The assessed parapatric species pairs and combinations of the Southern African Avifauna

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ABSTRACT

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At the present time, resurgence in interest on the part of the ornithological community in conservation issues in general has included, inter alia, a welcome re-awakening in the necessity for the re-appraisal of parapatric pairs and assemblages of species in an avifauna as potentially harbouring currently unrecognised and even undescribed full species. The Afrotopics have been determined as singularly rich in world terms in such groupings of closely related taxa, many of which are centred on the South African Subregion (Afrotropics south of ca 16 S.) alone. Locally, this awakened interest has already culminated in the recognition of additional full species previously treated as subspecies of polytypic species with extensive ranges, as for instance the southern African Black Korhaan and the Whitebrowed Coucal, both now accepted as composite and comprising elements of two discrete species.

From an assessment of pertinent literature and of available empirical evidence it has been concluded that if this concept is to realise its full potential a more rigorous interpretation of it as formulated by H.M. Smith (1965) is required, as the recent list of African cases drawn up by Dr Jürgen Haffer (1992) seemingly embraces complexes which, prima facie, are debatable. instances of parapatry, the constituent taxa not now meeting in a readily definable secondary contact, without intergradation and reproductively isolated, and, in effect, recently evolved species of birds. In the South African list of parapatric species as here identified, some fifty-five pairs and groupings are recognised and discussed as a contribution to still further research in this fundamental field of systematic enquiry. Attention is drawn to forms which are seen as probably currently unrecognised species, while a short list of equivocal cases is appended to the main text.

INTRODUCTION

With the current widespread interest in the conservation of biodiversity, increasing attention is being paid by avian systematists to parapatric pairs and groups of closely related forms as possibly comprising both forms overlooked and of undescribed cryptic species. In a recent important preliminary study of parapatric species in different parts of the world, Haffer (1992) has shown that a large number is to be found in the Afrotropics. Earlier, Hall & Moreau (1970) dealt with many cases of parapatry in Africa in terms of straight-forward superspecies in course of their speciation research into the continent’s passerines, and before the adoption of H.M. Smith’s formulation, in 1965, of the parapatric species concept by the scientific community. This was seemingly first regularly employed by Prigogine (1984 and earlier) during his in-depth taxonomic researches in eastern Zairese montane birds, and is now an integral part of investigative avifaunal research. While Dr Haffer’s list of parapatric species, based as it is on the maps in the Atlas of Speciation of Hall and Moreau (1970), is an important preliminary assessment of such taxa in the Afrotropics, scanning of the listed African cases reveals numerous spatially remote allopatric pairs which do not satisfy the criteria for treatment as instances of parapatry. Admittedly, some of the cited cases may well have been parapatric at some stage in their evolutionist history, but verification on this score is probably not possible.

With the South African Subregion better known and researched than any other major sector of the African continent, and with little likelihood of further readily determinable new species being discovered within its limits, critical re-appraisal of parapatric units already identified as possible sources of still unrecognised full, but usually cryptic, species taxa is called for. This has recently been highlighted by the taxonomic splitting of the single small bustard species *Eupodotis africata* into two species: *E. africana* and *E. africoides* subspp (see Clancey (1989) & Crowe et al. (1994), the admitting of the coucals *Centropus superciliosus loandaee* and *C. burchelli fascipygialis* as representatives of two and not a single species (Clancey, 1989), and the recognition from southern Namibia of Cave’s Lark *Certhilauda cavei* (vide Crowe et al. 1994). In the list presented below I recognise over fifty cases of parapatry as here adopted, supplying in addition to the names of the taxa involved, the locations of the contact zones, major references in the standard literature, and further relevant taxonomic comment in complex cases.

