HALCYON LEUCOCEPHALA - Summary and Index - Jan. 31, 1986


In dry plateau scrub, near Sanmatet, Nov. 14, 491, 492.


Breeding: Infrequent, 413. From ground, 436, 437. From shrub or brush near ground, 411, 437. "Flinging" 437.

Breeding: Does not breed in Liberia in January, 403, 410, 424.


Intraspecific Relations: Individuals family dispersed, e.g., 438.

Vocalizations:

Single note, "Wheet", 400.

Rattle, quite like that of "Triller" during apparent chase, 428.
H. brevirostris

Gapwing. Apparently ritualized: 412, 413


"Displacement" Preening: Via x Whitefaces: 410

WF's Handcuff: 406, 412, 437, 438

Head-bob Common: 406, 412, 437, 438

Eurystomus glaucurus  June 1985

Habitat. In tall trees, usually on high perches, 63, 93, 137, 178, 296, 343, 447, many other sites. In mangroves, 296, 343, 543, 670. Palms, 445, 455, 456, 500, 527, 631. straglerly Juj, 173. Old Palms; 140, 141, 193, 268, 551, 563, 573, other sites. In mangroove; 564. On rather road to Jual, 183. Most perches are over fairly thick scrub (so the birds cannot feed from ground). 140. Individual ranges and territories seem to be large, 126, 126 and most suggest that many kinds of the species are migratory, “increase greatly in south during dry season.” But there is at least some site tenacity in Senegal; 141. Presumably (?) more or absent in very dry areas.

A few birds of the species may have been seen along road to Zekoko on Mt. Tambaba, Problem of possible confusion with gularis.

Feeding. Essentially purely aerial. General comment; 229, 464, Sally, flycatching; 93, 122, 134, 143, 193, 296, 325, 433, 434. How long; 133, 134, 135, 140, 157, 193, 220, 221, 224, 228, 231, 270, 275, 365, 450, 453, 462, 463, 476, 478, etc. First feeding is high man; 123, 134, 141, 172, 221, 331, other sites, 15-20 ft up, 463, 46-50 ft up, 140. I did see a few cases of apparent low-over water; 137, 281, 284. But could have been bathing (e.g. 137).

Species shows a strong tendency to be crepuscular, 451, 453, 462, 464, at dawn and especially toward sunset. See notes from W. Brown 461.

Activity between the disappearance of swallows and the appearance of birds; 450. Finding prey silhouetted against sunset; 453, 463.

Even despite the “crepuscularity,” the species may be more active than other swallows; 135, 221. Because lighter and smaller?

Feeding usually is silent; 123, 124, 220, 221, 224, 228, 231, 240, 463, 468, many other sites. But there are sometimes blue- or light brown; 296, 450 (W. Brown), 456, 459.
Flights. Generally steady migrants; 198. can also glide like swallows.
199. No preliminary movements. 198. do also aerial displays and interspecific relations.

Interspecific Relations: Extremely diverse.

Consider Abyssinian first. Certain the ranges or territories of Broadbills and Abyssinian can be overlapping or adjacent. They certainly must see and hear one another with considerable frequency. Sometimes the two species seem to ignore one another socially, 304, 310, 523. The 'friendship' rhythms of the two species seem to be slightly different, 310. But there can also be violent disputes between them.

Two good examples:
(1) Nov. 24, ca. 8:15 a.m. 319 et seq. Interactions between 3 Broadbills and 3 Abyssinian. Broadbills disputing among themselves. Also aggression toward the Abyssinian. Redirection. On this day, the Abyssinian are generally patient and long-suffering. But see incidents the next day (below).

When I first see birds today, a Broadbill is chasing and swooping at an Abyssinian. "Amh." Notes by one or both birds. Some of the attacks on Abyssinian are much more vigorous than interspecific attacks.

Here are some "greeting" vocalizations: Interspecific? Essentially "Amh." brief chatter. Then I hear a long and loud chatter.

Here also are long screaming "Amh." Notes with attacks. Are these higher in contrast than chatter? 320.

Broadbills attack Abyssinians while the latter are both perched and flying. No visible response by Abyssinians. Only change perch from time to time. Never fight back during first 30-30 mins. of dispute. Little aerial display by Broadbills.

Dispute almost over? 9:00 a.m. Some occurrences until 9:20.

Once on Abyssinian - presumed string beyond endurance - supplants Broadbill. Once Broadbill swoops at Yonger. Once Broadbill swoops at a
pair ofmartaca. Once Broadbill swoops at tree containing Blackbill, and group of Turdus and Currubilla.

Broadbills presumably are coming into breeding condition.


Abyssinian offers doublets and triplets. Attacks Broadbill with screams. Broadbill flies away with loud chatter.

Two Broadbills swoop upon one another. Abyssinian dives at me. Redirection.

Broadbill attacks a babblers, with chatter. Again redirection.

It looks as though birds might end up with adjacent territories.

Note: In both species inter- and intraspecific patterns are identical in form, if not in frequency (?), 324.

Consider the Bluebills now. They do not seem to interact as frugivorous, or as vigorously, on the average, with Broadbills as do the Abyssinians. Nevertheless, relations between the two species are rather mixed. Certainly, there is some overlap, e.g. 131, other rufus. Relations can be reasonably good, 363, 573, 574. Sometimes the two species seem to ignore one another, 268. 278, 687.

But there can also be hostility. Broadbill chased by Bluebill, 197. Bluebill is dominant, 200. In some circumstances, Broadbills may tend to avoid areas occupied by Bluebills.

Consider bee-eaters. Broadbill overlaps White-breasts (M. albobellus), but not usually synchronously; 351. Also overlaps Little Bee-eaters (M. pusillus), but less not usually hunt in the same places at quite the same times; 122. The Broadbill tends to perch higher than Little, 123. Also feeds higher than Little, 123. (Although not as high as swifts, e.g. 471.) Sometimes ignores
Letters, 123. Interestingly, the Broadbills became rare at Osprey after several species of pic-eaters arrived in Jan., 2018.

Doubtless the Broadbill contributes its fair share to the Biculiform effect.

133.

