocricotus st*ierlingi*

kikuyuensis (incl. kaffensis +mbuluensis); eurycricotus

kulalensis; winifredae; silvanus flavilateralis (incl. jubaensis)

capensis (incl. atmorii +virens +caniviridis)

virens (incl. caniviridis)

elgonensis

lopesi (incl. camerunensis +granti +mariae +usambarae +boultoni +ufipae +bangwaensis +barakae)

bangwaensis

mariae (incl. granti +usambarae +boultoni +ufipae

+barakae) alexanderi canescens chapini

chubbi; makayii (incl. rufigenis); schoutedeni voelckeri; alacris (incl. johnstoni +quelimanensis

+minullus); ochrogularis

usambarae pressa

extrema; distans (incl. puguensis) maloneyana (incl. iboensis)

atriceps

monacha; stierlingi (incl. stictigula)

unnamed emini hartlaubii tanganjicae haynesi; bohndorffi griseiventris sharpii malbranti nigrescens marjoriae; fasciolata

alopex naevia <u>archeri</u>

subcoronata; brevirostris; semitorquata; benguelensis

barlowi erythrochlamys cavei beesleyi

blanfordi; erlangeri

athensis axillaris angolensis Urban et al. (1997) Urban et al. (1997) Urban et al. (1997) Sinclair and Ryan (2003) Urban et al. (1997) Sibley and Monroe (1990)

Solms (2003)

BirdLife International (Anon. 2000)

Our judgement Our judgement Our judgement Urban et al. (1997) Sibley and Monroe (1990) Urban et al. (1997) Our judgement Urban et al. (1997) Collar and Stuart (1985) Sibley and Monroe (1990) Urban et al. (1997) Our judgement Our judgement Sinclair and Ryan (2003)

Our judgement Our judgement

BirdLife International (Anon. 2000)

Our judgement

Sinclair and Ryan (2003)

Our judgement

Our judgement (Moyer In press) Urban et al. (1997)

Sinclair and Ryan (2003) Sibley and Monroe (1990)

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Our judgement

Urban et al. (1997) Our judgement (Rauri in litt.)

Our judgement Our judgement

Sibley and Monroe (1990) Our judgement (skins at ZMUC) Our judgement (skins at MNHN) Our judgement (skins at NHM)

Clancey (1984)

Our judgement (skins at ZMUC)

Our judgement Sinclair and Ryan (2003) Sibley and Monroe (1990) Sinclair and Ryan (2003) Our judgement

Sinclair and Ryan (2003) Sibley and Monroe (1990) Sibley and Monroe (1990) Collar and Stuart (1985) Ryan and Bloomer (1999) Ryan et al. (1998) Keith et al. (1992) Crowe et al. (1994b) del Hoyo et al. (In press) Sibley and Monroe (1990)

Sibley and Monroe (1990)

Sibley and Monroe (1990)

Our judgement

Anthreptes rectirostris tephrolaema Our judgement Nectarinia olivacea obscura Fry et al. (2000) Nectarinia amethystina kirkii (incl. kalkcreuthi +deminuta) Our judgement Nectarinia rubescens Our judgement crossensis Nectarinia senegalensis cruentata Our judgement Our judgement (skins at ZMUC) Nectarinia senegalensis gutturalis (incl. saturatior) Nectarinia adelberti Our judgement eboensis igneiventris; fazoglensis Our judgement Nectarinia venusta Nectarinia habessinica turkanae Our judgement manoensis Fry et al. (2000) Nectarinia chalybea Nectarinia afra stuhlmanni; prigoginei Sibley and Monroe (1990) Nectarinia afra ludovicensis (incl. whytei) Fry et al. (2000) Nectarinia afra 73 Our judgement (Bowie et al. 2004) whytei; unnamed Nectarinia mediocris usambarae; fuelleborni (incl. bensoni) Bowie et al. (2004) Nectarinia regia Our judgement anderseni Our judgement Nectarinia cuprea chalcea Our judgement Nectarinia tacazze jacksoni arturi; gadowi Nectarinia kilimensis Our judgement dartmouthi (incl. itombwensis) Nectarinia johnstoni Our judgement Nectarinia shelleyi hofmanni Our judgement Nectarinia mariquensis 74 osiris Our judgement Fry et al. (2000) Nectarinia bifasciata tsavoensis Nectarinia pembae 75 chalcomelas Fry et al. (2000) Our judgement Nectarinia pulchella melanogastra Nectarinia nectarinioides erlangeri Our judgement Passer iagoensis 70 motitensis (incl. rufocinctus +cordofanicus +shelleyi) Summers-Smith (1984) Passer iagoensis 76 Sinclair and Ryan (2003) rufocinctus; cordofanicus; shelleyi Motacilla aguimp 77 Anthus novaeseelandiae 78 cinnamomeus (incl. latistriatus +hoeschi +camaroonensis) Prigogine (1981) Prigogine (1981) Anthus novaeseelandiae latistriatus Anthus novaeseelandiae 79 Sibley and Monroe (1990) hoeschi; camaroonensis Anthus similis 75 nyassae (incl. frondicolus) Prigogine (1985) Anthus similis Sibley and Monroe (1990) bannermani Anthus similis Our judgement moco Ploceus baglafecht stuhlmanni Our judgement Ploceus melanogaster stephanophorus Our judgement vitellinus; reichardi; katangae Sibley and Monroe (1990) Ploceus velatus Ploceus cucullatus collaris; spilonotus; nigriceps (incl. graueri) Our judgement Ploceus nigerrimus 80 castaneofuscus Our judgement kersteni; amaurocephalus (incl. tephronotus +analogus Our judgement (skins at NHM) Ploceus bicolor +kigomaënsis); stictifrons; mentalis nicolli (incl. anderseni) Ploceus olivaceiceps Franzmann (1983) Ploceus olivaceiceps Our judgement <u>anderseni</u> Anaplectes rubriceps leuconotos (incl. jubaensis) Our judgement ladoensis (incl. stricta +niassensis +taha) Our judgement (skins at ZMUC and NHM) Euplectes afer ansorgei; friedrichseni Euplectes gierowii Our judgement Euplectes axillaris Our judgement quanzae Euplectes macrourus 81 macrocercus (incl. soror) Our judgement (skins at NHM) Euplectes albonotatus Our judgement (skins at ZMUC) Euplectes albonotatus 82 asymmetrurus Our judgement (Craig 1993) Euplectes ardens concolor; laticauda (incl. suahelicus) Our judgement Euplectes hartlaubi Sibley and Monroe (1990) psammocromius Parmoptila rubrifrons Woodcock (2003) jamesoni emiliae; candida Nigrita canicapilla Our judgement Pytilia phoenicoptera Pytilia melba ⁸³ Sibley and Monroe (1990) lineata Our judgement (skins at ZMUC) citerior Pyrenestes sanguineus 84 coccineus Our judgement Spermophaga ruficapilla Our judgement (skins at ZMUC) cana nitidula Lagonosticta rufopicta Sibley and Monroe (1990) Lagonosticta rhodopareia virata; umbrinodorsalis Sibley and Monroe (1990) vinacea (incl. nigricollis +togoensis) Sibley and Monroe (1990) Lagonosticta larvata Lagonosticta larvata nigricollis (incl. togoensis) Our judgement

niassens (incl. cyanopleurus)

roseicrissa (incl. marwitzi)

bocagei

kandti

avakubi

charmosyna

delamerei

ochrogaster

quartinia (incl. kilimensis +stuartirwini +bocagei)