RESEARCH BACKGROUND

In preparing the following list of parapatric species of birds for southern Africa, the maps covering both the non-passerine and passerine species of the Afrotropics appearing in Hall & Moreau (1970) and Snow (Ed.) (1978), as published by the British Museum (Nat.Hist.) London, both of which are essentially based on preserved material in the larger museums, were studied in close detail. This was later supplemented by an evaluation of the large data base provided by S.A.O.S.Checklist of Southern African Birds (Clancey, Ed.) (1980) and its two updates of 1987 and 1991, and the extensive series of 67 parts published by P.A.Clancey under the title "Miscellaneous Taxo-
nomic Notes on African Birds” in the Durban Museum Novitates between 1952 and 1986; and like contributions published during the same time span in other series, such as Arnoldia (Rhodesia) and the Bulletin of the British Ornithologists' Club to the year 1993. Dr Jürgen Hafer’s eminently useful contribution was also carefully scrutinised in so far as it affected the southern African list as determined by me.

Before enumerating the southern parapatric species so far determined, it is desirable to first ascertain the speciation stage involved in the concept. Just what is parapatry and what is served by recognising so-called parapatric species in the first place? Parapatry as initially defined by H.M. Smith (1965) is essentially a taxonomic concept designed to facilitate identification and the nature of the structures and mechanisms of such species units, which at some stage in their history had seen integral elements spatially sundered from other (probably mainly core) populations in a state of allopatry. These detached birds later spread to re-unite with their parental conspecifics in distributional contiguity and virtual sympatry in secondary or even tertial contacts. The re-unification was probably activated by a comparable set of biogeographical factors to those which had initiated the cleavage in the species population continuum in the first place. The secondary contact event has far reaching taxonomic implications for the forms concerned, and the present list of parapatric cases in southern Africa should go some way in stimulating still further research into this important field of scientific enquiry.

In order to limit recite and currently unrecognised species continuing to be overlooked, parapatric pairs and complexes need to be identified, re-assessed and the points of secondary contact established by both field research and the critical examination of adequate series of specimens in museum collections. Such incipient species are seemingly in the main the outcome of both expansionary and contractive phases involving major biomes, such as the Lower Guinea rainforest during the Pleistocene and perhaps earlier in the case of the eastern and southern African fauna, which, periodically, either facilitated or inhibited distributional extensions of forms generated in centres of radial speciation to both the north and south of the equatorial rainforest belt of the continent.

At this point a cautionary note is, however, required as many species pairs identified in the austral African avifauna speciated via allopatry, enhanced in the early formative stages by distributional and ecological shifts, and are now spacially segregated often quite widely from one another. The well-known southern African species pairs grouped in superspecies in the sugarbirds Pomorrops cafer and P. gurneyi, the rockjumpers Chaetops frenatus and C. aurantis and the siskins Pseudochloropitta tattu and P. symonisi are cases in point. Many parapatric combinations enumerated in Hafer’s list are in effect species pairs, and like those just mentioned now pursue independent evolutionary courses, these usually aligned with spread into a new environment. It would be taxonomically acceptable to view such species pairs as derived from close ancestral analogues and to have evolved through parapatry and subsequent distributional divergence and allo-

patry into the geminal (paired) combinations present today.

The composition of simple parapatric pairs calls for little additional comment to that given for such species in the formal list, but complexes are of necessity composite and may vary widely in both nature and complexity. The main parapatric paradigm (as a pattern or model), which is repeatedly to be found in the southern African avifauna, is exemplified by that furnished by the southern aggregation of medium-sized parrots of the genus Poicephalus, as given in (a) below, et seq. -

a) Three congeneric species in state of west - east parapatry, one monotypic in the west, the others polytypic and hybridizing in the secondary contact interface: Poicephalus rupePELLI / P. meyeri / P. cryptoxanthus. See Clancey (1977), Clancey (Ed.), Checklist, 1980, p.95 (Map 1).

b) A single polytypic species, four races of which are distributed west-east, this sequence present to the north of a second species of an earlier ancestral lineage with two races, the two species meeting without hybridization in the south-east of the range: Goldentailed and Knyasa Woodpeckers Campithera abingoni / C. notata. See Clancey 1988, Clancey (Ed.), Checklist, 1980, p.135 (Map 2).

c) Three species, two polytypic, meet in a compact mosaic centred on a major arid zone, all evincing minor instances of hybridization. The monotypic species is a remnant of an earlier radiation than in the case of the polytypic ones: bulbuls of the genus Pycnonotus: Pycnonotus capensis / P. nigricans / P. barbatus. See Clancey (Ed.), Checklist, 1980, p.171; also Lawson (1962) (Map 3).

