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CUCKOO ABOUT CUCKOOS: IDENTIFICATION OF COMMON AND AFRICAN CUCKOOS RE-EXAMINED

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Birders who claim they can confidently identify any large grey cuckoo momentarily glimpsed are either deceiving themselves or deceiving their audience. Part of the problem stems from the innate secrecy of cuckoos, which means that opportunities to study them at leisure in the field are very rare. Fortunately the simple but persistent songs of males count amongst the most characteristic and well-known sounds of spring and summer. Yet, actually laying eyes on the caller is less straightforward, as Shakespeare alludes in Henry IV:

"He was but as the cuckoo is in June, heard, not regarded."

The problem is particularly severe when dealing with the multiple species of grey *Cuculus*, represented in southern Africa by the Common (or Euopean) Cuckoo *Cuculus canorus*, the African Cuckoo *C. gularis*, the (Asian) Lesser Cuckoo *C. poliocephalus*, and the Madagascar Cuckoo *C. rochii*. Of these four very similar species, the African Cuckoo is the only one that breeds in the region, where it is common in summer. As its name implies, Madagascar Cuckoo breeds in Madagascar, where it parasitizes various small passerines in summer; although some are resident on Madagascar, most are believed to winter in East Africa from April to September (Fry *et al* 1988). However, there have been records of Madagascar Cuckoos singing in South Africa and Mozambique during the summer breeding season too (Dean & Payne 2005c). Optimists may even suggest that this species occasionally breeds in southern Africa. Common and Lesser Cuckoos are strictly non-breeding immigrants, "wintering" in Africa during the austral summer. Thus, it is theoretically possible to encounter all four species in the same tree during late summer – a fantastic but potentially possible situation if there happened to be an outbreak of caterpillars, an absolutely irresistible delicacy to cuckoos.

Based on our admittedly limited current knowledge, Lesser and Madagascar Cuckoos are both rare but probably widely overlooked vagrants to Zimbabwe, Mozambique and the lowveld of South Africa (see e.g. reviews by Spottiswoode 1997, Dean & Payne 2005c, and Earlé 2005). Unless identification is based on their very distinct songs (see sonograms below) they are extremely difficult to separate in the field, and this paper does not attempt to address that conundrum. Readers are referred to literature pertaining to East Africa for more information on the identification of these two taxa, e.g. Fry *et al*. (1988), Zimmerman *et al.* (2001) or Stevenson and Fanshawe (2002).

The aim of this note is to re-assess the identification criteria aiding in the separation of Common and African Cuckoos, in a southern African context, and focusing mainly on characters that are useful in the field (as opposed to birds in the hand or museum specimens). Identifying these two exceptionally similar species (previously considered conspecific) presents a severe identification challenge: they are almost identical in size, shape and colouration, and overlap extensively in habitat and distribution. Furthermore, Common Cuckoo is virtually silent while in Africa, while African Cuckoo only calls for about 3-4 months in early summer (Tarboton 1975).

The need for a critical re-examination of identification criteria is exemplified by the number of misidentified photographs in books and on the internet, and even wrongly identified museum specimens. For example, in a sample of 35 study skin specimens in the collection of the Ditsong National Museum of Natural History (DNMNH), only 22 are correctly identified, while 10 were wrongly labelled and species-level identifications of 3 were still pending.

Be warned: this paper is akin to taking cooking advice from a skinny chef, as the author has not yet "ticked" Common Cuckoo in southern Africa, and is basing all his comments on literature, investigation of specimens and limited field experience in the Palearctic. It is hoped that readers will submit the identification features outlined in this paper to rigorous field testing, in order to elucidate a clearer and more reliable impression of the status and distribution of these two species in southern Africa.

Phenology and distribution

Both Common Cuckoo and African Cuckoo are present in southern Africa virtually exclusively in the austral summer, with Common being a non-breeding migrant from the Palearctic and African a breeding migrant from further north in the Afrotropical region. Common Cuckoos breed across virtually the entire Palearctic, from North Africa and Iberia, north to the United Kingdom and Scandinavia, and eastwards to Russia and Japan on the Pacific coasts. In the east of their breeding range, they overlap with the related Himalayan Cuckoo *C. saturatus*, Oriental Cuckoo *C. optatus* and Lesser Cuckoo. Egg-laying occurs chiefly in May to June (mid April to mid July), timed to coincide with the breeding season of the various host species, and fledging occurs up until late July or rarely mid August. All western Palearctic populations winter in Africa, except for Asian populations of *C. c. bakeri* and some populations of *C. c. subtelephonus*, which winter in India and south Asia (Cramp *et al.* 1985, Payne 2005).

Post-breeding movements of Common Cuckoos were until recently very poorly known, and based on few ring recoveries. Frequent confusion with African Cuckoos further distorted the picture. However, fitting of satellite trackers to birds from the UK now allows real-time tracking of migrants (see www.bto.org for details). This has revealed, for example, that most southbound migrants originating from the UK cross the Mediterranean at Italy or Greece and fly south over the central Sahara, before moving south to the equatorial rainforest belt of Congo, D.R.C. and Gabon. After a few weeks these birds move north-west, hugging the West African coast, before returning to Europe via north-west Africa and the Iberian Peninsula.

Migrants seen in southern Africa probably hail mostly from central Europe, and are mainly of the nominate subspecies. Small numbers of the subspecies *C. c. subtelephonus* (which breeds from Turkmenistan to Mongolia), also reach our subregion, primarily visiting Zimbabwe, Mozambique and northern KwaZulu-Natal (Clancey 1961). This taxon is slightly smaller, paler and duller than the nominate race, with lighter and narrower dark bars on the underparts (Cramp *et al*. 1985, Payne 2005). Silent birds of this subspecies could easily be confused with both Madagascar Cuckoo and Lesser Cuckoo.

Within southern Africa, the Common Cuckoo shows the typical extensive but low-density distribution pattern exhibited by many non-breeding migrants, as depicted in Figure 1. It is most numerous in Mozambique, Zimbabwe, northern and eastern Botswana, and the northern half of Namibia. Within South Africa it is most frequently reported from the woodlands of Limpopo and Mpumalanga provinces

(Kruger National Park in particular). However, it also occurs at lower densities in most of KwaZulu-Natal and down to the Eastern Cape, and very sparsely across the interior, mostly east of 25°E. Wanderers are occasionally reported from the coastal regions of the Western Cape; such records usually pertain to singleton first-winter birds, often seen in atypical open habitats.

SABAP data suggest that the first Common Cuckoos arrive in southern Africa in October, regardless of latitude (but confusion with African Cuckoo, which is more conspicuous at that time, is a strong possibility). The main influx seems to be from early November in Zimbabwe and slightly later in South Africa. Records peak in January to February (Vernon and Herremans 1997), probably as birds are then more conspicuous during pre-migration fattening and after completion of moult. Northward departure is mainly in March, with the last few stragglers remaining until April.

The intra-African movements of the African Cuckoo are imperfectly understood and apparently complex. Based on current knowledge, it appears that the species is a breeding visitor to southern and south-central Africa, as well as the band stretching across Africa from Senegal to Ethiopia (Fry *et al.* 1988). It is mostly resident in central and West Africa, but a non-breeding migrant to East Africa. It is unclear where southern African birds spend the non-breeding season. In addition, the presence of fully fledged juveniles in slightly worn plumage in Zimbabwe and northern South Africa in September, suggests that these birds hatched outside the subregion, at least 7-11 weeks previously (i.e. early July to August).

Like most cuckoos, the African Cuckoo is an obligatory brood parasite, and therefore needs to synchronise its breeding with that of its host, the Fork-tailed Drongo *Dicrurus adsimilis*. As such, newly arrived males start calling by late August in Zimbabwe and late September in South Africa, to establish territories and attract mates (Vernon 1997). During peak breeding males may call throughout the day and even at night. Egg-laying occurs from September to December, peaking in October and November. This early peak in singing, territorial displays and intraspecific aggression makes this species much more conspicuous than the Common Cuckoo in spring and early summer. Territories are held for about three months (Tarboton 1975), after which the birds become quiet, transient and inconspicuous in the new calendar year. Departure is more synchronized than arrival, occurring in March and April. Said to occasionally overwinter in southern Africa (Parker 1994).

Interestingly, the African Cuckoo is virtually absent from vast areas of the Eastern Cape and Western Cape where its host, the Fork-tailed Drongo, is common and spreading. The reasons for this are unknown, but are probably related to climate and habitat availability. It might also be noted that drongos generally breed later further south (Tarboton 2011). For more information on the breeding biology of this species, consult Tarboton (1975, 1986 and 2011), and the excellent www.africancuckoos.com.

Abundance

Contrary to its English name, the Common Cuckoo is seldom abundant, although loose associations have been reported, probably in response to outbreaks of caterpillars. That being said, Irwin (1981) reported that this species is twice as numerous as African Cuckoo in randomly collected Zimbabwean museum material. Conversely, in northern South Africa, African Cuckoos were collected about five times as often as Common Cuckoos (Rowan 1983). A small sample of material in the collection of the DNMNH (mostly from South Africa

and Namibia) consists of 11 Common Cuckoos and 19 African Cuckoos (ratio 1:1.73).

