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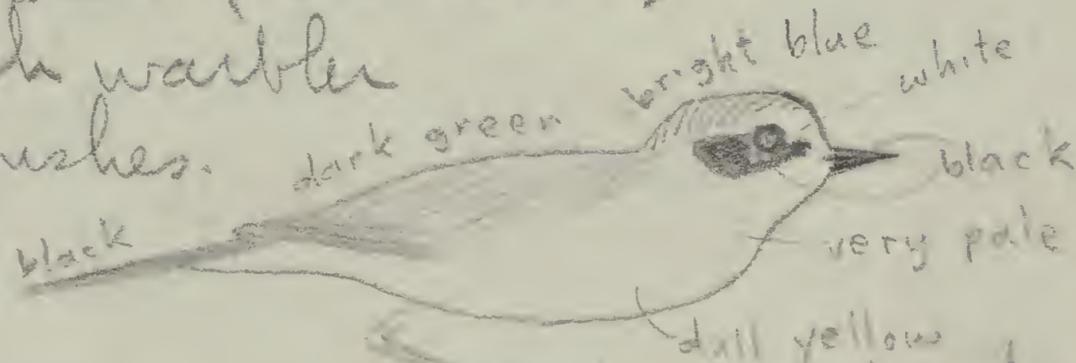
25 Jan. /62

Office Memorandum • UNITED STATES GOVERNMENT

TO :
FROM :
SUBJECT:

① In lush vegetation
(at km 69-70, about 15 km below Matucana).
- Looked like a languish warbler
- feeding in low, dense, bushes.

DATE:



② Just below San Mateo -

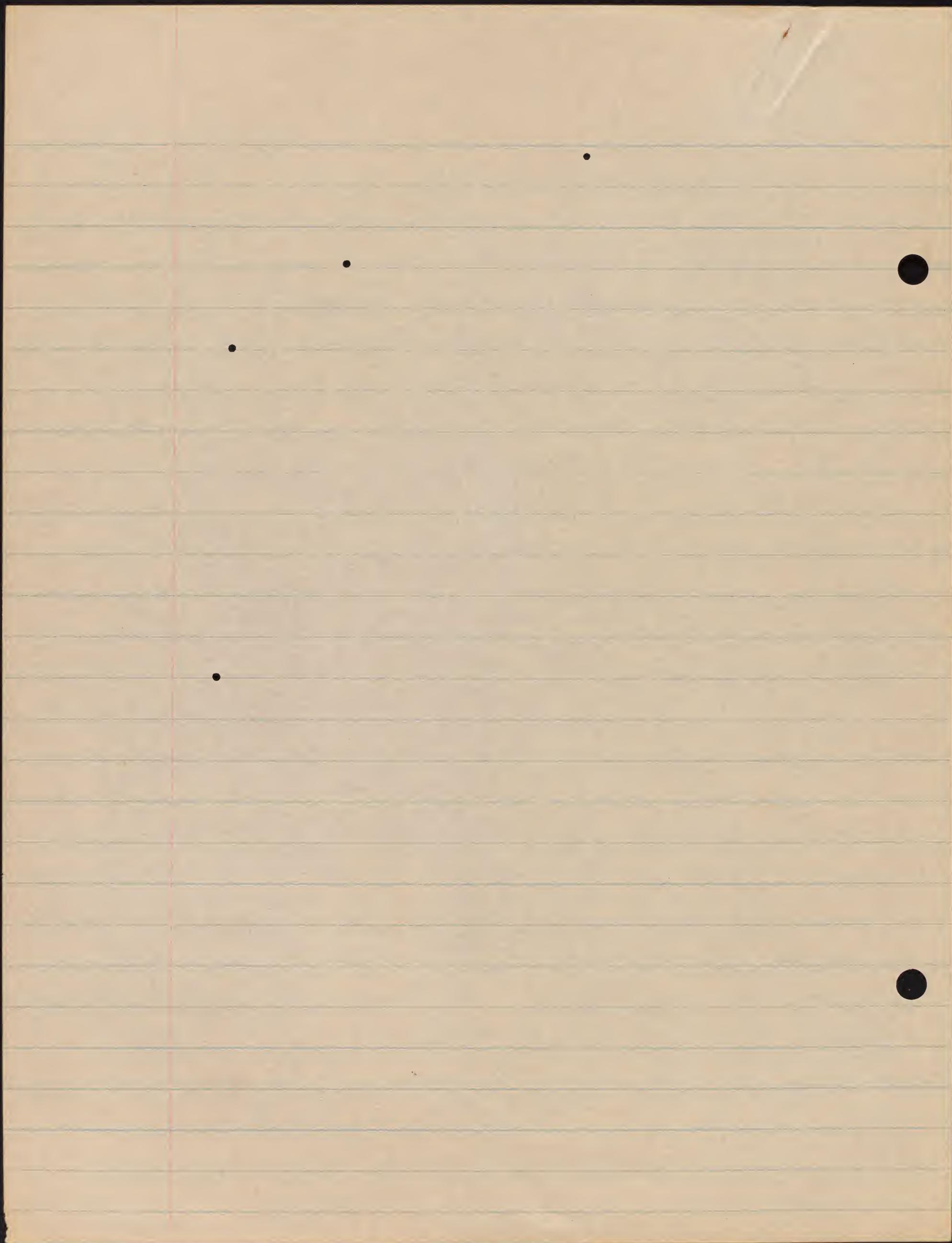


in planted Eucalyptus in 10-15' dense bushes -
coerebid-like, active bird; fairly frequent
wing-fluttering; fed near ends of branches.
"Sang" much, an unclear whistled sequence:
"tree tree tree tree tree tree"
mi mi mi mi mi

Also sometimes called "tchip" in flight or when
giving flight intention movements.

Catantemnia

Species identified near Quito are mornata and anelis.
homochroa looks rather like mornata, but bill is
much smaller. Bill probably light colored in life. ♂'s darker
than mornata, slightly brownish, no streaking on back.
♀'s darker and more olive than mornata, little or no streaking
underneath.



Paroaria

AMNH

1 captive bird obviously gularis nigro-genis

2 captive birds are presumably g. gularis, but all specimens here are red-headed

capitata is similar to gularis but bill all light, white collar almost complete also light legs. Little or no black on face. Probably no crest.



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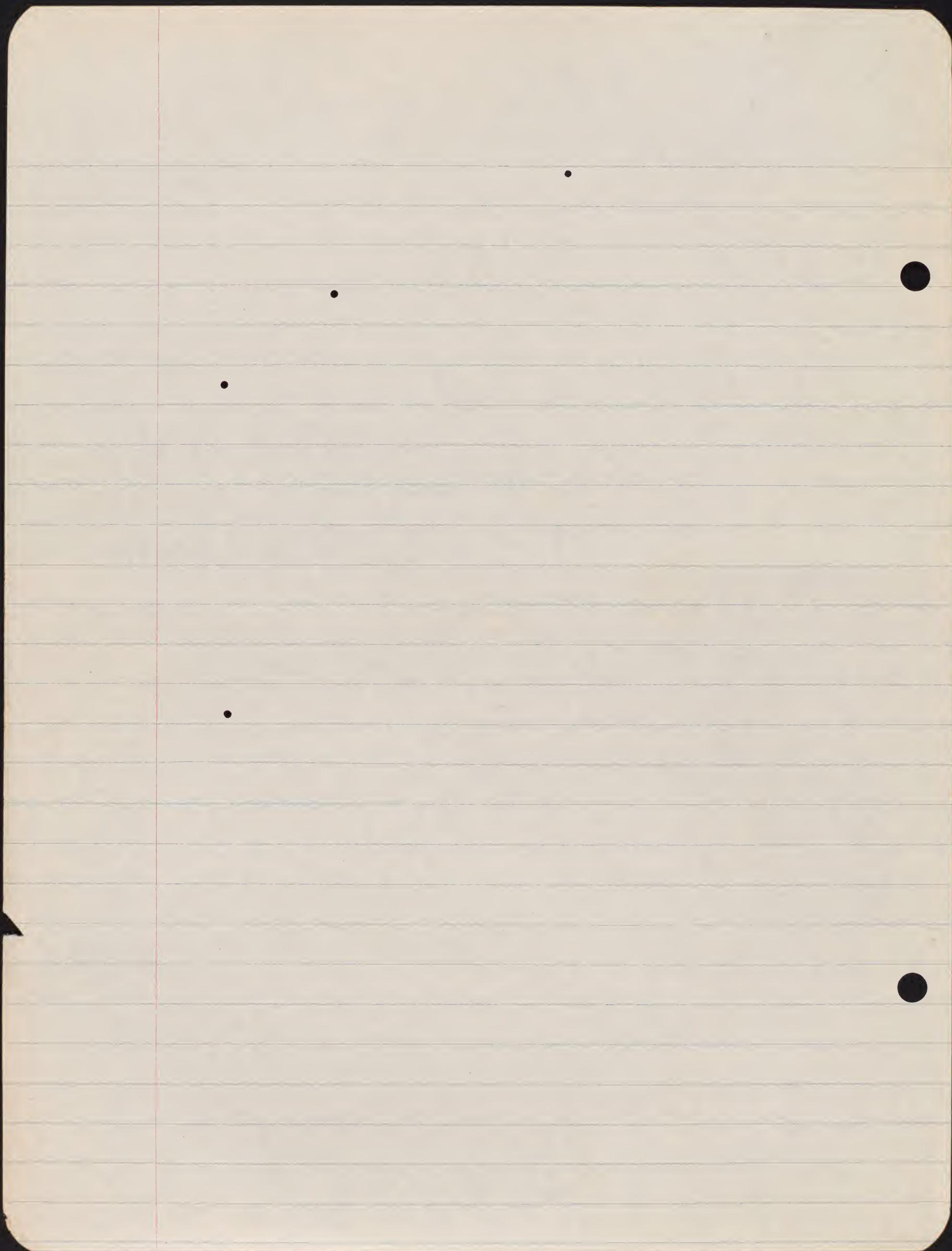


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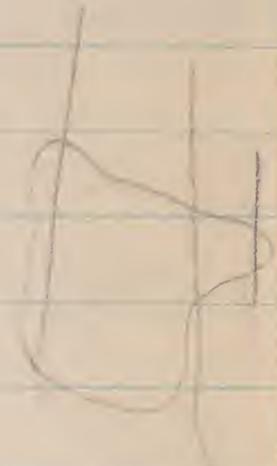
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1. Chlorospingus .
2. Atlapetes + Anemon + Pycopetes
3. Saltator + Anemonops + Rhamphocelus
4. Piranga + Phaeucticus
5. Tyrannus palmarum + verreauxi
6. Tangara
7. Tyrannus boarumensis + Ptiliophonus
8. Pocolothraupis
9. Cinnopus
10. Tachyphonus
11. Damsis - Cyanerpes - Chlorophanes
12. Conuropterus - Coereba - Diglossa (incl. Diglossopsis)

