January 11, 1958
Bueno Colorado

For at least a week, there has been a bird around the cleaning, usually mornings & evenings, giving many loud R's, very harsh & distinct & loud (perhaps even more so than the most conspicuous R's of the Green Humming creepers). Apparently a sort of "song".

This bird seems to be a & or “summer"

Praeger! I got my first really good view of the cleaning thing this evening and it was doing the R from a posture common to:

Pronounced CR. Wings not curved over wings.

Jaw vibrating in slight rhythm with the call.

Accompanied by lots of WF and TF some slight vibrating also, I think.

This bird seems to be strictly unmated or is one of this species or

The only response to its R that I have seen was an approach by a Golden-mark - see today's notes on Sangaia.

January 17, 1958
Bueno Colorado

The same bird back again tonight, behaving the same ways but I got a better view of it.
It was giving lots of R's, averaging 10-18 per minute at its peak. From more or less the same posture as yesterday, the angle of head, body, and tail varies somewhat at different times, partly according to the angle of its peak — the sketch down below is a very common variant.

The tail is particularly apt to be raised when TF's are particularly common.

The proportions of this sketch are probably somewhat better than the one I did yesterday.

The whole performance was accompanied by quite extreme & very frequent, if somewhat irregular, prusting (without hopping), and lots of extreme TF's, D-V (without very much in the way of a lateral component), more or less synchronized with the prusting. Absolutely no WF!!

This was occasionally interrupted by BW. Every time the bird did this, it lowered the neck, so that the crown was absolutely smooth.

Again nothing responded to this performance. This bird may be a g., as it doesn't seem to have any indisputable wing feathers. But it is fairly large.
Same bird, still wound, still giving R's, again & again a again (particularly in the evening), without getting any response (it seems to be the only known Fowler in the neighborhood). This must I think be the equivalent of "song". Get a rather better view of the performance today. The usual full R seems to consist of 5 (or possibly 6?) notes. The component posture is probably the one drawn on p. 2, with tail cocked up, wings very slightly drooped, and belly feathers very slightly fluffed. CR is very cardinal-like looking from the side quite remarkably square from in front.

Most peculiar. This is apparently never accompanied (I have only seen one brief int. mor. of an interval between R's — and I must have watched at least 100 R's by now.) The prizing hardly deserves the name. What the bird does is close look to one side, or from side to side, sometimes shifting body considerably and leaning neck very slightly (almost looking back over its shoulders) between R's; or, more rarely, during R's, TF's are very common. Almost every sideways prizing movement is accompanied by 1TF, and 1 or more TF may occur in the intervals between R's (sometimes completely vertical, V or V-D. I am not sure if D or D-V ever occurs). More often with a very pronounced lateral component (although usually less extreme than the corresponding component in the TF of the hummer de
Even after following a "square arched" pattern coming up from the tail, the tail feathers are somewhat fanned, but I am not sure about this. I only saw the bird BW once in association with R's today, but again it smoothed the head feathers during the movement.

I also saw today, for the first time, what might be called an "Alarm R" (ALR) pattern. Done by the bird in the evening, as it was probably getting ready to "swing", when I came up on it unexpectedly. Stayed close to me, but obviously very nervous. Noted a whole series of R's, which sounded quite unusual, except for the fact that they were greatly abbreviated. Usually only 3 notes per R, sometimes only 2. And there was no trace of CR!! Crown feathers absolutely smooth. And all the time the bird hopped from twig to twig in an obviously agitated manner.

The complete, ordinary R is certainly very reminiscent of that of the Green Honeyeater, but definitely louder, possibly just a tuffle sharper. There seems to be a very slight continuous change in a single R program. The first few notes of a single R are sharper, more rapid, and higher pitched than the last few notes (by "more rapid" I mean that there is less of an interval between them.).

