

Ketterson / Nolan Research Group Collection

This document is part of a collection that serves two purposes. First it is a public archive for data and documents resulting from evolutionary, ecological, and behavioral research conducted by the Ketterson-Nolan research group. The focus of the research is an abundant North American songbird, the dark-eyed junco, *Junco hyemalis*, and the primary sources of support have been the National Science Foundation and Indiana University. The research was conducted in collaboration with numerous colleagues and students, and the objective of this site is to preserve not only the published products of the research, but also to document the organization and people that led to the published findings. Second it is a repository for the works of Val Nolan Jr., who studied songbirds in addition to the junco: in particular the prairie warbler, *Dendroica discolor*. This site was originally compiled and organized by Eric Snajdr, Nicole Gerlach, and Ellen Ketterson.

Context Statement

This document was generated as part of a long-term biological research project on a songbird, the dark-eyed junco, conducted by the Ketterson/Nolan research group at Indiana University. For more information, please see IUScholarWorks (<https://scholarworks.iu.edu/dspace/handle/2022/7911>).

License/Disclaimer Statement

By downloading this document or using any information contained therein, you agree to the license terms outlined at <https://scholarworks.iu.edu/dspace/handle/2022/8979>, which explain terms governing use, creation of derivative research, and requirements for citing the document.

PRAIRIE WARBLER NOTES

1957

BLOOMINGTON, INDIANA

Volume II

May 22 through June 26

Val Nolan Jr.

May 22, 1957

A dark, cloudy dawn after a night of the heaviest sort of rains (about 2 inches); very gusty from the S; 62°. The day is windy but until 1845 not rainy; then it begins again and rains heavily all night. Present from 0500 to 0830, from 1400 to 1700, and from 1845 to 1945.

T63 - Silent as I go by.

T62 at 0508 - M62 is singing loud step-buzzes as I arrive and calling as though angrily or excitedly between songs. (Later in the day I hear 2 males in a fight; the difference in their calls and M62's is in the rate, possibly the volume. M62's excitement calling is slower, less noisy.) He quits at 0515 after 17 songs.

0528 - Just conceivably the female goes to the nest. It's too dark and windy to be sure.

0518 - 0521 - M62 sings 12 step-buzzes.

0525 - In 2 minutes, 5 more songs.

0528 - He begins again, may call between step-buzzes. At 0544 he is silent after 34 songs.

0544½ - 62F leaves the nest, the first time I've been certain I've seen her.

0546½ - M62 sings 5 times in 1½ minutes. An Alder Flycatcher (singing "way-bee-o") and a Connecticut Warbler are here. There are other migrants, as

1706

1206 (4.10)

2
506

2
3406 (2.0)

1½

506

down

impro
etc calls

beginning

though there was a movement last night.

24
250h
4/1/2
30h
0612 - M62 skids for the first time today, 25 yards or less from the nest. He sings 25 in 5½ minutes.

0622 - Three skids.

0625 - I climb the nest tree. There are only 2 eggs. It seems unlikely that 62F just came to the nest and didn't lay.

T63 - M63 is singing loudly near the nest, about at the pines. All songs are chatters. I can see little or no evidence that the nest has developed much since yesterday. Possibly the rain has stopped building.

T61 - M61 sings high penetrating skids in the pine field and in 1. 61F takes plant down to the nest as I watch. It now is fully shaped, from a distance looks complete.

T64 - Silence here. Evidently M64 has left, at least temporarily.

T65 - 65F is incubating for the first time. Evidently the injury to the male did not retard her laying schedule at all. Either she has laid unfertilized eggs, or fertilization occurred before the male's injury, or he was not hurt too badly to prevent effective copulation. Perhaps I'll get some evidence on this later.

*Drop
Egg B
Sing on
9
= 6 days
ago*

Note that M65 sings little or not at all; much of

the time I don't hear him. Today there are 3 or 4 songs, chatters and skids, in the tree row at the very SW part of XII. I never see the singer for sure, but I think I see a FW fly rather badly at about the place where the song comes from.

T67 - M67 sings loud frequent chatters, about 5 a minute. His behavior is as usual; he's on his original territory.

T66 - The heavy winds or the rain seem to have pulled the new nest loose from one of its supports. In any event it will be abandoned I'm sure. M66 is silent during the 3 minutes I'm present, and I hear nothing from T67. *Wesley*

0830 - I leave.

1400 - I return. It's cloudy with occasional lightening of the sky, warm, windy from time to time.

(2.1)
20
8 4.00
T63 - 63F is building and M63 is singing loud chatters along the ravine. He ranges E and W about 50 yards from the nest, sings 2.8 songs a minute regularly during 30 minutes. I put up nets, catch only a Yellow-bellied Flycatcher and Field Sparrow. *61 day*

I then drive to Griffey and follow the E male for 40 minutes without seeing the least sign that nest building is going on. He sings chatters but he and the

W male both sing endless step-buzzes near their line. Once at 1530 they give anger calls, but most of their notes are loud (occasionally when close together, faint) songs.

T67 - M67 is silent during 20 minutes while I'm on T66.

T66 - By watching M66 as he perches 35-40 feet up and sings rather faint skids in the trees at the E edge of the territory, I soon locate 66F. She is building in a blackberry, this time on top of a stem that curves over and runs horizontally for a foot or so. The nest is about 3 feet high and is in the strip of field which M67 seemed to have won from M66 a few days ago; it is about 40 yards N of the maple and E of it. I can't account for the change in lines, of course, unless males sometimes fight for and win ground adjacent to their territories and then voluntarily relinquish it.

gt Wldg

M66 when I first see him flies up into an edge tree and immediately after landing begins the lateral shaking and wing fluttering that seem to be a part of plumage maintenance. He does it possibly 20 times in 3 minutes, preens during the same time, goes on preening and finally stretches. From the suddenness with which all this began and the fact that he evidently came up

bathing

from near the female in the field, I'd guess it may *not* have had some displacement function in this case. It occurred at 1645.

1700 - I leave.

1845 - I return. It's just begun to rain and soon is raining steadily and hard. It's about 62°.

T62 at 1845 - 62F is on the nest, though visibility is poor.

1855 - 62F seems to have left the nest.

1900 - M62 begins to skid near me, 40 yards S of the nest.

1903 - A bird goes to the nest tree (silently - I hear no calls), lands 6 or 7 inches above the nest, hops down and looks in for 3 seconds from 3 inches away, leaves the tree after being in it some 6 or 7 seconds. The PW looks quite yellow, and just after it goes M62 sings from the direction in which it went. I'd guess it was M62 and that 62F is not spending the night off the nest because of me.

to nest?
not on
on 1903
major

1945 - I leave.

At Griffey I found a last year's PW nest 6 feet up in a 9-foot tulip, the first such nest site I've seen. In places at Griffey tulip is much the commonest tree, but there are plenty of scrub elms everywhere.

May 23, 1957

A rainy dark morning with a strong SE wind, after a night of heavy rains; 60°. Present from 0500 to 0845 and from 1545 to 1645.

T62 at 0513 - M62 is singing his usual loud step-buzzes and uttering excitement calls. It's too wet to note every break in his song; there are few. *dm*

0533 - I think 62F may have gone to the nest. *Gay*

0537 - 62F is on the nest at this time.

0545 - M62 sings 1 skid, reverts immediately to his early morning step-buzzes. Sometimes he sings 5 a minute.

→
137 0613 - M62 has sung 137 songs in the hour, during which it has rained, more recently rather lightly. One song was a skid, I'd say his rate during his series was about 4.5, that he sometimes sang irregularly and less frequently, and that it was rare for him to stop altogether (for 2 to 3 minutes at the most). He seemed to sing from the tall trees NW of the nest, seldom over 50 yards from it. He goes on but I quit counting.

0620 - 62F leaves the nest. I'm pretty confident she didn't return last night after I left and begin incubation, so I think it likely my 0533 arrival time is accurate. I'll return to see if she incubates today.

(A late arrival to lay would be explained by the poor light today.)

0622 - M62 begins regular skids for the first time today.

0627 - 62F (I think) calls near me, so I quickly go.

T63 - M63 sings a few chatters. I see no activity at the nest, but it is early in the day and construction must be well along.

T61 - The nest has no final lining yet. The present lining material consists of feathers and plant down. M61 is silent, and I don't see 61F.

T64 - Silence.

T65 - 65F is on the nest and M65 (I judge by his song) sings twice near the nest as I pass.

T67 - M67 sings 29 times in 5 minutes; the song is his usual chatter, sung from the big walnut on the center of his old territory. His rate at times is a little faster than 6 per minute; once he pauses for 30 seconds.

T66 - Silence, and I see no activity at the nest, which is a bare shell, thin and only just assuming a shape. I'll return to see if she has abandoned because of the rain. I stay 10 minutes.

T62 - 62F is on the nest at 0830, so today is the

Song rate
approx 6 per min

beginning of incubation.

0845 - I leave.

1545 - I return. It's been near rain, then almost ready to clear, many times today. A little rain fell at 1500.

T62 - 62F is on the nest. M62 is silent.

T63 - I see and hear nothing when I inspect the nest, which looks complete.

T67 - M67 sings in his walnut tree, 17 times in 5 minutes when I come up. He is silent when I leave after going to T66; altogether I hear him for 15 of the 20 minutes I'm within range.

T66 - 66F is still building the nest she began yesterday. It looks finished from the outside (and from quite a distance). M66 sings half-volume chat- ters antiphonally with M67.

1645 - I leave.

*Long note -
of alarm*

*Antiphonal
song*

May 24, 1957

A nearly clear dawn with a moon, a very heavy ground mist, no wind; temperature 49° at 0445. Present from 0500 to 1915.

T63 - Silence as I pass.

T62 at 0504 - M62 is singing loud step-buzzes NW of the nest, and I can see G2F move on the nest. The light is fair. Whip-poor-wills quit singing at 0500.

M62 goes on singing with considerable regularity, taking breaks of 30 to 45 seconds 2 or 3 times and slowing down a little about 0520. At 0523 he gets to within 35 yards of me, and I can hear excitement calls between songs.

0524½ - G2F, which has been moving on the nest for some 5 minutes, leaves and drops S. M62 sings on without any pause. A Barred Owl just hooted once.

0529 - G2F goes to a spot a foot above the nest, drops down in 2 or 3 hops, faces W.

0530 - M62 just quit after 118 step-buzzes. He was still calling between songs at 0528, although I have only heard a few such calls today.

It is 48°, nearly clear with light clouds.

0532 - M62 begins the same songs, quits after 15 in 4 minutes.

0553 - G2F leaves the nest.

24
0557 - She returns silently and with only a second's pause 8 inches from the nest. The direction she has faced so far seems to be NW.

0600 - M62 sang only the 15 songs already mentioned.

3
It's calm, very thinly overcast, 46°.

→ 9:40
0603 - M62 sings 9 weak skids in 3 minutes.

0608 - G2F leaves and drops W.

9
0612 - She comes silently in, just below the nest, hops up a few inches above it, instantly enters as usual.

A Barred Owl hoots many times to the N.

17:40
0615 - M62 begins weak skids W of the nest; they are not faint, just slow and unemphatic. He quits in 3 minutes after 17 songs.

0624 - G2F leaves the nest after a good deal of restlessness.

25 { 12
0629 - She returns quickly and directly, faces NW.

51°
0630 - M62 sang 26 skids in the half hour. It's completely cloudy at the moment, windless.

0643 - M62 begins weak skids SW of the nest.

27:00
0645 - G2F drops W. M62 pauses slightly in song, probably by chance.

0651 - M62 quits after 27 songs.

9
0651½ - 62F returns to the nest, pauses 2 seconds,
enters facing as before, possibly more toward the N.

0700 - M62 sang 27 skids.

It's 54°, cloudy, extremely damp, calm.

0721½ - 62F leaves and drops S toward me but stops
well short of me or turns off.

22
160h
0722 - M62 begins to skid SW of the nest. There
is 1 "check" call near me, possibly 62F. She appears,
goes on calling. M62 sings from near her, so her calls
may be stimulated by his songs and not by alarm at me.
He quits after 6 songs; the last near her. At 0725
he skids again and goes on. He stops at 0729½ after
10 skids.

0729 - 62F returns alone to the nest, with the
male singing near me.

0730 - M62 sang 16 times.

It's 59°, a little less overcast, calm.

0750 - 62F leaves and drops W from the nest.

30"
0757 - 62F returns as usual.

0800 - M62 has been silent.

It's 58° but the sky is clearing, at least tempor-
arily.

5
60h
0805 - M62 skids 6 times between me and the nest.

0808 - 62F leaves and drops SE. She feeds some
20 yards from the nest at between 2 and 12 feet high,
fringe

calls a light "check" at times.

0814 - She returns very quickly and directly, enters immediately.

0823½ - 62F leaves and drops W.

0829½ - She goes to a branch W of and above the nest, drops down W of and 3 inches below it, enters from the S and faces NW as usual.

0830 - M62 has been silent.

It's 62°⁰, becoming sunny. A breeze from the N has just come up.

0835 - 62F switches positions so that she is clearly facing NE, a new direction today.

54
0858½ - 62F leaves, getting to the S rim and standing there a second before dropping S.

0900 - M62 has been silent. (I'd guess he is off the territory.)

It's 66°⁰, lightly overcast but with the sun shining, a little breezy.

0902 - 62F returns very quickly. She is facing S.

Two young Broad-wings soar over, doing all kinds of maneuvers. An adult joins them; there is much calling. Near them for a second is a Red-tail.

0921 - 62F leaves and drops straight down to the W.

0925 - 62F flies to a point 6 inches NW of the nest,

hops around to a perch an inch or two S of it and below,
sits there 2 seconds, enters from the S and faces NW.

0930 - M62 has been silent.

It's 67°, lightly overcast with a high thin haze
that the sun penetrates pretty well, getting a little
breezier from the NW.

0933 - 62F leaves the nest.

0936 - She returns extremely quickly, enters from
the S, faces NW.

0941½ - A bird of Field Sparrow size flies into the
nest tree 18 inches above the nest. 62F rises and stands
in the nest for 30 seconds looking at it. The bird flies
N and she flies after it. (Some half hour ago she dis-
regarded a chat which was 8 inches from the nest and
apparently curious about it.)

0946½ - 62F returns quickly, enters from the N,
faces S.

1000 - M62 has been silent; almost surely he has
been off the territory.

It's 70°, with the sky as it was at 0930 and the
breeze somewhat stronger from the N.

1000 - 62F leaves the nest.

1001 - M62 begins weak skids 25 yards from the nest.

1004 - 62F flies to a perch just SE of the nest,
in 4 seconds hops up, enters from the SE and faces NW.

11:00 in a moment N.

1004½ - M62 quits after 11 skids.

1025 - 62F leaves the nest and drops W.

1030 - M62 sang 11 times.

It's 73°, sunny through a haze, calm.

1031 - 62F flies to the tree 6 feet below the nest, hops up to the NW rim, enters and faces N.

1044 - M62 sings a skid SW of the nest.

He goes on, quits at 1045 after 4.

1048 - M62 flies from a spot a foot from the nest to a 10-foot perch 10 yards away, where he sings.

62F is on the nest. I couldn't see if M62 had food.

The number and timing of the songs suggest he had.

1050 - M62 quits after 9 skids. This song of his never has any shrill or ringing quality.

1053 - 62F leaves the nest.

1100 - M62 sang 13 times.

It's 72°, sunny with very little haze now, slightly breezy.

1101 - 62F returns from the NW, enters from the S, faces NW.

1118½ - 62F leaves the nest and drops W.

1122 - 62F flies to a branch 6 feet below the nest, hops up, enters from the SE and faces NW.

1129 - M62 begins weak and rather faint skids W of

874
mor
AFR?

20 1/2
the nest. He sings 7 in possibly a little over a minute.
Two are abbreviated.

1129 1/2 - G2F leaves the nest.

1130 - M62 sang 7 times.

It's 62°⁰, sunny, breezy from the N.

1134 - G2F flies to the tree from the S, climbs up from 6 or 7 feet below the nest, enters from the S and faces NW. Did she leave the nest because the male sang?

1142 - G2F jumps to the E rim and flies E at nest level. Is it the heat and the time of day that account for her short periods on?

1146 - She flies in 1 foot below the nest, enters from the S, faces N.

1158 - A PW calls "check" and "sip" each about 3 or 4 times 20 yards S of the nest, 20 feet up in a sassafras. G2F turns in the nest to look up at the PW, presumably M62.

30
1158 - G2F leaves the nest. I think she must actually be leaving when she discovers the male nearby.

1200 - M62 was silent.

It's 73°⁰, now completely and unusually clear, slightly breezy.

1205 - G2F flies and enters the nest as she did last time. She is always quick and silent.

No sun has touched the nest so far today.

1217 - 62F gets to the S rim and leaves the nest toward the S. She flies at nest height.

1219 - 62F calls "check" near (8 yards) me and 20 feet up. She calls 8 times, flies 30 yards N toward the nest, calls 4 or 5 times about 6 feet up, moves on a few yards, calls 8 times more, flies to the nest tree.

1220½ - 62F enters from the S and faces N. This is the first time today I've thought she paid any attention to me.

1230 - M62 has been silent.

It's 73°, a very clear fresh day.

1233 - M62 begins skids SW of the nest. 62F looks around at the first song, sticks her head far out at the third, leaves at the fourth.

1233½ - 62F leaves the nest and drops W, the direction from which the male is now singing.

1237½ - M62 quits after 21 skids.

1245 - Both male and female fly from the W to the nest tree, landing about half a second apart 1 foot from the nest. M62 has his back to me as he goes to the S rim and for 6 or 8 seconds sticks his head out and down toward the cavity. He then flies S and in 15 seconds skids, goes on 7 more times to 1247½.

When M62 gets away from the nest I can see 62F on

it. At exactly what point she entered I don't know.
I'd guess that M62 may have brought food, but I couldn't see his bill. The strongest evidence against his having brought food is the fact that he accompanied the female. His behavior at the nest and after leaving was suggestive.

AFB -
Jew
mor

16'12
1254 - M62 skids near me to the E in the woods, I'd guess.

13 ok
1255 1/4 - 62F jumps to the S rim (she faced N) and drops S. In 30 seconds M62's skids have dropped to half-volume; they go on with regularity, 13 to 1257, then stop. She did not fly directly toward the place from which the male sang.

3
1300 - M62 sang 42 times, all skids, some fairly loud and ringing.

9
1302 - 62F returns from the SE, alone. She enters from the SE, faces NW. She was quick, direct, silent.

1309 - M62 skids 40 yards SW of the nest.

1 ok
13 min
7 ok
1309 - 62F immediately gets to the W rim and flies toward the song. M62 sings faint steps, the last half of insipids.

1315 1/4 - M62 quits after 1 skid, 13 of the steps just described, 7 skids. All songs but the first were weak and faint.

1322 - The 2 birds go to the nest together. M62

together

8
7pm
sits at the S rim and certainly seems to be thrusting his bill out toward 62F in the nest. In 8 seconds he flies S and in 20 more seconds begins loud skids E of me at the edge of the woods. He quits at 1325 after 7.

1330 - M62 sang 28 times.

It's 74°, as before.

1331 - 62F leaves the nest.

1346 - She is feeding in a tree 10 feet over my head. She is silent, looks at me, seems to have no fear at all. If she doesn't go straight to the nest now I'll take that as more evidence that she isn't interested in me.

35
1350 - 62F returns to the nest, faces N.

1400 - M62 has been silent.

It's 74°, very bright, occasionally breezy.

1403½ - 62F leaves the nest.

1413 - She returns alone, faces N.

An Olive-sided Flycatcher is singing repeatedly.

1426½ - 62F leaves the nest.

1430 - M62 has been silent.

It's 72°, otherwise unchanged.

1436 - 62F returns to the nest, faces N.

1441 - She reaches over the side and touches something on the outer shell with her bill. She is turned S now; possibly that was her original direction.

1448 - 62F leaves the nest.

1458 - She returns, hops up in small but quick stages from a point 3 or 4 feet below the nest, enters from the SE and faces NW.

1500 - M62 has been silent.

It's 73°, perfectly clear and calm.

1505 - M62 begins to skid within 30 yards of the nest to the W. 62F immediately gets restless, looks around, stands up.

1506 - 62F leaves and goes W toward M62 after his sixth song. In 30 seconds he sings 2 more weak skids, between 1509 and 1512, 6 more.

1519½ - 62F returns, enters from the E, faces N. She then quickly rises, seems to stand over the nest, turns S and incubates. The sunlight hasn't touched the nest today.

1530 - M62 sang 14 skids.

The weather is unchanged.

1534 - M62 sings 4 weak skids quickly. By the time I turn to the nest 62F is gone, so I don't know if she left just before or just after he began to sing.

1534 - 62F leaves the nest.

1537½ - M62 starts weak skids about 40 yards SW of the nest. He moves E across in front of me, stops at 1543 after 17 songs in 5½ minutes.

17 1558 - 62F flies into a little sassafras 8 feet from the nest tree. She preens, scratches, forages (all these quickly and just for a few seconds), goes W low and out of sight.

1559 - 62F enters the nest and seems to face W.

1600 - M62 sang 21 skids.

The weather is unchanged.

21 1621 - M62 begins loud skids in the tall trees just W of me.

14 1622 - 62F jumps to the W rim, flies some 4 or 5 feet and seems to be moving around in a little maple adjoining the nest tree. In 45 seconds M62 drops his song to half volume. He sings 14 times to 1626.

1630 - M62 sang 14 times.

It's 71° and there are a few high thin white clouds, not enough to affect the sun. The nest tree has been in sun for many hours, but no sunshine touches the nest.

11 1636 - 62F flies into the nest tree at nest level, from the W. She gets to the S rim, enters facing N.

7 1637 - M62 begins weak skids near the nest. After 7 the female leaves and drops W.

1638 - 62F leaves the nest. M62 sings 2 more times and quits.

2 1640 - 62F climbs to nest level from low in the

nest tree, enters from the E and faces N.

6 ok
At the same time M62 starts his skids again, 40 yards SW of the nest in or near the big trees. The songs are faint. He quits at 1643 after 6 in-3 minutes.

1644 - M62 goes to the nest; I can't see his bill, but I don't doubt he has food. He perches on the W rim or just W of the nest for 10 seconds, drops W. AFB?

17
62F leaves the nest a half second behind M62 and follows him. B

1700 - M62 sang 15 times.

