

July 17, 1965
Piedras Blancas

M

6:00 am Ca 8050 ft. Region scrubby vegetation. Cloudy.
Some fog

See lots of nuthatch thrushes, apparently fuscater, alone. 5-15 ft

Blue! up! Then see nuthatch Blue Diglossa (juv Cy ??? Coer ???) in bush 4 ft up. Silent and alone

Very little bird song at first. Then some Diglossa type sounds begin. Probably Albes and Coers

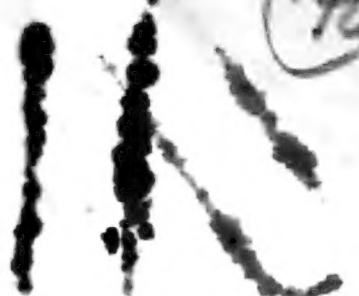
SEE TODAY'S NOTES ON MIXED DIGLOSSINI

3 wares saw BYB's in a tree (either the same birds twice, or 2 birds not close together). Apparently quite alone.

COMMENT: I saw remarkably few birds today!!! Possibly there were a lot of birds around in the neighborhood which I failed to see - but I doubt it. The Albes, Coer(s), and Sooty Thrushes which were present were quite conspicuous, and quite vocal. But I did not hear many vocalizations of other species.

The apparent sparsity of the fauna here is really quite surprising. Much of the scrub looks eminently suitable for many species. But perhaps the fact that almost all the local trees are conifers (and almost all exotic) has a "discouraging" effect ???

Absolutely no mixed flocks of any bird were seen. This is surprising because the area certainly is near a "frontier", and large mixed flocks were seen in nearby areas in 1962. Also surpr



ring because some of the local species (*Diglossa* spp., BYB's, Blue-B. Cuckoo, *Paradeuteronis* spp.) occur in mixed flocks in many other areas.

Possibly the birds were less active than usual today because of the very cold and windy weather ???

Possibly the apparent absence of mixed flocks here is evidence that such flocks are formed only when populations are dense ???

Can also

Possibly the apparent absence of mixed flocks is correlated with breeding ??? Certainly the Coerebids and Albes here are singing frequently enough to suggest that they are in, or near, breeding condition. And I saw one pair of *Tiaris olivacea* perform an apparently successful copulation this morning.

In any case, the behavior of the birds this morning would suggest that the formation of mixed flocks is not inevitable under frontier conditions.

According to my local informants, it is full "dry" season here now. Rains stop at end of May or in June.

July 18, 1965
Santa Elena

Arrive one of the areas where I worked in 1962, 8300 ft, 5:25 am. Just starting to get light. Quite a lot of bird sounds. Largely Andean sparrows, I think.

Area of scattered open fields, patches second growth scrub, patches of forest.

By 5:35 am, other species of birds are singing. Including *Tiaris* and hummingbirds. But apparently no *Diglossini*.

Weather today is clear but windy
Absolutely nothing of interest yet 6:05 a.m.

See a couple of sooty Thrushes. 10-15 ft up in second growth trees.
Silent and alone.

There are almost no flowers around here.

3 6:15 a.m. See a pair of Whitestarts, apparently alone, 20 ft up in large tree. Can't see birds well enough to be absolutely sure of species. But cert
ainly with yellow cheeks. Presumably a Yellow-faced or one of the Spectacled
types. Apparently uttering occasional song phrases. Yes! Rather Laf-like soug
gs. No other birds audible at the time.

Going down into scrub, hear quite a lot of bird sounds. Whitestart
art phrases, miscellaneous R's, others. Sounds as if a mixed flock might
be forming. But I can't actually see the birds.

As far as I can tell, Whitestart songs seldom or never overlap anything else.

14 6:29 a.m. See single Atlapetes rufinucha 2 ft up in second growth
scrub under tall bushes. Probably another rufinucha nearby. Hear what
t sounds like Atlapetes "quieting" twitter. The visible bird disappears
almost immediately. Apparently alone while under observation. But in sa
me general area where I heard a variety of noises a few minutes earli
er. This (ese) rufinucha(s) certainly not in highly integrated flock,
but perhaps hanging about in neighborhood other species.

allii 8 A minute later, see single ♂ Albi in low scrub, 2 ft up, only
10 yards away. Silent and apparently alone. This scrub is not under
trees (although there are rather small trees not very far away).

allii Probably, the Albis and Granguits here were alternating their
R's earlier this morning. But, if so, I was unable to differentiate bet

* WCC record very dubious. Individual may have been another species. Possibly T. heinei >>>

when the sounds of the two species.

I 110

W 3

W 3

6:45 a.m. Come across mixed flock. Large. At least 20 birds. But diffuse. Includes a pair of Whitetails (same birds seen before), at least 1 Cy, at least 1 BYB, possibly 1 ♀ WCC (!)*, lots of others. Others Tangara-types. Blue and Blacks and, probably, others. Edge large patch woods. In trees and bushes 5-20 ft up. BYB f → group. Cy f → group. Whitetails sing quite frequently. Cy sings at least 1 phrase. Rapid Twitter, composed of many notes, very "formless". Little or nothing in way of Dubco patterns. Very different from Coer songs heard yesterday. Cy does not overlap Whitetails.

Tangara types eventually fly off into adjacent conifers. Land high up in trees. Other birds do not follow.

7:05. Same group. Whitetails feeding 20 ft up in arboreal melanotome. Also singing frequently. Get quite good view of them. Orange yellow forehead. Pure yellow front of face. Black coming forward to cover rear third or quarter of cheek. At least one individual appears to have a white spot or streak in black behind cheek. Obviously a species I have never seen before. I shall call it "Yellow faced" for time being.

No other birds very close to Whitetails at this time. But lots of bird noises in scrub and trees in all directions, all around, 20-50 ft away. Whitetails fly off into distant trees. A group of 3 Melanoccephala f → Whitetails. (Probably also some Tangaras.)

It looks as if the behavior of the birds in this region now is much the same as in 1962. (Altho I do not remember seeing mixed flocks in this particular spot before.)

7:15. See single Sooty Thrush in conifers where some of the

Tangaras which were with flock earlier seem to have remained. But the thrush and the tanagers seem to be ignoring one another. The thrush eventually flies off. Other birds do not follow.

7:25 a.m. Flock as a whole has moved on. Back in direction from which it came.

Go along road a few hundred yards. Come across another mixed flock. In trees, 15-25 ft up. Group includes at least 3 or 4 individuals. Can't identify them all. At least 1 Chlorospingus (apparently BCBT), 1 Cy. Cy sings repeatedly. Long formless twittering phrases. 24 Chlorospingus quiet. Cy flies off. Other birds do not follow.

7:40 a.m. Come across yet another mixed flock. Includes 1/2 Yellow-faced Whitestarts (I see the white spots on black behind cheeks very clearly in these individuals), at least 1 Cy, at least 1 vireo (Brown-capped?). All 8-12 ft up in second growth scrub. There also is a nest not nearby, but I don't think that it is paying much attention to the other birds (or vice versa). Whitestarts utter "CN"s, but no songs. Cy utters lots of long phrases. Long formless Twitters with "Tset tset" or "Tset tset" Intro Notes.

See another single sooty Thrush alone

Everything very dead now

Leaving 8:40 a.m.

Go along road to another area 8400 ft. Arrive 8:45 a.m. Everything very quiet here too

See a single Green Jay (!) along edge sparse second growth forest. Some distance away, I see pair of Slate-throated Whitestarts feeding on berries of melastome tree. 15 ft up. Utter "CN"s, "SHN"s, and R's which seem to be accelerated series SHN's. Apparently quite alone.

(Incidentally, earlier this morning, in general region where I saw mixed flocks with Yellow-faced Whitetails, I thought I heard occasional slate-throat songs as well. I so, the songs of the 2 species of Whitetails probably did not overlap.)

A few seconds later, see same pair slate-throats associating with 2 or more BCBT's (identification definite) in adjacent trees. All birds 10-20 ft up. BCBT(s) utter(s) occasional R's. Then group moves off. Can't see who is leading who.

Are slate-throats Allopreparious here, as in Western Cordillera?

Leaving 9:15 AM

COMMENT:

Looking over my 1962 notes, I realize that the resemblance between the mixed flocks here now and the flocks observed in the same place earlier is even greater than I thought. Some of the flocks seen in 1962 also were diffuse. And at least one of the 1962 flocks also included slate-throats

This is very good evidence that social behavior tends to be stable over periods of at least several years. (Viz also observations in the Eastern Cordillera)

In general, the social behavior of the birds here resembles that of the birds on Purace' — except that the flocks here are more diffuse. In this connection, it is well to remember that the number of species seems to be much smaller here than in Purace'. This suggests two conclusions: (1) The frequency with which mixed flocks are formed is independent of the number of species present in an area. (2) The cohesiveness of mixed flocks, on the other hand, is positively correlated with the number of species present and/or dependent upon the presence of partic

ular species.

of M

One factor which may (or must) contribute to the diffuseness of the flocks here is the absence or rarity of many species of tanagers (e.g. Cnemoscopus, Hemispingus spp.). Possibly these tanagers (like the commensal Coucoron spp. - see today's notes on mixed diglossini) are absent because the native forest has almost disappeared.

CORRECTION: I have just been to the airport to check my altimeter. It seems likely that I have overestimated all altitudes recorded so far during this trip (i.e. July 17 and 18) by 300-500 ft. I have now corrected the altimeter - but not the records in my notes of today and yesterday.

July 19, 1965
Boquerón de Palmitas

Arrive area 7750 ft 5:35 a.m. Just getting light. Area with miscellaneous scrub. Some bird noises. Largely Andean Sparrows.

Clear, fairly cool, and windy.
Lots of hummingbird sounds 5:43.

W 7

5:44. Hear diglossine twitter. Many phrases one right after the other. No obvious Intro Notes. Bird singing in small trees along road. 15-25 ft up. Young from tree to tree. Impossible to identify species (yet). No other diglossine or Whitestart audible at the time. No Albi-type R's. Bird seems to have very large territory. Cy?

Albi

Diglossa shuts up 5:50. Then Atlapetes Whistle songs begin. Lots of "complete" phrases. Presumably rufinucha. Also some R's which may be Albi and/or Scaris. These songs

do not overlap Atlapetes phrases.

13 5:55 a.m. Catch glimpse pair BYB's 4-6 ft up in thick second growth scrub edge forest along ravine. Apparently alone. Atlapetes silent now. But many other birds noisy. Definitely sounds like breeding season here.

14 6:00 a.m. Diglossa singing again same area as before. Now Twitterers are preceded by "Tut tut" Intro Notes. Must be Cy. Then a couple of R's are inserted between presumed Cy phrases. Possibly Albi. No overlaps. Then both birds shut up.

Then hear a few phrases which sound like Yellow-faced White-tart. No diglossine audible at the time.

14 Then see single Yellow-faced White-tart feeding and singing 3-4 ft up in bushes along edge of ravine. Definitely alone. This area well within territory of presumed Cy; but the latter is neither audible nor visible now. 6:10 a.m.

15 Then see single Ruddy Flycatcher alone 4 ft up bare tree edge scrub. This certainly is one of the species which is uttering R's around here!

White-tart shuts up. Atlapetes utters more whistle songs. Then Atlapetes and White-tart alternate song phrases. White-tart definitely Yellow-faced. 2 ft up in scrub edge road. Alternation is not "regular". One bird may utter several phrases between single phrases of the other. But there is absolutely no overlap. Atlapetes definitely is rufinucha.

16 Perched motionless 6 ft up in scrub opposite side of road from White-tart. 6:18. Now White-tart has shut up. Atlapetes continues for a while.

17 Then rufinucha starts to move around. 2-4 ft up in scrub. Feeding on seeds of Compositae. Continues to utter Whistle songs from time to time. Then single Cy (definite) suddenly appears. Apparently a

Cy
 case of Cy j → rufinucha Cy perches 3 ft from rufinucha. Wa-
 takes latter intently. But remains quite silent. Distant Whitestart (Yf
 32 low-face) intersperses one song phrase between rufinucha songs. No over-
 lap. Cy still silent. Then Cy starts to move around and feed. Picking
 15 up insects off leaves. 3 - 15 ft up. Then some Tangara-types j →
 group. Found in trees 20 ft up. One of these Tangaras appears to be
 juv keiner. Then Tangara types move on rufinucha remains be-
 hind. Still uttering Whistle songs. Cy also remains. Feeds on purple
 h berries. Plucking and chewing them.

Then everything silent 6:30 a.m.

Then rufinucha starts Whistle songs again. Cy seems to have moved on.

6:36. Yellow faced Whitestart alternates a few more phrases with rufinucha. Both species certainly breeding here now.

17 Then both shut up. See ♂ Tiaris uttering R's 4 ft up in tree.
 Yellow-face utters another phrase. Partial overlap with Tiaris! Then
rufinucha utters some more phrases. Both Yellow-face and Tiaris
 continue to utter phrases from time to time. Tiaris partially or comp-
 letely overlaps both Yellow-face and rufinucha, but the latter still
 do not overlap one another.

Song behavior Tiaris here apparently different from that of Tiaris at Boqueron de Tollo in Western Cordillera!!!

Then Tiaris and Yellowface shut up.

34 6:43. A few feet further along road. Catch glimpse mixed
 flock in trees in distance. Can't identify most of the birds. But one
 33 certainly is a Cy. Probably same individual seen with rufinucha earlier.
 This certainly is one of the areas where Cys seem to be almost obli-

gate commensals !!!

Back to fruit site. rufinucha and Yellowface still uttering occasional song phrases. Non-overlapping. 6:50.

Then see single Yellow-throated Atlapetes (gutturales) apparently alone. Silent. 3 ft up dense second growth scrub.

7:03. Further down road. See single Sooty Thrush alone.

Then hear more rufinucha Whistle Songs in another area. Certainly not same individual heard and seen singing earlier.

41 7:07. Catch brief glimpse 3 Cys moving about, close together, 10 ft up, sparse scrubby trees edge pasture. All apparently adult; but no obvious overt hostility!

Everything quiet 7:30 am

41 7:35. See mixed flock in scrub and second growth trees along road. When first seen, flock includes 2 cyanocephala, at least 2 Cys, others. All close together. 12 ft up in tree top. Also 1 brown squirrel. (Apparently usual species) Fairly noisy. Lots of "CN"s and "PN"s. Then group flies off. Can't see who leads. Cys f. → group repeatedly. Squirrel left behind.

41 7:34 After a minute or so, Cys stop following. Turn around and go back the way they came.

43 Then 1 Cys → 1 BCBT in scrub 3 ft up!
Cys certainly active nuclear here!

25 Then I see a single Yellowbelly feeding in scrub 60-75 ft away! Silent. Apparently alone. Eating same species purple berries as Cy earlier this morning.

8:10 am. Go further along road to another area. 7850 ft. Rather sparse second growth scrub.

Then a couple of Yellow-faced Whitestart songs in distance.

Then a pair of Cyanocorax feeding in tree, 20 ft up, also in low scrub, 2 ft up. Also Phainopepla nitens.

8:35 a.m. 100 yds. from 70 ft scrub & trees along ravine

(One of the areas which I explored in 1952). See a small mixed flock approximately 10 individuals. Includes at least 1 Blue & Black, 1 dull Taujara (juv.?) species unknown (humerus?), 1 Cy, 1 Yellow-face, others. Blue & Black f →. Cy f → group. Yellow-face f → group. All birds 6-12 ft up. Both Cy and Yellow-face feed frequently while with group, but not simultaneously. No overlaps. Cy feeds Purple berries. Yellow-face flycatches.

Group was first seen when it flew into tree where there were 2 squirrels already. The two squirrels obviously pair. Both very small (Microsciurus?) Generally warm brown, medium dark (but not at all rufous). With brilliant white bellies. Probably same species seen earlier this morning. But certainly not same species seen in other areas such as the Sierra de Merida. Squirrels absolutely ignore birds. Birds quickly fly off. Squirrels make no attempt to follow.

Presumably, if associations between squirrels and birds are not purely "coincidental", they are formed by the birds joining the squirrels rather than vice versa. (This seems obvious, in view of the locomotion of the 2 types of animals.)

All the Cy songs with flock compound of "Tut tut" Intro Notes followed by long rapid, "formless", Twitter.

Leaving 8:50 a.m.

NOTE: There have been "white-leaved" Cecropias just below all 3 areas (Piedras Blancas, Santa Elena, and Boqueron de

Palmitas) where I have walked before (so far). It is another indication that the region is relatively very humid.

July 20, 1953
La Montana Surca of U. S.
Ca de la Garcia

Around 5:35 a.m. 17900 ft Edge forest and scrub extending down slope. Clear & cool. Little wind.

Everything very quiet 5:42 p.m. No song. A fair amount of Scotty Thrush patterns around (Alarm patterns).

5:45. Hummingbird sounds begin. Sounds like same species as at Piedras Blancas

Everything very quiet again 5:48. It looks as if very few (or none) of the birds here are breeding!

Then hear what sounds like Colibri display (song flight) in distance. Only one or two performances

6:05. See single rufinucha 2 ft in edge patch second growth scrub. Silent and alone.

Then begin to hear a few R's. Probably Albi or Taurus

Then see single rufinucha feeding in Oak in middle of scrub. 10-20 ft up. Quite silent. Apparently quite alone.

Bird noises increasing a little now, 6:14. Hummingbirds and Taurus.

6:31 Albi → rufinucha 20 ft up in Oak. Then flies away again. Both birds quite silent. rufinucha seems to be pulling insects off leaves.

6-12 different areas. Practically large patch second growth wood. The
10 11 one refuge shrub area has 2 or more Distant Bird observed
not as strongly motivated. Yelling also audible at the time - except have
• many birds

Summary except to say I don't see just 7.07 a.m.

7 2 Colts along Diploma, with Scars, edge scrub. Both be
12 Lo 20 Yup stomach Diploma seen only in the Probably Cy 3-4
ft up in brush

7 35 Down by some stuff. Came across Scars (identification quite
• certain - get good view of purple check with and purple on stomach). In full
of "chuck" song.

• If Scars are common here, this would help to explain why Diplomas
are rare

• Now I can hear several Scars in neighborhood. Scars apparently
in breeding condition now.

• Hardly I see some tubular red flowers with Diploma - type holes in
them. Quite small holes. Then I see a Cy in "hedge" - like scrub - 20 ft or
so away. Isolated. Apparently alone. There are Scars around the neighborhood
at the time, but none very close to the Cy. Apparently Cy and Scars ignore
one another. Cy disappears almost immediately.

• Cy backs again a couple of times. Same place. Again no reaction
with Scars. Cy never stays long.

• See single of Scars perched on branch only a couple of feet from
Scars uttering "chuck" song. Scars doesn't seem to mind at all. I.E.
The Scars around here certainly don't attack all small species.

• Then I hear what may be a couple of Cy songs in distance from
of Switters. Can't tell if they have Intro Notes or not. I think that the

Scans
Albi

use phrases were uttered when Scans were silent or, at least, comparatively quiet.

I have yet to hear an Albi for a long time (since the local Scans were uttering R's quite frequently). It is possible that the Scans & Albi overlap Scan-like songs.

Scans
Albi

Albi was for a long time. By then was where Cy was earlier. No display or arousal at the time. A few minutes later, Albi appears, in exact same area. Feeds on tubular red flowers, in usual display fashion (i.e. this is the species which made the holes seen earlier). Also on purple tubular flowers (Palicourea sp., Rubiaceae). Probably same species of purple flower which the Albi near Munich favored. This Albi is silent throughout the whole period observed. Scans audible in distance while Albi is around, but none nearby. Certainly no sign of reaction between Albi and Scan. Albi ranges 2-12 ft above ground. These are the same elevations which the Cy favored when it was here earlier.

Scans
Albi

So the territories of the Cy(s) and Albi(s) here must be at least broadly overlapping. (Although I have no definite evidence, I am sure that the territory of the local Cy(s) overlaps that of the local Albi(s) completely.) And the territory of at least one of the local Scans must partially overlap those of both Cy(s) and Albi(s).

Albi
Cy
Scans

(I was particularly interested to see the Albi feeding on the tubular red flowers, and making holes in their corollas. I have just realized that I have never - to my recollection - seen Cys (or Cows) make holes in corollas.)

My observations today certainly would suggest that there is no overt hostility between Scans, Cys, and Albi here. Nor, app

arently, is there any contact or any form of overlapping among the three species. The absence of contacts might be expected in a region as small as this one. But the region is so small that one might, perhaps, expect overt hostility between the species. Such hostility may be avoided (or may not be "necessary") for any one or all of several reasons. In the first place, the local Scans apparently do not feed on the same species of flowers as the local Diglossas (this, the situation here is very different from the gardens of Bogota). Secondly, both Cy and Albi seem to be relatively rare at this particular site (if not in all other parts of the general region).

At various times this morning, there was a medium sized greenish hummingbird (slightly smaller than Scan) in same area where Cy and Albi were seen, and where Scan passed through. Repeatedly fed on the same purple flowers as ♂ Albi. I think that the Scan who flew through this area attacked this other hummingbird in passing. But certainly this other hummingbird was not visible or audible when the ♂ Albi appeared. (It probably was not near to the Cy when the latter was around either.)

I must return to this area again!

NOTE: It may be useful to add some comments on the various environments around here. They obviously fall into two groups: (1) Santa Elena and Boqueron de Palmitas, and (2) Piedras Blancas and the Finca "La Montaña".

This division is not geographic. Santa Elena and Piedras Blancas are east of Medellin (and not far apart from one another). Boqueron de Palmitas and La Montaña are west of Medellin.

(1) Santa Elena and Boqueron de Palmitas both have fairly

70

dense human populations, with scattered houses, fences, etc. Lots of different patches of pastures, gardens, second-growth scrub, and forest. Forest includes extensive areas of broad-leaved trees (presumably second-growth but probably native species) as well as unported conifers.

(2) The region around La Montaña is quite similar to Santa Elena and Boqueron de Palmitas, but has much less broad-leaved forest. Only occasional angiosperm trees scattered in scrub. Also lots of small plantations and "hedges" of unported conifers. All in all, probably considerably less varied an environment than either Santa Elena or Boqueron de Palmitas.

Piedras Blancas is rather like La Montaña but "even more so." Fewer fences and gardens and even more unported conifers.

I think that conifers must be very unsuitable for mixed flocks of Thrupids and auouates!

July 27, 1965
Finca "La Montaña"

Still more or less as before from Aug. and also seen last week
5-10:30 AM

By 2:25, I have seen several single thrushes, and pairs, also
one Kinglet sounded like Sooties

NOTE. I spent all morning watching D. flossens and her
mating birds. Without seeing a trace of a mixed flock, or any fin-
ches, tanagers, or warblers. But I did see several thrushes again
in mid-afternoon. All Sooties. And all alone

July 28, 1965
Region of Belmora

Trying to get to Paramo around here. But without success.
Trouble with car, roads, etc. Finally reach place called El Heredero,
ca. 15 AM. Visit Belmora. This is just a farm, with pastures and a few
patches of scrub. ca. 3500 ft. Weather clear and cold.

Some Yellow-faced Whitestarts singing when we arrive NOD
WA. Heard up fairly soon.

ca. 3:35 See three single Sooty Thrushes alone. In low sparse
scrub along path.

Then more Yellow-face songs. NODWA. Then see ¹ Yellow-faces
33 In tall, mature-looking trees, scattered above second growth scrub.

ca. 25 ft up. Ca. 2000 ft

Then I realize that these Yellow-faces are outliers of a large and di-

flame flock. Found the rest of the flock a few yds to down road. Region of low but thick round growth scrub. With lots of bamboo and other vegetation, miscellaneous flowers (mostly red) and berry like plants. Not far from patch of another, apparently untouched "upper sub-tropical" forest. All birds were in the same area.

This part of the group included at least one (possibly two - 33 by itself, not together) Brown C., 1 Ag. 1 Shrike-capped Finch, a warbler (36) city of hummingbirds (including 1 indigo blue proboscis Swift 64 era), 2 PL Attapetes, and at least a pair or family group (4-6 individuals) of rufinucha (white spots on wings). Almost a "mixed Attapetes" flock!!!! Also 1 Yellow-belly with flock!

Birds on both sides path. Sometimes far apart. Sometimes close together. But moving about in "all directions". Perhaps group as a whole going about in a circle. But the whole thing looks very disorganized! Can't tell who (if anyone) is leading.

Most birds ranging 1-6 ft up. rufinuchas ranging from ground to 6 ft up.

When group first seen, it was very, very noisy. Large Attapetes sounds. Lots of "greeting Switters". Also White Loups. (When Attapetes were most noisy, the Yellowfaces were silent.) I think that a lot of the noise must have been due to the fact that the flock as a whole was passing from the territory of one pair or family group of rufinuchas to that of another - thus provoking a territorial boundary dispute. Viz the Yellow-thighed Finches in Chiriqui. (It also is possible that there was more than one pair or family group of PL's associated with this flock - and that they were also disputing - but I can't be more about this.)

(3)

As far as I could tell, the Pl's and rufinuchas definitely were not associating quite so closely with one another - at least most of the time.

After some minutes, the Atlapetes spp. quieted down. Finally apparently, almost up entirely, except for "M's" and/or "CN's". At which point, the Yellow-bills uttered a few more song phrases! Then also shut up. Then I heard one Brown R-Zoo. But neither the Brown (s) nor the Cy sang at all, too.

The Red-capped Fuchs showed a definite tendency to stick to bamboo. (Viz, the kinds of the same species seen elsewhere in northern Andes.)

7:20 a.m. Saw over most of the flock snippets have disappeared. But some of it seems to have remained behind. Saw Yellow-billies and three B. nigrorotatus, and at least one White-bill! There is some sort of dispute among the B. nigrorotatus. Actual chase Yellow-billy f ———> nigrorotatus. All birds visible now 1-3 ft up. In both bamboo and other scrub.

Perhaps these birds are bringing up the "rear guard" ??? If so, perhaps one or both of the Atlapetes spp. are (or were) in lead ???

Then these birds disappear. Then see single Cy not far away. I.E. Cy here may not follow mixed flocks over long distances like the Cy at Munchique.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

7:45. Only a few feet down road. Now I see that all or most of the large mixed flock is still here or has come back. Some birds are in trees edge scrub. I.E. Yellow-billies, Cy, and White-stripes. All 15-25 ft up. Not close together, 10-15 yds apart. Also in some

71 trees now are one Red Woodpecker and at least one Brown Squirrel
 !!! Both Red Woodpecker and squirrel ca. 20 ft up. In nearby scrub, are
 82 at least three rufumchas and two B. rufocinctatus. Chimney then
B. rufocinctatus repeatedly f —————> rufumchas and rufum
chas repeatedly f —————> B. rufocinctatus, rufumchas ranging
 from ground - 2 ft up. B. rufocinctatus f 3 ft up

83 Also with group in a pair of Indica ranging all levels 1 -
 20 ft up in both trees and scrub.
 Group as a whole quiet now, except for Ch. which is still lung
 84 ing from time to time.

Going to move up hill along path, to another area 8:05 a.m.
 Good heavens! Life does get complicated here. Only a few hundred
 yards further on. 8:50 ft. 8:10 a.m. Come across another mixed flock.
 A group of birds first seen in low-lying scrub (including lots of
 85 bamboo) At least 1 rufumcha and 2 Yellowfaces. Some Yellowbellies
 in small trees 50 yards away. Yellowbellies f —————> group of
rufumcha and Yellowfaces

This group gradually moves up hill. Quite coherent. All birds
 close together. Very noisy. Yellowfaces lung. NOISE. Yellowbellies utter
 a great variety of loud sounds.

As group gets closer, I see that there are at least four Yellow
 71 bellies in it. All adult. Obviously divided into two pairs. Some probably
 hostile charging back and forth - but not as much as one might, perhaps
 ps have expected. (To my recollection, this is the largest group of Yellow
w-bellies I have ever seen.) All birds ranging 2 - 4 ft up.

72 Also, as group gets nearer to me, I see that there is a Red Wood
pecker with it. What it was doing in scrub, I don't know. But it

suddenly appears and then flies on ahead of group. Lands on ground, sloping barrenness uphill. Feeds on ground. Very flicker-like. Then I lose sight of it.

74 Part of group continues to move uphill slowly thru scrub. In front of it are 2 or 3 M. nigrocristatus, 2-3 ft up, in bushes. When group first seen, it was at least 20 yards away from the nigrocristatus. And the latter were very noisy (lots of R's and flower-bells). But the group gets closer and closer to the nigrocristatus as it moves uphill. Finally the Yellowfaces and Yellowbellies fly into same clump of bushes as the nigrocristatus. Should this be considered joining ??? As soon as the group came within 5 or 10 feet of the nigrocristatus, the latter shut up. Apparently the nigrocristatus did not leave the clump of bushes. But their silence would suggest that they were trying to remain inconspicuous and thus "spied" the group on its way. See, however, below.

75 In any case, the Yellowfaces and Yellowbellies continue on their way uphill. Not followed by nigrocristatus. The latter remain behind in the same clump of bushes they have been clinging to all the time. Also, the sufmucha seems to have disappeared by now.

Repeatedly, the Yellowfaces fly \longrightarrow Yellowbellies. And repeatedly Yellowbellies fly \longrightarrow Yellowfaces !!!

Yellow-belly - Yellowface group still very coherent

As it moves uphill, it gradually approaches line of mature-looking forest. Then, suddenly, a third flock appears !!! Moving thru line of forest. At right angles to Yellowface - Yellowbelly group.

76 This third group includes a lot of birds, but I can identify only a few of them. One or two WCC, at least one BCBT, and at least one Green

and White Hummingbird. All 15-25 ft up in trees.

As soon as this third flock appears, the Yellowfaces of the second flock turn around and go uphill down hill again. This is in spite of the fact that there do not seem to be any (other) Yellowfaces with the third group. The Yellowfaces apparently are followed by some or all of the Yellowbellies.

On their way down hill, the Yellowfaces pass them or over the clump of bushes in which the B. n. pygmaea have remained. This time as soon as the Yellowfaces have passed, the pygmaea follow them (or them + the Yellowbellies) at least part of the way down hill!!!!

96 A few minutes later, same area, I see a single B. n. pygmaea going uphill, thru scrub, apparently on its way to join the arboreal third flock.

This is as nice a case of an encounter between apparently distinct flocks as I have ever seen.

But there are complications! It is quite possible, for example, that the Red Woodpecker which apparently started out with the second flock eventually joined the third. Also, the area where the third flock appeared is between the areas of the first and second flocks, which themselves are not far apart.

In actual fact, there seems to be a nearly continuous mass of birds throughout this whole "series" of areas. I have not yet, this morning, come to any large "uninhabited gaps" such as separate flock ranges in most parts of the Andes. Thus, in view of the fact that some of the "groups" seen have been diffuse, one might suppose that they are purely "accidental" aggregations. But I think that detailed observation of the exact movements of particular individuals is sufficient to reveal that at least some of the groups are "organized" social entities.

(see the Yellowface - Yellowbills, and Yellowface - magrocratatus associations described above). There are, at least, "nodes" in the "matrix"

COMMENT "Mixed flocks may be closer together here than anywhere else I have ever visited (with the possible exception of the low woods near the Finca below Hacienda Que). This would suggest that the (comparative) scarcity of mixed flocks near Medellin is due to the fact that most of the natural vegetation near there has been destroyed. Certainly, to my eyes, there is more natural-looking vegetation around here than anywhere else in the region.

This, in turn, would support my hypothesis that accessibility to "island hopping" largely determines the frequency with which mixed flocks occur in any given region. This part of the Central Cordillera may be particularly amenable, simply because it is itself divided into several "islands" and also is particularly close to two "islands" (Fronton and Paramillo) of the Western Cordillera.

Mixed flocks certainly seem to be more common, and larger, here than in Morcopia, at comparable altitudes (and probably humidity) in the southern part of the Central Cordillera, last May.

Same area, 9:20 a.m. From sounds, I can tell that the Yellowfaces, Yellowbills, and B. magrocratatus are still around. But not very close together now.

Mixed flock disappeared a long time ago. It certainly appeared to be very coherent and making rapid progress in a definite direction.

Going back down road 9:30 a.m.

Reach area where first flock seen 9:35. All birds have gone! Area quite silent and deserted! This is good evidence that the first flock really was a social group, not just an accidental association in a particular

early "favourable" site.

Getting cloudy now. Wind coming up. Getting cooler.
Between near first and second groups. There are lots of Acorn
Woodpeckers in trees here. But not in mixed flocks.
Leaving 10:05

July 27, 1965
Region of Belmura

Going to work same place today as yesterday

6:00-6:10. Area where first flock seen yesterday. There certainly
are some birds around here now, but not at all close together, and
certainly not a flock

98
01

See single Yellowbelly alone. 25 ft up in tree edge scrub.

The various Yellowfaces singing around here (at least 3 individuals)
obviously are alone. In trees.

6:25 am. Area second flock. Occasional Yellow-face songs and
Atlapetes Whistle songs. No overlap. Then silence. Then some Parulidae
as R-flourish patterns. Then silence again.

It apparently is not the "height" of the breeding season here either.
Presumably birds here are in same stage as at Frontiers.

63

64 See pair Yellowbellies moving thru scrub. 6-12 ft up. Quiet.
Probably alone. But there is at least 1 B. nigrocrinitatus moving
thru scrub, in same direction, 20-40 ft behind Yellowbellies. 3-6 ft
up. Moderately noisy.

100

101 And I can hear nigrocrinitatus sounds very close by so this does seem to

g Brown. Presumably, Cy is apparently larger than Brown. They disappear. Apparently leaves flock. But Cy remains and sings for some after phrase "Triumph". All I hear with notes

112 Then Cy gradually moves away from center of flock. I see
113 will at least B. nigriventris. Also at least Yellowbills, Flycatchers LXXXI. All birds ranging 2-4 ft up in scrub. I also hear both Yellowface and Atlapetes. In the same general area, but can't see these birds. (Yellowface and Atlapetes songs not overlapping)

Group as a whole quite noisy. Whistles and nigriventris with some R's. But not the Flycatchers LXXXI.

Birds milling about without showing much obvious sense of direction. But they all disappear at approximately the same time (while I am writing this account). Apparently going uphill.

NOTE: When I was watching the "original" Synellax - nigriventris group, a single Atlapetes torquatus appeared! Passed through the group, silently, and then disappeared. This probably should not be considered a case of joining. (Incidentally, this Atlapetes probably is not the species heard uttering Whistle songs later. (Latter presumably PL and/or rufinucha.)

8:15 a.m. Same area. Hear what may be Dubuna near by. Can also hear Cy singing not too far away. NODWA. But the Cy songs do overlap those of the presumed Dubuna. Apparently at same level.

Starting downhill again 8:20 a.m. Sun shining brightly now. A few yards along road, catch up with what is at least part of same flock. Yellowbills (no) apparently in lead, but probably only

(10)

part of the time. Then occasionally fly back or to one side. I think that when this happens the Flycatchers LXXXXI are "left" in the lead.

Now, 8:42 - Flycatchers LXXXXT are way out in front. Prog remaining steady in our direction. But it looks as if the other birds are no longer following the Flycatchers. (Incidentally, the Flycatchers also have begun to utter R's now.)

Further down hill, 8:50, see single booby through alone.

8:55 Area where second Jack seen yesterday. See apparently single le rufumica, silent, apparently alone, 3 ft up edge scrub.

Leaving 9:18 a.m.

August 1, 1945
Parque

Up to work this morning in the first place I worked a few months ago - i.e. the place where Cy, Allen, Kay, and CC all worked together

Around 5:31 am little quite dark Cold sky partly cloudy some fog in distance, coming up from Wisconsin

Everything very quiet. First bird sounds 5:47 am thru the alarm calls. But these calls continue for only a few minutes. I hear there is silence again

6:00 am A few noisy, chaotic bird sounds in distance. But things in general still remarkably quiet. Certainly, most species cannot be breeding here now.

VIII? See a green hummingbird, presumably no. VIII, feeding on small red flowers. Inadvertently, the dark red cup shaped flowers which were so common here a few months ago seem to be rare or absent now

6:06 am. Hear one Pentothraupis "long" in distance
SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

6:27. Hear Dufuna in distance.

Then see single Tribellia alone, 20 ft up in tree above locuparise scrub. Uttering soft "CN"s. Flies off immediately

I HO 13
XIII? 6:50 am. A large mixed flock suddenly appears including at least 2 Pseudospingus, 2 Pythya eximia, 3 Yellow faces, 2 Whiteboarded Flycatchers, 2 Tribellia, 1 Yellow belly, 1 Dufuna, 1 Setta, others. Flock moving very rapidly in one direction. Very coherent. All birds cited above ranging thru trees and taller br

also in scrub 10-30 ft up. Pseudospingus and Certhia eximia a alternating in lead. Yellowface, Yellowbill, Scrub belly, and Dubium all follow repeatedly. Generally definitely eximia. Group as a whole noisy. Yellowfaces fighting among themselves! Also Whitebrowed fighting among themselves!

There does seem to be a lot of intra-specific hostility in the mixed flocks of this region.

There may also be a single Blue & Orange with the group.

Dubium and Sitta seem to form the "rear guard" - at least part of the time. But they are not particularly close to one another.

As far as I can tell, there are no particularly close associations of any sort - no special inter-specific preferences - within this group. All birds ranging 3-25 ft apart.

As flock moves by, fairly high in trees, a single adult Atter appears briefly in bush below the other birds. Silent. Only visible for a moment. I don't know if it follows the other birds or not.

7:05. Same flock back. Retracing its steps. Still coherent. Still moving rapidly. Still noisy. Lots of Pseudospingus chatter. Lots of Dubium song. Lots of Yellowface SHN's.

Now I see that there are at least 3 Pseudospingus with group, 2 Sittis, at least 2 Blue & Orange Tanager, and 1 PL Atlapetes. Also 2 Red Woodpeckers!

Pseudospingus and/or eximia still in lead all or most of the time. But now the rear guard seems to be composed of Yellowfaces, Blue & Oranges, and the PL as well as the Dubium and the Sitta is. The PL and Blue & Oranges also are following → the group.

repeatedly

Most of the birds still are ranging in trees and tall bushes. Now 6-20 ft up. Not like the PR and the Blue + Orange average lower than all or most of the others. Usually 3-12 ft up.

22 A single Sooty Thrush \rightarrow group Then another! And then a third!!! One Sooty Thrush supplants \rightarrow Pseudospin pus! All the Sooty Thrushes \rightarrow group repeatedly!!! Then there is a fight, with lots of aerial chasing, between two of the Sooty Thrushes.

2 After flock moves on, a single PR Atlapetes appears low in scrub, 3 ft up, in scrub about 40-50 yards behind the other birds. It is visible for only a minute or so. I don't think it followed the other birds. Even if it was "attracted" to the other birds, it certainly was not trying to associate with them very closely.

It would appear that the mixed flocks here now are similar to those seen here a couple of months ago — but even larger and more varied!!!

Sun coming out 7:20 a.m.

3 8:35 a.m. See single F. v. belly. Silent and alone. 3 ft up in sparse scrub. Flies off immediately.

Then see a single Sooty Thrush alone in pasture.

8:55. Down by road. See another single Sooty Thrush alone 10-20 ft up in tree.

4 Then see single White-bearded Flycatcher. White-beard \rightarrow Audubon Sparrow (sic!) in scrub along side of the road. 3 ft up. Then White-beard moves on. Sparrow does not follow.

NOTE: I have seen remarkably few birds of any kind down

ing the latter half of the morning's observations. This would suggest that they are even more "concentrated" than they were a couple of months ago. I.e. a relatively larger number of birds are in flocks.

3 9:03 a.m. See single *Furbell* alone 6ft up in hedge. Call scrub. Sooty Thrush $\xrightarrow{\text{Furbell}}$ *Furbell*. But I think that the thrush actually is attracted to me. Utters alarm calls. Then thrush flies off. *Furbell* does not follow.

9:15 See another single Sooty Thrush alone 8ft up, in "hedge".

Leaving 9:25 a.m.