This bird seems to have a definite home range (which may also, of course, turn out to be its territory). Always R-ing within a very restricted area (no more than 1 or 2 adjacent trees) and quite probably always feeding nearby. Even when frightened, it doesn't go far away.
January 15, 1958
Baro, Colorado

Not much new today; but I did see a performance by the usual bird, in the usual place, which seemed to be intermediate between the ordinary R and the ACR complex. Bird maneuvered nervously, hopping around, uttering R calls and ACR calls and all intermediates, with crown absolutely smooth — even when the call of was being uttered. I might add that I have now seen @W quite frequently, with the ACR performance (all forms).

Baro, Colorado

January 16, 1958

This morning there seemed to be a pair of荏rous Sauers in the area where one was before. Both in @A or unusual @plumage; absolutely no display by either bird.

I did notice, however, when the 2 birds were feeding peacefully, flying about from twig to twig, that this species uses very few or no WF’s at any time. I didn’t see more than 2, any low intensity, “cut songs” of WF, during all the time (15 min.). I watched the birds today, so the lack of WF with R is not a sign of ritualization.

January 22, 1958
Baro, Colorado
I have heard many fewer R's in the neighborhood the last few days, compared with earlier. I rather think that this must be due to the fact that the solitary bird who was making all the racket before seems to have pivved up - more or less, at least, there are 2 birds around now, associating more or less closely with one another. Both in general or fleming.

A rather interesting sequence of events this evening. The 2 birds were feeding in the same tree, without any display at all. Then one flew away & disappeared. Almost immediately, a whole series of R's was audible, coming from the general direction in which the bird that flew away went. Mostly short (like the "alarm" R's I heard earlier), but some long and apparently complete. The bird that stayed (I think) seemed to answer the R's by soft "Whoooo" or "Whooooo" Notes, rather like the Whoo Notes of the Palm Sawyers, but softer and less whistling. All this happened some distance away, and so I can't be absolutely sure of the details, but the bird giving the "Whoooo" Notes seemed to be doing this without opening its bill. The sequence of events was as follows: 1 R, answered by 1 "Whoooo", 1 R, 1 "Whooooo", 1 R, 1 "Whooooo", etc.

February 25, 1935
Barro Colorado
Several weeks now, apparently quite unmated and behaving just the way he did before. (Incidentally, I presume that this bird must be a T., but he still hasn’t shown any trace of melting into more plumage.)

He did, however, “mug” today, or, rather, this evening. Perched all by himself on one of the electric wires. Gave repeated phrases of song, which, must, I think, be called W.S. Balloon soft and definitely a warble. Including a few doublets— as well as other more or less single notes. Generally quite reminiscent of both Thrushes and the young captive Bee Honey creepers. Given from a quite unmutilated sitting posture, without a trace of CR.

I don’t know how long he has been in the habit of giving this W.S., but it may have been for weeks.

Pinanga, I

March 21, 1958
K-6

There has been an apparently unmated young T. around here yesterday and today. In half real plumage. Gaining R’s with CR and prancing just like the bird I watched on BC1.

The way in which this solitary bird gave such repeated R’s was certainly very reminiscent of the “song” of Browse genovesas. I can’t say much about the motivation of this performance; except that it was presumably produced by frustration of some sort. This bird was certainly not aggressive or hostile toward other birds (there were apparently no other summer Pinangas as
anywhere in the neighborhood and there were never any other birds of any sort particularly near this bird. And I am fairly certain that there R's were not provoked by or directed toward me, as they were often given when I was hundreds of yards away (and probably out of sight of the bird). These R's meant, I think, have been provoked by threatened very, very angry or aggressive Turkeys.

March 27, 1958
Balboa

I might just mention the fact that the Turkeys say that the summer Turkeys are the most aggressive birds that ever came to their feeding tray.

August 26, 1958
Celio Campviano

Hepatic Turkeys = flavus
These are quite a lot of birds of this species around here, ranging from about half way up to the top. In woods, sticking pretty well up near the tops of the trees. In flocks or single bird. They seem to have a FCN of more or less usual type. Usually 2 or 3 rattles soft "Whit" or "Whi-it" Notes. One loud flying away from me did a few notes like this, then three shorter, more emphatic notes, right close together, almost like an R. They have been low-intent R.