d) Two polytypic warblers disposed in a west - east sequence, with a complex of stabilized subspecies derived from both parental forms interposed between them. This southern group intergrades to the north of its range with a further complex of forms (C. simplex), and is detachedly represented to the south-west by an isospecies (see Amadon & Short 1992). Barred Bush Warblers Calamomastes fasciatus / C. stirlingi, the isospecies Euryptila subcinnamomea. See Clancey (Ed.), Checklist, 1980, p. 209 (Map 4).

A quantitative study of the southern African instances of both pair and multiple parapatry reveals that most occur in the eastern sector of the Subregion, particularly in association with the Malawi Rift, south along the eastern continental escarpment to South Africa, south to the mid-Limpopo R., as demonstrated in the following:

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Lower Malawi Rift - Limpopo R.</td>
<td>10%</td>
</tr>
<tr>
<td>Limpopo R. - Umtamvuna R.,</td>
<td>11%</td>
</tr>
<tr>
<td>Natal/Transkei</td>
<td>11%</td>
</tr>
<tr>
<td>N.Botswana/W.Zimbabwe</td>
<td>8%</td>
</tr>
<tr>
<td>Namibia</td>
<td>7%</td>
</tr>
<tr>
<td>Transvaal plateau</td>
<td>6%</td>
</tr>
<tr>
<td>Western Cape Province</td>
<td>4%</td>
</tr>
<tr>
<td>Eastern Cape Province</td>
<td>4%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>50%</td>
</tr>
</tbody>
</table>

42%

22%

14%

12%

8%

8%

100%
This disposition correlates closely with the conclusion reached earlier that the mesic eastern constituents of the avifauna stem largely from eastern African centres of speciation, their subsequent distributional history much influenced by oscillations in the extent of the equatorial rainforest belt and concomitant spread and contraction of the woodland savanna biomes lying both to the south and north of the Equator.

SOUTHERN AFRICAN PARAPATRIC PAIRS AND COMPLEXES

The English and scientific names of the forms involved are followed by a brief outline of the zone or zones of secondary contact, and indication if hybridization occurs or not. Reference is also made to major relevant statements in the literature. Additional taxonomic comment is given as and when required.

The present research project has highlighted the possible need to recognize several additional bird species, as defined in cases 14, 21, 31 and 39 in the following list. In addition, in case 50, it is suggested that a restructuring of the current arrangement of the southern African Zosteropidae is perhaps desirable. Such a restructuring would result in the recognition of four species in the South African Subregion.

1. Reed and Crowned Cormorants
   Phalacrocorax africans / P. coronatus
   Note: Both species formerly widely viewed as conspecific, as P. africans is additionally maritime in north-west of continental range.

2. Jackal and Augur Buzzards
   Buteo rufinus / B. augur

3. Pale and Dark Chanting Goshawks
   Melierax canorus / M. metabates
   Note: M. metabates is linked parapatrically with M. poliopterus in eastern Africa.

4. Cape, Natal, Redbilled and Hildebrandt’s Francolins
   Pternistis capensis / P. natalensis / P. adsersus / P. hildebrandti

5. Crested Guineafowl
   Guttera pucherani / G. edouardi
   Note: Crowe, in his definitive study of guineafowl, united edouardi and pucherani, but qualified opinion clearly favours their treatment as allospecies, which view is supported here.

6. Karoo and Ruppell’s Korhaans
   Eupodottis vigorsii / E. ruppelli
   Note: E.v. barlowi (Roberts), 1937, now seen as an interspecific hybrid between the two species cited.

7. Black Korhaans
   Eupodottis atra / E. aferoides
   Contact: Cradock district, eastern Cape (see Crowe et al., 1994); Clancey (1989); Clancey & Snow (Ed.), Atlas, 1978, and also Clancey (Ed.), Checklist, Second Update, 1991.

