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BIRDS RECORDED ON THE KIMILILI TRACK, MT. ELGON, KENYA

By

P. L. Britton

P.O. Box 90163, Mombasa, Kenya

and

M. St. J. Sugg

c/o 'Bushbury', Blackboys, nr. Ukfield, Sussex, England

Mt. Elgon is a gently-sloping, comparatively isolated mountain straddling the Kenya/Uganda border at 1°N, 34°30'E, with a peak at 4300 m. Its avifauna is well-known (see especially Granvik 1923, 1934). The Kimilili track is motorable to above 3500 m, traversing one of the widest parts of the mountain. This southern slope is comparable in extent with the northern slope in Uganda, but the eastern and western slopes are far steeper. In climbing from 2400 to 3500 m one covers about 25 km.

The authors and their wives conducted a census, and selectively collected birds at five main localities along the track from 24th December 1969 to 7th January 1970. We were accompanied by Loriu Lokiru of the National Museum, Nairobi, and grateful acknowledgment is made to the Museum both for his services as a skinner and for the provision of a vehicle and petrol. We are also grateful to the Forester, Kimilili Forest Station for his considerable help. In July 1971 the Brittons and C. F. Mann visited this area again, camping for one night at a sixth locality. At the time of the first visit habitats above about 2300 m were quite intact, but a logging camp has since been established at about 2600 m and the forest above this level is being rapidly destroyed.

Dale (1940) describes the vegetation of the mountain in general terms but the impression given is rather misleading. For example, on this part of the mountain at least, there is a mosaic of bamboo and forest from about 2450 to 2900 m rather than large areas occupied by bamboo alone. And the percentage of forest does not lessen with increased altitude within the bamboo zone. In fact our camps between 2600 and 2800 m were dominated by forest rather than bamboo.

An attempt has been made to show the approximate altitudinal range for each species by using the numerals 1–6 in the systematic list, where a particular numeral means that it was recorded at that locality, defined as follows:

1. 2400 m (7800 ft) in forest (especially *Neoboutonia macrocalyx* Pax trees) with virtually impenetrable undergrowth; below the bamboo line (the contour *below* which bamboo does not occur); 6 days, January.
2. 2500 m (8100 ft) in bamboo, forest edge (*Neoboutonia* again abundant) and natural glades; 1½ days, December.
3. Between 2600 and 2700 m (altitude less accurately known than for other localities as no altimeter available) in *Podocarpus* forest and bamboo; 1 day, July.
4. 2800 m (9100 ft) in habitat like 3; 4 days, December.
5. 3200 m (10500 ft) in giant heather along a stream (lower moorland or heath zone); 1½ days, December.

6. 3400 m (11100 ft) in moorland with giant heather along streams; 3 days. According to Moreau (1966) afroalpine moorland occurs from 3500 to 4100 m upwards on different mountains. Moorland species (i.e. away from streams) at this locality may be included in the afroalpine moorland avifauna.

Additional random observations elsewhere along the track are included. The list should not be considered as complete. It is not intended to be a "checklist" of Mt. Elgon birds.

DISCUSSION

A comparison of the number of species at different localities shows a clear impoverishment with increased altitude: 2400 m, 58; 2500 m, 41; 2600–2700 m, 40; 2800 m, 36; 3200 m, 14; 3400 m, 15; 4300 m, 7. The most apparent reductions are between 2400 and 2500 m (the bamboo line) and between 2800 and 3200 m (the tree line). Only 26 of the 58 species recorded at 2400 m were also recorded at 2500 m. Were we able to spend a little longer at this second locality we would very probably have recorded a few more species, but we doubt that more than about half of the 58 species occur at 2500 m. There is also considerable variation in the species composition within the bamboo zone even though the total is fairly constant. For example, only 23 of the 41 species recorded at 2500 m were recorded at 2600 m whereas 26 of these 41 species were recorded below the bamboo line at 2400 m. The variation in forest types intermingling with the bamboo probably accounts for much of this, as at 2500 m the dominant tree is probably *Neoboutonia* sp. whereas at 2800 m it is *Podocarpus* sp. To an ornithologist the only common factor in these two habitats is the bamboo.