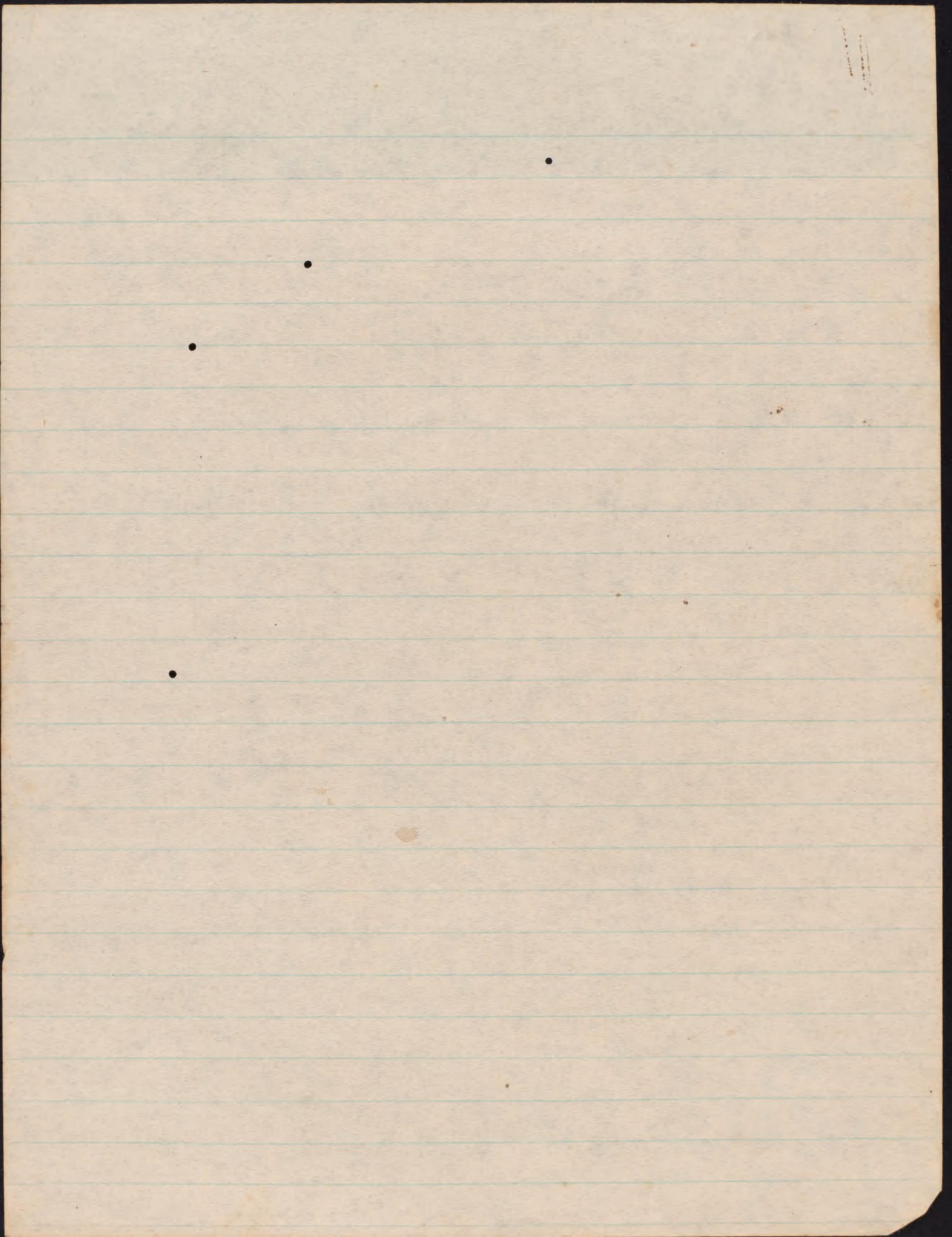


During the last couple of years, I have been studying the evolution of the social behavior of several groups of neotropical birds. In this connection, it has been necessary to trace the correlations between the ecology of the birds, their general social organization, and the particular types of ritualized display behavior they have developed.



Change from an idea of how to

- | | |
|---------------------------|---------------------------------------------------------------------------------|
| I. Cardueline Finches | <u>Spinus</u> |
| II. "Typical" Buntings | <u>Volatinia</u> , <u>Ammodramus</u> ,
<u>Phrygilus</u> , (<u>Tiaris</u> ?) |
| III. Bush Finches | <u>Atlapetes</u> , <u>Aimophila</u> |
| IV. "Red" Tanagers | <u>Piranga</u> , <u>Thraupis</u> |
| V. Blue & Green Tanagers | <u>Thraupis</u> , <u>Tangara</u> |
| VI. Tanager-Honeycreepers | <u>Cyanerpes</u> , <u>Chlorophanes</u> |
| VII. Swallow-tanager | <u>Ternia</u> |
| VIII. Euphonia | <u>Tanager</u> |



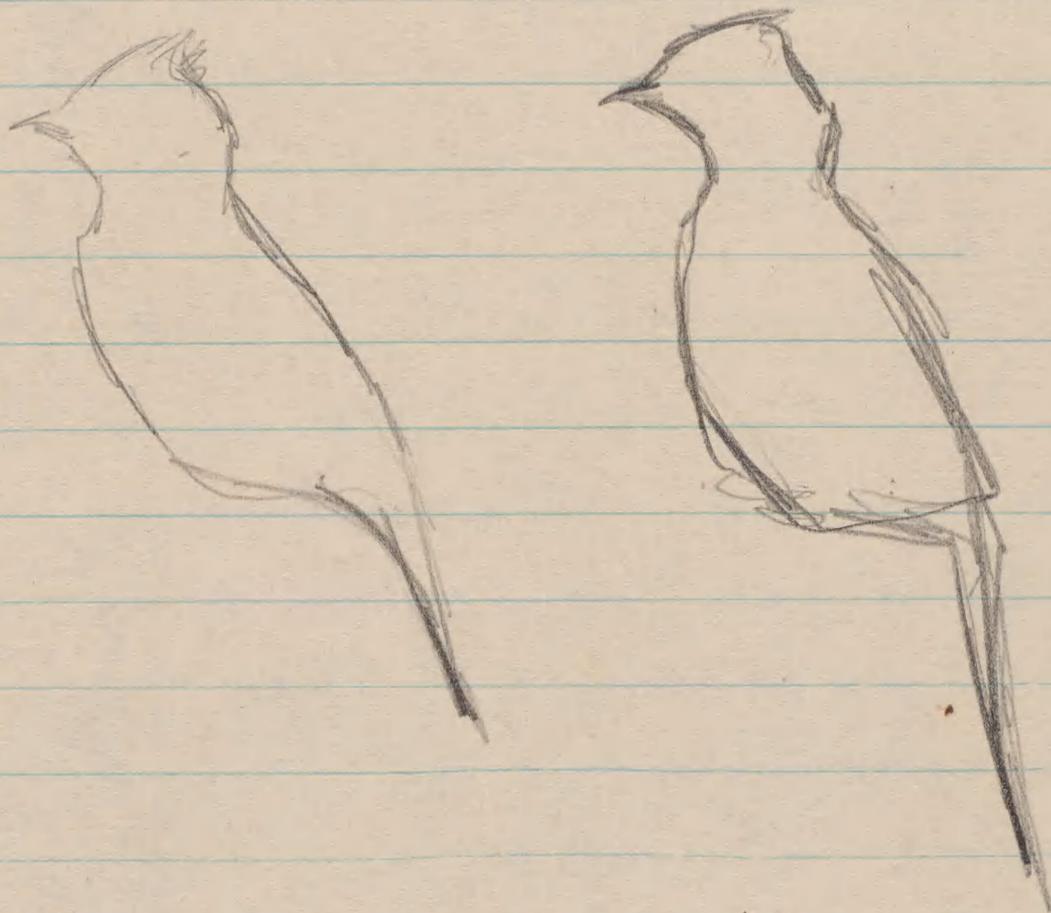
Volatunia

Mrs. Alderton

HAC "greeting" when ♂ returns to ♀ on nest. Initiated by both birds. Also HAC "greeting" between mates away from nest.

Height of App apparently correlated with ♂'s position vis a vis the nest.

App by neighbouring ♂'s disputing with one another



Yellow-belly.

♂'s Song increased after his mate disappeared.

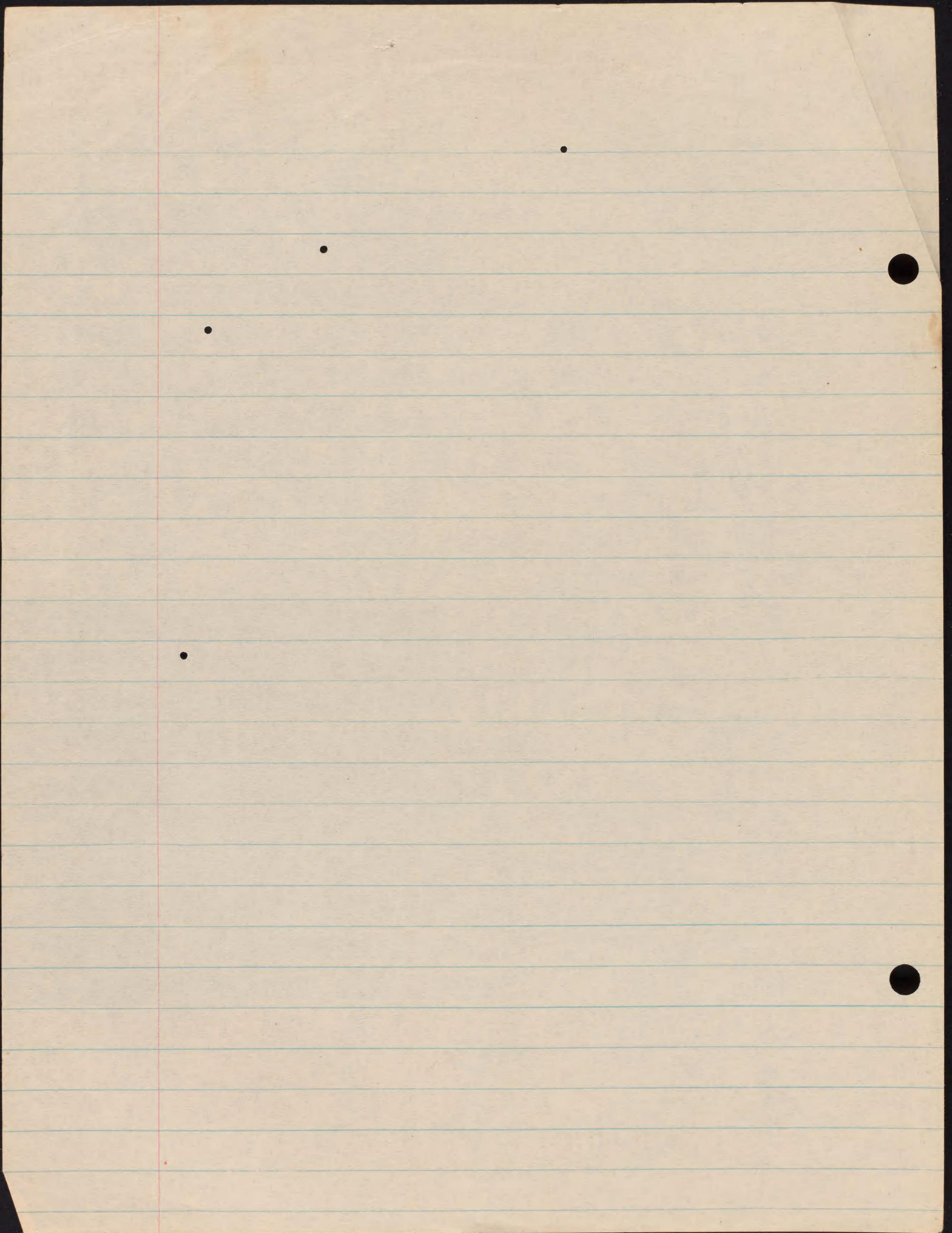
♀ ♀.