The SABAP1 project database includes 491 Common Cuckoo records from 315 Quarter Degree Square (QDS) grid cells, and a mean reporting rate of 1.5%. Conversely, SABA2 lists 3 122 African Cuckoo records from 911 grid cells and a mean reporting rate of 6%. This suggests that Common Cuckoo is outnumbered by African 6.36 to 1. However, this ratio should be interpreted with caution and is more likely a reflection of the far higher conspicuousness of a vocalising breeding visitor (African) than an unobtrusive non-breeding visitor (Common); actual numbers of the two species may be more similar than the SABAP data suggest.

Table 1. Number of specimens of Common and African Cuckoos in the DNMNH bird collection, and the months in which they were collected. While this represents only a small sample, it does demonstrate that African Cuckoos arrive earlier than Common Cuckoos, and are more conspicuous in early summer. The opposite is true in late summer, when African Cuckoos are quiet and unobtrusive, while Common Cuckoos are then fattening for their northward migration and probably becoming bolder as their hormone levels increase in anticipation of the breeding season.

Species	J	A	S	O	N	D	J	F	M	A	M	J	Total
Common	—	—	—	—	—	5	2	2	4	1	—	—	14
African	—	—	2	5	5	1	4	1	2	1	—	—	21

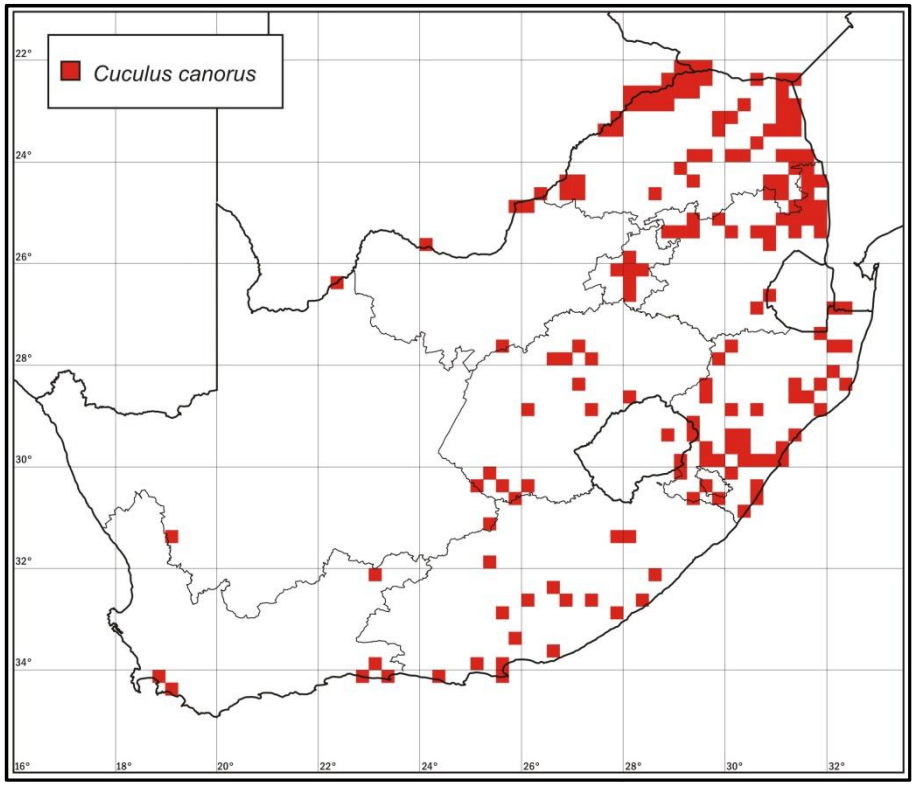

Fig 1 - Distribution of Common Cuckoo *C. canorus*, based on data from both SABAP1 (1987-1993) and SABAP2 (2007-2014) at 15' x 15' QDS scale. Unlike African Cuckoo, this species is not bound to the presence of a host species while in southern Africa, and appears to be more catholic in habitat choice. Consequently it has a more extensive but scattered distribution, as shown by many species of non-breeding migrants. It may occur virtually anywhere in the subregion where there are indigenous or alien trees, including gardens in arid regions and plantations, but it avoids true forest. It is probably widely overlooked, especially in the Northern Cape and North West province. Records of cuckoos, particularly immatures, from the Western Cape and Eastern Cape are more likely to pertain to this species than African Cuckoo.

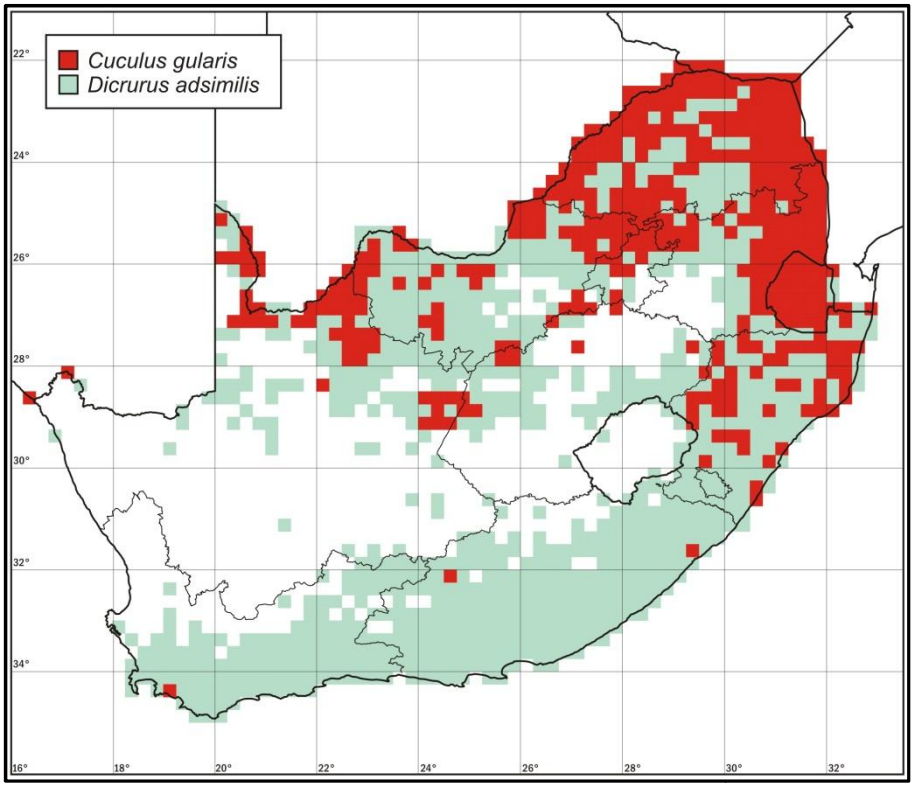

Fig 2 - Distribution of African Cuckoo *C. gularis* (red grid cells), and its host Fork-tailed Drongo *Dicrurus adsimilis* (green grid cells), based on data from both SABAP1 (1987-1993) and SABAP2 (2007-2014) at 15' x15' QDS scale. The distribution of the African Cuckoo mirrors that of the savanna / woodland biome, and it is thus mainly restricted to the northern and eastern parts of South Africa, where its range overlaps entirely with that of Common Cuckoo. Surprisingly, the African Cuckoo is essentially absent from the Eastern and Western Cape despite the occurrence of its host there. Outlying records from these provinces should be treated with caution. The African Cuckoo is far more conspicuous than the silent and unobtrusive Common Cuckoo, although numerically both species may be common in an area.

Vocalisations

The onomatopoeic word "cuckoo" is a rendition of the main territorial call of the male Common Cuckoo, as immortalised in the hourly interjections of cuckoo clocks, and is probably one of the best known bird sounds in the world. Unfortunately for local birders however, Common Cuckoos do not sing while in southern Africa.

The full vocal repertoire of the African Cuckoo has not been fully described. Males' main territorial call / song consists of paired, low-pitched, deep *coo-coo* or *hoo-hoo* notes, given at 16-25/10s (Figure 3, right). The two notes are very similar in pitch and quality, although the second note may sound slightly more emphatic than the first (Fry *et al.* 1998). The song is quite similar to that of the African Hoopoe *Upupa africana*. It is easily imitated by blowing two short breaths into one's cupped hands.

Female Common Cuckoos utter a liquid bubbling or chuckling series of approximately 3 seconds (Figure 4) that is occasionally heard on the non-breeding grounds in Africa (perhaps more frequently just prior to northward migration). An equivalent call is given by the female African Cuckoo, described as an excited *wick-wick-wick* or bubbling *kwik-kwik-kwik* series (Fry *et al.* 1988). The stress and pitch of these calls apparently differ in various social contexts, and it is doubtful whether they can be used for identification.