BREEDING SEASONS AND MOULT

A total of 362 birds were ringed between 25th December and 6th January, virtually all at 2400, 2500 or 2800 m. Primary moult scores were noted in the 350 passerines and the 10 *Turtur tympanistria* using the methods of Evans (1966). If there are nine long primaries, as in most passerines, these scores range from 0 (primary moult not yet started) to 45 (primary moult completed). Discussion is confined to those 29 species where three or more individuals were ringed (see the Systematic List). Of 342 birds, only those detailed below exhibited primary moult, a total of 53 birds of 10 species. So little active moult, together with the breeding data in the Systematic List, suggests that many species were either breeding, soon to breed, or recently finished; and more than half of our 96 specimens had enlarged gonads. According to the map in Griffiths (1958), Mt. Elgon has an April-September only rainfall regime, but our data indicate a much later breeding season for most species. Birds breeding during this wettest period would very likely be moulting primaries in December and January. All ringed birds were caught in mist nets within about 3 m of the ground so that any conclusions based solely on moult data may refer only to species occupying the forest undergrowth, bamboo or heather. Canopy and mid-stratum dwellers may be thought to breed earlier (in the rains) but the high incidence of gonad activity in these species suggests that they may reasonably be included with the netted birds. It may be concluded, then, that the modal period for egg-laying on the southern slopes of Elgon is from about November to January.

It is noteworthy that Betts (1966) considered September-December the modal egg-laying period on the Mau ridge, south east of Elgon at about 2500-3000 m. This area experiences an April-November rainfall regime, heaviest in July and August. Judging from Bett's systematic list, September is far less important than the later months, especially November and December, so that the modal egg-laying period in the two areas may be more or less the same.

It is likely that the months of heaviest rainfall are *too* wet in both these highland forests so that they are not favoured for breeding by most species. Cold and mist may

well be important controlling factors; and such areas are probably seldom so lacking in moisture that the onset of the main rains has the profound effect on breeding so apparent at lower altitudes.

Andropadus tephrolaemus: 18 scores ranged from 3–14, mean 7.4; one score of 43.
Chloropeta similis: score of 33.
Phylloscopus trochilus: scores of 5, 17, 22; palaearctic migrant.
Cisticola hunteri: score of 43 (male).
Nectarinia preussi: scores of 2, 5, 8, 10, 10, 19, 20; one of these was a case of interrupted moult (two renewed primaries giving a score of 10).
N. tacazze: Of six females, three were in moult with scores of 42, 3 and 4. Thirteen of the fifteen males were in moult. An immature male had a score of only 3 but otherwise the smallest score was 20, with nine out of twelve adult male scores between 20 and 33 (mean 26.0). The remaining three had scores of 40, 44 and 45. Thus, most males were about half-way through their primary moult whereas females were either not moulting at all, just starting, or just finishing. We are unable to interpret this considerable difference in moulting schedules between the sexes.
Zosterops senegalensis: scores of 33, 44, 45.
Serinus striolatus: score of 13.
S. burtoni: score of 6.
Ploceus baglafecht: immature, score of 34; no moult in four adults.

ALTITUDINAL MOVEMENT

In December 1969, three *Nectarinia* sunbirds, *preussi*, *tacazze* and *reichenowi*, were exceedingly common at 2800 m, and they were also noted lower down (see Systematic List). Our camp in July was in habitat identical to that at 2800 m yet we saw *preussi* only twice, *tacazze* only once, and *reichenowi* not at all. There was certainly a dearth of flowering trees and plants in July and these sunbirds had clearly moved elsewhere. P.L.B.'s data on *reichenowi* from Central Nyanza, at much lower altitude less than 150 km away, strongly suggest that this species at least has a regular altitudinal movement after breeding.