August 2, 1965
Purace

Arrive area where *Laps* and (probably) *Cys* were the only non-commensal *Diglossini* seen and heard a few months ago 5:37 a.m. Cloudy, still dark. Some wind. Everything silent.

SEE TODAY'S NOTES ON MIXED DIGLOSSINI.

Things generally very quiet ca 6:00 - 6:10 a.m. Obviously, most species are not in breeding condition here now. But the *Furbell*s may be an exception!

6:35 a.m. A group of 3 *Butor* appears moving rapidly thru scrub approximately 10ft up. Moderately noisy "CN"s and/or "PN"s. But definitely alone!

A few minutes later, see a single Sooty Thrush alone. 3ft up in scrub. Uttering usual alarm calls.

Everything very quiet (again) now. 6:50 a.m.

begin to go to camp out @ 5:55 a.m.

74
74
17:03:00 In rocky road. See mixed flock Includes 2 Blue & Orange ¹¹ eximia, 1 Black and White, 1 White, 1 Black & 1 White. Definitely watching else. All birds in low scrub near to me. eximia is going 2' to 3' ft up. PR's moving up from ground to 3' up. All birds quiet. Only a few CN's. PR's f → Blue & Orange at least twice.

75
75
75
17:28 Spot another flock. See another mixed flock. Includes at least 2 Blue & Orange, 2 Black and Whites, 1 eximia, 1 Black & 1 White. eximia is going 2' to 3' ft up. PR's moving up from ground to 3' up. All birds quiet. Only a few CN's. PR's f → Blue & Orange at least twice. Both flycatchers moving at first. Then whole flock quiet. Flycatcher eximia supplants → White-headed. Blue & Orange f → eximia. Black and White j → Blue & Orange. Flock as a whole quite diffuse. Can't see who is leading.

76
76
76
There also are at least two Hemispungus or Basileuterus types low in scrub, approximately 50 ft away. But I can't tell if they really are integral members of the flock or not.

77
77
77
I also can hear a Yellowface singing nearby NODWA
17:32. Another area. See 2 Scrubellies 10 ft up scrub edge road. Definitely alone. One individual supplants the other.

Sun has gone now. Wind coming up. Getting colder.

78
78
78
8:00 a.m. Same area. Catch glimpses large mixed flock. Probably largely same as large flock seen earlier. But now includes at least 1 Scrubellie and 1 Plush-capped Finch. Yellowfaces and Basileuterus or Hemispungus types apparently still associated with group. Group as a whole quite coherent now. But quiet. And staying low in the alpine scrub. (This may be due to change in weather.) Probab

by Blue & Orange and/or Plum-capped in lead.

NOTE: The Plum & Orange and the Plum-capped often are remarkably difficult to distinguish in the field. Especially when observational conditions are poor. Is this another case of "social memory"?

49 At one time, a single Lark suddenly appears in scrub, approximately 30 ft from flock. Silent. Disappears almost immediately.

50 A few minutes later, a single Alouatta (sp.?) appears in another scrub on the outskirts of flock. This is at least 100 yds from where the Lark was seen. Alouatta also silent. And certainly flies away after a few seconds. None of the other birds follows.

To my recollection, this is the highest I have seen Alouatta here. Altitude, according to my altimeter now is 3190 m, 10,497 ft.

Everything dead quiet 9:00 a.m. Going along path uphill. Nothing! Sun out again now, but no signs of life.

Down by road, see a single Sooty Terns alone, 2 ft up in scrub. Leaving 9:35 a.m.

NOTE: Although today's observations certainly were not very exciting, they would tend to confirm the theory that most of the birds of this region are usually gathered in flocks now.

August 3, 1965
Region of Purace'

Going to work in area where Alouatta seen a couple of weeks ago. Arrive 5:30 a.m. Cloudy. Just getting light. Everything quiet.

A few miscellaneous bird sounds begin almost immediately. Shrike alarm calls and others. Apparently no songs.

5:50. Some Banlecternus and/or Hemispungus type R's and Hou
sashes. Quite a lot of phrases in rapid succession. Uttered by at least 2
different individuals.

See single Sooty Thrush above. On ground.

Then quite a lot more bird sounds 6:00 am. Sounds almost
as if flock were beginning to form - on both sides of road. Yes! See some
sort of thrasher or finch fly across road into scrub where Banlecternus
and/or Hemispungus are vocalizing.

Lots of birds vocalizing all along both sides of road.

It would appear that many of the birds here are breeding
now. (See comments below.)

Then first Yellowface Song, 6:08. NADWA

Catch glimpses birds all around in both trees and scrub, with
out being able to identify any of them. But it is obvious that the flock -
if one is really forming - has not "crystallized" yet.

13 Then see definite mixed group. At least 1 Sitta and a couple of
Cyanocorax or Chlorospungus 30ft up in tree. And two Banlecternus or
Hemispungus 20ft up same tree. All moving same direction. Sitta f →
group.

14 6:20. 175 yds away, across road. See 2 Big Bullfinches 20-
30ft up in trees. Other birds in near vicinity.

10 Then see group at least 2 Sittas, 2 Tree creepers. 15ft up. Yellow
belly → group. Also others.

Sun coming out 6:25 am.

Birds are really incredibly noisy now!

Lots of individuals seem to be converging, slightly up hill from
road. Presumably including all or most species cited above. Also at least

11 ✓ Pseudospingus, 30 ft up in tree - ~~group~~ 6:30 a.m.
15 One little "sub-group" of Yellowbellies, 1 ♂ Flycatcher, 2 ♂ up in same tree

Group as a whole still not completely coherent 6:30 a.m.
Bird moves ~~downing~~ a little 6:30? Have some already gone uphill ???

16 See 1012 Flycatchers ~~LXXXVI~~, apparently more or less isolated, 10 ft up in scrub.

Then see "sub-group" at least 4 or 8 birds quite close together in distant trees. Most are unidentifiable. But at least one is certainly

17 Cy. Fly → group. Alas! At least one of the other birds in this sub-group is Yellowface ~~WII~~

23 Then, 6:50, see single Forbelle fly into tall tree. (Probably 40 ft up. (I think this is first time I have seen Forbelle in this area.) At least one other small bird (unidentified, but warbler-like) follows Forbelle. Then Forbelle flies away. The other bird does not follow.

Everything relatively quiet 6:55 a.m.

35 COMMENT: I know that the ~~previous~~ notes and descriptions are very poor. Certainly, I have seen only a small fraction of the birds moving around here this morning. And I am not really sure what has happened. Certainly, there have been a great many individuals of a great many species moving around within an area of (no more than) 100 (or 150) yds x 100 (or 150) yds. And certainly, many, more or less small mixed flocks have been formed from time to time. But in any of these seem to have been rather "evanescent". I am not sure that any very large, coherent, flock has been formed. If it has been formed, it has been done uphill, away from the road. Partly out of

my right

7.05 Birds are somewhat noisier (again) now.

See 2 single birds flying from tree top to tree top up hill. There certainly are at least two other small birds (unidentified) in at least one of the trees.

The weather is beautiful now! Clear. Warm. No wind!

7.12. See a single B. nigrocrinitatus in scrub. By road 2 ft up. Picking insects off leaves. Apparently alone.

Everything dead just now 7:15 a.m.

All the large "blue + yellow mountain" type tanagers seem to have disappeared. So they probably have gone off as a flock.

44 Spook of the dead! Go down road a few hundred yards and come across definite mixed flock. In trees and scrub 10-30 ft up. Group quite coherent. I suppose part of it. Definitely includes at least 3 Yellowbellies, 2 Whitestripes, several tree creepers, and a pair of woodpeckers LXXXVI. Whitestripes ranging 6-10 ft up. Yellowbellies ranging 6-15 ft. Woodpeckers and tree creepers 8-20 ft up. Woodpeckers noisy. Yellowbellies definitely bringing up rear of group.

7 A little further on, see apparently single B. nigrocrinitatus 5 ft up in bamboo scrub. Apparently alone. This bird moves off.

8 A minute later, single Yellowbelly, alone, lands in adjacent tree. 10 ft up. Flies on immediately.

8:45 a.m. See another single Sooty Thrush alone. 20 ft up in tree. Uttering usual alarm notes.

Going back up road. Area seems almost empty now.

Can hear Yellowface singing not too far away. NODWA
Ala. Single fly flies across road. A pair of Yellowfaces f

NO III 51

→ Cy! (Quite clear.) All birds land in scrub 5 ft up
8:25 Approximately 8-9 tanager-like birds fly down hill high
over road (Cubana) at least 2 species. But not very close together.
Clouds coming up, 8:35 a.m.

More birds flying down hill high over head!
There is some reminiscence of bird noises as clouds spread
8:42. See a couple of dull grey birds which look remarkably like
Col birds (but lack rufous undertail coverts) 5-10 ft up scrub. Flycat
chasing. Presumably a tyrannid, related to Ventura. About 6 alone

There are single Yellow-bellies flying alone
Sun coming out again 8:55 a.m.

Still more birds flying downhill, high over head.

9:10 a.m. Come across a small and rather diffuse mixed flock. Reg
con rather scattered upstair trees over bamboo scrub. Group includes at least
4 Blue & Black, Yellowbellies, 1 Yellowface. All in trees 10-25 ft up
4 Rattlerquit, Blue & Black; → group. I also can hear both B.
mignocentatus and Whitewipe (s) low in scrub under trees. Both new
to me. And there is a Cy flying nearby somewhere! NODWA

9:31. Another area. See a pair of Yellowbellies 10 ft up second gro
with scrub. Apparently alone.

Also see another single sooty thrush alone

Leaving 10:05 a.m.

NOTE: According to my altimeters now, the altitude here is
8900 ft, 2695 m.

COMMENTS:

My observations this morning would suggest that the loc
al birds are showing much the same kind of social behavior now that

they did a couple of months ago. But these observations certainly are not so accurate!!!

It is supposed to be full "verano" now in Papayan itself, and also on the near side of Purace (altho we have had a couple of days of showers - including hail - in the city since my arrival). But it is supposed to be the main season on the far (Tijeras - Moscopan) side of Purace now (altho it certainly was very good weather in there today). This may explain why the birds on the near side of Purace do not seem to be breeding now, while those on the far side do seem to be doing so.

This afternoon, going to work at level of Papayan itself. By small stream where I made first observations a couple of months ago. Arrive 3:35 pm. Cloudy. Hot. Everything very quiet

See group of 2 BT's and 1 (Crucifera and/or cayana). Close together in tree, 10 ft up. But then the 2 species move in opposite directions. Some flocks of Elanus-like Alycaetens.

Big flock of Cowbirds fly into trees along stream. Apparently alone. Silent. 4:00 pm.

Catch glimpse of 2 Slate-throated Whitestarts. 1 ft up in scrub. Silent and alone.

There are very few flowers around here - and apparently no hummingbirds (!) - now

See 1 Parula Warbler (presumably pitayumi) alone, 6 ft up in dense scrub.

Some wrens singing from time to time, but everything else very quiet.

Leaving 4:30 pm.

August 4, 1955
Region of Purace

Going to work at a Finca called "Canaen" just above the town of Purace itself. Not very far from where Ater-Scan reactions were observed a couple of months ago.

Arrive base of path leading up to house 5:35. Just starting to get light. Moderately clear. Fairly warm 21.25 in 8925 ft

Hear some miscellaneous bird noises as I go up path to farm. But not many. Mostly Thrushes

Reaches farm 5:55 am. Just as in 2800 in there is a large garden in here. Full of the same species of orange tubular flowers, growing in clumps, which is not common around Bogota.

Lots of humming birds feeding on these flowers 5:56
All or most are Amazons. I.E. this is where the Amazons have come to! Quite noisy

There is a Black Dytone feeding same species of flower in far part of the garden. Silent. Apparently not molested by humming birds. Flies away. Then I hear R-Zaza. Bird is presumably Ater

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

NOTE: During the course of this morning's observations, I saw Sooty Thrushes alone a considerable number of times (at least 6 or 7), without bothering to record them in my written notes.

This species is partly a commensal of man. Although they are not rare in apparently untouched forests, Sooty Thrushes seem to be most common where there are more or less extensive open areas, such as pastures, in the immediate vicinity.

August 5, 1965
Parace'

Going to work same place today as yesterday. Arrive house at 5:30 am. Still dark. Occasional light sprinkles of rain on way up, but sky looks largely clear.

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

August 6, 1965
Parace'

Going to work same place today. Arrive house at 5:31 am. Moderately clear. Cool. Little wind (as yet).

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

August 14, 1965
Parrot

Going to ... mountain region of ... but not
very high ... 9130 ft ... 2810 m. ...
... where largest flocks have been seen. Arrive 5:50 am. Partly cloudy. Little wind.

Everything quiet as we arrive. Then miscellaneous thrush sounds 5:55. Quiet, 6:00 am.

It is not until about 6:00 am that anything is heard. ...
... NODWA. Then several more. Still NODWA. ...
... then hear just Atlapetes Whistle Song. NODWA. Then more Yellowface. NODWA. Then more Atlapetes. NODWA 6:04. This continues for some minutes more, with absolutely no overlaps.

General silence 6:15 am. Then a few miscellaneous sounds far away. Then more Yellowface songs. NODWA.

The sound here seems almost deserted now. (Most of the audible Yellowfaces are some distance away.)

Then Atlapetes songs NODWA. Then more Yellowface NODWA. Then more Atlapetes. NODWA 6:32 am.

6:36 am. Single Yellow-belly flies by, Overhead. Definitely alone. Then another single Yellow-belly flies by alone.

6:40 am. Also! This Yellow-belly lands just up in bush. When I get to within bush, I see that there also are 1 PL Atlapetes and 1 PR Atlapetes in it. PR flies off to neighboring bush. PL f → PR. Yellow-belly does not follow group.

PL's seem to have a definite tendency to follow other species of

Atlapetes (at least black & yellow ones) !!!

10

6:57 Down by road. See patch Yellowfaces above 25-40 ft up in trees in patch VSF. One individual seen repeatedly. No bird above

7:05, Found note patch among trees record growth scrub

VI
170

62 see single Big Buttercup. Slight 15-25 ft up in isolated tree above scrub. Apparently alone. But I see hear other birds (Yellowface, probably Cy, and others) 50-100 yds away.

64 another Big Buttercup flies into a large native tree. And another Big Buttercup follows. When I manage to get a good look at the tree, after a few minutes maneuvering in mud, I see that there is a single PL in it, but I can't find the Buttercup! PL flies off into distant tree. Nothing follows.

171

173

Then complications set in. A large mixed flock appears in a scrub right beside tree in which Buttercup and PL seen. This scrub obviously record growth, 10-18 ft high, but thick, with lots of bamboo. Flock includes at least 1 PL, 2 PR's, 2 Yellowbellies, 2 Blue & Oranges, 2 "Little Striped" Flycatchers (LXXXXT). All birds ranging 4-15 ft up. This particular scrub group very coherent. All birds noisy. When first seen, Yellowbellies in lead. Flycatchers LXXXXT f → Yellowbellies Flycatchers LXXXXT j → Yellowbellies Blue & Oranges f → group repeatedly. Then group changes direction. And PL(s) take(s) lead. Flycatchers LXXXXT f → PL's. Flycatchers LXXXXT j → PL's. Blue & Oranges f → group. Yellowbellies f → group. ✓

175

At one time, there also is a pair of furnariids or wren (dull brown, small) with group in scrub. Very noisy. But I don't think that they stay with group very long.

Group also is visited by a single White-throated Hummingbird. White-throat f → group repeatedly. Then flies off and disappears temporarily.

There is a pair of ^{✓✓} Ruddy Kinglets in nearby small trees, 15-25 ft up. Also no noise. Uttering lots of R's. Frequently only 5-10 ft from (other) members of flock, but it is difficult to determine if there are any special social reactions between the Ruddies and the others.

Then a single Coer (definite) f → group !!! Flies in to middle. Silent. Perches in tree 3 ft up. Then flies on. Apparently goes far away. Nothing follows. This Coer must presumably purely an escorting reaction

Group eventually moves up into mature tree(s) where Big Butt braupis and PL seen a few minutes earlier.

As group passes, a pair of PR Atlapetes appears low in scrub, behind them, definitely bringing up rearward. 3-10 ft up. PR's f → group repeatedly. But then the PR's turn back, go in opposite direction. Nothing follows PR's. (One of the PR's pulls up long strand of grass. H M? Is this species breeding here now??) Following by PR's probably also purely escorting

At no time, were there any indications of particularly close association between the PR's and PL(s) in this group!

When group goes up into trees, Ruddies and White-throat remain behind.

I think that the Big Butt braupis seen earlier must have been "outliers" or "forerunners" of this group. Also the G and Yellow-face(s) heard earlier.

A few minutes later, essentially same group is back. ca. 7:40 a.m.

81 Coming down out of fig trees into scrub again. This is that group definitely does include 2 Yellow faces and 1 Cy. But the Yellowbellies seem to have left. And I can't see Big Buttercups now. Rather surprising the Striped Flycatchers ~~XXXXX~~ definitely are in lead now! Followed by Blue & Oranges. Blue & Oranges f ———> ~~XXXXX~~ repeatedly. PL (2) f group repeatedly. Cy j ———> Blue & Orange. Cy f ———> group repeatedly. Yellow faces f ———> group repeatedly.

82 Both Yellow faces and Cy f sing repeatedly. No overlaps. All Cy songs rapid Twitters with "put" Intro notes

Group as a whole still very coherent. Moves thru scrub very rapidly. Soon lost to view

But the Ruddies remain behind after the others leave

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI.

83 Flock back again ca 8:10!!! First appears a pair of B. nigrocrinitus. Moving thru scrub. 5-10ft up. Very noisy, uttering lots of SHN's, Rattles and Flourishes. Then, a few minutes later, and at least 20 yds behind, appears a pair of Yellow faces. Following exactly same route as the nigrocrinitus. Apparently definitely attracted to the latter (which are still audible in distance). Then appears a single

84 PL. PL j ———> Yellow faces. Then the rest of the group appears. Much as before. But now includes Yellowbellies again! Also 2 or more Blues & Blacks. Blue & Blacks tend to stay fairly high, 10-20ft up. Blue & Blacks may tend to associate particularly closely with Yellowbellies. ~~UUUUUU~~

85 104 ~~UUUUUU~~ still includes Cy. And also Coer Coer f ———> group up at least twice. As far as I can tell, there is no particularly close association between Coer and Cy (but I certainly am not sure of this!)

Neither Cy nor Coor sings while with group. But the Yellowfaces do repeatedly. NO-VA.

A single White-throat "route" group again

This group disappears again, going back in the direction from which it came.

This group certainly is very long-sustained! Presumably lasts all day (and probably re-formed day after day)

I wonder why there were no Couirostrum or Pseudospingus with this group. Is the vegetation here too low???

Going to continue along this side path. Leads on to region mixed second growth and tall mature forest

8:58. See single Sooty Hummer alone 12 ft up in tree above scrub. Silent.

9:01 Region where most of scrub is bamboo. Come across another mixed flock. Includes at least 3 or 4 of the All-rufous Synallaxis, 2 "Spectacled" Atlapetes (LXXXVII), 2 GT's, 1 Yellowbelly, 2 (or 4) B. nigrocristatus, 2 Yellowfaces, probably others. Yellowfaces in trees above scrub. 8-20 ft up. Yellowbelly in tree, 12 ft up. GT's ranging from scrub, 4 ft up, to trees 30-35 ft up. B. nigrocristatus in scrub. 4-12 ft up. Atlapetes and Synallaxis very low, ground level - 3 ft up. Synallaxis and nigrocristatus very noisy. Other birds fairly quiet. "CW"s. Synallaxis and Atlapetes very closely associated. Spectacled Atlapetes f → Synallaxis at least twice. Rest of group very diffuse. Birds often 50-100 yds apart from one another. Yellowfaces possibly leaders. B. nigrocristatus may not follow the other birds when the latter move on

While group is around, I can also hear Cy singing high in near

by trees. But I can't see it. NO DUH

9:31 a.m. Just a little further along path. Familiar environment

While I am watching and listening to a Coer (SEE TODAY'S NOTES ON MIXED DIGLOSSINI) a small mixed flock shows up. Probably different from the one seen a few minutes earlier. Includes at least 4 Yellowfaces, 5-15 ft up in bamboo scrub & nappi trees. Very fighting and doing themselves. At same time, I can hear Crucial notes and Howling 12th type R's and Howlers in scrub. Also presumed by singing in near 12th type R's ly trees. Once, a single White throat comes and "visits" Yellowfaces

Going back down path 10:05 a.m

Leaving 10:25 a.m

COMMENT: This morning was most encouraging. It would tend to confirm my preferred hypothesis about the Central Cordillera. I.E. in the mornings, and at relatively high altitudes, at least, mixed flocks are as common in the Central Cordillera as in the Western. (I may have been "overly" impressed by the frequency of mixed flocks near Munchique, simply because I made so many observations in the afternoon, at relatively low altitudes, there. It probably is true everywhere that mixed flocks are more common at relatively low elevations than at relatively high ones. Probably also true that they are more common in the afternoon, on the average, than in the morning

There may be more species with "unusual" specializations for allopreparations on Munchique than on Purace. I.E. the Slate throats, Sooty Thrushes, and Atlapetes torquatus on Munchique. But the Coers on Purace may be an exactly comparable case

The absence of a large amount, and great variety, of bird sounds at the first site visited this morning may not be a reliable in

Realize that most of the local birds are not breeding. It may be simply that there are not many individual birds at the first site. Once I get onto the side path this morning, I get a very different impression of the possible status of the birds.

August 15, 1965
Paraná

Going to work along the same side path as yesterday. Arrive 5:37 a.m. Just starting to get light. Pretty cloudy. Little wind.

Already a few birds seen in "bog" area where car is parked.

Arrive area where first big mixed flock seen yesterday 5:46 a.m.

Most sounds here now are through Thryothorus -type R's and Stonies in distance. Everything rather quiet 5:55. This cannot be height of breeding season for most of the local species!

First Yellow-face songs 5:58. NODWA. Quite a lot of phrases in fairly rapid succession. There are at least 2 individual Yellow-faces singing. Phrases of the 2 individuals not overlapping. Both still NODWA. 6:03 a.m.

6:05. See single Sooty Thrush alone. 25 ft up in tree above scrub.

11 A single White-throated Hummingbird appears briefly. Alone.

No trace Atlapetes or Diglossa songs yet 6:12. Does this mean that the Atlapetes and Diglossas seen here yesterday were here only because they were "attracted" to the flock?

6:16. Go along path a few yards. Reach area "bog scrub." See single Yellow-belly 8 ft up in bush. There is at least 1 other bird in same bush, but I can't tell what it is. Yellow-belly quiet.

Yellow faces still singing NODWA.

114

Then see pair Blue & Orange, 3-5 ft up, in bush 20 ft from where Yellowbell seen a few moments ago. Silent. Alone fly off.

115

Then first Altapetes songs in distance 6:21. NODWA. Then see Yellowface NODWA. Then, 6:28 a.m., hear what may be some brief snatches of Laf song in distance interspersed among Yellowface songs. Definitely not overlapping.

Cloud cover continuous now. But no wind.

See a couple more nudge boots, *Thryothorus* alone 10 ft up in trees

6:38. Now hear several Yellowfaces singing, overlapping one another. Then shut up. Then hear 1 Altapetes song. NODWA

116

Cy 124

Cy

6:44. See definite mixed flock. Approximately same place Yellow-belly and Blue & Orange seen earlier today. Group now includes at least two Yellowbellies, two Blue & Oranges, one Cy, one PL. Almost certainly others. Yellowbellies, Blue & Oranges, Cy hanging 4-8 ft up in scrub. Cy eating small white berries. PL on ground. Group as a whole noisy. Coherent. Yellowbellies in lead. All others follow.

There must be same birds seen in flock yesterday.

I am going further along path now.

6:58. Area of bamboo scrub and scattered tall trees. Where

117

BT - Spectacled Altapetes flock seen yesterday. 9200 ft according to my altimeter now. When I arrive there are a couple of small brown crows 30-40 ft up in trees. (This is the same species seen everywhere around here - including with first large mixed flock yesterday. Generally dull medium brown. Lighter, more buffy below. Light buffy supercilious stripe) One of the crows singing madly. Long, faint, high pitched Twitter (These are the songs which fooled me on the west side of Purace a few

months ago I thought that they must be uttered by some sort of Diglossini. Wrens apparently alone

About 100 yds away something is uttered loud whistles, in indeterminate series. Whoooo-whoooo-whoooo-whoooo... Can't see the bird uttering these sounds - but it is the sort of thing which the Spectacled Altopeternus might be expected to produce. (The whole performance is somewhat reminiscent of A. torquatus.)

136 Then a large mixed flock appears. Probably includes approximately 14 Yellowfaces, 1 Arremonops, 4 (red?) Flycatchers, 2 Ruddy Flycatchers, 2 Cyathras (species with orange patch throat, white breast), and at least 1 large tree-creeper. All these birds high in trees when first seen. 20-40ft up. Yellowfaces definitely in lead. All others following. Group rather diffuse at first. Then very coherent.

Yellowfaces and some of the other birds fly into trees where Wrens are. Yellowfaces sing. Wrens also (continue to) sing. I think that the songs of the 2 species are partly overlapping. But it is difficult to be sure of this, as Yellowface sounds are much louder than those of the Wrens. In any case, the Wrens soon fly into another tree. And then I lose sight of them. I thought that they were leaving flock; but later, after flock has passed by, the Wrens do not reappear. I.E. they may have gone with the flock after all.

This series of reactions might be considered a case of flock jumping to Wrens. But I rather imagine the fact that the flock goes into the "Wren tree" is largely "coincidental".

149 As the flock moves from tree to tree, ✓ or 2 B. nigroventris appear 4-6ft up in bamboo scrub below trees. Very noisy. Lots of

SHN's, R's, and Howlers I saw almost certainly that these singers start us moving in scrub long before the flock arrived - but quiet and hidden in I.E. they suddenly "emerge" just as a hostile reaction (perhaps an intention movement if incorrect). From these particular niro ocrotatus certainly, so not from and from the flock. (How probably, are the same birds seen with Spectacled Atlapetes flock yesterday. They probably also behaved the same way yesterday)

The fittis and Cyanocaprus are probably more its offshoots and they show a definite tendency to keep close together.

ADDITION: There also is at least 1 or 2 Atlapetes with the flock also high in trees (same levels other birds). Silent.

Eventually, the fittis come rather low, 4-10 ft up in tangles of main base tall tree. And then they begin to dispute among themselves. Probably 1 pair fighting with another. Very noisy.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

While fittis are disputing, I see that there is (are) 1 or 2 Banisterius-types near them. Also fairly low. These certainly are not the "resident" niro ocrotatus. Possibly other niro ocrotatus. But I think more probably something like luteoviridis.

This group moves on down hill quite rapidly.

Light rain starts 17:15.

17:45 a.m. Another mixed flock appears same area. Probab-

It includes some Atlapetes-types high in trees. But I can't identify these. Certainly includes a lot of birds in scrub. And I do identify some of the 159 esp. 2 Plush-capped Finches, at least 1 Spectacled Atlapetes, at least 106 3 All-rufous Sycallaris, 2 Little Striped Flycatchers, 2 Yellowfaces 171 Certainly others! Atlapetes and Sycallaris ranging from ground to 2 ft up

130
132

Others ranging 2-2 ft up group very coherent. Going down hill. Asks why the same place is just group seen here earlier. But it was very dense forest and forest. To regular leadership. I yells, I heard 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100. all slight. ahead of the others at different times. I called Attapetes never seem to be usual. Incidentally, to say there is no sign of a particular. Close association between the Flycatchers and the Spectacled Attapetes.

113 As this flock moves by, the "resident" B. superciliosus appear, again, same place as before. Again utter lots of SHN's, R's, and other noises. And again fall silent, go back down into scrub, after the flock has passed on.

The Pink-capped Flycatcher with this flock showed the usual tendency to stick to bamboo. Other species joined them both bamboo and "non-bamboo", showing no obvious preference for either.

This is as clear a case of two quite different flocks with overlapping territories as I have ever seen.

Rain stops ca 8:30. Going further along path 8:49 am

114 8:55 am Area similar environment. See group 3 Yellowface Yellowbills, 1 Sooty Thrush ranging 30-40 ft up in trees. Silent. Yellowbills flies away. Other birds do not follow.

Then Near Paddy Flycatchers ca 100 ft away.

Then Yellowfaces Aug. NODWA

119 Then suddenly I am surrounded by birds! A large mixed flock! Includes at least the 3 Yellowfaces, 2 Yellowbellies (the bird that flew away seems to have come back), 2 GT's, 2 of Attapetes, 2 Little 115 Stumped Flycatchers, 2 Paddy Flycatchers, a variety of tree creepers (including large one with conspicuous white throat). Sooty Thrush seems 110

to have disappeared. All birds in this group more or less arboreal. Ranging 12-25 ft up in fairly small trees. Some Colaptes. Some develop strong yellow faces. Some bellies and G's probably all in but at different times. Different species feeding in their usual different ways.

This group proceeds at a slow pace. G's tend to lag behind as proper courtesies. Then suddenly the G's fly back uphill and form what seems to be another, different, flock. This flock is only 100 yds or so "behind" first flock (and only about 100 yards from where original cluster of Yellowfaces - Yellowbelly - Sooty Terns h. seen). But it does seem to be a more or less "distinct" group going uphill. And showing a preference for lower vegetation.

200
201
202
203
204
205
206
207
208
209

193 This new group includes, in addition to the G's, 1 Yellowbelly, 2 Olive-capped Finches, at least 4 of H. atricapillus, at least 1 Pitta, 1 Attagis torquatus (me!), 1 Little Striped Flycatcher, 1 Yellowface, 2 or 3 All Rufous Squalarias. I also hear what sounds like White-trope (s) in neighborhood, but can't actually see the birds.

This group also very coherent. Most members ranging 2-15 ft up in scrub (lots of bamboo) and small second growth trees. Little staying relatively high, not seen below 10 ft up. A. torquatus seen only on ground and 1 ft up.

ADDITION: Group also includes at least two of the large white-throated woodcreepers.

The atricapillus do a lot of fighting among themselves. Suppl. ants and long chases. Other members of group apparently peaceful. Group as a whole noisy. Lots of "CN"s. And the atricapillus disputes are accompanied by a variety of vocalizations. But none of the species does any singing.

Difficult to tell who, if anyone is in lead. Possibly the GT's at least part of the time.

all 210
all 213

When the first of these two groups was seen, I noticed a single Is upon about 20 ft away. Large species of Queen with red breast and belly. White band between green of throat and red of breast. Lots of white on tail. I couldn't tell whether it was really associating with the other birds or not. But then, when the GT's joined from the first group to the second, the trogon sort of drifted along behind them. And then it definitely accompanied this group uphill. Sort of following a parallel course, about 10 ft to one side of the other birds.

Could the trogon have been "attracted" to the GT's because they also are green & red?

There was a group of B. nigrocostatus low in scrub about 50 ft from first Yellow-face - Yellowbelly - Sooty Thrush cluster. When the first mixed flock appeared around this cluster, the nigrocostatus came up higher in scrub and uttered their usual range of vocalizations. Then subsided. Then came up and vocalized again when the second, uphill-moving, group appeared. Then subsided again. As far as I could tell, they showed no tendency to follow either group.

My God! Mixed flocks are thick here! They certainly seem to be as common here as on Munchique! Possibly even more so. Almost "continuous"!

Starting back down path 10:07 a.m.

Back to 9200 ft area. See single Sooty Thrush apparently alone 20 ft up in tree.

Also hear sounds which suggest that resident B. nigrocostatus are still down in their usual scrub.

A little further on, hear Dull Brown Wrens (small species) song
ing high in trees. Then Yellowface song in adjacent tree. No overlap
see Yellowface 30 ft up. Apparently alone. Fly away.

Leaving 10:35 a.m.

COMMENT: There seems to be a greater variety of birds
flocks here than on Fairweather. Not surprising, as there seem to
be a greater diversity of environments here.

August 16, 1952
Pence

Going to start work in the region of Tigras this morning. The
same place I worked a couple of months ago. Arouse 5:22 a.m. Still
quite dark. Windy. Cool. Sky fairly clear. According to my altimeter
now, the altitude here is 8400 ft, 2545 m.

Some thrush sounds 5:45 a.m. Then some other, miscellaneous, notes.
Something that may be Yellowface song 5:47. NODWA. Again, definitely
Yellowface. NODWA.

Unfortunately, some of the scrub here has been cleared since my
last visit!

Everything quiet 5:52 a.m. Then some more Yellowface song
s. NODWA 5:58 a.m. There also is something else being here. Possibly
late-throat. Song of this species occasionally overlaps Yellowface songs, but
not usually.

6:04. See apparently single Yellowbelly. 4 ft up in fairly tall snow
L growth tree. Apparently alone. Fairly noisy.

Quite a number unidentified birds flying around now. Also q

quite a lot of bird noise 6:08 a.m. Both Yellowfaces and possible Slate throats still singing quite frequently. Song overlaps are actually not uncommon, at the same relative same. Different individual Yellowfaces certainly are overlapping one another.

A single thrush, presumably forest flycatcher
see single Yellowface singing 20 ft up in tall tree second growth woods. NOBWA. Apparently alone 6:23

6:31. Yellowfaces still singing quite frequently. But other species have stopped. Yellowfaces NOBWA

19
20 A single Black-headed woodpecker low scrub-edge pasture 2-3 ft up. Quiet. Alone. Then 100 ft away, see single Yellow-belly, same level similar scrub. Also apparently alone

Still beginning to reach this area 6:45 a.m. Going down road a little
6:50 Hear. Subura singing up hill.

Going to walk along border VSF and pasture. Ca. 8220 ft.

Come to region where there is thick but not too high second growth between VSF and pasture. There does seem to be a mixed flock of some sort here, altho I can't see it well. Hear Yellowface(s) singing up hill. Also something which probably is Atlapetes sp. singing approximately 100 yds away. No overlaps. Then catch glimpses of a couple of olive birds, 8-15 ft up, in general area where Yellowface(s) are singing. Apparently joining or following Yellowface(s).

CORRECTION: A few yards further down path. Edge VSF.

6:45. There are two of the same "Atlapetes" singing in trees about 100 ft apart. And now I see that they really are Slate-throats!!!! I had not realized before that Slate-throat songs really are quite reminiscent of the Whistle songs of Andean Atlapetes. Songs of Slate-throats here are

composed of 4 or 5 short whistle like notes. More or less descending in pitch (with possible exception end of last note) "chee chee chee chee"

Of course, this resemblance explains why Yellowfaces (and rufous-crowned form) do not usually sing when Atlapetes are singing!!!

(It does not explain why Atlapetes do not sing while Yellowfaces are singing. Perhaps they refrain because Yellowface songs sound like their own Quoting Switters.)

A few minutes later, both Yellowfaces and Slate throats are singing quite frequently. Again no overlaps

Then silence 6:50 a.m.

8:05 a.m. Some Whitestarts around here are uttering lots of long song phrases which sound like slowed-down versions of ordinary Yellowface songs, composed of much "harder" notes than usual Yellowface songs. Are these Slate-throats???

Incidentally, both Slate throats and Yellowfaces here probably are in reproductive condition now.

8:30. 8100 ft. Hear more Dubonia song. Apparently, in forest.

Back up to edge USF + Pasture 8:40. Both Slate throats and Yellowfaces still singing occasionally. Usual songs. Still no overlaps

Getting hot now!

Back up by highway. See pair of Blue & Blackies, apparently, alone 15-25 ft up trees very sparse scrub

Back up to starting place, without seeing anything more!

9:28 a.m. 8400 ft. Can hear 1 or 2 Yellowbellies and 1 furnarii in same patch thick second growth. This must, I suppose, be considered another (sic!) mixed flock.

9:52 In a 2' ~~...~~ 3-4 ft up in thick second growth edge
a patch of ~~...~~ ~~...~~ ~~...~~ Apparently alone. But, at exactly
the same time the Yellowfaced became conspicuous, a Cy begins to be
I suspect presence NODWA This by must be at least 100 yds from the Yell
owfaced bird there. It is quite possible that its large was a response to the
appearance of the latter.

10:08 See 1 Yellowface med chasing another. Flying over road along
road uttering SN's Arrows harsh. Alone

Leaving 10:10 AM

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

COMMENT: It is obvious why mixed flocks are so rare here.
Because both species and individuals are comparatively very rare here.
This is, by far, the most depauperate

Probably I saw even fewer flocks here today than a couple
of months ago because many of the birds (especially the Yellowfaced)
are in reproductive condition now

Presumably this area is depauperate because of the very re-
cent extensive destruction of natural vegetation. But there is one
very surprising aspect of the area. Even the patches of natural veg-
etation which remain, apparently untouched by human hand, (and
there are quite an appreciable number of such patches, some of which
are quite large), appear to be almost as depauperate as the obvious-
ly "gutted" patches. This would suggest that some sort of "shock"
effect has spread throughout the population of the whole area. Could
this "shock" be the interruption of "normal" inter-specific social
relations ???

August 17, 1965
Purace

Going to work at a comparatively low altitude on the west
ern (dry) side of the mountain this morning. Where Ater-Scan inter-
actions, and mixed flocks including A rufinucha, were seen a few
months ago. Arrive 5:15 a.m. Still dark. Cloudy. Little or no wind.
d. Everything quiet.

Some loud sounds ca. 5:22. Possibly some type of DC. Then sil-
ence. Then a variety of miscellaneous bird sounds 5:41 a.m. Then silence
again. Then more sounds. Possibly some hummingbird(s) - although
apparently not Lolani.

11 5:56. See single rufinucha feeding. Perched 6 ft up in small
tree in sparse scrub. Apparently alone. Song very different from that of the
Quito rufinucha !!! Stitches of rather slow, whistled, chatter or Twi-
tters, interspersed with real R's !!! NODWA.

Bird moves thru scrub. Uttering similar sounds at irregular
intervals. Then I hear some Atlapetes Whistle songs (without R) in dist-
ance. NODWA. Then Atlapetes shut up.

6:03 a.m. Hear a few Dubunia songs. Exactly same place as a
couple of months ago. Dubunia shuts up. Then a few more Atlapetes
chatters. Then more Atlapetes Whistle song in distance. Then more Dubunia
is song. No overlap Atlapetes and Dubunia.

17 6:03. See single Dubunia. Perched 8 ft up. Exposed. In tree above the
ck low scrub. Alone.

13 Will! 6:03. See single rufinucha (probably not same individu-
al seen before). Moving quietly thru second growth scrub. 2-8 ft up

104 Then Dubonia flies into tree which Atlapetes has just vacated. This should be cooper's gambusia gambusia gambusia on. Dubonia does not follow just perching up up. Then a C's and a cyanocapala j →
 105 Dubonia All in same tree 4-8 ft up. No obvious reactions between the birds of different species. All quiet - then single Audubon Sparrow
 106 j → group Then a rufinucha j → group! (One of these obviously is the bird that the Dubonia joined earlier. The other obvious is its mate.) Then single Yellow face j → group! All birds quiet. All perched close together in tree. No obvious hostility. Birds change perches from time to time. Sometimes a change by one induces other(s) to move. But these reactions obviously not supplants. Every once in a while, the Dubonia, the Yellowface, the C's, and/or the rufinucha chas make a little excursion to one or the other of the nearby bushes. Apparently to feed. But always go back to original tree, within a few seconds, to behave as before. I have never seen an obviously highly integrated mixed flock so stationary.

107 Then 1 CC leaves group. 6:09. Moves uphill thru hedge-like scrub. Silent. Ranging 6-10 ft up. The other birds do not follow - not even the other CC!

Then, 6:15, the group as a whole begins to move Downhill (i.e. in opposite direction from the CC which left earlier). This movement is initiated by rufinucha. But then the leadership changes frequently and rapidly. Dubonia, CC, and Yellowface all in lead at different times.

Group still very coherent during movement. Birds often only a few inches from one another. Still quiet. Group disappears from my view almost immediately.

This flock certainly was formed instantaneously!!!

And it obviously is largely the same flock seen here a couple of months ago!!! In exactly the same locality!!!