8. Greyheaded and Hartlaub’s Gulls
   Larus cirrocephalus / L. hartlaubii
   Contact: South-western Cape coast, where hybridizing (vide Maclean, Roberts’ Birds, 1985.

9. Rüppell’s, Meyer’s and Brownheaded Parrots (Map 1)
   Poicephalus rupeppelli / P. meyeri / P. cryptanthus

10. Lilian’s and Blackcheeked Lovebirds
    Agapornis lilianae / A. nigrigenis
    Contact: Mid-Zambezi R. from Victoria Falls downstream. No established hybridization. See Irwin, Birds of Zimbabwe, 1981.

11. Knysna, Livingstone’s and Schalow’s Louries
    Tauraco corythaix / T. livingstonii / T. schalowi

MAP 1: Complex of three west-east parapatric species with limited hybridization between two taxa; Poicephalus meyeri and P. cryptanthus marked thus: ■
1 = P. meyeri, 2 = P. cryptanthus, 3 = P. rupeppelli, 4 = P. rufiventris.
12. Whitebrowed and Burchell’s Concals
*Centropus superciliosus* / *C. burchelli*

13. Black and Bradford’s Swifts
*Apus barbatus* / *A. bradfieldi*

14. Speckled and Whitecheeked Mousebirds
*Colius striatus simulans* / *C. leucots berlepschi*
Note: The sharpness of the point of secondary contact and distinctiveness of the character suites justify the recognition of the *leucots* group of Speckled Mousebird forms as specifically discrete from the southern *C. striatus* differentiates.

15. Redfaced and Blueneared Mousebirds
*Urococyllis indicus* / *U. macrourus*
Contact: South-western Tanzania from Lake Rukwa to northern end of Lake Malawi. See Schifte (1985).

16. Redbilled and Violet Woodhoopoes
*Phoeniculus purpureus* / *P. damarenensis*
Contact: Centred from interior of Namibia north to Angola.
Note: Status uncertain as some populations show general intergradation between the two forms (see Clancey, *Rare Birds*, 1985). Perhaps a localised remnant of an earlier evolutionary radiation, as a somewhat similar population of *damarenensis*-type (*P. granti*) is present in East Africa. In an Angolan and Namibian context, *P. damarenensis* is generally accorded full species status.

17. Crowned and Bradford’s Hornbills
*Toxotes alboterminatus* / *T. bradfieldi*
Note: *T. bradfieldi* is more ecologically xeric than *T. alboterminatus*.

18. Acacia and Miombo Pied Barbets
*Tricholaema leucommelus* / *T. fruntatus*

19. Ancheta’s, Sowerby’s and Whyte’s Barbets
*Statiolaema anchetae* / *S. sowerbyi* / *S. whytti*
Note: The splitting of *sowerbyi* and *whytti* is adumbrated in Goodwin & Clancey, *loc.cit.*

20. Redfronted and Yellowfronted Tinkerbirds
*Pogoniulus pusillus* / *P. pycnosus*
Contact: South-eastern Transvaal, east to the Maputo district, Mozambique. See Goodwin & Clancey, in Snow (Ed.), *Atlas*, 1978.

Note: The two species are again in secondary contact in east-central Africa.

21. Bennett’s and Specklethroated Woodpeckers
*Campethera bennettii* / *C. scriptoriauda*
Note: *C. nubica* is not a constituent form of the present complex. *C.b. buisi*, described from the Kaokoveld, has characters probably meriting specific status.

22. Goldentailed and Knymsa Woodpeckers (Map 2)
*Campethera abingoni* / *C. notata*

23. Clapper and Flapet Larks
*Mitrafa apiai* / *M. rufocinamomea*

24. Karoo, Red and Dune Larks
*Certhilauda albescens* / *C. burra* / *C. erythrochlamys*
Contacts: *C. a. karrensis*: hybridizes freely with *C. burra* at Brandvlei and elsewhere in north-western Cape; *C. a. caevi* is seemingly of stabilized hybrid origin, being distributionally interposed between *C.e. barlowi* and *C.a. guttata*. See Clancey (1989), but for revised taxonomy see Crowe et al. 1994.