All species certainly does have an R, quite like the Pit-a-
to-ick "of the Seammers. Apparently rather than that of the Seam-
mer, and apparently never as long as that of the longest Seammer R's.
Often abbreviated, to our one or two syllables.
The only birds I have ever heard do this are more or less
solitary (at least 300 yds apart from the nearest birds). Single
birds, quite sitting on tree-tops, in a more or less unarticulated sitting
position, without CR (although the feathers of the top of the head may
be slightly fluffed), giving R after R, quite like the Seammers, ap-
parently as "song." The only bird I have actually been able to see do
this was a ? or, more probably, an immature R? Again like the
Seammers.

The R's by our bird apparently provoke return R's by
the nearest other birds hundreds of yards away.
I watched one flock, including at least one adult F and
5 or 6 females or miniature males yesterday, and it is probably sig-
nificant that I didn't hear a single R by any bird in this flock.
Our presumption that the generous birds are in non-reproductive
condition, while the solitary birds are looking for mates.
This flock was really quite silent on the whole, except for
canonical CN's or FCN's — and what appeared to be FB and re-
lated patterns. One of the birds in the flock — which I never saw
well — kept uttering mew notes at regular intervals, almost
constantly: "Auh ... auh ... auh ... auh ... auh ...

founded almost like the CN's of the House Le-Fo, but less em-
phatic and slightly less nasal. Occasionally accelerated into a
more emphatic series. Once during this acceler-
ated series, I saw a bird do 8 just like the FB of other species.
- except that the tail quivered as well as the wings

The species has quite exaggerated TF's as flight increases, almost straight V-D, with little or no lateral component. And -

Get a brief view of a flame-colored passing from tree top to tree top, just pausing momentarily to perch from time to time. Attentive brief R notes, always single, more or less like those of the Hummer, but much briefer. Might be transcribed as "Brrr" or "Brrrrr." Without a trace of CR.

These birds seem to be completely unaggressive. I have seen at least four or five by now, and they have always been single or in pairs of presumably related adult and young. They tend to appear in quite open places. The tops of trees where remnants of the rain forest are left, or in the tops of low trees or branches where the forest has gone.
I found an immature Titie afternoon just beginning to acquire red feathers on throat. Sat on top of brush near me, and gave R after R. Sounded just like the R's described above. Bill opened a closed once with each R. A slight trace of CR (see left) throughout the whole performance, extra during and between the notes. As in the summer, the top of the head looked flat when the nest was erected.

September 17, 1958
Ceno Punta

E.E. watched a probably adult or young R's repeatedly. He would transcribe the R as "Irseep" or "Chureep" or "Cheep." Repeated with pauses of about a second. (These R's may have been shriller, with a more definite sharp ending than the ones I have heard.

Piranga L.  March 2, 1959
Ceno Punta

Quite a lot of flame-colored Tanagers around here now. Possibly the beginning of the breeding season, although I haven't heard some of the pairs doing anything.
vocal performances, which may be "song." Essentially composed of brief
y double notes "Isee -see" or "I'see -see"—some
times repeated (at least 3 times) before a definite pause supervenes.

According to RW Barlow this sounds very much like a cow-rit
unity song performance of the scarlet toaaga. Usually, done while
the animal quite exposed at the top of a (often very tall) tree


One of the miniature Q's uttered several R's after a burst
of the "song."

Piranga, I

March 4, 1959

Cerro Pacifico

Finally saw a White-winged Hanaga (L. superba —
) Two of them, a O and a 9, in fact.

Very inactive, but generally behaving like the other species
of the genus. Quite non-aggressive (both sexes ignored some facilities
threats which fed in the same trees from time to time). Tail looks like
the other Pirangas, ssp., and also no white flanks. The Q uttered
"Fuck" CN's from time to time, and the Q occasionally
uttered "Taika" CN's (much fainter than those of the Q.) It may
be significant that the Q did not utter R at all, in spite of the
fact that he was separated from the Q from time to time.