4
It's 72°, unchanged.

3 ok
1704 - M62 sings 3 weak skids in the woods NW of me.

1724 - 62F returns to the nest.

21
1726 - M62 begins weak and faint skids NW of me.

1728 - 62F drops W, clearly affected by the songs.

15 ok
They go on to 1729½, stop after 12.

1730 - M62 sang 15 times.

2
It's 68°, otherwise unchanged.

1732 - M62 begins his same skid. It's short as well as weak.

1740 - 62F returns to the nest from the E side of the tree, enters from the S and faces N. M62 is still singing W of the nest at this time.

In 2 minutes 62F faces NE.

1743 - 62F leaves and drops W.

I can't account for her behavior. She seems much influenced by the male's song and by other evidences of his presence (e.g., his visit to the nest caused her to leave). I've seen nothing at all to suggest that she is alarmed at me. Note the fact that this is her first experience with a nest.

1746 - M62 quits after 39 skids.

1749 - He begins again, just as before.

A Barred Owl hoots in the distance.

1757 - A ray of light hits the side of the nest in a small spot.

1800 - M62 has sung 62 times and is still singing. His rate is slow and regular and he seems to have spent the half hour in the trees at the W edge of XIII, mostly in the SW corner.

It's 68°, unchanged.

1805 - M62 quits after 15 songs since 1800, 38 since he began the series at 1749. Light still touches the nest.

1815 - M62 begins his skids again, sings 4 in 2 minutes. At 1820 he resumes more strongly, very sporadically.

1822 - M62 calls "check" twice, then goes imme-

diately into a skid. He is near me. He seems to flutter a little in low flight.

2 am
3
1824 - I can see 62F in the grass or field cover about 20 yards from me. She is silent. *forage*

1826 - 62F flies up to a 4-foot perch and gives the lateral shake 6 or 7 times during a minute, preens. Her feathers are ruffled as though she had been bathing. After preening and stretching she flies N to a dogwood within 10 yards of her nest, goes on N past the nest tree. *bathing*

4 am
1829 - M62 flies to the nest tree, looks in the nest (without food I think) for 6 seconds, hops 4 feet away, returns and looks in for 5 seconds, moves out to a limb of the nest tree and sits there for 10 seconds, goes on. *5 to move*

1830 - M62 sang 27 times.

It's 67°, unchanged.

11 am
5
1830 - M62 begins to skid again, sings 11 times to 1836, then again once at 1841.

10 am
1855 - M62 begins skids between me and the nest, full volume songs. He stops after 9 to 1857.

14
9 am
1900 - M62 sang 21 songs.

It's 66°, unchanged.

3
Clearly 62F has deserted her nest. I climb the tree and find only 1 egg (normal in all ways) left in

the nest). Thus the stimulus for incubating was as nearly non-existent as it can be, and it is probable that this ^{no} plus my presence combined to cause desertion when neither alone would have done so. Note that in all my other cases of desertion there have been fewer than the regular complement of PW eggs.

NB

It seems to me that the way the final departure is built up to is quite significant. Compare the way 59F left the nest last year when I took the eggs. The circumstances give a good insight into the mental or nervous processes of the bird.

6:45
1903 - M62 sings 5 or 6 skids in 10 minutes, probably will sing some 15 to 25 songs before dark.

1915 - I leave. The day has been 95% sunny. The weather had nothing to do with 62F's conduct.

May 25, 1957

A clear dawn turning cloudy; gusty from the S; 54° at 0600. It gets more and more overcast, rains hard from 1045 to 1200, clears a little periodically in the afternoon. The temperature depends a good deal on the clouds; it never gets over the mid-70's. Present on the area from 1000 to 1100 with Moorhead and from 1300 to 1445. Moorhead and I explore the large section of PW habitat E of N. Dunn and just S of Griffey between 0600 and 0930.

We find a female nest-building, the male paying a good deal of attention but rarely singing near the nest. He occasionally flies along as she collects. The nest is 3 feet up in a 6-foot elm, a well-shaped shell with the walls neatly made and thin, the bottom very porous. I'll call this pair D1.

♂ 1 ♀ 6/1/57

appearance of nest

We also hear and then catch 2 PW fledglings, clearly only today emerged from the nest. We put up a net and put the young in a cage under it, soon catch the male. We make no effort at the female, which doesn't come at the time the net is up. I put no numbered bands on these birds, but will assign them numbers which are surplus. The male I band with yellow on the right leg and I paint his tail black. One young has yellow

left, green right; the other blue left, red right. Both adults go through elaborate distraction display. I'll call this pair D2.

I see another male, and I'd guess there are perhaps 4 or 5 pairs present in all. Of the 5 adults seen today none were banded.

Note the extremely early date for fledglings, the earliest I have and many days ahead of any date the university farm could have produced this year, even without failures. Since the nest probably took about 29-30 days and the male arrived on about April 20, pair formation and territory establishment must have been accomplished in 4 or 5 days.

I'll work on this Dunn area.

T67 - M67 sings loud chatters at the N end of his territory, 85 in 15 minutes and undoubtedly that many more in the next 15 minutes. As usual, he stays high, disregards my net and Screech Owl, acts unmated.

T66 - The nest is complete, well lined. M66 sings a few (3-5) faint skids, once comes into the field within 30 yards of the net.

T65 - G5F is not on the nest.

A heavy rain comes up and we get caught, finally leave.

1100 - We leave.

NB

Screech
Owl
present

N

1300 - I return. It's warm, only lightly cloudy for the moment.

T65 - 65F is on the nest; M65 sings. He flies as though completely recovered from his injury.

T67 - M67 is singing almost as rapidly as he did this morning, and he continues to do so as I take my (empty) net down.

T66 - M66 sings one or two high faint songs. — 3

T63 - M63 sings loud chatters near the nest, but I see no sign of the female.

T62 - 62F appears several times near her nest but never goes to the tree or shows any other interest in it. She doesn't gather nest material within my sight; the fact that she shows up 2 or 3 times in about the same place suggests that she is interested but hasn't begun to build. She moves in a leisurely way. M62 sings type-8's (which is interesting since he sang none yesterday), first near the recent nest and then to the N 50 yards. He moves little at first, stays near the nest, then goes N and sings. The signs point to 62F's not having begun to re-nest yet [error].

1445 - I leave.

May 26, 1957

A clear dawn, turning cloudy and followed by a day of constantly changing skies; extremely gusty from the S and SW; about 60° in the early morning and rather slow in rising, the day somewhat cool except when the sun is out. Present at the university farm from 0515 to 0730, at Griffey from 0830 to 1000, on the university farm from 1015 to 1100, and on the Dunn tract from 1400 to 1600.

T66 at 0515 - I take a position to let me see 66F, which should lay today. *dawn*

M66 is silent till about 0550, when he begins insipid steps and sings 21 times in 20 minutes, obviously irregularly. I hear no excitement calls.

M67 sings from 0527 on, a loud rather melodious chatter. In 27 minutes I hear 55 songs, and after a 10 minute break he sings 5.5 of the loud chatters per minute. *long note*

I never am perfectly sure about whether 66F goes to the nest. At 0529 there is a sharp jarring motion of that part of the blackberry where the nest is, and at 0616 a similar movement makes me think she just left. The nest is empty, so no egg was laid; but it feels a little warm to my hand, so 66F may well have sat in it.

T67 - See above. M67 acts unmated, as always.

T65 - 65F is on the nest. M65 sings a few times ✓
as I pass. He is a comparatively silent bird, and
since he seems to be well again after the wing injury
received when I caught him, his silence evidently has
nothing to do with that matter.

T61 - 61F has laid her second egg. M61 sings ✓
loud skids in the pine field as I pass.

T64 - Silence.

0730 - I leave.

At Griffey I decide there are 3 males, the third
one a moderately marked skid singer SW of the other two.
His territory may be unusually small.

I find the nest of the middle pair, which I'll
call G2, numbering E to W. It is 15 feet up in a
20-foot ash in a tangle of Virginia creeper against
the main trunk. The female carries grass to it once in
40 minutes, leaves without placing it when she sees me.
Clearly the nest is in the last stages of construction,
possibly the rest period. The male doesn't concentrate
on the nest site at all. Once he comes and calls at
me; otherwise he shows no interest.

1015 - I leave Griffey.

T63 - The female is not incubating and I don't see
the male in a few minutes here at 1015 and 1100. ✓

T62 - I find 62F building her new nest, the male singing high skids at perches N and S of it, the farthest 40 yards away. He is taking his usual interest. The nest was clearly begun yesterday, looks fully shaped and from below is indistinguishable from a complete one. This means that some of M62's singing yesterday was 60 yards or so from the nest and that the female's behavior may be referred to the building stage.

hug belly
or belly

The nest is 20 feet up in a 25 foot dogwood, built near the end of one of the diagonal branches in the upper center of the tree. There is grapevine on the branch, so it's a hard nest to see.

The most interesting thing here is the presence of a silent PW, poorly marked and probably a male. He shows up near (20 yards) the new nest once, then disappears without meeting the 62's. His behavior is like that often seen in this situation: He moves alertly, sits with his body nearly horizontal, giving the impression of readiness to move; these intruder birds seldom sit for more than a few seconds. (Compare the behavior of known males when off their territories; some sing; are these silent males non-territorial, or do I just miss their songs?)

B 8 or
probable
watcher

62F's first nest has no eggs at all now, possibly a significant fact in connection with her desertion.

1100 - I leave.

1400 - I go to the Dunn tract.

DIF, which was building yesterday, has quit and will probably start a new nest. I may see the male; in any event, a male sits 40 feet up in the big trees S of this territory and sings faint insipids and chatters, some fragments and some run together.

TD2 - The female is carrying food and I see an unbanded fledgling, so she had at least 3 in the brood [probably 4].

I scout over the area but don't learn much beyond what we discovered yesterday. It's very windy and males are singing only sporadically.

1600 - I leave.

May 27, 1957

A cloudy morning with a cool S wind; 52° at 0700. It stays about the same all day, is only 60° at the end of the morning, warms up a little on the few occasions when the sun nearly shines. Present on the Dunn tract from 0830 to 1030 and from 1330 to 1530, on the farm from 1600 to 1745.

TD1 - I find the male and female and after 30 minutes conclude she isn't building yet. Error In this period I see her 6 or 7 times and at a number of separate places on the territory. She forages the whole time, moves without excitement, seems not in a condition to build. Once MD1 pursues her rapidly and closely in the air, singing a quick insipid. At all other times he is certainly keeping her in view and following near her. She calls "check" a few times irregularly and once he does too. He may possibly explore a little crataegus in a site-prospecting way. He sings very little, sometimes sotto voce.

TD2 - I see MD2 once when he gets into a brief but loud fight with another male with fledgling young, MD3. See below. 0101

TD3 - This is a new pair for me, located to the N of TD2 and TD1. I hear young, and the 2 adults, both

well marked, come up and show mild signs of alarm but no display. I'll return later with a net. The nest is 5 feet up in the center of a dense 8-foot crataegus.

I'm now sure of 5 pairs on the large Dunn tract between the street and the first strip of N-S woods along the ravine [the W field]. Possibly there are more. I've seen all the males, at least 3 females; none are banded from other years.

I go E and on the next habitat to the E find an unbanded female on 4 well-incubated eggs in a nest 2 feet up in a 7-foot maple, built against the main trunk. Call these D4's.

On E is a good strip of habitat, [the wooded field]. One poorly marked male sings here. Note that this area is almost within earshot of the Griffey tract. There are probably 40 acres of suitable habitat between Dunn and Fee just S of Griffey.

1030 - I leave.

1330 - I return. It's gray and unpleasant.

TD3 - I catch 2 fledglings, put them in a Potter trap under a net, and after the male hits the net about 4 times he finally sticks. The female won't come, even when I put the male in the trap too and she can see and hear most of her family.

I paint the male's tail green, band him 25-66014 on the left leg, no color bands. The 2 young are 25-66015 and -16 on their right legs, with 2 very dull blue bands on their lefts.

Note this second very early date.

1530 - I leave and go to the farm.

T63 - 63F is not incubating yet. M63 sings 4 or 5 chatters in 20 minutes. N

T62 - I don't see 62F building. As I arrive a lightly marked male FW flies into a big cherry tree above the nest, near where M62 is singing. M62 flies up and there is a fraction of a second when the 2 males hover near each other. Then there is a fast close pursuit out of sight. In 2 minutes M62 is back, singing loud skids and moving around a lot on the territory. 101

I think there may be males that stay on the edge of territories and try to move in, and that these moves are much different from the loud invasions by neighbors with territories. Cf. other experiences, e.g., on T53 last year. These males may get to be tolerated somewhat, may possibly help care for young. Cf. M48's appearance on T54 last year; was this a visit, with his pugnacity caused by the fact that he was on his old territory, or was he one of my postulated males trying No-
way

to move in?

T67 - M67 is silent when I pass twice; I'm within earshot for about 15 minutes.

T66 - The nest contains the first egg, 16.4 x 13 mm. It is marked with well defined darkish spots, *1 egg clear* scattered over the entire surface, with more at the large end of course.

M66 may sing one high faint skid.

T65 - G3F is incubating, and M65 sings his rasping step in the woods to the S. *y*

T64 - Silence.

T61 - M61 skids loudly in the pine field and G1F incubates at 1700. I wait so that I can mark the third egg, and all are quite warm when I touch them. She's *y* on at least 20 minutes.

1745 - I leave.

[The male on T62 may have been M63, which seems more likely than that there are outlying males which seek to usurp territory.]

May 28, 1957

A cloudless, dewy, windless dawn; 44°. Present
from 0500 to 2005.

(20 min)
5:00
6
5 min
4
T61 at 0502 - M61 is singing high insipid steps
at the S end of 2, interspersing them with anger or
excitement calls. In 1 minute after 5 songs he falls
silent.

0508 - M61 sings 5 insipids, again at the S end
of 2. I'm too far away to get the calls, if there are
any.

61F seems to be on the nest.

0515 - M61 starts to sing insipids at the S end of
2.

0521 - 61F leaves the nest. I'm not going to risk
an inspection.

0521-27
265

0527 - 61F returns, looks in for 1 second, faces
N.

6:00
(46)
3:00
0530 - M61 is still singing insipids, 69 since 0515.
I begin a new count.

0538 - He quits; 35 songs since 0530.

0543 - 61F raises her head and foreparts as though
laying.

10:57

The sun comes up. Two Barred Owls begin to call,
continue for 3 or 4 minutes.

13.5 48.5
40.5
7.5
1.0

271
5/28/57
VN

12
30h

0550 - M61 begins to skid, stops after 3.
0550 - 61F subsides in the nest, sits low facing N.

3
160h

0554 - M61 sings 16 high skids in the distant SW part of the territory, stops at 0558.

2

0600 - It's cloudless, 44°.

0610.19
15

0610 - 61F drops N after 3 minutes of restless looking around, raising her head and glancing in all directions. I'm sure that this behavior is not attributable to me.

NB

18 1/2

0618 1/2 - M61 begins loud skids in the N part of the territory.

0619 - 61F returns, faces SE.

M61 goes into the pine field and skids within 25 yards of the nest. At 0625 he moves SW, probably to the S end of 3.

48h (35)

0630 - M61 has sung 41 times in this series and is continuing.

It's unchanged, 45°.

0632 - M61 quits after 48 skids since 0618 1/2.

17
30h

0637 - 61F turns to face SW.

0644 - M61 skids 3 times, faintly or at a distance.

4
30h

This may go on out of my earshot. At 0649 I hear 3 more.

0647 - 61F leaves the nest.

0647-57
3+15

2

0652 - M61 begins loud skids in 2 or the pine field,

1.50h sings 15 to 0656.

2
1.50h 0657 - GlF comes to the nest tree 1 foot below the nest, hops up, enters facing N.

1
0658 - M61 skids once in the pine field near the nest.

0659 - Sunlight hits the side of the nest.

0700 - M61 is silent; I'll not total up songs at the half hour today.

8
It's virtually cloudless, 47°. A very light S breeze has sprung up. The sun is bright on the nest and the female's head and back.

2.10h 0708 - M61 begins to chatter in the pine field, sings 21 to 0712, all in the field.

4.10h 0716½ - M61 begins to skid, probably in the 2-3-4 clearing.

3.80h (4.1) 0725 - M61 quits after 38 skids, those of the last 5 minutes in the S part of the pine field.

7.15 0725 - GlF leaves the nest to the N, a few seconds after M61 quits singing. She looked around her for a minute before going.

7.40 0730 - It's 50°, otherwise unchanged.

7.45 0732 - M61 probably sings twice, skids to the S.

7.50 0745 - GlF comes to the tree 6 inches below the nest, hops to the S rim, enters facing N.

0725-45
2 S
leaves nest
sing 3 times

28
2 1/2
0800 - It's 52°, breezy from the SE.

0802 1/2 - M61 skids at the E edge of 2, moves E into the pine field near the nest.

0809 - M61 goes to the S nest rim and sits on it, undoubtedly has food, though I'm too far away to see it. He stays probably 10 seconds. 61F makes no movements toward him, takes nothing. He drops N and in 40 seconds resumes skidding. He'd sung 20 before he went.

20pk
21pk
3
0818 - M61 has sung 21 times since he went to the nest. 61F is facing NW.

18pk
0821 - M61 skids between 2 and 4.

0828 - He quits after 18.

0828 1/2 - 61F leaves the nest, drops NW low.

6 1/2
0830 - It's 54°, unchanged.

4 1/2
0834 1/2 - M61 begins to skid faintly in the pine field.

0843 - 61F comes in a few inches above the nest, drops, looks in from the S side, turns away for 1 second, jumps to the W rim, enters facing SE. M61 is still singing; he moves near me, now is far to the SW. He sang almost all the time the female was gone.

76pk (3.7)
0859 - M61 quits after 76 high skids.

1
0900 - It's 56°, breezy, clear.

A Connecticut Warbler sings in 2. An Alder Flycatcher sang earlier.

3 1/2
0903 1/2 - M61 sings an insipid in the N end of 2,

A FB

0828 - 43
27

then skids to the W, probably near the fox den.

1 hr 3
43 min
(3.6)
2
0915- The sun still hits the nest. It has done so continuously though with differing intensity since 0700.

0916 - M61 quits after 43 skids.

0918 - He begins loud skids near me in the pine field.

10 min
4 1/2
12
0919 - 61F leaves the nest. The male goes on singing irregularly, quits at 0922, after 10 songs.

0919-32
7+44

0926 1/2 - M61 skids in the pine field.

0930 - It's 58°. M61 is still skidding.

0932 - 61F returns, faces SE.

29 min 27
(3.6)
2
13 min 3
39 min
6
0939 - M61 goes SW from the pine field, sings once more, quits after 39 songs, 32 since 0930.

0941 - M61 begins faint insipid steps that sound as though they come from 3, after 13 to 0944 switches to faint skids S of 2. He quits at 0954 after 52 songs.

1000 - It's 62° with a milder breeze and a little scattered thin white haze.

1013 - 61F after probing in the nest turns to face almost due S. She has sat with her head and breast very low, her tail high during this attentive period.

1026 - 61F after looking around for 1 minute leaves the nest. The amount of activity and restlessness or watchfulness involved in her looking about varies a good

01026-33
7

deal from departure to departure.

1030 - It's 67°, otherwise unchanged.

1033 - G1F returns, faces N. The sun has just quit shining on the nest.

1058 - G1F leaves the nest.

1100 - It's 68°, unchanged.

1112 - G1F hops up from below to the S nest rim, enters facing N. Immediately after sitting down she sticks her head up high; I've thought for 30 minutes or so that she may see me. I'm sure that earlier she wasn't aware of my presence.

1120 - G1F leaves the nest, evidently going only a few feet away and to a point lower than the nest. In 45 seconds she hops up to the N rim and without any preliminaries enters and faces S.

1121½ - M61 begins skids S of 2, moves on farther S and W, at 1126 comes into the pine field and sings loud skids within 30 yards of the nest. At 1127½ he quits after 26 songs.

1130 - It's 67°, unchanged.

1130 - M61 begins to skid in the SW part of 2, sings irregularly, at 1132 moves into the pine field. At 1137 after 18 skids he sings 2 insipids, a type-S, 23 more insipids. The insipids are short, fast, loud, and thus sound almost like chatters; some are probably

0-1038-1112

off?

13

26 pk
(4.3)

2 1/2

18 skids
20 ins
128
23 ins

ins -
desc -
related
to ch?

1
7 min
in fact chatters. Occasionally 2 songs are given without a pause. He sounds excited. He stops at 1141, after 45 songs. Since 1137 he has been within 15 or 20 yards of the nest.

2
At 1142 he begins again, 7 fast short songs, some nearly run together.

5/10/5
1145 - M61 begins insipid steps at the N end of the pine field a few yards (15) from me. The songs have only 5 or 6 notes, neither the first nor the last part of the usual song but most like the last. They rise in pitch, are sung quickly, have an interrogative quality. He is very irregular in his intervals.

1200 - It's 67° but much warmer in the sun, unchanged except that possibly the breeze is a little higher.

6 min
2 ch
2 + 8
9 ch
2 min
M61 has sung 51 insipids, and he stops at this point. G1F is facing NE.

1206 1/2 - M61 begins the same sort of insipids near me in the pine field. After 6 he chatters 2 times, switches to 2 type-S's, back to 9 chatters and 2 steps to 1212.

1210 - G1F leaves the nest.

8
1220 - G1F goes straight to the S rim and enters facing NE.

Exactly as the female returns M61 begins loud

0 1210-20
6
starts running

skids near me, 35 yards from the nest. He continues irregularly.

1230 - It's 70°, perfectly clear, only occasionally breezy.

56.5 hr
M61 has sung 34 times, all as described just above, and he is still singing.

27
1237 - M61 quits after 22 songs since 1230, 56 in the series.

1245 - G1F leaves the nest.

23
1252 - G1F returns low, hops up to the S rim, faces NE.

1300 - It's 72°, unchanged.

12
1 hr 3
30 min
1312 - M61 sings an insipid step, then switches to 3 loud skids. He's in the trees at the N edge of the pine field. Note that he seems to have given up his territory in the woods, which he took over only because the female built there; this is an interesting point.

2
15:48
1317 - M61 sings 15 half-volume type-8's from the pine field, switches to chatters.

1321 - G1F leaves the nest. One minute later she "checks" 3 times near me, probably her first concern at my presence and possibly her first awareness of me today.