♂ & ♀ facing each other, picking at each other's bills
with soft rapping sounds

♀ making soft twittering sounds.

♀ Cluttering call.

Blue & Red = *Poecilothraupis squameata*
Thraupis episcopus = Blue Tanager Squates



March 8, 1959
Cerro Punta

Black head. Tufted or ragged white supercilium, stripe stretching all the way down side of black head. White throat greenish olive above, including back, rump, wings & tail. Below whitish, marked with yellowish olive, becoming quite dusky on sides. Bill black. Legs nondescript (grayish?).

At least 4 of these birds were moving along with a mixed flock of Collared Redstarts, Slate-throated Redstarts, Wilson's Warblers, Yellow-throated Tanager, Yellow-throated Atlapetes, & one Ruddy Tree-mummer (Margarornis rubiginosus). At approx. 7000 ft elevation (probably a little below) in heavy second-growth brush, scattered with trees.

General actions very Parulicentrus-like or Chlorospingus-like. Frequent & quite extreme WF's of the usual type. Frequent but slight TF's. Quite lateral, seeming to be little more than continuations of the body pivoting. Probably slightly V-D in most cases. Uttered single little weak "Trit" or "Whit" notes as they moved through the bushes more or less slowly. Uttered an accelerated series of 3 or 4 of these notes, once, when making a relatively long flight to an isolated tree.

At one time, a fight apparently broke out between 2 or 3 of these birds, low down in a bush where we could hardly hear them. Accompanied by definite HAC of the usual tanager or finch type.

1897

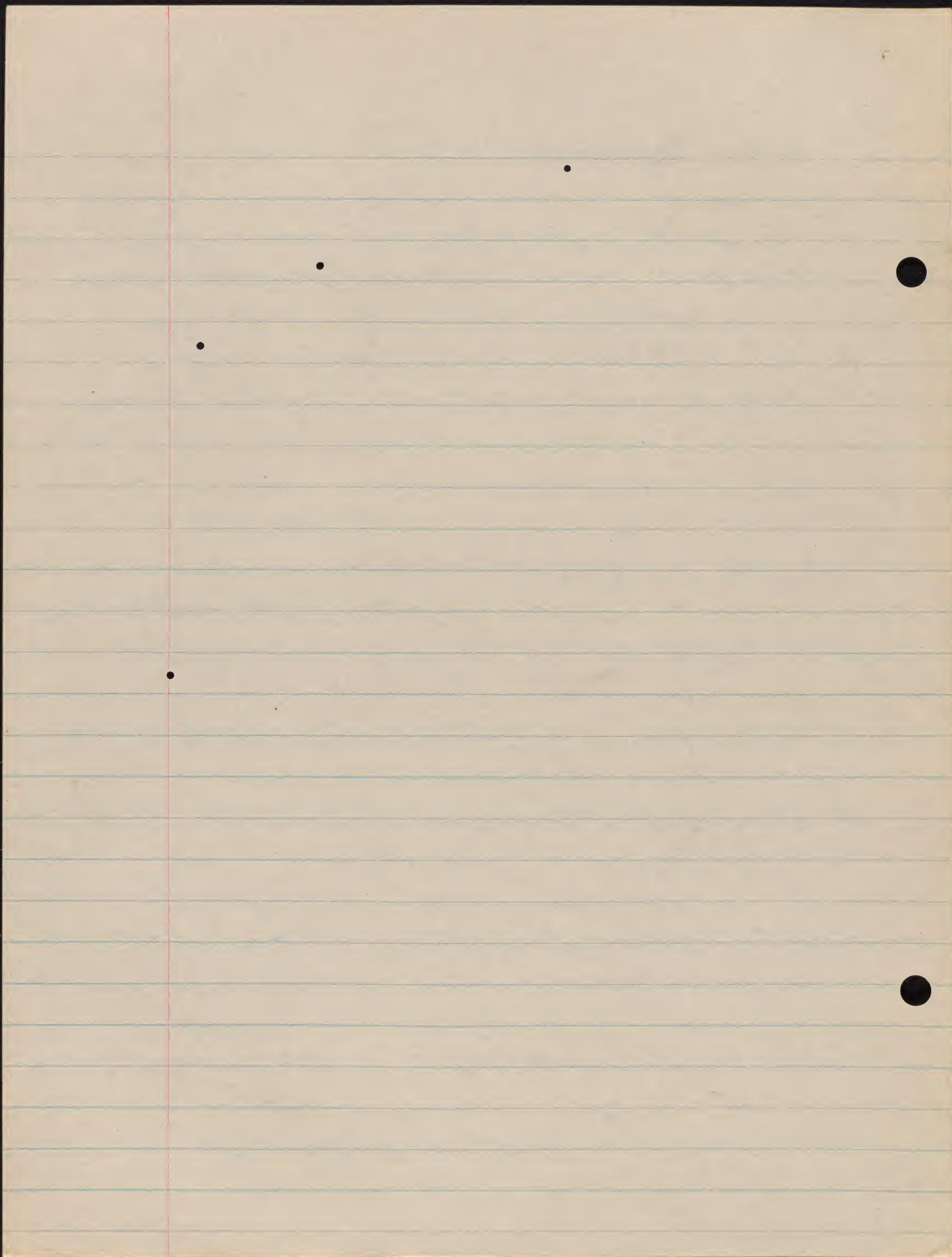
PLAIN TANAGER ASSOCIATION

1 Plain following 2 Blues

1 Slatey ant-strike (♂) following 1 Variable seed-eater (♂) following 1 Plain.

* 1 Plain not following 1 Golden Mane.