Other coraciiforms: Ignores woodpeckers. 95, 97. Ignores and is ignored by them. 140. Ignores kingfisher sounds; many ruf, e.g., 172. Swoops at birds. 346. Miscellaneous: Doesn't like raptores. Chases unidentified hawk with very whirring "Quack." 325. Glasses Black Kite and Palm-nut Vulture with both its and R's. 585. Black-winged kite may be competitor. 159. Swoops at Guinefer, 325. Denbom's cattle egret, 327. Attached by sunbird, 222. Ignores pigeon and bulbuls, 172.

Intraspecific Relations and Social Organization. Basic structure probably unique, but it isn't always. Indo apparent alone: 60, 96, 133, 134, 137, 149, 151, 152, 158, 193, 220, 227, 228, 268, 270, 310, 312, 447, 455, 459, 463, 476, 523, 551, 560, 563, 564, 629, 682, 683, 694. Group of two: 135, 137, 152, 198, 199, 212, 231, 246, 296, 312, 463, 491, 629, 635, 687, 694. Other ruf: One pair resident White Road, 625. Group of three: 122, 137, 310, 312. against other ruf. Group of four: 137, 310. Group of five-six, 450. Group of at least 8 ends; feeding more or less together at M'Bour, 463. (But note that there also seem to be single 'resident' during the day: Jan., 1942.)

"Courtship" seemed to begin rapidly in 1946, 311, 317 et seq. But the birds were not very demonstrative in Oct. 1935, 636. "Greetings" often absent: 137, 684. I may have seen juveniles in 1976, on Oct. 5 and Oct. 29.

137, 222

Vocalizations. General comments. Repertoire may be varied.

310: Quieter than Aterceus spp. Less harsh; more urgent-sounding than the Dollarbird.

"Arms" Notes. Obviously the Basic. But they are associated with - some

Times intergrading - various Chatters and Rattles can be prolonged to
dreams. Could also be transcribed as "Kraah" 587, 589.

longed single notes, 705. Doublets — 325, 572, 705, 720. Long
Chatters, screams during interspecific chase, 306, 388, 527. Vocal quality
is variable. Buzzing, twanging, not very loud, 224. Very buzzy; 306, 313.

Clear version: 310. Twanging while hawking bank, 485. Long series might
be "song" 313. "Quitting or answering series (functionally equivalent to
Bluebell Rattle - Shn ?? ??); 313.

Screaming more aggressive or (more probably?) higher intensity than
Chatters.

"Arh" - Chatters. Handbook: 309, 547, 549. As "Quitting" or
landing call, 319, 325. "Arh" - R's while Bluebells are
disputing among themselves, 582. Variable "Kraah" - R. 587.

"Arh" - Chatter is morphologically the reverse of Bluebell Rattle-
thus.

Chatters (2) - 3-4-5. Notes be single and. 585. Diving extra-
specific battle encounters, 306. During particularly close or furnic chase,
306. Long and loud version during dispute, 319. Chatters with attacks
upon nests of other species, 326. Some Chatters are semi-Rattling, 306. Rattling
Chatter while hawking, very Bluebell-like, 296.


"Kraah" - R arrangement, 528. "Kraaakah" type notes while attack-
ing or chasing nests of other species, 587. See "Arh" - R, 587.
Once, a Rattle seemed to be given as "Greeting". A soft version was heard to be uttered on landing. 563.

Aerial display. Notting as spectacular as Coracias, 306, 310, 567, 589. Apparently no special special Rises or turns. Swoop at (?) from bill, 310. Swoop, with Rattle, at perched opponent, 310. Excited figures of 8 semi-swoops, with "Aaaanul" Notes, 436.

Feather Patterns. Throat and crown ruffling, 476. Head feathers raised in "Creses", 177 (with drawing). See also sketch book.
HALCYON BADIUS  Galton and Puttick, 1776-1977

Habitat: dense forest, 341. Usually high (see Tree), e.g. 381. In gardens, 372-373-381. Birds found in more open habitats than do Male 321. Males may hunt in higher or in more diverse vegetation than do males. 385.

Nesting. Usually in alder or in Howitzenus nests. 308. Competes with Suckins cammarus. 375.

Interspecific Relations: Songs of Bays do not overlap with those of Male. 385.

Song: regularly descending whistles. 341, 343, 344, 381. Dittero. 374. 384. 4 notes may be typical. 344. There may be longer series of more notes. 375.

General. Miscellaneous comments. Difference between Abyssinian and Bluebell parallels difference between Blackbell and Redbell, 308. Speculation that the species is so rare on CapVert. Problems of perches may be particularly important for Coracias spp. and martin-chasseurs, 637. As a whole, Abyssinians are talkative, fabulistic.

The lists of page nos. listed below are incomplete in many cases. I did not continue to cite more and more references once the existence of a phenomenon or correlation seemed to be well established.

Habitat. General discussion, 308. Absent from very humid areas, 117, 196, among others. Absent from mangrove, 240. Dominant in central Camaroon East of Kola, 413. Good description road Milbour-Geal, 184 et seq.

Most birds seem to be migrants. First seen in Camaroon, 1976, in October, 213. Migrating south to breed, 323. It is not, however, certain that all birds migrate. There were, for instance, some birds present in the Camaroon in June of 1981, 548.