Young birds beg with insistent, piercing calls that become louder as they age. Young Common Cuckoos also give a loud hawk-like rattle as a threat call, e.g. when handled (Fry *et al.* 1988).

Brief mention may also be made of the vocalisations of Lesser and Madagascar Cuckoos, as there seems to be some confusion in the literature despite the songs of these two species actually being very

different. The song of Lesser Cuckoo is composed of 5-6 sharp and very quick staccato notes, much higher than other cuckoos' songs. The middle notes are typically higher and more emphasised, with a yelping quality, e.g. *chu-chu-CHIK-CHIK-chu-chew*, or *yok-yok chiki-chuchu,* or rendered as the bird's Japanese name, *ho-to-to-gi-su* (Fry *et al.* 1988, Zimmerman *et al.* 2001). Conversely, the song of Madagascar Cuckoo is considerably deeper, lower-pitched and slower, and consists of three even notes, followed by a lower e.g. *chew-chew-chew-choo* or *whip-whip-whip-too* or *wu-wu-wu-poo*. This song is somewhat reminiscent of the familiar phrase of the Red-chested Cuckoo *piet-my-vrou* but with an additional lower note at the end, e.g. *piet-my-vrou-vrou.*

Lesser Cuckoo is usually silent during the non-breeding season in Africa, but males may sing briefly before departure back to the breeding grounds, and both sexes may utter a staccato rattle when flushed (Stevenson & Fanshaw 2002). Non-breeding Madagascar Cuckoos are likely to be silent if present during the austral winter, but in summer males may call incessantly in southern Africa, suggesting that small number may even be breeding in the subregion.

Sexual dimorphism

In both species, sexual dimorphism is slight and sometimes the sexes are indistinguishable (Cramp *et al.* 1985). However, in many female Common Cuckoos there is a broad rufous-buff or pinkish band, with darker barring, across the upper breast and sometimes extending onto the sides of the neck. The extent of this band is variable: absent in some birds (which then look like males), sometimes with only a slightly warmer wash, and in extreme cases so well-developed that confusion with Red-chested Cuckoo *C. solitarius*, becomes a possibility.

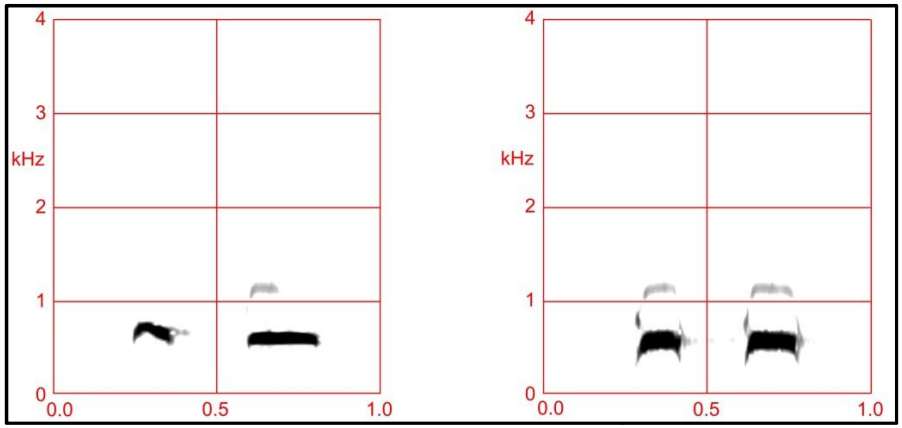

Fig 3 - The familiar song of the Common Cuckoo (left), reflected in the family name "cuckoo", is not heard south of the Sahara. African Cuckoo (right) utters two low notes at nearly equal pitch. Common Cuckoo recording by Elias Ryberg, in Norway; African recording by Charles Hesse, in Botswana (www.xeno-canto.org).

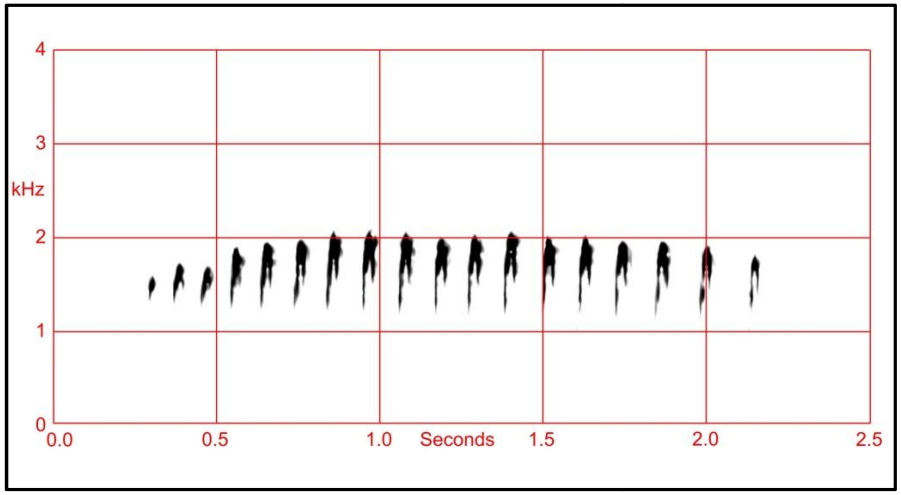

Fig 4 - Bubbling call of female Common Cuckoo. Females of both species utter liquid series of 2-3 seconds. It is not known whether this call differs between African and Common Cuckoos. Recording by Jarek Matusiak, in Poland (www.xeno-canto.org).

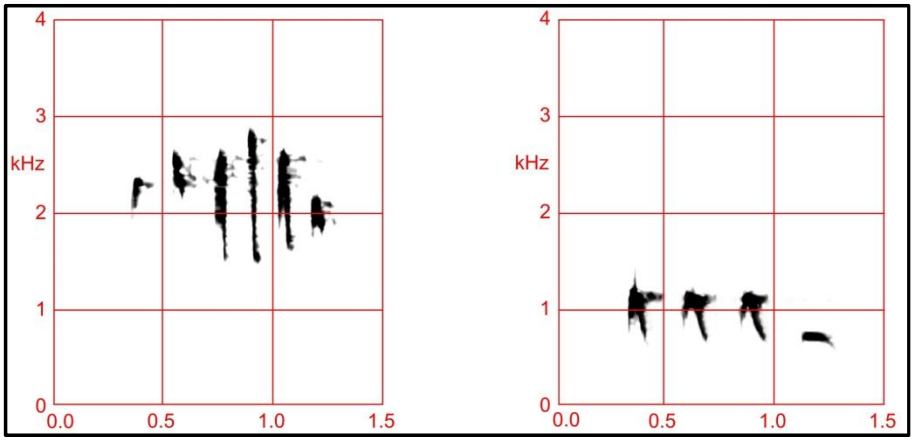

Fig 5. Songs of Lesser Cuckoo (left) and Madagascar Cuckoo (right), both from their extralimital breeding grounds. Recording of Lesser Cuckoo by Frank Lambert, in China; recording of Madagascar Cuckoo by Hans Matheve, in Madagascar (www.xeno-canto.org).

Additionally, females with extensive buff on the breast also tend to show small rufous spots on the wing coverts and flight feathers.

The buffy breast band tends to be less pronounced in female African Cuckoos, and is generally fainter and more yellow-toned, with faint overlying “shadow barring” that reduces the contrast between the grey throat and barred breast. In both species females are marginally smaller e.g. 1-10 mm difference in wing and tail length in Common, 3-5 mm difference in African (based on Fry *et al*. 1988).

Hepatic form

Adult female Common Cuckoos occur in a unique "hepatic" rufous or brick-red form, in which the upperparts are rich chestnut and boldly barred black, except for a plain rump. Likewise, the tail and wing feathers are prominently barred chestnut and black. The proportion of the population that exhibit this form is unknown, but it appears to be rare, both on the breeding and non-breeding grounds. Such polymorphism may have evolved due to parasite-host interactions. Studies have shown that the resemblance between cuckoos and hawks of the genus *Accipiter* is not incidental; various passerines mistake cuckoos with barred underparts for hawk (but not controls with unbarred underparts; Welbergen and Davies 2011); this hawk-mimicry by the cuckoos results in decreased mobbing response by host species, and thus easier access to host nests for the parasitic cuckoos (Davies and Welbergen 2009). However, if this deceitful strategy becomes too familiar to the species being deceived, the latter’s behaviour may change and the cuckoo will lose its advantage. As such, the evolution of different colour forms (such as the hepatic morph) may help to avoid this familiarity (Mappes and Lindström 2012). Importantly, an equivalent rufous form is not known in the host-specific African Cuckoo.

Plumage: adult

Adult plumage is extremely similar between the two species, and unless an exceptional view is obtained, many birds will unfortunately have to remain unidentified. Most field guides stress the pattern of the outermost rectrices i.e. the shortest tail feathers, as a distinguish character, with those of Common Cuckoo being spotted, and those of African being barred (see Figure 6). Given a decent frontal view, this is indeed a reliable feature.