Uraeginthus angolensis 85

Estrilda melanotis

Estrilda melanotis

Estrilda paludicola 86

Estrilda paludicola

Estrilda atricapilla

Estrilda atricapilla

Estrilda erythronotus

Estrilda erythronotus

Our judgement (skins at ZMUC)

Our judgement

Our judgement

Our judgement

Our judgement

Sibley and Monroe (1990)

Sibley and Monroe (1990)

Sibley and Monroe (1990)

Sibley and Monroe (1990)

Ortygospiza atricollis Ortygospiza atricollis ⁸⁷ Ortygospiza locustella

Lonchura bicolor

Lonchura bicolor Vidua complex ⁸⁸ Vidua chalybeata ⁸⁹

Vidua camerunensis ⁸⁹ Vidua funerea ⁹⁰ Vidua funerea ⁹¹ Vidua orientalis ⁹²

Vidua orientalis ⁹² Vidua paradisea ⁹³ Serinus canicollis

Serinus cuntouts
Serinus citrinelloides
Serinus citrinelloides
Serinus atrogularis
Serinus atrogularis
Serinus donaldsoni

Serinus donaldsoni Serinus albogularis Serinus gularis Serinus striolatus Serinus burtoni Serinus burtoni

Serinus alario Linurgus olivaceus

Emberiza capensis Emberiza cabanisi fuscocrissa (incl. muelleri +smithersi +pallida +digressa)

ansorgei (incl. ugandae)

uelensis

nigriceps (incl. minor +woltersi)

poensis

codringtoni phylogenetic species

wilsoni nigeriae

interjecta; togoensis

flavivertex (incl. sassii +huillensis) frontalis; hypostictus (incl. brittoni)

brittoni reichenowi flavigula; xa

flavigula; xantholaema; xanthopygius

buchanani crocopygius canicapillus whytii melanochrous

tanganjicae (incl. kilimensis +albifrons)

leucolaema elgonensis; kilimensis vincenti

orientalis (incl. cognominata)

Fry et al. (2004) Our judgement Our judgement

Sibley and Monroe (1990)

Our judgement

Payne et al. (1992) Payne and Payne (1994) Sorenson and Payne (2002) Payne and Payne (1994)

Payne (1985)

Fry et al. (2004) Fry et al. (2004) Our judgement (Van den Elzen 1985)

Erard (1974)

Sibley and Monroe (1990)

Our judgement

Sibley and Monroe (1990) Sibley and Monroe (1990) Sibley and Monroe (1990)

Our judgement

Sibley and Monroe (1990) Our judgement (skins at NHM)

Fry et al. (2004) Our judgement

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- ¹ Cisticola Kilombero and Cisticola White-tailed: These two genuinely new species are as yet unnamed. For the Worldmap database we have used their english names as species names, but this is purely for reference purposes and does not reflect any taxonomic considerations.
- ² Vidua maryae: maryae is described as a new subspecies of funerea by Payne (1982), but is treated as a full species by Payne and Payne (1994). Payne and Payne (1994) does not state who has raised maryae to full species status, and we have been unable to find this information. Since Payne and Payne (1994) is the earliest record we have found of maryae being treated as a full species, we use Payne and Payne as reference to this genuinely new species. Despite Payne's (1982) suggestion that maryae is a subspecies of funerea, we do not lump these for the BSC list, since it is a new taxon (even though it had a brief history as a subspecies).
- ³ Indicator meliphilus: narokensis was accepted as a separate species by Snow (1978), but it's validity has been questioned (Short et al. (1987) in Dowsett and Dowsett-Lemaire 1993). We have been unable to find the original text, by Short et al. (1987), and unfortunately Dowsett and Dowsett-Lemaire (1993) do not give any explanations, as to the arguments for the invalidity of narokensis. However, since narokensis is not mentioned in Short and Horne (2001), we choose to follow these authors, and have therefore lumped narokensis with meliphilus, for both BSC and PSC species lists.
- ⁴ Phoeniculus purpureus: Cooper et al. (2001) does not accept damarensis as a valid taxon, and it has therefore been lumped with purpureus for both the BSC and PSC species lists. Sinclair and Ryan (2003) treat both damarensis and granti (formerly considered a subspecies of damarensis) as separate species, but since Cooper et al. (2001) base their work on mtDNA, we follow them.
- ⁵ Eremomela icteropygialis: Sinclair and Ryan (2003) treat salvadorii as a separate species, stating that salvadorii is slightly larger and more brightly coloured. Dowsett and Dowsett-Lemaire (1993) however, state that they have heard and seen (both in the field and specimens) both taxa, and do not believe them to be separate species. Since Sinclair and Ryan (2003) do not give more details as to the grounds, upon which they found their decision, we chose to follow Dowsett and Dowsett-Lemaire (1993) an treat the two taxa as conspecific.
- ⁶ Numida meleagris: Borders have been drawn according to range descriptions in Madge and McGowan (2002) and Urban et al. (1986) and maps in Mackworth-Praed and Grant (1952, 1962).

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- ⁷ Guttera edouardi: Urban et al. (1986) state that barbata intergrades with edouardi, but it is not mentioned where, and since their ranges do not meet, we do not have an overlap of edouardi and barbata's ranges. The position of the border between verreauxi and edouardi in Zambia is not very precise, as Urban et al. (1986) simply state it as respectively West and East Zambia, and the map in Mackworth-Praed and Grant (1962) is small and not very detailed
- ⁸ Francolinus albogularis: Borrow and Demey (2001), Madge and McGowan (2002) and Urban et al. (1986) all state range of buck-leyi simply as East Ivory Coast to Cameroon. Mackworth-Praed and Grant (1970) has range map where buckleyi only reaches west to the border between Ghana and Ivory Coast (and not into Ivory Coast). However their range map of albogularis is much more restricted than mentioned in the other references, as they only show it to occur in Senegambia (not in Liberia or Ivory Coast). Since it is the oldest reference we choose not to follow Mackworth-Pread and Grant (1970), but instead place the boundary through the middle of Ivory Coast with Lac de Kossou as part of the border.
- ⁹ Francolinus sephaena: The range of rovuma (incl. spilogaster) is not certain. Mackworth-Praed and Grant (1952: 234) has rovuma (incl. spilogaster) and granti (included in sephaena) as two separate but sympatric species, and have a gap between spilogaster and rovuma in NE Kenya and S Somalia. However, others (Urban et al. 1986, Sibley and Monroe 1990, del Hoyo et al. 1994, Madge and McGowan 2002) all describe them as allopatric, and state that spilogaster should also occupy NE Kenya and Somalia. We therefore treat sephaena and rovuma (incl. spilogaster) as allopatric, and followe the range maps in Mackworth-Praed and Grant (1952) for rovuma (incl. spilogaster), but have extended their range to include NE Kenya and Somalia.
- ¹⁰ Francolinus ahantensis: The range of ahantensis was adjusted according to Madge and McGowan (2002).
- ¹¹ Francolinus squamatus: Although squamatus is treated as monotypic by several authors (Urban et al. 1986, del Hoyo et al. 1994, Madge and McGowan 2002), the original description of usambarae (Conover 1928) and skins at ZMUC indicate that the taxa in the Eastern Arc mountains have distinctive dull black facial markings. We tentatively treat usambarae (incl. uzungwensis +doni) as a phylogenetic species, but recognize that further study of these taxa would be beneficial. This split has been further confirmed by J.Fjeldså's study of skins at the Muséum Nationelle de Histoire Naturelle, Paris.