MAP 2: A case in which a widely distributed savanna woodpecker *Campethera abingoni* abuts parapatrically and interdigitates with a deep southern forest taxon *C. notata*, without hybridization, but which hybridizes (1) with a contiguous savanna woodland taxon *C. nubica* in East Africa.

1 = *C. notata*, 2 = *C. abingoni*, 3 = *C. nubica*.

25. Pinkbilled and Botha’s Larks
*Spizocorys controris* / *S. fringillaris*
Contact: East-central southern Transvaal plateau, but precise disposition not established.
Note: Hall & Moreau, *Atlas*, 1970, link the Pinkbilled and Selater’s Larks *S. selateri*, but the latter’s bill shape, dusky tear-drop lower orbital mark, single egg clutch and nest among stone fragments, negate any close association. These workers also associate Botha’s with Stark’s Lark *Eremalauda starki*, which
is again unacceptable, as Stark's is a highly gregarious and nomadic xeric species. Contiguous grassland plateau ranges, bill and plumage colour features compared with *S. griseovinacea* favour the arrangement adopted here.

### 26. Southern and Acacia Grey Tits

**Parus afer** / *P. cinerascens*

Contact: South-western Great Namaqualand, Namibia, and mid-Orange R., Cape. See Clancey (1958). No verified hybridization.

### 27. Whitewingled, Carp's and Southern Black Tits

**Parus leucomelas** / *P. carpi* / *P. niger*

Contacts: The first two taxa are in contact on the south-western periphery of the Middelbome biome in western and southern Angola, where this abuts on the arid bushveld which *P. carpi* inhabits. See Clancey (1972); also Clancey (Ed.), Checklist, 1980. Furthermore, *P. niger* is a melanistic species related to the *P. major*, *P. afer* and *P. cinerascens* clade and not to *P. leucomelas*. *P. niger* and *P. leucomelas* intergrade ecologically in the south of the core range of the latter, while in the case of *P. niger* this has been found to occur sympatrically in the Waterberg of north-central Namibia and on the mid-Kunene R. alongside *P. carpi* (C J Brown pers. comm.), confirming that three full species of these tits are involved (Clancey in press).

### 28. Cape and Grey Penduline Tits

**Anthus capensis** / *A. caroli*


### 29. Cape, Blackeyed and Redeyed Bulbuls (Map 3)

**Pycnonotus capensis** / *P. barbata* / *P. nigricans*

Contacts: *P. capensis* / *P. barbatus*: Sundays R. region of eastern Cape; *P. barbata* / *P. nigricans*: western Transvaal and western Zimbabwe. Hybridizing at both stated points of secondary contact. See Lawson (1962); also Clancey (Ed.), Checklist, 1980.

### 30. Sentinel and Short-toed Rockthrushes

**Monticola explorator** / *M. brevipes*

Contact: East-central plateau of Transvaal. See Kemp et al., 1985.

### 31. Olive and Karoo Thrushes

**Turdus olivaceus** / *T. smithi*

Contact: Localised occurrences of *T. olivaceus* subsp., within karroid range of *T. smithi* in interior of eastern Cape and O.F.S. through anthropogenic habitat alteration. No direct evidence of hybridization. P.F.I.A.O. & author in prep. The specific status of *T. swynnertoni* of Zimbabwe has yet to be determined. Described initially by Bannerman as a full species.

### 32. Chorister and Natal Robins (Figure 1)

**Coelurus dichrous** / *C. natalensis*


### 33. Collared and Rufoustailed Palm Thrushes (Morning Warblers)

*Chiladusa arquata* / *C. ruficauda*

Contact: No evidence that these two species are now in contact.

Note: Haffer (1992) groups *C. arquata* and *C. guttata* as comprising a parapatric pair, but the forms concerned are sympatric in East Africa. *C. ruficauda* and *C. arquata* are a better match and of immediate common evolutionary origin, their plumage pattern and ecology closely congruent.

MAP 3: The Pycnonotus bulbil complex in southern Africa with limited instances of hybridization at points along the contact interfaces (marked with *B*), between the extensively polytypic *P. barbata* and the austral endemics of earlier evolutionary events, *P. capensis* and *P. nigricans*.