Habitat selection is opportunistic — as usual in rollers. Rds. of the species often prefer high perches, e.g., 317 (near giant). Among the trees selected for perch sites are: Oil Palms, e.g., 235, 236, 237, baobabs, 504, Ternagors, 231, Xads, 252, 259, 266, etc., 336, 693. Use bare branches of acacias, 244. The species is particularly fond of wires and poles. Perhaps in correlation with scavenging? (But consider benghalensis!) Examples: 184-170, 176, 233, 231, 232, 234, 235, 240, 244, 265, etc., 319, 445, 454, 455, 465, 491, 667. High perches tend to be over rock (sometimes impervious) in platina, 182, 232, 234, 238, other rds. In very flat bare areas, edge, rds., 238, 254, 265, 354, other rds. O.I did not see Abyssinians using beaches. Occasionally, only above low perch. In acacias, 183, 233, 530, etc. In suburb, 184, 190 (only 2 above ground), 474.
Feeding. Of course, usually (not always) a pouncer. General decision.
303. Flight to ground; 185, 232, 286, 257, 434, 455, 484. May attempts
unsuccessful; 240. Feeding usually silent; e.g. 237. Taking prey from bush;
332. Hawkwing, 235 (?) 242 (definite). Perhaps some birds hunt or chase in
groups? 130. Perhaps the resources of Abysinian are less changed than are those
of Bluebellies, 303. They are various. Sometimes small; 185, 455. Small caterpillar;
144. Full-colour lepidopteran; 240. Large insect or small crab; 297, 301. Large
beetle, 288. Large beetles may be battered; 332, 414.
Trees in Zignarul and environs were not attacked in Oct. of 1985.
Concentration of birds (4-5 miles in some cases) in recentlyburned areas,
Dec. 9, 1946, north of Gambria, south of Moio de Rio, 386. Indo, flying about fire
near Bromeling, northern Camarone, Feb. 25, 1947, 525.
Two dead birds, one real, same place, same date, north of Gambria, see above;
346. 5-6 miles, dead near Bromeling, again seen above, 525. Much greater mort-
ality, Dec. 2, 1985, between Gambra andoed and Haffenirce. 20+ dead individuals
over approximately 200 km (cizidanne) highway. Presumably related to scaven-
ging. P. E. roads provide food, but they also are dangerous. How long best to
hunger on? Abysinians are very different from Bluebellies!

Inter-specific Relations. Exceedingly complex and multifarious. The species
tends to be aggressive.

The Blue-billy must be unusual. General comment; 240, 242. Some variation.
Terrors of the two species overlap in many places, e.g. 200 (but see also above). Despite
the overlap, individuals of the two species are seldom close together. Some degree of
spatial avoidance is common. A mixed-species outbreak e.g. 239. Other exam-
ple of Abyssinians ignoring, and being ignored by Bluebellies; 231, 238. When
mixed, the two species do encounter one another, it is more typical for dispute to break
C. abyssinicus *Nov. 1985*

Fights with Bluebellies, lots of chasing and sweeping with "Arms" gesture, 260, 261. Sometimes somehow involved in this last dispute, 260. Generally speaking, Bluebellies are dominant over Abyssinians, but Abyssinians are good at "harassment," 262. Possible example of an inhibited attack by an Abyssinian upon a Bluebell; 260.

Relations with Bluebells also are difficult and variable. Again territorial overlap with some degree of spatial avoidance, 314, 436. The degree can vary at different times and in different places. One example of an Abyssinian being ignored by Bluebells, 310. More often there is fighting. Many clashes and attacks both long-range dominance can change, 317 et seq. In one case, it looked as if parts of the two species were settling down to adjacent but non-overlapping territories, 326, 327.

The interactions with negroes, the Resouc-crowned Roller, were seen. Perhaps the rollers of Upper Guine are partly separated from one another by different tempos of breeding seasons, data from the Meru. Bluebells breed April, June, July, in the Gambia. Abyssinians breed April, May, June, July in the Gambia, Resouc crowned breed in August, September in the Gambia. Bluebells has been found to breed in August in the Gambia. In 1974 it was my impression that Abyssinians might be coming into breeding conditions as Bluebells were going out, 262.

There is a surprising amount of hostile interaction with Blackbells. Not inevitable, 275. But certainly frequent. Abyssinians were attacked by Blackbells again and again near M'Bour in October of 1976-84 et seq., 192. Single Abyssinian chased by Blackbell at White Peal in 1983, 483. One Abyssinian was seen with "Aaaaaahh" (Screaming) also at White Peal in 1983, 436. This last performance could have been connected to dispute with Bluebell and/or it could have been part of an attempt to establish territory. In general, however, Abyssinians do not return attacks by Blackbells, 190.

The flock near M'Bour which was dominated by Blackbells also included a few Redbistles, 190. On two occasions, Abyssinians were seen to attack Redbistles, 187, 191.
This is not usual. More often, Abyssinians ignore, and are ignored by, Redbills, e.g., 415.

Abyssinians ignore, and are ignored by, Yellowbills, 275. Also ignore, and are ignored by, Natilators, 284. Even though Natilators may be interested in Corporal spp. in general, 286.

Knights, are problematical. Halycon spp., may be more pertinent than the Ceryle types. Abyssinians may exclude them, several refs. by implication, 196, 246. Ignored, and are ignored by, Grants and Pilo, 274, 275. Chase, and swoop at Grants, 284, 285.

Abyssinians may discourage little-rallies, 265, 266, other refs., 341. The "Whitefaces" (important near Obozney) are presumably "White-throated" Mongolian s.

Some hostilities toward rapscalls. Chasing, small gray, banks, 282.

Dispelled by, small gray, banks, 286. (Common, small gray, bank in Casamance, around Ziguinchor, in Halycon s., Gallo, sp. is another possibility. ) Abyssinian chased after, (undirected) banks, with "creams", 456, 689, 418. Black-shouldered Kite may be comparator, 137, 286. But it was ignored, specifically, 223, 224.

Growl, dive, to, Hordek, Culture (= Helycon montanus), 290. "Arms" notes toward Hordek, Culture. Dispelled by Hordek, Culture, 314.

Dispelled by, Yongou, Barat, (Helycon, aequipes).

"Arms" dive with "tail-swoops" (vertical? lateral?) to bennons and pigeons, 337.

Starlings seem to be relevant, again not always. Ignores short-tailed glossy, starlings, 317. But also "Arms" notes to short-tailed glossy, starlings, (p. ?)

Attack upon short-tailed glossy, starlings, 295. Chatter to Long-tailed Glossy Starlings, 302. Dispelled by Long-tailed Glossy Starlings, 300.

Certain, some reduction. Attacks upon egrets, 190 (sp., ?), 636 (Yellow-crested). Attack upon cren-nilght, 346.
Patterns used during intraspecific disputes do not differ, in physical form, from patterns used during intraspecific disputes. 324.

The local Abyssinians were not part of the mixed flocks in the CRSTON park at Midmarch.