There is no doubt that the Flame-colored Hanaga is by
far the most common of the 2 species of the genus here. We see or hear
it very frequently.
The Flame-colored really utters & very frequently. At least as frequently as the summer. The R is quite metallic-sounding close up. The loudness of the Flame-colored's song is extremely variable. I think that it tends to quiet the softer versions when the $f$ is not too far away. At least in sight.

Piranga, I

March 4, 1957
Ceno Puente

The usual singing posture of the Flame-colored Tanager unusually more or less comes $f$, I think. Crest not raised. Head more or less horizontal. Body more or less erect. No body feathers fuffed, except probably the rump feathers to some slight extent. Wings do not feel a little but not spread. Tail not spread.

I think that $f$ Flame-colored Tanagers tend to quiet the song when they are usually separated from their $f$, and the R when they are relatively slightly separated from her.

The most metallic-sounding "R"s I have heard may be purely $f$. At least all the ones uttered by birds I have been able to see have been uttered by $f$'s. And some "R"s uttered by $f$'s don't seem to have any vibratory or melodic quality at all. Might be transcribed as just plain "Think!" (some $f$ R's do certainly have some quacking quality), however. Although I am not sure that they are
even quite as rattling as the R's of F's.) I have never definitely heard a T utter a plain "Plunk." R.

Barth heard an adult T utter a weak soft "Isit" or "What?
Note. Presumably a CN.

I have seen an adult T feeding in a tree with his mate attack & drive off another presumed to be trying to feed in the same tree. No display before or during the attack, but immediately afterwards the T flew to the top of a tree approximately 100 to 150 yds away and sang repeatedly. Might suggest that the song of this species is dialectic, proclaiming the ownership of territory.

Piranga, 1

March 7, 1959
Cerro Punta

The q of one of the pairs of Flame-colored Tanagers I have been watching is obviously building a nest.

I saw an adult Flame-colored Tanager, in full plumage, this morning, sitting by himself on a bare twig at the top of a high bush, singing repeatedly. The interesting thing was that his song was almost or completely identical with that of the Flame-colored Tanager. Essentially made up of double notes. A typical phrase might be transcribed commea: "Brenew, turenew, turenew," With a slight but definite rattle undertone. The phrases were slightly variable. Some included 4 doublets instead of three. The bird was singing in exactly the same posture as that of the Flame-colored Tanager shown yesterday on 9.13.
So it would seem that this is another species in which the juveniles have a more elaborate song than the adults.

Piruanga, I. 
March 8, 1958 
Ceno Pinta.

I have been watching the pair of Flame-colored tanagers, the female in nest-building for about 4 or 5 days. She usually goes along with the male when she makes her morning collecting trips. The first couple of days he sang a lot, and also uttered a lot of R's from time to time, when she became separated from him. But the last 2 days, he has been completely silent. This might suggest that both the song and R are strictly correlated with the sex drive, and that his sex drive is declining now?... I wonder if the "song - R complex" of these Piruanga tanagers might have been derived from something like the S-SR complex of Chlorotypus?...

Piruanga, I. 
July 12, 1959 
Ceno-Campana.

Lots of Hepatic tanagers quite conspicuous around here now. Very vocal. Socially breeding.

Uttering lots of R's, quite as described above. I gather that the impression I had several days ago that these R's were at least partially distinctive, at least in some cases, as I think that birds tended to start to utter R's when I approached them.
I also heard a lot of what I think was the “song” of this species ("song" like that of the adult Flame-colored Tanagers I watched at Cien Pruitt), although I never actually saw a bird utter this "song." It consisted of lots of doublets, sometimes repeated endlessly for minutes on end, with very little pauses between successive doublets. The most common forms of these doublets were "Whee-ut Whee-ut" and "Whee but Whee-ow.

I watched an isolated q utter a after the apparently in a response to another bird (her mate?) "mu-ing" doublets in the distance.

I also saw one q carrying nest material.

Pirangá, 1

April 17, 1960

Cieno Colorado

I have had a q Summer Tanager here for a long time now, and I have been more or less ignoring her, but I did notice the following this morning.