1 Blue following 2 Palms.



Feeding Experiments

Same Coati ♂

{ 2 adult ♂ Variable feeder
1 ♂ Variable in almost complete adult

plumage
1 ♂ Variable in transitional plumage

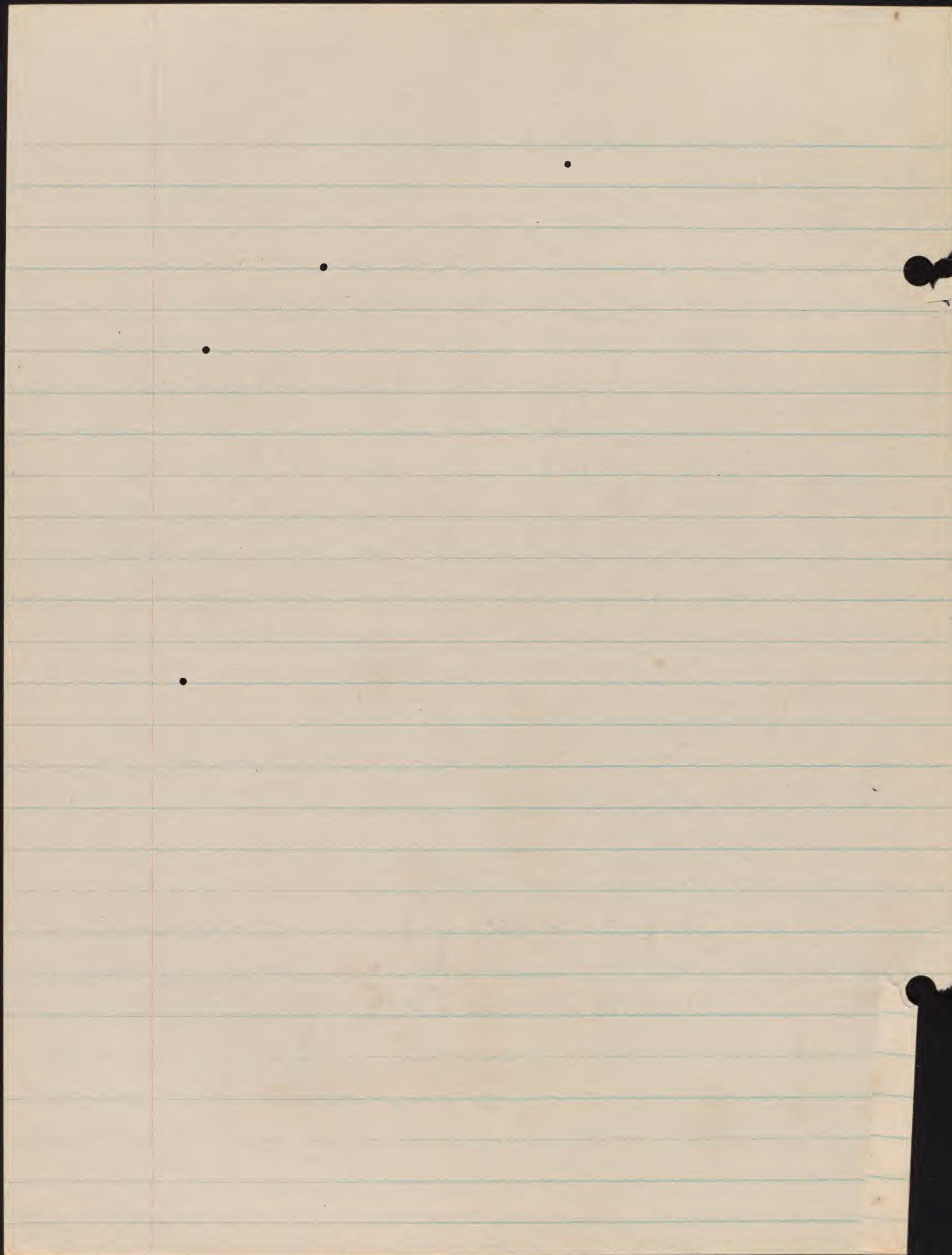
1 ♀ Variable

1 ♂ Yellow-belly in almost complete adult
plumage

Three Marmosets

2 ♀ Variables

1 adult ♂ Blue-black



Variables

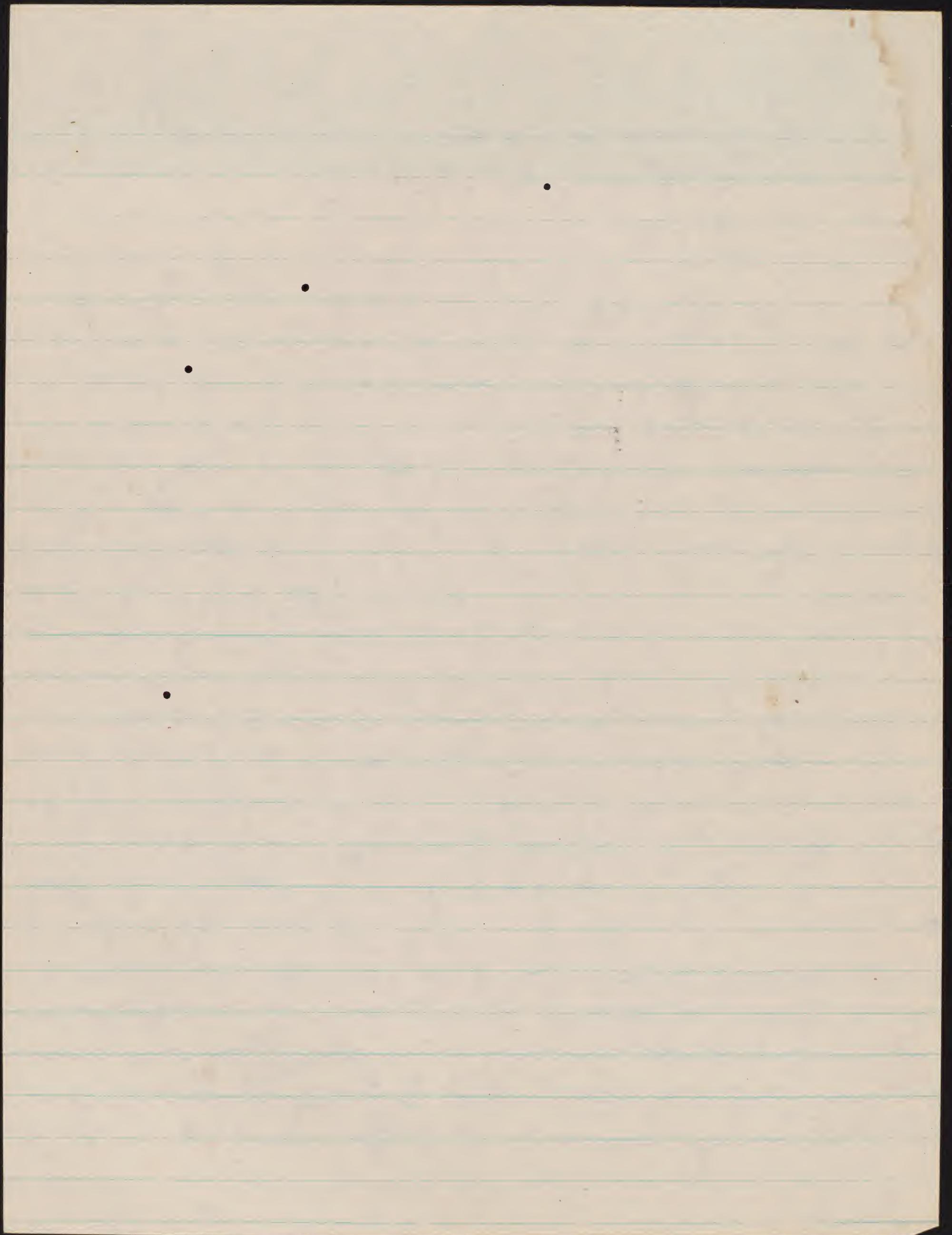
3 adult ♂'s

1 intentional ♂

3 adult ♀'s

Blue. Blackies

1 adult ♂



January 15, 1958,
Barro Colorado.

THE GREGARIOUSNESS OF THE PLAIN TANAGER, AND ITS POSSIBLE ROLE IN MIXED FLOCKS.

The Plain Tanager is the most remarkable tanager around here.

It can be distinguished from all its local relatives by several characters, i.e. its dull and simple color pattern, its extreme gregariousness, its extreme restlessness and mobility, and the extreme frequency and rapidity of its Call Notes.

The color pattern is quite unlike that of most other tanagers and honeycreepers (even the most emberizine-like forms); but it is not very cryptic. (Female Green Honeycreepers and Dacnis are probably less conspicuous in the tree-tops than Plain Tanagers.)

The restlessness is peculiar, insofar as a flock will often leave a desirable food source (e.g. Cecropia) before the food is exhausted, fly to another source (e.g. another Cecropia) which is essentially identical with the first, and then return to the first source again. All this in a matter of minutes. The Plain Tanagers often seem to move just because they "like" moving --- when it isn't really "necessary" from a practical point of view.

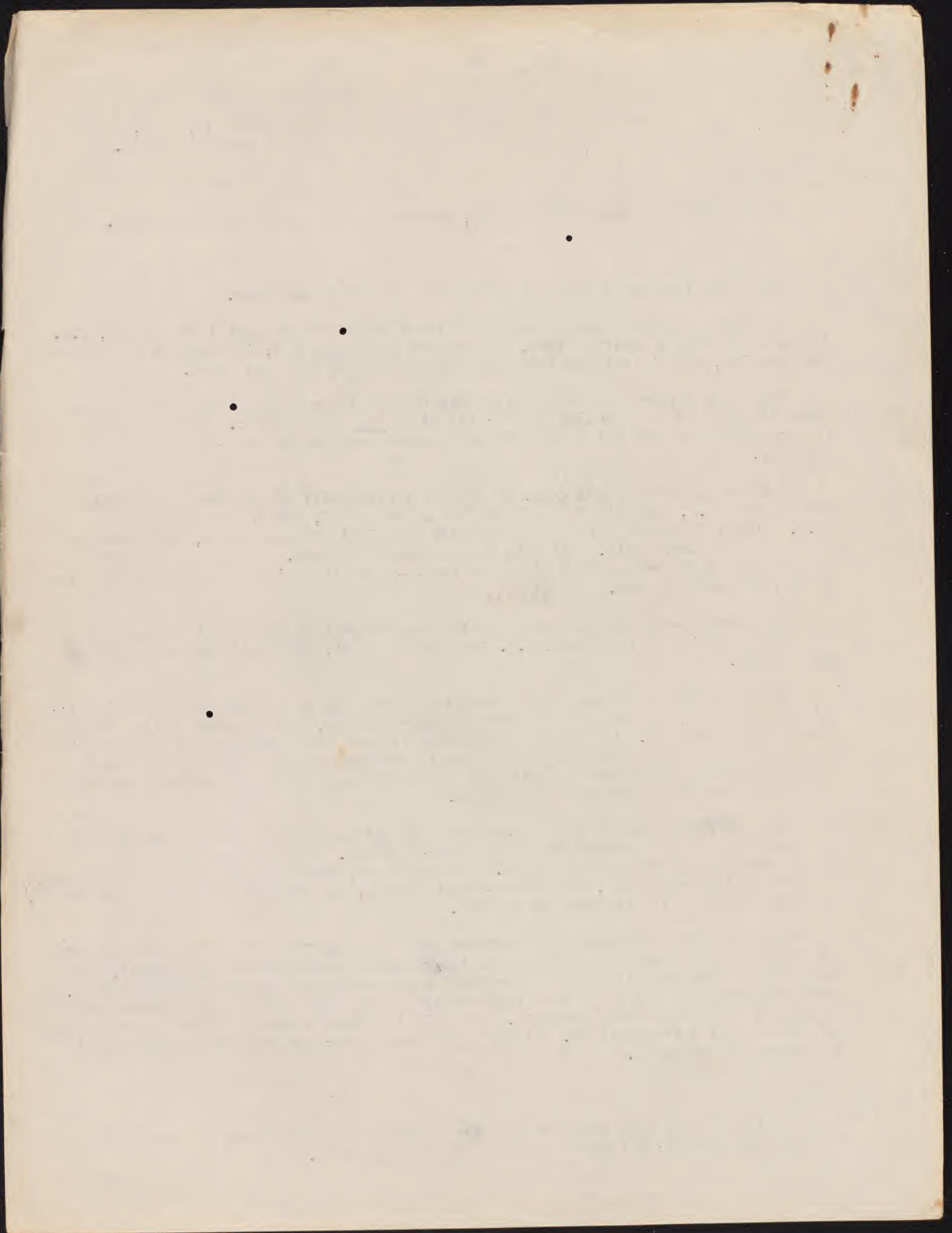
The restlessness and the "exaggerated" Call Notes (and the bright wing-patch) all seem to be "designed" to induce, i.e. take advantage of, the "following response" of other birds.

These characters must help to maintain the cohesion of a flock of Plain Tanagers; but they may also help to attract birds of other species, keeping them in the vicinity of the Plain Tanagers. (If it is advantageous for the Plain Tanagers to aggregate in groups --- as it obviously must be --- then it may well be advantageous for them to increase the effective size of their flock by attracting all the other birds of roughly similar feeding habits in the neighborhood.)

Blue and Palm Tanagers (whose coloration is also comparatively dull and simple) may become "integral" members of a Plain Tanager flock. Blue Honeycreepers and Ultramarine Dacnis may follow a flock. Other species, including the Green Honeycreeper, the Scarlet-thighed Dacnis, the Golden-maned Tanager, and at least one species of oriole, may hang around in the vicinity of a flock.

It should be noted that almost all the birds more or less closely associated with the Plain Tanagers here are largely blue and/or green (usually with some black), and that many of them are brighter or more intricately patterned than the Plain Tanagers. This might suggest that the peculiar coloration of the Plain Tanager has been evolved because it is more or less "neutral". It can't look too "strange" to the other species; but it is still quite distinct. It won't provoke escape; nor will it release sexual or aggressive responses.

(It is possible that the Blue and Palm Tanagers have evolved in the same direction as the Plain Tanager; but they seem to be less specialized.)