Intraspecific Relations:

- Many other refs.
- Group of 3. 239, 284. But males and females are rare, 930.
- Group of 5, dispersed among Blackbills, 190.
- Group of 6, dispersed among Blackbills; 184 et seq.

Probably the basic structure is the pair. But not always obvious to the naked ey. Indo, tend to keep apart from one another; e.g. 190, 656. Apparently single in October 1945. In some circumstances, perhaps our opponents are often close together; 259. And in does "pairing" occur on breeding grounds after migration? 437. There were signs of "courtship" on November 26, 1946. Relations between mature, monogamous, 684. Transfer of large instead of small land crab, Nov. 20, 1946, 299. Males may be strongly hostile to one another; e.g. 263, 247. A directed attack after copulation in Blackbills, 184. One wid. swept at another with rapid "Arnh. Note. 193. Slow development of "courtship" 311. See "Greeting and Aerial Displays. In other words, relations are both ambiguous and ambivalent.

Population density is highly variable. Indo, became more common than earlier, doubtless by migration, in the lower Garamania, Nov. 2, 1946, 254, 256.

Aerial Displays. A diverse incident.

(1) Forming by single wid. chased by conspecifics, perhaps int. mov. of
landing on water, 186.

(2) High circular flight with double "Arnh" 3-685
(3) Flying around rapidly, full fan with set wings, with long cry, "Aaaaaaaah!" into. Then lands in tree, 430.

(4) Soar (set wings) - glide (rocking from side to side with loud, accelerated, urgent "Arnh" s). Ind. alone, but joined by another afterward, 247.
(5) Soar (set wings) - downward plunge (at first with set wings, but wings begin to beat before end).

(6) Ind. flies up (beating wings), single "Arnh" s, also doublets and triplets, circles (beating wings), regular doublets, stalls, plunges back to perch (set wings), rocking, perhaps zig-zagging, with series of urgent-sounding "Arnh" s 3-282


Another example of spreading of tail streamers, 346.

(8) "Arnh" s in zig-zagging flight. No tail spread. Then loud noise (while beating wings). Then long glide downhill. At first with beating. Then slants up. At same time begins to back from side to side (wings in V position), 346

(9) One bird, arrives, flying high, single "Arnh." Notes in regular rhythm (no doublets). Suddenly, flies steep, upward, stalls with folded wings, glides downward at increasing angle. Stalls (flattens out and starts rocking. Begins screaming. Notes in glide, and continues, progressively louder and more urgent, through rocking. Pursuer makes three violent back and forth marks, 349


(12) Particularly elaborate conspicuous and noisy performances, soaring, plunging, flapping, etc. Stimulus not obvious. 585. Perhaps ??? and is alone, 56.

(13) One nid. chases another of same species. Screaming "Aaaaaaaah!"

Feet. Acceleration and swoop. Still with feet. Thin lean. F.E. lean after swoop. This does not seem to be usual for species. Is it Blue-bell-like? 607

(14) Comment. Some or all aerial displays may be partly sexual as well as hostile: 259

Greeting displays. Species in matter available. 634.

Animal "Amarsh" Notes: 316, 716.

Full sequence, presumably between mates: Incomming in horizontal, with beating wings, Rocking, Screaming "Amarsh". Setting bird utters "Amarsh" Notes in Drag. 1 when approaching bird is still some considerable distance away. Incomming birds silently with extreme Fall-fall. Setting bird does forward "clam" or Bow. Both then fall. Landing bird assumes Drag. 1, F's repeatedly. Partner sits. This sort of sequence may be typical. 311.

"Amarsh" Notes and related patterns. Easily variable. Parts of a continuum. 184, 360. Single notes and all sorts of series, ranging from chatter to F's. Combinations may be less stereotyped than in the case of the Bluebell.


Arc series "song" P., 194, 276.
C. alyssaevarus. thru 1985

Low-releasing threshold, 191.


During swoop at ground, 194.

With tail-raising, 290. With tail "swinging" (whatever that may mean -- it has to be checked), 294.

Chattering types. E.g., 237, 259, 260. Other refs., 321, 636, 643, 656, 681. One triplet, descending, 298. But most chatters are not double, triplet or quadruplet, 261. Chattering as landing and/or "Greeting", 239. During flight with Blue bills, 260, 261 (high intensity).

Rattles and Growls. One real case R, 240. Prolonged, rolling "Arnt", 185. Rolling r-r-r-r-r-r... 239. Rolling r-r-r-r-r-r... during dispute with Blue bill, 241. Growling while snout attacks of Grant, 288.


Abnormal. General comment. Mostly tail-raising. On landing, 185, 275, 276, etc., 217, 311. Tail-raising between hops, 185. Alitulialaup party hostle, 244, 296 (with series "Arnt" Notes -- not perfectly synchronized), 185.

Away from partner, 244. But descriptive, single bird, with "Arnt", 290.

Tail "swinging" (whatever it means) sometimes silent, 334. With "Arnt", toward kours and pigeons, 334. Perhaps partly sexual or some occasion, 294.


Real St. As "Greeting", 344.
Agg U With HF during "Courtship"; 302, 305, 311
Bewering (a "F"). During dispute with Blackby.
"Displacement" Bewering during "Courtship"; 302.
MEGACEPHYLE MAXIMA Complete thru 1985.

General Comments. Accounts: 103, 273 et seq. (Nov. 15 onward - breeding season). Partial summary: 284-285. display behavior simple, 284. Large species may tend to be plated; 103. No song; 284, 305. No aerial display; 284. No Shaking (Shuffling); 284. Birds may be rather late in visiting nesting area; e.g. 305 and earlier references


Feeding. I have remarkable few observations on the subject. Obviously, this bird does not usually feed near any of the areas of observations. Presumably takes fish from relatively deep waters (ponds, mangroves). One possible example of feeding behavior, 336. One with fish in bill, 673. See also feeding of 9 by 57.