M61 is singing on at a fast rate, then slows down somewhat.

1330 - 61F returns exactly as last time, so she may not be affected by me.

1330 - It's 72°, unchanged.

M61 has sung 42 chatters and is continuing in the field. He quits after 28 more songs to 1338, a minute later begins again (or continues - I'll start a new count). His song has become an intermediate between a chatter and a short, fast insipid.

He sings 13 to 1343.

1345 - M61 begins faint, high steps, after 7 switches to 1 skid, back to 4 insipids. He's running his songs together rapidly. Next he sings 3 skids, 1 chatter, 4 insipids, 3 chatters, 1 insipid. He quits at 1348, in 1 minute starts again: 1 skid, 2 chatters, 1 skid, 1 chatter; at 1350½ he quits.

1351½ - M61 chatters once.

1352 - 61F leaves the nest.

1400 - It's 71°, unchanged, a fine day.

1401 - 61F returns, faces NE.

1402 - M61 skids 3 times.

1407½ - M61 begins type-8's in the pine field near the nest, then at the edge of the N woods, then W at or beyond 2 at 1414 (22 songs to this point). He quits after 39 to 1418.

1426 - 61F leaves the nest.

Note song

Note song

1352-1401

70 (4.2)
1 28
13 ch

7 min
10 ch
4 min
30 ch
1 ch
4 min
30 ch
1 min
1 ch
20 ch
10 ch
1 ch
1
1 ch
8 1/2

30 ch
4 1/2
39 + 8 (3.4)

16.5 1520
495
450

01426-49
7+11+26

1427 - M61 sings 7 faint type-8's in 1 1/2 minutes.

1430 - It's 72°, unchanged.

1436 - M61 sings 11 high, slow insipids in 2 minutes.

1441 - M61 begins the same high slow steps, sings in 2. After 25, he sings 5 in which there are 5 initial notes but no second half. He then switches to step-buzzes, sings 24 to 1457 1/4.

1449 - 61F returns to the S rim, looks in for 2 seconds, faces N. M61 is singing in the pine field 30 yards W of the nest at this time.

There is sunlight on the leaves that shade the nest and sometimes lightly on the nest itself; this has been true for an hour or so.

1500 - It's 72°, completely clear and calm.

1512 - M61 begins weak insipid steps between me and the nest. He sings 14 to 1517 1/4.

1518 - 61F leaves the nest.

1520 - M61 starts his extremely weak insipids again. Many consist of only 5 notes, straight, sweet, slightly ascending, Goldfinch-like. He sings 9 in 4 minutes.

1525 - 61F returns to the nest just as she has been doing the last several times.

1528 - M61 sings 11 of his insipids to 1533. At

01518-25
9

insipid

01
748
7 1/2
11 min
3
25 min
5 min
2400 hours

2 1/2

12
14 min

2 1/2

9 min

4

4 min
6

22 $\frac{2}{157}$
 44
 13

280
 5/28/57
 VN

1534 he begins fairly loud skids, sings 9 to 1537.

1530 - It's 69°, unchanged.

1539 - M61, which quit skidding 2 minutes ago, begins again loudly in 2.

1545 - G1F leaves the nest. About a minute later a bird calls loud "checks" above me, some 40 in 3 minutes. I assume it's G1F; just possibly it could be a Kentucky Warbler. M61 goes on with his skids; he's now between 2 and 4. G1F's calls may be continuing, much less frequently and probably in 2.

1554 - M61 quits after 38 skids since 1539.

1559 - G1F flies into the bottom of the nest tree, in 3 seconds climbs up, enters from the S, faces N.

1600 - It's 69°, unchanged except for a few thin, high, white clouds.

1618 - M61 begins faint slow insipids in or W of 2. Many I can just barely hear.

1628 - G1F leaves the nest.

1630 - It's 69°, unchanged.

M61 has sung 33 insipids W of 2, very faint and very irregular. He is going on, but I'll begin a new count. He is moving E.

1640 - M61 quits after 24 insipids in 10 minutes, 57 in all.

1644 - G1F enters the nest and faces N.

O 1545-59
 22

O 1628-44
 24+6

33 ins

24 ins
 (2.6)

22 $\frac{2.6}{157}$
 44
 13

45 1/2 15
225
150

22

1700 - It's 68°, unchanged.

6

1706 - M61 begins high faint steps at the S end of 2. He sings 25 in 4 1/2 minutes.

25 4/5

1709 - G1F leaves the nest. Sunlight still hits the sheltering leaves and may flicker on the outside of the nest.

O-1709-33
7

19 1/2

1730 - It's 66°, unchanged.

24

1733 - G1F flies low to a little tree 3 feet N of the nest tree, goes to the nest tree, hops up to the S rim, enters quickly and faces N.

1754 - M61 skids faintly to the S, goes on doing so.

20 sk (3.3)

1800 - It's 65°, unchanged.

M61 has sung 20 skids since 1754, continues for 1 minute and sings 4 more.

40

1803 - G1F leaves the nest.

O-1803-16
0

1816 - G1F returns low to the nest tree, hops up to the S rim, faces N.

34 29

1830 - It's 65°, unchanged.

1848 - G1F leaves the nest, dropping E with very little looking around her. Sunlight still filters through to it slightly.

O-1848-19
0

30

1854 - G1F returns to the nest, faces N.

1900 - It's 63°, unchanged, The sun is just dropping to the point where the woods keeps it from touch-

4 ing the nest. In 2 minutes the whole nest tree will be in shade.

1904 - M61 begins faint insipids, probably W of 2.

1909 - A small bird comes within 5 or 6 feet of the nest, and GLF rises half out of it as though to meet an intrusion. She slowly sits back. (Compare how she would crouch down if a predator or unknown danger appeared.) NB

34 ins
(4.2
7+8+3
1 1/2
1916 - M61 after 34 insipids changes to loud rasping 7-note steps, like the Golden-wing song but hoarse and I think on a falling pitch. He sings 7 and stops in 1 1/2 minutes, in 2.

1919 - M61 begins the high insipid steps in 2, then the pine field.

10 ins
2
1 ch
1920 - GLF leaves the nest.

1921 - M61 quits after 10 insipids.

1923 - M61 sings 1 chatter.

2 1/2
1924 - GLF flies to a redbud 1 foot from the nest tree, to the nest tree, climbs up the 1 1/2 feet to the nest, from the S rim looks in for 4 seconds, probably probes once, enters facing N.

1925 1/2 - M61 skids loudly in the pine field.

14
2600
7+8+3
1930 - It's 60°, unchanged.

M61 has sung 14 skids, is continuing in 2.

1943 - After 26 skids since 1930, M61 sings 7

rasping steps W of 2. He stops at 1945.

1945 - 61F rises and resettles, so she's still awake. It's quite light still, though I think the sun has set. All or most birds are still singing.

1947 - M61 begins rasping steps in the SW part of 2. These songs have from 5 to 7 notes, usually 6.

2000 - It's 56°, unchanged.

M61 has sung 31 steps since 1947, is continuing.

2003 - 61F puts her head up and looks around.

She did this 2 minutes ago too.

2005 - M61 quits after 20 more steps since 2000.

I leave. The day has been 100% sunny, and I'm sure that 61F's behavior was in no way abnormal as a result either of my presence or of the weather.

2
31 steps
(12.4)

stuttery
etc

2000 steps
(4.10)

2005 7:40

May 29, 1957

A cloudless windless morning with a heavy dew, about 50° at 0600. Present from 0700 to 1000 and on the Dunn tract from 1330 to 1545 with Moorhead and from 1800 to 1930.

T67 at 0700 - There is no sound of M67 here and, more significant, M66 sings loud and repeated chatters from the N edge of the original territory, i.e., from within M67's more recent holding. M67 therefore seems to have given up, possibly 2 days ago.

The date when males quit trying to attract females may indicate something about the time when it is no longer likely that females are moving about and unmated; or it may go only to males' individual internal conditions.

The fact that females seem seldom to stay with the first male they see probably means that no male remains unmated simply because he never came into contact with a female. NB

T66 - Yesterday's and today's eggs are present. They measure 16.6 x 13.2 and 16.6 x 13 mm., but I don't know their sequence.

See above re M66, which sings about 6 times a minute.

T65 - 65F is on the nest and M65 is singing skids
in the hawthorns in the field at the SW end of the ter-
ritory. I watch him to see if he shows any effects of
the injury received when I caught him: It may be that
the tip of the right wing droops a little. However,
he flies freely and without any abnormality at all,
and I once see him hover to catch an insect. I think
he can be regarded as a wholly normal bird for the
purposes of behavior and banding statistics.

hover

T61 - 61F is on the nest, and after a number of
attempts to find her gone I quit going back for fear
I'll upset her. M61 sings loud skids and chatters in
the pine field and in 2 and 3. See below under T62.

✓

T64 - Silence. Note that I'd have heard some
sound from here yesterday if a male were on territory.

T63 at 0840 - 63F is incubating, though she is
not on the nest at my arrival. M63 sings loud chatters
from the S hillside near the pines. He seems to be
staying high.

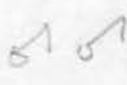
N

Once I hear songs just W of the pines on the N
hillside and then hear "check" calls. When I go there
I see a fight, i.e., one male (M63) flies at another;
there are 2 or 3 anger calls, a pursuit. I see the
double silver bands of M62 and his blue tail just as
he starts to fly. The pursuit is slow and the 2 males
climb very high (60-75 feet), are about 20 feet apart.

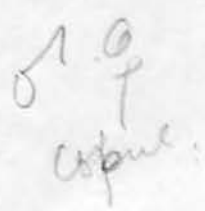
8/5
pursuit
83T

The front bird starts N to the E-W fairway, turns as though to circle back S again, then turns N and heads for T62. M63 gives up the chase (which is silent) about over the middle of the fairway. He sings near the pines in a minute or so.

T62 at 0900 - Many things happen here, in the order described: In the SE part of the territory I scare up an unbanded poorly marked male from the field cover. In silence he moves very quickly to the center of the territory near the nest. Immediately M62 flies up, one or both males call 2 or 3 times, and there is a long chase, fast, circling, covering about 100 feet. The 2 birds are 5 or 10 feet apart and they twist and turn through the trees, from 5 to 15 feet high. Note that the intruder male gives ground but doesn't seem disposed to leave. I lose the two in the trees, I think at the edge of the woods.



I hear high step-buzzes (M62 had skidded a few times earlier) in the N center of XIII and find M63 singing about 30 feet up in a 45-foot tree. After a minute he suddenly, silently, and without any display flies about 30 feet to a tree at the edge of the woods on the N end of T62. There, about 20 feet up, is 62F. The male flies straight to her and she makes no effort to move. For 6 seconds I can see outstretched wings



fluttering in 1 spot; I'm sure he is on her back. She then moves 1 foot away and he hops to her, his wings outstretched and quivering. (Note that this is the stationary version of a form of display flight, and compare M62's approach to the female here with M64's approach to the female on his territory earlier - they seem identical though I don't see M62 as well.) I can see that the 2 birds are in physical contact for about 5 seconds; when the leaves part I think I see the male pulling the female's tail with his bill, still moving his spread wings. All this is in silence.

018
7
NB

M62 then flies (manner not seen to be abnormal) a few yards into the woods. In 5 seconds 62F flies normally to a branch 5 feet high and 10 feet from the place where the copulation (surely) took place. She calls "check" once (at me?), moves deliberately and without any excitement or nervousness of manner. I watch as she forages. M62 is silent.

Within 1 minute of 62F's call, I see a male in the tree she's in. It is M61, whose territory is about a half mile away through heavy woods. He and 62F forage with complete calmness and apparent disinterest in each other, silent, only 5 to 10 feet apart. M61 probably does keep an eye on 62F; she sees him, of course, but doesn't make the slightest unusual movement to show

He is
foraging
62F

awareness of him. This goes on for at least 1 minute, while I check many times to be sure it's M61 (green right, silver left).

M61 then flies some 10 feet and evidently is seen by M62 for the first time. M62 flies at M61, and in silence a long fast (but not darting) pursuit begins. For perhaps 15 seconds they fly around through the trees at the N edge of T62, moving at heights of from 5 to 20 feet, separated by probably 5 to 15 feet. At the end I see only M62, which sings loud skids and in a few minutes step-buzzes. He moves around on the territory, uses high perches only, but isn't changing position frantically or at an obviously fast pace.

In 2 minutes I hear a few anger calls and see a pursuit, but I can't tell whether the second bird was M61 or the unbanded male. In 15 more minutes nothing happens. Note the time, 0900 to 1000.

Do these wanderings occur on the Dunn tract too? I can't help wondering if a male closed in by others in a homogeneous habitat would do this. It looks like a response to a need for company, stimulation by fighting and by hearing other songs.

(In this connection but on an entirely different point, it seems possible to me that predation may be lower on a large uniform tract. The patchwork habitat

of the university farm exposes the birds to predators
of the woods as well as of the fields.)

No

1000 - I leave.

1330 - Moorhead and I return. It's clear, bright,
in the mid-70's.

We first see a female carry food to a little (7-foot) crataegus and find a nest there, 4½ feet high. There are 2 well-grown young in the nest. The territory is just W of TD1, and I'll number it D5.

TD1 - We flush the female from a low scrub tree with blackberries around it, near which the male has been singing. She stays around, shows nervousness and attachment to the spot but I can't see a nest. A later inspection turns nothing up; the D1's aren't near. Perhaps we caused her to desert a nest in the very early stages.

TD4 - The young have all hatched; the nest is clear of shells; and to judge by the down on the young and their size, hatching began yesterday. The male is on the nest rim at my approach, and he freezes and stands motionless while I circle to get a better look at him. He flies without display when I'm 12 feet away, stays nearby in the bushes calling.

of fresh

To the SE of TD4 is a male, possibly another to the

S. I find a nest with 2 eggs on the SE territory, but I'd guess it's old. It is $3\frac{1}{2}$ feet up in a 7 foot maple, against the trunk. [This must be a D8 female's.]

Just E of TD4 I find a female near a nest with 2 fresh eggs; she isn't there on 3 later occasions, so I gather the set is still being laid. The nest is 20 inches up in a 3-foot crataegus. I'll call this pair D6.

N of this pair a male carries food to a nest in a blackberry surrounded by extensive stretches of broom sedge. The nest is 1 foot high. There are 2 well-grown young in it, ready to fledge. I'll return and try to catch the adults today. I'll call this pair D7.

Just N a male and female show an attachment to a little patch of trees in which there is no nest. The female forages near the ground for 10 minutes, moves back and forth, exhibits no nervousness at us. The male sings sotto voce at times, once seems to flutter a little, keeps the female in view. I'd judge nest building is about to begin. [These are the D10's.]

There are perhaps 5 or 6 other pairs still not located.

1545 - We leave.

1800 - I return.

TD7 - When I arrive I hear young calling and find the nest empty. A later search reveals 4 fledglings, all W and NW of the nest in the direction of a tree row (and not out in the much larger arc of the periphery where there are only a few very small trees, broom sedge, and blackberries - these young moved toward trees and bushes). The farthest bird is about 35-45 yards from the nest, at least. Note that this seems to be a case of afternoon fledging. I probably did not have anything to do with the departure from the nest of the last 2 young, sometime between 1530 and 1800 (judging by their distances from the nest, nearer 1530). Clearly I didn't influence the 2 earlier birds. Conceivably a predator scared them out, but all can fly well (20 yards, one gaining altitude) and I think they left naturally.

52
position

48

I eventually catch 3 young and both adults. The female is tending the farthest birds, and she shows great alarm when I get near. She calls a sort of twitter, probably consisting of "tsu" notes run together; she sounds like a gnatcatcher. She goes into distraction display when I get within a few feet of the birds. She is much less persistent than the male in following me when I catch young, and I nearly give up

twitter -

she does

hope of catching her.

I band the male with silver on each leg, numbers 25-66017 and -18, and I paint his tail red. The female is 25-66022 and -23, both on the right, no paint. The young all have silver left, 2 green bands right, and are numbered 25-66019, -20, -21.

A couple of random notes: MD7 carries a green caterpillar once when he flies up to and probably hits the net right beside me. Despite the net, my presence, and the noise of the captive young, he stops and hovers over the spot where the food was dropped, looking for it for about 4 or 5 seconds. MD4 is attracted by the noise and comes and sits in a big tree right overhead and watches. Two or 3 times he gets too close to MD7 and there is a brief flurry of fight notes. I would guess that trespassing is not resisted under circumstances of stress like this unless the trespasser is seen close at hand by the territorial male, in which case he attacks.

*persistence
up front*

5/57

1930 - I leave.

I noticed today that 62F stills has a good deal of gray about the head, probably a clear sign that a bird is in its first adult year. The question is whether a bird of that age always has gray. I've seen only 1 other female this year with a noticeably gray head, but the light and distance have to be good to see it.

293
5/29/57
VN

Every male I've caught and most that I've seen
have had good dark markings. Surely not all are old
birds.

May 30, 1957

A clear dawn with no wind and a heavy dew; mid-50's. Present on the Dunn tract from 0500 to 0700 and with Frank Hubbell on the farm area from 1400 to 1600 and on the Dunn tract from 1600 to 1730.

As I arrive I can hear 2 or 3 males singing insipids or step-buzzes and 1 is giving excitement calls between songs. I go to TD5 to band the young. *dawn*

TD5 - The female is off the nest at my arrival, and the young are asleep. After I see that the female is going to miss my net beside the nest, I remove the 2 young, put them in a trap, and try to bait in the adults. I catch the male immediately, paint his tail yellow, and band him yellow over silver, left, number 25-66009. The female I can't get. She hits the net once, but most of the time she either goes into distraction displays away from it or shows a reluctance to let me get close enough to lure her (by making the young call). After release, the male flies into a nearby favorite tree and sings within a minute or two. He doesn't return to watch me or tend the young until about 15 minutes later when they get very noisy as I move them. MD5 then flies up and into the net again. *1st after release*

The young I band like the male, with yellow over

silver left and a colored band on the right. Their numbers are 25-66024 and -25. They would not have fledged today but are certainly no younger than 9 days; they can use their wings enough to break a fall and to hold themselves aloft but not to move forward much.

MD1 is interested in all the noise but so far as I can see he never gets off his territory to look the situation over.

0700 - I leave.

1400 - Hubbell and I return. It is sunny and rather humid, getting somewhat overcast later in the afternoon and once thundering.

T66 - 66F is on her nest and M66 is singing a few songs. 4

T67 - Silence. I'll omit mention of this territory from now on unless a PW returns to it.

T65 - 65F is on her nest. We hear but don't see the male. 4

T61 - The eggs have been taken. M61 skids loudly and frequently in the SE corner of the territory. In our short time here we don't see the female.

T63 - 63F is on the nest and M63 is about 20 feet away, silent, so that I wonder if he had been at it 4

just before we came up.

T62 - M62 sings. 62F is not in sight. We remove a dogwood limb that screens her nest, so it can be watched later. Sunlight on the nest will not be affected by the removal.

1600 - We leave and go to the Dunn tract.

TD1 - We find a nest right away, complete and containing 1 egg. It is near where I saw the male and female on May 26. Clearly I was way off on my interpretation of their behavior then and since. The nest is 3 feet up in a 6-foot elm, built just above a point where the leader makes a Y-fork. N

TD5 - I can't find the young, which are silent and have moved well away from the nest. A short walk on the territory doesn't turn up anything at all.

TD4 - Both adults are feeding nestlings.

TD6 - The nest contains 3 eggs, cold. N

We find no other nests. MD7 is silent. A male [MD8] just S of TD4 flutters a little in flight near the ravine, as though a female were near, but we see none. He crouches, body horizontal and head thrust down, when he lands.

1730 - We leave.

May 31, 1957

A completely overcast morning, humid, only very slightly breezy, 58°. Present on the Dunn tract from 0445 to 0630, with Bill Ryckman from 0930 to 1030, and on the farm area from 1030 to 1300. *Down*

TD6 - I arrive at 0450 to try to follow the nest all day. Whip-poor-wills are singing and it's just beginning to get light. Two PW's are singing step-buzzes at 0453.

0455 - I begin to time MD6. At exactly 0500 he comes to a 7-foot elm near me and from 3 feet up sings and gives anger calls. We seem to be near the S center of the territory, with no males to the S and none near anywhere. I count 16, 11, 9, and 18 loud fast calls in bursts between songs, and he then moves too far N for me to pick out individual notes. I don't hear many more anger calls; the last he gives are at about 0524. *Make call*

All males heard early are singing step-buzzes. At 0522 one to the W, probably MD4, sings chatters. MD6 doesn't switch till about 0515, when he begins type-8's but soon goes back to step-buzzes. He sings 72 times from 0455 to 0508, then pauses. I quit counting because I can't be sure I'm hearing him unless I have a long *for change*

series to work with.

0529 - D6F leaves the nest and flies 18 yards SE to a patch of blackberries. Here she sits 2 feet high and preens with the greatest thoroughness till 0533. This is an interesting development, the first time I've watched the female just after a night on the nest. She calls 2 times before beginning and 5 or 6 times when she quits, probably at me. Then she goes N.

*9/6/00
activity
of the
day*

0557 - D6F returns to the nest. She shows a lot of nervousness, won't actually enter until I walk away.

It is now very dark and thundering, and at 0615 it begins to rain. I decide to call off the all day watch, which would give bad weather results even if the female didn't desert.

0630 - I leave.

0930 - I return to the E field of the Dunn tract. It has rained irregularly since 0615 and sprinkles very lightly from time to time now.

While I wait for Ryckman I see a female low in the very scrubby trees and the berry bushes in the SE corner of the E field. A male is near, singing occasionally, and she is clearly exploring for a nest site, going from tree to tree and sometimes crouching. At 0950

while I watch she flies from the field to a 40-foot perch in a 50-foot locust, 50 yards E of where she starts from. The male flies to within 2 or 3 inches of her, arriving a few seconds after she lands and coming from an unknown spot. She turns at him quickly, giving the effect of resisting his approach. He flies back 3 or 4 feet, sits there moving somewhat jerkily and fanning his tail very slightly. [These must have been the D8's.]

TD4 - The female is on the nest, evidently brooding.

TD6 - The female is incubating.

TD1 - Ryckman and I measure the eggs. The first is 15.5 x 12.5, the second 16.3 x 12.7 mm. [The third, next day, is 16.2 x 12.5 mm.]