In Common Cuckoo the outer tail feathers have only discreet, isolated white marks covering the narrower outer web of the feather, and mirrored on the inner side of the rachis (shaft). On the inner web, these white marks extends only 2-4 mm from the rachis, leaving the majority (approximately 15 mm) of the inner web grey or dark; however, a small 1-3 mm wide white spot may be visible on the edge of the inner web opposite the white mark on the outer web. White

marks may be in the form of spots, narrow bars, hearts, diagonal bars or chevrons, and range in width from 2-9 mm (but broader at the feather base, usually obscured by the longest undertail coverts).

Conversely, in African Cuckoo the white bars on the outer rectrices are bold and broad ("zebra-like"), often creating the impression that the undertail is mostly white, or that the ratio of white and black is about equal. The white bars often extend all the way across the inner web, or may be constricted slightly in the middle. Although usually diagnostic and reliable, extremes between the species could cause confusion (e.g. D vs H in Figure 6). See also tail feather illustration in Rowan (1983). In addition, the large lowermost dark area of the tail feathers is usually blacker, forming a black subterminal tail band; in Common Cuckoo this dark patch contrasts less.

If seen only from the back, the tail pattern can still provide a very useful identification clue. In Common Cuckoo, the rectrices are generally dark greyish black throughout, with a slight purple sheen in good light. On the central tail feather, very narrow white spots may be visible along the rachis. These white marks vary from almost absent to about 5 mm wide, but are usually in the range of 1-2 mm wide. Spots may be mirrored on both sides of the rachis, but are often only present on the outer web side of the rachis. In some birds a series of similarly narrow white spots may run along the outside edge of the feather, but these can be worn off completely. The general impression is thus of a nearly uniform dark tail, often contrasting strongly with the paler grey uppertail coverts and rump.

Conversely, in African Cuckoo there is almost always a remarkably distinct, broad (15-25 mm) black subterminal band, contrasting strongly with the white tail tip and paler grey tail base. In other words, the basal 4/5 of the tail is grey, followed by the broad black band,

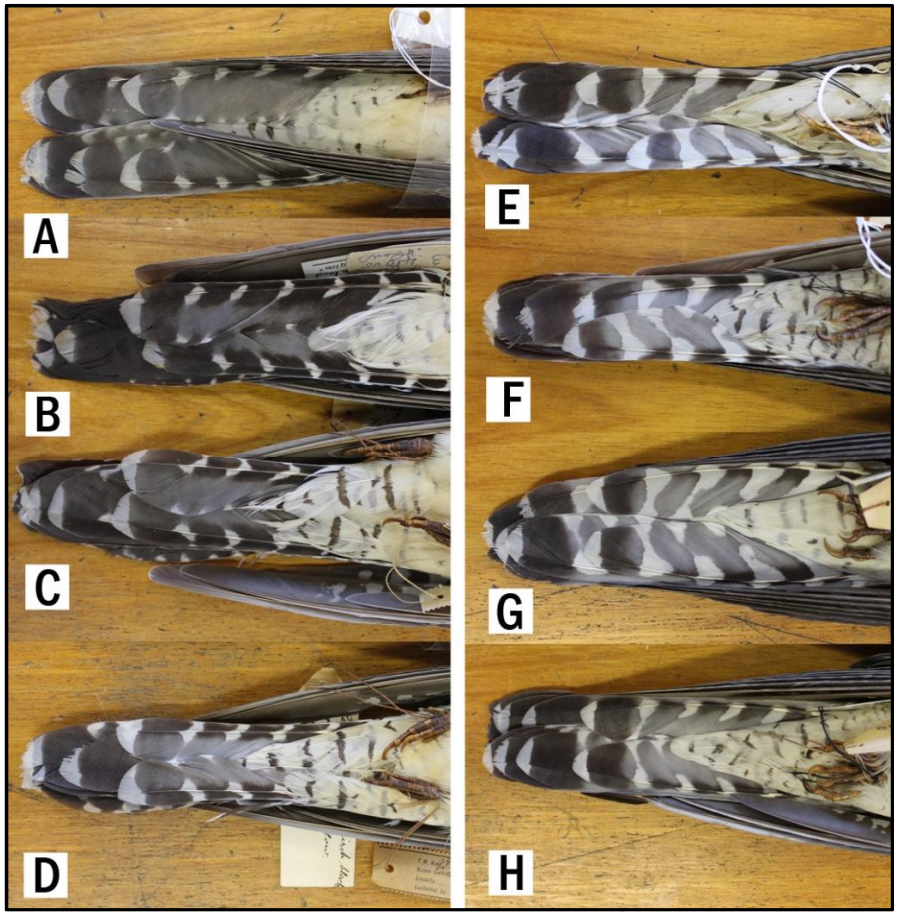

Fig 6. Ventral surface of tail. In Common Cuckoo (left column, A-D) the two outermost rectrice, i.e. the two shortest tail feathers, typically have only discreet, isolated white spots or narrow bars, not extending much across the inner web. Conversely, in African Cuckoo (right column, E-H), the outer rectrices show bold, broad white bars that usually extend all the way across the inner web. However, in cases such as D vs H, this difference can be minimal. A large black subterminal patch is usually visible on the undertail of African, but not of Common. Note the highly variable barring of the undertail coverts.

and then a small white tail tip. In some birds the upper edge of the black band is strongly defined but in others it is more diffuse, or narrows and extends upwards towards the tail base along the rachis. Furthermore, 4-5 large and prominent white marks are usually easily visible along the rachis; these white blobs are generally rounded, nearly symmetrical on both sides of the rachis, and 4-6 mm wide (but as narrow as 2 mm in a few birds). However, the white marks are always considerably more obvious than in Common Cuckoo. The white patches are often framed by black or dark grey extending up from the subterminal band. In effect, the base of the uppertail thus appears paler (contrasting little with the uppertail coverts), with much bolder white and black markings.

Other plumage characters are much less reliable. In a large comparative sample, the dark bars on the underparts of Common appears somewhat darker, broader and more widely spaced, but in African are greyer (paler), narrower and closer together. As a result Common appears more hawk-like, and African more cuckooshrike-like, but it is doubtful whether this will be of use in the field.

The eastern subspecies of Common Cuckoo, *C. c. subtelephonus*, which is slightly smaller and paler grey above, with somewhat narrower barring on the underparts (Clancey 1961, Chittenden *et al.* 2012), may also cause confusion.

Some references mention the background colour and intensity of barring on the undertail coverts as a possible distinguishing feature (also in relation to Lesser and Madagascar Cuckoos), but in DNMNH specimens this seems too variable to be of any significance. Dorsal colouration is similarly variable. Finally, white bars on the underside of the primaries (especially P9) are, on average, slightly narrower in Common than African.

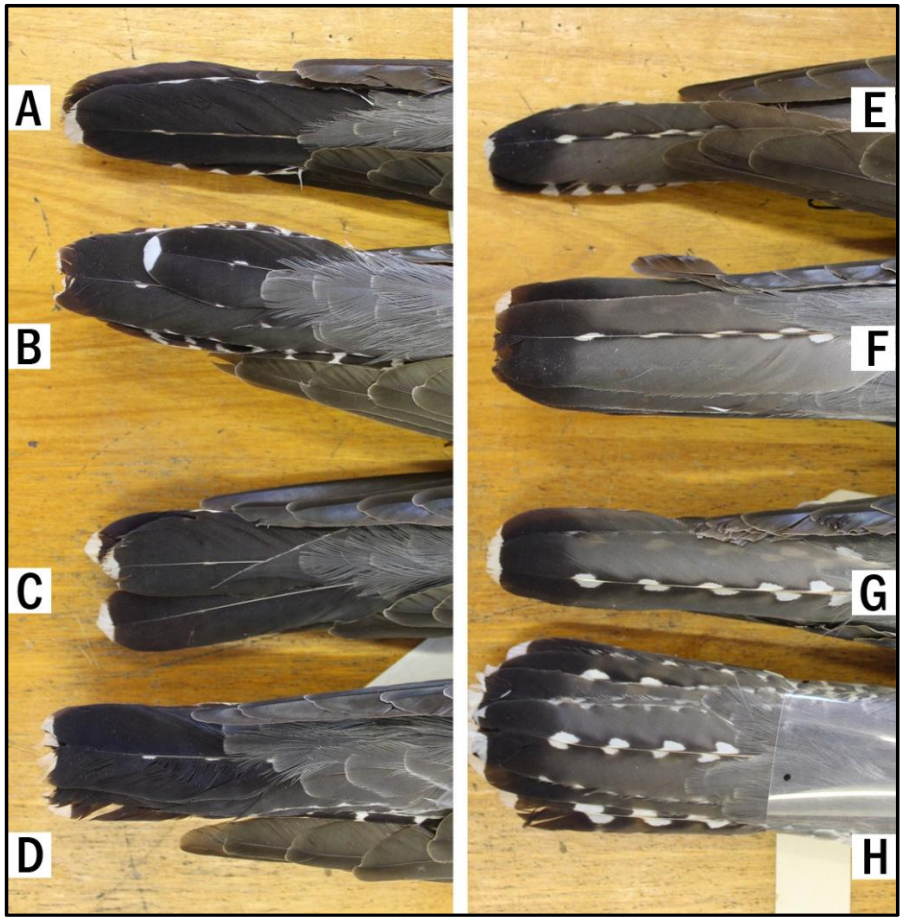

Fig 7 - Dorsal surface of tail. In Common Cuckoo (left column, A-D), the rectrices are dark throughout, with a slight purple sheen. A few very narrow white spots may be visible along the rachis of the central rectrix and sometimes along the feather's outside fringes. Conversely, in African Cuckoo (right column, E-H) the dark colour is restricted to a very distinct blackish subterminal band, contrasting with a paler grey basal colour. Also, the white spots along both sides of the rachis are much wider, and often framed by dark grey. These features may be visible even at a considerable distance.