- ¹² Francolinus afer: The maps of afer, cranchii, castaneiventer and melanogaster are primarily based on the maps in Mackworth-Praed and Grant (1952, 1962), although these are very small, and thus not precise. Urban et al. (1986) states that afer and cranchii intergrade in the highlands of west Angola, and we have therefore left one grid-cell of overlap in Angola. Likewise Urban et al. (1986) state that melanogaster intergrades with cranchii in S Tanzania and E Zambia.
- ¹³ Xenoperdix udzungwensis: obscurata is a new subspecies described by Fjeldså and Kiure (2003) which we treat as a phylogenetic species, on grounds of the plumage and size differences described in Fjeldså and Kiure (2003).
- ¹⁴ Plectropterus gambensis: The range of niger is difficult to determine. References state that it ranges from South Africa, north to the Zambezi river, "but there is a wide overlap zone of intermediate birds" (Madge and Burn 1988: 161). However we have been unable to find out how broad this overlap zone is, and all references are very vague about the range in Namibia. We have therefore made an overlap of one grid cell along the range-border of the two phylogenetic species, and arbitrarily placed the borderline along the northern border of Namibia.
- ¹⁵ Anas sparsa: The range of sparsa is uncertain. Snow (1978), Brown et al. (1982) and Madge and Burn (1988) all state its range as going from the Cape peninsula north to Zambia and Mozambique (and we would thus presume it to lie along the Zambezi river). However, del Hoyo et al. (1992) states it as being in South Africa, south of Zimbabwe. Since del Hoyo et al. (1992) is the most recent of these references, we choose to follow them. The exact range is not given, so we place the range of sparsa north to the Limpopo river.
- ¹⁶ Pogoniulus bilineatus: leucolaima and makawai were accepted as separate species by Snow (1978), but the validity of these two species has since been disputed (Dowsett and Dowsett-Lemaire 1993), and they are treated as conspecific with bilineatus by Fry et al. (1988) and Sibley and Monroe (1990). Since Dowsett and Dowsett-Lemaire (1993) treat leucolaima and bilineatus as conspecific on grounds of vocal evidence, we agree that they should be conspecific as biological species, but keep them separate as two phylogenetic species. However, the validity of makawai is only questioned because of a lack of resightings, and we therefore treat this taxon as both a biological and phylogenetic species. Short and Horne (2001) also treat makawai as a species, although they stress that "It must be considered very doubtful that the type represents a new species;" (Short and Horne 2001: 161).
- ¹⁷ Tricholaema melanocephala: Brown et al. (1982) and Short and Horne (2001) state that *flavibuccalis* is "known only from Wembere Steppes and Seronera" (Brown et al. 1982: 453). Both Mackworth-Praed and Grant (1952) and Short and Horne (2001) show a range-map which lies due south from Lake Victoria, but this area is not included in Fry et al. (1988). Since Short and Horne (2001) is the most recent of these references, we follow their range-map. The exact range of *flavibuccalis* is not given, but we place it west of the two mentioned localities (Wembere Steppes and Seronera), since Short and Horne (2001) describe the range of *flavibuccalis* as N-central Tanzania, and the range of *stigmatothorax* as "... S Somalia to central Tanzania" (Short and Horne 2001: 186).
- ¹⁸ Lybius leucocephalus: Fry et al. (1988) states that there is overlap between *senex* and *albicauda* "..along Kenya-Tanzania border." (p.

- 458), so we have made a one grid-cell overlap. However, even though the maps in Mackworth-Praed and Grant (1952) seem to show a slight overlap between *leucocephalus* and *senex* in western Kenya, Fry et al. (1988) states that there is no contact between *leucocephalus* and *senex*, and so we have made them allopatric.
- ¹⁹ *Lybius torquatus*: It is difficult to determine the range of *zombae*. Mackworth-Praed and Grant (1952, 1962) has shown two very different range-maps in these two volumes of African Handbook of Birds. In Mackworth-Praed and Grant (1952) the range of zombae is very small, but they show the range of albigularis, which Fry et al. (1988) states as being a morph of zombae. In Mackworth-Praed and Grant (1962) the range of zombae has increased considerably, but that must be because they have included the range of some other subspecies (without describing this in the text, however), most likely *vivacens* and *pumilio*. Since the range-map of *zom*bae and albigularis corresponds well with the described range in Fry et al. (1988: 467), we have followed these two range-maps. Furthermore we have made an overlap of zombae and irroratus, because Fry et al. (1988: 467), states that these intergrade in Tanzania (in southern part of irroratus' range). The extent of this overlap is not mentioned, and since the range-maps in Mackworth-Praed and Grant (1952) show them to be allopatric, we have only made one grid-cell of overlap. Clancey (1996b) state that zombae intergrades with *lucidiventris* along the lower Save. However Fry et al. (1988) states that lucidiventris is synonymous with bocagei, which does not occur in this area (instead occurring from Angola to SW Zambia). Since both *lucidiventris* and *bocagei* are treated as subspecies of torquatus this dispute of names in southern Mozambique is of lesser importance, and we merely let zombae overlap with torquatus in one grid-cell of overlap in the southernmost part of zombae's range.
- ²⁰ Indicator maculatus: The range of maculatus and stictothorax in western Africa was adjusted according to Borrow and Demey (2001).
- ²¹ Campethera cailliautii: The range of *permista* in western Africa was adjusted according to Borrow and Demey (2001).
- ²² Rhinopomastus cyanomelas: The range description of cyanomelas and schalowi in del Hoyo et al. (2001) and Fry et al. (1988) is not very precise, with the two taxa described as reaching to Natal. We have used the range maps shown in Mackworth-Praed and Grant (1962), but there is a gap in the distribution of the two species in Mozambique, which is not shown in the other two references (Fry et al. 1988, del Hoyo et al. 2001). We place schalowi in this area, since schalowi is stated as ranging from "Somalia to Zambia and W Natal" (Fry et al. 1988: 365). It appears, on the two maps shown in Mackworth-Praed and Grant (1962: 503), that there are slight overlaps in the range of the two populations, but since the maps are shown at different scales, which makes it difficult to determine details, and since neither del Hoyo et al. (2001) or Fry et al. (1988) describe any overlap, we show them as being allopatric.
- ²³ Merops variegatus: Range of bangweoloensis is not certain. Fry et al. (1988) states it as "... northeast to Ufipa plateau and about Kibondo (Tanzania)." (p. 311), but there are two towns by that name in western Tanzania; one at 3°S 30°E and one at 1°S 30°E, furthermore there is an administrative region with its centre at 4°S 31°E. Since the first-mentioned town is larger than the latter and the administrative region lies close to the first-mentioned, we assume that Fry et al. (1988) are referring to the Kibondo at 3°S 30°E. None of the references (Mackworth-Praed and Grant 1970,

Fry et al. 1988, Fry et al. 1992, del Hoyo et al. 2001) describe which subspecies inhabits NW Tanzania, Rwanda and Burundi, but since (Fry et al. 1988) describes *bangweoloensis* as ranging northeast to Kibondo, we have only included its range in Tanzania south of 3°S.