(Note, again, that this flock was composed entirely of one species, as always seen in the Quito region.)

6:37. There are a number of small one species flocks around here. Probably the same S-H as at "Canaan".

6:37. Near Yellow face fungus in distance. 11° 25' N.

NOTE: All these observations are being made along the road.

I have been walking slowly uphill. I am now at 9025 ft.

16 6:49. See single rufinucha, silent and distinctive, alone 4 ft up in sparse hedge-like scrub. Almost certainly not one of the birds seen with flock earlier.

See a couple of sooty Thraupids alone, in scrub-way down hill. Starting down hill myself 6:52 a.m.

COMMENT: I have always had an "unfortunate" suspicion that the absence of mixed flocks in such parts of the Quito region as the "No" no locality might be due to the smallness of the local populations there. But certainly the populations here are much smaller! And yet the birds are Allopreparous.

VI 113 11:00 a.m. See pair of rufinuchas in thick hedge-like scrub. Above where mixed flock seen earlier. Ranging 5-15 ft up. Quiet. Then I see that there is a pair of CC's behind them. CC's f → rufinucha repeatedly. CC's also quiet, ranging 5-15 ft up. Both CC's and rufinucha has apparently picking insects off leaves.

11:19 Then I see single Aster in same hedge. 20 ft downhill from CC-rufinucha group. 10 ft up. Silent. Also picking insects off leaves. Shows absolutely no tendency to follow mixed flock.

I don't know if the birds in this C-rufinucha group are the same ones seen in the larger mixed flocks seen earlier or not.

17:00 single Sooty Thrush alone 3ft up in scrub and on ground. Rather quiet.

NOTE: Part of the scrub here has been cleared since my last visit

17:18 a.m. Downhill. Near road 6000 ft. See single rufinucha. Quiet and alone. Ranging from ground to 10ft up, in extensive 'field' of miscellaneous second-growth scrub.

Another single Sooty Thrush alone in scrub by road.

Taking a long walk down road. (Note: There are quite a lot of Passiflora flowers around here at various localities. Apparently not same species as in the Western Cordillera. Salmon pink, not lavender pink. There are also a lot of bushes with the clusters of small yellow flowers favored by VB's and others at 'Canaan'.)

17:40 Another single Sooty Thrush alone. And another.

Near some more Yellow-face foug. NODWA

18:40. Slightly below road. Group of 3 Sooty Thrushes flew by. None but alone.

Sun coming out 8:50 a.m. Going back above road. Everything very quiet now.

More single Sooty Thrushes alone.

Nothing else! rufinuchas certainly are keeping themselves hidden now! (This presumably is why mixed flocks also have disappeared now as rufinuchas here may as important as panuve nuclear species as they are on Mundique.)

Leaving 9:40 a.m.

COMMENT: It probably is significant that I did not see the

Dubium or the cyanocephala after the first flock dispersed this morn-
ing. This would suggest that the flock was not reacting to any enemy and
kept together

August 18
1952

Going to work near the city tomorrow. By the usual small ste-
eam. Arrive 5:35 a.m. Still completely dark. Heavy cloud.

Some miscellaneous bird sounds 5:50 a.m. Flycatcher song etc
Then everything quiet by 6:05 a.m.

See some squirrel (species unidentified) in tall tree. Silent and
definitely alone.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

6:32. See single juv ♂ Ramphocelus 15 ft up in tree. Alone.
Then see a couple of squirrels in adjacent tree. Apparently the
usual species frequently seen at higher altitudes. Bird and squirrels ap-
parently not reacting to one another. This place certainly seems to have
been invaded by squirrels now! Why?

6:40. Now there seem to be several juv. ♂ Ramphocelus around
and flying. But alone.

There also are flocks of Thaenias around (as usual)

Leaving 7:40 a.m.

Central Cordillera Colombia
 Pasto - Mascapan side
 May 1963

May 21, 22, 23
 24.

No Inds seen alone

|||||

(22)

(23)

90.04%

No Inds in flocks

(213)

No. Inds per flock

8 4
 5 7

4

13 130

4

2

2

11

3

10 16

8

4

6

16

4

13

No flocks seen

|||||

No H.O. flocks seen

|||||

Largest no inds in flocks

14, 17, 17, 28, 26, 22

May 21 = 6 hrs 00 min
May 22 = 4 hrs 30 min
May 23 = 4 hours 15 min
May 24 = 5 hours 00 min

TOTAL = 19 hrs 45 min

Central Cordillera Colombia

May 8, 9, 10, 11,
12, 14, 15, 16, 17,
18, 19, 20

Purace - Town side + Top
May 1963

No Inds seen above

(236)

(426)

46.95%

No Inds in Flocks

(200)

Top of pur. side

6	2	5) 9
4	5	4	
3	4		
2	4		
			134

No Flocks seen

|||||

(34)

45

No H.O. Flocks seen

|||||

(21)

Largest no. Inds 1 Flock

9, 16, 18

24

4	4	
2	3	
9	2	22
3	2	
2	4	

May 8 = 4 hrs 00 min

May 9 = 4 hrs 30 min

May 10 = 4 hrs 30 min

May 11 = 4 hrs 00 min

May 12 = 4 hrs 15 min

May 14 = 2 hrs 00 min

May 15 = 4 hrs 30 min

May 16 = 5 hrs 15 min

May 17 = 4 hrs 45 min

May 18 = 4 hrs 15 min

May 19 = 4 hrs 00 min

May 20 = 3 hrs 45 min

TOTAL = 49 hrs 45 min.

Central Cordillera Colombia
 Páramo - Masenahú Side - Aug. 1963
 Mt. Tijeras

Aug 3, 1963
 133

No. Inds seen alone

|||||

16

11

(18)

No. Inds in flocks

(213)

92.21%

(231)

No. spp. per flock

28
 4
 2 46
 6
 3

No. flocks seen

|||||

12

No. H.O. flocks seen

|||||

11

12 }
 14 } 39
 9 }
 4 }

Largest no. Inds in flock

35)

10 4 }
 10 } 46
 11 }
 10 }
 11 }

131

Aug. 3 = 4 hrs 00 min

Aug. 14 = 4 hrs 30 min

Aug. 15 = 4 hrs 30 min

13 hrs 00 min

Central Cordillera Colombia
Parase' - "Hearts" town side & top.
August 1965

Aug. 1, 2.

No Inds. Seen Alone

|||||

18

(18)

73.53%

No. Inds. in Flocks

||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||

(50)

Inadequate count
probably small

No. flocks per flock

13

2

17

11

33

No Flocks seen

|||||

No H.O. Flocks seen

|||||

Largest no. Inds in Flock

22

Aug 1 = 3 hrs 30 min

Aug 2 = 3 hrs 30 min

TOTAL = 17 hrs 00 min

Central Cordillera Colombia Aug. 1, 8, 14
 Purace - Town side & Top
 August 1965

No. Inds. seen alone

||||| / 1 |

|||||

(26)

No. Inds. in flocks

||||| / 1 |

||||| / 1 |

(63)

(71)

69.23%

Probably Composite

No. Flocks seen

||||| / 1 |

No. Inds. per flock

13

2

7

11

5

2

No. N.O. Flocks seen

||||| / 1 |

Largest no. Inds. / Flock

22,

Aug. 1 = 3 hrs 30 min

Aug. 2 = 3 hrs 30 min

Aug. 17 = 3 hrs 45 min

TOTAL = 10 hrs 45 min

Central Cordillera Colombia

Piedras Blancas, Santa Elena

July 1965

Boqueron de Palmitas

La Montaña, Belmaria

July 11, 12, 13, 20,

24, 25, 29,

No. Inds. seen

|||||
|||||

(9)

(176)

58.16%

Very High

No. Inds. in Flocks

(114)

No. flocks per flock

16

3

3 20

3

2

2

2 11

4

2

10 9

3

17

5

4

10

143

Fl

No. Flocks seen

|||||

No. H. Flocks seen

|||||

Largest no. Inds. 1 Flock

20,

July 17 = 4 hrs 15 min
July 18 = 3 hrs 30 min
July 19 = 3 hrs 50 min
July 20 = 2 hrs 45 min
July 27 = 3 hrs 30 min
July 28 = 3 hrs 45 min
July 29 = 3 hrs 15 min

TOTAL = 23 hrs 30 min

Santa Marta Colombia

August 12, 1947
Santa Marta Region

SEE TOP. & NOTES ON MIXED DIGLOSSINI

3:00 pm 2000 ft. E. summit of MTF. Mixed
fog and sunlight

Altogether mixed birds, as yet seems to be some sort of a
mixed flock. Includes 1 White-crown, 1 Slate-throated Whitestart,
1 small ^{v3} rufous flycatcher (Can't tell if latter is the same species seen
elsewhere to the south or not), 1 Alb. Alcedo. All visible inds. now
going in - 30 ft up in very mixed vegetation. Not going anywhere
in particular. Rather diff. 10-20 ft up. All very quiet.

A few minutes later there suddenly are a lot of birds
around. Presumably, many just same flock.

Now I see that group also includes another "White-crown",
and another "Bright" Ruddy flycatcher (same species first under
label - CXXV)

Also 2 ^{v7, 4} White-throats. Definitely not slate throats. No.
CXXVII. Was I wrong in my earlier identification of slate throats?
I think so

Also 3 ^{v10, 5} Chickadees - (CXXVI), At least 2 ^{v12, 6} Squalia
rus (same species). 1 ^{v13} Alb. Alcedo, 1 ^{v14} Luteoventris type. At least 1
Hemispingus type (White-stripe or reign?) Flock is vented
briefly by a single ^{v11, 10} Zonotrichia. Also a single White-tailed
Hemispingus (CXXIX).

Now most of the birds are quite close together. The
Atlapetes, Basiluterus, Hemispingus, Zonotrichia and Alb.

stay quite low in edge woods 2 - 4 ft up. All the other
range 1 - 23 ft up. That is quite a lot. The other side of
number of loud successives. Note: White-bellied, etc. and
noises of species.

Albi
Whitestarts, White-bellied, Bright Ruddy and 7 Albi
tend to stick quite close together. In a nucleus. Best not
really "leaders". Actually, from a young member's fact,
and probably has no "lead" of its own.

Albi
Group gradually drifts away to right. Then drifts
back, ca 3:50 pm. Apparently same birds, still associated. (See
diag of Albi!!!) Now one of the Chuck Alligates seems to be
lead. Followed very closely by Whitestart - White-bellied - Bri-
ght Ruddy - Albi "nucleus". Birds a little more noisy now.
And moving more rapidly and consistently. Soon disappear from
sight.

7 Albi seems to disappear at same time, presumably
going along with the flock!!!

Catch up with same flock again only a few yards further
on. Get better view of "Whitestripe or ruddy type". It definitely is
something different. EXXVIII

This flock undoubtedly is long sustained and highly inte-
grated!

5:00 pm. See what seems to be same flock in almost
exact same area. Apparently all or most same birds attached!

NOTE: This flock seems to have "incorporated" all
the suitable birds in the (not very large - 1/4 - 1/2 mile long)
that I have been able to cover this afternoon. At least, I can't

any other birds around.

5:23 pm - flock appears again. This time Whites
write down 30 birds. Check identities of → White-tant,
♂ Alb. → All the rest just →
group. Most most individuals close together

NOTE: I will count this flock out once for this afternoon
when making the formal tabulations. But I will use later observations
to correct my identifications, and counts of birds, made during
the first period of observation.

Thus for instance, when the flock reappeared this last
time, I was obvious that it included 3 White-tant XXVII's.
Presumably all 3 have been present all the time.

NOTE: The ♂ Alb. has been feeding on small tubular
or orange flowers. In usual Dryflora style. There also is a
small Hummingbird (XX) here which feeds on same flowers quite
frequently. Apparently using Dryflora holes!!! But I have
never seen the 2 species around in the same area at the same time

When the flock appeared again at 5:23 pm, the ♂ Alb.
fed at a whole series of these flowers. Then disappeared. A few
seconds later, a single hummingbird XX appeared. XX →
→ flock. Then the XX also fed on whole series of same
species of flower as the ♂ Alb. Probably including some of the
same individual flowers!!! But Alb. never (re) appears.

Mutual inhibition and avoidance ????

COMMENT: Why aren't there any real "tree top"
members of this flock (e.g. Cys, some tanagers) ???
Starting downhill 6:50 pm.

August 10-9
Lower Santa Poyson

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

6:23 a.m. Border of DSTF with quite extensive patch of low dense scrub in front of it. About 200 mixed flock. Possibly but certainly not wholly, flock yesterday. Includes at least 2 ^{W 19} Whitestarts XXVII, 2 ^{W 20} XXVII, 2 ^{W 23} XXVII etc. - all low in scrub, 4-12 ft up - 2 ^{W 24} XXVII XXVII 2 of the local species of Ammodramus ("Local XXVII") - all high in trees, 20-25 ft up - and 2 XXVII types (same species seen yesterday) ranging widely, 6-20 ft up. A single hummingbird XXVII → group briefly.

Flock as a whole quite noisy. Whitestarts being from time to time. NODWAH. Group probably well integrated but inds. rather far apart. Difficult to tell who is what. Possibly Whitestarts. Check XXVII certainly in rear. Checks f. → group repeatedly.

COMMENT: I only see the "blue and yellow-tanagers" briefly. I think that they may separate themselves from group quite soon. Another indication that "tree top flocks" and "scrub-flocks" are unusually "distinct" here??

6:55 a.m. Approximately 100 yds further on same type vegetation. Single XXVII flies by. Apparently alone.

Albi
3

A few minutes later, a couple of yellow-billed birds flit by, low in scrub. XXVII types?? Then I hear 1 or 2 XXVII singing nearby. And then a single

lets up a little. Until finally it is so light that I can see to take a walk. Start out 4:50 pm Going in a different direction along "highway" leading uphill from station.

Almost immediately see group of 3 Acridothera trichotis. Usual species. In low scrub, just "scrub bordering" pasture" (actually a field cleared for a future pine plantation). Moderately mossy. Lots of PN's. But difficult to follow.

4
5:10 pm Just a few yards further up see a pair of Budytes perdi flycatcher. Attorney R's. And flycatcher per chug 2 - 4 ft above ground. A single Whitstart CXXXVII flycatcher apparently alone.

Rain getting heavier again.

5
5:35 pm. A few more hundred yards along road. Low second growth scrub along edge, bordered by STT further back. See pair of birds. One is flycatching from the ground, while other is flitting thru scrub 6-10 ft up. These birds are peculiar. At first I thought that they were Slate-throated Whitstarts. But now I think that they are "Brown Whitstarts", CXXX. (SEE BELOW). They move on. But immediately I saw a single Albe, just across road, 2-4 ft up. And then 2 Chick Atlapetes, 1-2 ft up, only a few yards away. One bird adult, the other juvenile (this would suggest that breeding season is just over). Then see single Whitstart CXXVII, 4 ft up in scrub. And then 2 large wood creepers (not same species seen earlier), 6-20 ft up trunks large trees 10-25 ft away.

I think that all these birds must be classed as belonging to a flock. I think of the Crowned Whitestarts. Latter probably only "transient" members of flocks. But the rest may be largely single birds. No obvious bird-like shape. I think they are very different species.

Rain is so bad now that I have to turn back.

About 100 yds down road, saw across pair of birds. Apparently Crowned Whitestarts. Almost certainly same individuals seen a few minutes earlier. Again one is flycatching from ground while the other flits thru scrub. About 10 yds away I see 2^W Ash-throated Flycatcher, a-10 ft up in some trees. Certainly not the same individuals seen earlier. The two species apparently ignore one another. And move in different directions. Thus, I think that they should both be classed as alone.

Stopping observations: 8:45 pm.

COMMENT: I have no idea what CXXX really is. Whitestart (adult or juvenile), flycatcher, or what have you. But it probably was what I called "plate throat" yesterday. If so, the role of the species (or form) in mixed flocks seems to be fairly clear (on my observations so far). An occasional associate. Occasionally joining and/or joined by other birds, but not sticking with them. And, I should add, that I have never seen it close to a Whitestart CXXVII when the two species are associated in the same flock. All very reminiscent of the relations between the two species of Whitestarts at the Parakeets above Cali!

NOTE: It is my general impression that the avifauna

(2)

here has a surprisingly "high altitude fauna" for its actual elevation above sea-level. Why?

August 14, 1954
Santa Marta, Pigeon

Going to work along "highway" above station again this morning.

SEE TODAY'S NOTES ON MIXED DIALOGE

6:45 am Going to work along side path "highway" at 14400 ft. Apparently goes up into 15000.

Almost immediately come across large flock (probably the same as flock seen earlier this morning, but it will be counted again now.) Difficult to see in forest, but includes at least the following: 1 large ^{white} rufous tree-sucker (30 ft up on tree trunk), 2 small yellow-billed flycatchers (probably same species - ranging 15-25 ft up, in rather smaller trees), one yellow-billed ^{white} tanager (Local Yellow-billed? - seen once 30 ft up in tree), one large ^{white} thrush or flycatcher-like bird (pale gray underneath - something I have never seen before - ranging 20-30 ft up in trees). Also at least 3 ^{white} Atlapetes. Including "begging" juveniles. Ranging 2-20 ft up. At least 1 ^{white} Whitstart CXXVII seen occasionally. NOT W.A.H. At least 1 ^{white} Brown Whitstart. Both Whitstarts range 10-30 ft up in great variety of vegetation. Once, at least, the "Brown" repeatedly follows and "supplants" the CXXVII. This looked almost like a young following a parent.

and is considered good. It can be seen by only a few forms of EXVII. Also, group is visited by several EXVIII individuals. EXVIII is not seen just - can't identify all the birds where it is - the same species.

Group above is also squirrel. Large flocks of bright rufous all over. Parents some white or blue.

Group as a whole is very noisy. Members highly integrated. But birds often quite widely dispersed. Can't tell who, if anyone, is leading.

COMMENT: It is so that highly integrated flocks tend to be more widely dispersed, at least in size, than comparable flocks in some other species. Is this causally related to the fact that there are comparatively few species here?

NOTE: Forest here is not tall. Most trees no more than 20-30ft tall. Due to edaphic factors. (slope is very steep.)

7:45 am Go on uphill thru forest. To 7000 ft. Where forest becomes lighter and there is a lot of bamboo. From the sounds I hear, it would appear that the flock is moving parallel to me and still maintaining its cohesion.

Lots of Whistling EXVII song. All NODWAH

ADDITION. Now I see that there are at least one pair of each of two different species of creepers more or less associated with this group. Essentially following.

8:10. See a single Trogon. Apparently alone.

Starting back down hill 8:15 am.

10:22 am. Walking along road. 17525 ft. Flush a single EXVIII EXVIII from low fern bamboo scrub on old slide

Silent. Apparently alone

10:23 a.m. Just a little further along road. No song
diffuse. Flare in low-suffr on another slide. Includes at least 6
Local Yellowbellies, 2 ¹⁰⁰ Atlapetes. All 1-4 ft up. Yellow
bellies ¹⁰⁰ Atlapetes. Group was somewhat busy. 1 Atlapetes
and 1 ♀ Atlapetes (at different times and in different places). And
also 1 Zonotrichia. This I suspect they have seen before
in scrub near Yellowbellies. Also 1 Geothlypis working tree.

Then Brown Whitestart XXVII song nearby. Completely
overlapped by distant Thalass song.

Local Yellowbellies would seem to be more autogynous than other forms of Auroquathus.

NOTE: This may be (partly or largely) same large
flock seen yesterday afternoon and earlier this morning.

Now see there is another Check in adjacent edge of ST.
More Whitestart song completely overlapped by Thalass.

Going a few feet further into ST, see that there are quite
a lot of other birds around. Include 2 "Brown Whitestarts" fly
catching from ground. Get a good look at these birds. Certainly
not either Slatethroat or XXVII. Also 1 Bright Ruddy flycatcher
ing low and high. Also 1 Aquifera-type, high in tree. And
¹⁰⁰ 5 or 6 small birds high in trees. Probably Euphonias.

I think that all these birds (except the Thalass)
must be considered as belonging to the same diffuse but probably
highly integrated flock — the flock of the area.

11:00 a.m. A little further on. See single Bright Ruddy
flycatching in usual place. There is a single Check on ground only &

few get away. These birds reportedly do not belong to large flocks.
New birds flying away. Leaving Buddy alone. Bird
appears to jump to other birds of its own species in low scrub.
Also appears to show nest.

Height of mountain 11-13-5 m.

Then journey, going straight up above the station,
into the USTF, with a quite rocky terrain with a moderate
slope very very steep. 6:30 to 7:30 ft 2:33 pm. So far, there
has been a quite fantastic amount of undergrowth in the forest.
Lots of bamboo and other things. There is a lot of sunlight
reaching the lower layers. Some of the bamboo trees are falling all
the time. On the whole, this is very unlike any other mountain
forest I have wandered in.

Fog rolling in 3:00 pm.

Hear birds from time to time. But, of course, they
are frightened by the sound of the machete.

Reach altitude of 8075 ft 3:15 pm. A small "plat-
eau" Rather open, upper USTF type trees, with lots of bamboo
scrub underneath. Birds moving around in the tree-tops, but I
can't identify them (yet). Certainly a few large creepers.

3:15 pm Another part of the same plateau. Fog has
become noticeably thicker in the last few minutes. But it doesn't
seem to have produced either an increase or a decrease in bird
sounds in general.

I hear a few bird sounds scattered about. But nothing
of which sounds like a flock.

Going to start gradually down hill 3:45 pm.

Arrive at bottom edge VSTF 4:20 pm. Everything dead quiet. (Perhaps fog down here & up here after all?)

See a single Th feeding on blackberry flowers. Quite alone. Note: Th is not usually a common al off focus.

Fog lifts, some Th up. Then everything is dead quiet again. Fog is long in. Even though the fog has stayed lifted.

Fog comes in 5:00 pm. Nothing happens for a few minutes. Then Whitstart XXXX Sung. NODWAA. Stops. Then Sung Th. Same Whitstart Sung again. NODWAA. Stops. A few minutes later, fog lifts.

5:07. See mixed flock low in scrub edge VSTF. Includes 2 Chick Attaptes and 2 Synalaxis (either ad and juv. of same species or, more probably, ads of different species). All birds ranging 1-3 ft up. Never coming out from cover. Very quiet. But flock is only highly integrated. Birds very close together. Just one species in lead, then another.

Some minutes later, see single Alb LA Alb saw area. Silent and alone. Feeding on usual orange flowers.

5:20 pm. See (another?) single Alb LA Alb some distance away. 4-5 up edge VSTF (Alb) silent and alone.

5:32. Further along path, see single White LA White heard low in scrub along edge VSTF. Silent. Alone.

Everything seems to be very "coy" this afternoon!

NOTE: *Alcedo* birds seen earlier than in all or most other places. Presumably another species of the same genus.

They are silent - only 2 or 3 flycatching, quiet

3-40 *Alcedo* birds seen in all of bird houses. At least 2 species. Not just *Alcedo* but also *Alcedo* birds.

But then they fly up and sounds stop almost simultaneously. See another note of this, silent and above 2-4 ft up

scrub edge. This would appear to be optimal habitat for *Alcedo*. (And I should stress that the scrub here is much denser - and apparently wetter - than the scrub under the *Thalassia* *Scaevola* trees I worked this morning.)

Starting down about 6:05 pm

NOTE: For purposes of statistics, this afternoon's observations should be counted only from 4:30 pm (to 6:05)

August 15, 1967
Santa Marta Region

Going to work along "highway" again this morning. SEE TODAY'S NOTES ON MIXED DIGLOSSINI !!!

8:50 am Just below where "the" flock usually seen. Very mixed vegetation edge road. Come across small group. Includes 2 ¹⁰⁰ Bright Ruddy Flycatchers. Flycatching at all levels, 2-25 ft up. At least 1 ¹⁰⁰ "Brown Flycatcher". Flycatching from ground and in scrub 2-6 ft up. 1 ¹⁰⁰ "Slate-throat", flycatching and picking insects off leaves, in scrub 2-12 ft up. Also family of 3 ¹⁰⁰ *Alcedo* all

14

apetes (including juv) flying in scrub and also moving out in 2-20ft up. Then I hear Whistling ETVIT flying out far away NODWAH. Stops.

Group as a whole well interested. Only juv. Ch. in Attapetes moving. It has almost no caudal

NOTE: There does seem to be a definite "territorial complex" here (also). Different species are seen within areas which associated with same flock. One the Brown ETVIT does seem to be a member of the complex — occupation of its plumage to relationships.

ADDITION. A large, more or less scrubby ground bird flies out of the scrub. Conceivably it also may have been a "member" of the flock.

9:15 am. Further down road. See pair ^{W 1141} Bright Raddies Flycatchers. Flycatching over slide. Also hear ^{W 1142} Check Attapetes ^{W 1143} mainly. This is exact same place where I saw a Check - Bright Ruddy group yesterday. Group presumably still in existence. I.E. small as well as large groups can be "semi permanent".

9:40. Area mixed scrub and scattered VSTF trees just above station. See single ^{W 1144} Check Attapetes low in bamboo edge road. Uttering PN's but apparently alone.

Stopping observations 9:45 am.

This afternoon going to work directly above station but not exactly where I have worked before. Arrive lower edge VSTF 2:45 pm. It is hot. Rather windy. Occasional patches of fog.

2:47. Hear 1-note Hummingbird Song NODWAH. Stops. Otherwise everything is dead quiet. Both when the fog is in

W

W

and some of a...

fills
CMT

3:23 ... feeding on
... ..

10:15

3:37

In some cases
... ..
... ..

Step by observation, 5:50 pm

August 16, 1967
Santa Marta Pigeon

Going to work along "highway" again this morning.
SEE TODAY'S NOTES ON MIXED DIGLOSSINI

17
17:17 a.m. Up by highest ravine with VSTF trees and ady
cent scrub. 14625 ft. See small mixed flock. Includes 2 ^{vv. 100} Local
Yellow-bellies, 2 ^{vv. 100} rapid-rax-type flycatchers, 2 ^{vv. 100} Whitestart
CXXVII (1 adult, 1 "beeping" juvenile), and 1 ^{vv. 100} Zonotrichia.
Zonotrichia stays low. All others range 2-18 ft up. Yellow-
bellies in lead. Zonotrichia f ———> Yellow-bellies. Whitest
arts f ———> group. Flock as a whole quite integrated.
Rather quiet, except for juv. Whitestart.

A little further on, see single of ^{vv. 100} Alb. 2 ft up in dense
low scrub (quite apart from trees). ^{vv. 100} "CN's". Definitely
alone.

all

Down
Down
Down

They hear CXXXII from distance. 11:20 AM. Hear in several places flying toward CXXXII. Sounds which may be from fly & display 11:20 AM

See low over road & display. CXXXII is same individual seen with flock yesterday. (Note that annotation of cheeks with feathers is facultative.)

7:55 AM Down by road. See several CXXXII apertures 1 ft up low-CXXXII scrub and above. (Note that annotation of cheeks with feathers is facultative.)

8:20 AM Down by "the Road" and see a very large group up crossing road. Partly but not completely same group seen on earlier days. Today includes at least 20 CXXXII

Chlorophonias (CXXXII). (Note are undoubtedly the same as the birds that I thought were CXXXII the day before yesterday. 2 Yellowbellies, at least 4 Check Antapetes. 1 CXXXII 1 CXXXII 1 CXXXII 1 Brown Nighthawk 1 small tree creeper 1 Bright Ruddy Flycatcher. 1 Flycatcher of a species I have never seen before (brown cap & back, yellow supercilium).

Group as a whole highly integrated. Yellowbellies and/or Check Antapetes definitely in lead. CXXXII definitely bringing up rear.

Vegetation here is very mixed. VST = trees and all sorts of scrub, as well as bare earth of road and embankment. The Chlorophonias stayed high in trees, 20-30 ft up. The Yellowbellies stayed in scrub and low trees, 3-15 ft up.

20
20

The Thalassidroma were 1-4 ft up in scrub. Particularly banders - H. B. rather conspicuously, stayed in trees, 10-25 ft up. The W. XXVII also in trees, probably approx same level. The Brown Whitstart stayed low in scrub and flycatcher was around 7-8 ft up. was seen only on low bushes, 10-15 ft up. The Bright Ruddy flycatcher at all levels 2-25 ft up. Other flycatcher seen only in small trees, 10 ft up.

Group as a whole were noisy. Chlorophonia was uttering lots of nasal notes. Probable call CH. Constantly flapping wings, flapping tail of body, back and forth. The Yellowbills were quiet. The Thalassidroma also were noisy. Lots of loud "quittings" (Action. I think that there was at least 1 individual more than a single family group of the species present.) The Alb uttered occasionally R's, NODWAH, but was generally quiet. The Brown Whitstart was apparently silent. The XXVII sang several times. Always NODWAH, except for Thalassidroma in background. (Thalassidroma may also have overlapped Alb's R's, but I am not sure about this.) The Bright Ruddy uttered R's. The other flycatcher seemed to be silent. The creepers also seemed to be silent.

The 2 Whitstarts were never close together.

All or most of the species seemed to be picking up insects in their various ways. (The only probable exception were the Chlorophonia. But I couldn't see what they were eating, if anything.)

In spite of their number and conspicuousness, the Chlorophonia seemed to be only minimally nuclear. Rather higher in

Trues than most of the other members of the group. And none of the other members of the group seemed to be paying much attention to them. Group as a whole doesn't seem to be making any real progress in any particular direction. Birds still around in general neighborhood 9:00 am

10:35 Below "the flock" very few ^{1/1000} *Atlapetes* 4 ft up in mixed scrub. Also can hear *Atlapetes* low in scrub. ^{1/1000} *Atlapetes* fly. And see *Atlapetes* ^{1/1000} *Atlapetes* flitting 2-10 ft up bushes and small trees. This can be considered a non-integrated flock.

^{1/1000} *Atlapetes* A little further down, come across another flock of at least 3 *Atlapetes* in bamboo scrub-edge road. *Atlapetes* "buzzing" steadily. These birds must be considered alone.

(Incidentally, this species seems to be remarkably fond of bamboo. This may help to explain why *Bush-capped Flycatcher* were so rare here.)

Then see single *Bush-capped Flycatcher* alone

10:46 am Still further down road. *Bush-capped Flycatcher* with *Atlapetes* and rather high second growth vegetation. See single *White-throated* ^{1/1000} *Atlapetes* CXXVII. Silent. Flycatching 1-10 ft up. Can also hear at least 1 *Atlapetes* ^{1/1000} *Atlapetes* nearby, low in scrub. Then 3 *Atlapetes* ^{1/1000} *Atlapetes* CXXVII group. Moving 10-10 ft up. Quiet. *Atlapetes* not feeding. CXXVII eventually stops flycatching. Starts to pick insects off leaves, like a *Comptosia*!

Stopping observations 10:55 am.

This afternoon going to climb way up into forest above station, just as we did day before yesterday. Start into USTF 2:15 pm, and climb fairly rapidly up to 7900 ft. Fog is

in the time. We were getting little showers of rain. At least
 150 feet above ground. A lot more birds' noises than the
 day before. The weather was better.
 5:05 pm

Go up to 500ft + But in the 400 ft part is
 very dense bamboo scrub and more growth forest (then sapling
 growth close together. Denser look very promising

And then the rain comes down in buckets!!! We have
 to turn tail and retreat to the station.

Pratt returning steps to Jan for a walk along high
 way! Reach first patch of scrub just above station 4:30 pm.
 See a group of 2 birds 15-20 ft up in scrub.
 1st fly. But apparently alone.

3:05 pm. A little further along. Another area of very
 mixed scrub. See groups of 3 ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174}
 Slate-throats, 1st ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194}
 All ranging 2-10 ft up. Ducks seem
 to be similar. Very conspicuous. Ino. begging all the time. But
 they certainly are not in lead. 1st ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174}
 Slate-throat f —————> 1st ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194} ^{V 194}

Also around in the same neighborhood, but only briefly
 are a single ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174} ^{V 174}
 unglued — probably ~~XX~~. (It differs, I think, from the other
~~XX~~'s seen earlier in that the rufous or cinnamon of the chin
 and throat is "cut off" abruptly at the middle-lower part of
 the breast — instead of "dribbling" down onto the abdomen. But
 this might well be an individual variation. Or my earlier observa-
 tions may have been wrong.) I think that both the Puddy and

the hummingbird must be considered part of the group group as a whole and not be well interpreted.

The other great wasp birds time looking over from
near small blue cap-shaped flowers (growing in clusters) &
I apparently looked for insects on them.

COMMENT It looks like I have seen
many more of them of this species than I have seen at the point
an object. Not sure what it is, but that is the only one I
fluent subject and several less of the same in the birds.

NOTE: There is one point where I have not been
essed sufficiently strongly in my notes so far. The White-throated
Whitetail does seem to be a regular or almost regular occurrence
of flocks in this region.

5:32 pm "The Rock" area See small group 3-4

Alouatta, 2 Brown Whitetails. All 10-20ft apart.
Also hear Bright Ruddy R's nearby. Another small and probably
not very well integrated group.

Lots of thunder in distance. It is going to rain again.
I am starting back down road.

See lots of Sooty Terns. All alone.

Stopping observations 5:45 pm

NOTE: For statistical purposes, the whole of
this afternoon's observations should be counted as 1 for 2 min.

CORRECTIONS AND ADDITIONAL INFORMATION:

Some of the technicians from the CVM came up here
today, and I learnt a lot of things.

There are supposed to be two rainy seasons here.

April and May, the latter September - How can we see the end of the wet season now? (I had God's time - not enough!)

All the birds were - some were very much affected by now. (The plants were - the station was bare garden (and it looks it!). Most of the forest has been burned repeatedly (and it looks it too!).)

There may be ways of getting to higher altitudes.

At the moment the best but would seem to be to go from Guacumala to Valle de Papaya (by air), then to Puello (by air), then to San Juan (God knows how), and then higher yet (by mule) to stay with the local Indians (This is essentially an approach to the Sierra Nevada from the South.)

In a couple of years, there may be an easier way. The Colombian authorities are planning to build a new television relay station on Pico Kennedy, another and higher mountain of the Sierra Nevada.

August 17, 1967
Santa Marta Region

This morning, going to work along "highway" again. SEE TODAY'S NOTES ON MIXED DIGLOSSINI.

7:15 a.m. Ridge VSTF ravine by first forest area. See small group of 1 Whitstart CXXVII and 2 Chick Atlapetes in adjacent scrub. Chicks 1 - 3ft up CXXVII 2 - 10ft up. Group is

"muted" but at least 2 Whistlers and DW to Dist nest
sings from tree to tree. No DW

Then a large scrub group comes down road :
Group react then to arrive a lot of calls by the
Whistler XXVII. (Sound is like the one they use in the nest area and is very loud and is very repetitive)
and then some in general a lot of "usual" rattles.
All these in the "scrub" area are very loud and is very repetitive.
Allapetes ??? Just near them is !

with

17:28 a.m. Hear more scrub songs up the road DW is at stop.
(NOTE: These certainly never produce rattles by anything)

COMMENTS: The rattles which tend to accompany XXVII
songs would seem to be "really" adapted to increase the
cohesiveness of a group and thus attract additional members.

The XXVII - Chick Allapetes relationship would appear
to be the strongest of all the "friendly" relationships in this region.
Probably stronger than most comparable relationships in other parts
of the Andes. Of course, the isolation of this area probably provides unu-
sually favorable opportunities for developing such relationships.

17:45 a.m. Walking further up road. Region of low scrub
scrub interspersed with low bushes. See groups of 4 Chick Allapetes
ca. 1-3ft up. Noisy. But definitely alone.

with

8:15 a.m. Back first scrub area. See 2 scrub groups,
perched silent and alone, in scrub below road. Flies up call.

26 W 213 1 Then see group in USF and scrub of ravine. Includes
2 Whistler XXVII and 1 Slate-throat. Both species fly
catching 3-12ft up, but not together. XXVII sings once. No
DW. Slate-throat quiet or silent. Also see 1 Chick Allapetes

3-4 ft up in water. Some are 2-3 ft
0-12 ft in water. Then I see a point between a bank & Drajana
I think that is an entrance. All and I see many cases
of *Clupea* in the water. I think it is *Clupea* - if there was one
point - I suppose it is the same. The other of
Clupea stops around for some time. The fish are also

During the day, the group also was
visited by one or two *Clupea* birds.

Thinking further down, I find that Bull-Layer is
working in "the fish" area. So I continue down.

COMMENT It seems to me that some of the areas along
the coast are very poor. In some places look
just as good as some areas where birds are common. Does this
suggest that the region is (still) underpopulated? - as a result
of earlier cutting and burning???

9:10 a.m. Found a couple of Bright Ruddy Flycatchers chasing
insects in a usual place. Flour. But definitely alone.

Stopping observations 9:30 a.m.

Santa Marta - San Lorenzo 1767

No. Birds. seen. Alone

No. Birds. in Flocks

40
 60
 IIII
 (28)

12
 IIII
 (219)

09.08.70

(26) No. Flocks seen
 IIII IIII IIII IIII IIII IIII

(15) No. N.O. Flocks seen
 IIII IIII IIII

Largest No. Birds in Flock
 32
 (Chlorophanes)

<u>No. spp. per Flock</u>	
11	2
7	2
3	2
2	14
5	4
8	(20) 9
11	2
2	3
2	5
(10) 4	3
2	2
3	2
2	3
(14) 5	(28) 4

(21)

Santa Marta - 1967

Hours Spent

August 12	3 hrs	00 min
August 13	4 hrs	00 min
	1 hr	50 min
August 14	6 hrs	00 min
	1 hr	45 min
August 15	4 hrs	30 min
	3 hrs	00 min
August 16	5 hrs	30 min
	1 hr	00 min
August 17	4 hrs	00 min

33 hrs 45 min

April 3, 1965
Pico Espejo
Venezuela

... of ... sitting ... not far from
July 2, 1965 approx 3:45 pm to 4:15 pm

... across ... immediately. Includes
at least 1 PL *Atlapetes*, several other birds

& 15 fee angle PL *Atlapetes* (you may know him as before)
By itself. Select. In low open scrub

It is in ... (before the attack) by one of the
... (see ... *Atlapetes* ... *Atlapetes* ...
... without ...

Everything very quiet 8:23 am

Lots of ... *Atlapetes* ...
Orange bell, feet, and eye ring. In pairs

10:20 am. Finally come across mixed flock. One pair of PL
Atlapetes. One pair yellow-billed *Poecilothraupis*. In region of fairly tall,
scattered trees, with lots of scrub-bulow-trees. (Probably same area where

PL's seen earlier) Group quite well integrated. PL's usually somewhat
lower than yellow-billies, but there is great overlap. PL's = 10-30

ft above ground. Yellow-billies 15-40 ft above ground. Both species
quite silent. One Yellow-billy \rightarrow PL. Twice Yellow-billy

\rightarrow PL. Twice PL \rightarrow Yellow-billy. (What seems to
be happening is this. PL's advancing by hops and short flights. Never

stay in one spot long. Yellow-billies usually advancing by longer flights.
But also staying in one spot longer. Then, when Yellow-billies get left
behind, they fly to and past the PL's. Then the PL's eventually catch

PL's
HO

up with and pass the Yellow-bellies "Leapfrogging")

10:50 am Further up hill, along a ravine, come across what is undoubtedly the same mixed flock. Behaving as before - except this time I hear that the Yellow-bellies are stirring lots of soft "Secret Notes". Once PL f → Yellow-billy. There also is a single GL in the neighborhood. Once it seems to f → Yellow-billy. Possibly coincidental. In any case the GL soon moves on by itself.

Incidentally, this area is at least as high as Silphium-

Station # 2 h

12:10 PL's and Yellowbellies still together 11:50 am 1 PL f → Yellow-billy. 1 GL f → Then GL comes again. Others do not follow

12:10 pm Somewhat further on. Coppy grass forest area station 2 Yellow-bellies. Associated with White-bearded Flycatchers. Once White-beard follows → Yellow-billy. There also is a single GL, feeding on bamboo, fairly low, about 50 ft away. It may be following the Yellow-billy. - White-beard in a casual, irregular way. About 150 ft away from the Yellow-bellies (and about 50 ft away from the GL) is a single "Red Woodpecker" (LXXV). Apparently not paying attention to any other bird. About 20 ft from the Woodpecker (and same distance as Woodpecker from GL and Yellow-bellies) is at least one PL Attapetes. It doesn't seem to be paying any attention to any other birds. But it is just conceivable that it is following the Woodpecker.