Inter specific relations. Obviously diet is crucial. Many range overlaps, e.g. 110, 273, 274. Sometimes feeds and Grunts ignore one another; e.g. 104, 494, 653, 654. They may even associate, 676. Sometimes Grunts seem to be "attracted" to Pid colonies; 653, 654 (late Oct. '83), 663, 664. This is not
usual, or at least there are many exceptions. Relations with Pucks are
unfriendly, more often than not. 346. Giants are attacked by Pucks quite
frequently, 243, 244, 245, 284, 306, etc., 339, 343. Pucks may take over

Miscellaneous...

Sometimes Giants seem to be attracted by sounds of other coraciiforms
(Blue belled, Bronze belled, Fan Tailed), 346.

Relations with Alepyrinacea may be occasionally tense or hostile, but
they are not often close. 331. Alepyrinacea chases and swoops at Giant. 346. 
Grant pays no attention to hornbills; 248 (but see also CR, 294).

Ignite quita 104. Ignite Purpurea, 104.

O also Wingo sp.


Intraspecific Behavior. Simple. Always on paper; 243 et seq., 284,
other refs. No exceptions. See also breeding. Either sex can follow the other in
flight, e.g. 333. Greetings are not common; 244, 245, 247. Helps can be used
occasionally. Helps may help communication between mate, 315. Helps can be
exchanged between mates after visiting potential nest hole; 283. When something
like greetings do occur, they vary wildly, 315. Helps and Rattles; 281, 294, 458.

Three refs, flying around with Helps, Rattles and Raas; 315.

Vocalizations. Single birds often land silently, e.g. 306, 315, 315.

The principal sounds are Helps and Rattles. Often in medleys. Sometimes
the medleys appear to be random. Probably they are not. Medleys usually begin
with Helps rather than Rattles, 315. Rattles (careful of definition - performance
rather than single notes) are less common than Helps, 306.

Medleys can be structured. One example (both p. 346 and p. 373) is several
Helps -> Rattle -> several Helps -> several Helps -> Rattle ..., 373.

Probably 394. A series better analyzed. E.g. p. 346. Helps -> Rattle ->
34 Helps -> Rattle -> 3-4 Helps -> Rattle ... Then Rattles stop. Helps
accelerate. Letter into double/trisyllabic pattern. Almost "Jack-a-


tuck-a-tuck-a-tuck-a-tuck-a... Before copulation, page 342.

Yelp-Rattle sequences can sound like duets. Yet this can hardly be possible. See p. 342.

Breeding. In general (Nov. 15, 1946), 243+ et seq.
by visiting potential nest holes, 244, 245, 249, 281. & quizzes hole, 249, 244.
& begins to visit hole more frequently than does female, 283. Nest hole excavation may stop or slow down as copulations become frequent, 295.
Feeding, the & by the female, general comment, page 336-339. One example, with Rappro by &. no attempt at copulation, 333. Another example, with Yelp and Rattle by both individuals, 308. & arrains near nest site with food in absence of female, 295.

Sometimes no begging. At least one exception: & utters soft Yelp's while "soliciting," page 294.
Comment on copulation, pages 284. Unsuccessful copulation attempts, page 284. 298, 345. Copulations with Yelpes, 284, 294 (twice in same morning), 308, 331, 345. A group map of &'s, lateral wing, etc., page 308.

See also Habitat.

Yelpes. The most common vocalization of the species, usually loud. Sometimes soft. Often associated with Rattles. Motivation of the two types of patterns cannot be very different. Only the Yelpes may be louder in intensity and less agonistic than the Rattles. See below:

Yelpes may be the basic note of the species, 276, other refs. sound like notes of the Yellow-billing, 220. Description, 136, 205, 230, 244, 245, 246, 248, 249, 281, 283, 289, 334, 520, 533, 544, 555, 641. Bisyllabic, 275, 318, 332, other refs. In flight, 200, 553, 554, 555. Could this be a form of (conventionalized) aerial display? Could Yelpes on the ground be considered flight "intent" movements? Y. 283. Yelpes may become louder on landing, 345. They could be contact notes, 262. They can be combined with Wingpreads, 276. Tail is flapped slightly upward with each note, 286.
There are various soft or muffled versions, sometimes doublets, triplets or quadruplets, 275, 276, 276, 281.

Yelps are often uttered in melleys with Rattles, 244, 245, 281, 282, 286, 287, 294, 296, 305, 308, 314, 315, 324, 331, 333, 337, other ref., 342, 348, 563, 565, 661, 667. Combination of Yelps and Rattles often seems to be variable, 296. But see Vocalization section above. Also... Yelps may follow Rattles, 296. Some Yelps occur without Rattles, e.g. 295. Rattle-Yelps may perhaps occur as "Greetings", 281, 283.

Yelps can be associated with copulation, 281, other ref. After copulation attempt, 284. If anyone hears Yelps by itself, Yelp-Rattles of her own.

Rattles. In some ways distinctive to the species. Apparently absent in Chlorocynx (H. Hettich).


Perhaps each Yelp could be transcribed as "Awh", 338.


Aerial Display. ?? (?). Flying high (left up) long wailing and figures eight courses. More Yelps. Sometimes several at intervals. Sometimes in accelerated "Matters." Performing without local dccnd as long, sweeping silent glides.
Crest-smoothing. Monoscript, 261, other refs., 315.

CR. Monoscript, 261, 267, 273, 294, other refs., e.g. 345. Jobs' comments, the pattern observed in a beetle, has intensely vivid, 103.
Extreme version face-to-face with Abyssinian. Interactions with e.g., 345.
Probably some correlation with Tailholes, e.g. 274, 315, 345. With silent Gape and Wurgespauld, 274. With silent Yelpes; 245. With Rattles, 316.
With Wurgespauld, Yelpes and Rattles as response to attack by Abyssinian, 286.

Gape. See Wurgespauld, 273, 274, 275, 300.

Tailholes. Not conspicuous, 283. Not coordinated with Tailholes; 274.

Displacement. Breeding under wing; 345. See also Tailholes.

Hunched Posture. By g before copulation attempts; 281, 284, 294, 298, 308.

Wurgespauld. Variable, silent, with Gape as reaction to swarms, e.g.,

Silent; 244, 246. On landing, 282, 283. Usually associated with CR, many refs., e.g., 315. Often accompanied by Wf's, 337. With Yelpes; 284.