Fig 8 - Adult Common Cuckoos. Adult males and grey females are extremely similar to African Cuckoos in shape, size and colour. The most reliable distinguishing character is the barring pattern of the rectrices, with Common Cuckoo having sparser and narrower bars on the shortest tail feathers, making the tail look darker, less marked and more spotted than barred. A buffy band on the upper breast is discernable on many females, e.g. the bird second from the left; in extreme cases this may even suggest Red-chested Cuckoo. Slimness of third and fourth birds is a result of specimen preparation.

Fig 9 - Adult African Cuckoos. Except for the bolder white barring on the tail, adults of both sexes are not easily told from Common Cuckoos (with the exception of the brick-red hepatic form of adult female Common; an equivalent morph is not known in African Cuckoo). On average, the dark bars on the breast and belly of African may be slightly greyer and less contrasting than Common's, and spaced slightly further apart, giving it an almost cuckooshrike-like appearance. The barring and background colour of the undertail coverts appears to be too variable to be of use in field identification.

Plumage: juvenile

Juvenile plumage appears to be significantly different between the two species. In both, juveniles are distinguishable from adults by their barred throats, prominent narrow white fringes to the coverts, remiges and dorsal feathers, and often a conspicuous white nape patch and some white crown feathers. In Common Cuckoo, juveniles occur in multiple forms that intergrade extensively; however, these can be roughly divided into brown, grey and rufous classes (Figure 11). The latter can appear similar to adult female hepatic morphs (Figure 11, bird F), but only very rarely have plain, unbarred rumps as in adults. Importantly, note that in all variants the tail is much more distinctly and boldly barred with white and/or rufous than in adults.

Juvenile African Cuckoos appear to be much less variable in appearance, and are similar in all photographs, specimens and field notes examined. They are attractive creatures, much greyer than young Common Cuckoos, and very liberally marked with white bars, fringes, tips and notches on the upperparts, wings and tail. Like Common Cuckoo they can show prominent white nape patches and often have a few white feathers on the crown. The underparts (including the throat) are heavily barred with brownish grey. The primary difference between juvenile African and Common Cuckoos, is that the latter has the wing feathers and wing coverts obviously barred or spotted in rufous or rich brown, usually easily visible on the folded wing. In contrast, juvenile African Cuckoos lack any brown or rufous spots, instead having the wing spotted with greyish white; they are exclusively white and grey and lack any brown or rufous.

Moult and ageing

Common Cuckoos undergo a complete post-breeding moult on their African wintering grounds, started in October / November and completed by February / March. Moult takes about 3.5-4 months, but may be suspended during any stage. The sequence of feather replacement is complex, e.g. up to four primaries may grow simultaneously, but two growing ones are almost always separated by a fully grown feather (Cramp *et al.* 1985).

Juvenile Common Cuckoos undergo a complete post-breeding moult, replacing all feathers except for some flight feathers. In particular, some inner secondaries and their corresponding greater coverts, some alula feathers, and rarely a few primaries may be retained until the second moult sequence, by which time these feathers are very worn. Primary moult usually starts about one month later than in adults, starting in September to January and completed by February to July. Some birds arrive in southern Africa in nearly full juvenile plumage, and may only start their moult in the new year, and suspend moult during pre-migratory fattening and migration back to the breeding grounds (Cramp *et al.* 1985).

Moult is less studied in African Cuckoo. Adults likely undergo a complete post-breeding moult, perhaps starting in the late (austral) summer, but mainly on the central African non-breeding grounds. Egg-laying occurs in southern Africa from October; assuming similar incubation, nesting and independence periods as Common Cuckoo, fully fledged juveniles are thus to be expected 6.5-10 weeks later, i.e. approximately from about December onwards. These young birds probably start their post-juvenile moult only after leaving southern Africa. However, juveniles in slightly worn plumage, probably hatches outside the subregion, may also be observed in spring.

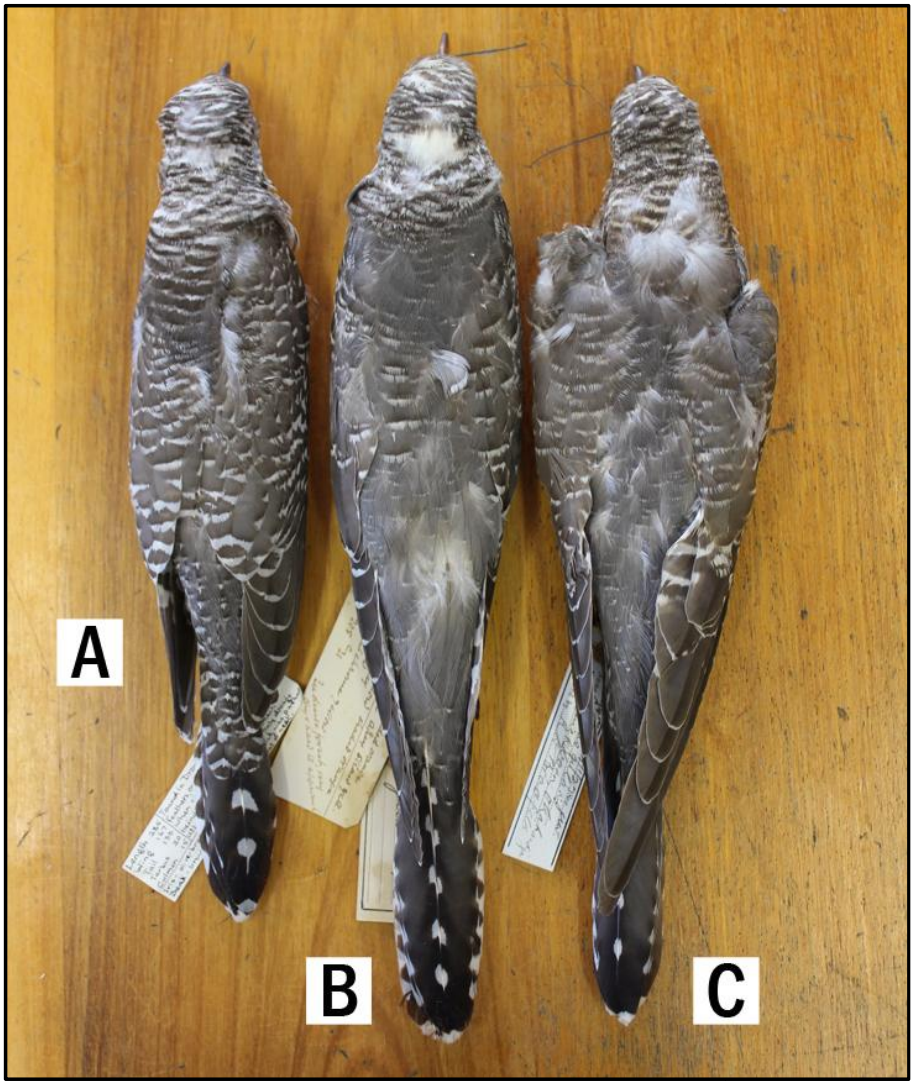

Fig 10 - Juvenile African Cuckoos are always much greyer than juvenile Common Cuckoos, with sharper white feather edges, and lacking any rufous. A is in fresh, wholly juvenile plumage, but B and C show a mixture of worn juvenile plumage and fresh adult plumage.