### 34. Brown, Bearded and Eastern Bearded Scrub Robins

**Erythropygia signata** / *E. barbata* / *E. quadriovagata*


### 35. African and Cinnamon Reed Warblers

**Acrocephalus baeticatus** / *A. cinnamonus*

Contact: *A. cinnamonus fraterculus* ranges to the Natal coast to the south of Durban and some interior localities, as well as the Transvaal plateau, while *A. baeticatus* is present at others in the high eastern interior (west to Johannesburg). Status of the case is still unresolved, but seemingly represents one of incipient secondary contact without consolidation. See Clancey, 1994a.

### 36. Blackheaded and Chirinda Apalises

**Apalis melanocephalus** / *A. chirindensis*

Contact: Recorded seasonally alongside one another in the Makurupini Forest, Haroni-Lusitu confluence, eastern Zimbabwe, but *A. chirindensis* breeds at
higher elevations than *A. melanocephala*, so that the two are altitudinally segregated. Hybrids not recorded in the literature. See Irwin, 1981.

37. **Green- and Greybacked Bleating Bush Warblers**
   *Camaroptera brachyura / C. brevicaudata*
   **Contact:** Well-defined zone of secondary contact hybridization between these two species is centered on the frontier highlands of Zimbabwe and southern Mozambique, and a less sharply marked one along the course of the Save R. in the Mozambique lowlands. A narrow tongue of introgression by *C. brevicaudata* genes also extends through *C. b. constans* from the eastern Transvaal to Zululand (see Clancey (1970); also Clancey (Ed.), *Checklist*, 1980.

38. **Barred Bush and Stierling’s Barred Bush Warblers**
   **(Map 4)**
   *Calamonastes fasciolatus / C. stierlingi / Euryptila subcinnaomaea*
   **Contact:** Two subspecies of *C. stierlingi* are phenotype intermediately between *C. stierlingi* and *C. fasciolatus*, these being *C. s. pinotii* and *C. s. irwinii*, with *C. s. olivascens* and nominate *C. stierlingi* disposed both to the east and north, resulting in three southern groupings. In Zambia *C. stierlingi* hybridizes in depth with *C. simplex*, while *E. subcinnaomaea* is a karyotypically identical species present to the south-west of the *fasciolatus*/*stierlingi* group. See Hall & Moreau, *Atlas*, 1970.

39. **Palecrowned Cloud Cisticola and Sibling (Wetland Cisticola)**
   **(Figure 2)**
   *Cisticola brunnesens / C. taciturnus*
   **Contact:** On the breeding grounds, *C. b. egregius* affects the moist interior grasslands of Natal and the Transvaal, generally above 1525 m a.s.l., with *C. taciturnus* replacing it along the coast from Transkei and Natal and Zululand to the Limpopo R. floodplain in Mozambique. While some elements of *C. b. egregius* reach the coastlands as winterers, the two near contiguous cisticolas do not intergrade or hybridize and two species are apparently involved, but further vocalization, phylogeny and mtDNA is required to resolve their status. The vernacular Wetland Cisticola is here introduced for *C. taciturnus* as the two forms occur alongside one another in the southern winter months, when both affect comparable littoral estuarine wetland habitat (see Clancey 1992).

40. **Lazy and Rockloving Cisticolas**
   *Cisticola aberrans / C. emini*

41. **Spotted (or Karoo) and Saffronbreasted Prinias**
   *Prinia maculosa / P. hypoxantha*
   **Contact:** Interior of eastern Cape to west of East London. See Clancey (1982a, 1989), also Clancey (Ed.), *Checklist*, 1980.
   Note: *P. maculosa* and *P. flavicans* also meet and interbreed in north-western Cape (vide Brooke (1993).

42. **Pririt, Chinspot and Mozambique Batises**
   *Batis pririt / B. molitor / B. sower*
   **Contacts:** *B. pririt* conjoins in interior of eastern
Cape with *B. molitor*, which species pair is widely distributed throughout the Acacia country of the southern African plateau and arid west, while *B. soror* replaces *B. molitor* to the north of the lower Limpopo R. valley. The three allospecies are not recorded as hybridizing. See Clancey (Ed.), Checklist 1980.