POSSIBLE PHYLOGENETIC SIGNIFICANCE
OF TAIL MOLT

It might just be mentioned that a surprising number of my finches seem to have lost all their tail feathers at the same time. Including:

- 1 adult ♂ Volatinia
- 1 adult ♂ Yellow-banded Grassquit
- 1 young ♀ Sporophila aurita
- 1 young ♀ and 1 adult ♂ S. nigricollis



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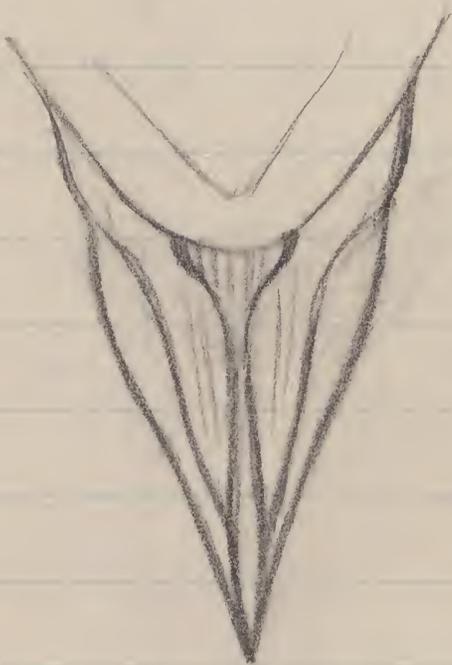
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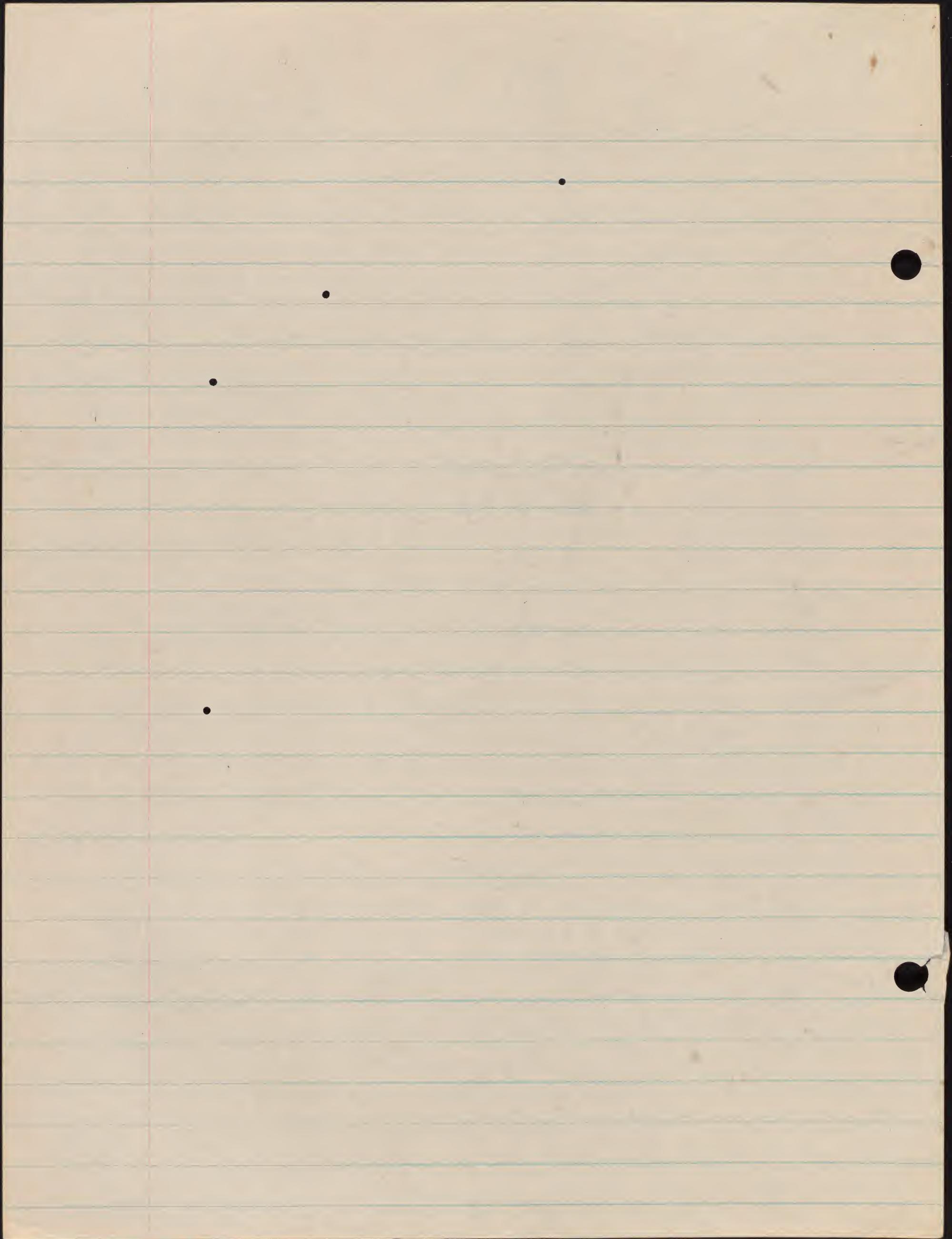
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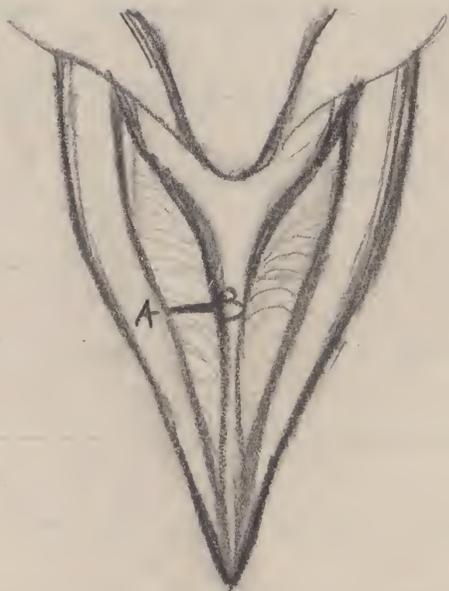
HORNY PALATE



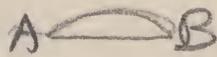
Volaterra jacinini
adult ♂
July 27, 1958

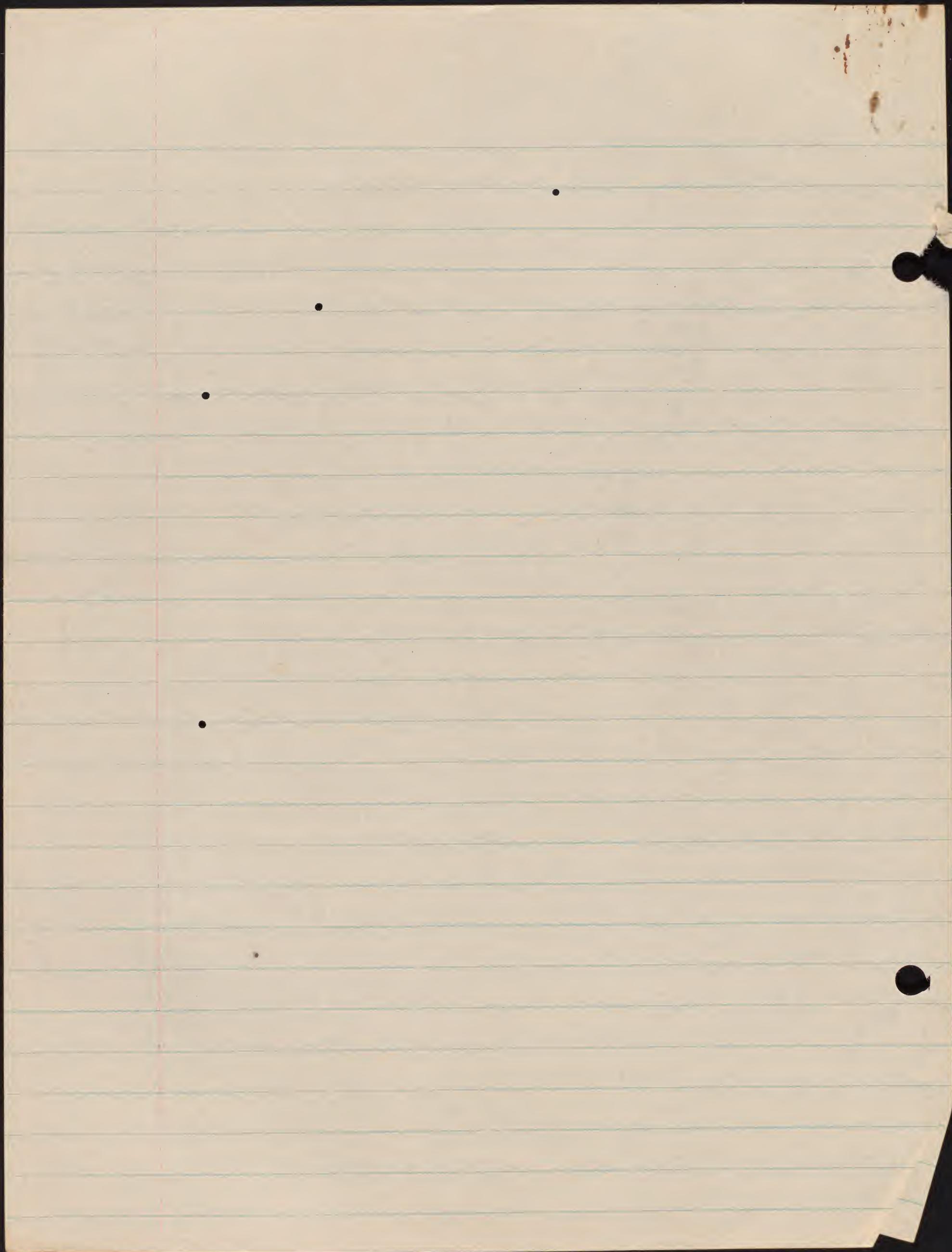


HORNY PALATE



Sporophila nigricalles
Young ♂, molting into
adult Plumage, July 19, 1958





The nature of

• Consummatory situations,

THE CONSUMMATORY STIMULI OF ~~SOME VOCALIZATIONS OF BIRDS~~

with special reference to ~~the~~ vocalizations of ~~some~~ birds
by some

M. Moynihan

(Canal Zone Biological Area, Panama Canal Zone)

INTRODUCTION

The performance of certain behavior patterns, which have been called "consummatory acts" (see Lorenz, 1950), is usually followed by an obvious and rapid drop in responsiveness to the stimuli releasing the patterns, an apparent decrease of "internal motivation", "reaction specific energy", or "specific action potential". The precise nature of this effect is still debatable (see, for instance, the discussion in Bastock and Blest, 1958), but it has usually been thought to be the direct and inevitable result of the mere performance of particular movements. Bastock, Morris, and Moynihan (1953) have suggested, however, that it is not the performance of a consummatory act alone which brings about the apparent drop in motivation, but rather the reception of certain "consummatory stimuli" during or after the act.