- ²⁴ Halcyon senegalensis: Mackworth-Praed and Grant (1970) shows an overlap in range of fuscopilea (subspecies of senegalensis) and cyanoleuca in WC Angola. However, this is not mentioned in Fry et al. (1988), who instead state that senegalensis and cyanoleuca intergrade in NW Tanzania, Rwanda and Burundi. We therefore treat fuscopilea and cyanoleuca as allopatric. senegalensis and cyanoleuca, however, are given an area of overlap south of lake Victoria and in Rwanda and Burundi. The coastal area of Tanzania and northern Mozambique is not shown for any subspecies in Mackworth-Praed and Grant (1952, 1970), but based on the written range description in Fry et al. (1988), we include all of the eastern range in cyanoleuca.
- ²⁵ Colius striatus: Mackworth-Praed and Grant (1952) show leucophthalmus and ugandensis (respectively included in the new phylogenetic species nigricollis and leucotis) as being sympatric in extreme eastern DRC (on western shore of lake Albert), but since (Mackworth-Praed and Grant 1970) shows these two populations as allopatric, and none of the references describe them as sympatric, we choose to make the two allopatric. Both Mackworth-Praed and Grant (1952, 1970) show a slight overlap between leucophthalmus and jebelensis (included in the new phylogenetic species leucotis) in SE Sudan, but here Nikolaus (1987) shows them as allopatric, and we choose to follow Nikolaus.
- ²⁶ Cuculus clamosus: The range of gabonensis is based both on map 244 from Snow (1978: 237) and habitat maps, since clamosus lives in savannah and woodland, whereas gabonensis lives in forest regions.
- ²⁷ Poicephalus senegalus: The range of versteri is made according to the map in Mackworth-Praed and Grant (1970: 403), with an overlap between senegalus and versteri in Nigeria.
- ²⁸ Otus scops: senegalensis is split from scops, but this just means changing the name, since scops does not occur S of Sahara.
- ²⁹ *Bubo bubo*: *ascaluphus* is split from *bubo*, but this just means changing the name, since bubo does not occur S of Sahara.
- ³⁰ Glaucidium capense: The description of etchecopari as a subspecies of capense includes measurements of the various taxa of the *G. capense* complex (Erard and Roux 1983). These measurements show etchecopari to be smaller than the other taxa, with measurements of etchecopari lying below the range of the other taxa. Since Köenig et al. (1999) state that etchecopari also differs vocally from the others, and that it may be specifically distinct, we treat etchecopari as a phylogenetic species.
- ³¹ Glaucidium capense: There is some disagreement about the range of capense, as del Hoyo et al. (1999), Fry et al. (1988) and König et al. (1999) describe the range as going from South Africa north to S Mozambique, whereas Sibley and Monroe (1990) describe it as reaching as far north as Tanzania and as far west as Angola. Since the range of capense and ngamiense, described in Sibley and Monroe (1990), would appear to make the two taxa sympatric, without this being mentioned in the other three references, we have chosen to follow del Hoyo et al. (1999), Fry et al. (1988) and König et al.

- (1999). We have used the map in König et al. (1999: 379) for the range of *capense*.
- ³² Athene noctua: After splitting spilogastra and somaliensis from noctua, for the PSC species list, the range of noctua has been deleted, as its range is marginal S of Sahara.
- ³³ Caprimulgus nubicus: The range of nubicus has been expanded in Kenya, according to Lewis and Pomeroy (1989: 240), whereas we have lessened its range in Sudan, according to Holyoak (2001: 522) and Nikolaus (1987: 123).
- ³⁴ Caprimulgus climacurus: Range of climacurus has been expanded to include the area in southern DRC, as shown in Holyoak (2001: 626).
- ³⁵ Streptopelia decipiens: We have been unable to determine the exact boundary between the two phylogenetic species, since both Urban et al. (1986) and Gibbs et al. (2001) simply state it as S Ethiopia. Because of these vague range descriptions, and since south and east Ethiopia (except for the highlands) is only composed of one habitat type (Bushland), we have arbitrarily drawn the boundary one grid-cell above the southern border of Ethiopia. Likewise, the extreme NW range limit of *perspicillata* is arbitrarily drawn along the NW border of Kenya.
- ³⁶ Sarothrura rufa: We have been unable to determine the border between rufa and elizabethae, to the east of DRC. Mackworth-Praed and Grant (1952, 1962) have elizabethae and bonapartei as synonyms of rufa, and so only show range of rufa. Neither del Hoyo et al. (1996) or Urban et al. (1986) specifically mention which taxon is in SE Uganda, Rwanda or Burundi. Since the range of rufa is given as "central Kenya, S Zaïre and Angola to South Africa" (Urban et al. 1986: 90) and the range of elizabethae as "Central African Republic, NE Zaïre, Uganda, W Kenya, Ethiopia" (Urban et al. 1986: 91), we place rufa in Burundi, Rwanda and SW Uganda, with one grid-cell of overlap in SW Uganda.
- ³⁷ Podica senegalensis: The range of camerunensis is based on the range-map in Mackworth-Praed and Grant (1970: 227), whereas the map of somereni is based on the described range in Urban et al. (1986: 147) and the range-map in Ash and Miskell (1998: 140).
- ³⁸ Balearica pavonina: The range of pavonina and ceciliae is not clear. pavonina is stated as ranging from West Africa, east to Lake Chad, and ceciliae should range from S Sudan and further east (Mackworth-Praed and Grant 1970, Johnsgard 1983, Urban et al. 1986, del Hoyo et al. 1996). This leaves a gap in central-southern Chad (both Johnsgard (1983) and Mackworth-Praed and Grant (1970) show disjunct ranges, with a gap, whereas Snow (1978) and Urban et al. (1986) show a continuous range). Nikolaus (1987) only shows range in Sudan, but here cicilia crosses through Sudan, all the way to the western border. Since most references are fairly clear, on pavonina ranging to Lake Chad, and Borrow and Demey (2001) state that "Eastern ceciliae reaches E and C Chad." (p. 418), we place the borderline between pavonina and ceciliae in SW Chad, so that pavonina occupies SW Chad, whereas ceciliae occupies SC and SE Chad.
- ³⁹ Pterocles exustus: Urban et al. (1986) state that *olivascens* is "sometimes poorly differentiated." (p. 425), whereas Madge and McGowan (2002) describe it as "an obviously differentiated form" (p. 449). Despite that the plates of *olivascens* in Madge and McGowan (2002) and *exustus* in Urban et al. (1986) are difficult