The male in the SW corner of the E field, the bird Hubbell and I saw fluttering yesterday, is with a female in the little trees and the berry bushes there. He again flutters slightly as he flies, once goes to a thick clump in a blackberry bush, may squat down, leaves, goes back to it. The female moves quietly through the low growth, feeds, never gathers material or seems to nest-shape. I'd guess she is in the pre-building stage, but I have no opinion on whether she just joined this

male. [Surely the DS's.]

1030 - We leave Dunn and go to the university farm. The weather hasn't changed. En route we hear and see a skid singer in the field E of Oliver's and W of Martin's. He is unbanded. I would guess that this is not a territory that will be held. I don't think this bird can have been here long or I would have heard him. [He never reappeared.]

T63 - 63F returns to the nest while we wait. M63 is silent. N

T62 - M62 skids. The female is not on the nest yet. N

T66 - 66F is incubating and M66 sings very faintly, possibly to the E of the territory across the woods, possibly just in the woods. Y

T65 - M65 sings frequently in the semi-wooded area to the S. The female comes to the nest. N

T61 - M61 skids all over the pine field, as usual giving little attention to the building female. We find her carrying spider webs in the NE corner; she wipes them off her bill when she sees us. Her calls ("tsu") and her behavior suggest we are near the nest. We retreat, return later and find her building at the base of a top whorl of a 12-foot yellow pine. She certainly is an unusually shy bird. I don't go up to see how far

of day
9 tent

along the nest is.

1300 - We leave.

In the middle of the pine field on V we saw a chipmunk 7 feet up in a 10-foot cherry. Chipmunks must be a common predator of the PW nests.

Chipmunk

June 1, 1957

A wet morning, clear at dawn but soon clouding. It rained last night and just before daylight and does so a few times during the later part of the day. It is 60° at dawn; the highest temperatures of the day are about 80°. Present on Dunn from 0500 to 0700, on Griffey from 0715 to 0745, on Dunn from 1100 to 1215, and on the farm from 1700 to 1815.

TD1 at 0505 - I sit to watch the third egg laid, checking the nest first and finding 2 eggs. MD1 is singing insipids when I arrive and calling anger notes between songs. Other males seem to be doing the same thing; I hear nothing but insipids and their variation, the step-buzz, at this early hour. MD5 to the immediate W is silent; can this be because he has young out of the nest?

0514 - D1F goes alone to the nest.

0531 - She looks in and settles deep. I can't be sure of her actions between her arrival and now.

MD1 is still singing steps and uttering the anger or excitement note.

0538 - The male quits his insipids and calls and begins to skid. He has been sitting at the extreme tip of a 25-foot cherry, evidently a song post, till this time. He returns to it for 30 seconds at 0541.

0556 - MD1 goes to within 20 yards of the nest tree

and skids loudly at a height of 18 feet. He then goes in silence to within 4 feet of the nest, nest level. I lose sight of him but am sure he doesn't go to the nest. The female doesn't react visibly.

0603 - D1F leaves the nest, and I quit watching. Later I mark the egg. *See egg not it is here 0603*

TD5 - MD5 is singing both on the hillside NE of the nest, and SW at the bottom of the valley. Evidently this territory runs on a long axes NE-SW.

There is a male W of the valley, perhaps; not sure.

N of TD1 are a male and female seen before several days ago. They showed alarm at or unusual interest in me at that time so I marked the spot. Today the female again seems concerned at my presence. I hear no young and see no food carrying, and she soon goes away. However, I find an empty nest very near my old marker and the spot she called at today. The nest shows no use, and the facts suggest she has just completed it and will soon lay. [Correct, the D9's.]

Once while the female is calling at me the male flies up to her and tries to land an inch or so away. She prevents this, and he goes on. When females resist approach it is usually by turning toward the male. I have seen them open their bills, but this isn't a necessary or even usual part of the resistance. It's

5/6
NTS

hard to detect any other action than the turn; perhaps they crouch slightly and move the body to a horizontal position.

TD3 - MD3 sings at the NE edge of the PW habitat here, in the big trees near the ravine. He also feeds young as does the female. I hear but don't search for the young. An unbanded male is on this territory, I think. I.e., it is possible that I'm still unacquainted with territory lines and there is a pair I don't know about, but I doubt it; I think this male must be an interloper, maybe MD1 or MD4. [Correct.]

0700 - I leave and go to the Griffey tract.

TG2 - The nest has been torn up. MG2 sings loud type-8's and I stay near him for 15 minutes but see nothing.

TG1 - MG1 sings.

0745 - I leave.

1100 - I return to the Dunn tract, E field. The sun comes out strongly as I arrive and it stays out for about 2 hours.

TD6 - D6F is on the nest. See below.

TD4 - MD4 is carrying food to the nest, so I go on.

I then search for nest building by the females I saw yesterday in the SW and SE corners of the field.

The SW female I find by following the male, which at my arrival is sitting 35 feet up in a tree near the edge, singing, sometimes sotto voce. The female moves quietly along on and within 2 feet of the ground. She flies 3 times to little clumps of vegetation around 3 trees that are higher than most in this very treeless field. She remains in each clump so long that I conclude she's left without my seeing her; then in 3 or 4 minutes she moves on. Finally she pulls at nest material (plant fibers) but doesn't hold it. Then she goes through 30 seconds of hovering and gathering motions; I can't see what she gets, so it must be spider webs. She carries these rapidly to a blackberry (I think) 30 or 40 yards away, but I see nothing there yet. She may have just begun to build.

The male sings infrequently, about 25% of the time sotto voce. He moves about in the area where the female is, is clearly following her movements closely. Once he flies into a tree she's in, fluttering with small quivering wing beats just before he lands. He may sing in flight at this time; he's some distance from me and I miss the details.

The SE male never sings, and I get no information. A male that must be MD6 sings loud and frequent type-8's

from perches in the field, and N of and perhaps from in the area where I saw the pair yesterday. Note that the nest with 2 old eggs found on May 25 is very close to the spot where I saw the female yesterday.

[I must have seen the DS's twice yesterday, in different places.]

1215 - I leave.

1700 - I return to the farm area. It is warm, threatening to rain.

T63 - Over a 30 minute period I make 2 trips to the nest and don't see the female or hear the male. I haven't time to wait. N

T62 - M62 sings loud skids on the center of the territory, about 3 a minute. I watch him for 5 minutes as he sits 8 feet up at the edge of a thicket and sings and forages. He doesn't seem to be seeking high perches.

62F is on the nest at 1710. Incubation was due to start today. Y

T66 - 66F is on the nest. I don't hear M66. Y

T65 - 65F is on the nest the second time I visit it. M65 is singing his slow rasp to the S. N

T61 - M61 sings loud skids everywhere in the pine field. 61F is carrying nest material frequently, and the

307
6/1/57
VN

nest looks complete from below. She calls in alarm
and flies away from the nest when she sees me.

1815 - I leave.

June 2, 1957

A cold, very gray morning with a strong N and E wind which has dried off the vegetation. It's 56° at 0400, 58° at 0500. Present from 0450 to 1000 and from 1615 to 2000; Ryckman present from 0915 to 1800.

TD1 at 0458 - MD1 begins to sing after I come up, at 0459. I hear no other PW's for another minute or two. His song is an insipid step, with the usual anger calls intermingled. When the other males begin to sing, all songs are insipids or step-buzzes; I hear anger calls but I can't tell much about what males are doing this. MD5 seems to be silent in the early dawn, as he was yesterday.

The female is on the nest.

0524 - D1F leaves the nest.

0536 - She returns quickly, faces E.

MD1 has sung 130 steps to this time, though I may have missed a few or counted a few sung by MD2 to the SE. The songs have been in series, the rate about 5 a minute. He goes on after 0536, sings 24 to 0542.

0547 - MD1 begins to skid, the first songs other than insipids today. He quit calling a few minutes ago. MD5 began to skid at about 0520; I'm pretty sure these few songs were his first.

0600 - It's 58⁰, gray, windy.

I'm not going to try to count MD1's songs. I can't be sure I'm not hearing some other male, and Ryckman won't be able to keep up a count.

0612 - MD1 begins to chatter about 25 or 30 yards from the nest, sings about 3 a minute.

0614½ - MD1 flies quickly to the S nest rim from somewhere nearby. It's too dark where he is perched to see if he has food, but he acts like it. He stands at the cavity for 8 or 10 seconds, the female sitting quietly looking E. Then the male moves away. It's pretty sure that he took food. AFB

0631 - DLF leaves the nest.

0640 - She calls once, goes straight to the tree and lands 2 inches W of the nest, enters facing E.

0700 - The weather and temperature haven't changed.

All PW's have been very quiet. Occasionally a male sings a few songs, but evidently the cool, strong wind slows down singing greatly. W. A. R. S.

0707 - DLF leaves the nest.

0717 - She returns very quickly, directly, and silently. She faces E.

0743 - DLF leaves the nest.

0753 - She returns exactly as before.

0757 - MD1 skids after a long silence, then sings a few chatters. I hear "check" calls near me as though an alarmed or aroused PW sees me. The female is sitting quietly on the nest, so it must be the male.

0800 - It's 59°, unchanged.

0807 - MD1 sings 3 or 4 step-buzzes at the hilltop, the first I've heard from him.

0821 - D1F leaves the nest.

0834 - She flies to a little branch 5 inches NW of the nest, turns there and looks N, possibly at me, for 6 seconds. She is silent and there are no signs of nervousness. She then jumps to the W rim and faces E.

(Do male and female PW's that quit building early or are deserted by their mates, or that quit after later nests are destroyed, remain on their territories or in the vicinity to molt, the way successful birds do? See M58's appearance in late July at 60F's nest. I probably should spend time on an unsuccessful pair this year.)

0900 - It's 62°. About 30 minutes ago the sun's location began to show through the clouds, so that there is a slight glare. The gusty NE wind continues.

There have been very few songs during the hour, perhaps only 20 or 30 from all males within earshot. D1F sits quite low and quietly, seldom if ever probes,

so far hasn't changed position. At 0901 I see her back off and put her head in for 2 seconds.

0903 - D1F leaves the nest and goes E. The male had just sung his second skid since 0902½, to the NE at his usual place, but she had been looking around before he began and probably wasn't responding to his song. He sings 4 more chatters.

0915 - D1F returns, faces E.

Ryckman relieves me.

TD9 - The nest found yesterday to the N is still empty.

TD4 - The 6-day old young are well developed; at this stage a 10-day fledgling period seems quite likely. All 4 are alive.

TD6 - D6F is at the nest or on it. She leaves when I'm some 20 feet away (unusual), calls. She's as shy as any female I've seen. The male sings type-8's to the E.

TDS - I look for the male and female in the SW corner, in 30 minutes see nothing, may possibly hear a few skids. I'm going to number this pair D8.

The pair in the SE corner of the field is equally impossible to find. It's conceivable that there was only 1 pair and that I saw the birds in 2 places.

1000 - I leave.

TDL at 0915 - I (Ryckman) relieve Nolan. DIF is on the nest.

0922 - MD1 arrives from the S and circles the nest several times. He goes to the rim and thrusts his head into the nest a number of times, leaves at 0924. DIF leaves the nest momentarily but stays in the nest tree. AFB

0925 - DIF returns to the nest, settles.

0930 - It's 62°, gusty.

0944 - DIF shifts emphatically, settles N.

0952 - She repeats.

0953 - DIF leaves after getting to the W rim, dropping NW, flies N.

1000 - It's 63°, the breeze subsiding.

1004 - DIF returns, faces N.

1030 - It's 66°, slightly breezy.

1034 - DIF leaves exactly as she last did.

1052 - She approaches from ground level to the SW, hops up through the tree, perches on the SW rim, settles N.

1100 - It's 71°, still overcast, slightly breezy.

1120 - DIF shifts about in the nest for 1 minute.

1122 - DIF leaves from the N rim, dropping NW and moving W.

1130 - It's 76°, overcast, calmer.

1131 - She returns, perches on the W rim, settles
E.

1143 - MDI comes from the W, circles the nest tree,
hops up to the rim. I can't tell if he has food. DIF
stirs when he is on the rim. He leaves to the W. AFB

1148 - DIF probes from the N rim, settles.

1154 - DIF leaves, getting to the N rim and going
NW.

1200 - It's unchanged.

1207 - DIF returns, settles NE after perching a
few inches from the nest for 10 seconds.

1230 - It's unchanged.

1232 - DIF shifts, settles E. [Ryckman kept his
glasses on the nests nearly constantly all year, pro-
bably caught all but a few movements on the nest.]

1234 - DIF again shifts, probes deeply for 15
seconds from the W rim, settles E.

1235 - DIF leaves, pauses several seconds; flies NE.

1240 - She returns, settles NE.

1254 - DIF probes as at 1234, settles NE.

1258 - She repeats, settles E.

1259 - DIF leaves, goes NE.

1300 - It's 78°, overcast, slightly breezy.

1307 - She returns, settles NE.

1330 - It's 79°, clearing, slightly breezy.

1331 - DIF leaves, goes E.

1343 - She returns from the W, settles E.

1359 - DIF leaves.

1400 - It's 74°, partly cleared, nearly calm.

1411 - DIF returns from the W, quickly settles NE.

1422 - She probes from the rim, settles quickly.

1430 - DIF leaves, goes W.

It's 78° or so, unchanged. The sun comes out occasionally and the temperature goes to 86°.

1441 - DIF returns from the W, settles E immediately.

1445 - DIF probes from the rim, settles.

1455 - DIF leaves.

1500 - It's 75°, unchanged.

1503 - She returns, faces E.

1528 - DIF leaves E.

1530 - It's 72°, unchanged.

1540 - She returns from the W, faces E.

1600 - It's 70°, unchanged.

1603 - DIF shifts to face N.

1604 - DIF leaves, goes NE from the N rim.

1616 - She returns from the W, perches a few inches from the nest for 30 seconds, settles E.

1630 - It's 69°, completely overcast, slightly breezy.

1635 - D1F leaves, goes E.

1642 - She returns from the E, goes quickly, faces E.

1657 - D1F gets to the rim, shakes, settles E.

1700 - It's unchanged.

1701 - D1F leaves.

1714 - She returns from the W, enters from the W rim, faces E.

1730 - It's 67⁰, getting windier.

1734 - D1F perches on the S rim, shakes her wings; settles.

1735 - D1F leaves, getting to the N rim, moving in- to the W part of the tree, flying E.

1748 - She returns from the E, perches in the nest tree for several seconds W of the nest, settles E.

1800 - Nolan relieves me.

1615 - I return to the farm. It has been unchanged through the day except for a little brighter sky and greater warmth at times.

T63 - 63F is no longer using her nest. In 20 minutes I see and hear nothing.

T62 at 1650 - 62F is not on the nest, but I can't wait to look for her. Silence.

T65 - 65F is on the nest. At 1710 M65, which has

been singing faintly to the W, carries food to near the nest, sees me, goes away. At 1720 the female leaves. The male appears within 20 feet of the nest with a different item of food, sits quietly for 5 minutes about 5 feet above the nest acting reluctant to go because of me. He then eats the food but stays in the tree and forages. At 1720 65F flies up with a green larva in her bill. She seems to have flown some distance and she flies directly to (or at) the male, which gives ground about 1 foot. I think she may have hovered just at him as she landed. Is this female dominance?

This is the day of hatching for this brood.

1735 - I go to the Dunn tract.

TDS - I find the female carrying material. The nest is on the outer tip of an elm branch. The tree is about 25 feet high, the nest at about 9 feet and maybe 6 or 7 feet from the trunk. a rather unusual situation. It is scarcely concealed, consists of a completely formed but highly porous cup. It may have been begun yesterday but not worked on much till today. I don't hear the male.

*odd
near site*

TDL at 1800 - I relieve Ryckman. The female is on the nest. It's 64°.

1811 - D1F leaves the nest. MD1 has been singing

insipids nearby (20-30 yards) for 5 minutes, about 3.5 songs a minute. He goes on, may give mild fight calls for 10 seconds.

1821½ - D1F flies silently and directly to the W rim or a spot beside it, enters instantly and faces E.

1842 - I hear calls to the S a few yards, from TD5. Probably feeding the young is going on.

D1F has turned so that she faces NE.

1854 - MD1 sings a skid.

1854 - D1F leaves the nest. Whether she left immediately before or immediately after the song, I don't know. MD1 skids twice more and stops.

1900 - It's 62⁰, clearing somewhat. This nest is on a W hillside so we'll get sun till it sinks behind a hill half a mile away.

1903 - D1F returns to the nest, faces E or NE as usual.

1908 - MD1 skids twice.

1914 - MD1 begins to skid (as usual from the top of the ridge to the E), sings 8 times in 2 minutes.

1915½ - D1F leaves the nest.

1918 - MD1 sings 3 faint skids.

1920 - He sings 4 faint insipids.

1921 - D1F flies to the nest tree, hops around to

the W side of the nest, enters facing E. She always goes to the tree at nest level.

The sun came out nearly unobscured about 5 minutes ago. The sky is nearly clear now.

1934 - MD1 begins loud insipids 30 yards E. The female becomes very restless and for 5 minutes, until he stops, keeps looking all around nearly constantly. Once she half rises and faces N for a minute; then turns to the E again. Just when he quits she settles down.

1941 - D1F leaves the nest, so perhaps her recent behavior was not caused by the male's singing.

1943½ - MD1 begins a series of fast insipid steps, the song itself being sung rapidly.

1947 - D1F returns quickly, faces E. The male is still singing.

1950 - MD1 quits singing after 26 insipids. In half a minute he begins again.

1954 - The sun drops behind the hill. It's 58°, lightly clouded. The day has been 1% sunny but the even temperature and other conditions should make the data very reliable.

2000 - I leave. The male sings 40 times to 2001, may possibly sing longer. As I pass TDS at 2005 that male skids 3 times. *last song?*

June 3, 1957

A clear dawn with occasional clouds and a tendency to become lightly overcast at times. The rest of the day is the same way. Temperatures range from the high 50's at dawn to the mid- or high 70's. Present from 1000 to 1200, including Dunn, and from 1630 to 1730.

T62 at 1000 - 62F is incubating and M62 singing loud skids. See immediately below under T63.

T63 - I begin a search for the new nest. M63 sings loudly from the W edge of the territory, then moves E and stays there the rest of the time I'm present. Across the ravine a male sings high skids for 5 or 6 minutes; almost surely it's M62. (Could the male seen last week on T62 have been M63? He is marked like that male.)

I find 63F building rapidly, the nest about 11 feet up in a grape vine festooned on a 13-foot, spreading redbud. I'd say it was begun this morning and will clearly take 2 more days to complete. 62F seems to favor her left foot, frequently drawing it up to her body and standing on the right. This doesn't affect her building speed or her hopping about to collect.

M63 sings within 40 yards of the nest and most of the time within 25 or so. His songs are frequent, in

Yester
day?

of 62F

series with perhaps 5 or 6 a minute. Some are sotto voce.

1115 - I leave and go to the Dunn tract.

TD6 - The female is on the nest, the male silent. Y

TD4 - The young are all right. MD4 sings a few times.

TD8 - MD8 sings 3 loud Golden-wing songs in 15 minutes.

TD1 - D1F is incubating. Y

TD9 - MD9 sings loud chatters. When I go to the nest a PW, presumably the female, is in or at it at 1145. It flies away as I come close. The nest still contains no eggs but surely is active. Note the visit of the female (?) at this stage. Y

I see and hear no PW's in the SE corner of the E field.

1200 - I leave.

1630 - I return. It's sunny, moderately hot.

T63 - 63F is still building, still protecting her foot at times. The nest is nearly fully shaped except that it doesn't have a neatly worked, even rim; it therefore looks quite unfinished. Also the entire thing is thin and porous, and it lacks bulk. The male and female behave as they did at 1100.
foot wing
not
aggressive
P. H. d. g.

321
6/3/57
VN

T66 - 66F is not on the nest, but the 4 eggs are intact. The male is silent. N

T65 - 65F is brooding. I hear no songs. ✓

T61 - M61 sings loud insipids in 2, occasionally may give an anger call. I put up a mirror and find the nest complete but empty. N

1730 - I leave.

June 4, 1957

A slightly overcast dawn with high light clouds, no wind, a fairly heavy dew; 55°. Present from 0515 to 1000 and from 1600 to 1945; Ryckman present from 0900 to 1600.

3
1 ch.
T63 at 0520 - I arrive to start all-day observation of the female's building. M63 sings 1 loud chatter at 0523. The nest, of course, is unchanged in appearance; it's only a flimsy cup lacking bulk and showing some light through the walls.

30
0540 - The sun begins to be visible; it rose behind clouds a little earlier.

20h
4
0550 - A PW calls 4 or 5 loud "checks" 20 yards SW of me, flies E past the nest. Immediately M63 skids twice, so it must have been he.

31h
2
20h
30h
0555 - M63 sings 3 skids, either faint or far. At 0558 he sings 2 near the nest, then 3 chatters there, quits in 1½ minutes.

0600 - It's 56°, lightly overcast, the sun covered at the moment.

1
0601 - M63 begins irregular skids, singing one or two and then moving. He stays on the E half of the territory so far as I can tell but covers it from 1 ravine to the other and evidently is constantly in motion.

x

25pk
8
2pk
2
There are sometimes 2- and 3-minute pauses between songs.
By 0615 he's sung 16. As yet I've seen nothing of the
female. At 0620 M63 falls silent after 25 songs.

0628 - M63 sings 2 skids to the N at the ravine.

0630 - It's 58°, completely overcast, rather misty
and calm.

14pk (7.0)
6
10.5
2
13pk
3
6pk
7
0630 - M63 begins a rapid series of chatters, some
interrupted and possibly slightly less than full volume.
He quits after 14 in 2 minutes, all sung in the same
tree, 30 yards from the nest.

0638 - The male skids once.

0645 - He begins to chatter 40-45 yards SW of the
nest. One song is weak. After 11 songs in 2 minutes he
moves away, sings twice more.

0651 - M63 chatters 6 times to the SW; 2 songs are
sotto voce.

19
12pk (40)
2pk
0700 - It's 63°. For 20 minutes it has been get-
ting brighter as the mist and clouds burn off. There
are no cloud masses, only a gray overcast through which
the sun shines and casts light shadows.

0719 - M63 begins chatters 40 yards SW of the nest.
He sings 12 in 3 minutes, waits a half-minute and re-
sumes but moves SW. He sings 26 times to 0730, continues,
moves N to the ravine.

0730 - It's 68°, nearly cleared up.