Some vocal patterns of certain Central American passerine birds may be of interest in this connection; as they may be terminated by the reception of consummatory stimuli from the external environment without the performance of any activity which might be considered a consummatory act in the conventional sense of the term.

These patterns have been studied in several species on Barro Colorado Island and the mainland of the Panama Canal Zone, and adjacent areas in the Republic of Panama.

DESCRIPTION OF AN APPARENTLY TYPICAL CASE

The so-called "song" of the Blue Tanager (Thraupis episcopus) may be taken as an example of the type of pattern to be discussed here.

The sound of this song has already been described by several authors (e.g. Eisenmann, 1952; Skutch, 1954). It consists of a moderately long and complex, but not very melodious, single phrase.



It appears to be uttered in a considerable variety of social situations; and may be produced by the thwarting of several different kinds of motivation. It seems to be most common as a social signal between the members of a mated pair. As such, it is apparently confined to males; and usually or only uttered by a male when he has become slightly separated from the female.

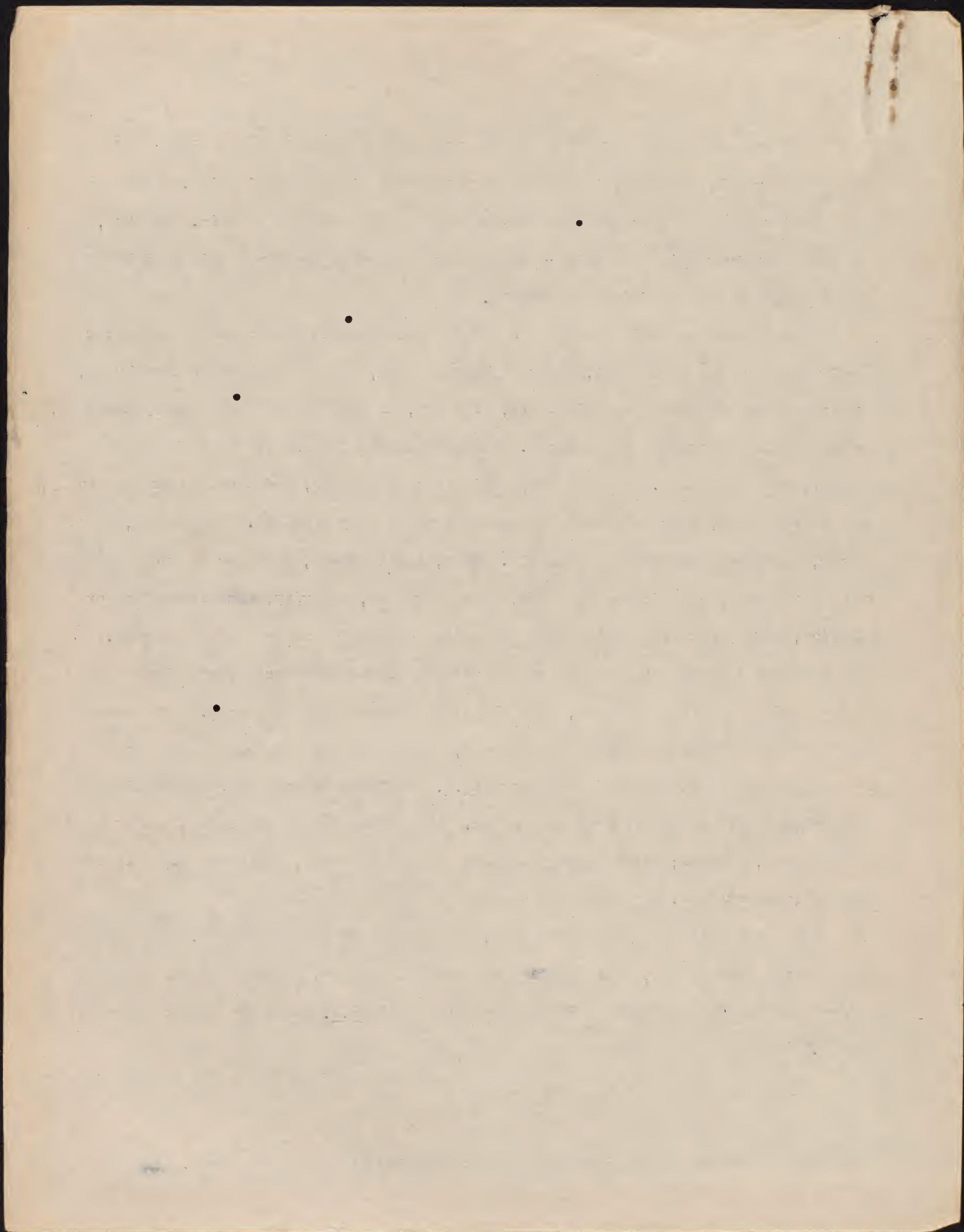
The male usually begins to sing as soon as the distance separating him from the female is more than a few feet, and continues to sing, repeating phrase after phrase, as long as she remains within sight (or, at least, as long as she stays fairly near him, and he remains aware of her presence). This singing is largely independent of the cause of the separation. The male may begin to sing as soon, and continue as vigorously, when he moves away from the female as when she moves away from him. (There are, of course, exceptions to this general rule. When, for instance, the male has moved away to perform some particularly energetic, high intensity, activity, such as feeding or fighting, he may put off singing until his other activity has declined or stopped.)

The most interesting singing performances are those which are induced by the female moving away from the male, when she remains nearby for some time. The male may then continue to sing throughout this period, ^{without making any attempt to fly to or join the ♀} without any appreciable decline in the apparent intensity of his performance (i.e. the loudness and frequency of his phrases), no matter how prolonged it may be. (It seldom lasts more than three or four minutes, however; as the female usually rejoins the male, or flies away into the distance, before then.)

When the female does rejoin the male, his singing stops immediately. He usually just relaxes immediately, sits quietly in a resting posture, or does a little preening and/or other comfort activities in a perfectly normal (i.e. obviously "autochthonous") manner.

DISCUSSION

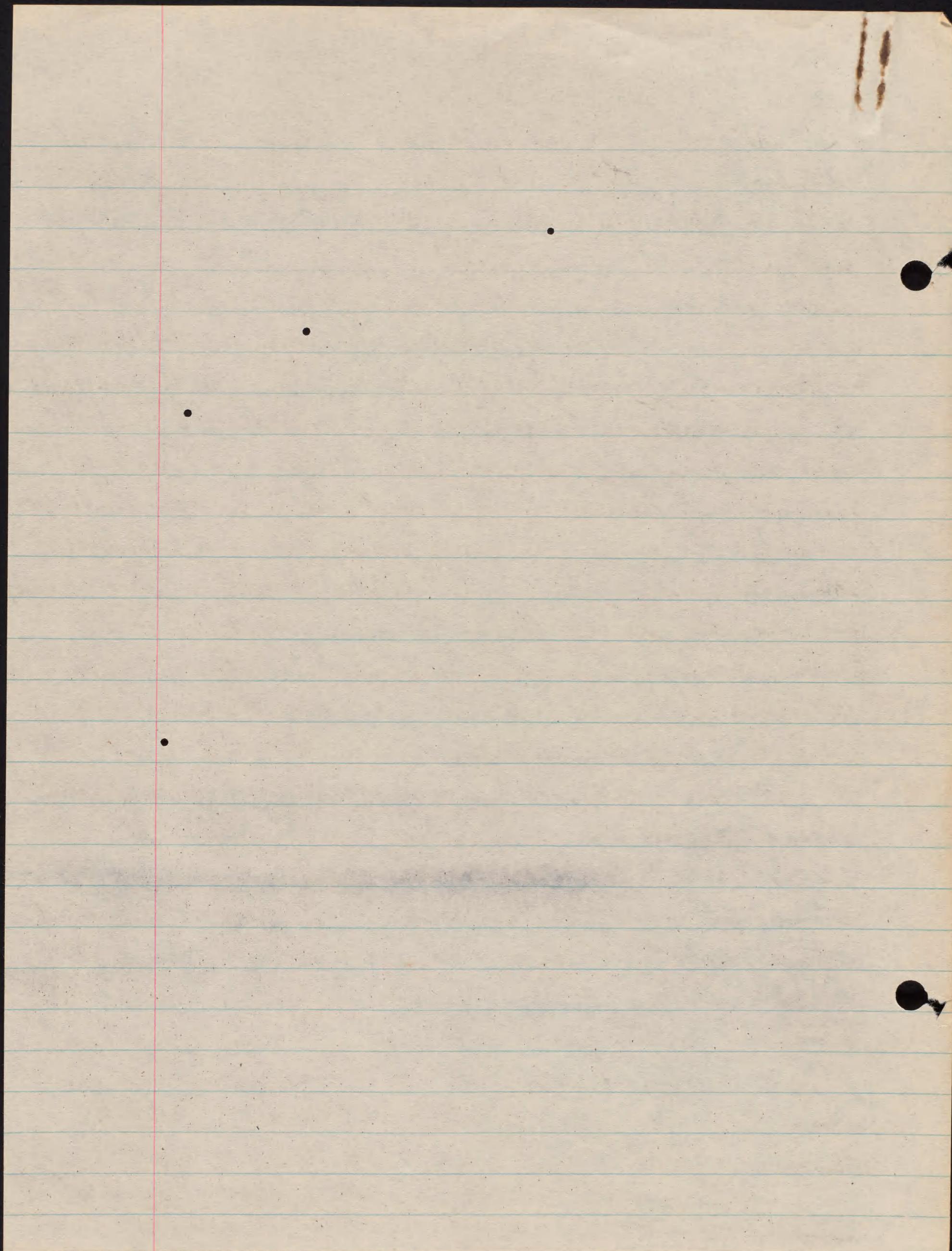
This singing cannot be interpreted in conventional ethological terms. ~~Will~~



It cannot be reconciled with Lorenz's famous "water tank" analogy (his comparison of motivation to a fluid which accumulates within an animal, to be released or discharged only by the performance of specific acts), or with the usual division of behavior patterns into appetitive & consummatory acts.