to compare, we choose to treat *olivascens* as a phylogenetic species, based on Madge and McGowan's statement, that it is obviously differentiated. The range of *olivascens* in NE Kenya and S Somalia is not certain. Both Urban et al. (1986) and Johnsgard (1991) show a gap in the range, with a question mark in NE Kenya. Madge and McGowan (2002) state that *olivascens* perhaps inhabits Somalia. Urban et al. (1986) does not mention Somalia in its range description, whilst Johnsgard (1991) state that *olivascens* inhabits SE Ethiopia, Somalia, Kenya and Tanzania. Although there is no mentioning of this river in any of the references, we choose to use the Genale River in Somalia as a borderline between *P.exustus* and *P.olivascens*, but leave one grid-cell of overlap, since the river runs through the middle of the grid-cells.

- ⁴⁰ Pterocles lichtensteinii: It is not clear how far north sukensis should range. Mackworth-Praed and Grant (1952) does not show a range map for sukensis, only lichtensteinii, which reaches south to the Kenyan border. However, Urban et al. (1986) and del Hoyo et al. (1997) describes the range of sukensis as also including S Ethiopia, and since these references are more recent, we have included low-land SW Ethiopia in sukensis.
- ⁴¹ Vanellus tectus: Both Urban et al. (1986) and Hayman et al. (1986) state that latifrons is smaller than tectus. However, they refer to different wing meassurements; "180–201 mm (nominate), 173–193 mm (three specimens of latifrons)" (Hayman et al. 1986: 263) and "(8 males, 8 females) wing, male 188–197 (191), female 184–198 (190)" for tectus and 170–175 for latifrons (Urban et al. 1986: 260). Although the measurements given in Urban et al. (1986) indicate that latifrons is distinctly smaller than tectus, the discrepancy between the measurements in the two references (and the lack of number of individuals measured), means that we only use these measurements as a guideline for treating latifrons as a phylogenetic species. Apart from the size difference, there is also a difference in the width of white band on forehead, but, by itself, this seems to be only a slight difference. Based on the plumage and size difference, we tentatively treat latifrons as a phylogenetic species.
- ⁴² Vanellus coronatus: The range of demissus is stated simply as Somalia, but we have been unable to find the exact range. Ash and Miskell (1998) show how far south it ranges in Somalia, and also show it to occupy the northern part of Somalia. It thus seems likely that it will also occupy the extreme eastern part of Ethiopia, and we have made a straight line from its southern extent up to the SW corner of northern Somalia.
- ⁴³ Smutsornis africanus: The range of bisignatus follows the rangemap in Mackworth-Praed and Grant (1962).
- ⁴⁴ Rhinoptilus cinctus: The various descriptions of the taxa (Mackworth-Praed and Grant 1952, Mackworth-Praed and Grant 1962, Urban et al. 1986, Hayman et al. 1986, del Hoyo et al. 1996) only describe slight variations between cinctus and seebohmi, but plate 7 in del Hoyo et al. (1996) shows the taxa to be distinctly different. The northern extent of seebohmi's range is not certain, as del Hoyo et al. describe it as "... N Namibia to S Zambia, Zimbabwe and extreme N South Africa; possibly also N Malawi." (del Hoyo et al. 1996: 379), and Hayman et al. describe it as the "southern fringe in Zimbabwe and Namibia" (Hayman et al. 1986: 246), whereas Urban et al. describe the range of emini (included in cinctus) as reaching south to Tanzania and N Zambia (Urban et al. 1986). Since Rhinoptilus cinctus inhabits dry bushland and woodland, we let seebohmi range north to N Malawi, and use the Southern Rift

Montane Forest habitat, just north of Lake Malawi, as the borderline between the two taxa.

- ⁴⁵ Glareola nuchalis: Both Borrow and Demey (2001), Hockey and Douie (1995) and Urban et al. (1986) state that intermediates between nuchalis and liberiae occur in W Cameroon, though no further details are given. We therefore use the western mountain range in Cameroon as a border between the two taxa, but leave an overlap-zone of two grid cells in SW Cameroon, from 8-10° E. Mackworth-Praed and Grant (1970) does show the range of nuchalis to reach west all the way to Senegal, but this is an old publication, where the text itself describes the range as "Cameroun, Gabon, Lake Chad and the Sudan to Angola and the Zambezi River" (p. 296) and Urban et al. (1986) makes no mention of nuchalis occurring further west than Cameroon. Borrow and Demey (2001) however, state that "Nominate also reported from Guinea and Togo" (p. 428), but since there are no further details on these sightings and it is an intra-African migrant where ".. migrations poorly understood" (Borrow and Demey 2001: 428), we choose not to expand the range of nuchalis to include Guinea and Togo.
- ⁴⁶ Falco tinnunculus: The presence or absence of tinnunculus and/or rupicolus in east-central Angola, west Zambia and eastern Mozambique is not clear (Mackworth-Praed and Grant 1962, Brown et al. 1982, del Hoyo et al. 1994, Ferguson-Lees and Christie 2001, Sinclair and Ryan 2003). We follow Sinclair and Ryan (2003) in their range of tinnunculus and the area of overlap in northeast Zambia and southwest Tanzania, but otherwise follow the other references, in having rupicolus occupy east-central Angola, west Zambia and eastern Mozambique (Mackworth-Praed and Grant 1962, Brown et al. 1982, del Hoyo et al. 1994, Ferguson-Lees and Christie 2001).
- ⁴⁷ Dryotriorchis spectabilis: Borrow and Demey (2001) state that "Range limits of races inadequately known; nominate thought to range east to W Cameroon" (Borrow and Demey 2001: 376). As we have not been able to find a more detailed range description, we place the boundary of the two taxa along the Bamenda Highlands in west Cameroon, with an overlap in the grid-cell containing the lowland between Mount Cameroon and the Bamenda Highlands.
- ⁴⁸ Kaupifalco monogrammicus: The range of monogrammicus and meridionalis is not well known, and the written descriptions of their range are very vague (Mackworth-Praed and Grant 1970, del Hoyo et al. 1994, Ferguson-Lees and Christie 2001), especially regarding central Africa around DRC. Since the habitat is fairly continuous in this region, we have not been able to use habitat type as a guide to placing the range-border. Therefore the border has been drawn arbitrarily with a one-grid-cell overlap between the two phylogenetic species.
- ⁴⁹ Accipiter badius: The borderline between the two taxa, shown in Snow (1978) and Mackworth-Praed and Grant (1952) is not very precise. Since the range description in Brown et al. (1982) and del Hoyo et al. (1994) are likewise imprecise, we have followed the borderline shown in Snow (1978). As badius does not occur in Africa, we have kept badius name in the BSC list, but changed it to sphenurus and polyzonoides in the PSC list.
- ⁵⁰ *Podiceps cristatus: infuscatus* is split from *cristatus*, but this only results in a change of name, since *cristatus* does not occur S of Sahara.