According to White (1963), *Nectarinia reichenowi* does not occur below 5000 ft (*c.* 1550 m) but most Central Nyanza records are at 1170 m or 1300 m with one at 1500 m and one at 1550 m. It has been recorded on eleven dates (up to four together) between 13th May and 3rd September 1969 and 20th March and 27th May 1970. The only collected bird was a female at Ng'iya on 13th May with no gonad activity. The stage of primary moult was noted in all five ringed birds: no moult on 11th and 22nd May (both females); scores of 1 on 25th May (female), 44 on 19th July (male), and 42 on 3rd September (male). A moult schedule from about May to September is completely out of phase with other Nyanza sunbirds, as is the non-breeding female in May. Virtually all moult in Nyanza-breeding *Nectarinia* spp. is from July to November with modal egg-laying months probably March to June (Britton in prep.). The moult of *reichenowi* in Central Nyanza is entirely consistent with the Elgon breeding schedule suggested above, and it should be noted that no Elgon bird was in moult in December. But, as it is also consistent with the breeding schedule of Mau birds, for which Betts (1966) gives nests in November, December and January, it is not certain in which highland forest they breed. Central Nyanza is probably too low for *preussi* and *tacazze* even as non-breeding visitors.

CISTICOLA HUNTERI AND *CISTICOLA CHUBBI*

Following the suggestion of A.D. Forbes-Watson we made a special effort to investigate the exact ranges of these two species, so that they form some 20 per cent of the whole collection. Their virtual allopatry is well shown by Hall & Moreau (1970), and Mt. Elgon occupies a special place as the only area where they both occur. On Elgon, *hunteri* occupies higher altitudes than *chubbi* but there is confusion as to the precise area of contact, if any. Most authors (Hall & Moreau *op. cit.*, Jackson 1938, Lynes 1930, White 1962a) say that *hunteri* occurs down to 9000 ft whereas Granvik (1923) recorded it only above 11000 ft. Although stating that it occurs above 9000 ft, Jackson (*op. cit.*) says that it occurs only in the alpine zone above the forest. White (*op. cit.*) has departed from other authors in treating the two forms as conspecific under the name *hunteri*. The evidence presented below shows that White's arrangement is untenable.

Table 1

CISTICOLA HUNTERI (H) AND *C. CHUBBI* (C) COLLECTED ALONG THE KIMILILI TRACK, MT. ELGON, KENYA.

		Males		*Females*		
Altitude (m)	*No.*	*Wing (mm)*	*Weight (g)*	*Wing (mm)*	*Weight (g)*	*Habitat*
3400	H2	62	16·9			Alpine moorland.
	H5[a]			68	15·9	
2800	H36			60	15·0	Glade in *Podocarpus* forest.
	H37	65	16·8			
	H39			59	14·2	
	H40	63	16·5			
	H46	63	16·0			
2550	H93	62	16·0			Large Glade by rocks in mixed bamboo and *Podocarpus* forest.
	C92[b]	62	18·0			
2500	H83[a]	60	14·0			Glade in bamboo/thick scrub.
	C84			59	12·5	
	C85			59	13·5	
	C90			62	16·0	
	C91	63	17·0			
2450	C88			60	15·2	Glade in bamboo/thick scrub.
	C89	62	19·3			
2400	C86	65	17·0			Scrub by road.
	C87			58	15·0	
	C95	66	16·5			
2400	C71	66	17·5			Along stream in forest.

[a] H5 and H83 are probably wrongly sexed; their measurements are ignored in the discussion.

[b] C92 was badly shot and could not be sexed; it is put with the males because of its measurements and is included in the discussion

Table I lists all twenty specimens and shows clearly that there is an area of slight overlap between about 2500 and 2550 m (8100 ft–8300 ft) in the bamboo zone. Our specimens 92 and 93 were collected within 100 m of one another at 2550 m. The critical specimens are the *chubbi* from 2550 m (no. 92) and the *hunteri* from 2500 m (no. 83). No. 92 could not be sexed but no. 83 (a male) exhibited gonad activity (testes 4×2, 2.5×1.5 mm) as did most of the other specimens from all altitudes. In view of this, as well as the widespread song, it is unlikely that the overlap was the result of off-season wandering.

No intergradation is apparent in any of the specimens, neither has it been suggested before, and the two forms are very distinct in plumage as well as song. We were unable to tape either song on Elgon but have since taped *chubbi* at Kakamega and *hunteri* on Mt. Kenya. When the song of *chubbi* was played to singing *hunteri* on Mt. Kenya it caused no response. It would be interesting to show these songs on a sonogram although there is no disputing that they sound very different.