104
0733 - The male quits after 10 more songs.

27
0736 - M62 flies silently into a tree 15 yards from me, 10 from the nest. He looks around while 30 feet up, in 30 seconds moves 10 yards to another tree top. In 10 seconds he flies N high (45 feet while over level ground), seems to land or to pass over the trees at the N edge of the E-W fairway. I heard no sounds from any PW at the time. At 0740 a male sings 4 weak skids in the tree I first saw M62 in. The songs lack the high shrill quality of M62's.

0800 - It's 75°, slightly hazy but sunny.

I'm not going to count the male's songs.

12
0812 - 63F comes to the nest for the first time, stays 25 seconds, goes S. M63 sings sotto voce 25 yards S.

From now on I'll indicate 63F's trips by a direction from which she comes, a number of seconds at the nest, and a direction in which she goes, thus: W; 10; W, etc.

(20) pot 10
sk
0817 - S; 17; SE.

It's hard to account for the female's late start this morning; it must simply be an individual characteristic.

0823 - S; 20; S. M63 is skidding almost inaudibly to the S.

N13

0829½ - S; 32; S.

0835 - Unseen; 280; E. In the nest she moved about for 10 or 15 seconds, sat still for 20 or 30, moved some more, etc. M63 sang a loud skid 20 yards away while she was there. Now he sings slow faint chatters.

0842 - SE with plant down; 20; E, dropping low. She landed 3 feet below the nest and hopped up. Sotto voce.

0844½ - E, hopping up in 5 seconds; 17; E high.

0849 - S; 75, working on rim; E. The male chatters faintly after 5 minutes' silence. His rate is 6 a minute for 2 minutes.

0853 - S, straight to nest level and in; 125, a stretch of about 60 seconds of no activity; E high.

0858 - The male begins faint chatters at a 6-per-minute rate.

0900 - It's 76°, unchanged in the last hour.

0902 - S; 47; S high. The male is still singing. He quits at 0907.

0908 - S; 50; S. She sat still for 20 seconds.

0912 - S from at least 30 yards; 50; S. Ryckman relieves me.

T62 - 62F is on the nest and the male is skidding loudly on mid-territory.

0930 - I go to the Dunn tract.

TD6 - The female is incubating. I don't hear the male. y

TD4 - MD4 sings above the nest. The young have their heads out.

TD8 - The female is foraging silently at from 2 to 5 feet, just W of the tree row in the heavier vegetation. She's probably still building, the final stage. The male sings 2 type-8's from high up.

TD1 - D1F is incubating. y

TD3 - MD 3 sings.

TD9 - The nest contains the first egg today. Note the behavior of the adults recently, in the building and pre-laying period. first egg

The nest is 5½ feet high in a 6-foot elm nearly enveloped in bittersweet. Actually the nest is in the vine, which conceals it well.

There are no songs from the SE corner of the E field.

1000 - I leave.

T63 at 0915 - I [Ryckman] relieve Nolan.

0925 - S low; 30; N low.

0927 - N low; 10; N low.

0930 - It's clear, windless, 82°.

0932 - N low; 40; S high.

0949 - N low; 40, sitting in nest; S low.

0954 - E low; 70; N low.

1000 - NE low; 45; S high.

It's 84⁰, unchanged.

1003 - S high; 30, and 15 more in the tree after leaving the nest; S high.

1014 - SW low; 70⁰; S low.

1016 - S low; 20; S low. She paused 10 seconds, after leaving the nest.

1017 - She repeats exactly.

1019 - SW low, pausing 5 seconds near nest; 15; S high.

1027 - S; 30; SW low.

1030 - It's 88⁰, unchanged.

1031 - NW low; 30; SW low.

1034 - S low; 15; S.

1035 - S; 15; S low.

1100 - It's unchanged.

1103 - N; 20; S low.

1130 - It's 84⁰, partially overcast, the sun in.

1200 - It's 80⁰, overcast.

1230 - N; 70; N.

It's 88⁰, overcast.

1236 - N; 136; S high.

1240 - E low; 15, hopping down to bottom of tree

after leaving; missed.

1245 - SE; 20; E low.

1247 - SE; 40; SE low.

1249 - E high; 130; E high.

1252 - E; 20; S low.

1300 - It's 82^o, overcast, calm.

1308 - E; 40; E.

1310 - NE; 20; NE low.

1312 - SE; 20; SE.

1314 - SE; 20; NW low. M63 is in a tree just S

of the nest, singing I think.

1317 - Missed; 5; SE.

1326 - N; 30; low NW.

1330 - It's 89^o, unchanged.

1339 - SE; 30; low SE.

1348 - S; 35 after perching in nest tree several

seconds; NE.

1350 - SE; 20; SE.

1352 - SE; 40; SE low.

1358 - SE; 230; missed. While she is in the nest

a red and black bird flies in and perches for 50 seconds

just below the nest. 63F stays 70 seconds after the

bird leaves.

1400 - Sunny, calm, 82^o.

1416 - S; 15; S.

1421 - S 40 yards at least; 15; S low.

1429 - SE; 14; E.

1430 - It's 86⁰, unchanged.

1434 - SE; 20; SE.

1440 - S; 35; S.

1442 - S; 25; S.

1444 - E; 55; S.

1451 - E; 80; S.

1456 - S; 60; S.

1500 - It's 84⁰, unchanged.

1502 - S; 16; S.

1514 - S; 15; S.

1516 - S low; 10; S. Many times today she doesn't land right at the nest with her material; she comes into the tree low and hops up.

1524 - S; 100; S low.

1530 - It's 86⁰, unchanged.

1540 - E; 40; E.

1600 - It's 87⁰ with scattered clouds and a slight breeze.

1602 - SE; 40; N.

1607 - S; 48; S.

1630 - It's 87⁰, slightly breezy, clear.

1632 - SW; 30; NW low. I think M63 is singing.

1700 - It's 80⁰, partly cloudy.

330
6/4/57
BR
VN

85/420
340
900

1701 - 63F comes to the tree without material, doesn't go to the nest. She perches 40 seconds on a limb just above it, flies down below it and stays 30 seconds, goes N.

1715 - Nolan relieves me.

1600 - I return.

T61 - The nest has its first egg. The male sings a few faint insipids, I think in 3 or 4. N

T65 - M65 sings loudly and frequently in the big trees right by the nest tree, but I never see him. N
There is no adult at the nest during the 10 minutes I'm here.

T63 at 1715 - I relieve Ryckman.

706
4 1/2
1716 1/2 - N; 19; N low. The male began to chatter very faintly 35 yards to the N a minute ago, sings for 2 minutes.

42+8
(4.9)
1723 - M63 begins faint type-8's to the N. He goes on, at about 1728 comes in to within 30 yards of the nest (near me) and sings loudly. At 1731 1/2 he quits after 42 type-8's.

2 1/2
4+8
It's 82°, wholly overcast, still and humid.

1734 - M63 begins type-8's N at or across the ravine.

1735 - N; 30; drops straight down N.

2
1736½ - N; 10; drops N.

4 1/2
2
3 1/2
1738 - N; 17; N. She took 5 seconds to hop up
and in, actually entering from the S. The male sings
4 type-8's at this time.

1741 - M63 sings 3 type-8's.

1742½ - N; 30; N high. She flew directly to the
nest.

12
3 1/2
1754 - M63 sings 3 half-volume chatters 35 yards
N of the nest.

1800 - It's 82⁰, totally overcast with a high
cloud cover, nearly windless.

20
(Will a female PW begin building a new nest in the
afternoon or evening?)

9
9 1/2
1829 - - M63 begins to chatter 30 yards W of the
nest, near me, 25 feet up. He sings 9 times in 2
minutes.

6
1830 - It's 82⁰, sunny as the result of clearing
that began 10 minutes ago. There is still a high,
thin cover in most quarters.

8 1/2
4
1837 - M63 chatters in the same tree he was singing
in last time, 8 songs in little over a minute. The
volume may be slightly less than full.

1842 - M63 chatters very faintly to the N.

9 1/2
1843 - N; 30; N dropping low.

M63 begins type-8's after 9 chatters, comes again

to the same tree and sings from 25 feet, 4 feet from the top. His rate is irregular; some songs are 30 seconds apart. The volume varies too. He's preening, has sat at the same perch for 4 minutes.

1850 - N; 24; E.

1851 - E; 12; W to within 12 yards of me, 25 of the nest. After 45 seconds 5 feet up in a tree she goes on. M63 leaves his perch where he's sat for 5-6 minutes. He sings on. At 1854 I hear no more; the series was of 45 songs, the last 36 type-8's.

1900 - It's 77°, very thinly overcast, sunny.

1930 - It's 71°, otherwise unchanged.

1931 - M63 skids once to the N.

1945 - 63F won't return today, so I leave. It's been 75% sunny. Neither Ryckman nor I have seen any sign of fear of us by the 63's, so 63F's activity today was natural. The nest now looks in all respects complete from the outside; it is bulky and neat.

June 5, 1957

A misty and damp morning but a nearly clear one; windless; 54° at 0500. Present from 0515 to 0840 and from 1400 to 1945; Ryckman present from 0840 to 1600.

T63 at 0515 - It is murky and silent. *down*

0544 - I hear 2 "checks" to the S on the hill top, and M63 sings a step-buzz. He seems to fly N toward the ravine; I hear a call or two and a weak buzz there at 0545, another at 0547, a chatter at 0547½.

0550 - M63 sings 3 loud chatters near me, within 40 yards and less of the nest, then moves SW and sings a step-buzz. At 0552 he chatters once near me again.

0555 - One chatter. Another in 2 minutes.

0600 - It's 56°, windless, and the sun is well up and becoming more visible through the mist.

0604 - One faint chatter to the N.

0606 - M63 sings 15 songs in the next 6 minutes, half chatters and half step-buzzes. He's to the S; some songs are faint.

0615 - He sings a step-buzz to the S, in a minute a skid near me, then a Golden-wing buzz to the N and a chatter.

0623 - A step-buzz and a skid W of me on the hill, then 14 chatters well to the S, probably at or near the

ravine. He quits at 0629.

0630 - It's 60°, still very misty.

0631 - M63 is still to the S. He chatters either very softly or at a considerable distance. After 7 to 0635 he chatters loudly once 35 yards S of the nest.

0638 - One type-8 to the S, and in a minute he goes into a long series there.

0647 - 63F makes her first trip to the nest. I miss the direction she comes from; she enters quickly. After 30 seconds of working and turning she becomes quiet, sits for 7 minutes and 10 seconds with only 3 slight movements to tell she's still there. She goes S. M63 sings the whole time she's present.

0657 - M63 quits after 41 type-8's and 2 chatters. In a minute he skids once, in 30 seconds sings type-8's.

0700 - It's 66°, brightening all the time.

M63 has sung 3 type-8's to the S. I'll finish this series and then count his songs only by the half-hour.

0703 - SE; 45; NW. While she's on the nest the male moves N to the ash tree he often perches in, 30 yards NW of the nest, and continues his type-8's. They aren't faint but lack any ringing quality. He stays 1 minute, moves on W, sings. At 0709½, after 36 type-8's (33 since 0700), he sings an insipid; in 20 seconds he

178
6
20m
sings a type-8 and quits, somewhere to the S. He begins again with 2 chatters at 0716½.

0730 - It's 68°, unchanged.

4:45
M63 sang 45 times, including the series described, a few scattered songs, and a short series from 0728 and continuing. Some of the current chatters have been sotto voce.

0732 - E (?); 110 seconds, 90 of them just sitting, so far as I can see; N.

0742½ - N; 35; N low. Very weak chatters are coming from the N, possibly from across the ravine. Note that M63 is not staying near the nest at all today, though he sings as he passes it. His songs are almost fewer here than this area's ratable share. I assume this has something to do with the late stage of building.

82
(20)
0800 - It's 73°, the sun shining very strongly but through a light, high haze which will probably last all day.

M63 sang 82 times, most of them in a series of about 40 chatters in 15 minutes.

0802 - N; 33; NW.

M63 sings 12 songs unlike any I've ever heard a PW sing and impossible for me to describe. They have the rattling quality of a chickadee's notes, a Blue-wing's second song, a Parula. In a way there is the

old
songs

staccato of a Tennessee's song. He is 30 to 50 yards from the nest at the time, moving and perching high.

0808 - N; 62; W. She moved in circles, shaping the cavity the whole time.

0818½ - N; 8½ minutes; W. She worked the first 10 seconds, sat as though incubating the rest of the time. Would a female do the same during construction of her first nest of the year, before she had had experience sitting on eggs?

0830 - It's 78°, sunny, still.

M63 sang 38 times; while the female was on the nest he sang 40 yards N and 30 yards S of it. All songs were chatters.

0835½ - N; 75; W. She sat still after the first 12 seconds.

0840 - Ryckman relieves me and I leave.

T63 at 0840 - I [Ryckman] relieve Nolan.

0847 - S; 120; NW, low.

0856 - S; 30; S low.

0900 - It's 80°, clear, windless.

0908 - SE; 140; missed. A Scarlet Tanager perches near the nest for 30 seconds. 63F leaves 5 seconds after he does.

0930 - It's 85°, unchanged.

inc
Sc Tan

- 0931 - SE; 35; NW low.
- 0939 - M63 sings high up near the nest for 6 minutes.
- 0946 - N; 20; NW.
- 0954 - M63 is singing near the nest to the NW.
- 1000 - It's 88°, unchanged.
- 1025 - E; 30; SE low.
- 1030 - It's 86°, slightly cloudy, the sun in.
- 1100 - It's 89°, slightly cloudy, sunny.
- 1130 - It's 86°, unchanged.
- 1143 - S; 15; SE low.
- 1200 - It's 90°, sunny, with a slight breeze.
- 1230 - It's 90°, slightly cloudy, the sun in.
- 1235 - A Cowbird flies to the nest, puts its head in, flies SW calling in flight.
- 1237 - M63 sings just N of the nest for 2 minutes.
- 1245 - SE; 15; NE.
- 1300 - It's 90°, slightly cloudy, sunny.
- 1330 - It's 88°, slightly cloudy, the sun in.
- The clouds today are scattered.
- 1332 - 63F spends 70 seconds in a tree immediately W of the nest tree, goes E.
- 1335 - N; 40; NW.
- 1400 - It's 84°, unchanged.
- 1427 - Missed; 40; NW low.

C to
nest
Songs of
case Red
+ 9 F's were
I think when
QC heard
with record
Wdly -
just a random
Sung yes

338
6/5/57
BR
VN

1430 - It's 86⁰, scattered clouds, sunny, calm.

1433 - M63 sings just N of the nest for 5 minutes.

1439 - W; 30; N low.

1443 - NW; 185; N low. She had material.

1500 - It's 84⁰, clear, calm.

1529 - 63F flies to the nest tree, leaves immediately without going to the nest.

1530 - It's 86⁰, clear, slightly breezy.

1600 - Nolan relieves me.

1400 - I return. It's hot and clear.

T62 - 62F is on the nest.

I go to the Dunn tract.

TD6 - D6F is not on the nest but the 4 eggs are intact.

TD4 - The young are alive, their heads hanging over the nest rim, bills open.

TD8 - The nest contains the first egg, a day earlier than I would have expected.

TD1 - The female is on the nest.

TD9 - The second egg is present.

TD2 - A male is singing here; I'm nearly sure I see MD2's band. I then come upon the female in a haw; she calls "check" 4 or 5 times at me and begins to prospect for nest sites. She crouches in about 4 places in the

♀ prospect
for nest -
2 d 60,

tree, flies quickly some 20 yards and crouches in 4 or 5 more spots. The male sings somewhere near, sometimes sotto voce insipids. I think I hear young as I go. I then return to the farm area.

T66 - 66F is at the nest, probably standing over the eggs rather than sitting on them. ✓

T65 - 65F is foraging quietly in a 7-foot haw near the nest tree (30 yards). She calls "tsu" very lightly and frequently; probably oftener than I can hear and probably because of me. I watch her for 5 minutes; she eats about 4 caterpillars, covers the tree thoroughly and rather deliberately. M65 skids once on some 6 occasions, always from high in the cluster of trees near the nest. In 15 or 20 minutes I never see a sure sign that the nest is still active. ✓

T63 at 1600 - I relieve Ryckman.

1620 - A male PW, banded with 2 bands, one colored (green?) on his right leg, flies from the N and lands 25 feet up in a tree 20 yards from the nest. In 10 seconds he goes to a tree 15 yards on S, pauses 30 feet up for 5 seconds, then flies straight S at a height of 45 feet. All this was in silence, and it is the kind of episode that is of special significance for behavior and territorialism. I'm pretty sure the silver band was below. (Is this M64?) Old 57

1627 - N; 33; N, low.

1630 - It's 87°, sunny, very humid and with a remote threat of rain in the slightly overcast sky.

1632 - W; 34; N. The male was with 63F; he flew very close to her, I'd guess 4 feet from her, stopped 10 feet up and 30 feet from the tree while she went on to it, called once (?), and flew N in 5 seconds while she was still at the nest. *add on*

1700 - It's 90°, unchanged.

7
M63 sang 7 times during the half hour, in 2 little *skids*.

1730 - It's 87°, unchanged.

15
M63 sang 15 songs, all insipids and step-buzzes and nearly all faint.

1800 - It's 84°, unchanged.

M63 has not sung.

1805 - A banded male, one band, flies silently into a tree 35 yards S of the nest. He looks around vigilantly for 10 seconds, moves to a tree by me but flies in 1 second to another on W, and then on away from it. M63 flies up as the male goes out of sight; M63 then flies toward the nest, sings 3 very faint step-buzzes, falls silent. The strange male must have been M48, the only male except 2 on the Dunn tract with 1 band. *add on*

1809 - W; 30; W. M63 flies along with the female and lands 5 feet from the nest, where he sits while she builds. When she leaves he flies 5 feet behind her. The two land 10 feet from me, the male 5 feet from the female. Both are silent and there is no posturing of any sort. She flies on W in 10 seconds, and he follows 5 feet behind.

1820 - There is an extra male PW here, behaving exactly as the other two have. As I watch him there are step-buzzes from the S and he calls 5 or 6 "checks," flies quickly N. I couldn't see his legs. (Ryckman mentioned that he thought he saw 2 PW's in a chase on more than 1 occasion.)

1830 - A male with 2 bands on his right leg, the lower silver, the tail unpainted, flies up, perches within 40 yards of the nest, moves on W. I follow and hear 5 or 6 faint "checks." In 1 minute I can't see the other band; it may be red (M64). Are these males, at least two, here because of 63F's nest building? Why do they always come to nest vicinity? Compare my catching M62 by the first nest she was building.

1830 - It's 81°, unchanged.

M63 sang 20 times, nearly all step-buzzes.

1841 - W; 75; W. I heard a "check" behind me and

found the 63's in the same tree together. She flew right past me directly to the nest; he flew 5 feet behind her and landed $1\frac{1}{2}$ feet from the nest. He sat there, hopped around quietly in the tree, hopped out of sight, in 15 seconds returned to within a few feet of the nest. When 63F flew out and W he was on her heels. I heard a song from another male.

A Barred Owl hoots 10 times.

I think that intruder birds may be more common on a territory at 1 time than at another; witness the fact that when 1 incident is seen it is almost always followed by more with the same and even with other intruders. Also the situation seems to go on for more than 1 day. I suspect that nest building, feeding, etc., are exceptionally interesting to males whose own mates are engaged in the dull business of incubating, and that this accounts for some moving. If I'm right, this fact would be equally true of birds in a high concentration and should show up on the Dunn area too. Note the fact that fights occur when males come to a territory where I've created a disturbance or where adults are tending young. The difference between those and what I've seen today is that those fights occur at a border, so that the intruder is virtually on his territory. Too, there isn't the slightly furtive quality

sometimes seen in the rapid flights of intruders like those today. NB

I'd say the odds are by far that a male here today was M64. I don't see how the other can be any but M48.

1900 - It's 79°, unchanged.

M63 sang about 3 times.

1930 - It's 73°, unchanged.

M63 sang 3 or 4 faint songs.

1937 - I hear a step-buzz and an insipid from 2 different places and see 2 PW's in a very brief pursuit in the big trees on the hilltop. In 2 minutes I see M62 (seen clearly, including painted tail) feeding silently about 18 feet up in trees on the S edge of the territory. I watch him for 1 minute. He is silent, acts normal for the late hour, i.e., feeds very energetically. This intrusion at dusk is exceptionally interesting. 3rd of 7 weeks

1945 - There's no chance of further nest building, so I leave. It has been 90% sunny, ideal in all respects.

June 6, 1957

A very damp morning with a heavy mist; no wind; 65° at 0500. It never clears for more than an hour at a time during the day, which is humid, cloudy, rainy during the mid-morning. Present on the Dunn tract from 0500 to 0945 and on the farm area from 1400 to 1730.

TD8 at 0500 - I can hear several males singing insipids and step-buzzes and at least two are calling the harsh excitement notes. MD4 sings step-buzzes to the N. I'm not sure I hear MD8.

0527 - D8F flies to a bare branch 6 inches above the nest, looks down at it for 5 seconds, drops in to lay her second egg. The male begins to skid at about the same moment.

0610 - D8F leaves the nest. Egg-laying might have been earlier on a clear light morning.

TD4 - The nest has been pulled down and no young have survived. The condition of the nest and the fact that the predation probably occurred at night indicates a mammal almost surely. The parents are still excited and probably would call as they are even if I weren't here. I put up a net and a mounted owl but the net is visible and I catch nothing. The adults join a large

down

laying

*ads of the
new
feature*

assembly of several species that is attracted by the PW calling and stay to protest the owl, but I'm pretty sure the owl doesn't really bother these PW's.

TD6 - The female is incubating, the male singing frequent type-8's. y

TD7 - I find the male at the N end of the fence line in this field and at the E end of the fence which then turns N as the field narrows. He also moves N into the N field. He sings type-8's, comes quickly when I squeak.

TD10 - I find a nest of the pair, here numbered for the first time, which Moorhead and I saw here about 8 days ago and which then seemed to be beginning to nest. There are 4 eggs, fresh-looking; the female is incubating. I find the nest by watching the male; as he flies low over the field, he drops slightly and pauses in flight at a spot where I immediately see the nest in a blackberry, 2½ feet high. y
of Bour
near

There are at least 2 more pairs in the N end of this field. I see the male and female of one; unbanded.