Once when she was sitting on a branch, facing peacefully, she did a silent C toward a herd of another species that landed right beside her.

Later on she got involved in a series of supplanting attacks with another herd of another species. Usually she was the supplanter rather than the supplanter. During this performance she uttered several HAC’s! Her HAC’s were rather similar to those of most other species, but definitely softer and less screeching.

There was no trace of CR during any of these reactions. Which would suggest that the CR is not hostile.
April 9, 1966
Cerro Punta

I watched a White-winged Tanager (probably young - chest orange) singing in the tops of several tall trees this evening at sunset.

The song consisted of doublets, more or less like the doublets in the song of other species of the genus. Usually 3 doublets to a single song.

Comm. 3: "Whee-hoo! Whee-hoo! Whee-hoo!"

A definite rattle undertone to the second note of each doublet. Perhaps (sometimes or always?) a slighter rattle undertone to the first note of each doublet.

Sometimes the song was abbreviated. Reduced to 1 or 2 doublets.

The bird sat in a posture very much like the Flame-colored. Picture drawn on Mar. 4, 1966, p. 13, while it uttered these notes. Semi-erect. Head more or less horizontal. Flight CR. Wings slightly drooped, but not spread.

April 12, 1966
Bueno-Colorado

This morning, just at dawn, I heard what was alarming a Flame-colored Tanager "singing" almost steadily for at least 5 minutes. Apparently perched high in a tree (although I was never able to see the bird).

This song was just about what one would expect for the species.
It consisted of a series of "Kee-woo" Notes (up to 4 notes in a series, but usually fewer, perhaps usually 4-6), followed immediately by 1-2 R's, followed immediately by another series of "Kee-woo" Notes, followed immediately by 1-2 more R's, etc., etc., etc.

I think that most of the "Kee-woo" Notes were more or less common -- Rather variable, some of them may not ha

We had the usual -- rise in pitch. Sometimes the bird uttered a plain "Kee", or a "Kee-vee" instead of the usual "Kee-woo" (such changes seemed to be more or less "random".

It is possible that some of the "Kee-woo" and "Kee-vee" Notes had a slight rattle undertone, especially under the second syllables of the Notes, but I am not sure about this.

The interjected R's were always very brief. Some or all of them were hardly more than "Klik". Certain, no more "syllables" than on the "Pi-te-te-te" of the "summer" Songer.

This "ririque" was quite reminiscent of the "dew songs" of many other bush-fainagers and bush-finchie. Perhaps must title the "Kee-vee" songs, and the ACN-SCN alternations, of the fainager de Jowo.

(I know this "ririque" was done by a Flane-colored Fainager because I have seen adult Flane-colored Fainagers with similar, but shorter series of "Kee-wo" Notes, from time to time.)

This afternoon (from 3:30 p.m.) I observed some birds in an area a few hundred feet above Cerro Punta, (also halfway between Cerro Punta and the upper pasture).

There was one pair of Flane-colored Fainagers in this area. Apparently well-mated, the A and B spent considerable time feeding a flying
close together. Usually in medium-sized trees.

I first became aware of them when they both landed on a branch right above my head. One of them uttered a series of hoarse, rattling notes as they landed. Not very loud. Three notes in the series. They might be translated somewhat as: "Zaa-zaa-zaa."

I then came upon the pair again and again. Several times they just looked at me as I approached. Quite silent. The species seems to lack anything in the way of an ALCN. No signs of glowing or flashing as an alarm reaction signal.

Then I suddenly flushed both the $T$ and $Q$, separately. I apparently caught them unawares this time. Both birds flew off, and uttered: "Zaa-zaa-zaa-zaa" as they did so.

Immediately afterwards, a third flame-colored ($Q$ and/or juvenile) appeared in the area. Both birds of the pair immediately flew at the newcomer, and chased it away in a long aerial chase, twisting and turning among the trees. One or more of the birds uttered many "Zaa" notes. "Zaa-zaa-zaa-zaa-zaa......." during the chase.