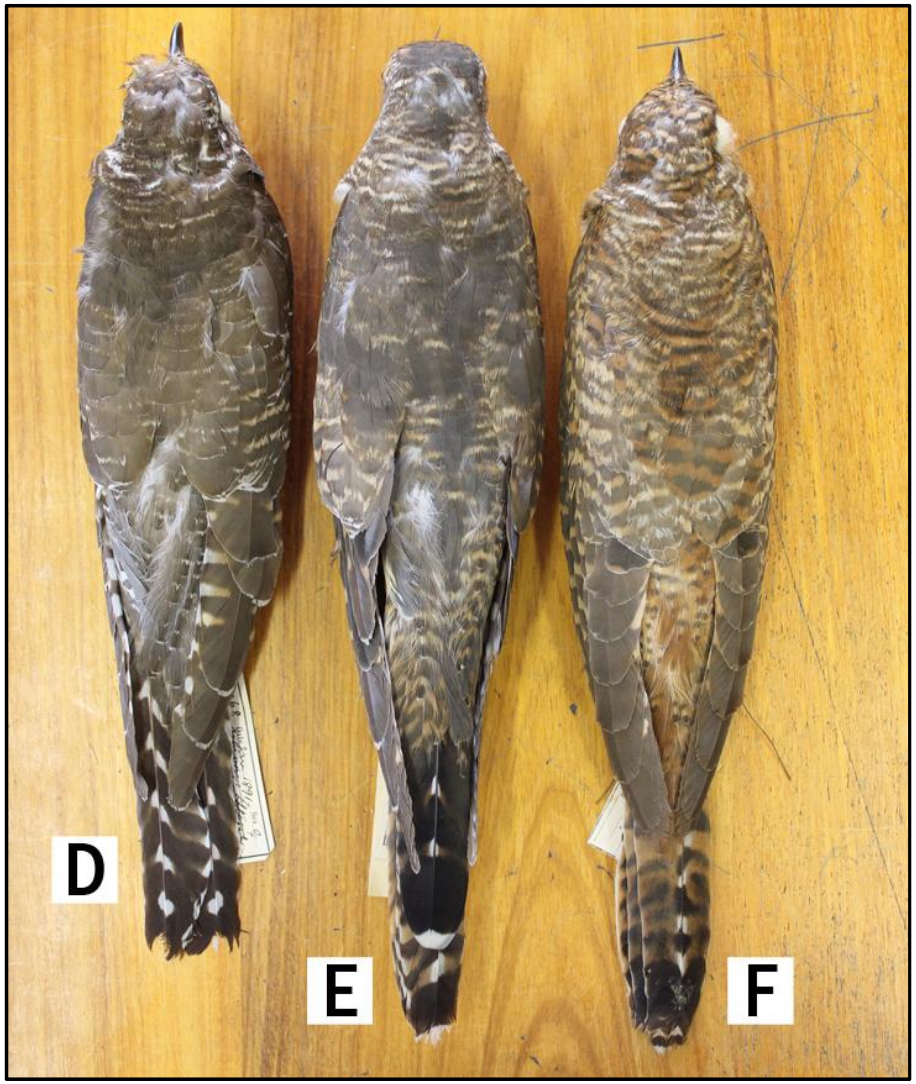

Fig 11 - Juvenile Common Cuckoos. Bird D is an example of a brown form juvenile. E is a rufous juvenile, but has already replaced many of the mantle and crown feathers with grey adult-type feathers. F is a rufous juvenile female moulting into hepatic adult form.

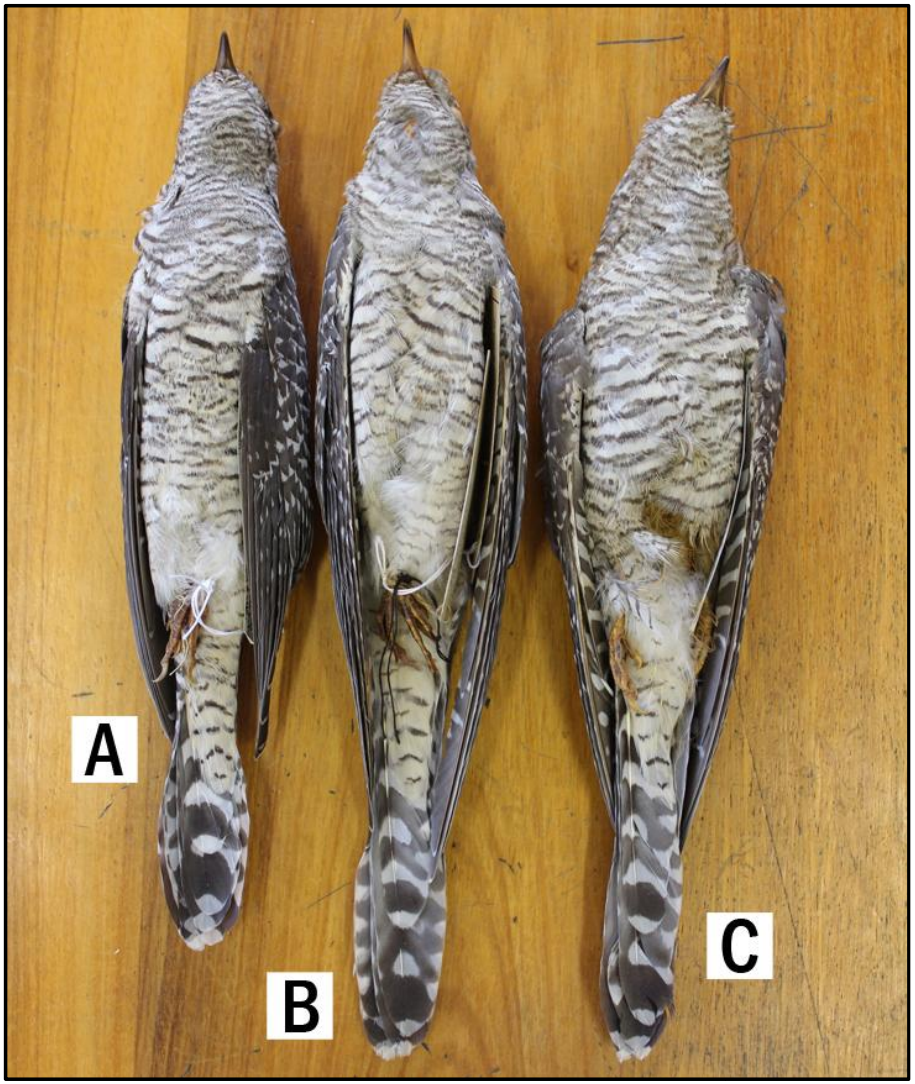

Fig 12 - Juvenile African Cuckoos. Distinguished from adult by prolific white markings on wing feathers and coverts, plus barred (not grey) throats. Such grey and white birds are easily distinguished from the brown- or rufous-toned juveniles of Common Cuckoo.

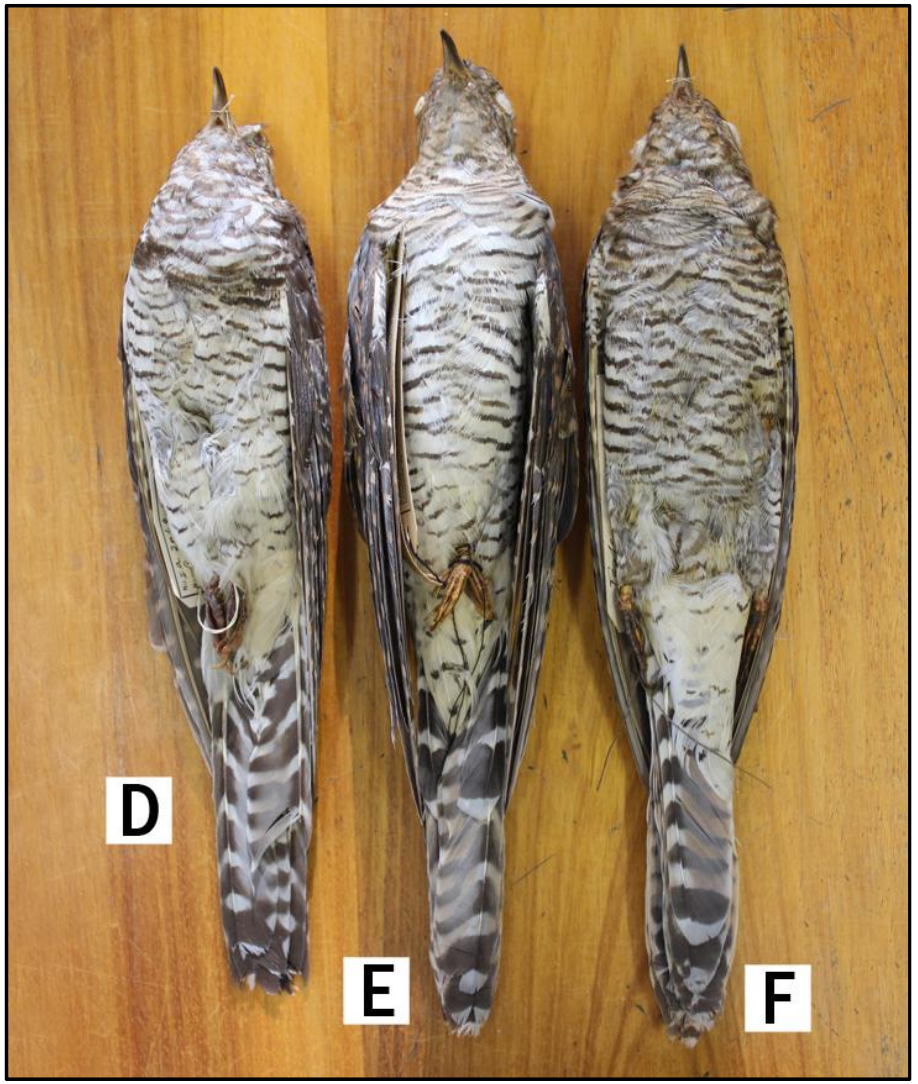

Fig 13 - Juvenile Common Cuckoos. Note that the undertail is more profusely barred with white in juvenile birds, quite unlike the spotted tail pattern of adults, and may lead to confusion with African Cuckoo. Bird F is a first-year female moulting into hepatic adult form.