Appearance, always U.D.
Habitat: Mixed vegetation everywhere, e.g. 584. Species dominant in many places, e.g. 581. Perhaps only species on Cap Vert, 584.
(Rains were early on Cap Vert in 1985; 581. They stopped early in October of 1985 in the Cribamans, 576.) Almost commercial of man, isaj Zouglou 562 e.g. 606, 608. General comment: possibilities of migration, 538, 633, often far from water, 115.

Plateau mix, 630. Inconspicuous White Road, 144. Almost from dempar road, 593. In Fromager (Mal area), 198. In other Fromagers, 266.
In Barobo, 581, 584, 586, 624. Ovar peaunut fields, 140. In Oul Palmas, 148, 647. In stumps, 647.

On ursa, in Bous, 196, 589.

Feeding: Feeding rates generally low, 610. But patterns are relatively easy to study. Best description, 113 et seq. They generally not always, taken from ground. 581, 583, 584, 663. Inspected carefully; many references, 584, 663. Taking insects from peanut fields, 113, 115, 119, 121, 321. Grasshoppers, 318, 663. Caterpillars, 114, 117, 121, 324. The caterpillars taken are not visibly having 114 dates can be varied. In hedge, 121. In or near rice field, 140.
H. senegalensis

Knobed usually in silent (e.g. 119, 121, 581, 583), but with exceptions (e.g. pounce with R, 584). See also Chatters and Rattles.

One unsuccessful pounce was definitely silent.

There is occasional "fly-catching" (not hammering): 119, 146, 220, 583. One dragonfly caught, 199. But dragonflies are usually ignored. There also is some fishing: 228, 412, 432.

Prey is often battled: 113, 114, 120, 121. Movements like BW, 113.

As far as I can tell, both sexes feed in the same way in the same place. This may be typical of H. senegalensis here.

Interspecific Relations. See also malampica and obeliata.


Though Mal is crucial. Although the species do not always interact (638), the relations between them are "uneasy": 403, 406, 414, 416, 437, 456, 474, 476.

Invariable: 244. General strategy is (mutual) avoidance, but there are (mutual number) may exceptions. Many references NCA. Good example of Mal-fem mutual avoidance: 446. Simulated references to overlaps with Mal: e.g. 146, 282, 236. Fem, the smaller species, may be more aggressive than Mal (?); 138. Possible Mal-fem disagree: 148. Definite encounter between pair of feins and (presumably) one Mal, with the latter retreating, in back edger road, 600. But Mal can be (usually, in?) dominant over fem: 151. Fem movements may be inhibited by Mal songs, 148.

Mal may replace feins gradually: 143. Mal may escort feins e.g. 206.
There may be character displacement between Senegal Roller, *Eupphenura senegalensis*, and Malal, *Euphenura africana*. When Malal sings, its song does not overlap, if performing individually; usually (not always) are far apart, e.g. 243. Random overlaps for Senegal Roller; 246, 247, 248, 249. Alternation of songs: 357, many references, e.g. 243, 247. Less song after Malal: 200, 207. Then also are song "duets," ten wins over Dul: 205. Losses other Duks: 206, 207 (?). Less may answer Malal: 235. General comment: Two-way answer: 247. Ten R's parting overlap. Malango: 243. Senegal Roller are heard more frequently than are those of Malal. Does this mean that Senegal population is denser? Frequency of Senegal Roller increased during course of 1955 season: 244. Less seems to be out of phase with other Malango string fevers. Some Malal have peculiar songs in Benkot area of Tikkerienn. With R component. They could be hybrids, 146. But 3 loud 5, 471. Senegal Roller seems to tolerate striped string feeders. No reaction to striped songs: 444. But then some Senegal Roller apparently provoked by striped songs elsewhere. 243.


Senegal Roller may have complete spatial overlap with Pied: 115. On the territories of the two species may ignore one another: 115, 246. On they may avoid one another: 116, other references, 196, 238, etc.

The Ovenbird Roller may be (almost) as important as Malal (Vigean fields cited above). Discussion: 117, 323. Senegal Roller may be excluded by Ovenbird Roller: many implied references, 246, 478, 479. Vigean Roller situation: less distinct to many ears. Ovenbirds oriented inland, perhaps...
H. senegalensis

Birds passing through here may occur near Bluebills; 699. Their songs may alternate with Bluebills; 616, 700. When Bluebills occur in the territory, individuals of the two species are not close; 615, 650.

Lions can be ignored by Bluebills: several references; 632. On at least one occasion, a lion retreated from Bluebills; 723.

Lions avoid or are excluded by: Abyssiinae; 193, 196 (?), 766.

Lions ignore Hugura; 584, 586. "Accidentally" supplanted by Hugura; 586. Not yet may not be members of avoidance complex.

Lions ignore Blackbills; 610. Songs overlapped by both Yellowbills and Blackbills; 602. Other references: 86. Hugura's overlapping Blackbills; 610. Some songs not overlapped by Yellowbills.

606, 616. Probably, in fact, acoustic relations with hornbills are essentially "random."

Birds may be reactions to approaches by a variety of non-coraciiform birds; 516, 626, other references.

One ten attacked Butendies; 611. Another swooped at Weaver.

Lions ignore Long-Tailed Glossy Starlings; 586, 616. Also ignore crevices; 616.

Intraspecific Social Structures: General Comment: Kingfishers.

681. One bird apparently alone; 586. But pair structure seems to be fundamental, even during non-breeding season; e.g. 684. Relations between mates; 586. Mates together; 584, 586, 666, 629. Mates may be close together during hostilities, moderately far apart at other periods; e.g. 586, 608, 626. Greeting between mates are not common; 117, 582, 583, 665. (Perhaps they are rare in kingfishers in general.) There may have been something like a "colony," as
Cap Vert in 1983, 584. Keeping together could be "courtship" and/or territorial defense, 584.

**Y. senegalensis**

**Territory** less may be more sedentary than some other Hoceyan spp. Territories are variable in size. Hybrid large in some cases, 402, 411.