It is obvious, therefore, that these "Zaa" notes are a form of HAC.

Later in the afternoon, one or both of the birds of the pair started to utter HAC Notes (usually in series of 3 or 4 notes) when they were feeding in a tree, when I couldn't see any other bird near them, and wasn't very close to them myself. I think they tended to utter these HAC Notes whenever they came particularly close to one another. It is possible, therefore, that their HAC's also function as GHAC's.

Once, I noticed that the $T$ had a slight trace of CR when he uttered a series of "GHAC" notes. Converse 3a.
Around 5:00 p.m., there was a burst of singing among several of the birds in the neighborhood. The one closest to me was probably the female of the pair I had been watching all afternoon. He gave his song standing on a leafy branch at the very top of a tall tree (well over 100 feet above the ground). I couldn't see his singing posture very well. He seemed to have some CR (but this may have been due to the wind, which was blowing from behind him. Standing at least fairly erect. No CR. The song itself was rattle like the song of the other two. Early this morning

"Kew-kee-gee-kee-gee-kee-gee RRRR Kew-kee-gee-kee-gee "

The number of "Kee-gee" Notes in a single series was quite variable, usually at least 2. The number of CR's also variable. Sometimes only 1 between 2 "Kee-gee" Notes. Occasional "Kew"'s were scattered in roughout. More or less at random, except that each burst of song usually began with a "Kew." The song was not quite continuous this afternoon. Definite pauses between bursts, but some of the bursts were very prolonged, probably including up to approximately 30 notes.

As far as I could tell, the song was not near the tree while he sang.

I think I shall call the pair I watched today "A."
Piranga, I
April 13, 1961

Cerro Punta

I went back to the same area where I watched the Harris-color
colo yesterday afternoon early this morning, ca. 6:30 a.m. ... but the
bush were not around very much, and I was distracted by other
species.

One bird in the neighborhood, probably a T., uttered a little
"Kee-see" - R. "song" when I first arrived, but stopped almost imm.
ediately.

The "Kee-see" - R. vocalizations of this species would certainly
seem to be much less exclusively or characteristically "dawn songs" than
some vocalizations of species of other genera.

Piranga, I
July 28, 1961

Jumila

Copulation of Hepatic Tenagers seen by D. Kow.

9 flew into tree, uttering "Chup" Notes (CN ?) - 9 hopped
down branch beside her, and mounted, without preliminaries by either
bird. (Flo Q)

Another incident. 9 m.b.ing. Collecting n.m. on ground. 9
accompanying her. Constantly facing her, assuming ft, and swaying
from side to side (thus revealing or emphasizing bright throat)
Came across a ? headphone-colored (in adult plumage, back rattle pale on belly) singing near its upper pasture this evening ca. 6:15 p.m. Bursts of "kee-woo kee-woo kee-woo ..." The "woo"s with a definite rattle undertone. Quite conspicuous Never more than 4 or 5 doublets to a burst, occasionally interrupted by single "keeo" notes, apparently at random. "Kew"s probably so with rattle undertone. All songs delivered from high exposed perches. Bird sitting semi-erect. Belly slightly fluffed. Crown and throat probably also slightly fluffed.

Puranga, I

April 15, 1962
Cerro Punta

Two adult ? headphone-colored Purangas hopping about in same bush 6:45 a.m. Continue to stay together for at least 5 minutes going from bush to bush, but remaining close together. Quite near the ground. Apparently not feeding. One or both utter (s) "kee-woo" and "kee-woo." Notes fairly steady. Notes probably slightly softer and more abbreviated than usual during song. Probably also uttered in slightly slower rhythm than usual during song. Not accompanied by any spectacular ritualized postures or movements. Both birds usually in rough semi-bunched postures. Some fluffing of underparts - laterally (revealing gray flanks feathers of one bird). Their fluffing may have been nothing more than a reaction to cold.
Eventually the 2 birds become involved in aerial fight and chase. Possibly 3rd bird of another species involved. Both fight and chase quite silent. Birds resume "Kee-woo" notes after chase.