It is apparent from Table 1 that *chubbi* is a larger bird than *hunteri*. In males, *chubbi* wings average 64.0 compared with 63.0 in *hunteri*, and weights average 17.6 in *chubbi* compared with 16.4 in *hunteri*. The difference in weight is significant (t-test, $P<0.05$) although the difference in wing-length is not. Sexual dimorphism in size is very marked in *chubbi* with males larger (mean wing-length 64.0 against 59.6, mean weight 17.6 against 14.4, both significant, t-test, $P<0.01$). There are rather few female *hunteri* but less sexual dimorphism is apparent here, so that the difference between female *chubbi* and female *hunteri* is trivial. At the time of collecting or ringing, *chubbi* shows a markedly stronger and paler tarsus than *hunteri*. Were *hunteri* and *chubbi* conspecific one would expect *hunteri* to be larger as it occupies higher altitudes.

In view of the above, the classification proposed by White (1962a) is unacceptable. *Cisticola hunteri* and *Cisticola chubbi* should be retained as different species within a superspecies, an arrangement also proposed by Hall & Moreau (1970).

SYSTEMATIC LIST

With the exception of *Cisticola hunteri* and *C. chubbi*, order and nomenclature follow White (1960, 1961, 1962a, 1962b, 1963, 1965). Collected species are marked with an asterisk. Species considered under the heading BREEDING SEASONS AND MOULT are marked 'M', the figure in parenthesis indicating the sample size.

Circus macrourus/pygargus, "Ring-tail" Harrier: **6**, 26th December.
Buteo rufofuscus, Augur Buzzard: **1–6**, also summit (4300 m).
B. oreophilus*, Mountain Buzzard: **3, **5**.
Lophaetus occipitalis, Long-crested Eagle: **3** and 2300 m.
Stephanoaetus coronatus, Crowned Hawk Eagle: **2** and 2300 m.
Milvus migrans parasitus, Yellow-billed Kite: 2100 m.
Falco biarmicus, Lanner: **5**.
F. tinnunculus, Abyssinian Kestrel: **6** and summit (4300 m).
Francolinus psilolaemus*, Montane Red-wing: **6 and up to 3900 m.
F. squamatus*, Scaly Francolin: **1, **2**, **4**, shelled oviduct eggs, December and January.
Sarothrura sp., Pygmy Rail: **5**, a pair, probably *S. affinis* at this altitude (Keith *et al.* 1970). No *Sarothrura* has been recorded from Mt. Elgon.
Columba guinea, Speckled Pigeon: pair on summit (4300 m).
C. arquatrix*, Olive Pigeon: **1–4.
C. delegorguei*, Bronze-naped Pigeon: **1.
Streptopelia lugens*, Pink-breasted Dove: **5.
Turtur tympanistria, Tambourine Dove: **1**, **2**. M (10).
Poicephalus gulielmi, Red-headed Parrot: **3**, **4**.
Tauraco hartlaubi*, Hartlaub's Turaco: **1–4.
Chrysococcyx klaas, Klaas' Cuckoo: **1**.
Ciccaba woodfordi, African Wood Owl: heard **3**.