What is the significance of this to field birders? In theory, feather age and progression of moult could assist with separation of Common and African Cuckoos, given a good view. Newly arrived Common Cuckoos show worn and abraded flight feathers in early summer, but by about February / March, have moulted into fresh plumage. The opposite is true of African Cuckoos, which are in fresh plumage at the onset of summer, but start showing signs of wear from about January (Dean and Payne 2005a, 2005b). Some variation in these patterns occurs, and judging feather wear in the field is challenging.

Young Common Cuckoos in their first year of life are readily identifiable by their mixture of retained juvenile feathers with obvious rufous spots, and grey adult-type feathers (see Figure 14, A and B); such birds are frequently recorded in southern Africa, and are often responsible for identification queries from atypical habitats or outside their normal range. This distinctive pattern is never seen in young African Cuckoos, which have white-spotted wings. Ageing of the latter species requires more speculation. It is possible that juvenile African Cuckoos hatched in southern Africa do not start their post-juvenile moult before departure in the austral autumn; if they do moult in southern Africa, they are unlikely to have progressed significantly. Birds that show a mixture of white-barred juvenile plumage and grey adult plumage (e.g. Figure 14, C) may be moulting immigrants hatched outside of southern Africa.

Bare parts

In both species, the feet, bare orbital ring and base of the bill are bright yellow. Most reference works suggest the amount of yellow at the base of the bill as a distinguishing feature, with African showing more extensive yellow than Common. In practice the extent of the yellow colour can be difficult to observe and quantify in the field, and therefore difficult to adjudicate accurately, and some authors have

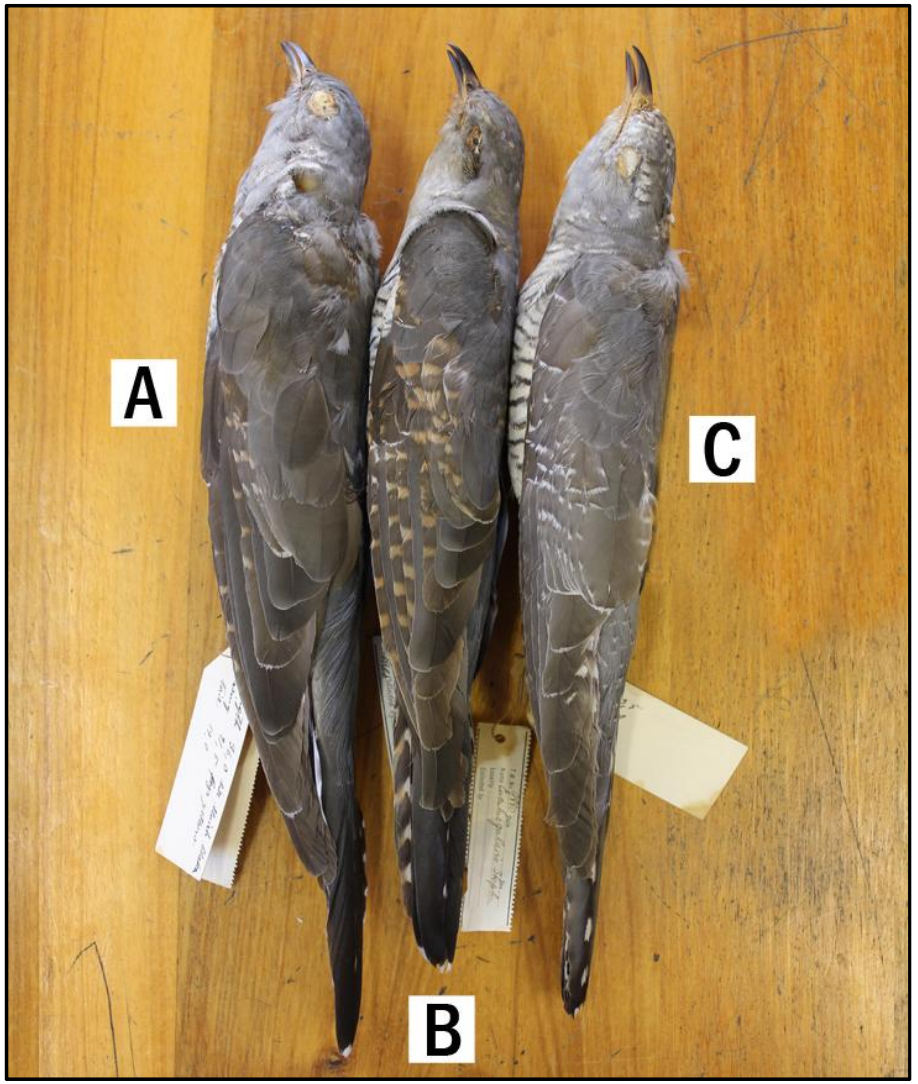

Fig 14 - First-years. Specimens A and B are first-year Common Cuckoos, identifiable by the rufous bars on the retained juvenile remiges and coverts. C is a first-year African Cuckoo, lacking rufous bars and with more prominent white bars, feather tips and tail spots.

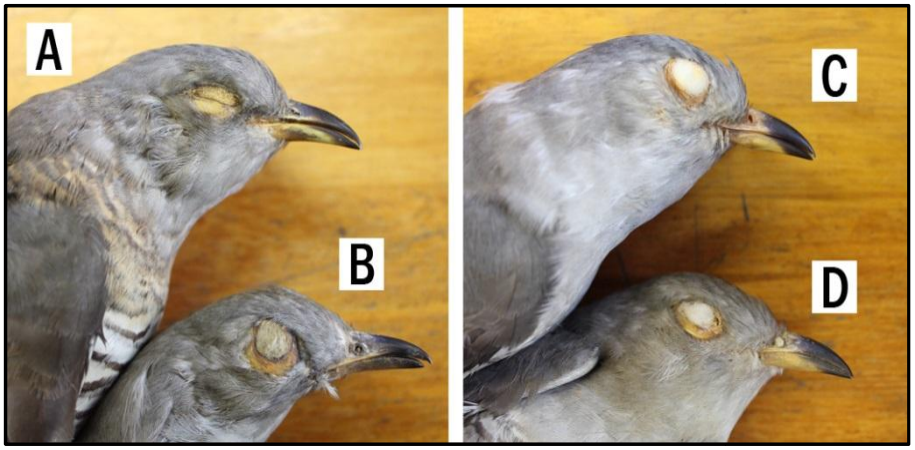

Fig 15 - Bill colour. In Common Cuckoo (left, A-B) the upper mandible is almost entirely dark, except for a narrow yellowish strip along the cutting edge. The lower mandible has a similar amount of yellow than African Cuckoo, but the yellow is often infused by dark, dirty smudges, making it appear more olive or greenish (clearly visible in specimen A). Some birds almost lack yellow altogether, e.g. B. In African Cuckoo (right, C-D), the yellow or orange is generally brighter and much more extensive on the upper mandible, usually encircling the nostril (clearly in C, but less obvious in D because of exfoliation of keratin).

expressed doubts about the usefulness of this feature for identification (Rowan 1983). However, in all the adult DNMNH specimens examined, a distinct difference was indeed discernable, and with practice this should prove useful in the field.

In African Cuckoo the basal 50-80% of the lower mandible is always strikingly yellow or orange; when seen directly from below, the bill thus only has a small black tip. On most birds the basal 20-40% of the upper mandible is also yellow, with the yellow extending clearly in front of and above the nostril (encircling the nostril). In about half the birds the culmen is dark at the base of the skull, but in the remainder, the yellow extends right over the culmen, thus effectively isolating the black colour to the bill tip (the black does not touch the feathers).

Common Cuckoo may similarly show much yellow on the base of the lower mandible (basal section up to 75% yellow in extreme cases), but the yellow colour is often infused with darker, greenish-black tones, and is therefore more olive or greenish, and less eye-catching. A few birds even lack yellow on the lower mandible altogether (never the case in adult African Cuckoo). In addition, in Common Cuckoo the upper mandible does not usually show any yellow, except for a narrow 1-2 mm wide strip along the cutting edge, from the skull to about below the nostril or to slightly in front of it. This yellow cutting edge is usually mirrored on the lower mandible as well. Note that exfoliation of the outer keratin layer of the bill, especially around the nostril, may create the impression of a paler, dirty, peeling effect on the upper mandible, which may be construed as faintly yellow by some observers.