43. Bluemantled Flycatcher
*Trochocercus cyanomelas segregus* / *T.c. megalolophus*
Contact: *T.c. segregus*, with short crest, is confined to interior evergreen forests south of the Limpopo R., with *T.c. megalolophus* replacing it in Zimbabwe forests and along the Mozambique coast as far south on the littoral as Muzuni, Zululand, this with an elongated crest. No recorded instances of hybridization between the two phenotypes. See Clancey (Ed.), Checklist, 1980.

44. Grassveld and Mountain Pipits
*Anthus cinnamonus* / *A. hoesschi*
Contact: Drakensberg massif, with *A. hoesschi* replacing *A.c. rufifrons* on the alpine summit grasslands, down to ca 1250 m a.s.l. with marginal overlap, but not hybridizing; see Mendelson (1984). *A. hoesschi* spends off-season in the grasslands of the Zambesi/Zaire watershed. Strongly migratory with northbound passage through Namibia, the return one via eastern Botswana. It is noteworthy that the local races of *A. cinnamonus* breeding adjacent to the wintering grounds of *A. hoesschi* in south-central Africa show loss of most of the white on the penultimate rectrices, suggesting *A. hoesschi*’s ancestors originated in that sector of the Afrotropics. See Clancey, *Rare Birds*, 1985.

45. Yellowthroated and Fulleborn’s Longclaws
*Macronyx croceus* / *M. fuellboerni*

46. Southern, Tropical and Swamp Boubous
*Laniarius ferrugineus* / *L. aethiopicus* / *L. bicolor*

Note: Irwin (1987) argues for the recognition of *L.f. savensis* as a full species, but the said taxon intergrades to the south of its range with *L.f. tongensis*, and is an integral part of *L. ferrugineus*.

47. Southern and Threestreaked Tchagras
*Tchagra tchagra* / *T. australis*
Contact: Lebombo Mts and lowlands of Transvaal, Swaziland, S.D. Save, Mozambique, and Zululand. For discussion on *T. australis* races see Clancey (1969).

48. Brubru
*Niltaeus afer solivagus* / *N.a. miombensis*
Contact: Southern Mozambique/northern Zululand border. No established intergradation or hybridization established. See Clancey (Ed.), Checklist, 1980.

49. Eastern and Guinea Olive Sunbirds
*Nectarinia olivacea* / *N. obscura*

Note: *N. violacea* / *N. olivacea* are not related, contra Hall & Moreau, *Atlas*, 1970, and Haffer (1992), the former sunbird seemingly a relict.

50. Cape and Yellow White-eyes
*Zosterops pallidus* / *Z. senegalensis*
Contact: Lebombo Mts and adjacent lowlands of sou-them Mozambique and northern Zululand.
Note: A case for the restructuring of the *Z. pallidus* mosaic is perhaps worthwhile reconsidering, splitting it into three allospecies: *Z. pallidus*, *Z. capensis* and *Z. virens*, along with *Z. senegalensis* subspecies. See Clancey (1968), Clancey (Ed.), Checklist, 1980.
51. White-browed Sparrow Weavers  
*Passer mahali* *terricolor* / *P. (m.) pectoralis*  
Contact: Hwange National Park, Zimbabwe (see Irwin, 1981).

52. Northern and Southern Greyheaded Sparrows  
*Passer griseus* / *P. diffusus*  
Contact: The extralimital subspecies of *P. diffusus* - *P.d. luangwa* is ecologically segregated but otherwise sympatric with *P. griseus ugandae* in the Luangwa R. valley of south-eastern Zambia (vide Benson et al., 1971).

53. Pink and Redthroated Twinspots  
*Hyarpogos marginatus* / *H. niveoguttatus*  
Contact: Ranges interdigitate in region of lower Limpopo R. floodplain, Mozambique, that of *H. marginatus* seemingly under pressure from *H. niveoguttatus*, which is now well-established south of the Limpopo at Macia and Chimonzo.