- ⁵¹ Lanius collaris: Harris and Franklin (2000) group the subspecies into a north (humeralis incl. smithii) and south group, based on differences in song and, to a minor extent, juvenile plumage. We have followed this, but have also split the northern group, since humeralis has a dark rump, whereas smithii has a whitish rump. The SE extent of subcoronatus is not certain, as it is stated to interbreed with collaris in this area (Hall and Moreau 1970, Fry et al. 2000). We have therefore left an overlap of two grid-cells between subcoronatus and collaris in the SE part of subcoronatus' range. This borderline has been arbitrarily drawn between the confirmed eastern and southern part of *subcoronatus*' range, as shown in Fry et al. (2000: 101). The borderline between smithii and humeralis has been determined by consulting Nikolaus (1987) and Mackworth-Praed and Grant (1973). However, for the southern range extent of *humeralis*, we have followed the descriptions in Fry et al. (2000) and Harris and Franklin (2000), instead of Mackworth-Praed and Grant (1973), who show it to range as far south as the Zambezi river. As for the borderline between smithii and capelli (included in collaris), we follow Fry et al. (2000) in having capelli inhabit Burundi, Rwanda and SW Uganda (Harris and Franklin (2000) does not mention which taxon inhabits this area), but the exact border is drawn arbitrarily. Harris and Franklin (2000) state that smithii should also be present at Cabinda in Angola, but we choose not to follow this, as their own map (on p. 68) fails to show this, this point lies within the range of *capelli*, and neither is this mentioned by Fry et al. (2000).
- ⁵² Nilaus afer: For the range of nigritemporalis (incl. miombensis) we have mainly followed Hall and Moreau (1970: 85, map 98). However, they have not included the range of miombensis in nigritemporalis. miombensis is described by Clancey (1971), and he states that Mackworth-Praed and Grant (1955) include miombensis in their range-map of nigritemporalis (Mackworth-Praed and Grant 1955: 586). We have thus followed Mackworth-Praed and Grant (1955) for the range of nigritemporalis (incl. miombensis) in southern Mozambique, but have followed Hall and Moreau (1970) for the rest of their range (as their map is larger and more detailed than in Mackworth-Praed).
- ⁵³ *Tchagra australis*: For the range of *souzae* we have used the place names given in Fry et al. (2000) together with the range-map shown in Mackworth-Praed and Grant (1973: 448).
- ⁵⁴ Laniarius aethiopicus: These splits are based on skins studied by J. Fjeldså at the Muséum Nationelle de Histoire Naturelle, Paris. Which taxon occupies the southeastern corner of Tanzania is not clear. However, since sublacteus (included in ambiguous) is stated as only reaching 'south to Zanzibar' (Fry et al. 2000) we let ambiguous (incl. sublacteus) range south to 7° south at the coast, and thus mossambicus (included in major) occupies SE Tanzania.
- ⁵⁵ *Batis mixta*: 'crypta' is a new taxon, which will be described as a species (Fjeldså in prep.).
- ⁵⁶ Batis poensis: Since poensis only occurs on Bioko island, this split merely indicates that the records on mainland Africa are under the name *occulta*.
- ⁵⁷ Bradornis pallidus: The range of pallidus is not certain, especially in NE Africa. The range-maps in Mackworth-Praed and Grant (1955, 1973) do not correspond very well with the range descriptions given in Urban et al. (1997). Since Urban et al. (1997) is the most recent reference, we follow their descriptions, using the place names given and connect these, following geographical and habi-

- tat boundaries when present. However, for the range of *modestus*, in western Africa, we have followed the map in Mackworth-Praed and Grant (1973), as it follows the described range in Urban et al. (1997).
- ⁵⁸ *Pogonocichla stellata*: We have made these splits in accordance with suggestions put forward in Bowie et al. (In press).
- ⁵⁹ Sheppardia gunningi: alticola is a new subspecies, described by Fjeldså et al. (2000), which we raise to species level, because of its distinctness.
- 60 Cossypha albicapilla: The range of albicapilla and giffardi in Ivory Coast and Ghana is not wholly certain. Mackworth-Praed and Grant (1973) and Keith et al. (1992) both describe the range of albicapilla from Senegal to Guinea, and that of giffardi from Ghana east to Cameroon. On their range-maps Mackworth-Praed and Grant (1973) leave a gap between the two taxa, whereas Keith et al. (1992) show a continuous distribution from Senegal to Cameroon. However, Borrow and Demey (2001) also show a continuous range, and states the range as "... Senegambia to Sierra Leone and S Mali to N Ivory Coast (nominate), east through S Burkino Faso and N Ghana to Cameroon (Adamawa Plateau) and NW CAR (giffardi)." (p. 603). Based on this, we place the borderline along the Black Volta, which forms Ghana's western border with Ivory Coast and Burkina Faso.
- ⁶¹ Cercotrichas signata: The exact range of tongensis is not clear, but since it is described as a purely coastal taxon (Keith et al. 1992, Oatley 1998), we have placed it only in the coastal grid-cells, as far south as the St. Lucia estuary, which Keith et al. (1992) describe as the southern extent of its range.
- 62 Cercotrichas leucophrys: The range of leucoptera is not certain, and we have used information from various references to compile the shown range (Mackworth-Praed and Grant 1955, Mackworth-Praed and Grant 1963, Nikolaus 1987, Keith et al. 1992). Mackworth-Praed and Grant (1955, 1963) shows zambesiana (included in leucophrys) ranging into coastal Tanzania, up to the Kenyan border. This, however, is not described in Keith et al. (1992), which describe vulpina (included in leucoptera) as inhabiting this area, and since Keith et al. is the most recent reference, we chose to follow them. The placement of the western and southern borderline in Tanzania is drawn using specific place names, given in Keith et al. (1992), but the exact borderline between these points is arbitrary.
- ⁶³ Onychognathus fulgidus: Since fulgidus only occurs on São Tomé island, this split merely indicates that the records on mainland Africa are under the name of *hartlaubi*.
- ⁶⁴ Parus afer: The range of benguelae is drawn according to Clancey (1996a).
- ⁶⁵ Hirundo abyssinica: The range descriptions of abyssinica are very vague. Keith et al. (1992) describe it as Ethiopia and E Sudan, but does not mention which subspecies inhabits Somalia, Kenya or Uganda. We have therefore followed Turner and Rose (1989), who describe it as Sudan, Eritrea, Ethiopia and Somalia, and placed the range of abyssinica along the borders of Ethiopia and Kenya, although this is rather arbitrary. Only the range border in Sudan is known, where we have followed Nikolaus (1987).
- ⁶⁶ Hirundo semirufa: The described ranges for semirufa and gordoni are vague (Turner and Rose 1989, Keith et al. 1992), and we there-

fore follow the map for *semirufa*, given in Mackworth-Praed and Grant (1973).