TD2 - I see both adults; the male sings irregularly, and the female spends all the time I watch her in feeding the young. They are beginning to be noisy. feeding

TD1 - The 4 eggs are intact when I pass. About 100 yards N I find D1F, easily recognizable as a female off

its nest because of the very rapid and rapacious way she forages. She stays within 3 feet of the ground and is in constant darting motion. After I've watched for 5 minutes she suddenly flies S, evidently going all the way to the nest in 1 flight. I don't see or hear MD1. *9:00 nest*

TD5 - MD5 sings.

TD9 - The nest still contains only the first 2 eggs, which I measure. Number 1 is 16.5 X 12.8 and 2 is 16 X 12.3 mm. I don't see or hear the PW's.

TD3 - I hear a PW singing about as far N as you can go in this field and W of the ridge and find it is MD3. His territory seems to be long and to run N or NW.

0945 - I leave.

1400 - I return to the farm area.

T66 - 66F is on the nest and there is 1 song from the male. *4*

T65 - M65 sings loud songs near the nest, but in an hour, half of it watching the nest, I see no sign that the young are being fed. I never see or hear the male after the first 10 minutes. Note that he is marked exactly as was the bird seen last evening on T63, but that I wasn't able to be perfectly sure about the bands.

347
6/6/57
VN

I'm still not sure this nest has failed; it is completely shaded, so the female wouldn't need to stay and protect it.

T61 - The nest contains 3 eggs. I see and hear nothing in 10 minutes.

T63 from 1600 to 1730 - I see no PW but M63 here. He sings very irregularly and at these times is always high and alert in his inspection of the territory. I think he may feed and move in a less-watchful way, with only periodic attention to territorial matters when he sings; this is a guess. He goes NE to the far hillside and sings there once.

The nest is complete but empty.

T62 - 62F is on the nest. I don't hear M62.

1730 - I leave.

138 07

N
Y

June 7, 1957

A clear dawn except for a very heavy mist that persists for several hours; windless; 62°. Present from 0500 to 1145 and from 1230 to 1645; Ryckman present from 0845 to 1230 and from 1640 to 1945.

T63 - M63 is singing insipids and chatters on the N hillside toward the E. *dawn*

(75)
4.30
0.518
T62 at 0505 - The male is singing insipids but I neglect to count his songs for a while. 62F is on the nest.

0518 - 62F leaves the nest. *0.0518 - 24*
19

0524 - She returns.

64.0518
3.0
0530 - I begin to count M62's insipids (step-buzzes). He sings 64 to 0552 without any pause. He then begins to skid.

6.00
2
0554 - 62F drops NW. M62 sings 1 more skid. (he's NW of the nest) and stops. He's sung 72 times since 0536, the skids weak. *0.0554.0600*
1+16
step-buzzes
gale

16.00
4.10
0556 - M62 starts to skid again.

0600 - 62F returns to the nest. Visibility is bad because of the leaves, so I can't tell how she is facing.

0600 - It's 62°, windless; there's a glare but the mist prevents the sun from shining.

M62 has sung 16 skids in 4 minutes and I begin over again.

64
(4.3)
15
22/17
25 min
(3-1)
4
4 1/2
15 min
3
20 min
(4-10)
2
7 min
6
2
9
0615 - M62 quits after 64 skids.

0630 - It's 64°, unchanged.

0636 - 62F leaves the nest.

0642 - She returns.

0647 - M62 begins to skid. He quits at 0656 after 28, stopping when a Cooper's Hawk flies fast and low, quite near where he must be.

0700 - It's 68°, unchanged.

0704 1/2 - M62 begins to skid again. He quits after 15 to 0708.

0710 - M62 is in the cherry that is by the nest tree; he's 10 feet above the nest. He has no food; the female looks upward.

0711 - M62 begins to skid, stops at 0716 after 20.

0717 - 62F leaves the nest.

0718 - M62 skids weakly 7 times.

0726 - 62F returns. She calls 2 or 3 times, I think near me, first. She faces W.
0727 - M62 skids weakly in the cherry above the nest.

0730 - It's 72°; there's a slight S breeze, but it's still very misty.

0745 1/2 - I see M62 in the dogwood tree, 5 feet from

O-0636-42
O

Coopers -
at nest?

O-0717-26
7

the nest. He's carrying a green larva. He hops to the nest in short moves, stands at the rim out of my sight for 12 seconds. He then hops down 3 inches below the nest, still holding the food. In 2 seconds he goes to the E rim (he'd been on the S rim) and stays 15-18 seconds. He drops low to the N; I can't see the disposition of the food. The female made no movement toward him that I could see. In 30 seconds he resumes skidding. He had sung 58 times from 0727 to 0745, with a pause of 2 minutes or so after 50 songs. I count over.

0757 - 62F leaves the nest.

0800 - It's 77°. The ground mist is gone, but there is a thin full overcast in the sky.

M62 has sung 47 times and is continuing.

0803 - M62 quits after 54 skids in his series.

0813 - 62F flies silently to a point 3 or 4 inches below the nest, hops up quickly, enters and faces SW. This has been her method of approach several times.

0816 - The sun burns through for the first time.

It will soon be out to stay for a while.

0817 - M62 begins weak skids.

0828 - M62 quits after 47 songs.

0830 - It's 77°, unchanged, the sun not out at the moment.

7
I'm not going to count M62's skids (he begins at 0835) since I'm leaving shortly.

0840 - The sun comes out for good.

0845 - Ryckman relieves me and I leave the territory.

T63 - M63 sings on the territory. The nest has its first egg, seen with a mirror. N

T65 - The nest has failed and the adults are evidently going through the preliminaries to building a new one. M65 is silent most of the time but does sing a series of some 15 or 20 once. He stays about 20 feet up, keeps a careful watch on the female, often assumes a tense attitude. At least twice he flies down to the female after one of these watches (during which the body is horizontal); I don't see what she does, but apparently she doesn't participate actively. I watch her once for 10 minutes: She simply forages along low. At the very end of my observations here she nest shapes, or at least crouches, for 20 seconds in 1 spot, a crat-aegus. I'd therefore say building hasn't begun. Also she doesn't stay in 1 area but is both in the W field and N near the last nest. Finally, the male's behavior suggests more excitement than you see on the last day of building, which is the only other possible situation here. (I forgot to note that he flutters in flight 2 57 Hdy)

or 3 times.) If it weren't for these indications I'd think building was well along; I've noticed lately, with the male's accompanying the female at the end of building, that the 2 periods are fairly hard to distinguish simply from occasional glimpses of the birds.

A large doe walks up on me, stares curiously, leaps away when I move.

T66 - 66F is not at the nest. The eggs are intact. The fourth measures 16.7 X 13 mm. I hear a male skid.

T61 - 61F isn't on the nest during some 20 minutes spent watching it. I don't have any mirror to check the contents. M61 sings insipids in the tops of the trees at the S end of 2 when I arrive, skids loudly in the pine field later, and when I leave is singing skids, chatters, and type-8's in the tops of the edge trees in the E woods.

I go to the Dunn tract.

TD6 - The female is incubating, the male singing type-8's.

TD10 - The eggs are intact, the female off the nest.

TD7 - MD7 is well N in the N field, just S of TD10. Then as I go S on the W side of the E field I find him there too. D7F is also there, and once when she is about 15 feet high he flies up close to her. I miss the

59
p. 246d

details. She seems to crouch in a leafy sassafras fork a few seconds later, and at the time I'm sure she is nest-shaping. She then flies out with a green larva and feeds it, presumably, to a young bird in the fence row below her. This occurs near the spot where I had the net up when I caught the D7's. Once again she carries food to the same place.

Just before these feedings MD4 is singing loud skids from 30 feet up in the trees just above where I caught the D7's. He does this many times; D7F must be visible to him 20 or 30 yards away. At the moment I decide that MD7 must have moved N with his young and let MD4 move N too. However, MD7 joins D7F near me, and MD4 seems to get back far enough S to avoid trouble with MD7. For the five minutes at first he was clearly singing very loudly on TD7.

TD4 - See just above. MD4 sings along his whole N-S line, so loudly and fast that it occurs to me that he's lost his female. [Correct.] I don't see her in 10 minutes here.

Foot-
low 74
singer

TD8 - MD8 sings skids. The nest should have 3 eggs.

TD1 - The female is incubating.

2
y
N

TD9 - The third egg is present, so she skipped a day yesterday. One of the pair calls when I go to the

354
6/7/57
VN
BR

nest.

TD2 - MD2 sings. I don't see the female but haven't time to search for her.

1145 - I leave.

T62 at 0845 - I [Ryckman] relieve Nolan.

0848 - 62F leaves the nest, perches 30 seconds on the rim, goes SE.

0848-57

0857 - She returns from the W.

0900 - It's 77°, slightly breezy, sunny.

0930 - 62F leaves, drops E.

0930-41

It's 80°, unchanged.

0941 - She returns from the W, pauses a second on each of 2 limbs, enters from the S.

1000 - It's 87°, unchanged.

1002 - M62 skids E of the nest, 24 in 6 minutes.

1030 - It's 90°, unchanged.

1041 - M62 begins to skid W of the nest, 31 to 1046.

1054 - 62F leaves, drops NW.

1054-1101

1100 - It's 90°; scattered clouds cover the sun.

1101 - 62F returns.

1106 - M62 skids W of the nest, 14 to 1109.

1112-47

1112 - 62F leaves.

1125 - M62 sings 17 times to the E.

1130 - It's 92°, unchanged.

355
6/7/57
BR
VN

1147 - 62F returns.

7 1154 - M62 skids 7 times to the W.

23 1157 - M62 skids, 25 to 1202.

1200 - It's 93, sunny, slightly breezy.

2 1225 - 62F leaves.

1225-32

1230 - It's 86°, cloudy.

0

1232 - 62F returns from the E.

1232 - Nolan relieves me.

T62 at 1230 - I return and, after the female comes back at 1232, relieve Ryckman. It's sultry and threatens to rain; the sky is overcast and there's occasional thunder.

1300 - M62 sang 52 times since 1230.

1300 - It's 76°, overcast, threatening, windless.

45 1317 - 62F leaves the nest.

1317-33

1330 - It's 75°, unchanged; rain is sure.

3 gnatcatcher

M62 sang 45 times.

1333 - 62F returns. Either she or M62, I think she, had a brief encounter with a gnatcatcher in the dogwood between me and the nest 10 minutes ago.

the

gnatcatcher

1345 - It begins to rain lightly and steadily.

49

1400 - It's 75°, windless, with a light even rain falling.

M62 sang 49 times.

1430 - It's 74°, unchanged. The rain is exactly as before.

M62 sang 11 times.

1435 - The rain stops.

1443 - 62F after a minute of looking in all directions, including down, flies W at nest level.

1453 - 62F returns.

1500 - It's 80°, the sun just visible through an overcast.

M62 was silent.

1500 - M62 begins loud skids in the cherry above the nest.

1504 - M62 after 17 skids drops 15 feet to the nest tree. He has food.

62F leaves the nest the moment the male lands, about 5 feet from her. It is exactly as though there were young. He starts to the nest from the W or N rim, hops down below it, goes in 2 seconds to the E rim, perches there 8 seconds. I can't see what happens. He then leaves.

1510 - 62F returns. Note that after both of her extra long attentive periods today (one in the morning and the one just lengthened by rain) she has had very short ones. Is this accident (e.g., M62's arrival)?

A F B

N B

N B

If not, it's interesting that she doesn't lengthen the inattentive period but instead stays on a shorter interval next time.

79
1530 - It's 76⁰, clouding over and threatening to rain again. There's a SW wind.

M62 sang 79 skids, is singing now.

1543 - 62F leaves the nest.

1553 - She flies from the W to a spot 4 inches E of the nest, hops around to the W and enters. I'd say she is facing S nearly all the time today.

1558 - I hear fight notes, about 3, and see a short fast chase in the big cherry beside the nest tree. There seem to be 3 PW's. At 1559, 62F flies quickly back to the nest, so she was attracted from it by the encounter. I saw a bird with a silver band, on its left leg I think. (M61?).

0151
NB

34
1600 - It's 77⁰, unchanged.

M62 sang 34 skids.

1620 - 62F leaves the nest.

86
1628 - She returns to the nest tree, catches and eats a green caterpillar 8 feet from the nest, quickly flies to it and enters.

1630 - It's 74⁰, unchanged.

M62 sang 86 skids.

1631 - A PW was at the nest for 5 seconds. My

358
6/7/57
VN
BR

first thought was that 62F had left without my seeing her, returned briefly, and gone again. However, M62 soon hopped up into the cherry and began to sing, and I can see 62F on the nest. It must have been the male that went to the nest.

1640 - Ryckman relieves me.

1645 - I leave.

T62 at 1640 - I [Ryckman] relieve Nolan.

1651 - 62F leaves.

1659 - She returns low from the W.

1700 - It's 76°, overcast.

M62 begins to skid to the W, 28 to 1708.

1738 - 62F leaves low to the E.

1746 - 62F comes from the W to a branch W of and below the nest. She hops to a branch just below and E of it, enters.

1800 - It's 74°, overcast, slightly breezy.

1811 - 62F leaves.

1817 - She comes in low from the E, perches below and E of the nest, hops up through the tree and enters.

1830 - It's 73°, overcast, calm.

1854 - 62F leaves high to the W.

1900 - She returns from the W.

It's 72°, unchanged.

1918 - 62F leaves to the W.

1924 - She returns.

M62 skids weakly to the W 4 times.

1930 - It's 70⁰, unchanged.

1936 - 62F is settled deep.

1945 - I leave.

It was 15 or 20% sunny.

June 8, 1957

A warm morning with a steady light rain beginning at 0430 and falling to 0700; it rains occasionally during the rest of the morning, clears somewhat at noon; windless; between 64° and 78° all day. Present on Dunn from 0500 to 0630 and from 0900 to 1130, on the farm area from 1400 to 1600. *Dunn*

TD9 - I sit to watch the nest all day, in an hour learn the eggs are gone. MD9 sings in the vicinity.

TD1 - The female is incubating. *4*

TD8 - This nest has failed too, the eggs gone from it. Incubation was to begin today.

TD6 - The female is incubating. *4*

0630 - I leave.

0900 - I return. A light mist is falling.

TD8 - MD8 sings 2 or 3 times in the tall trees of the tree row, but in 20 or 30 minutes I can't see the female. Once a PW, surely MD8, carries food out to the clump where the nest is. I watch the nest, but he doesn't go to it. Maybe my running to watch scared him.

TD4 - MD4 sings from about 35- to 40-foot perches in the tree row, goes out into the field once. As he

was doing earlier this morning, he sings at a rate of 4.5 songs a minute and so continuously that his average doesn't get as low as 4 a minute. He goes as far N as the place where I caught the D7's, never draws a fight. He doesn't look down toward the ground as he would if a female were here, and he moves along the whole fence row. I think D4F must have left after she lost her young.

*Sing rate
much less*

- 1 B

MD4's behavior suggests something that I think must be very common in males living in large fields with as few trees as this: He stays in the high edge trees, seldom goes to the field itself. As a result the territories here run N and S along the long axes of the field, with a boundary line in the center of the field theoretically but in fact a strip there that is scarcely utilized territory. An exception is MD6, which is frequently in the field but may have more low trees. It's virtually certain that fledglings from nests in the field will head for the edges or for clumps of vegetation.

*see BT -
note ♀
near 1000
in this
field*

D7 fledgling

TD7 - The male is in the very NW corner of the wide part of the field and seems to be caring for the young. He shows alarm at me, calls "tsu." D7F is across the fence in the more grownup area to the W,

feeding

carrying food. She too becomes alarmed as I arrive, displaying this reaction immediately, rather than gradually as she did yesterday.

*release to
dis. obs*

TD10 - The female is off the nest, the 4 eggs intact and getting chalky. In a few minutes I find a female to the N; her behavior makes it clear that she is away from eggs, and she finally goes back almost to the D10 nest. As a result of this, I can be nearly sure that it was not a new female I saw yesterday to the N of TD10 and that the territory simply covers a good deal of the narrow part of the field. [I now suspect polygyny here.]

N

TD11 - This is a new number. By chance I scare a nest-building female from a 1 to 2-day old nest 3 feet high in a 5-foot elm just E of the D10 nest. A male sings in tall trees on to the E a little, at the E edge of the field. This pair then is N of the D6's. I may now have accounted for all pairs here [correct]. See immediately below.

In the little wooded field E of the big one I hear a male singing a faint and distinctive song. He seems to hold the whole field up to the big locusts at the W edge; he must be the male whose female was searching for a nest site about 9 or 10 days ago, and the nest must be in the little field rather than where I

watched for the female to build. [Partly error; it's
MD8.]

1130 - I leave.

1400 - I return to the university farm.

It's clearing and is getting hot.

T62 - 62F is on her nest. I don't see or hear the
male.

On the N hillside E of old T6 a male is singing,
but I never quite catch up with him. This is very near
the places where M63 has sung recently, but I hear him
on T63 only a few minutes later.

T63 - I can see only 1 egg with my mirror. There
should be two. M63 chatters. See just above.

T61 - 61F is on her nest. It should be the second
day of incubation. M61 is silent.

T65 - I find a nest in the little crataegus where
I saw 65F on June 5 and where she shaped yesterday at
1045. (However, the nest is not on the branch that she
crouched on yesterday.) The nest is about 11 feet up,
the tree is some 15 feet high. I'd say that she began
yesterday after I saw her at 1045; the walls are some-
what porous but otherwise the nest is quite well along.
Note that it had definitely not been begun before I left.
The point is that this nest was surely begun around noon

relation better
shaping a hole

no 3 begun

364
6/8/57
VN

yesterday, or else later. I think time of day is not much of a factor in determining when nests are begun, possibly not a factor at all.

M65 is silent.

T66 - 66F is off the nest. The eggs are intact. N

1600 - I leave.

note 766

June 9, 1957

A dark overcast dawn with a NW breeze; 60° at 0500. Present from 0500 to 1200 and from 1430 to 2020; Ryckman present from 0915 to 1750.

TD1 at 0505 - The female is on the nest and the male is singing insipids. Between songs he gives excitement calls; the average number is 15 and usually there isn't much deviation from this. I begin to count at 0508.

Lawson

call note

0530 - MD1 has sung 77 times.

0540 - After some 47 songs this period MD1 sings his first chatter. To now all have been insipids. As usual all other males have sung only insipids or step-buzzes. I've heard 1 or 2 others giving excitement calls. MD1 quit this at about 0530.

0546 - D1F leaves the nest. She has been looking around for 3 or 4 minutes. Now she gets to the N rim, perches for 2 seconds, drops NW. The male keeps on singing.

0552 - D1F returns, perches 6 inches away on a blackberry, nest level, in 2 seconds goes and enters from the NW and faces SE. She seemed to be facing SE during the dawn.

0600 - It's 60°, very gray, damp, somewhat misty,

10 lines

(3.1)

47m

46m

7

with a cool NW breeze.

MD1 sang 93 times with a 6- or 7-minute break about 0550. He's singing now and I start a new count.

0626 - MD1 after 2 or 3 weak skids carries food to the nest. He perches on the S rim for 5 or 6 seconds, then hops across to a perch NW of the nest and 3 inches away. He still has the food, green I think. He stays there 7 or 8 seconds, hops down a few inches below the nest and out of sight. I see him at the rim twice more for 3 to 5 seconds each time, the 2 visits 20 or 30 seconds apart. In the interval he's in the nest tree, which moves as he hops around. At the end of the second visit he flies away fast and low, having been there just over 1 minute. The female settles down deep; I couldn't see her do anything during the time he was present; she seemed simply to sit. I don't know whether she took the food. He sings an insipid 30 seconds after going, continues in a rapid series.

A F B

0630 - It's 62⁰, unchanged.

62 more in s
MD1 sang 62 times, most songs insipid. He's still in the series that began when he left the nest.

0700 - D1F leaves the nest.

0700 - It's 62⁰, unchanged.

86 vis
on
low
MD1 sang 86 times. Note that my song counts may be slightly off; there are other males singing on all sides,

N B

and it's hard to be sure of a singer's identity. It seems to me that there is some evidence of social facilitation in song types. MD1 sings insipids, skids, chatters, and a 7-note Golden-wing song.

insipids
Golden-wing

0706 - D1F flies from a bush a few feet W of the nest to the NW rim, faces SE.

0730 - It's 64°, unchanged.

MD1 sang 75 times, is chattering now.

0745 - D1F leaves the nest. The male is singing insipids at the time and he continues.

0750 - D1F goes directly to the nest tree a few inches W of the nest, in 1 second enters and faces SE.

0800 - It's 66°, unchanged.

MD1 sang 76 times, is singing insipids now. This has been his main song during the period.

0830 - It's 68°, unchanged. MD1 sang 53 times.

0838½ - D1F leaves the nest.

0846½ - She returns. A minute ago she came to within 20 feet of me, foraged between 1 and 6 feet in the scrub growth paying no attention to me and uttering no sound. She then moved 6 feet toward the nest, then 10, then 50, then 50 and to the blackberry 1 foot from it; then in, facing SE. She foraged at every stop but the one just before the nest.

foraging
inc

MD5 has sung about as much today as MD1, always

from quite near me (and his successful nest). There have been no fights. It seems possible the female is nest building for her second brood.

0900 - It's 70°, unchanged except that the sky is naturally a little lighter as it gets later.

49 MD1 sang 49 times, more or less.

0915 - Ryckman relieves me and I leave the territory.

TD9 - MD9 is singing on the ridge top and watching D9F very intently as she moves along low. They are near TD3. Later I see a male and female on the W slope of the hill, acting as though the female is exploring; they may be the D9's or possibly the D5's getting ready for a second brood. [The latter was my view at the time; it was probably wrong.] Once the male flies, or nearly glides, to the female as she perches 10 feet up. She sits very quietly as he gets to her, which is the first time I see her, but he goes on without trying to copulate. If there were notes I forget them. Later she hops around on the ground, but I never see her carry material. [In the afternoon I found D9F building 15 or 20 yards from the place where the above was seen, so it must have been the D9's.]

TD5 - I never actually see MD5 or hear or see the young. An unbanded male is singing erratically but often

in MD5's big cherry. This may be MD1. See above under TD9. [It was probably an unstudied male to the SW.]

TD2 - Ryckman saw the male and female near their first nest when he arrived. I don't see them in a 10-minute search. That nest, found by Ryckman, is in a cedar top, about 6 feet.