54. Blackfaced and East African Swees  
*Estrilda melanotis* / *E. quartinia*  
Contact: Southern Zimbabwe, but not currently in immediate secondary contact. See Irwin (1981).

55. Blackthroated and Lemonbreasted Canaries  
*Serinus atrogularis* / *S. citrinopictus*  

ADDITIONAL EQUIVOCAL INSTANCES OF PARAPATRY INVOLVING SOUTHERN AFRICAN SPECIES PAIRS, MOST OF WHICH ARE ALLUDED TO BY HAFFER (1992), ARE BRIEFLY COMMENTED ON IN THE FOLLOWING LIST.

a. Fasciated and Banded Snake Eagles  
*Circetus fasciolatus*, *C. cinerascens*  
Not in parapatric contact. Morphological differences deemed too great to warrant close association.

b. Grey and Dickinson’s Kestrels  
*Falco ardosius*, *F. dickinsoni*  
Sympatric over western and north-western parts of joint range.

c. Rednecked and Swainson’s Francolins  
*Pternistis afer*, *P. swainsonii*  
Widely sympatric over eastern southern Africa from Natal north to Zimbabwe and parts of Zambia.

d. Cape Parrot  
*Poicephalus robustus*, *P. (robustus) suahelicus*  
Both parrot taxa meet without intergradation in the region of the mid-Limpopo R. drainage. They differ in size, bill-length and the colour of the head and neck, and are viewed by some workers as being attributable to two species, but the case requires further study on the basis of a larger panel of material than is available at the present time. Should a second species be recognised, it would take the binomen *P. suahelicus*, as the West African *P. fasciolatus* is closely associated with marine mangroves according to Bannerman (1931), and probably represents a third nominal parrot species.

e. Barred Owl  
*Glaucidium capense*, *G. (capense) scheffleri*  
Prigogene (1985) proposed the treatment of *G. capense* as a monotypic species and the grouping of the subspecies to the north of its southern African range as elements of another closely allied form, *G. scheffleri* Neumann, 1911. The case awaits critical re-evaluation. Prigogene listed both *G. capense* and *G. scheffleri* in close taxonomic association with two other *Glaucidium* spp., *G. castaneum* and *G. albicaudum*.

f. Woodland and Mangrove Kingfishers  
*Halcyon senegalensis*, *H. senegaloides*  
Do not form a superspecies, differing widely in biology, phenology, and bill mass and colouration. Bill uniform and dull crimson in *H. senegaloides*, bi-coloured scarlet and black in *H. senegalensis*. Vocalisation also widely different.

g. Blackeared and Chestnutbacked Finchlarks  
*Eremopterix australis*, *E. leucotis*  

h. Greater and Lesser Striped Swallows  
*Hirundo cuculata*, *H. abyssinica*  
Sympatric over eastern parts of joint southern African range, with *H. abyssinica* affecting lower altitudes and a somewhat moister climatic regime.

i. Cloud Cisticola  
*Cisticola textrix major*, *Cisticola (textrix) marleyi*  
Range disposition suggests *C. marleyi* is not conspecific with *C.t. major*. The case has similarities to that of the Palecrowned and Wetland Cisticolas dealt with earlier under No. 39 in the previous list.

j. Arrowmarked and Barecheeked Babblers  
*Turdoides jardinei*, *T. gymnogenys*  

k. Striped and Yellowtuffed Pipits  
*Anthus lineiventris*, *A. crenatus*  

l. Lesser Doublecollared and Neergaard’s Sunbirds  
*Nectarinia chalybea*, *N. neergaardii*  
Not associated parapatrically at any point, with
N. chalybea an inhabitant of interior evergreen forest, N. neergaardi being restricted to humid savanna woodland on the Mozambique coast and eastern Zululand. Also, note that *N. chalybea* terminates its range to the south of the Limpopo R., and is replaced to the north on the plateau by *N. manoeensis*.

**m. Redheaded and Cut-throat Finches**

_Amandina erythrocephala, Amandina fasciata_

Sympatric in Transvaal on the plateau. Often breeding in *Bubalornis* nests in the same tree.

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**REFERENCES**