Many of the songs given by males separated from their mates may be considered appetitive, insofar as they do not bring about any appreciable decrease in motivation, i.e. responsiveness. The performance of such songs cannot be said to "exhaust" any ^{considerable amount of} motivation, as the singing is continued indefinitely as long as the appropriate releasing situation is maintained. Other songs, morphologically identical and produced by the same causal factors, may be considered consummatory, insofar as they do bring about an obvious drop in motivation, leaving the performing bird in an apparently perfectly "satisfied" state of relaxation when the singing ends.

It is obvious that the "aim" of all this singing is to bring the performing bird into a particular "consummatory situation", i.e. a situation which will provide the correct consummatory stimuli. In this case, the consummatory situation is a particular physical relationship with another bird.

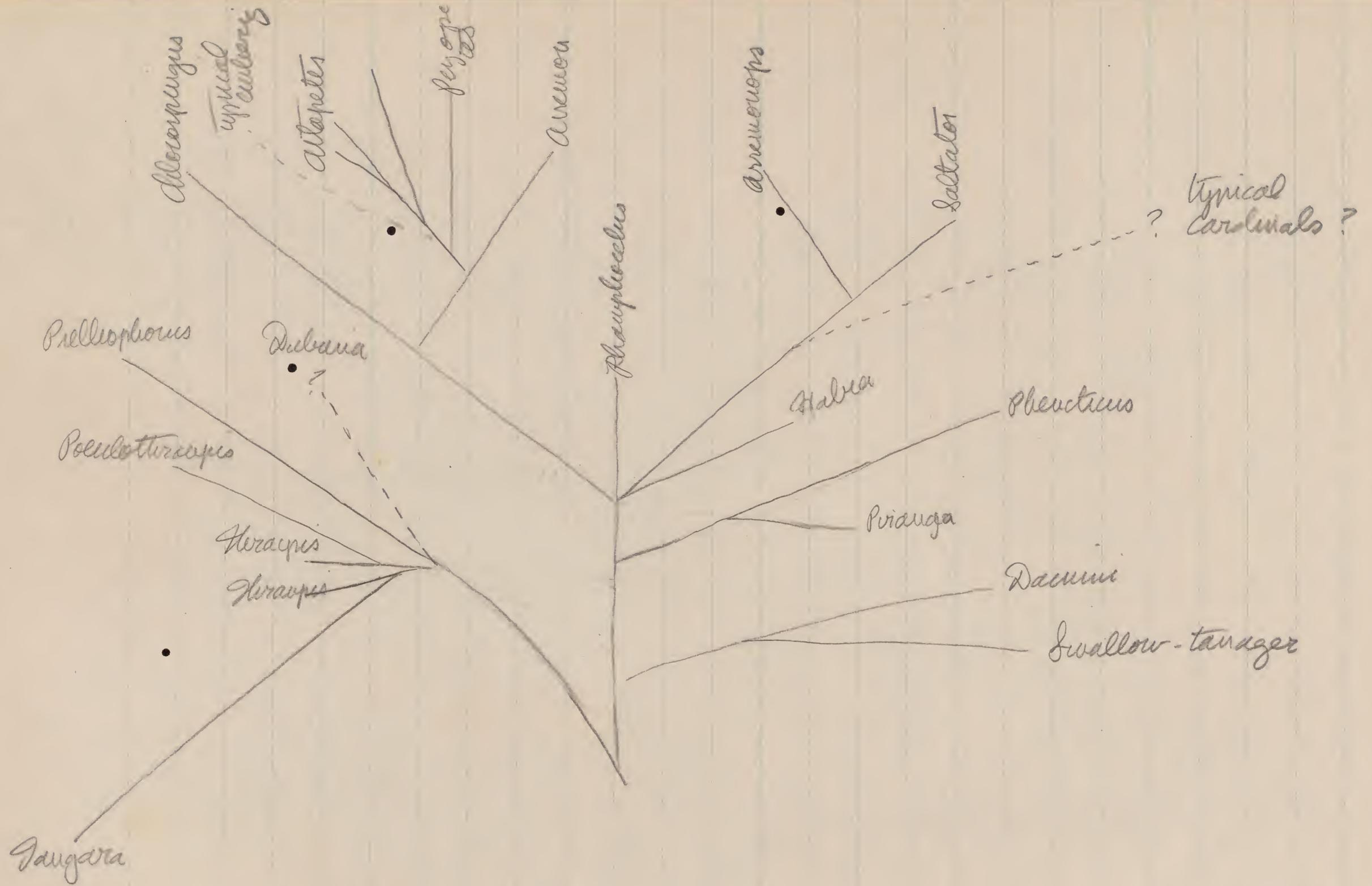


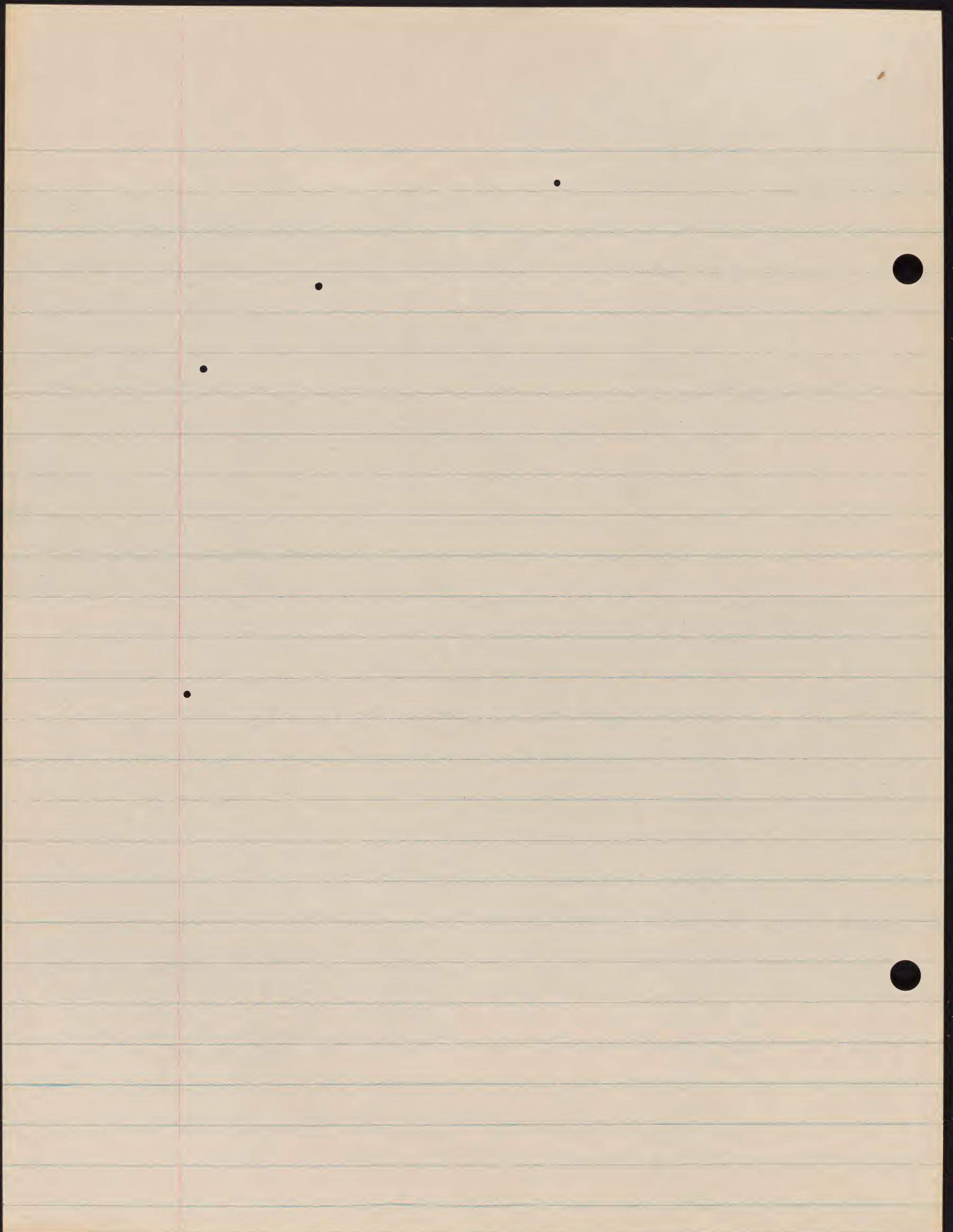
Its production & cessation are difficult to reconcile with Lorenz's famous "water tank" analogy, his comparison of motivation to a fluid which ^{accumulates and is stored} ~~building up and being stored~~ within an animal, to be released or discharged only by the performance of specific acts. It is also impossible to reconcile with the usual division of behavior patterns into appetitive behaviors & consummatory behavior patterns (see the discussion in Hinde, 1953, for the best description of the supposed distinctions between these 2 types). Many of these roles given by σ 's separated from their mates may be considered appetitive, insofar as they do not result in an appreciable decrease in motivation or responsiveness (as shown by the fact that they may be repeated indefinitely as long as the appropriate releasing situation is maintained). Other roles, morphologically identical and produced by the same causal factors, may be considered consummatory, insofar as they do bring about a drop in motivation, leaving the performing bird in an apparently perfectly "satisfied" state of relaxation. Thus, the mixing as a whole may be appetitive or consummatory depending upon the reaction it produces. (Hinde, loc. cit., ^{in another bird} has pointed out that there are some patterns which are known to be intermediate between typical consummatory patterns and typical appetitive patterns in one way or another, but he does not cite patterns which may be either appetitive or consummatory ^{at one time} ^{at another} depending upon different external circumstances).

It is obvious, in fact, that the "object" of this mixing is to bring the performing bird into a "consummatory situation", in this case, a particular physical relationship with another bird.

The most peculiar feature of this pattern is that it ^{does not} ~~cannot~~ itself determine whether it will be consummatory or not.

This depends entirely upon the behavior of molten lead.





June 17, 1961 Frijoles

I Tachyphonus rufus

1 bird. Eyes open. Well feathered. Primaries & tail feathers coming out of sheaths. Forehead still covered by pinfeathers.