12:30 pm Going down hill. Come across a pair of PL Attapetes. Silent. Definitely alone. They may be the same individuals seen at one earlier today

Jan 3
Jan 4
Jan 5
Jan 14
III NND 5

12:34 pm Clumps of bamboo further on. [✓]
 saw Yellow-bills in dense thicket. Also there is at least one PL (low leg.)
 can't tell if they are separate, associating or not

12:50 pm Drawing 12:50 pm.

COMMENT:

Continuing searching in bamboo here now

I think that the PL Atlapetes must have a special prefer-
 ence for the Yellow-bills and vice versa. Some of my observations
 on at the Barro Colorado Island in 1962 would support this.

April 4, 1965
Pico Espejo

10:11 Works slightly below Teleferico #2 early in the morning. Lots
 of flocks but no signs of any mixed flocks. Nor any individual PL Atlap-
 etes or Yellow-bills. Why? Possibly because there are very few tall
 trees there.

Then go uphill. Here there are more tall trees.

10:15 am See pair PL ⁽¹²⁾ Atlapetes. Definitely by themselves. Low
 in scrub-edge bamboo-thicket, 1-10 ft above ground. Hear but not under
 trees. Uttering occasional their faint "secret" notes

10:50 Reach high point reached yesterday 11,125 ft.

Fog coming in.

11:05 am. See patch of forest which looks more optimal for many
 montane tanagers & honeycreepers (e.g. Caprimyza spp.) than any I have
 seen before. In small ravine. Such. Even includes at least one tree with
 pink flowers (cup-shaped). Apparently same species as tree the local D.

glamas were found of above Hudson in Bolivia

(But it is a difficult place to work and fog is thickening
In any case, I quit

Finally leave 12:30 pm without seeing anything
more of interest

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

This afternoon, ca. 6:10 pm, I saw what appeared
to be a mixed flock from my bedroom window. In pouring rain
Group composed of one Elaenia (presumably same as large species in
Panama), 2 BT's, and one individual which may have been
Delottrampus cartusoventris. (Bright blue crown; medium
dark dull blue upper back, wings, tail; black facial mask
pinkish buffy below. I didn't see if it had a white throat
or not. Possibly back, wings, and tail looked darker than they
really are because they were wet.)

COMMENT:

Mixed flocks certainly are not common on Pico de
Espejo around 3500 m. now. Probably because all species,
except geor and some sub-oscines, are rare there. Actually,
this area has as depauperate a fauna as anywhere I have
ever been in the Andes.

April 5, 1965
Parana La Negra

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

6:58 am See single White rumped White-tail perched alone in

2
LXXX7

Jan

tree soft above ground. Feeding at fairly frequent but irregular intervals. Song consists out of Andean birds, but shorter. Also less lapemage - like

Quite a lot of the irregular Andean (same as on Pico Espejo) are and fly over as single birds

Everything very quiet 7:20

The mountain Andean are in flocks, but by themselves alone (Even though they are conspicuous and quite noisy)

7:48 am. A single PL Altopeter hops by. In open grass. Apparently alone. But just conversely, following a pair of Andean Sparrows

3) Andean Sparrow. Now as that there are a PL. Presumably mates. Young then are seen in a way that was in grass and Andean Sparrows. Not being followed by anything either. This Andean utter lots of Andean, Andean R, high "Secret" notes. The leading PL also utters occasional brief bursts of "chatter" and R

Then both fly into slightly higher vegetation. Move around 3-5 ft above ground. Fall silent at same time

There don't seem to be any Andean around. (I haven't seen one this morning.)

5 8:03. Another area. Come across another pair PL's. Also moving through low grass scrub. Also noisy and apparently alone!

6 8:26. See a single Thraupis cyanocephala bathing in water on leaves of tall tree. Apparently alone. Ignores Andean 10 ft away, and does not follow the latter when it flies away. A few minutes later, flies off in another direction.

9 8:43. Come across group of 3 PL Altopeter. Exactly where pair seen earlier (probably I overlooked the third bird earlier). Presumably same

by group. Moving thru low sparse scrub. On ground and a few inches above ground. Very noisy uttering twitter, chatter, and other noisy notes, apparently quite alone.

13
14
15

Lots of White-crowned Nyalaters around. Alone.

Fog starting to come in 8:55 a.m.

Finally in front of 9:01. Silent and alone feeding on clusters of small pale yellowish white flowers.

9:20. Found another PL. Definitely single and alone perched on perch in brush 7 ft above ground. Uttering faint "tick" or "tick" notes.

Leaving 9:30 a.m.

According to my altimeter, now, the altitude here is 8,725 ft. (which suggests that my altimeter is very wrong).

COMMENT.

I. Saw quite a lot of BT's around hotel while watching local *Diglossini* this afternoon. They frequently occur in close contact with other species. But apparently purely "coincidental" (There are so many birds around this area that everyone is crowded.) No indications that BT's are joining and following or being joined or followed.

O.K.
II The general situation at ~~Paranao~~ ^{O.K.} ~~La Negra~~ is a surprise. I certainly would have expected to see more in the way of mixed flocks than I did this morning. But I think I may be able to explain the discrepancy.

Mixed flocks probably are absent now because certain vital species, which were present in September, 1962, have left the area now. There is nothing around now which tends to react to the PL *Atlapetes* frequently (e.g. the Yellow-belly seems to be able

July

ent), including the Pro-antennae species, which we fit after
at night. It is quite obvious that the avifauna here is
much less diverse now than in September, 1962. There is rather an
impression, as the vegetation seems to have changed at all
except that I see very different.

Where are the morning species? Have they all gone down
hill? Because of bad weather.

III It has just occurred to me that all or almost all the
species which are "real" genuine mimics throughout the whole
of the high part of the Andes show striking similarities (in ad-
dition to their role in other specific reactions) Atlapetes, Chlor-
oceryx, Hemiprocne, Pro-antennae. All have similar voc-
al repertoires, body proportions, and general type of coloration.
These similarities extend to species which are not sympatric,
and also to species which do not play a special role in mixed
flocks. Thus, the similarities cannot be the result of mimicry.
Are all these genera really closely related to one another???

April 6, 1965
Paranao la Negra

At the same place as yesterday 5:55 a.m. Still very dark. Clear.
Cold. Everything quite silent.

Now my altimeter says 9025!

As yesterday, there is very little dawn song. And certainly no-
thing that sounds like a diglossine, tanager, or Myioborus.

Nothing at all of any interest 6:55 a.m.

15
Also
19
20
Hear first Whitestart song. The bird & please. The bird is perched on a mossy group of 4 or 5 Aspidotroch White bearded flycatchers. Also joins about 10 ft away from song of Albe feeding quietly in bush. The Whitestart remains silent for some minutes thereafter.

22
2
H
2
3
Then, 7:00 a.m. a group of Basileuterus appears. 7:03 individuals in distance, joining rapidly up hill (now 7:02). Apparently lutrovirides (T.S.). Very noisy. Uttering lots of Peetee and Rally-flourishes. Apparently quite alone at first. But then the Whitestart drifts over in their direction. Probably comes within 10 ft of them. Also, the Whitestart begins to sing again. Utters several phrases. Apparently stimulated by the lutrovirides sounds. But there is little or no overlap between the vocalizations of the two species.

23
The lutrovirides soon move off. Whitestart apparently remains behind. Utters occasional song phrase at irregular intervals. This was a nice "beginning" of an attempt to form a mixed flock which didn't quite come off.

27
7:17
Incidentally, these lutrovirides ignored a group of noisy White-bearded Flycatchers (probably same group seen earlier). In general, the White-beards are both noisy and conspicuous in their movements. Have great variety of vocalizations. But they are not attractive to other species. I.E. conspicuousness is not enough, per se. Also, I.E., this suggests that the reactions of other species to Basileuterus types are special inter-specific preferences.

31
7:20
Come appears small flock of Chlorophonia pyrrh ophrys. 1 adult ♂, 3 ♀'s or juvs. Sitting quietly top dead tree. Quite silent. Definitely alone. Soon fly away (not in same direction as the

B. luteoviridis

7.27 In several hundred yards. Call like B. luteoviridis 2000' but over up hill. Then a pair of Atlapetes fly up from down hill. "Atlat" "Atlat" in flight. Then feed in low, open, scrub. Possibly working their way up in direction of warblers.

Why are there so many more birds here today than yesterday?? It certainly is somewhat warmer (10°) today!

7.37 See single Atlapetes. In low scrub. Disputing alone.

Then see group Chlorophanes again. Atlapetes out with them at first. But then it flies away. The Chlorophanes then fly off in another direction 7.42

4.54 See 1 yr bird looking top tall tree. Looks like B. luteoviridis, but I am not sure that it is. Quiet. Not very chunky. Bill perhaps a little longer than I think is typical of B. luteoviridis. Is there a Hemispungus species here with a luteoviridis type pattern ????

In any case, they build pairs → a pair of PL Atlapetes. But the Atlapetes soon fly on, and the puzzling bird does not follow.

This pair PL's goes on 50 ft or so. Then engages in vocal boundary dispute with another pair of PL's. Lots of R's. Dispute lasts at least a couple of minutes. But it does not attract anyone else!

Fog coming in 8:00 am

Everything very quiet now

8.25 2 pairs of PL Atlapetes still disputing. Muddy still quite vocal. 1 pair B. luteoviridis - types f → PL Atlapetes

No luteoviridis types are silent. (Is this characteristic of "bank-warblers" when they are following rather than being followed ???)

Fog lifting 8:30 am In again 8:45. Clear again 9:00

Leaving 9:45 am

April 7, 1955
Paranao La Vega

Arrive usual spot @ 1:15 am Just starting to get light
It is much colder today than yesterday Also the
Dawn chorus - no "saw-whet" "leech" or "trunk" songs.
6:45 am Almost nothing moving - except the trees
6:48 Hear PL-type twitters in dust area Also possibly
Cy-type songs (up hill)

4. 116
US?
CSP?

6:55 Blue Diglossa singing from top tall tree 35 ft above
ground. Songs sound like those heard yesterday. Again I only see bird
silhouetted against sunrise. But it looked as if it might well be Cacr.

4. 117
H 21
H 21

Intermittent songs both before and after Diglossa No overlap
7:10 am Group of at least 4 B. luteoviridis passes rapidly
up hill Very noisy. Lots of Rattles & Hallowells They were following
a group of 2 or 3 small birds. I didn't get a good view of the latter,
but at least one of them appeared to be green. Probably a Chlorophanes

414

7:25 Sun has reached this spot now. It is warming up rapidly
ly. But everything is dead, dull and dead quiet

416

8:20 See single PL feeding quietly in blackberry thicket. (Always
there is always a single PL, or a pair, alone in this area.)

Some distance further on, see another single PL alone feeding in
low sparse scrub.

417
H 25

Fog & cloud starting to come in 8:25 W/J/O
8:33 Come across mixed flock. Includes 2 or 3 luteoviridis type

Also 1 was, like a house wren

W 2) ↓

Inter 214
Inter
Inter

23, and 1 or more probably, 2 Inters flitting about in tree, 10-30 ft above ground. Apparently all getting insects off leaves. Quite noisy. Flitting lots of W-type sounds. Once Inter → Luteoviridis. Once something attacks and leaves Inter. I am almost certain the attacker is a Luteoviridis. Chax was pursued by Cond R. But the Inter soon rejoins the group. Eventually, however, one or both Inter(s) fly (ies) off. Not followed by Luteoviridis right away. But the warblers drift off and disappear a couple of minutes later. Can't tell if they go in same direction as Inter or not.

When this flock was first seen, there was also a mountain catbird in the same tree. But it ignored the birds and vice versa. The catbird eventually flew off, and none of the other birds paid any attention.

There was also, however, a single squirrel with this flock. Its presence probably not coincidental. On outskirts. Possibly following flock. Stayed around for a few seconds after the warblers disappeared, then disappeared too. Feeding on vegetable matter. Silent. (Presumably squirrels associate with these insectivorous flocks in order to take advantage of the alarm reactions of the birds.)

All day before yesterday I saw a single squirrel not too far from this area. This animal definitely alone at the time. So squirrels are not obligate members of mixed flocks.

All squirrels seen here, this year and in 1967, obviously members same species. Medium size. Round ears. Grayish brown above. More rufous or buffy below and on inner sides of limbs. Distal third of tail blackish. Proximal two thirds largely rufous.

8:54. See another single PL alone. In low sparse scrub. There is also a flock of gold finches around here. To which no

one is paying me attention

51 9:12. See still another PL alone And another! 9:16 Both in clumps blackberries

Leaving 10:00 a.m.

NOTE: I think that the PL alligates may be joined and followed surprisingly infrequently now because they prefer very sparse and low vegetation at this time of the year. All or most of the other species which might be attracted to the PL's prefer dense and/or higher vegetation

Arrive old area near Chonos de Villa 3:30 p.m.

Lots of BT's around. Not in flocks

3:41. Two BQ's chasing one another in Eucalypt. With "Zheet" notes

3:45. See a single ♀ American Redstart alone

3:45. Then see an adult and a juv. BQ feeding in top trees, 20-30 ft above ground. Poking at heads of dead flowers. Disputed, alone. Then adult attacks and chases the juv. Silent. Juv. flies away

4:22. Single ♀ Redstart still around, all by herself. Feeding in trees where BQ's fed earlier

4:25. Oh! Oh! Oh! Single bird lands in low bushes. Uttering loud "Tut" notes. At first, I think it is ♂ Bari. Slatey-blue above. Buffy below. But then I see that it has a black facial mask, and a small finch or tanager bill. Flies on immediately. It occurs to me, however, that the "♂ Bari" I saw yesterday may have been this species (it was too far away for me to see clearly). Also possibly the "Delo-theraps" seen a couple of days ago (the bird here was in bad light - I could see that its crown was blue-ish, but not how bright it was)

I shall call this species "unidentified XXXVI"

I wonder how XXXVI gets on with ♂ Barus when they meet
?? I also wonder if it plays a role in mixed flocks (viz. the mixed
only mixed birds in Bolivia)

Glor

4.36. Good feed. There is a perfectly typical single Glor
seen feeding in typical diglossine fashion on flowers Erythrina,
40 ft above ground. Quite silent and alone. No other diglossine visible
or available at the time.

Then Erythrina is found isolated. In pasture dotted with
scattered trees and more or less hedge-like clumps of scrub.

According to my altimeter (see 1), the area here is 5915 ft

XCC

4.44. See a single XCC in large, non-flowering tree near
Erythrina visited by Glor earlier 30 ft up. Silent. No other diglossine
around at the time

Barus

4.52. Then see an undoubted ♀ Barus in another non-flowering
tree (different species) 30 ft up. Silent. Alone. No other diglossine
visible or available at the time

♀ Glor

Glor back in Erythrina a few minutes later. But only stays a
second. No other diglossine around at the time ("NOD"). After it
leaves, I see BG's in tree 50 ft away. Still chasing one another with
"Zheet"s (I presume these notes are Begging by juv.)

Barus

5.01. ♀ Barus feeds in Erythrina. On same clump of flowers
as Glor earlier. NOD. Flies on immediately. Back again immediately.
Ignores nearby BT's. Off again. Back again. BG's singing in distance
(far away). Ignored by Barus. Then Barus off again. Back again. NOD
stays a long time, feeding on lots of flowers. Then flies off into tree where
see XCC seen earlier!

XCC

Flor
Baru
+ cc
Flor
Baru
+ cc
Flor
Baru

3:15. ♀ Baru back in Erythrina NAD. Flew quickly for a
time. Then the flor flew into the opposite side of the same tree. Place
where it lands is at least 30 ft from the ♀ Baru. Flor about 2 ft
with a queen ♀ Baru. But she definitely left just before as
after the flor landed. I didn't see her go. She apparently went
into adjacent tree (where XCC was seen earlier). Flor only stays
a second. Flew off. Immediately to ♀ Baru flew back into the
Erythrina and started to feed again.

So Flor also seem to be dominant over ♀ Barus
Leaving 5:40 pm

April 8, 1965
Pd. to La Cruz

Arrive one little patch of forest about 3 km before San Luis
illas 6:10 a.m. Still quite dark. Quite a bit of fog. Altitude, according
to my altimeter 7750 ft.

Again, very little dawn chorus. And what little there is seems
to be largely sub-oscine. Lots of hummingbirds.

Quite a lot of birds around, but impossible to see clearly. Veg
etation dense, lush, & dark.

Lots of White-bearded Flycatchers. Noisy but alone, as usual
6:50. See single M. cyanocephala alone. In second growth tree
ce, 20 ft above ground.

Then see single Tangara. Probably no. VII. Silent and
alone. Some minutes later, see what is probably same bird in another
area. Still silent & alone.

7:01 am See single Tangara warreni (Blue & Black) feeding in low-lying vegetation. Uttering N's. There may be other birds with it but I can't see them.

7:02 See single new C. minutus type (LXXX) in tangles of vegetation. Uttering brief series, loud R's.

Then see Blue & Black fly into tall tree. Lands near large fly catcher, but the 2 birds seem to ignore one another.

Then see mixed flock. At least 2 BCBT's, 1 wren or fernwren & BCBT's uttering lots of R's. All in tall trees 30-60 ft above ground. BCBT's \rightarrow wren or fernwren. But then the latter moves on, and the BCBT's apparently do not follow.

Some minutes later, in another area, hear lots of noise. Includes loud BCBT R's. Apparently several species involved. Then a pair of BCBT's flies away from this area. Downhill across road. Noise, including BCBT R's continues uphill. Downhill BCBT's eventually fly back uphill to join the noise. This presumably is BCBT boundary dispute. One pair eventually flies away downhill (again). Uttering lots of R's. Definitely not followed by anything else.

Considering how noisy this dispute is, it is remarkable that it is not attracting individuals of other species.

Leaving this area 7:45

Above new area, just past Las Cuchillas 7:57. 7600 ft according to my altimeter. Area of partially cut down forest.

Can hear White-spotted Whitestarts singing. Quite Laf-like here.

8:23 A single cyanocapala, all by itself, flies from tree top to tree-top.

8:30. Come across definite mixed flocks High in tall trees
Includes at least 1 Whitestart, 1 Tanager which maybe labronoid
er (III), and others. Joined by 1 pair of S. xanthocephala Also 1
Merulops cyanocapitata. Group as a whole diffuse and quiet
Uttering CN's. Occasional song phrases by Whitestart.

Leaving this area 9:05 a.m.

Back to first spot 9:15. Just starting very quiet

Ala. See single state-throated Whitestart alone. I hope
the Whitestarts heard earlier this morning were not state-throated
(But there is no doubt that the Parsons La Vega birds are White-start
sided)

SD

9:34. See single Cy near pair of tanagers (probably M. cyanocap
ala) in top of tall tree, 40-50 ft above ground. Cy flies in one direction
Tanagers in the opposite. Then I can hear (vaguely) Cy singing in dist
ance. Short, high, then twitter. Can't distinguish intro notes at this
distance

See state-throated Whitestart alone again.

See pair of PCBT's in low dense thicket, 2-5 ft above ground.

Uttering "Juk" Notes. Definitely alone. Fly away with R's.

Leaving 10:00 a.m.

COMMENT: Up til now, it has become more and
more obvious that mixed flocks are not really very common here
(altho they certainly do occur — and sometimes in specialized form)
I will be interested to see what happens tomorrow, when I hope
to work above the Teleferico #1 station.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

MORE COMMENT: Possibly the BQ may be another exa

SS

couple of the ... in several locations exhibited by some ... but not in Young ...

April 7, 1965
Paco & Espino

Walking along ... Station #1 (La Montana) Above ...
13

14 7 ... *P. ...* feeding low ... Probably *Luteovirens*. ... definitely alone

15 Actually, there is a fair amount of bird noise here now. Most of it undistinguished warbler-like

16 See single White-throat (probably slate-throat) alone 7:50

17 Also see pair of *caerulescens* definitely alone. Meaning there ... scattered trees, 10-30 ft above ground. Uttering trills (soft R's, rather high pitched) as "greetings" whenever one joins the other

20 Walking thru area where Albes were common in 1962. Haven't seen or heard a single one

21 There are quite a lot of birds moving around in tree tops, but I haven't been able to see them well enough to identify

22 8:12. See single slate-throat alone

23 Also see a couple more single slate throats alone on way up hill. (Path is very overgrown now, so it is difficult to see much.)

24 There are lots of Goldfinches around. As usual, noisy, conspicuous,

and finally by themselves along
8:40. See birds WM Altapetes alone. Bird very noisy
near dense second growth scrub. Definitely alone

Allen

22 A minute later see another WM Altapetes (possibly) after he becomes
about 20 ft away. Utters a few notes (possibly) after he becomes
is aware of my presence. Definitely does not approach.

24

Then a pair of Yellow-billed Parulids appear
going from tree to tree. Utters lots of high thin "fizz" notes.
Very conspicuous, but definitely alone.

8:50. Can't go any further. (D.E. can't reach without part
of the forest.) Path completely overgrown. Turning back toward the
Station #1.

Fog coming in 9:15 a.m.

40
40
40

9:30-9:45 See very nice mixed flock. First become aware
of a single wren in scrub under trees. Probably same species seen in
flock Paramo La Negra. Looks like House wren. Dull brown, super-
cilious stripe. But uttering lots of ypt-like bell-like notes which are
quite unfamiliar to me. Then see pair WM Altapetes in second growth
scrub about 30 ft away. Very excited. Uttering lots of hard, loud
"Tit" notes. When first seen, the WM's are about 3 ft off the ground.
Then they gradually move away from me. Uphill. At same time they
gradually mount higher in vegetation. Up successive tangles. Finally
reach 30 ft above ground. At the same time, they are gradually joined

26

by more and more birds of other species. First the wren, and a Bauleut
erus, probably luteoviridis. When noisy, Bauleuterus very quiet.
(Incidentally, the WM's continued their "Tit"s as they mounted. Also
began to utter R's as "greetings".) Both the wren and the luteo

warblers - typical joined = 2 birds - repeatedly. Then the group was joined
 by a pair of B. magister magister. The magister also
 joined a few magister. At least one of the magister was very
 noisy, singing + returning to singing songs. Then the group was
 joined by 1 PL Atlapetes. In front this bird showed a definite tendency
 to follow the magister particularly closely. Followed repeatedly.
 Then tended to follow group as a whole. Repeatedly. Then joined the WM's
 !!! This PL was definitely single and quite silent throughout. Finally
 a single Cy joined the group. Also silent. The WM Atlapetes were def-
 inite, the leaders of the whole group throughout this phase. The Cy only
 joined after the WM's had reached the highest point of their arc in
 the group. But all the others joined while the WM's were still low
 and followed them up. By the time, the Cy joined, the WM's were beco-
 ming quiet. The Cy itself was silent throughout. But the magister
 remained noisy. About this time, the group started to break up. The
 Cy flew away once, re-joined the group, and then disappeared again. The
magister flew away from the group, re-joined it once, and then
 went off in one direction, low in bamboo + other second growth veget-
 ation. I lost sight of the wren. This left the 2 WM Atlapetes and the
 1 PL Atlapetes all alone 30 ft in a tree. Finally one WM flew off, then
 the other. Then the PL followed the WM's (definite). These three birds
 flew off in the same direction as the magister earlier. Following
 a course parallel to that of the warblers. About 10 ft away from the
 latter. Then trees and tangles. I.E. it looked as if the leadership of the
 group might have passed from the WM's to the B. magister.

Part of this behavior, or the behavior of some of the birds involved,
 may have been "molting" Reaction to me. But the whole thing could no-

to have been completely mobbing too many following and forming reactions. (It must also be significant that I have never been mobbed by many species in the Quito region.)

Note that this group was not joined by Slate-throated Whitestarts (altho there must be plenty around in the neighborhood). Nor by squirrels

26 Ca. 10:00 am. The pair of WM's returns utter a few "Tut"s and then disappear. Apparently alone.

It seems quite possible that the WM's were the leaders of the flock this morning simply because they began the mobbing part of the reaction.

27 10:23. Hear a number of songs in distance which might be by fee single slate-throat alone.

See single thrush alone (same species as at Barano La Negra)

28 10:27. See pair microscitatus feeding in tangles 10-20 ft above ground. Possibly saw birds seen in flock earlier (still) noisy. Alone

33 ADDITION: There also were a lot of hummingbirds with the flock seen earlier. Incl. spurred throated (or distant) no. 1

34 10:28. See single G feeding on white berries in tangle of vines only 20 ft away from the pair of microscitatus. Method of feeding is not exciting. Sticks lower mandible straight into berry like a spear. At same time holds top of berry with upper mandible (the hook curves around inside). Then manipulates rapidly. Apparently extracting pulp and/or juice with tongue. So the legs here are fungivorous too. The bird also utters quite a lot of single "Tut"s. Probably reactions to my presence

35 Then see undoubtedly by nuthatch while perched exposed in tall tree

at least 70 ft above ground. Songs intermediate between those of
 08 Quite birds and those of more southern forms. Usually with intro
 notes. Sometimes "Trit trit", sometimes "Trit trit" But
 intros often followed by high pitched, then, longer notes. Followed
 by another ending "ceyoo". Typical phrase might be
 "Trit trit ta saaaa ta saaaa" sometimes "ceyoo" sometimes
 with punctuated R before "ceyoo"

10:55. See what looks like Brown-capped Vireo feeding top
 tall tree Quite like Coleo, but bill stubber. Also has light edges to
 wing feathers

See single cyanocapla alone

See out again 11:10 pm

11:18. See pair superciliosus alone. Feeds thickly. 6" to 2'
 above ground silent

Incidentally, there seem to be absolutely no red or pink flowers
 for Dryas around here now.

11:21. See single Albi in low scrub. Alone.

See another single cyanocephala. Silent and alone.

11:46. See a single Glor flying. Silent and alone. Not quite same
 area where Glor seen 1982

11:56 a.m. See pair superciliosus feeding in low, very dense, se-
 cond growth scrub. Quite silent, except for a few ALCN's & 1 R when they
 first see me. Definitely alone

12:03 pm. See pair cyanocephala alone. Top tall tree (Many of my
 records of this species today have been records of the same individual birds.)

12:05 pm. See another mixed flock. Includes at least 1 WM Atta
 39 jules, 1 BCBT, something that looks as if it might be a black and

Jan
 Albi
 Jan

W M 1/2

43 white montane manakin, several flycatchers (different species), 1 ♂ Gold Finch (looks like species of Chrysoceryx - yellow below, black above with black throat), and one Microcerculus. All following the WM up a tree, 20 - 30 ft above ground. All quiet. Then WM flies over into low thicket. Nothing follows. This out-of-group seems to break up.

44 Some minutes later, a pair of Microcerculus perches thru nearby shrubbery. Moderately noisy. Nothing follows.

12:30. Come across small group in small tree, 25 ft above ground. One WM Atlapetes, 1 White-spotted Whitestart (definitely ident. fed). Whitestart making fly-catching flights all around WM, in usual fashion. One Whitestart f. → WM. Once WM f. → Whitestart. Whitestart silent. WM begins to utter "Tut" off off off alarm because of me. These "Tut"s apparently alert a pair of Microcerculus status. They come to expect me. Utter lots of loud, harsh, "Chuck" ALCN's. Then move on. They do not join the WM - Whitestart group. The latter moves up into very tall tree, at least 40 ft above ground and I lose sight of them.

This group is very close to where large group seen earlier this morning. Possibly WM and Microcerculus the same individuals. But the WM seen with flock of flycatchers, goldfinch, etc., almost certainly a different individual.

44 Same WM back first tree a few minutes later. Silent. Definitely alone. Ignores Cy in tree 30 ft away. Cy also silent and alone.

49 12:41. See single ♂ Atlapetes. Silent and alone. Feeding in same tangle of berry-carrying vine as the Cy seen earlier. At least two trees to feed on berries. But apparently unsuccessful. Can't seem to

alone Cy

all

Attack leaves from stem and many trees to "spear" them. Then lo-
op off them near. Almost bump into a perched hummingbird I.
Apparently indistinctly Hummer just looks, but the Albi flies off
at great speed. Apparently scared.

Leaving 12:50 p.m.

COMMENTS

I. There were two aspects of the social behavior of the
birds this morning which rather surprised me.

One was the fact that the superciliosus were not nuclear.
Some of them were attending other species most of the time, and also
did not seem to be attending other species. Even the birds that
did form flocks and attract other species did so only once, and
not for very long.

The other thing was the role of WM Atlapetes in mixed flo-
cks. They were more important and conspicuous than I remember
them in 1962. But the flocks which they led today were not long-
sustained.

April 10, 1965
Pico de Espejo

Walking above Julifloro #1, same place yesterday. Arrive
me 7:30 a.m.

See pair WM Atlapetes, low in scrub. Alone. Uttering soft
R's as "grutings". Then they go up into small tree. Fall silent. Then
they fly off. About 2 minutes later, a single Ag. appears. Follows WM
route thru scrub and small tree. Silent and alone. But then it flies off

in a different direction

I suppose that some mixed flocks I see, throughout the Andes may simply be cases of different birds following the same route at the same time.

17:30 am There certainly appear to be some mixed flocks in tops of tall trees here, but I can't identify the birds

53 Then see a single Alouatta palliata perched high in a tree & alone in top bare tree, 35 ft above ground.

54 Then see single Cyanoceryle perched way up on top of another distant, dead tree. Alone.

Can hear quite a lot of Microcristatus rattling songs 17:45 am Also lots of what may be Cy. forbesi in distance.

55 8:00 am. See a pair of Cyanoceryle apparently alone

Bright sunlight and everything very dull 8:15.

56 See another Cyanoceryle silent and alone. In low scrub - 3-4 ft above ground, under trees (i.e. it could join low mixed flocks if it "wanted" to).

57 8:27. See pair (♂ & ♀) Alouatta palliata In same tree as before. Definitely alone.

58 See single PL Alouatta apparently alone. On stump in low scrub.

59 Also see single ♂ Alouatta silent and alone

60 Then see single Microcristatus. Quiet and alone. 30-40 ft from the PL. The two birds apparently paying no attention to one another. Then, approx. 2 minutes later, PL appears only 7-10 ft from the Microcristatus. Apparently a case of joining. (Definitely PL ♂ →) But very inconspicuous. Both birds quite silent PL feeding higher in scrub

to their warbler. Eventually both birds disappear from my sight. Apparently moving nose or bills together.

I am beginning to believe that there is a special inter-specific preference involved in the PL - myiozetetes relationship.

Go on a few feet further and see same myiozetetes apparent behavior.

W
W
W
W
W

Will 2/11 8:30 am Hawk 1 PL Atlapetes and 1 Pluck-cap & Truck from same bush. Apparently they had been together. The Pluck-cap goes to one bush sets egg. Silent. The PL goes to another bush 20 ft away. Apparently joins mate. Both utter a lot of CN's or all CN's. Then they fly away. Pluck-cap remains behind. Hummingbird flies off in opposite direction.

9:13 am See pair of Cyanocapala alone in Melastomaceae in tree. 15-25 ft above ground. Feeding on berries. One or less probably both uttering lots of "beent" or "Zbeent" notes. Every once in a while one of the birds feeds a berry to the other. The receiver goes down into semi-kimble posture (probably with head pointed diagonally upward) and quivers wings when receiving.

W

9:21. Hear what seem to be 4 songs with no Intro Notes or only a very, very weak "Int but".

I wonder why I haven't seen (or heard) any Whitetails today. Are they less active in good weather?

W

9:45. A single PL flies into tangle at base of tree which contains Cyanocapala higher up. But the two species seem to ignore one another. See two White-bearded Flycatchers glow.

W
W
W

Two blue birds, apparently both eggs, fly across road together followed, a minute or so later, by two myiozetetes. But the latter

174
 175
 don't seem to follow very long. When I go on, I find two Cys feeding together in tangle of vines with no uropygiales nearby.
 Come across single W. Atlapetes 10:10. In same area where large flock seen yesterday. It utters lots of MCN's at first, but soon moves on and quits down. //

176
 177
 10:13. See single White-spotted Whitestart alone.
 Looks like Calbasoides except that wings appear to be largely or completely blue green (but I did not get a good view of the bird)

179
 See a single Cyanocphala alone. See a single Red Headed parula alone (same species seen at #2 Station, i.e. LXXV)

180
 182
 10:24. Again see a pair of Cyanocphala. Silent and alone.

183
 184
 10:46. See single uropygiales Horn but alone.
 Then see single Yellow-bell. Apparently alone. In low scrub.
 There are a few tree weaver types around here, but not many.

And surprisingly non-gregarious, in the sense of not associating with other species. This must be significant. Mixed flocks simply are not common here now.

188
 11:00 a.m. Watching single P2 feeding alone in tall trees 30-35 ft above ground. Absolutely nothing shows any tendency to join it.

189
 11:02. See single W. Atlapetes feeding between same place as yesterday. Using more techniques. Sings quite a lot in intervals of feeding. Some phrases quite short. Eg "Trit trit ta neeeee ta neeeeeyoo". Others like those transcribed yesterday. With "Trit" Intro Notes. But the Intros are relatively soft.

190
 See another Cyanocphala alone!

Leaving 11:50 am

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

COMMENT: It is obvious that all the species above

Station #1, with its probable exception of cyanocapilla and the possible exception of cy, are in non-breeding condition now.

WJ

It is all the more surprising, therefore, that mixed flocks are not more common now than in September, 1962. Does this suggest that the birds of this region are in process of losing the habit of associating in mixed flocks ??? And that this process begins by reducing the frequency of associations in the non-breeding season ??? (Once the habit of associating has been lost, it may be difficult to control in the breeding season, simply because the birds have to be noisy while breeding and noisiness must tend to be "attractive" to other species.)

April 11, 1965
Pico de Espino

Working above station #1 again Arrive 7:20 am

Lots of long tailed, rather purplish blue jays around here both today and yesterday. Apparently have nothing to do with flocks

72

7:30. See pair myiopsittacus apparently alone in low scrub, not under trees. Myiopsittacus

For

93 Then a single Glaucidium fly. Exactly where Glaucidium seen in 1962. Slight. Definitely alone. NOD. Feeding in scrub, not covered by trees.

WJ

Makes one flycatching flight. Then Cy (s) began to sing in distance. Glaucidium apparently ignores them.

7:39. See single juv. PL Atlapetes (silenced bird) apparent-ly alone in low thick scrub. Silent. Goes off slowly. Then an adult PL appears. Going in same direction. Then see 2 birds together. Juv. uttering "Zheet zheet zheet zheet..." and some occasional wing-Q.

Probably this is the breeding season for Atlapetes. A little further on we appear to see Atlapetes along in bamboo thickets. Utters occasional CN, otherwise silent. Disappears almost immediately.

8:00 a.m. See pair of Cyanocephalus high in tree tops. With several other birds which may be different species.

8:10. See a single WM Atlapetes feeding alone in low open scrub. Mandibulating berries!

8:16. Hear what sounds like White-spectacled Woodpecker singing in distance. Song moderately Laf-like. No Atlapetes singing simultaneously.

Everything very quiet today. Rather surprising, as the sun is partly veiled by clouds and it is not very warm.

See a single PL Atlapetes, definitely alone and silent. Adult. (Probably the same individual that was with the large flock the other day.)

8:27. Single WM Atlapetes feeding, uttering A/CN's. Definitely alone.

8:35. See single BB about 20 ft up in tree. Also single Red Woodpecker on tree 20-40 ft away. There also is something in scrubby scrub. But I don't think this is a real mixed flock.

Then see single WM feeding alone & silent.

8:50. Go on quite a little distance (ca. 300 yds), around curve

XIII 96 97 98 99 100 101 102 103 104 105

- 119 to find nests of BCBT and single Red Woodpecker in same tree
- 120 I.E. the two birds have been moving together in same direction.
- (How many - must be the other sex from the one seen on previous day - there is nest in its mouth.) Then I realize that there are quite a number of other birds around in the same general area. At least 1 other BCBT (and probably 2), 1 tree-creeper, 1 Cyanocapala.
- 121 There also is a fly singing somewhere nearby.
- 122 (And) catch one glimpse of a PL Atlatpete. Then a glimpse of a
- 123 WM Atlatpete, 100 ft away from the PL. This seems to be a real mixed flock. But very diffuse and scattered. (Area includes scattered tall & wide trees, lots of scrub, both under trees and in the open.) Lots of miscellaneous coming and going. Difficult to tell who is doing what and to whom. But I did the following:
- Once BCBT definitely followed (probably followed the tree-creeper)
- Once the Red Woodpecker definitely followed the group. The BCBT's stuck to the trees, ranged from 10 to 40 ft above ground. The woodpecker and tree-creeper also stuck to the trees, probably ranging about same distances from ground. The Cyanocapala stuck to the tree-tops 30-40 ft above ground. The WM and PL stuck to the scrub, 5-20 ft above ground. All the birds were quiet or silent except the Cy.

The reason I am sure that this was a mixed flock is that I have gained this area many times before without seeing much in the way of birds. Also, all these particular birds disappeared at more or less the same time. Just sort of drifted off in an inconspicuous manner.

It is important to stress, however, that they never formed a compact group. Scattered anything from 10 to 200 ft away from one

another.

I think that the "nucleus" of this flock was composed of the BCB's, wood pecker, tree creeper, and cyanocephalus. The latter probably approached and sang out, as the group passed through its territory. (It shut up fairly soon as the group drifted on.) The Atlapetes may have come up from very low scrub, where they usually remain hidden, attracted by the sight of the other birds and the sound of the "y."

Incidentally, about 3 minutes after the last of this group had disappeared, at least one microcrinites appeared in scrub in area where group had been. I imagine it had been there all the time, but remaining silent and hidden. Like the microcrinites at the Paramo de Quasca!!! In any case, it eventually moved on in a direction different from that taken by the flock.

9:30 a.m. See single cyanocephalus alone. In tree-tops. This is new flock was earlier. Possibly it didn't follow the BCB - wood pecker - tree creeper assemblage.

9:37. See pair of microcrinites alone. Quite noisy.
 9:45. Stumble upon another mixed flock. Includes 2 WM's, 2 microcrinites, 1 spintail, probably others. Quite noisy. Differences upon my arrival. (The WM's and microcrinites in this group certainly by the same individuals that were in the large flock a couple of days ago.)

9:50. Continue along path. Run across pair of WM's. Certainly same birds seen a few minutes earlier. In tangles and scrub 5-20 ft above ground. Also 1 or 2 weasels, about 30 ft from WM's. Undoubtedly same species [and same individual(s)] seen in large flock two days ago. Also in tangle 20 ft above ground WM's uttering all

95
101
107
104
HO
HO
HO

Wren's and probably "Secret" Notes. Wren (s) singing loudly and
 furiously. Then I notice that the pair of Myiozetetes is in scrub
 20ft from Wren. 30ft from WM's. Then I see in a Cyanocephalus
 in tree tops, 30-40ft above ground, about 20ft from both the
 wrens and the WM. Then I see a Green Towhee in tree-top just
 far from WM's. Then by → There also are some miscellane-
 ous flycatchers around. This seems to be another real but very diff-
 erent mixed flock. All birds disappear more or less same time, except
 for the Myiozetetes which remain behind.

It certainly would appear that Myiozetetes does not like
 mixed flocks, even though it occasionally appears in them.

70 ADDITION. A single toucanet was associated, briefly, with the
 BCBT-woodpecker - tree creper flock seen earlier. Not the usual
 rusty species around here. Glossy black, yellow bill, legs, and eye-
 ring. Probably the species seen in mixed flocks in Colombia.