- ⁶⁷ Andropadus tephrolaemus: This is a complex group, which has been split in various ways by; Dowsett and Dowsett-Lemaire (1993), Fjeldså (2003), Keith et al. (1992), Roy et al (1998), Sibley and Monroe (1990) and Sinclair and Ryan (2003). We have raised all subspecies to species level for the PSC species list (through consultation with J.Fjeldså).
- ⁶⁸ Bradypterus baboecala: Moyer (In press) has compared sound recordings of *elgonensis* with other subspecies of *baboecala* and agrees with Chappuis' African Bird Sounds disks, that *elgonensis* should be treated as a full species.
- ⁶⁹ Phylloscopus ruficapillus: The range of voelckeri is determined from Peters et al. (1934–84), where it is stated as ranging east to the Great Kei River (= Swart-Keirivier). We have thus used this river as the borderline between voelckeri and ruficapillus, but left one grid-cell of overlap, since the river runs through the middle of these grid-cells.
- ⁷⁰ *Modulatrix stictigula*: The treatment of *pressa* as a phylogenetic species is based on DNA work by Rauri (*in litt.*).
- ⁷¹ Kakamega poliothorax: Although treated as a monophyletic taxon by Fry et al. (2000), the western and eastern populations are treated as separate phylogenetic species. This is done following a study of the skins from these two areas, performed by J. Fjeldså at the Muséum Nationelle de Histoire Naturelle, Paris.
- ⁷² Mirafra apiata: Sinclair and Ryan (2003) treat fasciolata as a separate species, but although it is clearly split from apiata, the name "fasciolata" is not used for any subspecies in Keith et al. (1992). We have therefore not listed which of the subspecies mentioned in Keith et al. (1992) are included in fasciolata, but merely used the ranges shown in Sinclair and Ryan (2003).
- ⁷³ Nectarinia afra: We have added the range of the unnamed subspecies to afra, for both the BSC and PSC species lists. The split of whytei and the unnamed Nectarinia is based on Bowie et al. (2004).
- ⁷⁴ Nectarinia mariquensis: There is some disagreement about the southern extent of osiris, as Fry et al. (2000) describe it as ranging as far south as the equator. Cheke et al. (2001) and Mackworth-Praed and Grant (1955) however, only describe and show it to inhabit northern Kenya (to about 2° N). Since Cheke et al. (2001) is the most recent reference, we choose to follow them.
- ⁷⁵ Nectarinia pembae: Since pembae only occurs on Pemba island, this split only means that the records on mainland Africa are under the name of *chalcomelas*.
- ⁷⁶ Passer iagoensis: iagoensis is split from the rest by Summers-Smith (1984). As iagoensis is restricted to the Cap Verde islands, it is only the name that changes in the phylogenetic species list, to Passer motitensis. Sibley and Monroe (1990) split rufocinctus (incl. cordofanicus +shelleyi) from motitensis, and state that this split is made by Summers-smith (1984). Dowsett and Dowsett-Lemaire (1993) however, point out that this is not so, and, after reading the article, we agree with Dowsett and Dowsett-Lemaire (1993), and therefore do not accept rufocinctus (incl. cordofanicus +shelleyi) as a species. However, all of the taxa have recently been treated as separate

- species (Sinclair and Ryan 2003), and we thus do likewise (although *insularis* only occurs on Socotra and Abd-el-Kuri islands and is therefore not included in the dataset).
- ⁷⁷ Motacilla aguimp: Based on skins from ZMUC, we would treat *vidua* as a phylogenetic species, but Alström (2003) has stated that "The taxa *aguimp* and *vidua* are not sufficiently different morphologically to be classified as 'phylogenetic' species" (p. 409). We therefore treat the two taxa as one phylogenetic species.
- ⁷⁸ Anthus novaeseelandiae: cinnamomeus (incl. latistriatus +hoeschi +camaroonensis) is treated as part of Anthus novaeseelandiae by Hall and Moreau (1970) and Keith et al. (1992). However, novaeseelandiae does not occur in Africa, and the african forms have been suggested as their own species; cinnamomeus (Prigogine 1981). For the biological species list the african taxa are treated as part of novaeseelandiae, but this is then renamed as cinnamomeus for the PSC species list (from which latistriatus; hoeschi and camaroonensis are split). This change from novaeseelandiae to cinnamomeus however, only changes the name of the taxon in the Worldmap data, and it is only the treatment of latistriatus; hoeschi and camaroonensis as separate phylogenetic species, which changes the range-map of cinnamomeus.
- ⁷⁹ Anthus novaeseelandiae and A. similis: the recognition of hoeschi and nyassae (incl. frondicolus) is supported by molecular data (mtDNA) (Voelker 1999).
- ⁸⁰ Ploceus nigerrimus: The range of nigerrimus and castenofuscus in western Africa was adjusted according to Borrow and Demey (2001).
- ⁸¹ Euplectes macrourus: We have not been able to find a range-map for soror, but Savalli (1994) describes its range as Western Kenya and Uganda, which corresponds to a population of the blackbacked group on map 355 in Hall and Moreau (1970).
- ⁸² Euplectes albonotatus: assymetrurus is split from albonotatus based on the measurements given in Craig (1993).
- 83 Pytilia melba: The range of citerior in E Sudan is not clear: Clement et al. (1993), Goodwin (1982) and Peters et al. (1934-84), state that citerior ranges from Senegal to West and Central Sudan (to Bahr el Ghazal and Kordofan). These references also state that citerior intergrades with soudanensis (included in melba) from Bahr el Ghazal to the Blue Nile. Nikolaus (1987) however, also has citerior in E Sudan, all the way to the border of Ethiopia (and since this is only shown for Sudan, it is uncertain whether Nikolaus would place citerior in Ethiopia as well). Nikolaus (1987) shows citerior to intergrade with both belli and soudanensis, but since we place belli as part of soudanensis, this is of no importance. Since Nikolaus' maps are confirmed point localities of the taxa, we chose to follow him, in giving *citerior* range through all of Sudan, to the Ethiopian border, but we would point out that the range of the taxa in this area seems unclear. Although the map shown in Nikolaus (1987) could imply, that citerior would also be found in Ethiopia, we have not been able to find any reference on this, and so follow Clement et al. (1993), Goodwin (1982) and Peters et al. (1934-84) in having soudanensis in Ethiopia.
- ⁸⁴ Pyrenestes sanguineus: The range of sanguineus in Sierra Leone and the Ivory Coast is not certain, and the range has been adjusted according to Borrow and Demey (2001). We have only included the two records mentioned in Goodwin (1982), from Bouaké in

the Ivory Coast and Rokupr in Sierra Leone. We have included the "full" range in Sierra Leone and the Ivory Coast in *coccineus*, although it is uncertain whether the two taxa are sympatric or allopatric in these countries.