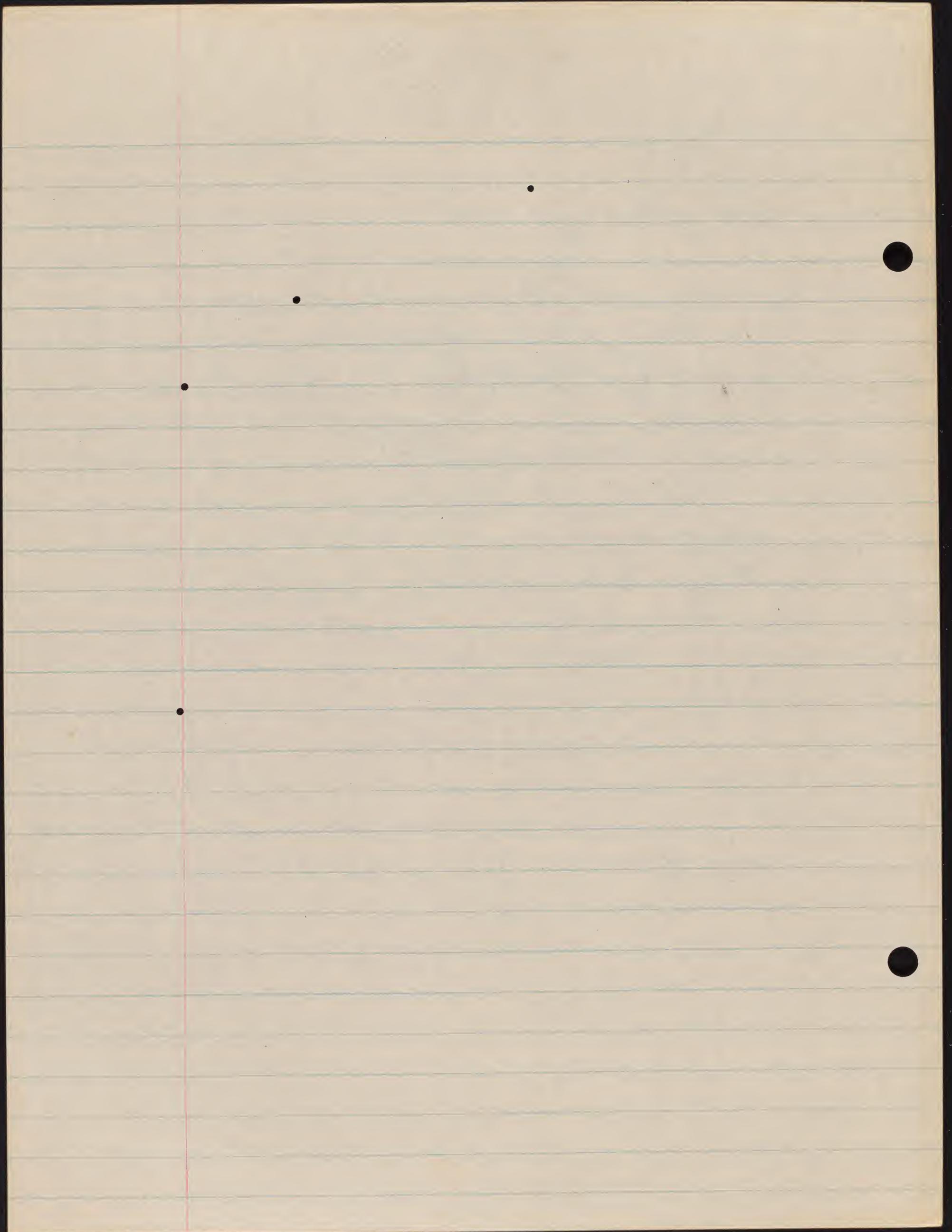
Nest on top of stump. Approx. 2 1/2' above ground. Surface of stump roughly circular, approx. 1 1/2' in diameter. New shoots growing out of stump, approx. 2 1/2' high. Nest touching two shoots on one side, quite exposed on the other side.

Stump in the middle of rice field. Approx. 50' from the nearest second-growth scrub. Field bordered by scrub, a few trees, on all sides. Stump itself on upper edge of a steep bank.

II Saltator albicollis.

2 birds. Eyes closed. Downy.

Nest in crotch small sapling. About 3 ft. above base of sapling. Sapling leaning over water, at base of RR embankment. Grass and scrub behind it on the embankment. Rice field on other side of pool. Very mixed copeland, breadfruit trees, second-growth scrub and forest extending in all directions further out.



Martin -

I'm leaving you these tapes; they're recorded at 15"/sec., so on your tape recorder you'll only be able to hear them at $\frac{1}{2}$ speed (which is useful to study the structure of a call) until you can get the machine adapted to 15"/sec (which I think you need). They can also, of course, be used for audiospectrographs.

For high frequencies

(1) *Tanagridae*:

a red and black Euphonia recorded in second growth near Guayaquil, Ecuador, 31 January, 1962.

(2) *Tanagridae*:

a similarly patterned yellow and dark blue Euphonia "chattering", recorded at the same time and place. (So far as I know, this one does not have the harsh call of the other, but a clear "song" of 4 or more notes, whistled.

pattern sketched at bottom of pg.

(3) *Thraupis palmarum* - Panama, Rio Piedras, last field before ford, 20 Feb., 1962, call of one bird flying overhead.

(4) *Thraupis episcopus*. Panama, mouth of Rio Piedras; 22 Feb., 1962 - pre-sunrise "singing" at 0620.

(5) *Saltator maximus*. Panama, Rio Piedras; 24 Feb., 1962 - fight and chases in bushes, 3 or possibly 4 birds.

(6) *Ramphocelus icteronotus*: Panama, Rio Piedras (near mouth); 23 Feb., 1962, Calls of a male perched in a Poroporo shrub (*Cochlospermum*) at 0625.

• (7) *Saltator maximus* - one of the birds from selection (5) calling at 0700, some time before the recording of selection (5).

(8) ?

Canãã Zone, B.C.I. Dawn song from edge of Clearing, top of a tall tree on W side near new Lab; we couldn't see the bird in 5 min of performance, then it flew farther into forest, sang from another tree briefly and disappeared. In flight a saltator-sized bird. 8 March, 1962.

(9) ?

• Panama, Rio Piedras, 2nd growth before gate to first pasture; 4 March, 1962 - unknown predawn song at 0601, possibly a Blue-black Grosbeak.

(10) *Pitylus grossus* (Slate-colored Grosbeak): C.Z., B.C.I.; 10 March, 1962. Calling about 0800 from top of crown of a forest tree near the Clearing.

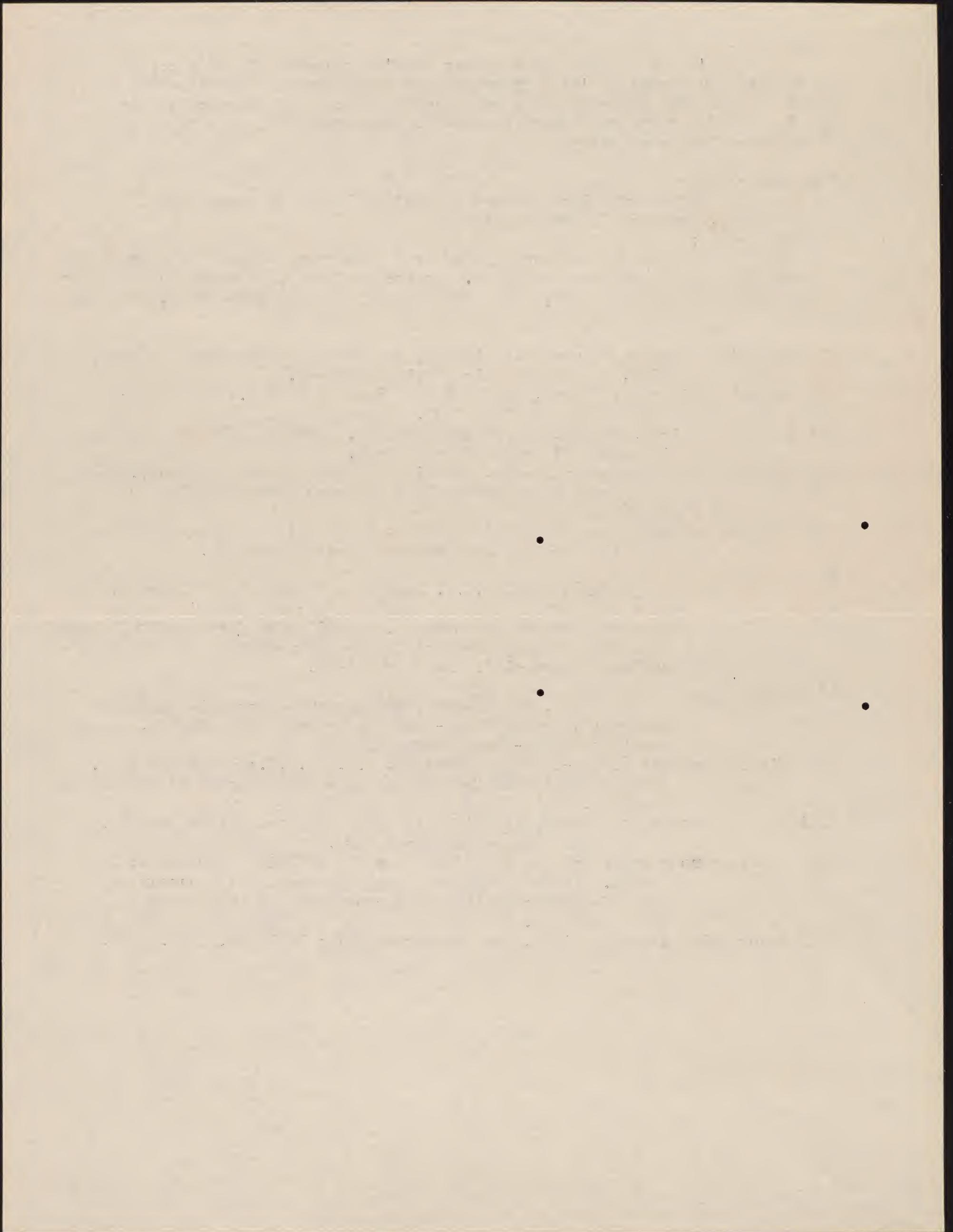
(11) *Saltator atriceps*: Panama, Rio Piedras beyond the ford; 14 March, 1962. Calling in a large fig about 0620.

(12) *Tachyphonus rufous*: Panama, Rio Piedras, bushy hillside near start; 18 March. Predawn calling of male perched conspicuously on top of a bush; calling with crown ruffled (when seen subsequently).

(13) *Chlorospingus ophthalmicus*, Panama, Cerro Punta; 30 March, 1962. 0700.

this tape is wound head-in (ie, #13 is outermost)





Martin

Blue Tanager

Panamá, Chiriqui region
26 March, 1962:

(On Lewis's property, below Cerro Punta):

0650 - copulation - no display immed before (that I saw) -
the mounted bird fluttered its wings high over its back, apparently
for balance, the other merely crouched (wings slightly drooped?).

Hopped off, stretched head and neck up, then bill down to feed
(a berry to) the bird it had just mounted - this one remained
crouched, without display. Then the bird which had mounted dropped
down lower into the tree, and I lost sight of it.

The presumed female sat still for about 30 sec., then began
feeding; giving more-or-less a "seeseeseesitseeesit..." song,
softly. Several times.