Caprimulgus poliocephalus*, Abyssinian Nightjar: **4, incubating fresh egg, c/l, 31st December.
Apus aequatorialis, Mottled Swift: 2000 m.
Colius striatus, Speckled Mousebird: 2300 m.
Phoeniculus purpureus, Red-billed Wood-Hoopoe: **4**.
P. bollei, White-headed Wood-Hoopoe: **1**, **3**.
P. cyanomelas, Scimitar-Bill: **1**.
Tockus alboterminatus, Crowned Hornbill: **3**.
Bycanistes subcylindricus, Black-and-White Casqued Hornbill: **1–4**.
Gymnobucco bonarpartei, Grey-throated Barbet: **1**.
Pogoniulus bilineatus, Golden-rumped Tinker-Barbet: **1**, **3**.
Trachyphonus purpuratus, Yellow-billed Barbet: **1**, **4**.
Indicator indicator, Greater Honeyguide: heard **3**.
Indicator (minor), Lesser Honeyguide: glimpsed **1**.
Dendropicos fuscescens*, Cardinal Woodpecker: **1, **3**.
Thripias namaquus*, Bearded Woodpecker: **1.
Mirafra sp., Lark: one on summit. This should be looked for in the future. Like the *Anthus* and *Macronyx* (see below) any *Mirafra* would be an addition to the afroalpine fauna of East Africa (see Moreau 1966).
Hirundo daurica*, Red-rumped Swallow: **2 and 2300 m.
Psalidoprocne pristoptera*, Black Roughwing: **2–5.
Anthus novaeseelandiae*, Richard's Pipit: **6 and on football field near **5**. Like the next species, not included in the afroalpine fauna of East Africa by Moreau (1966); yet collected at 11000 ft (*cf.* our locality **6** at 11100 ft) by Loven (in Granvik 1923).
Macronyx sharpei*, Sharpe's Longclaw: Two females collected at **6 weighed 28 and 29 g, wing-lengths 85 and 86 mm. Not previously recorded from Mt. Elgon although known from geographically near localities at lower altitude; in particular Jackson's (1938) Malawa River specimen which is the plot apparently on Mt. Elgon in Hall & Moreau (1970) (Hall *in litt.*). Both Jackson (*op. cit.*) and White (1961) record it only from 7000 to 8000 ft so that our specimens from 3400 m (11100 ft) are unexpected. We have compared them with a rather variable series of 25 specimens from the Kinangop Plateau in the National Museum from which they do not obviously differ. Seven of the Kinangop birds are females. Their wing-lengths range from 81 to 87, mean 84.0 mm., marginally shorter than our two birds. Not included in the afroalpine fauna of East Africa by Moreau (1966). If found on Uganda Elgon it would represent an addition to the avifauna of that country.
Laniarius luehderi, Lühder's Bush Shrike: **1**. M (4).
L. ferrugineus, Tropical Boubou: **1**, **2**.
Lanius collaris, Fiscal: 2500 m.
Oriolus larvatus percivali:* Black-winged Oriole: **1.
Poeoptera stuhlmanni, Stuhlmann's Starling: **3** (C. F. Mann).