71 About 5 mins later come a group what is probably part of the
 WM-toucanet-wren flock. Two Cyanocephalus and one Cy.
 I know it is the same Cy seen earlier (has light spot on lower man-
 dible). These birds disappear rapidly. About 2 minutes later, a
 single Green Towhee passes by. Low in scrub, 17ft above ground.
 Going in same direction as Cy and Cyanocephalus!

If Green Towhees are really members of mixed flocks here,
 they may be quite different from the Arizquier birds.

At the same time the toucanet paused, there were lots of loud
 "Tuck" notes in nearby scrub. Like nothing else I have heard this year.
 Could they have been uttered by the gray-headed Prioniturus
 seen in 1967? ???

104
110

12.71. ~~See pp 104/105~~ (14)
seen in 3 maculiphalia alone in tree top
Leaving 11:35 am

COMMENTS:

I. All in all, I don't think that the social behavior of most of the birds here has changed since we were in September of 1962. Probably one of the reasons I have seen very well-integrated, closely-knit, mixed flocks this year is that I have seen very little of the Antequerus-types and nothing of the gray-headed Basileuterus. There may be the only two species which "inspire" the formation of low flocks.

II. As far as my observations this year go, they confirm my earlier impression that there are really two types of mixed flocks here: "tree-top" and "bush".

In my final report, I will be able to discuss and compare only the "bush" flocks in detail. I shall ignore the "tree-top" flocks as much as possible.

Of the species observed at some length during the trip, probably only yanocphala is a frequent member of "tree-top" flocks. (Of course, it also occurs in "bush" flocks.)

April 12, 1965
M. W. S.

SEE TODAY'S NOTES ON MIXED DIGLOSSINI
(Not Much)

SEE NOTE AT END OF DIGLOSSINI SECTION

August 28, 1965
Pico Espejo

Arrive road station about 8:00 am. Clear sunny & warm.

Cool in yungas very quiet (M)

8:10 am. See pair of Chondestes Quetz. Definitely alone 10 ft up in AS. Fly off immediately.

There seem quite a lot of thrush sounds down hill. Apparently Sooties "Alone" notes not song.

Then see a couple of Sooty Thrushes alone 12 ft up in AS.

8:21 See single Whiskered Thrush 1 ft up AS edge rock slide. Quetz alone definitely alone.

8:26 Just about same level as Teleferico station see single flor. silent and alone 15-25 ft up in relatively tall AS scrub.

NOTE: There are few or no tubular red or pink flowers here now.

But there are melastoma bushes with cup-shaped lavender flowers.

9:35 a.m. There really are wonderfully few birds up here at the upper limit AS. (Certainly, this is one of the reasons why there are so few mixed flocks.) There seem to be more birds (goldfinches, etc.) in the Panamá itself.

10:03 a.m. About 7 ft below Teleferico station see group of PR

Atlapetes, 2-3 ft up in low thick AS and blackberry, brambles. Definitely alone. Very quiet. Just soft "Tut" notes. Very inconspicuous indeed!

10:14. See single Sooty Thrush. Silent and alone. 3 ft up AS.

Getting cloudy now 10:16 a.m.

10:29. Some slight trace of a mixed flock! 2 Catantopus (bill under eye, head grey, some streaking both above and below) and 1 dull-brown Squalarius-type. Moving together low in sparse scrub edge slide. Silent.

Then juncos fly on. Spine tail apparently does not follow.

There really is quite a lot of bamboo scrub here - in patches.

11:00 See another single White bird alone. Quite high up in the patches of AS. Flycatching

11:45. See another single Sooty Terns alone. Low in AS. Flycatching

Leaving 12:00 Noon

COMMENTS:

There undoubtedly were a few more birds around here this morning than I actually saw. I heard occasional "N"s low in scrub.

(Actually, a species of large rufous Ornithia seemed to be the most common bird throughout the area.)

The vegetation here is rather distinctive. On the whole, scrub is sparse. Possibly some (or much) of it is second growth. But there also are patches of very thick (and sometimes tall) AS scattered about. I think the area looks as if it should be inhabited by more birds than it actually seems to be.

I am confirmed in my impression that this area is very burned (note the continued presence of R's and Yellow-bellies). And, going down on the Teleferico, I noticed that the lower vegetation looks very much like the VSF on Manuque.

August 29, 1969
Paramo La Negra

Going to start work in the usual place here. Arrive 6:02 a.m. Still very dark. Heavy low cloud. Looks like rain is coming. Everything very quiet.

A few minor, smaller birds heard sounds 6:13 a.m. Then great volume and variety of birds. A lot of loud noise by 6:25. In between the birds are many of species. Many of the birds here must be in the area.

6:56. From 20-30 feet up in a tree. Then see a mother single Society Wren in low-land ground scrub.

Then see 2 PL's above. Obviously disputing. Chasing one another. With "chatters" and R's.

7:03 a.m. See mixed flock - of a sort. In tall trees above pasture. Group includes 3 "luteoviridis-types" in one tree, and a single Coer in another tree, 4 ft away. All birds apparently picking insects off leaves. Ranging 15-25 ft up. Coer about. Luteoviridis-types noisy.

Coer

The luteoviridis-types certainly are not same species seen at Aguacenta in Eastern Cordillera Colombia a few days ago!!! Uttering very different calls. More or less typical Baileuterus Rattles and Flows. Not at all slate-throat-like. Also duller in color. Dull yellow (washed with grayish olive) below. Rather broad superciliaries of the same dull yellow. Generally dull olive above. (Can't tell if crown is noticeably grayer than back or not.) Bill looks slightly large and "coarse". I.E. these birds might be Hemispingus. But they certainly are not very much larger than the Coer.

Coer

Then Coer flies off into low scrub 1-3 ft up, across road. The luteoviridis-types certainly do not follow. Eventually, they move off, thru trees, in a quite different direction.

Inter

Then, 7:17 a.m., I see a single Inter. Just perched 30 ft up in dead tree. Apparently quite alone. About 30 yds from the luteoviridis-types in one direction, at least 50 yds from the PL Atlapetes (still fighting) in

Inter
Can

the other direction. Both P-2 and luteoviridis-types being very at the
time. Then Inter flies over into the same scrub, distant 2-3 sec & few m
into scrub. Also merges 1-3 ft up.

Inter
Can

I & Can - Inter merges with low, constant, overlapping Inter
And the two species seem to work together for food. They both pick up
insects off leaves in the scrub.

Inter

Inter gradually moves up hill. In general location of P-2. But
I think that it does not actually join the latter.

Inter

Interiors here may be less highly (or less "calid") than elsewhere
here than all or most fitties in other parts of the Andes!!!

Atlapetes still uttering White songs occasionally 7:33. NODWA
See a couple more sooty Thrushes alone. Also a single warbon crest
ed montane cotunga alone.

Inter
Can
Glas

luteoviridis-types still around. 7:35. In trees and scrub grow-
th tangles. 15-25 ft up. Still noisy. One individual Bays from another.
and is fed. (The Baying individual is duller than the others. Obviously
young.) Then single Glas $\xrightarrow{\text{Inter}}$ luteoviridis types 15 ft up in
tangle. Silent. Picks insects off leaves. Then flies off. luteoviridis-types
do not follow.

Now I can see that the crowns of the luteoviridis-types are the sa-
me color as their backs. Definite. Also, their superciliary stripes are
not very broad.

Inter
Can?
Glas

At eye time, there are a single White-bearded Flycatcher and an
other flycatcher of another species (gray & crested) in tree only 20 ft or so from
the luteoviridis-types ("LT"s). But the flycatchers apparently do not
follow the LT's when the latter move on.

7:45. Can hear what seem to be Can songs ("seeee" Intro Note

3) in distance NODWA. Then Coer shuts up.

Scam
Glor
Glor
Glor

Also... what sounds like bear "Aah" for
gold... at the time

See... to come out... And now several birds are
uttering... completely overl
apparently... Again! Again! Again! Also hear what you
and like Scam grating notes.

A single Glor flies by. Silent and alone

7:57 Both Coer and presumed Scam silent now. And I see a single
gle Glor flying. Phrase after phrase. All or most with slight trace of sub-
terminal R. This probably is same individual which sang so much at
dawn (Presumably... in breeding cycle than all or most of the
other local ones). Perched up in 30 ft up top tall tree. Then flies away
and shuts up.

Everything fairly quiet 8:05 am

See a single Whitebeard alone 3 ft up bush in pasture. Then see
2 more individuals same species adjacent scrub. This seems to be a family
group. Definitely alone. (The Whitebeard may show as nice geographic
variation in All... as any species I have observed (!!!))

8:06. Another Glor flying. NODWA

See a single PL alone. On ground in pasture. Silent. Then flies
across road into scrub. Then it is joined by its mate. Very noisy Greeting

More Glor fowps NODWA

See a couple more Glors in scrub. Alone. Also another Sooty Tern
sh. Noisy but alone.

Sun has gone again now. And it is getting colder.

See group of Whitebeards (again). (Still) alone.

Glor
Glor
Glor

8:20 See single Cy alone 30ft up in tree. Singing NODWA. All song phrases "Tut tut tawee taweee rrrrrrrrr" I think that all or most of the supposed Coer song I heard earlier this morning (in distance) may well have been Cy songs of this type!!! The "tawee" notes are quite loud and more penetrating than the other notes.

Cy sings for a long time. No other birds in surrounding conditions. See another Glor silent and alone.

8:31 a.m. See single Yellow-bellied. Silent and alone 2-3ft up in young second growth scrub.

8:40 More than 100 "Chuk" song. At first NODWA. Then I hear more song by Blue Duglona in distance. This does sound like Coer but it is too far away for me to be sure. Completely overlapped by "Chuk" song. Then Duglona shuts up. Presumed I can continue.

I can shut up. Then I hear more Glor songs. NODWA Glor shuts up. Then I hear a few White-spectacled flycatcher. NODWA

See some more Glors and White-heads. Both alone. Also a pair of PL's alone. (All these birds obviously are same individuals seen alone earlier this morning.)

9:00 a.m. See another definite mixed flock. Includes at least 2 White Spectacled, 1 Yellow-belly, 1 cyanocephal. Group quiet but very coherent. Moving rapidly thru scrub and trees. All birds ranging 3-20ft up. White-spectacled in lead; followed by Yellow-belly; followed by cyanocephal.

At one time, a juv. Coer was seen only a few feet from the group. I think that it may have joined and/or followed the group!!! At various times, group also passes near 1 Glor, 2 White-heads, and 2 maroon-crested cotingas. But I am sure that none of these latter species follows

Cy
Coer
Glor
Duglona
Yellow-bellied
White-spectacled
NODWA
PL's
White Spectacled
Yellow-belly
cyanocephal
Coer
Glor

or joins.

But then the whole lot. becomes confusing.

I follow the path up to a fence road, in direction in which the White-spectacled-Sparrows - approach a groupment. And I come across a small group of some kind within a couple of hundred yards. In second growth woods. See a White-spectacled, 1 juv. flycatcher (see!), several woodcreepers and 1 or 2 hummingbirds, all close together, 15-20 ft up in trees. Group as a whole quiet, except for occasional White-spectacled song phrase (NSDWA). Not moving in any particular direction.

From sounds, I surmise that there is (are) also 1 or more White-headed quite close to this group, but I can't see them.

Then I hear more loud sounds about 30 ft away. I approach the one, and find another "cluster" of birds. Including 4 PL's, 1 Yellow-belly, 1 White-spectacled, 1 Wren. All 2-6 ft up in second growth scrub under second growth trees. When the PL's see me, they begin to mob. Becoming really very noisy indeed.

At this point, the White-spectacled and the Yellowbelly of this "second cluster" abruptly disappeared. I.E. they seemed to have gone off together (see the Yellowface - Yellowbelly associations on Purace!). But a number of other birds joined —> group of PL's and wrens, presumably attracted by PL Mobbing. The joiners included 1 adult flycatcher (!), 1 White-headed, and 1 woodcreeper. These joiners may have come from the adjacent "first cluster"!!!

Then all birds drift off. I can't tell who, if anyone, is in lead.

I don't know whether these 2 "clusters" should be considered separate flocks or two parts of a single flock. If the latter, then the flock as a

whole was quite diffuse - in much the same way as some of the flocks seen near the Teleférico #1 Station a couple of months ago

Everything quiet now 9:50 a.m.

10:00 a.m. A few yards down hill. Come across none of the Coer birds. 2 White-spectacled, 1 adult and 1 juv. Coer (!!!), 1 White-headed. All quite close together, 10-20 ft up in trees. Quiet

This a Coers are feeding on fruit. Also pulling waste off leaves of white-spectacled and White-headed figs etc.

The 2 Coers undoubtedly are the adult & juv. seen together earlier this morning. Also undoubtedly the two birds seen separately with different "clusters" only a few minutes ago. I.E. probably all the birds seen at various times in this particular site should be considered permanent or temporary members of the same diffuse flock (of fluctuating composition)

NOTE: The White-spectacled Whiteheads here have narrower spectacles and rufous crowns

NOTE: The altitude of the road here according to my altimeter now is 8550 ft.

10:15 a.m. Flors still singing down by road. NODWA
Leaving 10:20 a.m.

COMMENT: In general, my observations of today and yesterday would seem to conform my earlier impressions of the behavior of the birds of this region. They certainly are allogregarious to some extent, but apparently much less so than the birds of the Western and Central Cordilleras of Colombia.

If the birds here should turn out to be significantly more allogregarious than those of the Eastern Cordillera Colombia, this would indicate that the "frontier effect" is more important than "accessibility to island"

hopping". If this should turn out to be significantly less allopatric
s, it would indicate that "probability to island hopping" is more imp
ortant than the "island effect"

August 30, 1968
Paraiso La Vega

Going to work in same region again this morning. Arrive 5:30
a.m. Still completely dark. Sky appears to be largely clear

8:00 Bird sounds beginning around 6:10 a.m. First Glor songs 6:14
Quite a lot of Glor songs in the next few minutes. Some times overlapping
of songs by adjacent Glor sp. but more often alternating with
them! NODWA

8:30 Most of the Glor songs have little or nothing in the way of R com
ponents.

Quite a lot of bird sounds by 6:25 a.m. Going uphill along ridge
path I followed yesterday.

Glor silent 6:27. Then hear first Atlapetes Whistle songs. NO
DWA. But overlapping many other bird sounds apparently at random.

The chronological order in which different species sing here (and
probably even where else) seems to be quite fixed.

8850 ft ca. 6:40 - 6:45. See a couple of Sooty Thrushes. Also 1
White-bird. Also 1 Blue Duglona (Cy?). All apparently alone. 15-20 ft
up in trees.

Atlapetes still singing NODWA. 6:47.

9:00 Then see Blue Duglona again. Obviously same individual seen a
few minutes earlier. But I see now that it definitely is Coer. Silent. Still alo

Jan me. Feeding on small tubular orange red flowers. Apparently sticking beak down center of tubular corollas.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

8:03 a.m. See group ^{W 111-112} 3 lutiviridis-types. Probably same family group seen yesterday. (Altho they look brighter yellow in sunlight) 20 ft up in second growth trees.) Noisy. But definitely alone

8:23 a.m. Same general area. See some sort of mixed flock. 2 PL's 1 ft up in second growth AS. Noisy. Uttering "freet"s. There also is a pair of White-spectacleds in small trees above PL's. 6-10 ft up. Silent. Then the White-spectacleds fly away into trees 30 ft away. PL's apparently do not follow. (Note: A Coer appeared in trees not too far away from these other birds at approximately the same time. Possibly they have all been associating with one another.)

When I approach the PL's a little more closely, see that there really are 3 individuals here. Still very noisy. But definitely alone now. And one individual seems to be pulling up ⁽⁴⁰⁾ up.

8700 ft 8:50 a.m. See single flor alone in second growth AS.

Starting downhill again 8:55 a.m.

Back to area where PL's were seen earlier. They are still here. But now there certainly are also some other birds in area. At least 2 B. nigrocinctatus, 2-5 ft up in scrub. And I can hear some woodcreeper or near by. Flock as a whole moderately noisy, but diffuse

(My observations this morning also would suggest that flocks here may be "transitory". E.g. various things seem to have joined up with the PL's here at different times.)

NOTE: This flock was first seen at 9:30 a.m. (I.e. the 2 associations with the local PL's may be counted as 2 different flocks.)

W

W

9:30 a.m. In large area where mixed flocks seen yesterday. See quite a large flock following to see as one of the "clusters" seen yesterday but not the same as any of the flocks seen earlier today. Includes 2 Whitestarts, 1 Whitehead, 1 Ash-throated Green, 1 Yellow-green, in trees, 10-20 ft up. (Considers some birds seen with gaggle yesterday. I.E. they are regular members of group) Also 1 or 2 P.L.'s (one of which is a Begging juv) and 1 Parula low in scrub - 1-3 ft up. Group moderately moving and moderately coherent. Cons. Whitestarts, and P.L.'s each in lead at different times. Presumably, the Whitestarts are Whitestart-led, of course.

NOTE. This flock certainly does not appear to be "transitory".
 Leaving 10:20 a.m.

August 31, 1968
 Pico Espejo

Working from #2 Station. Reach station 7:50 a.m. Go down a path I have not visited since 1962. Arrive 10,300 ft 8:00 a.m. Upper limit AS. Weather clear and cool. Little wind.

See single Sooty Thrush alone. Flying across Paramo. Everything very quiet.

8:20 See 3 or 4 Sooty Thrushes in group in AS. Alone. See an Olectura alone. Local Olectura is dull brown, with suffused breast and belly, supercilious, and wing stripe. Silent & alone (This is species which also occurs at Paramo La Negra - sometimes in vicinity of mixed flocks.)

8:42 See pair Whiteheads 3 ft up. AS. Alone

8:50. 10,000 ft. Come across definite mixed flock. Region where mixed

I HO

10. Luteoviridis types and 3 woodcreepers Woodcreeper f - Luteoviridis types repeatedly. Group very silent. Luteoviridis types going from path of scrub to patch of scrub. Ranging from ground level to 4 ft up. Uttering lots of "CN"s Woodcreeper ranging 2-3 ft up. Silent. Luteoviridis types undoubtedly same species seen in the hills. All. Bill looks Parus-like close-up. Woodcreeper fairly small. Spotted or scaled underneath.

9:18 am 9650 ft See another group 3-4 sooty Thrushes alone in AS. Further down path, see what looks like hummingbird feeding on pink flowers. Silent and alone.

9:35 9475. See another mixed flock. Group of at least 3-4 Luteoviridis types and 1 woodcreeper. Same species seen together earlier. Ranging 3-4 ft up thru AS. Woodcreeper silent. Luteoviridis types very noisy. Harsh Peeping notes as well as "CN"s. Woodcreeper probably f - warbler. Luteoviridis types would seem to be Parus Nuclear in the "class" sense of the term!!!

Then see group 2 PL's & 1 Whitebeard About 20ft "behind" the Luteoviridis - woodcreeper group. But apparently going in opposite direction. PL's uttering lots of "Greetings". 2 ft up in AS. Whitebeard ranging 2-6ft up. Whitebeard j -> PL's.

Then I hear Whitespectled in AS across ravine. NODWA
9:55 am. 9350 ft. Just above fruit patch VSF. See pair PL's 3 ft up in AS. Noisy but alone. See single sooty Thrush alone 20ft up in tall tree further down path. Also alone. Then hear what may be Dubonia song down hill.

10:02 see single maroon crested montane cotinga alone in VSF trees

Coen 11

Thru the ... I know silent

11:40

12:02 9370 ft. 10-15 glimmers mixed flock in trees of VSF ...
2 White-eyed ... and 1 Tette. 20-30 ft up. Open, noisy but diffuse

Anten

Group then moves uphill into adjacent AS. I know that it includes
2 Tettes. ... at least 2 luticircularis types, a-
10 ft up in some near trees. It sounds as if group also includes some PL's
I can hear Attagates-like 'heart' notes.

Flocks really are quite common in this area now!

Group joins them area in which maroon crested cotinga is perched
And the latter flies away immediately. Apparently, nothing follows.

Group as a whole is quiet now, 10:30 am, and still very diffuse
I am going to start back uphill toward Station #2.

On way back, see several more single sooty thrushes alone.
Also hear more Whitestart Song NODWA

9800 ft. see a pair of Orecthices alone

11:40
11:45
11:50
11:55
12:00
12:05
12:10
12:15
12:20
12:25
12:30
12:35
12:40
12:45
12:50
12:55
1:00
1:05
1:10
1:15
1:20
1:25
1:30
1:35
1:40
1:45
1:50
1:55
2:00
2:05
2:10
2:15
2:20
2:25
2:30
2:35
2:40
2:45
2:50
2:55
3:00
3:05
3:10
3:15
3:20
3:25
3:30
3:35
3:40
3:45
3:50
3:55
4:00
4:05
4:10
4:15
4:20
4:25
4:30
4:35
4:40
4:45
4:50
4:55
5:00

11:45 9800 ft. Region where AS is low but particularly thick. See
group of 2 Yellowbellies and 1 Gler. 2 ft up. Yellowbellies noisy. Yellow
bellies f → Gler!

Clouds starting to come down 11:16 am.

11:35 10,075 ft. Fog starting to come in.

11:43 10,150 ft. see pair White-heads alone. 3-6 ft up in AS

Stopping observation 12:10 pm.

COMMENT: The fauna here certainly seems impoverished - as com-
pared with any of the Cordilleras of Colombia. Is this characteristic of the
Tuziguan Andes as a whole ???

In any case, it is (further) evidence that mixed forests are not necessarily highly developed where the number of species is least (i.e. where competition between species might be expected to be least intense).

NOTE: According to my altimeter now, the altitude at this station here now is 12,250 ft. According to the field book, it is 3450 m. Comparison of these figures will tell me if my altimeter is working properly.

September 1, 1968
Barro Colorado

Going to work from station #1 this morning. Arrive 7:30 a.m. Working along usual path uphill. Weather is fine. There still is some "general" bird noise. But no songs.

Path has been cleared since April

7:26 a.m. Not far from station. See single Red-tailed Squirrel apparently alone. 25 ft up trunk tall VSF tree

THE HOWL HO

7:32. Some distance further on. Area low second growth scrub. See mixed flock. Includes 2 WM *Atlapetes*, 1 *Synallaxis*, 1 other bird 3-4 ft up. WM's fairly noisy. All birds close together. Then WM's fly down bulk into scrub where I can hear *B. nigrocrinitatus*. This probably should be classified as joining! *Synallaxis* f → WM.

7:52. Some distance further along, see another squirrel apparently alone. Probably same species

Now going way along path uphill. Where I went in 1967 (but not last April). Everything very quiet.

8:21. 17990 ft. Edge VSF and bamboo scrub. See single Yellow-belly. 10-25 ft up in small trees and tangles. Noisy. But definitely alone

But then the Yellow-bellies fly up hill into VSF and I hear other birds
I notice in that direction

8:29 A little further up hill see ⁽¹⁸⁾ cyanocephala 40 ft up in ta
ll VSF. cyanocephala alone

8:35 am 2025 ft. Regions of VSF mixed second growth, adja
cent to large patch bamboo scrub. See another mixed flock. Includes 2 Bl
ush-capped finches and 1 other bird (unidentified, but generally yellow
olive) 3 ft up. Silent. All birds close together. All "shorts" the
s group briefly, but then disappears. Group going down hill slowly.
Then I hear Atlapetes "chewing" in scrub 15 ft up hill. Then 2 WM
appear. WM's f → Plum-capped group. Then 2 B. nigrovittatus
atlas appear, about 10 ft behind WM's. B. nigrovittatus f →
group. Then turn "sideways" and go thru bamboo scrub, 1-3 ft
up. They apparently have abandoned group.

Then 3 cyanocephalas appear from down hill cyanocephalas
j → B. nigrovittatus. Land in trees 10-15 ft up, right
above the warblers. But then the warblers move. And cyanocephalas
do not follow.

I think that these birds must be considered to form (or have form
ed) two different flocks. Both diffuse, on the whole
cyanocephalas very throughout. Lots of Switters WM's and
B. nigrovittatus utter a variety of sounds, but are quiet most of the time

8:50 same area. Single Yellow-belly j → cyanocephala
s A third "flock" here. Lands in tree 15 ft up, about 15 ft from the
nearest cyanocephala individual. Silent.

Then all birds disappear from view. I think the cyanocephalas &
Yellow-belly went in the same general direction as the B. nigrovittatus
earlier.

41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

8:56. Then the WM's reappear! Obviously same individuals seen earlier. 3ft up in bamboo scrub. Apparently following B. microscutatus and/or cyanocephala - Yellow-bellied "cluster" !!!

Then ♂ Albe "evicts" WM's briefly. Disappears

Then some sort of larger or completely rufous synallaxis-type f. WM's. Quite close. 1ft up in bamboo scrub.

So all the birds here would appear to be continuous or intermittent members of one, very diffuse, flock !!! Apparently with changing leadership.

Going further up hill 9:00 a.m.

9:11. 8000 ft. See single Yellow-billed, 15ft up in second growth tree above scrub. Apparently alone. But there may be some individuals seen earlier, and there may be other birds around in the neighborhood

9:36 a.m. 8140 ft. Region mixed second growth. See another mixed flock. Includes at least 2 White-spectailed, 2 BCBT's, 1 B. microscutatus. Quiet. And diffuse. But all the birds are going in same direction and there seems to be a definite order of precedence. White-spectailed in lead. Followed by BCBT's. Followed (at least for a while) by B. microscutatus. BCBT's + microscutatus 3-6 ft up in scrub. White-spectailed 6-10ft up scrub and small trees.

It is beginning to look as if most of the birds here now are gathered into flocks !!!

Perhaps the allopreparatory behavior of the birds of this region, in general, is intermediate between that of the birds of the Eastern Cordillera of Colombia, on the one hand, and that of the birds of the Central and Western Cordilleras on the other hand.

9:53. Some yards down path. Hear lots of White-spectailed song. NODWA. Then see singing bird. 10ft up in small second growth tree. Probably one of the birds with flock seen a few minutes earlier. And I can

all
TANC

H
H
H

than other birds in morning-sound. Apparently (still) following the White-spectacled

also BCBT's!

10 11 12 35 40 700-800 ft. In another mixed flock in region of same mixed vegetation. To sort of second growth and mature SF. Flock as a whole is enormous. Has a typical "nucleus" in lead. This nucleus includes at least the following: 2-4 Luteoviridis-types (probably same species seen up hill yesterday), 1 Parulotus coronatus (probably Parulotus), 1 Hemispinus superciliosus (see description above), 1 Cyanocephalus, 1 White-spectacled, 1 White-headed, 1 Empidonax-type flycatcher, 1 Woodreeper (same species seen with Luteoviridis-types yesterday), 1 Gray Jay (me!) - apparently same species as in Panama - and 1 Piculus rubiginosus (identification definite). This nucleus is very, very coherent. All birds sticking close together. And all moving in same general direction very rapidly. (The Jay certainly is an integral member of the group.) All or most birds ranging 10-35 ft up. Leadership obviously changing. White-spectacled, Woodreeper, Cyanocephalus, and one or (more probably) more species of Parulotus and/or Hemispinus in lead at different times. All species except Cyanocephalus, Piculus, and Empidonax-type vocalize frequently. Flock as a whole very noisy!!!

There was some fighting among the White-spectacled. With elaborate display postures. Possibly flock included 4 White-spectacled at one time. And/or joined from territory of one (breeding) pair of White-spectacled into that of another pair - thus provoking a boundary dispute (see also below.)

When flock was first seen, there was (were) 1 or 2 PL Atlapetes in scrub 20 ft "behind" it. I don't know if the PL's followed the nucleus or not. (But they certainly must be considered at least temporary members of the flock.)

At the same time, I saw a pair of B. nigrocrinitatus in bank
 or about 20-25 ft "behind" the PL's. Very near. Again, I don't know
 if these birds followed nucleus or not. (Probably 2 of them with nigrocrinitatus
emerged as flock passed by different areas. At last I saw
 (another) pair of nigrocrinitatus in miscellaneous scrub, and in the other
 or birds, much later on, when flock had passed far away from where
nigrocrinitatus was first seen. These (later) nigrocrinitatus (also) very
 young. Lots of Patties and Flowerbills.

Also, when flock was first seen, there were 1 Blue + Black (?) and
 1 Yellowbelly, 20 ft apart, 20-30 yds "behind" the nigrocrinitatus
us. Both 30 ft up in VSF trees. These may be considered "outliers"
 of the flock.

Thus, the flock included "diffuse, scattered satellites" or "fall
 owers" in addition to the very coherent nucleus.

Group as a whole could be described as a "mixed Baudin's us
 and/or Hemispingus flock."

In its general size and coherence (albeit not in its specific composi-
 tion) it resembled flocks of the Eastern and Western Cordilleras.

Certainly, there were no Diploma or Conurostrum with this partic-
 ular flock. Does WCC occur in Sierra de Merida ??? If not, why not
 t?? The environment would appear to be perfect for it!

Reach highest point of path (where it enters VSF) 11:08 a.m. Cloud
 is coming up now - and fog is coming down.

11:20 a.m. Some distance further along. Hear a lot of what sounds
 like White-tailed Song. NODWA. (It is just barely possible that there
 are short Lo songs, but I doubt it.) Sept 3, 1965

11:31 a.m. 8200 ft See single B. nigrocrinitatus, silent and alone
 c. 1 ft up in second growth scrub along ravine.

11:42. Some yards further on and uphill. (Again?) See single

microscitatus silent and close to up in similar environment.

Starting back toward station 11:45 am

11:55 am Back where presumed White spotted flocks heard at 11:20. Birds still singing. Still NODWA. (I would not be prepared to guarantee that they are not Laf. If they are Laf, it is interesting way to "find" them in an environment which is "typical" of Alb. - or the region on the east of Purua where Alb. & Laf overlap.)

12:08 pm 5200 ft Cott. glim. Alb. (can't tell if ♂ or ♀) in patch bamboo scrub in SE. Alb. R's NODWA

Then, 20 yds away, get very poor glimpses quite a large mixed flock. This is near where very large mixed flock seen earlier this morning. Probably largely same group. Probably at least 20 inds in group now. This time large, 30-40 ft up in tree-tops. Group certainly includes 2 large surface woodcreepers which it did not include earlier.

Can hear White spotted with group 12:21

And now I see that there also are birds in bamboo scrub below tall trees. But remaining very well hidden!

12:23 Now I see that tree-top group also includes small woodcreepers I can see with group earlier

Now I flush single B. microscitatus from bamboo scrub near flock. I don't think that this bird really is with group

Flock as a whole still very coherent. And almost as noisy as before

12:27. A little further along, 2 B. microscitatus j → group up. Low in mixed scrub.

I am going on down hill because this group is in such a position now that it is impossible to study.

12:38 pm. Approximately same altitude Fog is beginning to reach this area. Everything very quiet

Alb?

Alb

71
72
73

72

73

71

71

Jan

NOTE. There seem to be remarkably few hummingbirds here now. Presumably because flowers also are scarce.

12:47 8160 ft. See part of Yellowbellies, 18 ft up in second growth in trees. Flying. But definitely alone (Yellowbelly behavior seems essentially the same in all regions!)

Light rain starting 12:55.

101
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200

1:10 p.m. Just below 7900 ft. See another mixed flock. Includes at least 1 Yellowbelly, 2 BCBT's, 1 PL Altopetes, 2 flycatchers of different species, 2 large (and largely green) parrots. All in trees 15-30 ft up. Fairly close together but rather quiet. Parrots fly off, but nothing follows.

Rain stopping 1:17 p.m. Then starts again

1:22. Same place. Same group. Group really is quite large. Also includes at least 1 Blue & Black and 1 Tangara nigroviridis. Also in trees. Group as a whole still coherent. But not going anywhere. And apparently without definite leadership.

Then I have to move on 1:25 p.m. Rain very heavy. Back to station 1:30 p.m.

COMMENT: The fog and rain today didn't have any very noticeable effect on Allogregariousness. Weather obviously stimulating, not obviously depressing.

MORE COMMENTS:

There seems to be greater seasonal variation in Allogregariousness here than in all or most of the other regions in which I have worked. Why? Is this characteristic of "intermediate" regions???

There are relatively few brightly colored gregarious tanagers here, and relatively many olive-yellow birds of the Bantherus - Hemispingus - Chlorospingus type. Why? Why are such species as the GT and the Big Butorapis apparently absent? The answer

onment looks ideal for them (also).

I think that this is supposed to be the dry season here now. But it certainly has been wet (in the afternoons) in actual fact.

September 2, 1965
Parícuto La Negra

Going to work in usual area here this morning. Arrive 5:55 a.m. Still quite dark. Sky largely cloudy. Feels like rain may be coming. (There may be a very fine drizzle already.)

6:38. Going uphill along side path. See group 4 PL's moving on ground, and up to 3 ft up, edge of path. Uttering lots of "PN"s. Can also hear luteoviridis-types in scrub 10-15 ft away. But the association between the 2 species appears to be "coincidental".

6:52 Further uphill. See single luteoviridis-type. 3-6 ft up in scrub. Very noisy. But definitely alone.

7:06. See 2 B. nigrocrinitatus alone in second growth trees. 6-15 ft up. One adult, one juv. Juv. Beeps repeatedly (with silent Wag-Q). Adult feeds juv. repeatedly.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

8:45. Area where I have been watching Diglossas and humming birds. See group 3 luteoviridis-types. Presumably individuals seen around here before. Very noisy as usual. 15 ft up in second growth trees. I can also hear White-tailed Song in neighborhood. And 15 ft "below" the luteoviridis-types is a single moderately small woodcreeper. Also 15 ft up in second growth trees. Silent. This is exactly same species seen with luteoviridis-types on Pico Espejo!

II. II f —————> luteoviridis-types.
Obviously, II has a special inter-specific preference for luteo

viridis type. Quite as constant a preference as I have ever seen!

Young clown bill 9:02 a.m.

9:07. A few yards down hill. See single hummer (green species - green with buff throat) come in in to visit with. Also defend ng area against me. So perhaps all the Nectarivorous birds here are in breeding condition now

Then see single sooty hummer about 12 ft up in trees

A few yards further down, see single "purple" jay. Flying but apparently about 5 ft up in fairly tall second growth scrub.

9:25 a.m. Down by road see single PL. Silent and alone in blackberry, bramble edge pasture.

Then hear some more Gloy songs NODWAH

Then see group 3 PL's and 2 Gloy's low in scrub edge pasture 1-3 ft up. All birds close together. But about PL's apparently picking up bits off leaves. Gloy's feeding Pampou flowers in usual way. Gloy's fly away PL's do not follow

9:48. More Scan song in distance. NODWAH

See another single Gloy fly by, silent and alone

Will! Will! See single S. pumilio about 4' above 20 ft up in tall tree. Flies off immediately.

10:03 See single Yellow-belly Oquit. Definitely alone. Flying from tree to tree edge pasture. 5-20 ft up.

Leaving 10:05 a.m.

Jan

Jan

Jan

Scan

Jan

September 3, 1965
Parsons Zambador

Reach San Cristobal this morning. Going to look for the Par

La Zumbador this afternoon

Arrive site on road to Quirigua 2470 ft 2:40 pm. Flashed
sunshine & cloud. Sky level is not far above us

There is some scrub and USF scrub showing by second growth
the trees quite low

Near Tulumera long down hill 5-10. Quite typical. With

2
17
10
18

Then see very large mixed flock. Includes at least 2 Yellowbellies,
1 Luteovirides-type (apparently same species as on Poco Espino and La Hig
ra), 3 Gray-spectleds (see below), (almost certainly) Dubayya (prob
ably same bird heard singing a few minutes ago), Inters Fly (defu
ite), 2 PR Alfajetas, 2 White-spectacled, 3 White-bearded Nighthawks,
and at least 1 Yucatan. Group moving thru very mixed scrub, includ
ing some very young, some bamboo, and some fairly mature second grow
th also "pines by" some mature USF trees at one point. At first group
is moving along both sides of road; then the birds of one side cross over
and join the others.

Group as a whole quite coherent. Birds quite close together. Au
d moving steadily in one direction. But generally quiet. Only "ca" s

Inters

When group was partly divided, by road, the White-beards
definitely were the leaders on one side. Cy f —————> White beards repea
tedly. Inters f —————> White beards repeatedly. Yellowbellies f
—————> White beards repeatedly!!! Leadership on the other side was more
difficult to observe. Probably provided by PR's and White-spectacled in
alternation.

Most of the birds spent all their time in scrub. Ranging 1-6 ft
up. But the White-spectacled, Whitebeards, and the Luteovirides-type
also made "side visits" to the USF trees. White-spectacled going up to
30-35 ft up. The other 2 species up to 20-25 ft up.

Cy was seen only very low, 6" - 3' up!

cy

19
Inter

Altho the Cy and the Inters were on the same side of the road when the group was divided, they did not seem to be associating particularly closely with one another. Cy as to a better Inters pair 3/2 + off later.

At one time, there was a single Scaly Thrush perched on the summit of the rock. But it appeared to not stay with the group.

This certainly was another flock reminiscent of the Central and Western Cordilleras!!! As large coherent flocks found everywhere throughout the Andes, where there is VSF-type forest at relatively low elevations???

Perhaps flocks are particularly well developed here because this area is particularly close to the base of the Sierra de Merida???

NOTE: The "gray cap"s are a puzzle. Obviously Basilinna or Neospingus. Clear gray (almost blue gray) on crown. Conspicuous dark streak through crown. Otherwise yellow below, yellow-olive above. I have certainly called such birds H. superciliosus reye before. But are they? They certainly do not have any visible white supercilium!!!

Rain starts 3:10 pm. Stops again 3:27.

Inter 22
26

3:38 pm. Some considerable distance along road. 8600 ft. See app. other mixed flock. In scrub edge obviously mature VSF. Group includes 3 Inters, 1 luteovirens-type (apparently dual species), 1 PL, 2 Whitebeards. Group very coherent. All ranging 6" - 3' up! All uttering cn's, but nothing else. Whitebeards and fittles alternating in lead.

suticolor

Couacoum suticolor certainly does appear to be primarily a bird of scrub!

Going back along road a few minutes later, I can hear both flocks approximately where I left them.

Then go on to another area 8975 ft. Edge fog level. Arrive 4:15 pm.

Don't hear or see anything like a mixed flock. The tendency to form mixed flocks seems to fall off rapidly with altitude in the Sierra de Mirinda.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI
Hearing 8:28 p.m. Saw yellow warbler

September 4, 1965
Paramo Zumbador

Going to work same area where Laps were heard yesterday. Arrive 5:45 a.m. (total black fog, cold, air windy)

First (mixed) sound heard 6:16 a.m.

6:33. See pair of B. superciliaris. 4-10 ft up in thick vegetation on (SE-AE) Very noisy. Lots of Little-Kowbirds But definitely a lone. W/S

70 Then superciliaris move on, about 30 ft. And then a pair of Whitebeards appears where warblers were earlier. Apparently, Whitebeards f ———> superciliaris. (I can also hear a variety of other birds in the general neighborhood, but I can't place them definitely.)

It looks as if a large mixed flock may be in process of formation here.

70 Then Whitebeards move on superciliaris. And superciliaris f ———> Whitebeards. Then 2 Laps (described elsewhere) f ———> group. Presumably "morting".

SEE TODAY'S NOTES ON MIXED DIGLOSSINI!!!

8:31 a.m. Go about 100 yds downhill. Area similar vegetation. And I come across what seems to be an entirely different mixed flock.

Very large, including approximately 20 birds. At least 2 Titps, 1 Whitebeard-type (usual species), 1 woodpecker II, 1 Lap, 2 or 3 Little-Kowbirds, 1 Striped-flycatcher, 2 Whitebeards, 1 Euphonia-type flycatcher, other

III
IV
V
VI
VII
VIII
IX
X
XI
XII

46 WII

Def
Inter

Group very coherent showing rapid up bill flicks. Birds ranging c-20 ft up in (USE - KS) edge among Little Striped Flycatchers (green) definitely do not tend to associate particularly closely with one another.

This flock goes uphill until it reaches an area where the other large flock was seen earlier this morning. Then it apparently turns and disappears. The ranges of these 2 flocks seem to be pretty, but only slightly overlapping.