Probably continue after they separate.

It so this incident is not proof that "Kee-woos" are necessary for battle.

4:50 a.m. Q met-bubbling! Carrying a v. w. on bill. Disappears into bushes. Re-appears. Flies into tree. At this time I hear 3 Q's. Then I see there is a Q a few ft. above Q. Q relents. Includes slight Q (wings not very far out) and at least some ZQ, but Q doesn't get a very good view of the performance as I am almost directly below the Q. Q hops toward Q. Then Q hops away. Q stops soliciting, flies away, Q follows. Both birds quite silent throughout except for the Q's.

This nester probably in a clump of bamboo.

I shall call this pair "X".

8:25. Return to area to find Q X sitting quietly in tree above nest site or pot. nest site area. Quite silent. Does occasional preening.

Q not in sight. Then Q flies away. Then Q appears in almost exactly same spot I had been. Preen, settle. Flies away also.

Q back again 8:45. Probably returned some time ago, but I didn't see her. Q E. she is not soliciting yet. Just preens silently and then disappears again.

Does this species lack a WN pattern?

(I suspect old that the Q's I heard this morning before the copulation attempt were very harsh and mechanical. Very definitely. I didn't notice how many syllables they contained.)

None of the birds I observed this morning uttered anything.
like EN's or FEN's. It is conceivable, I suppose, that this species lacks such patterns.

Punaka - April 14, 1963

Ama uru, upper pasture 6:05 a.m. Still dawn. Hear 1 or 2 hammer-colored uttering "Kee-woo" type song. Probably including X. (?) 9:30 this species does not have a special DC pattern. First burst of song is very brief. No more than a couple of minutes.

Still no sign either X land near west 6:21 a.m.

Now I can hear more "Kee-woo" song in distance 6:24.

Again relatively brief.

Still no sign of X's 6:30.

Occasional bursts of song still heard in distance 6:40 a.m.

Then a couple more R's. Probably not uttered by O. Then Q flies into another tree. Low her with thick vegetation. Then see O. flying down to her. Copulation! I can only see it very poorly, but it was apparently successful. Q may have solicited beforehand; but if so, it must have been very brief. After straight off back Q. No post cop display. Both birds quite silent throughout this whole performance, except for preliminary R's. 7:00 a.m.

This cop occurred in tree about 30-35 ft above ground.

The cop attempt yesterday occurred in another, nearby, tree about 20 ft above the ground. Both trees near nest-site or potential nest-site.

The P X has certainly not sung anywhere near this
copulation next mile area this morning.

ADDITION: I am certain that the male had no time to perform
special pre-coop displays (like the swaying of feathers reported by
Snow) once he started to move down to the female before the coop this morn-
ing.

The male apparently met building at 11:10 a.m. Of one again almost
immediately.

The two X's back together. 14:30. Feeding in tops of trees. Very
high. Then X flies far away, going into low scrub. I remain where
he was. And remains quite silent! It's silently for at least 5 minutes
before disappearing too (I didn't see if he followed the X or not.)

A minute after he disappears, I see X in building again. Then
she disappears again too.

X back again 14:45. Buildets. Then up into tree where coop occu-
red yesterday. Rises. Flies in the tree where coop occurred today. Feeding
quite copiously the X goes back to building. A big bunch is quite silen-
c. Rises. Then follows X when she suddenly flies by. The birds in dead
treetop, feeds. X land in same tree, but a considerable distance away.
Then I lose sight of both birds

X back at 14:55. X sits high in tree above next mile. Quite
silent. X stops n. c. almost immediately. Flies into same tree as X,
about 50 ft below him. It makes no attempt to join her. X does a
little preening. Both birds quite silent throughout. X eventually flies
away. Follows after a second. I am almost certain that the X utters
ed 3 or 4 long-drawn "GHAC" notes just as she flew away.

"Zaanaa zaanaa zaana 3aa." This way have been what we
used the X to follow. (??)

8:04. I suddenly hear a burst of about 5 R's in neighbor-
Head, but can't see the bird(s).