362
4/9
TD4 - MD4 behaves exactly as he did yesterday, stays quietly about 35 feet up in the W trees, sings about 4.3 skids a minute for nearly all of 90 minutes. ♂ MD4 male

TD7 - Both male and female show up immediately and call "tsu" and "check" when I cross to the W side of the fence in the NW corner. The loud "check" seems to be a note of greater excitement than "tsu" in these circumstances. My object is to see the second brood nest begun. call longer

MD7 and a male that must be MD4 have a short, loud fight in the NW corner.

TD10 - I scare the female off the nest; the 4 eggs are intact. Y

TD11 - The nest has been much worked on and at 1100 is fully filled with the plant down layer.

TD6 - D6F is incubating. Y

TD8 - I have a series of strange experiences here. First I hear the male singing in the SW and S center of the field but can't find him. Then I later see him

carrying a green caterpillar. He takes this in short low hops across the field to the E, over near the road or track there. In a few seconds he returns to the SW corner and sings.

I follow and find a female and see the male approach her and watch her attentively. There are several "sip sip" excitement notes and I see, first, that a second female is present and, next, that the male is again carrying food. There is a fight with a flutter-up and a descent to the ground. I'm sure the participants were the females. Next the male starts to fly NE with his food and one of the females pursues him and drives him (or causes him to turn) back to the ground.

Then begins a 10-minute, silent fight between the females. There are 2 more flutter-ups, one ending out of sight on the ground; bodies are nearly vertical as they climb, to 15 feet, and they kick in the usual way. Most of the time they fly in the typical male bouncy flight, the wings beating in little shallow bursts, the tails down; the flight is slow. The two follow each other within 5 feet at times, sometimes disregard the other's movements. They often sit in the same tree 6 to 10 feet apart; on these occasions the bodies may be bent forward, heads lowered, but this isn't invariable. There are no lines, and I can't tell if one is more ag-

cell

♀ ♀ fight

♀ ♀ fight

♀ ♀

fight

gressive than the other. They move from the SW corner to the S center of the field, where I lose track of them at 1200. One characteristic of the encounter was for one or both females to fly in a slow, bouncy way in a curve; if the flier was not pursued she might return and fly past again, as though her object was to elicit pursuit. The entire performance was like a male-male fight except that it was silent. Even the flight suggested that of the male; there may have been a little fluttering. The male was in and out of the fight area the whole time but was disregarded and took no part in the encounter.

Now suspicious, I went to where I'd seen the male carry food and soon discovered a nest of 6-day old young, either 2 or 3. It seems quite clear that he has 2 mates and that the fight I saw was between them. Note his food-carrying yesterday near the nest that was destroyed.

I forgot to mention above that one female, presumably the one I've known about all along (thereafter female A), acted a little as though she was searching for a nest site just before the fight.

Polygyny or promiscuity among males is not surprising in view of their movements off the territories during incubation. It seems likely that monotony or

lack of occupation accounts for both these phenomena.

1200 - I leave.

TD1 at 0915 - I [Ryckman] relieve Nolan.

0916 - MD1 begins skids N of the nest, 28 to 0922.

0924 - He skids SW of the nest, 17 times.

0925 - D1F leaves.

0930 - It's 74°, overcast.

0931 - She returns from the SW.

1000 - It's 74°, overcast.

1001 - D1F leaves, SW.

1007 - She returns from the SW, quickly settles N.

1024 - MD1 skids weakly N of the nest, 24 to 1028.

1030 - It's 76°, overcast.

1035 - I quit song counts; 2 males are singing simultaneously.

1038 - D1F leaves.

1044 - She returns. MD1 begins to sing N of the nest, weakly; 16 songs.

1100 - It's unchanged.

1125 - D1F leaves, SE.

1130 - She returns from the SE, lands just below the nest, hops up.

It's 80°, overcast.

1131 - MD1 sings much more loudly E of the nest, 27

to 1140.

1200 - It's unchanged.

1208 - DIF shifts from facing N to NE.

1215 - DIF leaves, hopping down SW, going N.

1222 - DIF returns from the N, perches on a
branch NW of the nest, enters NE.

1230 - It's unchanged.

1300 - DIF leaves, hops out to the SW, goes low
NW.

It's unchanged.

1310 - DIF returns from the SW, enters as at
1222.

1330 - It's unchanged.

1345 - DIF leaves. She hops from the rim to a
branch, to the ground, then hops and flies NW.

1400 - It's unchanged.

1402 - DIF returns from the N, low. She flies to
the S part of the nest tree, enters facing N.

1430 - It's 84⁰, sunny.

1434 - DIF leaves.

1435 - MD1 sings weakly 5 times to N.

1445 - DIF returns.

1456 - MD1 begins songs N of the nest, 15 to 1502.

1500 - It's 82⁰, sunny, slightly breezy.

1530 - It's 80⁰, unchanged.

1551 - DIF leaves.

1600 - It's unchanged.

1607 - DIF returns, faces N.

1626 - MD1 brings food, puts his head into the nest while perched on the rim. The food object is green. He then hops 1 foot away, returns to the rim. DIF rises and perches next to the male on the rim. He puts the food in her mouth, repeats this several times [?]. He goes W, having spent 3 minutes at the nest.

AFB

1630 - It's 78°, unchanged.

1654 - DIF leaves, low to the E.

1700 - It's 77°, unchanged.

1707 - DIF returns from the E. She perches above the nest for several seconds, hops down through the branches and enters.

1730 - DIF moves around in the nest, seems to eat something.

1750 - DIF leaves, low to NE.

1750 - Nolan relieves me.

1430 - I return. It's just become sunny and pleasant with a light breeze. I go first to the farm area.

T62 - 62F is on the nest, the male silent.

Y

T63 - The mirror shows only 1 egg and I think shell fragments in the nest. Evidently it has failed,

possibly because of a Cowbird. M63 is singing in the big trees at the hilltop, near the tee.

T65 - The nest looks complete in my mirror. I can see a grass lining. N

T66 - I scare the female from the nest and find the eggs unhatched at 1545. M66 sings type-8's in the maple. Y

I go to the Dunn tract.

TD11 - The nest now is thoroughly grass-lined, a development that had not begun 5 hours ago. near 8:45 -

TD8 - I remove 1 young bird at a time from female B's nest and band them. There are only 2; I thought I saw 3 this morning. They are red over silver, left; 25-66026 has a yellow band on the right leg and 25-66027 a red. I have to scare the female off to return the second nestling; she sits extremely tight, letting me get to within 3 feet and returning to call "tsu" when she sees me put my hand in the nest. The young are 6 days old, possibly 5. N

Female A is being attended by the male, which sings type-8's. The female once almost certainly carries material to a low tree fork, then gathers spider webs and takes them quickly in a different direction. She may have 2 beginning nests, or none. pre(?) 8-9

MD8 once flutters with shallow beats, wings outstretched and probably moving less often than normally, from a perch; and I get the impression that the female follows him. He calls 2 loud "checks," bursts immediately into a skid just before this flight. He moves low near her and is extremely interested in her. I'd guess she has surely placed nest material but hasn't really started to build in earnest. This seems to me more evidence that building can and does begin in the afternoon.

long 8 days

TD9 - I find the loose beginnings of a nest near where I saw the male and female on the W slope this morning. This is one of those shapeless masses that occasional nests begin as. I wouldn't be surprised if it were abandoned. The female leads me to it; the male sings nearby.

early nest appears

TD1 at 1750 - I relieve Ryckman.

The female is off the nest.

1800 - It's 76⁰, fresh and sunny with no breeze to amount to anything.

1804 - DIF returns to the little branch a few inches from the nest, hops in and faces SE.

1830 - It's 75⁰, unchanged.

MD1 has sung but I haven't counted.

1843 - DIF leaves the nest.

1854 - She appears 10 yards from me and forages 2 feet up. Her movements are typical, extremely rapid and darting. She has her bill open for 2 seconds, possibly at me. The male is singing, has done so much of the time she's been off.

*Female male -
Did you see
me?*

1855 - DIF returns to the nest as she did last time, faces SE.

1900 - It's 72° , unchanged.

MD1 has sung but I haven't counted.

1930 - It's 70° , unchanged.

I haven't counted songs.

1938½ - DIF leaves the nest.

1947½ - She returns, perching 8 inches W of it for 5 seconds, entering and facing SE. She won't leave again; the sun is nearly down, and birds activity is falling off rapidly. It's 66° .

2000 - I leave. It has been 40% sunny; the weather can't have been a distorting factor in the female's rhythm unless it prolonged the early periods on the nest. It was quite comparable to the weather on her first day of incubation.

TDS - I go to female B's nest as I leave and find it empty, the female nowhere to be seen. The young are not under the nest; and they hadn't the power to move

*no 8
nest failure
day*

away from it even if they could have jumped out. Either the female removed them or a predator did. The evidence for the latter is the fact that I found 3 nestlings, I thought, at noon and only 2 at 1600. Also I've never known a parent to destroy nestlings.

2020 - I leave.

June 10, 1957

A clear but misty dawn, windless, 64°. Present from 0515 to 1230 and from 1515 to 1830; Ryckman present from 0845 to 1600.

T66 - The young are due to hatch today. I flush the female, which lets my hand get 2 feet away and actually pull on the nest bush, and find the 4 eggs intact at 0530.

At 0520 M66 sang faint type-8's and chatters (note these song types) with excitement notes in between.

T65 at 0530 - I sit to see if the female will come to the nest on what I think will be the day preceding laying.

0600 - It's 64°, very misty.

0615 - A male, I suppose M65, begins loud infrequent chatters at the osage oranges, his first songs since I arrived. He quits after 3.

0630 - It's 68°, sunny but misty.

0640 - M65 chatters twice near the osages.

0700 - It's 70°, the sun warming up but still much filtered by the moisture in the air. There's a SE breeze.

0702 - M65 chatters 5 times in a little over a

minute. He is 20 yards from the nest, 20 feet high, moving rapidly. I've seen him a number of times lately and can now say that his wing shows not the least sign of impairment.

1A
302
3
204
2
304
9
0713 - M65 begins to chatter 45 yards S of the nest, sings 3, pauses 3 minutes, sings 2. At 0720 he sings again faintly, 3 times.

0729 - 65F goes to the nest, landing 10 feet away in a walnut, going to within 2 feet in the nest tree, and getting in about 4 seconds after I first see her. The light is bad, and I can't tell if she brings material. She stays 2 minutes 50 seconds, sitting quietly most of the time but moving occasionally in a way that indicates she is shaping the cavity.

Just before she came I saw 2 small birds in a very short pursuit 20 yards from the nest.

Beginning when 65F arrived at the nest, a male sang 4 very weak short insipids in the trees to the N, then 2 or 3 weak Golden-wing songs. These were spread out over 8 minutes.

0730 - It's 72°, the haze slowly clearing, breezy.

0739 - 65F goes to the nest, stays 1 minute, goes N. Again I miss the details.

1.1
5m
0741 - There are 5 very weak chatters or buzzes to the N in 3 minutes.

7 7?

2
2.2
0746½ - 65F flies to the nest, landing 3 feet away first. She stays 30 seconds, goes E. I can't see if she has material, but there can be no real question that she does.

M65 (presumably) sings 2 almost inaudible songs above me, each of some 3 or 4 notes.

13
0757 - 65F to the nest; 40 seconds; W. She has left the nest in the same way each time today: Instead of dropping or moving away quickly, she flies out to the walnut about 8 feet away, lands 10 feet up, looks around, and moves through the tree foraging. *way 2 leaving nest*

0800 - It's 74°⁰, still slowly brightening as the vapor in the air burns off.

2
1600
0807 - A male sings a Golden-wing song somewhere to the W.

11
0811 - 65F from the E; 130 seconds, about 100 of them just sitting; straight E rather fast.

6.48
14.00
1.12
0818 - M65 sings 6 type-8's to 0820, then 14 slow skids to 0824½. He is E of the nest most of the time and about 20 feet up in a 35-foot elm 20 yards from the nest tree.

5.00
0826 - M65 sings 5 skids as he moves W of the nest, then to the elm, which seems to be a favorite place.

2
0830 - It's 74°⁰. Fifteen minutes ago it began to

cloud over, and now a shower seems almost sure.

10pk
1
0830 - M65 begins louder and faster skids in the elm, in a minute goes N of the nest. He sings 10 songs in 2 minutes. At 0833 he resumes. His song is a skid sung so slowly that its separate notes are almost distinguishable.

13pk
S.
0834 - 65F comes; 135, working most of the time;

8
M65 quits after 13 weak songs. A few drops of rain fell a minute ago.

6pk
0842 - M65 sings 6 scarcely audible, fragmentary skids somewhere to the SE.

3
10pk
4
0847 - M65 skids in and near his elm, 10 times in 4 minutes.

0855 - Ryckman relieves me.

T61 - 61F is incubating.

T66 at 0930 - All the eggs but number 4 have hatched since 0530. I have to scare the female off the nest to see them.

T62 - 62F is incubating. I don't hear the male.

T63 - In 30 minutes I find the 63's down near the pines, not far from nest 2. M63, which has sung only 2 times till now and those songs from the SE part of the T3 hill, sings sotto voce 4 times, and follows the

Song post

✓

down holes

✓

female closely. Once he flies quickly at, a few inches over, and 5 yards beyond her as she moves about on the ground. She goes deliberately from tree to tree; so far as I see in 5 minutes she gathers no material and shows no attachment to any spot. However, she stays near the sassafras trees there; perhaps (probably) females form an initial tie to an area before they select the precise nest site. (Query - I've seen nest-shaping far from the site selected a little while later.)

♂ 9

Site
selection

1045 - I go to the Dunn tract.

TD6 - D6F is on the nest.

✓

TD7 - D7F begins to call "tsu" in alarm when I come up to the area E of the E-W fence corner, 15 yards W of D11F's nest. The male joins her and both call, so I go on. Note how far she is from where I saw her yesterday.

position

TD11 - The nest is more thoroughly lined than it was yesterday.

TD10 - I flush the female from the nest. There are 4 very chalky eggs.

✓



TD4 - MD4 sings exactly as he has for several days. He stays high, is hardly ever silent more than 15 seconds.


♂ 40 9

TD2 - The adults and at least 1 young (unbanded) are all on the top of the ridge, on the N-S path about

10 yards beyond where you turn to go to TD1 and to D1F's
incompleted nest. MD2 sings. The female goes into a
full-scale, climbing, tumbling distraction display.

*dis dis -
note later*

(Note the depressed tail so that the body angle in
profile is . The head may be turned and if the
bird is climbing the body may be swung to this: .)

The young is full-sized, I'd say, possibly a little
less. It has the yellow breast tract just coming in;
Ryckman and I saw an unbanded young D2 on June 8, and
no yellow  was visible then in a rather brief look.

We found the D2's successful nest and I've neg-
lected to note it. It's 5½ feet high in the spreading
top of a very unthrifty 6-foot red cedar, my first cedar
nest.

TD1 - D1F is incubating, MD1 singing.

Y

TD9 - The new nest is making fast progress, looks
complete from the outside. I'll describe the site later.

TD8 - MD8 sings in the high W trees, obviously is
very intent on something below him. At times during the
next half-hour or so he comes down low, a stage of male
behavior that I associate with the period when he's
following the female, before she's begun to build (when
he stays higher and watches). I don't discover female
A's nest till I'm ready to go. It's a very bare beginning,

or pre-laying

about 4½ feet up in a little maple. She may not be making very frequent trips; I'd have expected to see more.

Several times I lose the male and I have the impression he is going N into the field. He clearly isn't staying with female A all the time, but there is so much variation in male behavior during building that this may not be significant. However, just as I leave MD8 does fly E, I'd guess as far as female B's nest, and a male sings from the SE corner of the field. I'll check for female B tomorrow.

↑ call 2 73
in place
bldg stage

1215 - I leave the Dunn area.

T66 at 1230 - Egg 4 is unhatched when I scare off the female. The male seems to have been at the nest.

1230 - I leave.

T65 at 0845 - I [Ryckman] relieve Nolan.

0856 - M65 sings to the E 5 times.

0905 - He sings SE 8 times.

0919 - He sings SE of the nest [in the elm tree I think] 4 times, flies NW and sings twice.

0927 - 65F perches for 15 seconds on a low nest tree branch; plainly visible is her building material. She hops up; 200; S. M65 sings SE 6 times while she is present.

solc 2
5
80k
11
chick
7
60k

2
26
6am
3
0930 - It's 76⁰, overcast, breezy.

0949 - W; 5 minutes; E.

0956 - M65 sings E 6 times.

1000 - It's 78⁰, unchanged.

1023 - S; 50; missed.

1028 - M65 and M61 fly to a large tree S of the nest and appear to fight, flying at each other, darting away but remaining in the same tree for several minutes, finally flying away SW together. All this is in silence. 818

1030 - It's 76⁰, momentarily sunny. It sprinkled briefly at 1015. Breezy.

21
5
1
1
1
1031 - M65 comes from the SW, perches in a big tree just S of the nest, goes E.

1051 - He sings E 5 times.

1054 - He repeats NE.

1100 - It's 82⁰, occasionally sunny, breezy.

8
4
16
9
5
3
4
16
1108 - M65 sings S 2 times, moves E and sings 2 times.

1116 - He sings S 1 time.

1130 - It's 76⁰, overcast. It has sprinkled intermittently for half an hour.

1139 - M65 sings S 5 times.

1143 - He sings E 4 times.

1200 - It's 82⁰, sunny.

24
9
3
12
2
3
5
1224 - M65 sings 9 times in the big tree S of the nest [the dead elm].

1230 - It's 82⁰, breezy, cloudy at the moment.

1242 - M65 sings twice in the elm, flies E.

1258 - He sings E 3 times, moves S and sings 2 times.

1300 - It's 82⁰, less breezy, scattered clouds.

4
6
7
1304 - M65 moves around near the nest, within some 15 yards, keeping going and singing 6 times from a total of 5 perches, twice faintly from 1 perch. He has done this several times previously.

1
3
3
3
4
1313 - He sings to the N.

1316 - He sings N 3 times.

1319 - He sings E 2 times, moves S and sings 2 times.

6
1320 - A heavy thundershower begins.

22
1330 - It's 74⁰, still raining.

1
1352 - M65 sings E once.

8
1400 - It is 76⁰, has stopped raining momentarily, is overcast.

7
3
1407 - M65 sings E 3 times.

3
2
16
1409 - It begins to rain. M65 is in the dead elm. He preens, ruffles his feathers a lot. He sings 16 times, by far his longest series so far, flies high to the E.

4
2
7
3
1
2

1416 - M65 sings S 2 times.

1424 - M65 sings N 3 times.

1426 - M65 sings E 5 times.

1430 - It's 74°, begins to rain hard. This lasts
to 1445.

10
3
6
1

1448 - He sings S 3 times.

1455 - He sings E 2 times, flies to the elm and
sings 6 times.

10
3

1457 - He moves on S, sings 2 times.

1
8
3
3
1
11

1500 - It's 76°, clearing, calm.

1505 - M65 flies in N of the nest, sings 8.

1511 - He comes from the S, sings 3.

1513 - He sings 11 times just to the N of the nest,
goes to the elm and sings 4, goes on S.

25

1515 - M65 begins to sing to the S. Rain starts
but he skids on, 25 times to 1526. Rain over at 1521.

4

1530 - It's 78°, overcast but with a few gaps.

8
3

1538 - M65 sings SW 3 times.

3
4

1544 - He sings S 1 time, goes SW. He sang 3 times
before this, the direction impossible to tell.

15

1600 - Nolan relieves me.

1515 - I return. It showered an hour ago and for
15 minutes rains hard now.

45 1190
180

T66 - M66 sings loud skids near the nest, may be waiting to take food. I scare off the female at 1545; the egg hasn't hatched.

I can hear an occasional faint song from a second male somewhere SE of here, perhaps in the woods.

30
7
100h
20
3

T65 at 1600 - I relieve Ryckman.

1637 - M65 begins his typical slow skids 50 yards or so SE of the nest, sings 10 in 3 minutes at irregular intervals.

1700 - It's 75°, windy from the SE, 80% clear. It became sunny 30 minutes ago.

19(4.2)ch
2
6ch
12 1/2

1702 - M65 begins his usual song, a skid that's so slow it's almost a chatter. He's S and SE of the nest. He quits after 19 in 4½ minutes, begins again in 2 minutes and sings 6 times in 2 minutes.

24(5.0)
1
10ch
1
12ch

1723 - M65 begins faint skids S of the nest, sings 24 in just under 5 minutes, in 1 minute sings another.

1730 - M65 sings 18 of his faint short skids to 1734.

2h
8
4

1800 - It's 75°, breezy, still sunny and only 80% clouded over.

1808 - A male with a higher short skid than M65's sings in the woods NW of the nest, comes to the osages after 3 songs, sings once more. I suspect it's M61,

20
30 but see nothing to confirm this.

1900 - It's 71°, and the sky and wind are as they were an hour ago.

30 I go to T66, since I don't want to scare the female off the nest any later than this.

T66 - Egg 4 is unhatched. The female is on the nest and lets me stand right above her and look down. Her tarsi must be drawn up under her, so that her body, though deep, doesn't fill the cavity. I can see space between her side and the nest wall, and a nestling sticks its head up here for a moment. When 66F leaves 2 young gape vigorously; the other young may be gone.

Point 3
9 of nest

M66 is silent during 5 minutes.

T65 at 1915 - Nothing is happening here.

1930 - It's clear that 66F isn't going to be active at the nest any more today, so I leave.

It's 70°, unchanged. It rained twice today briefly, was about 25% sunny. I'd say that the weather hasn't caused any unusual behavior.

June 11, 1957

A warm rainy morning after rain during the night; about 70° at 0630. Present from 0630 to 0830, from 1030 to 1230, from 1430 to 1500, and from 1830 to 1900.

TD6 at 0630 - The eggs haven't hatched.

T66 at 0700 - The last egg has hatched and I now see 4 young in the nest.

T65 - With a mirror I can see the first egg. Yesterday's experience here, i.e., the female's building trips, confirms my opinion that there is (often) no day of complete inactivity in a female which lays normally. I think she builds rapidly the first 2 days, less so the third, slows way down the fourth, lays the next. I don't know what happens in the cases of females which delay egg laying.

T61 - 61F is on the nest. See below under XI.

XI - M61 sings loud and repeated skids here and is doing so when I leave after 10 minutes of ascertaining his identity.

0830 - I leave.