F 110
Def
Inter

Then go up to road. See flock 7:15 am. Apparently a local flock (altho quite conceivably some of the birds in it also may be included in the second flock.) Group very large. Includes at least 10 species - by spec, 1 Gray cap, 1 Inter, 3 PL's, 2 CII finches, 2 woodcreepers, 1 CII, 2 White-birds, 1 Empidonax-type, others.

All birds moving steadily in same direction. But scattered over a very wide area. Some birds frequently 20-30 yds away from nearest individuals of other species. White-birds, Luteoviridis-types, Gray cap, and CII's near front. PL's and CII's at rear.

PL's and CII's definitely tending to associate closely with one another. Both species ranging from ground to 2' up, in low second growth scrub at very edge of road.

All other species in smallish trees 5-25 ft up.

The Luteoviridis-types and the CII woodcreepers show a definite tendency to associate particularly closely with one another.

LCH
Inter

A single LCH visits flock briefly. And it attacks and chases the Inter!!! (altho Inter certainly is taking insects off leaves - not feeding on flowers.)

W
W

✓
✓

100 Flock as a whole a quiet. But I saw both Circaea and Corvus singing at intervals. ... Both NODIAH The 2 birds go shall we not see ... toward rear of flock (app ... afternoon) by hand ... near Duter

101 A ... in center of flock for some moments, but ... continued to associate with group or not.

NOTE: There is yet another area where White spotted Woodpecker apparently does not reach high altitudes

Notes

102 ... a little further down road. Cent ... at least 2 ...

Learning is so ... as now starts again

REMARKS.

I. Altho the feeding behavior seen this morning was very reminiscent of the Western and Central Cordilleras of Colombia, I am still not convinced that Allegreanornis is generally as highly developed here as in the latter two regions.

II. Certainly the flocks on Pico Espejo and Paramo La Negra differ from those of the Western & Central Cordilleras in form. I.E. they are smaller, on the average. They also may tend to be less cohesive and/or quieter. Especially in the non-breeding season (April).

III. Altho flocks such as those seen this morning are similar to those of the Western and Central Cordilleras in form, such flocks seem to be absolutely confined to regions of very extreme humidity in this region. I am sure that I have seen equally extreme flocks in regions of lower humidity in parts of the Central and Western Cordilleras (e.g. parts of Purace).

IV. But I am beginning to come to the conclusion that the "frontier effect", everywhere, may be primarily an adaptation to hum

idity (An indirect adaptation - presumably for moving in dense vegetation. Especially forests.)

September 5, 1963
Peruvia

Going to work in the same area again this morning. Arrive 6:07 am. Just getting light. There is fog within lower limit fog level this morning. Cool little wind.

First few simultaneous bird sounds 6:12 am

Feb
Open

Then Laps begin to sing vigorously (described elsewhere). But there is very little, or nothing, else in the way of early bird song. I think most of the species here (apart from *Dryocopus*) probably are not in breeding condition.

Feb
Open

6:44. Hear *nigrocristatus* Rattles and *Stearnsia* approximately same place where species first seen yesterday morning. Four in AS - PL

6:52 am, pair PL appears soft ~~song~~ ^{chirp} ~~chirp~~. They lean in toward other making occasional "Greetings". Moving gradually uphill in direction of *nigrocristatus*. I.E. it looks as if flock is forming.

It would appear that the *nigrocristatus* form the "original" nucleus of the "fruit" mixed flock here.

Fog lifting 6:58 am

Feb
Open

Laps stop singing 6:59 am. And immediately single *G* appears in area. Sings repeatedly NODWAH. But overlapping *nigrocristatus* Rattles and *Stearnsia* at random. Singing from several perches in different trees 15-25 ft up.

Feb

At same time, at least 1 White head and 2 Little striped Flycatchers appear in same general area. 6-15 ft up

Feb

All 3 species congregate near PL's. Then the *nigrocristatus*, who

are about 20-30 ft away at the time. Fly over to j → P2 - Wh
steward - Let's stop - By group flock is "crystallizing" rapidly.
As continues to land vigorously. All phrases rapid. Switters pre-
ceded by "sit" & "sit" notes. And all NEOWAH

P2 j → Let's stop - By station

7:20 ~~see a flock~~ see a. But rather quiet and uncoor-
dinated. Group apparently not so coherent now. Then I see single Cy
flock in general neighborhood of group. Yellowbills fly off. Nothing
follows

Now seems very diffuse now 7:25. Yellowbills fly back out
of area; but don't land here. See to say of the other birds.

Does good weather discourage mixed flock formation here, while
bad weather encourages it? (If so, it would be another indication that
mixed flocks are being developed in this particular area)

7:30 Now all the flock birds seem to have gone from area. Pro-
bably they have drifted up hill. Presumably together. But probably as a very
diffuse, and quiet, group!

Going down hill myself

See single feisty Phoebe, silent and alone 20 ft up in AS.

Then single Cy appears 6-12 ft up in scrub 30 ft away. Group re-
peatedly from different perches. NEOWAH. Also apparently quite alone.

SEE ALSO TOM'S NOTES ON MIXED DIGLOSSINI

7:45 am There does not seem to be any group now where second
mixed flock was seen yesterday.

Then I go for a walk along road. Nothing where third flock seen
yesterday 8:05 am

8:15 am Some considerable distance down road. 8450 ft. Region
of scrub, rather diverse, not very tall USF - AS. Come across large mi-
xed flock. Includes at least 3 PL Atlapetes, 2 Yellowbills, 2 Blue & B

84

94
76

I presume that the Graycaps are either "primary" or "central" members.

Group as a whole fairly quiet. But all or most species (except wood-creeper and warbler or flycatcher type) utter a variety of sounds occasionally. Hummingbird-types utter Rattles & Rourules.

The PL's seem to be disputing among themselves. Lots of retreat-chases and supplants.

Gray-caps ranging 2-18 ft up. Definitely picking insects off leaves. Antiochensis-type ranging 2-18 ft up. Also definitely picking insects off leaves. Wood-creeper 10-18 ft up. Looking for insects on trunks and branches. PL's seen only 6-20 ft up. Yellow-billed and Blue & Black seen 6-20 ft up also. White-headed flycatcher 2-18 ft up.

97
98

At one time, I heard a brief match of White-necked song (NO DWAH) just downhill. This bird may have been associating with group. Certainly there was one sooty humbird on outskirts of group for a couple of minutes. In trees. Uttering alarm notes (at me).

Once, the Graycaps made a little sortie in area mixed scrub (including bamboo). There was nothing else visible or audible in the scrub at the time. But then the Graycaps left, going back the way they came. And immediately 1 or 2 B. macroscutatus emerged from bamboo scrub.

entered Butts and glances. They fell silent and went back into some
to SE the way from the Gray caps, and then showed
hostility after the Gray caps had gone

Group was ... ft off ... Without my being able
to see a few things.

They were standing over 8:50 am

9:00 am ... Approached to area where third flock seen yesterday

109
110
111
112
113

Don't mind ... at least 10' White-tailed Yellow ...
... type. All birds 5-12 ft up. Group as a whole coherent.
Difficult to tell who is leading. Perhaps White-tailed

Group as a whole is quiet ... White-tailed, yellow NOD
WAH. I also hear a few and ...
calls group (presumably ...
orally in the case of the ...)

This group apparently is not "connected" to the larger (Gray cap)
group seen down hill earlier today. But it may well be partly the same
as the third flock seen yesterday.

Leaving 9:45 am.

COMMENT: My observations later this morning would not
support the hypothesis that low weather discourages the formation of
mixed flocks here. But they would suggest that it may tend to encour-
age diffuseness and quietness.

Serria de Múrida

Sept 5-43

Zumbador - Sept 1965

No Inds seen Alone

|||||

(14)

No. Inds in Flocks

(124)

(14)

83.22%

No Flocks seen

|||||

No. Sp per Flock

11
4
3 } 18

No. HO-Flocks seen

|||||

9
11
6 } 26

Largest No. Inds / Flock

19

22

11
8
6 } 25

69

Sierra de Menda - Zumbador

Sept 1965

No. of Flocks

|||||

(11)

No. Inds. in Flocks

(10) ||| ||| ||| ||| ||| ||| ||| ||| ||| |||

(11) ||| ||| ||| ||| ||| ||| ||| ||| ||| |||

||| ||| |||

(114)

|||||

9-25

|||||

|||||

||| ||| ||| |||

(19)

86.52%

(122)

14 09
Cada pulcra

No. Flocks Seen

|||||

||| ||| (8)

No. U. I. Flocks Seen

|||||

||| ||| (8)

Largest No. Inds. 1 Flock

24

23

No. Sp. per Flock

11 11

4 4

3 8

(X) (X)

12 12

2 6

2 11

5 17

11

(10) 17

(59)

Journal of ...
Sept 1925

Hours spent:

Sept. 3	2 hrs 15 min
Sept. 4	3 hrs 30 min
Sept. 5	3 hrs 30 min

8 hrs 15 min

Panama La Negra
April 1965

Apr 3, 65

No Inds seen alone

|||||

|||

(3)

No Inds in flocks

|||||

(28)

34.54%

No flocks seen

|||||

No H.O. flocks seen

|||

No egg per flocks

2

2

2

2

2

2

Largest No. Inds 1 flock

3, 6

Apr 5 1965

Isleña de Moreuda

- 50, 100, 200, 300

April 1965

No. Birds Seen

No. Birds in Flocks

|||||

|||||

(48)

(28)

||||| ^{40 7.41%}

|||||

(52)

(28)

8.21
with 1000

33.00 %

No. Birds Seen

No. Sp. Per Flock

|||

2 2

|||

2 2

No. H. O. Birds Seen

2 2

2 2

2 2

||

2 2

|||

3 3

Largest No. Birds in Flock

6

Sierra de Merceda - P. de Negro

April, 1953

Hours Spent

April 5

3 hrs 00 min

April 6

2 hrs 15 min

April 7

3 hrs 30 min

9 hrs 45 min

Aug. 29 30, Sept 2

Sierra de Merula - P. La Negra

Aug - Sept, 1968

No. Inds. seen

No. Inds. in Flocks

|||||
||||| (22)

(30) |||||
||||| (20)

75 9.30

|||||
||||| (82)

|||||
||||| (100)

45, 34 70

No. Sp. per Flock

13.00
Inds. per flock

No. Flocks seen
||||| (11)

2 2

2 2

2 2

4 4

8 8

No. H.O. Flocks seen

2 3

||||| (9)

3 3

5 5

2 2

Largest No. Inds. in Flock

(10) 3 3

2 2

15

35 36

Records of ... - Pico Espino

Aug - Sept 1922

Hours Spent

Aug. 29 4 hrs 00 min

Aug. 30 4 hrs 00 min

Sept 2 3 hrs 30 min

11 hrs 30 min

Pico Espino

April 1965

Station #2
#1

Apr 3, 4, 7,
10, 11

No Birds Seen Close

(124)

43.12%

No Birds in Flocks

|||||
|||||

(94)

(21)

No Flocks Seen

|||||

(17)

No H.O. Flocks Seen

|||||

(8)

Farthest No. Birds 1 Flock

8, 11, 14, 15, 16

No Eggs per Flock

2
3
3
5
2
8
2
4
3
2
2
2
3
3
9
11
2

22

(69)

21

25

Apr 3, 4, 9, 11

Sierra de Mérida - Pico Espejo

April 1968

No. Birds seen

No. Birds in flocks

(50) ~~|||||~~
(100) ~~|||||~~
~~||||~~

~~|||||~~
~~|||||~~

(103)

(82)

43.75%

(50) ~~|||||~~
(100) ~~|||||~~
~~||||~~

~~|||||~~
~~|||||~~

(114)

(85)

42.71%

865
was per hour

No. Sp. per flock

No. flocks seen

~~|||||~~

~~|||||~~

(16)

2 2 8 9

2 3 9

3 5

5 2

2 2

No. N.O. flocks seen

~~|||||~~

~~||||~~

(8)

6 18

2 2

17 17

2 2

Largest No. Birds 1 flock

(10) 2 12

2 12

2 2

2 3

3 8

14

Records of ... - ...

April 1953

Hours Spent :

Apr 3	5 hrs 58 min
Apr 4	4 hrs 30 min
Apr 9	5 hrs 45 min
Apr 10	4 hrs 00 min
Apr 11	3 hrs 45 min

23 hrs 00 min

Pico Espayo August 1965
Station # 2, #1

Aug 28, 31, Sept 1

No Birds seen alone

|||||

(100)

78.95%

No Birds in flocks

(103)

No flocks seen

|||||

No eggs per flock

2

2

2

4

2

4

8

3

15

15

8

219

36

No H.O. flocks seen

|||||

Largest No. birds 1 flock

8, 13, 22

Aug. 27, 1965 - Sept 1

Acacia de Florida - Pico Espajo

Aug - Sept, 1965

No. Inds. seen alone

|||||

(23)

|||||

(26)

No. Inds. in flocks

(102) |||||
(102) |||||
|||||

(106)

196.26%

(104)

80.00%

No. flocks seen

|||||

||||| (9)

No. of flocks seen

|||||

||||| (8)

Largest No. Inds. in flock

22

22

2

2

2

4

2

4

5

2

2

(10) 3

15

15

8

(67)

Flora de Puerto Rico - P. 11
Aug - Sept 1955

Hours Spent

Aug. 28	21 hrs	25	1955
Aug. 31	4 hrs	13	1955
Sept. 1	6 hrs	12	1955
<hr/>			
	14 hrs	30	1955

April 13, 1965
Mts above Bogota

Am ... of the ... and before ...
light flight ...

... the ... is ...
... maybe ...

...
147

6:12. There is at least one Blue D... feeding
in ... Other birds in same trees at same time, but they don't
seem to be ... will ...

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

7:15 am ... and ... overlapped
the last time I was here. See group of 3 ...
(R) ... low ... growth, lots of
Bamboo) sometimes silent sometimes noisy, twittering, "chatter",
"squeet" notes. But always ... alone.

An unusual blackish ... fly, without my being able
to identify it.

Everything very quiet 8:00 am

April 14, 1965
Mts above Bogota

Working this morning same general area as yesterday.

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

8:15. Area dense ... growth scrub. Lots of bamboo ...

appear definite but poorly organized mixed flock. Includes at least 3
White-headed Flycatchers (same species as in Yqueru - more or
usual), 1 Spine-tail Warbler, and at least two B. magister (at least
(new, more - lots of Rattle-Throats and loud N's or all N's)
One magister at least 3 times.
At this point, 2 Hummers \longrightarrow (independently) Hummers
hop along ground, open paths, apparently looking for insects. Select
Then the Hummers fly away, separately. No one follows. Then the
magister go down hill. Apparently, no one follows them either.
Throughout the period I watched this flock, the magister
showed a definite tendency to stick to bamboo. The White-headed
flycatchers showed a preference for small, or lower, trees. Both the
warblers and flycatchers ranged 5-10 ft above ground.

8:45 a.m. A single magister flew by. Definitely, alone.
Leave 7:30 a.m.

April 17, 1965
Parque de Quana

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

(Big mixed flock, same type and in same place as 1962)

COMMENTS:

I. The flock seen above Quana this morning was really mixed
like the flock(s) seen in the same area in 1962. Almost all the same
species involved. And the species apparently playing much the same
roles.

I was struck (again) this morning by the fact that the mix

A flock is, however, does (do) not seem to have any "permanent" or "semi-permanent" leaders (and/or species playing a purely passive nuclear role). At one time this morning, different species were "leading" one another at a quiet rate and/or milling about in a non-agitated-looking manner. (It is obvious, nevertheless, that with flocks of one species as different species at any time together for relatively long periods of time.)

If any one species is more of a leader than any others, it is the PR Callipepla.

I think that my 1962 comparison between flocks of this type and Chrysomitris flocks minus CCBT's probably was a stroke of genius. Also probably quite correct.

II. In general, the mixed flocks of the whole Bogota area (including Guadalupe) seem to be quite the same now as in 1962. Still, there are fewer mixed flocks on Guadalupe than above Quasca. And still, it is difficult to say why this should be.

III. The mixed flock situation here seems to be essentially comparable to the corresponding situation in the Sierra de Merida in one important respect. In both areas, mixed flocks are not more common in the non-breeding season than in the breeding season. Why?

IV. There must be some basic biological resemblance between the mountains here and the Sierra de Merida. Not only are mixed flocks similar in both areas, but the local Myiophobus are more gregarious during the non-breeding season than during the breeding season in both areas. (In this respect, the Myiophobus seem to differ from all related species.) Why?? (Note also that the

(4)

of wear of pigmentation in the non-breeding season - either per-
haps equally spectacular in both areas - taken very different forms in
the two areas. Why?)

April 16, 1965
Petro de San Benito

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

April 17, 1965
Petro de Guasca

Arrive 5:55 a.m. A clear day. It has been light since
at least 5:30 a.m. Cold as the ace of spades!!! Low has not recorded
this area yet. Going to walk along road - rather than go uphill
where I made most of my observations of fops in 1962 (i.e. young who
in mixed flock(s) occur).

6:00 a.m. Can hear Whistle songs several Atlapetes as well as
also

single through flycatcher. Alone.

6:05. Hear Atlapetes Whistle Song in burnt scrub on side
road. Switters, which may be by Cy, coming from unburnt scrub - other
side road, 20-30 ft away.

6:15. See single PL Atlapetes perched exposed, unburnt scrub,
c. 1 ft above ground. Uttering Whistle songs. In general area big
mixed flock. But apparently alone. Whistle songs more or less "feco
feco foo."

Hummer
Feb
Feb
Feb
Feb
Feb

Automobile goes by P2 flies away. Starts up. Then I hear what sounds like Hummer P-3 going in nearby scrub. They catch another glimpse see P2 flying from bush to bush. Definitely (still) alone.

Then hear Laf singing in distance at 2.1. First Laf heard this morning.

It also is very windy today!
See another couple of birds alone
Laf & Black. I go a few by alone
6:32. From time to time hear Laf belly songs in distance
Just beginning to reach this area at 6:34 (It probably has not reached area where Lafs are abundant yet. Note that Lafs here seem to have same preference as Lafs near Quilo.)

More Laf song in distance.
In fact, surprisingly enough, there is a big burst of Laf song almost immediately after sun reaches area. Also brief burst of Attapet twitter. Laf songs completely overlap the Attapet twitter. Also overlap one another.

See a couple of Lafs at 6:38 a.m. One chasing the other. Then see another Laf alone.

6:55 Wind blowing up full force! And absolutely biting! It seems to be having a very discouraging effect on the birds. They are staying well under cover. I get only occasional glimpses something (usually Black & Droglossas, I think) sitting about low in scrub. And all bird song stopped by 6:43 a.m.

7:15 a.m. Actually, I wouldn't be surprised if the usual mixed flocks were beginning to be formed now. I am catching lots of glimpses of (unidentified) birds in the area where the big mixed flocks are usually seen.

en. But all the birds are staying much lower than usual. (still) much quieter than usual

Feb 9 The one thing I am seeing a lot of is lots of birds. There are the usual counts today and a more territorial song than usual

11 7:28 See single White-bearded Flycatcher alone
Also lots of hummingbirds chasing one another
Lots of goldfinches around. Many alone (as usual)

Alamogordo 11 7:36 See single White-beard. Probable same individual as before
Single Thrasher about 5-10 ft away. The two birds appear to ignore one another

I do 8:15 am Working slightly different area. From above by 3 birds
A group was seen the day before yesterday. Same group which seems to be slightly scattered mixed flock. Includes at least 1 PR Atlapetes
In low-undurbed scrub, 2 ft above ground, on edge burned scrub. After my twitter. Can also hear 1 or more Semisong Sparrows singing usual song in small trees, approximately 10 ft away. And hear peculiar noises (a series of loud, trumpet-like "sa-uh" Notes) which I think may be uttered by Blue & Orange Tanager. This group not really answering my twitter, but active at all. Flitting about on outskirts of group are 4 or 5 of the large sooty thrushes. This is the largest assemblage of thrushes I have ever seen here. Do the thrushes tend to flock together under unfavorable conditions???

12 8:50 See single Foxglove fly by Defunctly alone

13 See another single White-beard. Defunctly alone
Leaving 9:00 am

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI
COMMENT: This morning's observations certainly demo

motivated are important point. There is no immediate "upswing" of the tendency (as) to form mixed flocks when external conditions suddenly become unfavorable. The behavior of most of the species this morning may also help to explain why mixed flocks are not more common (or are actually less common) during the non-breeding season than during the breeding season. In the northern Andes (as well as that) conditions during the non-breeding season are less "favorable" than conditions during the breeding season - as seems reasonable. When external conditions turn bad, the birds tend to become "huddled" in dense vegetation. They grow also more compact, infrequently and apparently, socially compact, infrequently. All this must make them comparatively "unattractive".

April 21, 1965
Nets above Bogotá

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

It includes descriptions of the reactions of birds to sunlight following cloud and rain, in the afternoon.

April 22, 1965
Paramo de Guasca

Arrive usual area 3:45 a.m. cloudy. Probably going to be foggy here very shortly. Going to walk along road.

Quite a lot of bird noise. Monkeys. Whistle songs of Atlapetes etc. Others.

Also bear Trubellies, Atlapetes Twitter, and Cy-type songs

5:50 a.m.

See single Trubellie alone 5:55 a.m. Also several single Trubellies. Correction: This single Trubellie is perched in tree only 20 ft away from bush in which Atlapetes is singing White Song. Atlapetes is PL. Perched left up bare bush. Song "fessoo fessoo" and "fessoo fessoo fessoo". Also about 20 ft from PL I hear several Atlapetes Twitter. Probably PR's. So far, 6:00 a.m., I have seen no overt reactions between these birds of different species, but the group certainly is a "proto-flock", at the very least.

Song at 6:01. Difficult to see.

From the sounds I hear, PR's may have paired by singing PL, without being joined by latter. Gone on about 20 ft. Trubellies now nearer PR's than to PL. Possibly Trubellies & PR's already following one another? 6:02.

Saf starts to sing while PL continues White Song. Broad overlap. But then PL shuts up. Then both sing again, irregularly. Lots of overlap. But PL may show definite tendency to shut up when Saf is in full spate. Then all silent 6:05.

Then see Cy (definite) singing exposed 30 ft away. Song pretty much formless twitter. Then some phrases with Intro "Ja-see-tasee". No other bird(s) singing same time.

Lots of humming birds chasing one another.

Cy shuts up 6:08. Flies down into scrub.

As far as my evidence goes here, Cys and Safs (still) do not overlap their songs.

Cy back singing 6:09:30 All phrases with Intro Notes

U
12
fol
fol
Cy
Cy
fol
Cy

Cy song phrases overlap songs nearly indistinctly ✓
 6:12 Dubonia (same species Guito) → Cy Lands ✓
 in bush 1/2 ft below where Cy is singing. Cy stops singing moment
 andly, looks at Dubonia song again. Then flies lower down into
 bush

A few minutes later, see Dubonia 20 ft down road, in low-lying
 in unimproved scrub, 2-3 ft above ground. Cy apparently not close
 by

Then Laf sweep 20 ft further on. Cy silent at time, Laf beats
 up. Cy starts to sing immediately. Then in thick air 2 Cys in bush,
 almost exactly where Dubonia was seen only minutes ago. And then
 see single Blue & Orange (1) and single PL, only 1 ft from Cys and
 1 ft from one another. Definite mixed flock! Then Laf →
 group. Then, I think, Laf attacks Cys!!! All birds scatter.

Cys fly off one direction. Laf flies off opposite. Both species
 sing several phrases. No overlap.

This flock almost certainly not the same flock seen on previous
 days. In another area, 1/8 mile away.

Blue & Orange → Cys!
 Laf sings again. This time Cy utters 3 separate bursts of
phrases while Laf continues to sing.

Female → group. 6:23
 At first, I thought territories Laf and pair Cys mutually
 exclusive. But then, 6:25, the pair of Cys flies away from flock,
 thru area where Laf seen only minutes ago. Pass thru exact same
 bushes where Laf decided to sing. But Laf not visible now. One
 or both Cy(s) sing(s) a few phrases during this journey. No an

Cy
Laf
Blue
Orange
PL

Cy
Laf

swearing Laf song! Then Cy disappears up hill
Certainly, for a brief moment there, Cy and Laf were treat-
ing one another as members of same species. But apparently only for
a moment. Was this "mix-up" (?) due to the fact that
they were brought too close together (either in turn due to the
fact that they were both attracted to mixed flock)?

Laf
Cy

See Laf in scrub now, 6:32, after Cys have disappeared
NOD. Mixed flock seems to have disappeared. Oh my god! Now
hear and see Cys only 30 ft from Laf.

Laf
Cy

"Intertones" Laf and Cys here now seem to overlap com-
pletely.

Laf
Cy

6:37. See Laf feeding yellow-tubular flowers. Cy(s) nearby
20 ft away. Laf flies in direction away from Cys. Cys shut up.

Laf
Cy

Laf flies to top small tree. Begins to sing.
Can hear flock coming back now.
Laf shuts up. Cy immediately begins to sing! Laf flies to
tree 10 ft away. Sings.

Ref
Laf

Then Ref \rightarrow Laf lands on C 1 ft away. Laf app-
arently ignores it. Then Ref flies on. Laf does not follow.

Cy
Laf

Whole group definitely back 6:40. Now includes a pair of
of PL's as well. Cys in middle group. Doing a lot of singing.

Laf
Cy

Then Cys fly away from group. Followed by 2 Lafs, but nothing
else. Cys feed on cup shaped red flowers. Silent. Then 1 Laf appar-
ently pounces upon 1 Cy! Obvious attack. Followed immediately
by burst Laf song. Then the two birds separate. Pair Cys
goes in one direction, pair Lafs the other.

Cy
Laf

Then Laf attacks on Cys might well be redirection. Outlets

for the vocalizations produced by the presence of the whole mixed flock in general!!!

Everything quiet now to 10. Flock seems to have moved on again. And other differences seem to have disappeared.

For along road and back again. Both Cys and Lafs appear with with some. Both species singing. Complete overlap!

There seem to be 3 Cys with flocks

PL definitely follows → Cys.

Now Cys singing, Lafs silent. (Incidentally, songs both species have been quite typical throughout some form during flights and at other times.)

17:00 a.m. Flock seem to have gone down hill. Leaving Cys behind. Also has left at least 1 Laf behind. See Laf about 20 ft from Cys. Then Laf passes by Cys. Cys in tree, 15 ft up. Laf moving low, 3 ft above ground. No apparent reaction between species. Cys now silent. Laf moves on. One Cys starts to sing again.

Now hear PL uttering Whistle songs. At first alternates phrases with Cys. Then Cys shuts up. PL continues. PL shuts up. A minute later Cys starts to sing again. Shuts up. Laf sings in distance. Shuts up. Cys sings again. Shuts up. A minute later, Laf sings again. Shuts up. During this last Laf song, the Laf was perched on top small tree only 20 ft from bush containing Cys. But the Cys remained quiet in bottom of bush throughout Laf song. After finishing its song, the Laf flew away to a more distant tree. Perched there silently. Immediately, Cys hopped up to top of its own bush and began to sing while Laf remained silent.)

17:12. Oh oh! Sudden outburst lots of Laf and Cys songs.

Cy
Laf
Cy

Cy
Laf

Cy
Laf

Cy
Laf

Cy
Laf

Laf
Cy

Complete overlap. But Gulls apparently not present! I think two of the local Laps are engaged in a border dispute. Then one of the Laps flies into some trees as if! Only 4ft away. Cy silent. Laf just looks at Cy. Cy continues singing for perhaps a half a minute. Then Cy flies away. Laf ———> Cy! Apparently "mounting". But then the two birds separate.

Cy
Laf

Cy singing again 7:18. Then Laf starts to sing again in distant area. Complete overlaps. But apparently random. Can't see that one species is stimulating the other.

Cy
Laf

Both species moving around a lot. Their territories still seem to be completely or almost completely overlapping. And I have seen both species feed on same tubular yellow and cup-shaped red flowers. Also, around here, they both seem to be ranging thru same heights vegetation (1-20ft — i.e. the complete range available here).

Cy
Laf

Overlaps songs still continuing 7:20. I think Cys show a tendency to retreat whenever a Laf sings particularly close by (within 20 or 30 ft). Laf certainly the "dominant" species here.

Laf

Notes. 7:24. Fight between 2 Laps With "Secret" and "Gulls"

Laf
Cy

Everything quiet 7:30. Then Laf sings. This seems to stimulate Cy to sing! Overlap. Then Laf shuts up. Cy continues. Then Cy shuts up.

Laf

Going down road 7:32, to see if I can find a mixed flock. NO! Just as I start to go, complications arise. Laf sings.

Loud and long. This appears to stimulate song by other degeer
ms. Just after a couple of Cy type phrases. Don't see singing
birds. But song is coming from a bush in which I know a Cy
was sitting some minutes ago. So this song must be by Cy.

Cy about 45 ft from Sap. Then I hear some other, short, rather
or few less twitter (I can't tell if they have Intro Notes or not)
coming from tree 30 ft from Cy - (up 55 ft from Sap.) Look
up to find 1 adult Coer and 1 juv. Coer in this tree!!! It is the
adult which is giving these songs. Then Sap starts up. General
silence. A few minutes later, Coers fly off.

Both the Cy and Coer songs overlapped completely with Sap
songs. But I think that the Cy and Coer did not overlap one an
other.

The tree in which the Coers were seen is one in which I have
seen both Cys and Saps on other occasions. This tree is covered
with clusters small greenish yellow fruits. The Coers ate the fruits
avidly. Unlike the Saps and Cys on earlier occasions. Both the
Sap and Cys completely ignored the fruits.

Presumably the Coers here are more frugivorous than the loc
al Cys???

The fact that Coers seem to show up here only occasionally
would suggest that they have larger territories than the local Cys,
Saps, or Hummers.

Incidentally, I don't remember seeing Coers in this region
in 1962. Their presence here now may be another example of the
general tendency for different species to "spread out" and overlap more
during the breeding season than during the non-breeding season.

Cy
Coer
Sap
Cys
Cys
Sap
Cys
Sap

Cy 97 7:50. Cy perched top of tree where Crows seen earlier. Singing short phrases. All with "Tuck-tuck" notes. NOD

Cy 98 Interact I have now come to the conclusion that Cy and Crows are easy to tell apart.

Cy 99 Cy shuts up after a couple of minutes. Cy and Crows do seem to be managing to avoid physical

Cy 100 or vocal contact with one another. Does this suggest that they compete with one another more or less than do the more typical dry species (Hummer, Tow, Barn) here???

Cy 101 Everything silent 7:55 am. Going to try going down road (again).

Feb 11 see several Laps, alone and in pairs (chasing one another). Lots of Lap songs. NOD

Feb 12 8:01. See big Phainopepla probrevis. The other species I've never seen before. Black above. Including whole head & throat. Single individual. Apparently alone.

Feb 13 See group 3 Laps flying about together. Alone. Laps certainly are singing more than on my first day here! Swift sign of approaching breeding season??

Wind whipping 8:10. See a Blue Dylana, apparently Cy, being chased by small

Cy 104 all hummingbird. Dylana lands in thick scrub. Out of sight. But utters several Cy-type song phrases. NOD.

Jan 105 Why do almost all the nectarivorous birds here show so much inter-specific hostility. Populations are dense here, but no denser than many other areas I have worked in. And there are quite a lot of flowers around.

Hummingbird A pair of what was to be Hummers flies by. Fear, where Hummer
seen before. 8:20 See 2 Hummers (S). Hear R-3030 8:20
See lots of birds near the bushes

8:25 See single Towhees. Silent. Apparently alone
In western edge of bush. Along NOD. This bird sings a lot.

8:30 For several minutes or so. After about 1 minute, a Blue Dendroica
in tree about 32 ft away also begins to sing. Apparently Cy
compute overlap. Performed Cy utterances at least 7 or 8 phrases while
the Laps in full spate. Both birds shut up at approximately same time.
These individuals definitely different from the ones heard over
uphill earlier.

8:33 Hear more Cy-type songs in distance, while Laps are sil-
ent. Finally no bird. Definitely Cy. Long phrases somewhat variable
May more or less "Tit tit tace ~~some~~ ~~some~~"
Then this bird shuts up. This off.

Hummingbird Then I hear a few phrases which sound like songs of Hummers
down by Hummerity. Terminal R's. Then this bird shuts up. A few
seconds later see Hummer (silent) same area.

8:40. I have now been around the whole area where the long
muted flock is usually found - without seeing a trace of it! Has it
moved on to another area? Was the flock seen uphill earlier actually
the same ???

8:45 Now Laps singing again. NOD.

8:59. See pair of Towhees alone.

9:04. Have now gone around whole area again. Again wi-
thout seeing the muted flock.

Things in general much quieter now. No songs.

Feb

23

See another single Laf Then hear more Laf later 1150

Leaving 9:10 am

COMMENT:

The relations between Laps and Cys today can be summarized by a discussion into two phases

Feb
Cys

I. Early in the morning. When mixed flocks were not present in the immediate neighborhood, the two species behaved as in the Quite region. Mutual avoidance and inhibition apparently fully operative. Sometimes overlapping, but no fighting or close approach (?) or overlapping of songs. When mixed flocks were present, however, individuals of the two species behaved as if they belonged to the same species. Overlapping of songs, close approaches, and actual attacks.

Feb
Cys

II Later in the morning. Relations between the two species particularly "intermediate". Frequent overlapping of songs, some fairly close approaches, but no actual attacks.

Feb
Cys

The mutual avoidance and inhibition early in the morning may have been an indication of breeding mood. (If the birds are just beginning to come into breeding condition, one might expect the only revelations of this condition to occur at dawn.)

The inter-specific attacks may have been redirection and/or persistent expressions of "non-breeding" mood

Jan

The overlapping of songs, probably an indication of inter-specific hostility, apart from very strong stimuli releasing attack, may be compared with the gradual development of overt inter-specific hostility in the Hummer - Bani - Scan community in Bogota' streets.

So
The very brief Soj - Coen encounter would suggest that Soj
may treat Coen like up

April 23, 1963
Parque de Quince

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

In general, today's observations would suggest that mixed
flocks are less "highly developed" here, now, than in the breeding
season of 1962. At least, the birds in the mixed flocks today were re-
latively quiet, stationary, and unobtrusive. It is beginning to
look as if mixed flocks tend to be this way now.

This both resembles and differs from the situation in
the Sierra de Huixtla a couple of weeks ago.

April 24, 1964
Aqua Bonita

Going to start work at the lowest place here where I work-
ed in 1962. Arrive 5:37 a.m. Already quite bright. Warm.

Lots of bird noise. Lots of Rattle and Rattle-Howls-like
calls which sound like Basilanters and/or Hemispingus. Also lots
of other things. But nothing noticeably Diglossini.

Lots and lots of birds around. But almost impossible to see.
Sund here may be second growth, but it is very dense and thick.

Walking thru edge sund 6:00 a.m. Hear lots of birds. Get some
brief glimpses. But all unidentifiable.

Albi 7.1

6:00 Catch brief glimpse Black D. group silent, mostly alone
e. Feeding insects small yellow-tubular flowers a bit above ground
species almost certainly Albi

See notes near 6:12

6:15 in Cars turn an area which sounds as if it contained a lot
of birds. Contain B. cyanocephalus. But all the birds are keeping well
under cover.

6:40. Hear what sounds like "rattles" in distance

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

F 110

7:15 Come across huge mixed flock. Containing at least 20 birds!
In region of extremely varied, obvious, humid vegetation. Tall
trees, bushes, lots of trailing bamboo. I certainly didn't identify

all the birds, but I did see the following: two White-spectacled
Whitestarts (definitely identified - white spectacles conspicuous -
yellow foreheads - presumably albifrons - same as near Merop)

2 Pyrula rufus, 1 P. thapetes (definitely not pair), 2 Green
Toucanets (not seen well enough to identify species), several humming-

birds and flycatchers; 1 Black D. group (probably Albi), at least

1 Cnemidopus ruberiventris, at least 1 Tanager XXX, yellowish

tinted last year as Hemiprocne atriceps, and at least 6 leaf-scaper
like Formicids (LXXXI). Also 1 brownish squirrel

The Formicids LXXXI definitely were panuve nuclear!
(First Formicid I have ever seen play this role, I think) Forming
at least the "central" group. Sometimes in lead; sometimes apparently

Albi 7

not (Perhaps comparable BCBT's in Chiriqui.) The Black
D. group was seen only briefly. Probably only joined → group once.
The Green Toucanets just joined rear of group once, sat there, and did

A some "crackling" (For all I know, they were attracted to me rather than the other birds.) The Pipreolas, Whitestarts, and PL. Atlapetes formed the definite rearward of the flock. All three species followed and joined repeatedly.

The flock as a whole was very well integrated! Birds sticking quite close together. When flock was lost again, it was moving rapidly uphill. Then stopped and stayed stationary until approximately 8:00 a.m. Then started uphill again.

Now (8:15), as I am writing, seems to be coming back again moving rapidly down hill. As of games, I can see that it has picked up new members. At least: Thryothorus cyanocephala, Tanagers (probably Caladornides) 1 Cnemidopus → Caladornides //
1 Whitestart → cyanocephala Group also includes 2 or 3 small warblers or cowbird like forms

Group disappears again 8:25.

I noticed that the Pipreolas, cyanocephala, presumed Caladornides, and toucanets all stayed in trees while with flock. 20-40 ft above ground. All the other birds ranged from very low scrub, only a few inches above ground, to tall trees 20-40 ft above. Whitestarts probably more often high than low. PL probably more often low than high. Furnariids, Cnemidopus, and Thryothorus usually middle.

Group sometimes quiet, sometimes noisy. Lots of "cn"s even when most quiet. Whitestarts some occasionally. Occasional outbursts rattles and "chatter" by others. Furnariids gave loud bursts of very metallic chatter when they first became aware of me, but then they quiet and down.

The squirrel was a small species. Warm medium brown. Tail

grayer than body. Probably different species from squirrel with flocks near
Mesa. Quiet. I believe the squirrels with the Florida Rail. (See notes
rebut.) Definitely following flock. Not keeping behind the rest
of birds (i.e. Pipit, White-throats, etc.)

There was no sign of overt hostility in the flocks, except for a
few of supplanting attacks by 1 Pipit on the other.

It is interesting that neither Towhees nor Blue & Orange found
ed this flock. I don't think they are attracted to species in dense, high
moist vegetation.

Going down hill myself 8:30 am

7 8:43. See single ♀ alb. Definitely identified silent and
feeding edge mound growth scrub, 3ft above ground. Apparently looking
for insects.

See coming out 8:48 pm

26 ADDITION: One thrush, presumably usual slaty gray species,
joined the big mixed flock at least briefly, on its way down hill.

3 9:07 am. See single Cassin's. Probably microstratus. Seen
in scrub. Silent. Definitely alone.

4 9:30. Down by road. See single White-eyed White-throat sitting
tong about in trees. Hear sounds other birds in low scrub below.

9:37. Hear what sounds like a song.

Leaving 9:48 am.

COMMENT: Even though I finally did see a large mixed flo
ck, my earlier remarks still stand. All morning long, up until
the very moment I left, I kept hearing lots of bird noises (most
ly "ch" or "ch" during the latter part of the morning) from inside adjacent
scrub. There must have been a very great many birds around, po

only in groups of two or more species, which I don't see this morning.

COMMENT: I am sure they have never seen Blue or any of the other species from mixed flocks. They may be "obligate" some birds" in much the same way as Coccyzus erythrophthalmus is. In fact, I am not sure that I have ever seen Blue or any of the other species apart from flocks which also included Geothlypis. Could the Blue or any be an obligate component of the Geothlypis?

April 25, 1965
Agua Bonita

Working same general area this morning as yesterday morning. Arrive 5:22 a.m. Still quite dark.

Lots of bird song and other noises 5:35 a.m. As yesterday.

5:40 a.m. Overlapping with all sorts of things; but not, apparently, other Dryocopus songs.

5:44. White-throat singing on distance.

5:49. See single ♀ Alcedo (definite) feeding alone tangle and scrub 4 ft above ground. Apparently looking for insects.