⁸⁵ Uraeginthus angolensis: The range descriptions of these taxa are extremely vague, and the various descriptions do not correspond well with each other, or the shown maps (Mackworth-Praed and Grant 1973, Goodwin 1982, Clement et al. 1993). The maps we have made, are therefore imprecise, and the exact placement of the shown borders are, for the most part, arbitrary. We have some areas of overlap where the described ranges seem to overlap each other, and since Clement et al. (1993) state that there are overlap areas.

regarding the colour of its crown (Mackworth-Praed and Grant 1973, Goodwin 1982, Clement et al. 1993), but since the original description states it to be grey (Chapin 1950), *ruthae* is kept as part of *paludicola*. It is not clear which taxa should inhabit the shores of Lake Tanganyika. Goodwin (1982) states that *roseicrissa* reaches south to the north end of Lake Tanganyika, and *benguellensis* reaches up to the south end. Since *roseicrissa* (incl. *marwitzi*) inhabit NW Tanzania (and Goodwin (1982) simply states *marwitzis* range as western Tanzania) and *marwitzi* inhabits SC Tanzania, we place *roseicrissa* (incl. *marwitzi*) along the length of Lake Tanganyika. We do, however, leave one grid-cell of overlap at the southern end. As for *marwitzi* in SC Tanzania, we place the borderline between this taxon and *benguellensis* at lake Malawi, since it is not described that any of the taxa should in fact occur in Malawi.

⁸⁷ Ortygospiza atricollis: The range of atricollis and ansorgei (incl. ugandae) was adjusted according to Borrow and Demey (2001).

⁸⁸ Vidua complex: This is a very complicated group of parasitic birds, where many taxa are treated as neither species nor subspecies in Hall and Moreau (1970). Since these birds have not, as yet, been covered in the 'Birds of Africa' or 'Handbook of the Birds of the World' series, and neither are they included in any monographs, we have mainly used Hall and Moreau (1970) and Mackworth-Praed and Grants 'African Handbook of Birds' series (herein referred to as; AHB).

⁸⁹ Vidua chalybeata: This is amongst a group of taxa for which Hall and Moreau (1970) states that "... it is premature to classify the *Hypochera* into conventional species and subspecies." (p. 335), and so Hall and Moreau simply list the taxa (and show range-maps) without deciding which are species and which are subspecies. AHB treats *chalybeata* (incl. *ultramarine +codringtoni +camerunen-sis*) as a single species, and we follow this. However, *codringtoni* has since been treated as a separate species by Payne et al. (1992), and we therefore do likewise.

AHB treats amauropteryx as a separate species, whilst we cannot find centralis mentioned in AHB. We have included centralis and amauropteryx in chalybeata because "... chalybeata, ultramarina, centralis and amauropteryx are known to parasitize L[agonosticta] senegala ... and consequently to imitate its song." (Hall and Moreau 1970: 335). We have primarily lumped these taxa for the BSC species list, because they all imitate the song of the same host, and thus their song can not function as a reproductive isolating mechanism. There may be other isolating mechanism at work, between these taxa, but we think this lumping of subspecies is a valid approximation, of a biological species.

The status of *camerunensis* is not certain. Payne (1982) declared *camarunensis* as an invalid taxon, instead splitting it into to two

species; raricola and larvaticola. However, Payne and Payne (1994) and Sorenson et al.(2003) treat camerunensis as a species (separate from raricola and larvaticola), though without any reference. We choose to follow, and treat it as a phylogenetic species. The range of camerunensis is made by comparing map 388 in Hall and Moreau (1970) with written descriptions in Payne (1996) and Payne and Payne (1994, 1995), only including areas from Hall and Moreau (1970) when they have been described in Payne (1996) and Payne and Payne (1994, 1995). Thus we have not included the range in S Chad, W CAR and E Sudan, although this is shown on map 388 in Hall and Moreau (1970). The range of camerunensis is probably larger than the patchy distribution we have found, but we choose a conservative approach.

As previously described, we have lumped *camerunensis* with *chalybeata*, following AHB, for the BSC list. Furthermore, since the range of *raricola* and *larvaticola* are slightly different from *camerunensis*, but they were treated as *camerunensis* by Hall and Moreau (1970), we have also included *raricola* and *larvaticola* in *chalybeata*, for the BSC list (although they did not exist as taxa in 1970). Thus, they are only treated as "partially" genuinely new species, and therefore *raricola* and *larvaticola* do not appear in the BSC list

⁹⁰ Vidua funerea: As mentioned for the taxa of Vidua chalybeata, Hall and Moreau (1970) simply treat wilsoni as "taxa", being neither subspecies nor species. We choose to follow AHB and, for the BSC species list, treat funerea as a species with wilsoni as a subspecies. Furthermore, we lump nigerrima with funerea, despite Hall and Moreau's statement that "nigerrima replaces purpurascens, and is likely also to parasitize [Lagonosticta] rhodopareia." (Hall and Moreau 1970: 336), which indicates that nigerrima should be lumped with purpurascens. However, Payne et al. (1993) describes that nigerrima seemingly mimics more than one host species, and we thus follow Payne et al. (1993) in lumping nigerrima with funerea.

⁹¹ Vidua funerea: We follow Payne and Payne (1994) in treating *nigeriae* as a species. However, as for the range of *nigeriae*, we do not follow Hall and Moreau (1970), who show its range to extend into Sudan and NE DRC (p. 336). We have its range extend from Sierra Leone east to Cameroon, since this corresponds with the described range in Payne (1996) and Borrow and Demey (2001).

92 Vidua orientalis: Hall and Moreau (1970) treats orientalis as a species with aucupum as a subspecies. However, they mention the taxa interjecta and togoensis, and state that; "While it may eventually be necessary to recognise interjecta and togoensis as species, we prefer at present to leave their status undetermined ..." (Hall and Moreau 1970: 327). For the biological species we have lumped interjecta and togoensis with orientalis as Hall and Moreau (1970) state that; "There is at least on record of possible intermediates between interjecta and V.o.aucupum from Ndéle, and a specimen in London from the south-eastern Sudan appears intermediate between interjecta and V.o.orientalis." (Hall and Moreau 1970: 327). Furthermore, AHB treat orientalis (incl. aucupum +obtuse +interjecta +togoensis) as one species. The reason for omitting obtusa from orientalis is, that Hall and Moreau (1970) accept obtusa as its own species. Payne (1985) is the earliest reference we have found, of *interjecta* and *togoensis* being treated as full species.

⁹³ Vidua paradisea: paradisea is treated as a monophyletic species by Hall and Moreau (1970) and Sibley and Monroe (1990). However, Payne (1985) suggests that *orientalis* and *aucupum* should be treated as subspecies of *paradisea*. This is done because these three

taxa all parasitize *Pytilia melba*, of which Payne (1985) only recognises one species. I, however, have split *Pytilia melba* into *P. melba* and *P. citerior*, and the range of these two species corresponds well

with the range of *Vidua paradisea* and *V.orientalis*, and we thus follow Hall and Moreau (1970) and Sibley and Monroe (1990), in keeping *paradisea* as a monophyletic species.