Wariness between neighboring pairs, 586. Encounters between territorial neighbors, Cap Vert, 582 et seq., 584, 585. Hitherto never more than two pairs involved at any given time. Aerial chase with songs, Casamance, 410. Reference to small territories, 113.

**Breeding.** May breed earlier than Mala, several references, 221. Apparently not breeding on Cap Vert in September, 583. (But see below.) Perhaps coming into breeding condition in October, 136, 201, 592. Perhaps going out of breeding condition in early December, 348. Perhaps incubating or feeding young in Nov., November, Casamance, 417.

Possibly re-produced in early October, 590, 591. Possible (dubious) cop. attempt, Sept. 24, 582.

**Nesting.** See above. General account X pairs, 112 et seq., 116 et seq.

Presumably feeding young, Sept. 30, 112 et seq., other references, e.g. 117.

Description and sketch of nesting hole, 116. In non-hill diarrhea, 116. Sons are not interested in brown bull holes, 41.

**Songs.** My notes of 1976-77 may not be entirely reliable. In 1983, it was obvious that the most common vocalizations of *Y. senegalensis* were full songs (with faster notes), R's (more or less flat and regular) and HR's.

I am not sure that I made the correct distinction; in 76-77, in particular the class of sounds that I called "R" probably many have been heterog.
H. megalensis


Description. 120, 131, 132, 134, 141, 142, 147, 148, 149. Other references, 153, 157, 201, 230, etc., 581 (7), 587, 588, 589, 585, 586, 588, 589, 590, 591, 592, 600, 601, 602, 604, 605, 607, 608, 609, 610, 611, 614, 615, 618, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 638, 639, 640, etc.

Contact advertisement. General comparison with Mal. 604, 606.

Many many references. No terminal "scream". 581. Early morning, many references, e.g., 587. Singing perch. 582. It, seq. 584.

(Usually high, over 100 ft.) Kids sometimes favored as perch for singing, e.g., 622. But there are no fixed points for first songs at dawn. 618.

Songs without sumi-CV: 623. With sumi-CV ("At"): 582, 647.

604. With aerial chase: 583, 585, 586, 607, 628, 640.

With 3IR phase: 647.

During intraspecific disputes, probably many references, 604, 605, 607, 640. A few intraspecific overlaps, 582. More overlaps may be characteristic of male individuals. But at least one individual was seen singing next to its mate. 629. Mate and/or neighbors may alternate phrases, 584. Songs not answered by mate: many references, 585.


Intraspecific overlaps are generally rare, 602, 604, but they do occur.
Song as reaction to Redbills, 585. Overlay Redbills, 583, 585
Reaction to presumed pressure, 641.
As reaction to roller sounds (?), 260.

"R" and (male). General discussion of R no song, 584
Handwritten, 113, 147, 148, 406 (Kumba), 617, 644. Loud, hard voice.
113, 474. Tail not raised, 584. Near nest hole; many references, e.g. 117.
As calling call, 148. Between mates, 623. As greeting without
As Greeting with Wingspread facing away from mate, 667. With
flying preen, 584. As reaction to pass by another bird, probably
passerine, 510. Definitely reaction to bullets, 668. With aerial
chasing, 586, 628. During intraspecific aerial chase. High version
while pursuing hawks, 114. With Wingspread after pursuit of hawks.
114. Obviously hostile, 622, 623.

By apparent single call, high in trees, 591
Partly overlapping Mal Long, 613
Straight, then fluctuating, 609, 613

R's. Handwritten, 609. No intro, during intraspecific
territorial encounters, 582, etc., 611, 645, 665, 666, 667, etc., 680. Between mates, 130 (?), 131 (?), 602, 604, 685, 664, 683. As
Greeting, 618, etc., 666, 667. With Wingspread as Greeting, 121; facing
mate, 601. Facing away from mate, 604. By mate, as response to long
584. Without visual display, 584. Incorporated into song, 683, 685.
As reaction to pass by another bird (passerine ?), 610. As reaction to
H. senegalensis


Addition: Female at M. Bora in August, 4, 14, 22. See also 35, 58, 145. By mid., apparently alone, 518.


Hands down. In flight (reaction to me?) 113. In triplet, alt... acking something on ground, 612.


H. senegalensis


B.W. In highly ambiguous inter- and intra-specific situation: 150.


Semi-BV's ("Et"), fee-long, e.g. 603, 604. Not present in all songs: 425.

HAILEYON MALIMBIUS  
Nkovu December, 1975. 
Anton Casanza

Some data from Gabon and Algeria

Genera. There are different subspecies in West Africa and they may behave differently, e.g. 369.


Often high in trees, e.g. 575, 576, 599. High perch for hunting.

144. In intra-platow habitat, 673. Over main rice fields, 576, 599.

140. In treeless low, 149. Low above water, 103.

Occurring as same tree as hen, 425. Much less common than hen near palmaree, 624. Have you ever heard folks when there were more manner? See notes of 1976–1977.

Plains stopping early October, 596

Additional records: mangrove, 675–676, others, 704, 705, 710.

Observations: the species is a partial commensal of man in the Casanza.

Feeding Common, 141. From water, 145, 213, 404. Often a charger on land; many refs, e.g. 247, 314 (Banco), 480 (Banco), 567.
H. malimbus

(Casamancus). Taking insects from ground: 303, 399. Bursting unl
flat-wattled, 144. Fly- or bee-catching (Bance): 402, Flycatchers
and Pouncers may alternate with one another: 404. Feeding attempts
are generally rare. This is implied in many passages, e.g. 157. An
example of unsuccessful pouncing is cited e.g. 678.

Feeding is (usually or perhaps always) silent: 274, 374, 569.

Interspecific relations: See also Ok tools and Tens and Rollers.

General comment: 123, 129, 140, 145, 168, 201, 321; other refs. Certain
interaction in roller-kinajubeh social complex: 266. But much more clear
or frequently with some species than with others. Many references: No44
especially with Coops. But it can appear to be locally dominant at times in
particular areas.

If any roller is important to itself it is the Bluebells. But the
relations are indirect and for distant. At times the species does not
seem to interact visibly or audibly with Bluebells, e.g. 569, 596. Indo
the two species often are adjacent: 678. They may occur in the same
areas, but at different times: 578. Song overlap Bluebells: 450.