God! There are a lot of birds here. And all invisible or little all hours across the day!

5:59. Come across single Atlapetes-type. Looks like torquatus. White-throat. Black dark patch. Gray stripe above cheek patch. Black stripe above gray. Center crown gray. Back & wings apparently olive. But bill light, sort of dirty orange. I shall call this LXXXII. Uttering lots of "secret" notes. Definitely alone. Hopping thru dense scrub only a ft or

no above ground.

8 6:10. See single P. n. poocutatus (dispute) hopping thru low scrub. new ground growth scrub. Uttering SAN-type notes, a few to Lydons. Still slow 6:17.

6 6:20. See single White-spectacled Whitestart above. In tree 40ft above ground.

Albi
Hummer

Hear a few sounds which may be Albi R's. Also hear some sounds which may be Hummer R-3a3a! 6:20 am. No overlap.

9 6:21. Single Towheebird flies by. Definitely slow. Silent. Also single rosy thrush above.

There are various solitary flycatchers around.

10 6:30. See (another) single Towheebird. Top small trees in scrub by open scrub. Edge real forest. Apparently slow.

Some distance further on (500 yds) see single rosy thrush above.

11 6:38. See single n. poocutatus. Above in scrub, 6ft above ground. Silent.

It is possible that, although there may be more (and more regular) mixed flocks here than in Merida, the species which are gregarious in Merida are less gregarious here (???)

12 6:49. Hear what sounds like Coen song. "Zoo-wee zoo-wee - twitter" Only a few phrases. No other dialogue audible at same time. Bird invisible.

13 6:50. There is no Whitestart audible while presumed Coen is singing. But then the latter shuts up. And Whitestarts start singing almost immediately.

7:05 am. Reach area where Hummer - Albi dispute seen yesterday. Nothing (identifiable) around now.

17.11.71 17.10.71 in what seems to be path Coers in tree 30 ft away silent above. Apparently feeding small green berries. This (also) is not far from where presumed Coer heard singing earlier.

17.10-17.25 General impression. Trying to catch two sets birds at same time. Mixed flock on the one hand, and a variety of Diglossini on the other.

17.11.71 26 Mixed flock. First is a pair of Hemipyzes. The type which I have been calling stro-pileus here, but which may well be something like trifasciatus. Young, three varied, down, low, obviously young second-growth (no tree cover). 3-15 ft above ground. Feeding on insects. One Begging from the other. Harsh "Wah" type notes and Wung-Q. It is actually fed by the other from time to time. After pair eventually is joined, and then followed repeatedly by a pair of PR Atlapetes. (I noticed that the local PR's here have yellow spots at forehead base crown stripe.) Latter also noisy. Uttering twitter-type quacking.

17.11.71 14 A few minutes before the Hemipyzes appeared, a single Coer flew (back) into fruit tree where Coers were earlier. Definitely identified. Definitely feeding on fruit. Picking fruit off stem and then chewing it (i.e. no stabbing and sucking - fruit presumably not very juicy). Then begins to sing (perhaps just as Hemipyzes show up.) Song exactly as heard before. Single or double "Zooe" or "Whooe" notes as Intro followed by fairly long, rapid, regular, not very loud, rather musical twitter.

17.11.71 15 While this is going on, see single ♀ Albi, in low bush, 30 ft away silent. Approximately 4 ft above ground. She flies off almost immediately.

US
Coer

Approximately a separate later, no single Coer in same
Bush. Almost certainly Cy. silent and alone. Fly off
while Coer is still singing as before. Cy passes about 30 ft from
Coer.

US
Coer

So Cy and Albe territories seem to overlap here (I think I
established this in 1962). Cy and Coer territories may also overlap.

US
Coer

Shortly after the Cy flies by, the nature of the song from the tree
& tree appears to change. Intro notes become more like "saw" and become relatively louder. And the latter part of the song phrases becomes more Cy-like - very much like the shorter Cy phrases at the Paramo de Quasca. I think that a Cy must have gone up in this tree and begun to sing. But I can't see the bird.

When these Cy-like phrases begin, the typical Coer phrases stop. No overlap.

US
Coer

If there was a Cy in this tree, it did not feed on fruits. I would have seen it moving if it had fed.

US
Coer

Anyhow, a few minutes later, the Cy type phrases stop. Typical Coer phrases begin again. And now I see an undoubted Coer feeding on fruit again. Also definitely see that this is the bird which is uttering the Coer-type phrases. See mandibles moving.

US
Coer

The Coer has been ranging 25-40 ft above ground in the tree. If there was a Cy in the tree, it stuck to 20-25 ft level.

US
Coer

This evidence, such as it is, fully supports the hypothesis that the mutual avoidance, inhibition, mechanisms are fully operative in the Cy-Coer relations here.

US
Coer

8:00 a.m. Coer still in tree. Still uttering typical Coer type phrases.

es.

Spotted Cow family - are answering. And first I see
with much longer than usual. So each glass as a whole is
undoubtedly abundant

Then after some time I see a tree. How little fly off to begin with
of some - as they - and - I see where they are. The people yell
day. Sound so far as you I hear

So the Carolinian - I see here must overlap that of Humer
and

Going on to another area 8:15 am

A little bit later I see lots of forest. I see the trees made
by the Q. tozyl also - type carbon trees are - of the species probably very co-
mmon here

8:17. Near Whitestart. singing up hill. In some or less some are
numbers. Several presumed by song. It must be significant that
there was not a trace of Whitestart song while the Diglossas were
singing (I heard and saw song both before and after)

Road makes bend, passing back near where Coey and presumed
by song earlier. 8:23. Near Coey singing. Whitestart(s) silent.

As I remember, there were no Whitestarts at Paramo de Quasca
could they have been because they couldn't sing there? Because there
were too many singing Diglossas present?

8:35 am. Considerably up hill. Much more bright green tanager
ey (red bill, chestnut face - some yellow seen Munchique - Chlor-
eris or something - I shall call it "GT"). Lands in tangle, 20 ft
up. Utters a couple of GT type notes - then flies off. Definitely alone

See single White-banded Flycatcher above. Top tall tree
A little further on, hear lots of loud sounds bamboo scrub. of look?

Coey
Humer

Open

Coey

31
H2

32

34 In Whitteard on outskirts this flock ??? (Presumably, this area is
 35 not far from where large mixed flock seen yesterday. From 10:17, from
 36 sound alone, that the group here now includes Whitteard, Spotted
 and several other species. They are one party though in general mixed
 behavior. Then see 1 Pipilo flying about top trees, 20 ft above ground
 (All these in quite limited area. Must be large, same flock seen yesterday).
 Group does not seem to be moving, as a whole, in any particular direction
 on.

38

All the party members here look, at least superficially, like typical fuscator. Are they really joining mixed flocks as regular members?
 More probably just "freezing in" like some Chrysomitris
 see note of Albi, briefly, far on outskirts flock area
 Then see single GT (probably same bird seen earlier) in tree flock
 area!

38

Can't tell if flock has numbers of Juncoids now or not 8:59
 Think I hear agrasophala singing nearby. (✓)
 see single bird which looks like Tangara labradorides in trees
 outskirts flock area.

41W 44W

see GT again. silent. Definitely on outskirts flock
 though apparently still flying around.
 Starting to rain 9:05.

9:15 am.

Group seems to have scattered or gone on. Starting down hill myself

18

9:20 am. see small hummingbird being attacked and chased in
 flight by Black Doves. Unfortunately, species not identified

Baru

I am not surprised to find Baru absent here. Area looks much
too humid

VI Rain stopped 9:33 am
7:55 In road see single Plate-throated Whitestart also

7:20 Then a single bullet bird, possibly of vasore, flies by also

leave 10:00 am

VI On the way back to town, at an deviation several hundred feet higher, a single GT flies across the highway. Alone

COMMENT.

The Agua Bonita area differs from the areas near Guana and above Bagota in type of vegetation as well as in altitude. Much of the Agua Bonita area is scrub, now. But there also are occasional tall trees (like the mountain forest trees in Chiriqui) scattered about. Much taller than any trees seen near Guana or on Guadalupe. Reaching perhaps 100 ft. It seems likely that the original "virgin" vegetation of the Agua Bonita region was a complete forest of such tall trees.

Incidentally, there are Eucalyptus on the edge of the scrub at Agua Bonita. But they were not in flower now. And I have never seen a Drymonia in them.

This afternoon going to work on Guadalupe. At the lower area where I worked in 1967. Arrive 3:12 pm. Cloudy, but no rain or fog. Everything very silent

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

add 3:35. See pair sooty Thrushes alone
3:45. Single Scrub fly by. Following another bird, almost certainly of another species, which I didn't identify

Leave 4:30 pm without seeing anything new. West

April 23
La Aguadita

Arrive 5:33 am cloudy. Just getting light

A fair amount of bird song 5:36 am

Something is giving a rather elegant type song 5-7 In tree

"Tut" Notes followed by a Twitter. BQ 7:27 5:40. Hear this step

And I hear something like Cy in distance

5:47. See a Sooty Thrush alone

5:57. See single *Tanager*, which may be *hance* In top small tree

Also single *Hooded Saltator* (SS) in bush Both alone

6:14. Lots of goldfinches around. Alone as usual

There are a few *Erythrina* here. Same species *Merula*. But they have almost completely lost their flowers. Does seem attractive to anything.

God! This place is really poor in birds!!!

See a *Eucalyptus* tree in full flower, without a bird on it!

Well! Well! A ♂ *Scarlet-thighed Tanager* (1) seen by silent

and alone.

6:50. See a *Eucalypt* with some small birds way up in top

More *Tanagers*???

Then see a N. American *Meadowlark* alone

7:10. Have passed a couple of small gardens with lots of *Chenopods* in them. But no honeycreepers of any sort

7:15 See another "♂ *Scarlet-thighed Tanager*" This is not the same as the *Scarlet-thighed Tanager* in Panama. Has large patch of rather

greenish-gold in buff in regular region! (I can't see scarlet tinges either, but there is not so much of a contrast) In tree with Goldfinch and 4 sparrows. But it seems to be paying no attention to them. In view of the "pseudo-scarlet tinge" ("PST") occurring face off with the other downy-billed species. The PST was feeding by pecking at leaves, apparently looking for insects 20-30 ft above ground.

In the PST a Tanager

Incidentally, the whole area where I am working now is largely pasture. Old commercial gardens, hedges and other patches of scrub and trees. Surrounding hills are covered by forest, but they are rather far away.

Go quite far up hill 14-15 for some more single sooty Thrushes that is all. So start down hill again.

8:23 Near what may be Big Swampy Determinate, well-like places. "to to to to to to to to" type. High in Eucalypt.

8:40. See another large Eucalypt in bloom. Quite a lot of hummingbirds are feeding on the flowers, and disputing among themselves. But apparently no diglossids!

Leaving 8:50 a.m.

NOTES:

I. The PST is Tanager cyanicollis.

II. Hemiprocne tristriatus does not occur here. The birds which I have been calling atro-pileus must really be atro-pileus!

III. I think that all the birds I have been calling Tanager cabanerosides (certainly all the birds I have been calling by that name this year) are really Tanager nigrovirens.

The Call, 1705
Nets above, B. gata

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

August 20, 1965
Agua Bonita

Going to work in usual place here, this morning. Arrive usual parking place (1450 ft according to my altimeter now) 5:25 a.m. Just starting to get light. Partly cloudy. Not too cold.

Alba

Quite a lot of miscellaneous bird songs and other noises. Including R's. I am sure of the latter are Alba or not. Many are NODWA 5:30 a.m. Just Whistlers song. Several like Yellowfaces. Partly overlapping R's.

Alba

5:40 Just Whistlers song NODWA. Non Atlapetes shut up. Whistlers and R's continue. Apparently overlapping at random. Then hear some Basilinna and Howler (during the breeding season here now!!!)

Alba

5:44 Whistlers silent. R's continuing. The vegetation has grown up considerably since I was here last. 5:46. Hear what sound like Atlapetes torquatus Whistler (in indistinct enunciate series). NODWA. But overlapping Basilinna R's at random. Then Yellowface song. Overlapped completely by torquatus Whistler. Again

Then see torquatus 3 ft up in tangle second growth vines. (I think R I saw torquatus say a few months ago. Definitely alone

27

5:53. See pair Basilinna 15 ft up in tangle of vines. Presumably superciliaris. Very noisy. Lots of R's and Howlers. Fly into Cocro pia where there is already a Whistler. Presumably Yellowface. This will have to be classified as forming.

43

811

There is a decrease in bird noises at 6:01 a.m. Sky is clearing now.

Actually, I don't remember if the "high altitude" bird here is really Yellowface or not (I should call it "Yellowface" for time being.) But I certainly remember same species or super-species. The song of the birds here now sound remarkably like those of the undoubted Yellowfaces in the Central and Western Cordilleras.

6:10. See single Arremonops above. 6-10 ft up thick second growth scrub. Uttering "CN"s and "PN"s.

Albi? "Yellowfaces" still singing. NODWA. Then there are more R's. Completely overlapped by "Yellowface" songs.

NOTE: All the R's cited above - with the exception of those specifically labeled Basilentornis - sound as if they could be uttered by either Albi and/or flycatchers.

Starting uphill 6:17 a.m.

6:18. Hear what may be Cy song in distance. NODWA. Then more Albi-type R's. Nearby. NODWA. Then more "Yellowface" song. NODWA.

As usual, I can hear a lot of birds here which I cannot see.

6:30 a.m. 7800 ft. See single All-suspect Squalarius in thick second growth scrub. 3 ft up. Silent and alone. Then this bird flies across path into another, similar thicket, in which there already are at least 2 wrens (not a species with which I am familiar) and 3 Little Striped Flycatchers (apparently same species as on Purace!) Both wrens and flycatchers noisy. Flycatchers ranging 6-10 ft up.

Then flycatchers move around in big wide thicket. Not followed by wrens or Squalarius.

While this is going on, I can hear a lot of typical songs by Cy not far away. Possibly a response to appearance of other birds. But, as far as I can tell, Cy does not join any of the others.

HN

A few minutes later I hear, but do not see, a couple of B. nigrorostatus low in scrub where little striped Eucalyptus were earlier. Eucalyptus apparently gone by now. Then a single ♀ Albi flies into tree above warblers 15 ft up. Feeds clusters of bright red flowers. Silent. Her way, while warblers are still around.

Ay did not sing while Albi was around.

As far as I could tell, all the Ay songs were NODWA.

Three "Yellowface" songs in distance. NODWA.

Went further up hill. I see that a good deal of scrub has been cut down since I was here last. So make new paths. I am lost!

See a single sooty thrush about 15 ft up in tree fern.

7:00 a.m. Find beginning main path up hill which I followed last time. Very overgrown. Lots of bird noises in scrub. Also Ay songs in early (again). NODWA.

7:15. Near Dubura singing in distance. Also appear what sounds like a mixed flock somewhat closer. Sounds of B. nigrorostatus, "Yellowfaces", and, apparently, Ay(s). "Yellowfaces" and presumed Ay(s) singing. But not overlapping one another.

This region is 7860 ft. Region of very mixed scrub, all heights, with lots of bamboo. Very thick. Also a few, rather scattered, tall, possibly mature, VSF trees.

16 Suddenly a single trogon appears. Perches 20 ft up in tree. Silent. 17 t Flies on. Then a single hummingbird flies by. Apparently Eusifera!

20 The 3 "Yellowfaces" appear in trees, quite near where trogon was a few seconds earlier. Quite noisy. Some song. NODWA. I see that these birds have some white on cheek and/or near eyes. Is this the species which I used to call "White-tailed"? 8

(4) ✓ (3)

21

Then there is some more Dubonia song. Getting closer. Now I hear more *Bambantinus* and/or *Hemiprocne*-type sounds, about 200 ft down hill. In low shrub scrub (about 3-8 ft up) suddenly the 3 "Yellowfaces" fly down into this scrub area. Range 4-10 ft up. I think this movement must be considered case of "Yellowfaces" — you p. Why I got my glasses fixed on the scrub, I see that one bush contains us 1 ♀ Albi (definite) and several olive-yellow birds, in addition to the "Yellowfaces". ♀ Albi feeding on flowers, 2-6 ft up. The olive-yellow birds not feeding on flowers but apparently some levels above ground. Birds of different species in this bush sometimes only 1-2 ft apart. No overt hostility or other specific reactions among them.

Albi 24

25

Then I see a single PL *Atlapetes* in scrub 10 ft away. It disappears almost immediately. Then I see the *Dubonia* in nearby small tree and tangles. Also disappears immediately. Both PL and *Dubonia* 6-15 ft up when in sight.

Then the "Yellowfaces" fly up into small trees 20-50 ft away. Ranging 10-25 ft up. Apparently nothing follows them.

26

Then a single GT suddenly appears. In trees where "Yellowfaces" were first. (They are now about 300 ft away). GT 6-8 ft up. Also moves on immediately. Possibly following a course parallel to PL and *Dubonia* seen earlier, but certainly not close to them!

Albi 26

A few seconds later, there is a furious chase, involving 2 ♂ *Albis*, low in scrub near where GT was. (This is far from where the ♀ Albi was seen earlier. As far as I can tell, the ♀ Albi has disappeared by the time the ♂'s show up.) ♂ *Albis* quite noisy and conspicuous.

Albi

SEE TODAY'S NOTES ON MIXED DIGLOSSINI But soon disappear. I think this dispute among the ♂ *Albis* probably was provoked

by one bird trespassing into the territory of another, in the course of "error
trug" some other species like the dispute among the ♂ Albes at La Palma
in the Western Corridor.

I suppose that the disputes among Albes when other species pass
by may add to the attraction of mixed flocks like the disputes among
Yellow-throated Ticks in Chiriqui.

I hear a few more presumed by songs (NODWA) from time to time
during this period, but not when either ♀ or ♂ Albes are visible!

When the ♀ Albe and "Yellowface" were close together in bush
earlier, the group was visited by a single hummingbird. Apparently White
throat. The hummingbird did not attack and soon flew on.

Some minutes after the ♂ Albes have come and gone, a single
H. atropileus appears in bamboo similar region. 6-12 ft up. Silent.
Apparently at least 100 ft from nearest bird of another species at the time.
Also disappears almost immediately. A few seconds later, I see a small
wren (species unidentified) same region.

All this occurs ca. 7:20 - 7:45 a.m.

I think that all these birds, from the presumed Eurferia to the
atropileus and the wren may have been members of a single, real, socia
l group. But, if so, the group as a whole was very diffuse. (Rather
Sierra-de-Merida-like!) Apparently without real leaders.

Fog starts to come in, ca. 8:10 a.m.

During period 7:55 - 8:20, I can hear occasional snatches
"Yellow face" song and Banlautemus and/or Honusprungus-type sounds
in the neighborhood. These birds apparently are not close together now.
And the other species are neither audible nor visible.

Then, 8:25, I hear more sounds which suggest that other birds

Chiriqui
Albe
Yellow-throated Ticks
White throat
H. atropileus
wren

are coming back, but I can't see them.

Then silence again. I am going to try to go further up hill. 8:32 a.m. Fog lifting.

Reach highest point of path 8:43 a.m. This is about 8000 ft according to my altimeter now. This is where flocks were seen a couple of months ago, but there is nothing here right now.

Then I hear some "Yellowface" song not far away. NODW.

Then I find that there is, in fact, a continuation of the path going even further up hill. So I start to follow it. Only a few yards along, I hear more Dulcinea song. Then come to clearing, with thick scrub of moderate height (including bamboo). More or less surrounded by more or less tall trees. And there certainly is a mixed flock here.

First, I see a single bird which looks like an all-rusty byn allaniff Juv. univisa? ? silent. 3 ft up in scrub. Then suddenly see 1 or 2 Little Striped Flycatchers, 5-12 ft up edge clearing. Utter 1 or 2 g R's. Then 4 large tanagers, close together, move thru the adjacent tree-tops. I can't identify them definitely. But they certainly are at least partly blue. Probably some or all are Big Buttercups. Quiet except for occasional "ciff"s. Then I see single atropis, 4-6 ft up in bamboo. Then I see 2 "Yellowfaces", 1 PL, and 1 Trubelly, quite close together in tangles of vines, 15-25 ft up, about 30 ft away. Rather quiet. Then the group just seems to "fade away".

I think this is probably partly same group seen earlier.

Certainly it is (still) quite diffuse - as a whole. Also rather quiet as a whole.

The presumed Big Buttercups and the Little Striped Flycatchers seem to be dividing the lead between them. The "Yellowfaces", PL,

and Towhees certainly were in rear

The "Yellowface" certainly had some white around eyes

Starting downhill 9:30 am. Light fog coming in again

12 9:35 am See single B. nigro latius. Quiet. Apparently also no aft. of down sound. Then hear other birds ca 50-100 yds away. But probably not associated with the nigro latius

9:44 am Down where first flock seen this morning. Can (still) hear "Yellowface" and Parus torvus and/or Merula pinus sounds. Can also hear other birds in scrubland. Birds all apparently quite scattered

9:55 am 81780 ft. See single Parus torvus flycatcher alone. Perched exposed 12 ft up region laurea scrub-

15 10:02 8080 ft Region very much cut up second growth. See pair of ST's. Quiet. Definitely alone. Range 15-20 ft up second growth trees. Rain starting!

46 10:05 A few yds further down, see 2 "Yellowfaces", 1 Ruddy flycatcher, together in low-lying scrub. Ranging 6-10 ft up. Both flycatcher and Ruddy uttering R's "Yellowfaces" possibly following Ruddy. This group moves on. Then, I see 1 or 2 B. nigro latius in scrub. The other birds have just left. Apparently not following

53 10:13 am Down by road. See group of PR Atlapetes in thick low second growth. Uttering "secret" notes. Ranging 3-6 ft up. There is also a single Cyanocephalus 10 ft up in nearby tree. Cyanocephalus f -> PR's.

Also hear Slate-throat song 50-100 yds away. NODWA.

Leaving 10:20 am

COMMENT: I seem to have seen quite a lot of mixed flocks this morning. And yet, the social behavior of the birds here would

appear to be quite different from that of the birds of the Western and Central Cordilleras!

My notes on the preceding pages may be made quite in one respect. They may not emphasize one aspect of the population birds as much as it should be stressed. At all times, this morning, I could hear birds in the scrub — even when I couldn't see them. Thus the population appeared to be fairly evenly distributed — only a little more concentrated than usual in certain localities where diffuse flocks appeared to have been formed. This sort of distribution is very different from the distribution of birds in the Western and Central Cordilleras. In the Western and Central Cordilleras, one finds large, concentrated, and coherent flocks. These flocks usually are separated by "extensive" (and prolonged) "deserts" — i.e. areas apparently devoid of life. But there were no "deserts" near Agua Bonita this morning!

The environment at Agua Bonita looks very much like the forest and scrub near Telefonico #1 on the Pico de Espejo near Merida. And the mixed flocks probably are similar in both areas. Equally diffuse (and equally difficult to "recognize").

This afternoon, going to work on Guadalupe.

Cloudy. Fairly windy. Fairly cool. Start at Prime Eucalypt area. Then go up hill. Then downhill. 4:05 pm. Region fairly low but very thick, moist scrub. Lots of bamboo. 9000ft. See pair of B. nigrocapitata us, 3-4 ft up. Silent. Also hear Atlapetes "secret" notes in same general area. Presumably uttered by PR's (in this locality).

A few minutes later, see 1 Pitta (is this the forest Pitta I have ever seen on Guadalupe???) and 1 White-bearded flycatcher. Same area. Moving at same elevations above ground. Both quiet. Both probably f —

F 40
dms

→ magorantatus - Attapetes group. Then Sitta disappears. White-browed nuthatch starts to up hill, at a 30° to its previous course. Then I see that 1 Pseudis goes f → White-browed. Pseudospingus also quiet. I think that the White-browed and Pseudospingus probably were going away from the rest of the birds when they went up hill.

At least twice during this period, a single Scrubwren flies over group - without showing any tendency to join.

Everything quiet 4:25 pm. Then I go a little further down path. Come across part of same group. PL. Also 2 Sittes. Both quiet, 4-6 ft up in scrub. PL f → Sittes. Sittes f → PL. Then 2 PR's appear. Apparently following → PL-Sitta group. All birds quiet at first. Then PR's start to "mob" me. Lots of "SUN"s. PR's ranging 2-4 ft up. Then B. magorantatus shows up. Apparently f → group. Silent. 3 ft up. Then 2 Scrubwrens f → group. 5-8 ft up in trees. Also quiet. Then PR's stop mobbing. Group as a whole moves on. PR's and Scrubwrens bringing up the rear.

This group really was very coherent! But much quieter (aside from the "mobbing") than most groups in the Central and Western Cordilleras.

It is beginning to look as if mixed flocks are more common in this region now than they were in April. Is relatively great seasonal variation in frequency of flock formation particularly characteristic of regions in which flock development is "moderate" (rather than "extreme"?).

Slight sprinkle rain 4:45 pm.

This flock does not seem to be making very rapid progress. I can still hear Attapetes "freet" notes not very far away. 4:51 pm.

Pair of Scrubwrens shows up (again). 4:53. I can't tell if

8:14

they are (still) associating with the other birds or not.

Leaving 5:20 p.m.

ADDITION: A single *Dubonia* joined → the flock observed this afternoon after PR's began "mobbing". Before I recorded mixed group. (To my recollection, this is the first time I have seen *Dubonia* in this particular area.) *Dubonia* silent. Ranging 10-12 ft up.

August 21, 1965
Guadalupe

Arrive same place as yesterday afternoon 5:38 a.m. Getting light cloudy. Cool. Some miscellaneous bird sounds.

Including *Atlapetes* Whistle songs. NODWA

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI.

6:08 a.m. 9525 ft. Pigeon low thick scrub. Lots of bamboo. See mixed flock. Includes 2 PR *Atlapetes*, 2 *B. microcrinitatus*. Moving 1-6 ft up. *B. microcrinitatus* repeatedly f → PR's! Birds sometimes silent. At other times very noisy. Patterns and flourishes by Warblers. "Chattering" chatter and PR's by *Atlapetes*. It is very noticeable that the 2 species synchronize their vocalizations. I.E. one species stimulates the other. In at least one case, it certainly is the PR's who stimulate the *microcrinitatus*. A single Hummer f → group. With R

Then I lose sight of the group. 6:19 a.m.

Some hummingbirds are disputing among themselves 6:20.

Catch glimpses several more Black *Diglossas* low in scrub, various areas. All alone. Probably all Hummers.

Rain getting worse 6:29 a.m.

NO

Hummer?

Dubious still singing quite frequently. Probably same individual every time. It probably is in reproductive condition.

PR - microcrastus apparently (from sounds) still together, not far from where last seen.

A pair of Forbesii more than low scrub, 2-4 ft up. Quiet. Definitely alone.

Then see a couple of Sooty Terns. High in Eucalypts. Alone.

Then see a pair of Forbesii alone in another Eucalypt.

See single Laf alone, 2 ft up in firm scrub. Quite silent.

7:08. Starting uphill. Hear Ducula singing. Then 2 Dubious as fly out of low bush, region sparse low scrub. Definitely alone.

7:16. Higher uphill. See a couple more Hummers alone. Silent.

7:23. Further up. Region slightly bushier scrub. Catch brief glimpse pair White-beards. Can't tell if they are alone or not.

Rain almost stopped now. Wind has died down. Then, of course, rain starts in again - just as I reach area where mixed flock seen yesterday afternoon! Nothing much visible now. I hear both Whitebeards and B. microcrastus at different times in different parts of the area. Also catch glimpses several Black Drogons alone.

Fog coming in 7:45 a.m.

On way back downhill, see group 2 Whitebeards and 1 Black Drogona 2 ft up, in low-tyffe scrub. They probably are the Whitebeards seen earlier. Whitebeards move off. Drogona does not follow.

8:20 a.m. Down where PR-microcrastus flock seen earlier this morning. microcrastus still around. PR's not visible. Hear Whitebeards same general area. A minute later, hear Forbesii 30 yds uphill. I doubt if this assemblage is really a mixed flock!

sol

Hummer

Black Drogona

see several more ⁽¹⁷⁾ ⁽¹⁸⁾ and at least 7 of them
stopping observations 8:40 a.m.

COMMENTS:

I. I presume that all the "Spang-fans" here are in fact
A, White-spotted Whitestarts

II It is really very remarkable that Yellowbellies seem to
be absent from this region. The Agua Bonita area would appear to
be highly suitable for the species (judging from its preferences in the
Central and Western Cordilleras). The areas on Guadalupe where I have
been working also look suitable. (There is little but scrub on this
particular side of Guadalupe. But Yellowbellies certainly do occur
in scrub elsewhere — even if they prefer — as they probably do —
forested areas.) Is the Yellowbelly primarily a species of borders or
frontiers ???

III Certainly the bad weather this morning did not appear
to stimulate the formation of mixed flocks.

In this connection, the nature of the bad weather this morn-
ing would appear to be particularly significant. During most of the morn-
ing (after the immediate dawn period), there was fine rain (a real drizzle)
with some light patches of fog, and relatively little wind. This is just the
sort of weather which I would expect to stimulate the formation of mi-
xed flocks in the Western Cordillera (at least on Munchique). I.E. the
birds here certainly do not react to weather in the same way as the bi-
rds of Munchique!!!

NOTE: All my work on Guadalupe, so far, has been on the si-
de of the mountain facing the city of Bogota itself. I.E. the West side.
This side really is quite humid. But the local fogs and rains usually or al-

Jan

ways seem to come from the East side. Late this morning, we took a brief
drive along the road going to the East side (the road to Acahualtlan).
This side seems to be even more humid than the West side. Much
of the vegetation appears to be unproductive second-growth (large expanses
of bamboo-thicket!), but the area certainly looks as if it might be well
worth a visit.

So I am going to try the area this afternoon. Above area 10,100 ft
3:25 pm. Light sprinkle of rain, but little or no wind

This is just about the highest point of the road. Actually "open"
to both east and west sides

3:40. See single footy Humblers alone. In patch natural-looking sc
rub- (greenish, 1.5) Glycyptis station west side Guadalupe.

Then see group 3 Whitebeards, 3-6 ft up bamboo scrub. Noisy
but alone.

This area is just at the border of Parícut (with "Frailéjon"-typ
e plants natural in it - probably different species from Western Cordillera).

Then see several more footy Humblers alone (there are many open,
grassy, pasture-like areas around here).

Reach fog level, 10,170 ft, 3:55. Everything very quiet

Then hear what seems to be a definite, but diffuse, mixed flock

• Hear sounds of Whitebeards, Pouillies, B. nigricristatus, and Atlap
tes ("secret" notes). All birds apparently moving in same direction
Low in what could be called "old second growth AS". But individuals
of different species obviously usually quite far apart.

• The 3 footy Humblers join this group. But apparently only to
"mob" me. Soon fly off. Nothing follows. Then a single Synallaxis app-
ears. Possibly new species. Gray, with reddish crown cap, wings, tail

Red

Also a light forest poplar stump. This bird also "works" in its masses attract a single Puf. which flies into adjacent bush. Puf. fly on almost immediately. Then Lyrebirds gradually moves off.

I imagine that the "real" part of this flock included approximately 8 individuals

Parts of this area looks very much like the highest area marked on Purse!

Red
4 NHD

4:40 pm On way back toward road see single Puf in the bush beside path. Silent. Puffing 6-10ft up. Puffing sounds of honor. Down with the bottom of same bush, can hear ^{honor} sounds. Quite noisy. Puf does n't appear to be paying any attention to the latter. Then I see a pair of PR's, 50ft away, in region bamboo scrub with scattered AS bushes. PR's ranging 2-12ft up. Sometimes moderately noisy. Usually quiet. Then the PR's fly quite far away. Into region tall AS. Further Puf sound from a few moments later, hear White beared sounds from area to which PR's flew

How much (if any) of this was "real" flocking is very dubious. If all or part of this assemblage was a flock, all or most of it was very cliff use.

5:01. Region very mixed second growth & Eucalyptus (a species I have never seen before). See pair Whitebeards 6-15ft up. Alone

Leaving 5:20 pm.

COMMENTS:

I. It is beginning to look as if this series of observations will conform both my previous impressions of the sociability of the birds here. D.E. mixed flocks are not uncommon, but neither are they nearly as common as in the Western and Central Cordilleras.

Jan

II I am gradually coming to the conclusion that Guadelupe, as a whole, is about as humid a region as any I have ever worked in. Only it has less forest (50% - 60%) than some other regions.

III. It has just occurred to me that White-spotted Whitestarts are relatively rare, or absent, at relatively high altitudes here. The absence of real Yellowfaces, or the ecological equivalent thereof here may go far to explain the relatively poor development of mixed flocks here. (Similarly, the relatively poor development of mixed flocks here may go far to explain the absence of Yellowfaces.)

Barro Colorado 1965

August 23, 1965
Palmar de Guasca

Going to work in usual place here. Arrive 5:28 a.m. Still quite dark. Cloudy. Already some bird sounds. Probably through songs.

Thrushes singing quite steadily 5:35 a.m. Obviously in reproductive condition. There also are a few other bird sounds now, but nothing very much yet.

The vegetation here seems much as it was a few months ago. In the burned areas do not seem to be growing up very fast.

Near forest edge Atlapetes Whistle Song (1 phrase) 5:44. NODWA, but completely overlapped by thrush songs.

Everything much quieter 5:50 a.m.

There is fog just above road level now. Gradually coming lower!

Now Atlapetes Whistle Song 5:54. NODWA.

See a single Taffly fly. Silent and alone.

5:58. See single P2 Atlapetes singing Whistle Song. Pooled 3 ft

fab

Hummer

up dead scrub, close to unburned patch. NODWA. Then Hummer starts to sing some distance down road. PL and Hummer alternate long phrases. A few and again and again. Hummer, no overlap. Occasional short partial overlap. (Long phrases of the PL quite like usual phrases seen near Quito. Flight CR.) Hummer shuts up. PL continues 6:05 PL song completely overlaps Scrub, in distance.

3 Then Scrub j → PL! Then Scrub Thrush j → group (apparently only to "mob" me). PL stops singing and moves off a few feet. Both Scrub and Scrub also move off. Apparently not together. And apparently not followed by PL.

Laf

6:06. Hear Laf song in distance. Also more Atlapetes (presumably PL) Whistle songs. Completely overlapping! Repeatedly. Laf shuts up. Atlapetes continues. Atlapetes shuts up. Laf sings again. No overlap. Laf shuts up. Atlapetes starts to sing again.

Cover

It is cold now. Also wind is coming up a little. Hear what sounds like Cover song. "Seeee" Intro Notes. 6:08.

Laf

Alternating with Atlapetes Whistle songs. No overlaps.

Cover

See single Laf alone. Silent. 3 ft up in AS. Both Cover and Atlapetes silent now. 6:12 a.m. Then Atlapetes starts again. NODWA.

Laf

Fog lifting a little 6:15 a.m. Then Laf sings again. Completely overlapping several songs of several Atlapetes (PL's).

Cy Hummer

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI
6:58. Watching Cy, and listening to both Cy and Hummer. Ridge on burnt scrub, with some low new growth coming in. There is a pair of Scrub Thrushes, alone, giving alarm notes at me. Then a pair of OR

On
Humer

's appear. The ... Diagonal ... 0' - 2' up then ... along (Altogether ... Cy and ... it is ... that ...)

7.55. ... far away. ...

8.45 am. For the last hour, I have been walking around the area where a big mixed flock ... I have seen a lot of ... Also a lot of ... And I have heard some ... But that is all! Has the flock been 'suppressed' by the cold today? (Incidentally, the vegetation at this particular site seems essentially unchanged from my previous visit.)

On
Humer
Laf

No sooner said than done! I start back up road. And ... 9.22 am. Includes "permanent" nucleus of 1 Blue & Orange, 1 Cy, 1 Euphonia-type, and 2 PL's. Moving thru both burned and unburned scrub. First 3 species ranging 6-12 ft up. PL's ranging from ground to 4 ft up. PL's occasionally noisy. Other birds quiet. Cy utters 1 song phrase (completely overlapping Laf - see description elsewhere). There also is 1 ... with group, but only for a few seconds or minutes. Group also is escorted by 1 Humer, and 1 or 2 Lafs, for at least several minutes. (The Black Drogons with group are difficult to follow well, because group arrived just in the middle of a complicated series of encounters between Lafs, and between Laf(s) and Humer - see description elsewhere.)

The Blue & Orange was in the lead of this group all or most of the time. The PL's certainly brought up the rear guard all the time. The "order" of the species was revealed most clearly when the group flew across

(M) so the road. Blue & Orange went first. Lyf → Blue Orange
Lyf → group. Impudens-type f → group. And the P's
came last.

Leaving 7:30 a.m.

COMMENT. It would appear that the mixed flock interaction be-
havior of the species here seems to be quite stable. (This may contrast
with the inter-specific reactions of various *Dryocopus*, which may be quite
variable.)

August 23, 1965
Agua Bonita

Going to work the same place as on August 20th. Arrive =
23 a.m. Still dark. Partly cloudy.

Quite a lot of bird sounds by road 5:35 a.m. Including both
Albi-type R's and Bairdianus-type R-Flourishes. These two types of
vocalizations are not overlapping. R-Flourish usually comes immediately
after Albi-type R. Sounds very much as if the Bairdianus-type is "answer-
ing" the "Albi-type"!!!

White-spectacled Whitestarts also singing quite frequently. Ap-
parently overlapping both Bairdianus R-Flourishes and Albi-type R's
quite at random.

Then, 5:41, hear long series Atlapetes torquatus-type Whistles
Overlapping all other types of vocalizations!

5:50. Hear what may be Hite-throat Song. Overlapped, at least
occasionally, by White-spectacled Song!!! see below

In the absence of "black access" of mutual non-inhibition character of most species of the subgenus Tullia as a whole?

There is a great volume of all sorts of bird noises by 5:55. This thing begins to subside by 5:37.

First type of song and flat-throat-like songs overlap, overlapping at least occasionally. Just like you did and flat-throat-like songs.

6:02 see "White-spotted" singing 20 ft up in tangle second growth. This bird seems to have white check white. I think that's one of the "White-spotted" seen the other day were similar. Perhaps this feature is characteristic of the whole population.

Various Dendroica and Junco sounds overlapping everything.

6:09. See single Albe feeding clusters small white flowers 10-15 ft up in second growth tangle. Utters R's from time to time. Definitely the "Albe-type" R's heard earlier. And then R's overlap flat-throat type songs.

6:10 glimpse 3 White-throats chasing one another. Alone. From sounds, they are flat-throats.

6:30. Lots of birds audible various places in scrub. But, as usual, impossible to see adequately.

Lots of White-tailed songs near NODWA.

6:40 pm see "semi" or "pseudo" mixed flocks. "Nucleus" is group of 3 individuals which appear to be Basileuterus luteovirens Yellow-rump and olive crown stripes. Very noisy (see below).

These birds ranging 3-12 ft up in second growth scrub. At one time, they are only a few feet from microscistatus. Also noisy. At other times, there are a single White-throat and a single White-tailed.

Jan

Albe?

Albe

Jan 30

in trees above them. But none of these species shows any tendency to fall
on any other. All separate and go their separate way almost immediately!!!

Incidentally, I am now almost certain that at least some
of the "slate-throat-like song" heard this morning were uttered by the
B. luteoviridis-types!!! They seem to utter very slate throat-like desc-
ending notes. But these often are preceded by typical Bardol
crus R's.

(Nevertheless, I am quite certain that there are Slate-throats around here. I saw at least 1 individual, alone, 30 ft up in small tree, and heard this morning.)

The altitude here is 7600 ft.

See a couple of Fulvies fly over head. Alone uttering "DN"s.

Going to start up hill 7:15 a.m.

7:25 a.m. A few hundred yards up path. 7675 ft Hear B. lute

oviridis types in swirl some distance away. Also hear microscistatus

mainly And see a single White-beard and a single G (not together)

flicking about in trees, 10-20 ft up, not far away. All or most of these in

individuals almost certainly the same as the individuals seen near or last to

seen down hill earlier. Thus, it seems likely that this group really is a

mixed flock. But, if no, it is remarkably diffuse.