It lands on the near nest 8:19 a.m. Disappears into vegetation.

Putting all my business in top tall tree 2:25, suddenly begins
strutting whole series R's, then flies from tree top to tree top, uttering
many more R's at each place. Almost as if he had suddenly become aware
that he had "left" the q.

Almost all these R's seemed to be "Pi-ti-ti-ti."

Head and throat feathers slightly fluffed during R's. Head look
wiggled for raining of rain.

After continuing R's for a couple of minutes, flew back to the "Kee-


Then R's shut up after about a minute of song.

Suddenly starts R's again 6:40. Just as I approach. Perhaps
reaction to my approach. Stops when I stop moving. Then utters a few-
more, at longer intervals. Then silent. Then flies away. Then flies out of shrubbery below where I had been. Can't be done. Seem to
be around to react to her.

(At 5:25 burst of R's by the 07 also began when I approached
him. Perhaps my approach "wakes him up enough" for him to expr
whatever motivation is getting him?)

I am really rather baffled by some aspects of the behav
or of this species. As far as my evidence goes, it seems quite likely
that R's are produced by thwarting of some sexual motivation.
And the "song" may even be largely hostite. Is this prudent?
If the motivation of these patterns is really, as suggested above, then
the genus is self, distantly, related to other members of the family of
upper family. Have studied in detail.
There is no doubt but that these birds are remarkably silent except for their R's and song. Perhaps due to the fact that they are mainly birds of the tree-tops and brightly colored. They rely upon sight rather than sound.

This may also help to explain why the R and KV of the x pair are no often far apart. They can still see one another at consider-able distances, and do not need to be close together in order to main-tain contact with one another.

If this comparative silence is characteristic of the genus as a whole, it is easy to understand how the summer Tanagers became adapted to play its role in mixed flocks. It was already "pre-adapted" in a sense, easily able to avoid becoming a passive nuclear spec-ies. (The dull general plumage probably also significant in this con-nection.)

Working in Lewis's place this afternoon.

5:00 p.m. A single Flame-colored T perched high in dead tree, Alone uttering both "Kee-voo" song (I shall call each "Kee-voo" "KV" from now on) and Rattles, sometimes in apparently random order, More often in semi-regular arrangement. Sometimes R-KV-KV-R-KV-KV-R-KV-KV... Then often song broken down into slightly distinct phrases, separatedly slight pauses. R leading to occur at beginning each phrase, "R-KV-KV-KV-KV-KV..."

The R's and KV's of this bird also tended to intergrade occa-sionally. Some (not all) KV's with conspicuous rattle undertone. He also uttered peculiar intermediate notes, "Kraaie."
April 18, 1962
Cebo Pintu

Piranga I

Anne near upper pasture 5:45 a.m. Still dark. Raining slightly. Going to be a bad day - weather-wise.

Near first swatches KV song 6:05 a.m. Still far from light. All song now seem to be pure KV. No R's. Possibly an indication that KV is higher intensity than R?

Can hear at least 2 birds uttering KV song.

Swatches of song relatively short.

One bird (possibly XA) gives KV song 6:07-6:11 relate w/ low vs. some slumbering. Probably not more than 20 ft. above ground. Presumably on or near roost. Then apparently flies to higher perch. Does a little more KV song there. Then shuts up. Unfortunately, I could not see it at any time during the performance.

First R heard in a song 6:15 a.m.ingu, not followed by others. Bird becomes KV's as before.

Song almost stopped 6:30 a.m. Just an occasional KV in distance.

6:40 a.m. Now 1 of (at least) 2 uttering KV song with quite a few R's interjected. Again R's tend to occur as first note usually, after a pause in the song. Bird far away so I can't see it well. Sticking more or less erect top dead tree. Wings probably slightly droop ed, but no other special wing movements.

Still no sign of XA near nest 6:44 a.m.

Song apparently stopped completely by 6:50.

Rain coming down quite heavily.

4:15 a.m. O'X mushroom appears. On perch only a foot