It is possible - not certain - that Bluebells are sometimes directly discourag-
ed by Bluebells: 679.

Males do not usually respond to Broad-billed Rollers. On one
occasion, the two species are well separated ecologically but I did notice
one apparent example of vocal alternation: 578.

I did not notice any interactions between Males and Abyssinians
or Burdeos. Broad Rollers. I think that I saw enough of Abyssinian
Rollers to be sure that the absence is real.
H. melanocercus

Sex is the crucial aspect, the principal actual or potential competitor and correspondent. May overlaps between the two species, many refs, e.g. 146, 200, 356, etc., etc. Relations are generally unclear or uninformative. 321, 606, many refs, e.g. 644. They can be variable, e.g. 644, 647. The breeding cycles of the two species are somewhat out of phase. There are many sorts of avoidance, both acoustic and spatial.

Consider songs and other vocalizations first. A good example of acoustic avoidance: 646. Male and Hen songs alternating; several refs, e.g. 643, 674, 676. General comment: two ways answering: 646. Occasional overlaps. Sometimes apparently random: 613, 625, 643, 644. When overlaps occur, the individuals can be close together: 646, or far apart: 634, 674. There are occasional long “duels.” Stereotyped: 604. Early morning: 605, 614. Stereotyped, 605 et seq. Male songs may overlap Hen HRR’s: 606. Hen singing after Male; 600, 607. (But situation usually reversed at dawn.) Male loves long duel with Hen; 605. Wins long duel with Hen.

Spatial avoidance, e.g. 230. Interspecific dispute, 149, 150. Male (usually?) dominant over Hen; 151. But rare (?) Male seemed to leave white face on pair Hen, Kao, edge road; 608. In some or many cases, Male song may inhibit Hen movements; 148.

Character displacement not so via Hen; 200.

Males must overlap or adjacent Priets in many areas. But the relations between the two species, 697, however, are not incident in which a Male apparently supplanted a Priet; 293.

Male songs do not usually overlap Yellowlegs, 57, 59.

Other relations are discussed. Male does not attack cormorant; 141.
H. malcolmiae

One peculiar attack upon a Streptopelia, perhapsvertisement, 147.

The species does not seem to worry about hawks overmuch. 537.

But also long (and "hybrids").

Intraspecific social structures: General comment. Ringfischer, 681. Populations dense in many areas: 224, 405, 407. But even when
or where they are abundant, individuals are usually seen "singly," 398.

Etc., 421. Many other references. In 1985, this bird did not seem to be
breeding in early October: 398, 591. They may have been coming into
reproductive condition in mid-November, 391. On the other hand, it
was my impression that birds were beginning to breed in October of
1976 in Cape Hatteras: 145, 146. See also below.

Doubts on song permanence during the breeding season.

Association between one bright and one dull bird, Oct 4, 124.

There seemed to be a dispute between these 2 individuals: 127. Territor
cial display (?), silent chase, 127.

The greeting between mates at Barco, 400.

More comments on breeding: In September, Casa, 75. In
October, Casa, several refs. In November? (hole in dike), 269. Relative

Emerging out of breeding condition: Casa, in early December, 348. Not
breeding in Casa in March, 570.

Breeding in over Coast early January, 396. Mating pair in the
Barco Forest, 394. Usually excavates holes in Boesulus termes nests en
Galvan, 268.
Territorial: Usually relatively large in the Casamance, 43. But relatively small on the Cap, 144, and near Niagur, 224. Boundary disputes with silent, Wangapeka, 222.

Songs. General comment: 144, 143. Vocally dominant some areas.


Lengths of songs, numbers of Whistles are variable, many refs. 598, 599, 600, 643, etc. 604, 608, 609, 610. This must facilitate individual recognition. General sequence is Intro-Whistle(s). But there are variations from Intro Whistles in general are listed immediately. There are songs without Intros, 222, 223. There are songs which are unusually soft. 126.

There are songs with multiple Intros (quadruplets, triplets, 2 doubles). 134, 141, 142, 143, other refs. 220, 287, 348 (Galton), 396 (Orry Coats). 495, 497, 499, 613, 666, 670. 3-note songs with circular flight: 673. Whistles often (usually?) descending, sometimes fast and then three (1). 493. Can get progressively longer or vice versa, shorter. 142, 143, 144.

Usually "call-bouncing", 142, 143. Number of Whistles may increase on successive phrases, see aerial display, also 143, 147, other refs. e.g. 725.

246. Particularly long series: 86.

Some songs incorporate what appear to be Rattles. Intro-? Whi
Song may possibly be substituted by "Chak" in some circumstances
392, 393, 421, 478, 478.402.
Galap. Usually blue-benigal 374, 374, 378, 378. Also blue in vintages
Sibera. No blue? 403, 404, 444. General effect is slow and
languorous. See also H. indoicus.
Re-read notes on bamboo.
Consider problem of "hybrid." All the components

Aerial display is quite stereotyped. Description: 128, 128, 134,
146, 147, 148, 149, 173, 288. Generally rare e.g. 706. Circular flight with
Terminal plunge: 128, 128, 134. Accompanied or answered by pendul
vivo, many refs. e.g. 126, 141, 148. Perhaps no aerial display in
Galap. ? 343.

"Chatter," "Chak," "Chak" Variable, singlets, doublets,
Multiple Note series. More common and/or conspicuous in mulambara
than in senelegusensus. But less common and/or conspicuous than in some
Asian species of Holarcyno.

Description: 595, 596, 597, 621, 622, 631, many refs. 676, 678, 707.
Characteristic of more than one individual 622. Not accelerating (unlike
some roller "Chatters"), 598. Closely associated with song: 678, 707.
Can be substitute for song: 596, 598, 621, 678, 709. Not always: 708
Wingspreads silent, misconduct or during council dispute. 222, 223. "Bought" and "drift" facing one another. 124. Indo facing away from one another. 223. Silent (3) toward council. 149. Comparison with Ten, 124.

Heard: Flight 142. At Barco, 317.

Jenin-Bowing (F). By presumed juvenile, 303.