(Again) the G and the White beard go off apparently in different

directions?

7:45 a.m. Still hear White-patched songs and Albi R's from

time to time. Not overlapping.

7:55. Further up. See pair B. microscistatus. Young but appar-
ently alone. 3 ft up in second growth tangle.

I wonder where there could be few or no Tangaras around here? Is a single Red throat throat and alone

8:30 1723 ft. 9' 10" of view, much as at - Lots of bamboo and lots of swamp - also low on the average. One very steep slope. Camel - definite musical flute. The central "musical" of the group (all W almost certainly, not the leaders - not in front) is composed of 3 or 4 "B. luteoviridis"-types. Possibly the same as the "B. luteoviridis" seen down hill earlier. But I got a particularly good look at the birds here this time. And I am almost certain that they are Hemiprocne, not Boopis. Hemiprocne shape and bill. Also in the flock is at least 1 H. atropurpurea and 1 H. andersoni. A real Hemiprocne flock!

All these birds ranging 1-6 ft up in scrub. Usually low. Quite coherent. Also quiet, uttering only "CN"s - until they see me - when the "luteoviridis" types begin to "mob".

172 When flock appears, I also hear Trubelly (us) nearby. Can't tell if it (or they) really associated with flock or not.

The atropurpurea and/or Trubelly (us) probably in lead.

WT 173 "units" flock. Feeds on tubular red flowers. Same species favored by Albis! But (this time) hummingbird sticks bill up center of flower. Definitely does not use Diglossa holes!

all 174 Hummingbird disappears almost immediately. A second later, q. albic shows up! Also feeds tubular red flowers - in usual Diglossa style. This q. albic "escorts" flock for some minutes at least. Silent throughout.

175 While flock is around, I also can hear White-spotted White

start singing about 20 yds away. But the White throat's entrance was there before flock appeared. Flock is going in its direction. But I can't tell if they join or not.

71 2:55 Same area. Small group 3 birds appears. Albi by W of the "leucostictus"-types which were with flock earlier. But they certainly are alone.

SEE ALSO NOTES ON MIXED DIGLOSSINI

72 9:15 a.m. 17925 ft. Region of high mixed scrub. See single PR Altiapetes. Silent and definitely alone. 2-3 ft up

73 9:25 a.m. 8000 ft. Come across what seems to be another small mixed flock. See 2 Little Striped Flycatchers in scrub. 8-12 ft up.

74 7:20 After occasional R's, but not many. Then get bad view of W of other birds up in trees 25-35 ft away. The only one I can identify is a young le White-necked 15-25 ft up. Silent. Also can hear presumed Cy singing (NODWA) occasionally in neighborhood.

This flock seems to be both quiet and diffuse. In fact almost all flocks in this region seem to be quiet and/or diffuse!!!

84 9:36 a.m. Same area. Hear what sounds like both "cutcovered" is-types and migrorotatus in scrub where Little Striped Flycatchers were earlier. Then hear more presumed Cy song. Without Intro Notes. NO DWA. Everything else seems to have gone.

Starting downhill 9:42 a.m.

75 10:01. 17480 ft. See single White throat feeding clusters large red tubular flowers. Not using Diglossa holes. Silent. Can also hear other birds (White beards? migrorotatus?) in nearby scrub, but can't see them.

10:14 Down by road. Hear more Albi-type R's. NODWA.

February 19 2300

COMMENT - The number of observations would seem to confirm
my original idea that the various behaviors is very stable in their
own kind across a broad lot of birds - mostly uttering "ca"s -
(unmistakable to me)

August 24, 1965
Parque de Guasca

Going to work usual places here. Arrive 5:27 a.m. Still dark
Some fog and light drizzle. To wind Oribatula, macra

Whistles already singing when we arrive. A lot of them and quite
loud. Everything else silent. A few other bird sounds (miscellaneous)
begin 5:35. Then everything rather quiet 5:40.

Incidentally, the altitude, where the car is parked, is 9800 ft ac-
cording to my altimeter now.

Then more bird noises. Now working where Laf, Coer, and P
L Attapetes were heard overlapping a couple of days ago. Attapetes utter
as Whistle songs 5:45. NODWA. Then shuts up.

(Laf) Laf starts to sing 5:47 NODWA. Shuts up. Then presumed Coer
starts to sing NODWA. Shuts up. Then Laf and presumed Coer alternate on
one another's of song No overlaps and NODWA!!!

Everything rather quiet 5:54 a.m.

Then more Laf song NODWA. Laf shuts up.

6:00 a.m. A few more Attapetes Whistle songs. NODWA.

Fog getting thicker and rain less now.

In general, there is less "dawn choruses" today than the day before.

(Laf)
Laf
Gen

entirely.

Atlapetes still singing quite steadily 6:04. And still presumed Coer presumably is PL I can't see it. but it certainly is going from bush to bush singing at different perches. No whistle songs occasionally overlap to ally sounds in distance. Apparently at random.

Coer Then presumed Coer starts to sing again. Alternates phrases with Atlapetes. No overlaps!!! Alternation very regular.

Coer So there is considerable variation in timing of song behavior! Presumed Coer shuts up. Atlapetes continues NODWA. Then shuts up, temporarily, 6:17 a.m. Starts again 6:19. Still NODWA.

10 A single Forkbill flies by alone. Also several Sooty Thrushes silent and alone.

Atlapetes shuts up again 6:23. Everything very quiet. I am going to start walking down road.

15 See 2 Jays in bush AS. Both fly away. Land 30ft away. Then one sings a long phrase NODWA. Shuts up.

Coer A minute later, hear more presumed Coer songs up road in usual Coer area. And this time, I manage to see the bird. It definitely is Coer. Going from bush, 4-10ft up. Apparently picking insects off leaves. Songs definitely NODWA. Coer flies off. Then Jay sings. NODWA Shuts up.

Coer Jay here. Coer and Jay territories are (still) at least partly overlapping.

Of course, mutual song inhibition may be "working" here today largely because none of the species is singing very frequently.

Rain worse again 6:30.

6:33. Atlapetes uttering Whistle songs again. Again NODWA!

Jay Then Jay starts to sing. Long series notes. And now - complete

by overlapping Atlapetes songs! (Laf must overlap at least as Atlapetes explains.) Then both birds shut up

" Flying low, road is in the range of Atlapetes. Silent 3 ft up in burnt scrub Cypripedium above

Cy
Hummer
13

Then the PL me. Atlapetes is singing low, thick unburnt scrub. And see that there are 2 Cys and 1 Hummer (1 in 20) only a couple of feet away! 1 Cy and the Hummer are feeding in same bush, only a few (3-4) in dispart!!! Hummer quite silent. Atlapetes no indication of hostility toward Cy!!! One or both Cys in (a) case, singing very frequently. Typical Cy follows with "Tut" Intro Notes. I suppose that some or all of these songs may be purely or competitively hostile. But aside from this, the Cys do not show any overt indication of hostility toward the Hummer!!!

Cy
Hummer
Cy
14

Then both the Cys and the PL move back into burnt scrub. Cys fly → PL. Hummer shows no tendency to follow or join either of the other species. Then PL flies back into unburnt scrub (in general direction of where Hummer must be) Cys do not follow. Cys continue on, covering a very large area of both burnt and unburnt scrub. Still singing very frequently. NODWA. All songs long Twitters with "Tut" Intro Notes. These all given when the two birds are several feet apart from one another. But also given, occasionally, when they are very close together - 1" to 2" apart. (It is interesting that "Tut"s are given in the latter circumstances.)

Cy
Hummer

As far as I can tell, Cys are feeding on insects, on leaves and twigs, throughout. (But certainly the Hummer fed on small red flowers when it was very close to the Cys.)

Cy
Laf

Eventually, Cys move into Laf territory (the Laf whose territory overlaps Goer). Laf not visible or audible at the time. Cy (s) still singing. Then Laf suddenly appears in bush only a few inches from one Cy. Laf just

nts silent. Makes no overt attempt to attack or supplant Cys. But Cys
flies off within a couple of seconds. Followed by nts.

Both fly off into the soft away still singing. It is then when

Oh I see Cys earlier this morning. Cys not visible now. P. & Cys,

Cur. suddenly Cys was the typical song plane between Cys songs. No overt

P! From sound, Cys is 40-50ft away from the Cys at the time.

Then Cys fly off and disappear.

So Cys territories or ranges (at all) overlap those of Hummer, Laf, and

and Cys!!!

The close approach of different species to one another, without overt

Cys hostile movements, during these incidents is quite reminiscent of the serena

de Miranda!

11 Going back down road, after disappearance of Cys, I see single P2

silent and alone in (another) patch of burnt scrub. Probably same individ

ual seen earlier. It is in the exact same spot where I saw a couple of PR's

two days ago! PR's were also alone at the time. So P2 and PR territories

or ranges are at least partly overlapping, even when the two species are no

t associating with mixed flocks.

7:00 a.m. Further down road. Three Lafs singing NODWA

Then see a couple more sooty Thrushes alone

7:12. See single large hummingbird feeding tubular red flo

wers edge road. Not using Diglossa holes. This probably is the same species

seen supplanted by Laf a couple of days ago. It unusually is not Patagona

(Patagona apparently does not occur in Colombia.) In fog, it looks dark

green all over. Could it be the "Blue wing" ???

Laf 7:15 See a single Laf. silent and alone 2ft up unburnt scrub.
7:21 Then see a single Towheebly alone in burnt scrub. 7:26 a.m.

Cy

Then hear a whole series typical Cy songs. NODWA

7:57 a.m. See another Cy. 10 ft up in bush.

7:58 a.m. God! There seem to be lots and lots of sooty Thrushes in burnt scrub. Alone. It looks as if the sooty Thrushes here may form "monospecific" flocks in scrub. (I don't see them form flocks in scrub anywhere a couple of months ago)

Sof
Coor
Cy
Hummer

7:59 a.m. Hear Sof song in distance. NODWA. Sof shuts up. Then I hear Coor songs in distance. NODWA. Coor shuts up. Then I hear Cy songs nearby. NODWA. Cy shuts up. Then I hear Hummer songs. NODWA. Hummer shuts up. This really is too good to be true!!!

Hummer

8:00 a.m. Then see 2 Hummers moving thru scrub fairly close together. Some R's. No song.

Sof
Hummer

8:05 a.m. See single Sof flying alone. Then see a couple of Sof's alone. Silent. Feeding red tubular flowers. Both Sof's and Hummers seem to feed on this species of flower very frequently.

Cy
Coor

8:10 a.m. Then see single Cy. Silent and alone. Picking insects off leaves of tree, the same species favored by Coors!

Cy
Hummer
Sof

Competition here must be intense!!! Then some more Cy and Hummer songs. Not overlapping. Both shut up. Then there is more Sof song. NODWA. Sof shuts up.

8:15 a.m. God! There seem to be lots and lots of sooty Thrushes around everywhere!!! All alone.

Cy

8:20 a.m. See another single Cy. Silent. 10 ft up in bush. Region of partly burnt scrub. I also can hear B. nigrocrinitatus Rattles & Floweries in low new growth about 20 ft away. Cy flies away. The warblers do not follow.

It really is quite remarkable that there doesn't seem to be a single Whitetail in this area!

8:15 am See single maroon-capped mountain tanager silent and alone, 10 ft up umbrella, scrub

sol
Hummer

NOTE: I have seen at least 4 or 5 Jays, and 4 or 5 Hummers, all alone, which I have not bothered to record in my field notes

gen

COMMENT: Today's observations certainly have confirmed I'm not out!!! Light fog and/or drizzle, without wind, covering the formation of mixed forest on hillsides of the Eastern Cordillera

SEE ALSO TODAY'S NOTES ON THE WESTERN SIDE OF NI

Leaving 8:55 am.

NOTE: The behavior of the Whitestart, Myioborus ornatus (both Yellow faced and Whitespectacled), in all three cordilleras of Colombia and the Sierra de Merida, seems to be a particularly good example of the "geographical" trends which seem to be characteristic of this group of regions. The difference between the birds of the Western and Central Cordilleras, on the one hand, and those of the Eastern Cordillera and the Sierra de Merida, on the other, is extreme

Going to work on Guadalupe this afternoon. At the lower place where I worked before on previous trips. (The car is parked at 9200 ft according to my altimeter now). Arrive 3:18 pm. Partly cloudy. Partly sunny. Some wind.

San

Hear something that sounds like San "Chuk" song in scrub near road 3:22.

Then see group 3 PR Atlapetes. Silent and alone, 1-3 ft up, low on + thick scrub edge rock slide.

Black

3:30. Catch glimpses various Black Dryobas, all alone, in scrub. Without being able to identify them

gen

There seem to be quite a lot of hummingbirds around, including

g some from Eschscholzia and/or Haplophragma.

Black
Ceryle

From Black Douglas. Also alone silent. Then a single Cy the
Along later in "Track" notes in flight.

7310 ft. Grasses of some kind scrub. Including bamboo. A pair
of Black-capped Tit flying silent and alone.

g
H
D

7400 ft. 3:45 pm See what may be several flocks. Groups include
at least 2 Blue D. glaucas (probably Cy), 1 Trichostema, possibly others. Quiet
and diffuse

VB

About 50 ft away. I also see one VB Hummingbird ♀ or juv ♂
(Breast whitish, but an appreciable amount of violet on back). Feeding
clusters small white flowers. Silent. Apparently not reacting to other birds.

Scam
Hummer

3:55. Some Scam-type "chuk" song in distance. Nothing else audible
at the time. Then hear some Hummer R's. Completely overlapped by Scam "chuk"
R "song". Then I hear R-Twitter. Also completely overlapped.

4:02. A few yards further on. See single Synalaxis. Probably sub-
judica. Quiet. 3 ft up in mixed growth scrub. Apparently alone.

There certainly doesn't seem to be any great "concentration" of mixed
flocks in the afternoon here!

g

4:07. See group of 2 Trichostema and 1 Cy 20 ft away. Silent. 6-10 ft
up in scrub. Probably largely same group seen earlier.

g
H
D

4:10. 30 yds further on, see another very quiet and diffuse small
group. Includes at least 2 Trichostema, 1 PR Atlapetes, 1 White-beard. All
4-12 ft up in scrub. PR j → Trichostema.

Black

4:25. Same area. See another Black Douglas. Silent and alone.

Scam

4:30. Still a lot of Scam "chuk" song from time to time. Still nothing
else, of interest, audible at the same times.

4:48. Starting down hill.

Hummer

See a single Hummer about 2' above feeding on white up-bowed flowers

3 ft up very young scrub

Rain starting 4:50 pm!

03
04
05

4:50. In group 2. 1st. One also 1 other bird which probably is sub. fly. feeding well below 6-8 ft up small tree. Quite silent. Just a second before, I heard Tumbler's sounds same tree. I am fairly certain that this is same fly-Tumbler flock seen earlier this afternoon. As eventually fly off. Almost certainly fly-Tumbler. This fly-Tumbler flock would appear to be quite long-sustained.

Scrub

Scrub-type "chuk" song still continuing 5:02. Still nothing else of interest audible.

Leaving 5:30 pm.

August 25, 1964
Bogota

Going to work in University gardens again this morning

4:38 a.m. Good heavens! I see what appears to be single - 7 Orinoco-rump Tanager (same species as in Panama) alone in garden of the Pharmacy Dept.

This afternoon going to work same place as yesterday afternoon. Arrive 3:10 pm. Pretty cloudy. Pretty sunny.

Lots of wren and B. nigrocrinitatus noises near road. Then quite t, 3:14 pm. Then more wren noises.

03

3:17. A single fly fly alone. Uttering "Isset" notes.

3:21. Another single fly fly alone. Uttering similar notes

04 And then a third! All within a few yards of the same site!!!

Then see a single Proceramus or Haplophastria type alone. Silent. White blue rump and/or tail.

Black Then catch the first of a couple of Black D. glaucus alone. The D. glaucus population here now is as thick as anywhere I have ever been!!! (Apart from our usual flocks in such places as the Oregon Canal.)

3:37. See single Proceramus not far from road 3 ft up scrub. Apparently alone. Apparently juv. (very pale underneath). Then see that there are 2 Proceramus here. One certainly adult. Also hear B. macrocraterus near by. Both Amphispiza very quiet. Proceramus fly off. Apparently nothing follows.

It is beginning to look as if this may be the end of the breeding season for all sorts of things! Young set of the nest. (How does this jibe with my observations in September and October, 1902? ???)

More Black D. glaucus alone 3:50 p.m. At least one of these certainly is juv.

9300 ft. 4:03 p.m. Another couple of Amphispiza fly by. Alone.

4:20 p.m. A few yards further up hill, see single Proceramus. Quiet and alone. 4 ft up second growth. Single Hummer \rightarrow Amphispiza. Obviously Amphispiza feeding flesh-colored tubular flowers. Silent. Amphispiza flies off. Hummer does not follow.

Then fly plus by, 15 ft from Hummer. The two birds apparently do not react to one another.

Starting down hill 4:27 p.m.

4:31. See single adult Blue & Black. Silent. 2 ft up in scrub. On a few feet from it is single gray bird. Might be juv. Blue & Black. But looks very appreciably larger than adult. I also hear some sounds of at least 1 other species nearby (PR ???). I think that this should be classified as a mixed flock. But certainly a small one!

4:48 pm Down by road for a couple of hours (see page 59) Sp...
in apparently alone.

NOTE. One might expect mixed flocks to be most common during
period more or less immediately after young have left nest. But this
certainly does not seem to be the case here.

August 26, 1963
Agua Dulce

Going to work in the usual places here. Arrive 5:24 am. Still quite
dark. Pretty cloudy. Looks as if it might rain.
Some bird sounds (Atlapetes torquatus Whistles?) 5:31. Then
a variety of bird sounds.

all?
all?
all?
all?

First Albi-type R's 5:40 am. NODWA. Quite a lot of R's in ra-
pid succession. I rather imagine that the Albis here are in breeding condition
on. Then a lot of White-spectacled Song. Completely overlapping the Albi-
type R's. Then both species shut up. Then I hear some slate-throat-type
Songs (Probably real slate-throats.) NODWA. Then some more Albi-type
R's. Probably partly overlapping slate-throats (But the individuals of the
two species are far apart). Then slate-throats shut up.

Albis continue quite frequently. Occasional White-spectacled
Songs, completely overlapping Albis.

Also a variety of B. macrorhynchos and lutecoides-type sounds.
Apparently not overlapping one another. But probably overlapping everyth-
ing else at random.

5:58. See a single through. Silent and alone. Apparently fairly 20
ft up top tall mound growth tangle.

Albi off 6:01 Hear everything else continuing

See pair White-spotted sitting about in tall apples 20-25 ft up. Sometimes a few but from where I can hear luteoviridis-type soon. As But then White-spotted fly on. And luteoviridis-types apparently do not follow CORRECTION? luteoviridis-types do start to drift over in same direction as White-spotted & the two species apparently not very close together. Another diffuse flock?

6:10. See single Albi alone 3 ft up in scrub. Utters R. Flies off R not overlapped by anything else

Then hear more Albi R's in neighborhood. Sometimes alternating with White-spotted songs. Sometimes overlapping

everything getting quiet 6:18 a.m. There are occasional drops of rain.

See single White-throat feeding clusters tubular yellow-flowers. There certainly are some other birds (microcrinatus and torquatus?) in scrub not far away. Buff I don't know if this is flock or not.

Then see pair B. microcrinatus. Ranging 2-6 ft up thick second growth scrub. Quiet. Apparently alone

Rain getting heavier!
During rain, single ♀ Albi appears in scrub about 15 ft from the microcrinatus silent. Moves on, apparently without paying any attention to the warblers (or vice versa)

More torquatus-type Whistles 6:29. Overlapping some Diglossini Twitter in distance. Coer ???

Starting uphill 6:30, as rain is getting lighter. Just as I go, hear unmistakable Coer in distance. NODWA part of the time. But also completely overlapped by White spotted songs

at other times.

Can
alpha?

Can continue. Completely unorganized & faint.

Birds in general are quiet during noon. I'd expect all taking shelter. Contrary no obvious tendency to congregate in the shade.

Jan
31

But now they are becoming noisy again as rain stops.

6:37 a.m. Still down not far from road. Single cyanocephala flies by. Definite along roads in tangle 25 ft up. Still above them flies off.

Starting uphill (again) 6:41 a.m.

Just a few yards along path. See pair White-spectacled. In all trees, 10-20 ft up. Repeating. Also can hear lutewidius-types in scrub to only a few feet away in one direction. And microscitatus in scrub a few feet away in another direction. White-spectacled sing occasionally. Evening song both warblers (which are not, however, overlapping one another).

90
XIII
HO

6:50. A little further along path, 70-75 ft. Come across what is certainly partly same group. See 2 White-spectacled. Hear both lutewidius types and microscitatus. Also see 1 cyanocephala, and 1 Chlorospingus canicularis. Song and White-tits in trees, 15-20 ft up. Warblers low in thick scrub. cyanocephala f → White-spectacled. White-spectacled possibly leading group as a whole. microscitatus apparently bringing up rear. But definitely appearing to follow group as a whole very noisy and apparently quite coherent!!!

7:02 a.m. Near Dubuna long in distance.

HO
XIV

7:30 a.m. Region where "juvied Hemispingus" flock seen a couple of days ago. See single microscitatus 2 ft up in bamboo scrub. There probably are other birds nearby, but I can't see them.

7:35 a.m. A few yards further on Ca. 7900 ft See definite mi

WCC 101
 102
 103
 104
 105
 106
 107
 108
 109
 110
 111
 112
 113
 114
 115
 116
 117
 118
 119
 120
 121
 122
 123
 124
 125
 126
 127
 128
 129
 130
 131
 132
 133
 134
 135
 136
 137
 138
 139
 140
 141
 142
 143
 144
 145
 146
 147
 148
 149
 150
 151
 152
 153
 154
 155
 156
 157
 158
 159
 160
 161
 162
 163
 164
 165
 166
 167
 168
 169
 170
 171
 172
 173
 174
 175
 176
 177
 178
 179
 180
 181
 182
 183
 184
 185
 186
 187
 188
 189
 190
 191
 192
 193
 194
 195
 196
 197
 198
 199
 200

red flock includes at least the following 3 GT's, 1 WCC (white-capped), 1 WCC, 2 White-spotted, 1 Ruddy Flycatcher, 1 H. atropurpureus, and 1 White-throated Hummingbird. At least 4 species were seen. Agouti or more leucis-type types also were heard.

This region of natural tall, mature, VSF trees and miscellaneous lower shrub. GT's ranged from 30 ft up in trees to 10 ft up in scrub. WCC's seen only 20-30 ft up in trees. White-spotted low approximately same range as GT's. Ruddy Flycatcher 6-10 ft up. H. atropurpureus seen only 20 ft up in trees. White-throat flying about 4-20 ft up by certainly in trees. leucis-types extremely low in scrub.

Group as a whole quite diffuse, most of the time. But GT's & WCC's White-spotted, group of WCC's and GT's. The WCC's and by certainly were not associating particularly closely with one another.

GT's certainly eating fruit. WCC's picking insects off leaves. Ruddy and White-spotted Flycatching.

Group as a whole quiet most of the time. But all or almost all species vocalized occasionally. Both Agouti and White-spotted sang. Not overlapping.

Group moving steadily, but very slowly, in one direction. As group passes thru one area, I hear B. nigrocrinitatus sound low in scrub. But I can not see that these nigrocrinitatus were really associating with group. Possibly only manifesting their hostility.

Group disappears downhill 8:10 a.m.

8:35 a.m. 8075 ft. Region where highest mixed flock seen a couple of days ago. See another mixed flock. Includes at least 5 or 6 all-rufous Synallaxis and 3 or 4 B. nigrocrinitatus (this may be near boundary).

my two pairs of these warblers. All birds seem very busy - especially bamboo Quits (with their usual flight - but together). Not making very definite groups. Difficult to tell who is. All birds apparently taking insects from flowers and twigs.

Rem. starting again at 8:45 AM

Starting down hill at 8:50

9:05 14870 ft. Edge of flat - steeply sloping. 4 ft up in

bamboo scrub. Noisy, but apparently alone.

9:15 14780 ft. Near more trees. NOISE

9:26 14550 ft. Near road. Region of thick, fairly high, but young

t. looking second growth. See definite mixed flock. Very coherent, but quite

Includes at least 1 Bambuterus-type, 1 White Spectable, 1 Tit (see

only this is the lowest I have ever seen Tit?), 1 Black & White Trovialium

(probably same species as in Sierra de Merida). All birds 6-12 ft up.

Bambuterus-type apparently in lead.

Leaving 9:37 AM

GENERAL COMMENT: It is quite possible that I have seen more flocks (per hour of observation) here than in the Central and West of Cordilleras. But the flocks here certainly are much smaller, on the average, and less highly (or tightly) integrated.

The social behavior of the birds here seems to be perfectly intermediate between that of the birds in the Central and Western Cordilleras and that of the birds in the Quito region.

NOTE: The "luteoviridis-types" seen in Eastern Andes also could be B. squaratus!!! Bogota collection includes specimen from Parque de Guasca! (Mulle de Schauensee describes it as "subtropical")

Call 42
121
121

September 19, 1965 - S. of Bogota

Started out this morning to look for the *Agelaius* to be heard. To be near to home and El Hito. Go way past the lakes and arrive at area called Santa Rosa. In the border AS, where it touches Paramo. Unfortunately, there was a lot of fog and wind here, and the wind cooled rather fast and cut up. Time of arrival 5:40 a.m. Completely light cold. But sky clear and no wind. Altitude 10,000 ft.

See lots of sooty thrushes along road on way here. Quite a lot of bird song 5:45 a.m. Lots of species must be breeding here now.

Must take this very first report here. Lots of *Atlapetes* whistle song 5:45-6:00 a.m. Coming from local AS. Presumably PR's, but phrases are a little more elaborate (including 1 or 2 more notes) than those of the birds at Guasa. NODWAH. Then *Atlapetes* starts up.

6:08 a.m. See pair PR *Atlapetes* 1-2 ft up in second growth edge of pasture. Very noisy. Lots of "picketing chatters and twitters." But definitely alone.

Then see single Black Diphonia (Warner?) perched 10 ft up in AS 500 yds away. Silent and alone. Flies away immediately.

Then see another single sooty thrush alone. Silent in AS.

6:22 a.m. See single Whitehead. Silent & alone in isolated patch AS in pasture 1-6 ft up.

There are some cup-shaped dark red flowers here. Presumably usual species. See a single *Haplophragma* or *Eurostomus* feeding on them. Possibly species no VIII. Silent and alone. Flies off immediately.

Back to area where first *Atlapetes* heard. Feeding 6:28. Bird is feeding again. NODWAH.

Then hear Amabilis in distance, down hill
Going down hill myself see more single footy Amabilis about an
d alone, in AS

Gen

Then see a couple of Whitebeards. Very but about 20 ft up in AS
This is all too reminiscent of the upper parts of Pico Espeso

6:55. See single Synallaxis alone. This is species with light supercil
ary stripe. Bird is about 1 ft up AS edge pasture

6:58. Hear White spectacled song down hill. NODWAH. Then in
or White spectacled song a few minutes later. (still) NODWAH

Black

7:07 10, 100 ft. See single Black Drogona 8-10 ft up in second gro
wth AS. Picking insects off leaves silent. Also hear a Whitebeard about 20
ft away. And this is not far from singing White spectacled. Could this be a
very diffuse flock? Or the "fore runner" of a flock?

More footy Amabilis alone. On ground in pasture silent.

Then see group of Whitebeards fighting among themselves. 10, 1
ft Very noisy. But (still) apparently alone.

Hummer

7:15 - 7:45 a.m. See some "mixed flock" behavior. But rather
peculiar. First hear White spectacled songs. Slightly down hill. Obviously
same bird heard singing before NODWAH. Then White spectacled shuts
up. Then I hear some Hummer songs coming from the same general area
Also NODWAH. Then Hummer shuts.

Ruf

Then I see 2 Rufs and 2 Woodpeppers II close by. This is exactly
the same area where Whitebeard fight was seen a few minutes earlier.
It also is about 100 yds up hill from where White spectacled and Hummers
heard singing

Ruf

Both Rufs and II's are ranging 4-10 ft up in second growth AS
Quite close together when first seen. II's f → Rufs repeatedly.
II's usually 1-6 ft behind Rufs. II's looking for insects on tree
trunks and twigs and in moss. Rufs picking insects off leaves. But also apparent

they looking for insects in the same places as the II's !!! I.E. the 2 species probably cooperate with one another to some extent.

Then, one of the Ruf utters "fracture" when landing near the other. Loud, somewhat long "jow-lee" Twitter. General effect very much like a loud long without NODWAH

Ruf - II group is gradually working its way down in the general direction of where White started and Hummer were heard to sing. But still far away as yet.

Then the 2 II's start to dispute among themselves. Lots of chase and supplanting. Accompanied by soft Twitter by one or both birds. Then both II's fly away. Long distance to one side. Rufs do not follow, and do not seem to mind being left alone !!!

Then II come back. I.E. II's j → Rufs. Group continues as before. Gradually down hill. At same time, White started begins to sing again. NODWAH And I can tell that the White started is gradually moving up hill, toward the Ruf - II group.

During this whole period, I have been able to hear White heard occasionally. Presumably some of the birds engaged in flight earlier. About 30-40 ft from Ruf and II's. Apparently making no attempt to join Ruf - II group; but also moving down hill, on more or less parallel course. Then the II's begin to dispute among themselves again. Again eventually fly off to the side - more or less in direction of White heard. Again Rufs remain behind, apparently unconcerned. But then they suddenly fly off in same direction as II's. I.E. Ruf f → II's. When I get down to area where birds went, I find the 2 Rufs, the 2 II's, and 2 White heard, all more or less together, 2-4 ft up in scrub. Ruf j → White heard.

Then all the birds begin to move around quite rapidly. Sometimes close together, sometimes far apart. I can't tell who is following

Ruf
Ruf
Ruf
Ruf
Ruf
Ruf
Ruf
Ruf

whom.

All this time White-spectacled continues to approach. He continues to sing from time to time. Song NODWAH Pups also utter more quieting "Twitter". NODWAH I.E. not overlapping White-spectacled song.

When White-spectacled song was only 20-30 ft away, Pups suddenly fly over in their direction. III's! → Pups. Then I see 2 Pups and 2 White-spectacleds close together 10-15 ft up in AS tree!

I think that the Pups and White-spectacleds must be said to have joined one another!!!

NOTE: While I am writing this account, I get several more glimpses of both White-spectacleds and Pups. Sometimes close together. Sometimes far apart. White-spectacleds continue to sing from time to time. And Pups also utter more "quieting" Twitter. Quite variable (described elsewhere). And there are absolutely no overlaps between their vocalizations! I.E. there seems to be mutual song inhibition between Pups and White-spectacled!!!

Certainly, the Pups, III's, and White-spectacleds must be considered to have formed a real, organized mixed flock. But it was extremely variable, in degree of cohesiveness. Sometimes very diffuse. (Probably the Whitebeards also were "real" members of the same vocal group.)

The Pups may be just as "strongly" Alloquacious as sitticolor forms or WCC's, insofar as they react to (and with) other species approximately as frequently. But they apparently differ from both sitticolor forms and WCC's insofar as they do not always keep as close to other species. They apparently do not become "upset" at being left alone temporarily, or being separated from their companions by distances of 50-100 yds.

I suppose that this is what one would expect of a commensal species in an environment where flocks often are diffuse.

NOTE: Inters may be partly intermediate between Pups and typical

Ref
Ref
Ref
Ref
Ref
Ref
Ref
Ref
Ref
Ref

al better in their Allogregarious behavior (And possibly wee's are rarer or absent or more than because they have difficulty in "adjusting" to different flocks?)

NOTE: The scrub here is relatively sparse. All or most of it (even the stuff I have been calling "A" probably is second growth). This scrub probably is sparser than that preferred by utricolor forms. (Of course, Ruf also differ from utricolor insofar as they apparently never occur in trees. Ruf → utricolor → wee form a nicely graded ecological series!!!)

8:40 a.m. Same area. White spotted still singing occasionally. NODWAH. It has been a long time since I heard either Ruf or TH's. Have they gone off together? Leaving the Whitestart behind?

NOTE: The White spotted may be quite as Allogregarious as the Yellowface. Only more restricted in altitudinal distribution in some areas. (This probably is the highest I have ever seen the White-spotted.)

Going back uphill.

Leaving 9:15 a.m. Everything dead quiet

NOTE: Talking to the local people, I find that Santa Rosa is well past El Hato.

Gen
wee
Ruf
wee
utricolor
Ruf
Gen

Apr 15, 16, 18, 21
23, 24

Eastern Ceryle alcyon - Prunus
Eucalypto
Mts. above Bogota - April, 1963

No. Flocks Seen

(10) IIII IIII IIII IIII IIII IIII IIII IIII
IIII IIII IIII IIII IIII

(15)

No. Flocks in Flocks

IIII IIII IIII IIII IIII IIII IIII IIII IIII
IIII

(20)

31 20 15

10.32
Mts. above Bogota

No. Flocks Seen

IIII IIII IIII

No. H. O. Flocks Seen

IIII

Largest No Flocks 1 Flock

2

No. Sp. Per Flock

4

2

2

4

2

4

2

2

2

(10) 2

2

2

2

2

Eastern Condellina Colombica

Presque
Ensemble

Hours Spent

April 15	1 hr 00 min
April 16	1 hr 45 min
	0 hrs 30 min
April 18	1 hr 30 min
	2 hrs 00 min
April 21	1 hr 30 min
Apr 23	1 hr 30 min
Apr. 27	2 hrs 45 min

12 hrs 30 min

Eastern Cordillera Colombia
 Mt's above Bogotá, April, 1968

Apr 15, 16,
 18, 21, 25, 27

W. L. Miller

No. Birds seen Alone

|||
 (133)

No. Birds in Flocks

|||||

||| (41)

(23)

24.26%

No. of flocks seen

|||||

No. H.O. flocks seen

|||

No. Sp. Per Flock

- 4
- 2
- 2
- 2
- 5
- 4
- 2
- 3
- 2
- 2
- 2
- 4
- 2

Largest No. Birds / Flock

- 5
- 4
- 4

36

Revised

Indusium

Mts above Bogotá - April 1963

Apr. 15	3 hrs	15 min
	1 hr	30 min
Apr. 16	3 hrs	30 min
	1 hr	15 min
Apr. 17		0
Apr. 18	3 hrs	15 min
	2 hrs	00 min
Apr. 19		0
Apr. 20		0
Apr. 21	2 hrs	15 min
Apr. 22		0
Apr. 23		0
Apr. 24		0
Apr. 25	1 hr	45 min
Apr. 26		0
Apr. 27	3 hrs	00 min

21 hrs 45 min.

Eastern Cordillera, Colombia

Hours Spent

August 20 2 hrs 00 min

August 21 3 hrs 00 min

2 hrs 55 min

August 24 2 hrs 15 min

August 23 2 hrs 15 min

11 hrs 30 min

Apr. 17, 1965
22, 23.

Quasac - April, 1965

No. of Birds Seen Alone

(15)

No. of Birds. in Flocks

|||||
|||||

(65)

37.51 %

(14)

No. of Flocks Seen

|||||

No. Sp. Per Flock

4 ✓

3 ✓

6

3

3

2

6

6

6

2

No. H.O. Flocks Seen

|||||

Largest No. Birds One Flock

8

10-13

7

41

Apr 17, 19, 22, 23

Eastern Cordillera Colombia

Genaca - April 1965

No Birds Seen Alone

(22) |||| |||| |||| |||| |||| |||| |||| |||| |||| ||||
|||| |||| |||| |||| ||||

(29)

No Birds in Flocks

(22) |||| |||| |||| |||| |||| |||| |||| |||| |||| |||| |||| |||| |||| |||| ||||
|||| ||||

(39)

42-45%

10.67 birds per flock

No Flocks Seen

||||

No H.O. Flocks Seen

||||

No Sp. per Flock

2

2

5

6

4

3

7

11

Target No. Birds, Flocks

13

Eastern Cordillera Colombia

January - April 1965

Hours Spent

Apr. 17	3 hrs	50 min
Apr. 19	3 hrs	00 min
Apr. 22	3 hrs	15 min
Apr. 23	3 hrs	45 min

13 hrs 30 min

July 22, 1915

Eastern Cordillera Colombia

Quica - August 1915

No. Birds seen alone

|||||

(11)

No. Birds in flocks

|||||

(20)

11-65%

July 22, 1915
Quica

No. Flocks seen

||||

No. W. O. Flocks seen

1

No. Sp. per flock

3

17

2

3

2

Largest No. Birds. 1 Flock

2

Eastern Condalia Calocoma

Quana - August 1955

Hours Spent

August 22

4 hrs 00 min

August 24

3 hrs 15 min

7 hrs 15 min

Aug 22,
29.

Quinn - August, 1965

No. Inds seen

No. Inds in flocks

|||||
|||||

|||||

(2)

(15)

19.74%

(15)

No. flocks seen

No. spp per flock

|||

3

4

No. NO. flocks seen

3

1

13

Target No. Inds One Flock

3

8

4

Apr 24, 25

Eastern Cordillera, Ecuador

Oyjas Forests - April 25, 1955

No. Birds Seen Alone

III III III III III

(24)

No. Birds in Flocks

III III III III III III III III

(39)

01.20 to

M.G.H.
with Mrs. Searcy

No. Sp. in Flock

14

2

8

No. Flocks Seen

III

No. W.O. Hoop. Seen

III

Largest No. Birds in Flock

23

Eastern Cordillera Colombia

Agua Caliente - April 25

Hours Spent:

April 24 4 hrs 00 min

April 25 4 hrs 15 min

8 hrs 15 min

Eastern Cordillera

Apr 24, 25

Agua Bonita - April 1925

No. Nests seen alone

|||||

(24)

No. Nests in flocks

|||||

(41)

60.29%

No. Flocks seen

|||

No. Nests Per Flock

15

9

2

No. N.O. Nests seen

|||

26

Largest No. Nests in One Flock

26

15

Aug 20, 23, 26

Eastern Cordillera Colombia

Alvaro Ochoa - Aug. 1968

No. Insects seen
|||||

(13)

No. Insects in Rocks

(30) |||
(100) |||
|||

(112)

73.46%

11.92%
per hour

No. Hades seen
|||

No. U.O. Hades seen
|||

Largest No. Insects in Rock
16

No. Spgs per Rock

2 2

3 4

2

11

7

2

2

4

4

(10) 7

3

2

5

8

Eastern Cordillera Colombia

Aqua Bonita - August 1963

Hours Spent

August 20	4 hrs 30 min
August 23	4 hrs 30 min
August 26	4 hrs 00 min

13 hrs 00 min

Eastern Cordillera Colombia

Aug 20, 23
26

Agua Bonita - August 1965

No Inds seen Alone

~~|||||~~

1

(31)

No Inds in Flocks

~~|||||~~
~~|||||~~
~~|||||~~

(121)

(172)

70.35%

No. Inds per Flock

2

3

2 27

11

7

3

2

4

4

7

5

2

5

9

2

4

20

27

No Flocks seen

~~|||||~~

No H.O. Flocks seen

~~|||||~~

Largest No Inds 1 Flock

3

19

14

172

Sept. 28, 29, 30

Eastern Cordillera

Quasca, Sept. 1762, ~~Oct., 1762~~

No. Inds seen alone

||||| 38

47.95%

No. Inds. in Flocks

||||| 35

||||

(17)

No. flocks per flock

2

6

5

9

22

No. Flocks seen

||||

No. H.O. Flocks seen

|||

Largest no. Inds. in Flock

2, 10, 16

Sept. 28: 6:45 - 9:30 = 2 hrs 45 min

Sept. 29: 5:45 - 9:30 = 3 hrs 45 min

Sept. 30: 5:45 - 10:00 = 4 hrs 15 min

10 hrs 45 min

~~Oct. 22: 5:45 - 9:00 = 3 hrs 15 min~~