Onycognathus walleri*, Waller's Chestnut-winged Starling: **1.
Cinnyricinclus sharpei*, Sharpe's Starling: **3, 4.
Corvus albicollis, White-necked Raven: **3, 6,** and to 4100 m.
Coracina caesia, Grey Cuckoo-Shrike: **1–3.**
Campephaga sp., Cuckoo-Shrike: **1.**
Pycnonotus barbatus, Yellow-vented Bulbul: **1–4.** M (6).
Andropadus gracilirostris*, Slender-billed Greenbul: **1.
A. latirostris*, Yellow-whiskered Greenbul: common **1, 2; once **3.** M (34).
A. tephrolaemus*, Olive-breasted Mountain Greenbul: **2–4. M (37).
Phyllastrephus fischeri*, Fischer's Greenbul: **1, 2. M (3).
Saxicola torquata*, Stonechat: **5 and 2300 m.
Cercomela sordida*, Hill Chat: **6 and up to 4200 m. M (6).
Myrmecocichla aethiops, Ant-eater Chat: 2100 m.
Alethe poliocephala*, Brown-chested Alethe: **1, 2. M (7).
Pogonocichla stellata*, White-starred Bush-Robin: **1–4. M (11).
Cossypha caffra*, Robin-Chat: **2–4, 6, only common at **4.** M (9).
Turdus abyssinicus*, Olive Thrush: **3, 4, 6, common at **4.** M (8).
T. piaggiae*, Abyssinian Ground Thrush: **4.
Alcippe abyssinica*, Abyssinian Hill Babbler: **1–3. M (8).
Trichastoma pyrrhoptera*, Mountain Illadopsis: **1.
Bradypterus cinnamomeus*, Cinnamon Bracken Warbler: **1–4. M (6).
Chloropeta similis*, Mountain Yellow Flycatcher: **1–4. M (8).
Sylvia atricapilla*, Blackcap: **1, 2, 4, common. M (33).
Phylloscopus trochilus*, Willow Warbler: **1, 2. M (3).
P. umbrovirens*, Brown Woodland Warbler: **1, 3, 4, 6.
Cisticola hunteri* and **C. chubbi:* **1–6, see page **4–5.** M (7).
Prinia leucopogon, White-chinned Prinia: **1.**
Apalis pulchra*, Black-collared Apalis: **1. M (4).
A. jacksoni, Black-throated Apalis: **1.**
A. rufogularis*, Black-backed Apalis: **1. White (1962a) records it up to about 6000 ft (*c.* 1850 m). An unsexed young bird was collected at 2400 m (7800 ft) where others were seen.
A. porphyrolaema*, Chestnut-throated Apalis: **1.
A. cinerea, Grey Apalis: **3** (C. F. Mann).
Eminia lepida, Grey-capped Warbler: **1.**
Bathmocercus cerviniventris*, Black-faced Rufous Warbler: **1.
Sylvietta leucophrys*, White-browed Crombec: **1, 2.
Muscicapa adusta*, Dusky Flycatcher: **1–5.
Melaenornis chocolatina, White-eyed Slaty Flycatcher: **1–4.** M (5).
Batis molitor, Chin-spot Batis: **1, 2.**
Platysteira cyanea/peltata, Wattle-eye: **2.**
Trochocercus longicauda, Blue Flycatcher: **1.**
Terpsiphone viridis, Paradise Flycatcher: **1, 2.**
Parus albiventris, White-bellied Tit: **1.**
Anthreptes collaris, Collared Sunbird: **2, 4.**
Nectarinia verticalis, Green-headed Sunbird: **1.**
N. venusta, Variable Sunbird: **2, 4.**
N. mediocris, Eastern Double-collared Sunbird: seen and heard singing 3 (C. F. Mann).
N. preussi*, Northern Double-collared Sunbird: **1–4. M (10)
N. tacazze*, Tacazze Sunbird: **2–5. M (21).
N. famosa*, Malachite Sunbird: **6, males building nests, late December.
N. reichenowi, Golden-winged Sunbird: **2, 4.** M (9).
Zosterops senegalensis*, Green White-eye: **1–6. M (37).
Serinus canicollis*, Yellow-crowned Canary: **4–6, and up to 4300 m. M (6).
S. citrinelloides*, African Citril: **1, 4.
S. striolatus*, Streaky Seed-eater: **1–6, and up to 4300 m. Two broods being fed by parents out of the nest on 24th and 25th December were probably from eggs laid in late November. M (29).
S. burtoni*, Thick-billed Seed-eater: **1, 3, 4. M (3).
Ploceus baglafecht, Reichenow's Weaver: **3, 4.** M (5).
P. melanogaster*, Black-billed Weaver: **1, 4. M (4).
P. insignis, Chestnut-capped Weaver: **1.**
Euplectes capensis, Yellow Bishop: 2100, 2200 m.
Passer griseus, Grey-headed Sparrow: 2100 m (forest station).
Cryptospiza salvadorii*, Abyssinian Crimson-wing: **2–4. Three incompletely grown juveniles netted on 31st December were probably from eggs laid in early December. M (9).
Estrilda melanotis, Yellow-bellied Waxbill: **2.**
E. atricapilla, Black-headed Waxbill: **2–4.**

SUMMARY

Birds are listed from six main localities between 2400 and 3400 m along the Kimilili track, Mt. Elgon, Kenya. Impoverishment with increased altitude is marked, especially when pure forest gives way to a mosaic of bamboo and forest, and again when this mosaic gives way to moorland and giant heather.

Evidence from moult, breeding records and gonad activity suggests that the modal egg-laying period on the southern slopes of Elgon is from about November to January, after the main rains. An off-season, altitudinal movement of sunbirds is likely. Dates of occurrence of *Nectarinia reichenowi* in Central Nyanza, Kenya correlate with its absence from Elgon.

Cisticola hunteri and *C. chubbi* should be considered specifically distinct members of a superspecies.

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