There are also slight average biometric differences between the two species, but whether this will be of any use in field identification is doubtful, and there is slight overlap. In particular, the bill of African Cuckoo is on average 2 mm longer, 1.1 mm wider, and 0.9 mm deeper than the bill of Common Cuckoo (see table below).

Adults of both species have yellow eyes, sometimes tinged brown or orange-red. Juveniles generally have darker brown or yellowish brown eyes. Recently fledged young have blackish or dark brown bills, gradually becoming yellower at base; gape reddish.

Table 2. Bill measurements from a sample in the DNMNH collection, measured from/at the front edge of the nostril, in mm.

AFRICAN CUCKOO (n=15; sexes mixed)				
	Minimum	Maximum	Average	Std Deviation
Length	16.1	18.5	17.3	0.71
Width	7.2	8.4	7.7	0.34
Depth	7.9	8.6	8.3	0.25
COMMON CUCKOO (n=13; sexes mixed)				
	Minimum	Maximum	Average	Std Deviation
Length	14.1	16.6	15.3	0.64
Width	6.3	7	6.6	0.27
Depth	6.7	8	7.4	0.41

Fig 16 - Adult African Cuckoo. Even from a distance, the dark tip and white spots on the uppertail, and the broad and complete white bars on the undertail, are clearly visible. Photos by Phil Penlington.

Summary

The main diagnostic features separating Common and African Cuckoos are quantitatively assessed in Table 3 below. Juveniles are readily separable by the fact that the grey and white African Cuckoo lacks any brown or rufous, whereas young Common Cuckoos are liberally marked with these colours; specifically, diagnostic retained rufous-flecked wing feathers are easily visible in first-winter Common Cuckoos moulting in southern Africa.

Adults are best separated on tail pattern. On the underside of the tail, African Cuckoo shows broad white bars that typically extend across the entire inner web, Common shows only small, isolated white spots or thin, broken bars, not extending across the inner web. On the uppertail, African shows a broad black subterminal bar and obvious white spots along the shaft of the central tail feather; Common has a uniformly darker tail with only very small white spots. African has more yellow on the upper mandible, usually encircling the nostril. Finally, a hepatic form is not known in African Cuckoo.

Table 3. Summary of identification characters. Values for character strength were obtained by scoring the distinctiveness of the specific character in each specimen and averaging across the number of specimens of each species. Field use is the average of the character strength across both species, multiplied by a representative factor of how practical it is to observe that character in the field (e.g. it is easier to observe tail barring than bill dimensions).

AFRICAN CUCKOO	COMMON CUCKOO	Strength		Field use
Adult		**Afr.**	**Com.**	
Black subterminal tail bar	Mostly uniform dark tail	7.7	8.6	6.5
Broad white spots on uppertail	Narrow white spots on uppertail	8.4	9.0	7.9
Undertail barred	Undertail spotted	8.2	8.8	7.6
Yellow around nostril	Dark around nostril	8.4	8.6	5.1
Dark bars on underparts greyer and closer together	Dark bars on underparts blacker and sparser	6.4	6.2	1.3
Bill deep, broad, long	Bill thin, narrow, short	7.5	7.2	1.5
No hepatic form	Hepatic form in female	NA	NA	NA
Fresh in early summer; worn in late summer	Worn in early summer; fresh in late summer	7.2	8.1	2.3
Juvenile / first-year		**Afr.**	**Com.**	—
Plumage exclusively grey and white	Plumage with brown or rufous areas	8.3	9.6	8.0
No distinct rufous spots on flight feathers	Rufous spots on flight feathers	9.3	9.2	8.3

Fig 17 - Juvenile African Cuckoos have attractive grey plumage, liberally marked with white tips, bars and notches. Unlike juvenile Common Cuckoos they lack any distinct rufous or brown marks, e.g. on the wing coverts and along the outer edges of the primaries. Very recently fledged birds may be seen in association with their drongo foster parents. Photo by Phil Penlington.

Fig 18 - First-year Common Cuckoo, in active wing and body moult. This individual shows a mixture of brown-barred juvenile feathers, and plain grey adult feathers (comparable to specimen B, Figure 14). The edges of the wing feathers never show distinct rufous or brown markings in juvenile or first-year African Cuckoos. Photo by Neels Jackson.

Fig 19 - Adult African Cuckoo, photographed in early summer. The primaries and wing coverts are fresh, with slight wear detectable on the tips of the longest primary feather. The tail shows only moderate abrasion. Note the darker subterminal tail band, obvious white spots on the central tail, and yellow base to the upper mandible encircling the nostril. Photo by Phil Penlington.

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References

Chittenden H, Allan D, Weiersbye I 2012. Roberts Geographical Variation of southern African Birds. John Voelcker Bird Book Fund, Cape Town.

Clancey PA 1961. The Eastern Cuckoo *Cuculus canorus telephonus* Heine as a South African Bird. Ostrich 32(1): 48-50.

Cramp S (ed.) 1985. Handbook of the Birds of Europe, the Middle East and North Africa. Vol 4. Oxford University Press, Oxford.

Davies NB, Welbergen JA 2009. Social transmission of a host defense against cuckoo parasitism. Science 324(5932): 1318-1320.

Dean WRJ, Payne RB 2005a. Common Cuckoo *Cuculus canorus*. In: Hockey PAR, Dean WRJ, Ryan PG. (Eds). Roberts birds of southern Africa (7th edn). Trustees of the John Voelcker Bird Book Fund, Cape Town.

Dean WRJ, Payne RB 2005b. African Cuckoo *Cuculus gularis*. Roberts birds of southern Africa (7th edn). In: Hockey PAR, Dean WRJ, Ryan PG. (Eds). Roberts birds of southern Africa (7th edn). Trustees of the John Voelcker Bird Book Fund, Cape Town.

Dean WRJ, Payne RB 2005c. Madagascar Cuckoo *Cuculus rochii*. In: Hockey PAR, Dean WRJ, Ryan PG. (Eds). Roberts birds of southern Africa (7th edn). Trustees of the John Voelcker Bird Book Fund, Cape Town.

Earlé RA. Lesser Cuckoo *Cuculus poliocephalus*. In: Hockey PAR, Dean WRJ, Ryan PG. (Eds). Roberts birds of southern Africa (7th edn). Trustees of the John Voelcker Bird Book Fund, Cape Town.

Fry CH, Keith S, Urban EK (eds). 1988. The birds of Africa. Vol. 3. Academic Press, London.

Irwin MPS 1981. The Birds of Zimbabwe. Quest Publishing, Salisbury.

Mappes J, Lindström L 2012. How did the Cuckoo get its polymorphic plumage? Science 337(6094): 532-533.

Parker V 1994. Swaziland Bird Atlas1985-1991. Websters, Mbabane, Swaziland.

Payne RB 2005. The Cuckoos. Oxford University Press, Oxford.

Rowan MK 1983. The Doves, Parrots, Louries & Cuckoos of Southern Africa, David Phillip, Cape Town.

Spottiswoode CN 1997. Lesser Cuckoo *Cuclus poliocephalus.* In: Harrison JA, Allan DG, Underhill LG, Herremans M, Tree AJ, Parker V, Brown CJ. (Eds). The atlas of southern African birds. Vol 1: Non-passerines. BirdLife South Africa, Johannesburg.

Stevenson T, Fanshawe J 2002. Birds of East Africa. Princeton University Press, Princeton.

Tarboton W 1975. African Cuckoo parasitising Fork-tailed Drongo. Ostrich 46:186-188.

Tarboton W 1986. African Cuckoo: The agony and ecstasy of being a parasite. Bokmakierie 38:109-111.

Tarboton W 2011. Roberts' nests & eggs of southern African birds. The Trustees of the John Voelcker Bird Book Fund, Cape Town.

Vernon CJ 1997. African Cuckoo *Cuclus gularis.* In: Harrison JA, Allan DG, Underhill LG, Herremans M, Tree AJ, Parker V, Brown CJ. (Eds). The atlas of southern African birds. Vol 1: Non-passerines. BirdLife South Africa, Johannesburg.

Vernon CJ, Herremans M 1997. European Cuckoo *Cuclus canorus.* In: Harrison JA, Allan DG, Underhill LG, Herremans M, Tree AJ, Parker V, Brown CJ. (Eds). The atlas of southern African birds. Vol 1: Non-passerines. BirdLife South Africa, Johannesburg.

Welbergen JA, Davies NB 2011. A parasite in wolf's clothing: hawk mimicry reduces mobbing of cuckoos by hosts. *Behavioural Ecology* **22**: 574-579.

Zimmerman DA, Turner DA, Peason DJ 2001. Birds of Kenya & Northern Tanzania. Christopher Helm, London.