1030 - I return to the Dunn tract. It is sunny at the moment, but the day is very threatening.

TD6 - The 4 eggs are still unhatched.

TD11 - The nest contains no eggs yet.

TD10 - The eggs here are unhatched.

TD7 - Both adults are in the E-W fence row, and I

can hear but not see the young. It sounds as though they have begun to move around together. D7F shows no alarm at my presence, for the first time since I caught her. 28

TD4 - MD4 still behaves as he has been since his nest failed, singing loud skids from high in the trees of the fence row. I noticed that the rain earlier this morning didn't slow his song down. Clearly he is unmated. ♂ w/o ♀

TDS - Female is building her nest in the maple tree. MD8, however, is behaving pretty much like a male without a mate and surely not like one whose mate is building. He sits high in some big trees at the S end of the field, E of female A's nest, and he sings more frequently and loudly than I have ever heard him do. He seems to be looking N and E, and several times he flies E to the big locusts or N into the field. I search very carefully for female E, without success. Although I watch the male for only about an hour during the day, I think clearly his behavior is governed by the loss of the B nest and probably the female rather than by the activity at nest A. Once or twice he goes W to the big trees in the edge there, but his stays are brief. July 2 95
(1 gone) -
singing 6/11

TD1 - I measure egg 4. It is 16.3 X 13.1 mm, marked with large spots, distributed over the surface more egg

generally than in most eggs.

TD9 - The nest is still empty.

TD3 - MD3 sings loudly and often from the ridge top near the N end. I thought I saw D9F exploring there 2 days ago, but now I wonder if it wasn't D3F getting ready to try a second brood.

TD2 - I can't find these birds.

TD5 - I can't find these either. I'm not sure I've seen them for several days.

1145 - I go to the university farm.

T62 - 62F is incubating.

T63 - After 30 minutes I find 63F nest building; M63's second song of the whole period attracts me to the right spot. She is near the hilltop at its E-W center, in one of a clump of sassafras trees there. The nest is in a typical sassafras multiple upright fork, about 12 feet high, I'd guess. It is in at least its second day of building, is fully shaped but with somewhat porous upper walls. Note that M63 was singing here in the afternoon on June 9.

of day

M63's behavior is interesting. He is following the female as she goes to and from the nest, staying some 5 or 10 feet from her all the time. He sings very infrequently. 63F gathers at a distance of 75

of day
distance gathered

yards from the nest the 1 time I see her, so possibly this is the third day of building. All the acts of the pair suggest it, but the nest hardly looks that far along. The object 63F gathers is large, soft, white. She beats it against a limb several times, as though it were alive, and at first I think it's a moth.

1230 - I leave.

1430 - I return to the Dunn tract. It is sunny but may rain.

TD6 - Two eggs have hatched, one of them the last egg laid. I think this is my first record of the fourth egg hatching other than last. (I don't know the sequence in which the other eggs were laid.) I notice that 1 egg is still faintly translucent, so it clearly is not alive and hasn't been for a long time.

*last
sequence
+ time*

1500 - I leave.

1830 - I return. It rained heavily at 1600 and has continued to do so more lightly ever since.

TD6 - The remaining live egg has hatched.

TD10 - The eggs are still unhatched.

1900 - I leave.

June 12, 1957

A cloudy morning after a very heavy rain and wind in the middle of the night; it gets extremely windy at 0900 and the sky clears by noon; warm all day. Present from 0900 to 1215, from 1600 to 1700, and from 1900 to 1915.

T61 - 61F is not on the nest, but she returns to it while I'm here.

I go to XI and find M61 skidding there as he was yesterday. Suddenly he begins to sing sotto voce, and I notice that he is looking down (from high perches of about 25 to 35 feet), tensely. I soon see an unbanded brightly marked female carrying grass. In 15 minutes I find the nest, about 8 feet up in the NW part of XI. It is well developed, in its third day I'd guess. (Note that M61 paid a visit to T65 two days ago, when this female must have been building.) Also, the female gathers at a good distance, perhaps 50 yards.

M61 pays more attention to this female (female B) as she builds than he ever has to 61F (which I'll still call 61F). He acts as most males do, stays high, moves from perch to perch, sings often but irregularly and sometimes sotto voce. Note that this female's nest location has caused M61 to extend his utilized territory.

N

5/4/2/3

distance
gathering

5/4/2/3

J

greatly. I'll probably not be able to see the effect this has on his use of V until female B quits building and M61 begins to range normally.

I'd guess this female hasn't been present more than a few days. She may well have been the mate of another male earlier (cf. D4F), or have had a first brood (cf. 53F and her going to T56 last year). In any event, these polygynous matings don't require one to suppose an unbalanced sex ratio.

T65 - The nest contains its second egg.

T66 - The 4 young are alive, the adults not in evidence.

I go to the Dunn tract.

TD6 - The 3 young are alive, D6F on the nest.

TD11 - The first egg is present.

TD10 - The eggs are intact.

TD7 - I don't see the D7's.

TD4 - MD4 sings loudly and often in the big trees on the W side of the field. He seems still to be unmated.

TD8 - Female A carries material to the nest, which I can now see is about 6 feet high, presumably in its last day of construction.

MD8 seems to be wholly occupied in searching, or singing, for a mate, much as he was yesterday. I cover

N

N

Y

N

of 1/10 9

of 1/10 -
209
gone

397
6/12/57
VN

the field but see no sign of a second female, surely not of one building.

1215 - I leave.

1600 - I return. It is fair.

T62 - The female leaves the nest and returns without food. When she sees me near the nest she calls, sits preening for 2 or 3 minutes.

1700 - I leave.

1900 - I return. It's fair.

T62 - Again 62F returns without food, so the eggs haven't hatched today.

1915 - I leave.

June 13, 1957

See P 411

A nearly clear dawn with a light S breeze after a clear night with a bright moon; 68° at 0500. Present from 0445 to 1030 and from 1430 to 2020; Ryckman present from 0830 to 1700.

down

TD6 - MD6 sings insipids at 0453 and calls excitement notes between songs.

I hear no other PW's in the E field as I pass. It's only just light enough to see.

122
ins
TD1 at 0455 - MD1 is singing insipids and uttering excitement calls. I begin to count at 0500. The female is on the nest.

0530 - He has sung 122 times, about 4 or 5 minutes ago seemed to quit the excitement calls. *sub after calls*

DLF has been moving a good deal on the nest and looking about her for the last few minutes.

0543 - DLF is still looking around, suddenly raising her head, and in general acting more excitable than usual. She is facing N.

0545 - MD1 sings 2 brief step-buzzes, the first songs other than insipids today. Actually he sings only the buzz part of the song. *buzz*

0600 - It's clear except for a light early morning moisture haze, about 68°, breezy from the SE.

77 MD1 sang 77 times. The female continues to act as I've described her; possibly it's only that her head movements are more noticeable because she is facing me.

0610 - DIF leaves the nest to the E. I check the eggs and find all intact and smooth to the touch.

A complete overcast is forming and it looks as if it may rain.

0620 - DIF flies in at nest level, perches for 7 seconds about 6 inches W of the nest, enters and faces ENE.

43 0630 - MD1 sang 42 songs, but I may be a few off; both he and MD9 are singing short chatters.

0634 - MD1 takes food to the nest after some 10 or 15 weak chatters sung near it. For 5 seconds he perches on or near the rim while the female is slightly drawn up or risen. There is a position shift then and the two perch side by side on the S rim facing N. MD1 keeps craning his head and neck to give the food to the female; he looks like a billing love bird. After 10 seconds he quits and I see that the food is gone. The two sit on the rim for 1 minute occasionally looking in. DIF then hops 2 inches W, in 1 second returns and enters facing E. MD1 then stands quietly on the S

A F B

400
6/13/57
VN

rim facing N, for 3½ minutes, the first time I've seen such behavior. He then flies N. In 5 minutes he sings a few faint insipids.

39
0700 - It's still about 68°, the sun just visible through the clouds, windy at times.

MD1 sang 39 times, all in short bursts of 3 or 4, most songs weak insipids or buzzes. Several times he ran 2 insipids together.

0715 - A violent rain and thunderstorm comes up, passes in 10 minutes with a strong SW wind.

0730 - I don't think MD1 sang.

0800 - It's gray but the clouds are higher. A cool breeze from the S makes the temperature about 65°.

25
MD1 sang about 25 times, most songs faint.

D1F has sat low, facing E, through the disagreeable weather. Note that her remaining on the nest after the rain suggests that cool wind or threatening bad weather influences her to stay. NB

0808½ - D1F leaves the nest and flies low 35 yards to the NE past me. MD1 quits after 16 buzzes; he is near where she must have landed.

0815 - D1F returns quickly, faces E. She called 4 or 5 times near me 3 minutes ago.

MD1 has been singing loud chatters for 4 minutes.

He is 10 feet up in an elm near me.

It is clearing in the W, and the sun suddenly begins to cast faint shadows from the E.

0825 - MD1, which has sung a long series of chatters, goes to the nest, I think with food. He jumps from the S rim to the E rim. All I can see is that the female raises her head toward him and leaves it that way for the 45 seconds he's facing her from the E rim. He then hops to a branch 1 foot from the nest and flies W; he was present 1 minute.

0830 - It's warmed up, is about 70°. The sky is 90% cloudy and the wind is still gusty.

MD1 sang 68 chatters in the half-hour.

Ryckman relieves me.

TD9 - The nest is still empty. She waited an unusual interval before laying in her last nest.

TD3 - MD3 is tending young in the edge growth along the E ravine. The female's absence, at least from sight, suggests a second brood. Note that the young have gone for the edge as usual. MD3 sings. I find an empty nest in a crataegus.

TD2 - MD2 feeds an unbanded young and at least another one that I don't see. They too are in the

A FB

N3

feeding position
↙

edge, the young calling loudly. One is full grown, seems to have full immature plumage except for a very messy head and possibly some juvenile feathers on the belly.

TD4 - MD4 still sings as though unmated.

TD7 - In searching unsuccessfully for these birds I go N into the NW field and find a nest, presumably of the female of a pair not yet studied.

TD12 - I'll give this new nest a number. It is 3 feet up in a 5-foot elm, contains 2 newly hatched young and an egg ready to hatch. The young, discovered at 0930, clearly came out today. The female is unbanded.

TD10 - The 4 eggs are intact.

TD11 - Egg 2 is present.

TD6 - All 3 young and the egg are here; D6F is off, and I don't hear MD6.

TD8 - The nest of female A is complete but is very poorly made. Near the bottom is a hole almost big enough for an egg to fall through. The other nest I found of hers was just as bad; I thought it unfinished until I felt the egg in it.

MD8 acts much as he did yesterday, singing loud skids and evidently under the influence of the mate he lost. I see him sing in 2 places, the tops of the

8/4/57

N
N

not
complete

NT3

8/2/57
60-
miles

low trees in the shrubby area where female B's nest was, and about 35 feet up in the maples SE of female A's nest (he looks out into the field though, not toward the A nest).

1030 - I leave.

TD1 at 0830 - I [Ryckman] relieve Nolan.

0900 - It's clearing, slightly breezy.

0906 - DIF leaves.

0914 - Both D1's return to the nest a second apart. She perches on a branch while he goes, and sits on the rim, pokes his head into the cavity. I can't see food. He then hops to DIF's branch, back to the rim, and back to DIF. She goes to the rim, and back to DIF. She goes to the rim, then to the branch above the nest. He leaves SE. She enters, settles.

0926 - MD1 sings E, 7 times.

0930 - It's sunny but partly overcast, with stiff gusts.

0942 - DIF perches on the rim, puts her head in, settles. A strong wind buffets the nest.

0958 - MD1 sings E 5 times.

1000 - It's unchanged.

1001 - DIF puts her head in, settles.

1014 - DIF leaves. No eggs have hatched.

1024 - She returns from the W.

1030 - It's unchanged. The wind is quite strong,
obscures sounds.

1031 - DIF again looks in the nest.

1033 - Two PW's fly by low and fast, N to S, close
together. They go into the lower branches of a tree
to the S; I lose them.

1034 - MD1 comes to the nest, perches on the rim.
DIF stays in the nest. He puts his head in. She gets
to the rim. He goes to a nearby branch, returns to put
his head in. This is repeated a third time. He goes
to a branch above the nest. She settles back on the
nest. He flies low to the W. [Food probable.]

1052 - DIF perches on the N rim, head down in the
cavity, resettles at 1056.

1057 - She gets to the rim, settles after 30 se-
conds with her head in the nest.

1101 - She repeats for 40 seconds.

1103 - She repeats but only for a second or so.

1106 - She repeats.

1107 - She gets to the rim, looks in for 70 seconds,
resettles.

1110 - She repeats for 120 seconds.

AFB

- 1113 - She repeats for a moment.
- 1120 - She repeats for a moment.
- 1122 - She repeats for 110 seconds.
- 1126 - She leaves. Egg 2 has hatched. The shells
are still there. [N.B.]
- 1130 - DIF returns, puts her head in, immediately
resettles.
- 1132 - She gets to the rim a moment, puts her
head in, settles. This is repeated at 1134, -35, -42,
-43, -44, -45 (twice).
- 1146 - She gets to the rim and puts her head in,
settles in 40 seconds.
- 1147 - She repeats, eats a shell.
- 1150 - Again she seems to eat eggshell, settles
after 70 seconds.
- 1152 - She looks in and probes for a moment, re-
peats at 1153 and 1155.
- 1158 - DIF leaves low to the E. No new egg has
hatched.
- 1202 - DIF returns from the E, without food I think.
- 1207 - She looks in for a moment, repeats at 1208
and 1214.
- 1221 - DIF leaves S. No new hatchings.
- 1223 - She returns, feeds, settles.
- 1230 - It's sunny and getting hot, still quite windy.

See
P
411
Imp.

- 1231 - D1F backs off, probes a few seconds.
- 1236 - D1F leaves low to the S. No new hatching.
- 1240 - She returns, feeds for 30 seconds, settles.
- 1245 - She looks in, repeats at 1249.
- 1257 - D1F leaves.
- 1259 - She feeds, settles.
- 1300 - It's unchanged.
- 1312 - D1F looks in a moment.
- 1313 - D1F leaves. No new hatching.
- 1317 - She feeds, broods.
- 1327 - D1F puts her head in for 40 seconds.
- 1329 - She repeats for 30 seconds.
- 1330 - She repeats for 15 seconds.
- It's unchanged.
- 1331 - D1F looks in momentarily, repeats at 1332,
-33, -35 for 35 seconds, -37 for a second or so, -39,
-43, -46.
- 1347 - D1F leaves.
- 1351 - She feeds, settles.
- 1400 - D1F backs off to rim, moves her head around
in the cavity for 2 minutes, settles.
- It's unchanged but less windy.
- 1407 - D1F looks in a second.
- 1409 - She repeats for 40 seconds.

12
1410 - MD1 sings for the first time I've heard him since morning, 14 times in 3 minutes, to the SW.

1414 - D1F leaves. No new nestlings.

19
1416 - MD1 sings some 19 times to the W.

1428 - D1F returns, seems to settle immediately without feeding.

1430 - It's unchanged, very windy.

1432 - D1F probes for several seconds, settles.

1446 - D1F leaves. Egg 3 is slightly cracked.

1451 - She returns, feeds for 20 seconds, settles.

1500 - It's unchanged.

1514 - D1F probes for 140 seconds, settles.

1521 - She repeats for 40 seconds.

1523 - She backs off and looks in for a second.

1526 - She repeats for 35 seconds.

1528 - She repeats for 15 seconds.

1530 - She leaves. Egg 3 is further cracked. D1F "checks" at me 9 times.

1535 - She returns, feeds for 15 seconds, settles.
MD1 sings W 3 times.

1542 - D1F probes for 20 seconds.

1545 - D1F leaves.

1547 - She feeds for 15 seconds, settles.

1555 - D1F leaves. I don't investigate.

- 1603 - She returns, feeds, settles.
- 1609 - MD1 sings NE 9 times.
- 1611 - D1F probes for 160 seconds, settles.
- 1616 - She repeats for 3 minutes.
- 1621 - She repeats for 1½ minutes.
- 1630 - It's very threatening, windy.
- 1631 - D1F looks in for a second.
- 1636 - D1F leaves. Egg 3 has hatched. *10:21 hatched time for 3*
- 1642 - D1F returns, feeds, broods.
- 1643 - MD1 sings 10 times.
- 1647 - D1F probes several times.
- 1650 - D1F leaves to the SE.
- 1654 - She feeds for 15 seconds, broods.
- 1659 - She probes for 15 seconds, settles.
- 1700 - Nolan relieves me.

1430 - I return. It's extremely changeable, hot and sunny most of the time.

T66 - The 4 young are alive, Neither parent is at hand. *N*

T65 - The nest has 3 eggs. *N*

T61 - 61F is on the nest. M61 is singing loud high skids from 20- to 30-foot perches on XI, and he stays there during my 15 minutes on the territory (1530). *Y*
Female B has laid her first egg, a day earlier than I'd *2 2 3*

have expected. I don't see her.

T62 - M62 is at the nest when I approach, and I'm pretty sure he freezes at the rim for 30 to 40 seconds, moving when I finally do. The young have hatched.

T63 - The nest is complete; empty.

I go to the Dunn tract.

TD10 - The female flies away from the nest as I pass and I find that the eggs are gone. The nest itself is undisturbed, the predator not around.

TD12 - The 1 egg is still unhatched.

TDS - A male that may be MDS sings loudly and often in the fence row between the big E field and the wooded one.

TD1 at 1700 - I relieve Ryckman. D1F is on the nest. It is about to rain.

1707 - She leaves the nest. I check: 2 eggs remain unhatched.

1710 - D1F feeds 1 (?), leaves in 6 seconds.

1712 - She returns and feeds, in 10 seconds broods E.

1716 - D1F probes.

1720 - D1F leaves.

1721½ - She feeds, in 20 seconds broods E. She seems always to go to a spot 6 inches W of the nest and

approach from there.

1722 - It begins to rain, goes on unevenly with short periods of fairly heavy fall.

1735½ - DIF leaves. It's scarcely raining.

1740½ - She returns, feeds, broods E after 30 seconds' probing.

1745 - It rains rather hard for 5 minutes.

1800 - It's still sprinkling, but the thunder and dark clouds have passed E, and the W is clearing. It's about 70°.

1801 - DIF goes low to the S after looking around.

The sun comes out and shines directly on the cavity.

1805 - DIF brings 1 object, feeds from the W rim as always, in 10 seconds goes 30 yards NW to the field cover. She calls "check" near me as she forages.

1810½ - She goes to the nest, feeds 1, probes 15 seconds, enters E.

1816 - MD1 is singing; I've heard him little at all since I got here.

1821 - DIF leaves.

1823 - She returns, feeds from the N rim, in 20 seconds broods E.

1830 - It's sunny, 90% clear, about 72°, breezy from the S.

1832 - DIF leaves.

1835 - She returns, feeds l, in 10 seconds broods
E.

1839½ - DIF leaves.

1842 - She feeds l, probes for 20 seconds, leaves
W. The nest is still in the sun, probably at too much
of an angle to expose the cavity much.

1846 - DIF feeds l from the W, in 10 seconds broods
E.

1852 - DIF leaves.

1855 - She feeds l from the N, in 10 seconds broods
E. There can be no doubt that she's bringing only 1
food item at a time.

1859 - DIF leaves.

1900 - It's 70°, sunny, windy, clouds passing over
rapidly.

MD1 sang about 20 times during the half-hour.

1901½ - DIF feeds from the W rim, in 15 seconds
broods E. After feeding she invariably probes and
watches.

1906½ - DIF leaves. MD1 is singing insipids on the
hilltop, where he can surely see her.

1908 - DIF feeds l in the usual way, broods E.
The male paused in song when she flew to the nest, pos-
sibly a coincidence.

food
done

14

1924 - DIF, which has been rising high but never leaving now leaves. I check the nest. The unhatched eggs are 1 and 4 and 4 has a 3/16-inch dent in the shell at the large end. put

1928 - DIF feeds 1, looks in for 20 seconds, broods E. MD1 skids loudly about 25 feet from the nest, beginning about when she goes to it. Note that he doesn't discover the existence of the young by seeing her carry food.

1930 - It's about 68°, with the air very moist despite a nearly clear sky.

1932 - DIF leaves.

1934 - She feeds 1 from the N rim, in 15 seconds broods E.

1941 - DIF leaves.

1945½ - She feeds 1 from the W, in 20 seconds broods E.

1947 - The sun has gone behind a cloud on the horizon and it's fairly dusky. MD1 sings insipids and loud step-buzzes 25 or 30 yards from the nest, goes on to 1953.

2000 - It's 66°, sunny now, windy from the S.

DIF has risen to probe twice in the last 5 minutes.

2000½ - DIF leaves the nest after looking around, drops E.

2002 - She feeds l from the W, in 10 seconds broods
E.

2006 - The sun sets behind the big hill.

2007½ - DIF looks around and leaves, a surprise
in view of the light.

2010 - She feeds l from the W, sidles around to
the N, probes for 20 seconds, broods E.

No FW has sung since 2000.

2015 - DIF has sat quietly and very deep for 5
minutes. She won't leave.

2020 - I leave. It's been 60% sunny, and only
the early morning rain had any effect on DIF's behavior.

MD2 and MD8 sing at 2020 and 2022 as I pass.

June 14, 1957

An overcast dawn after a clear night; windless;
64°, at 0530. Present from 0525 to 1200 and from 1500
to 1600.

TD8 - Female A is on the nest, presumably laying
her first egg, at 0527. *laying*

TD2 - MD2 is calling excitement notes as I pass. *down sitting*

TD1 - D1F is incubating at 0530.

0534 - An egg may just have hatched. She probed
for 2 minutes may have eaten something.

0544 - D1F leaves. I inspect the nest: Egg 4
has hatched and the shells are gone.

0546 - D1F feeds, broods E quickly.

MD1 has sung insipid steps loudly and regularly
for the last 15 minutes and is doing so now some 35
or 40 yards from the nest, 12 feet up in a 13-foot
elm. *skid* At 0549 he begins to skid. Note that he hasn't
brought food to the nest since the eggs hatched. *1st skid*

0552 - D1F leaves.

0555½ - She feeds 1, probes for 10 seconds, broods
E.

My objective here is to see the male's reaction to
the discovery of young. I'll probably stay for 1 hour
after his first food-carrying trip.

0600 - It's cloudy but likely to clear, very damp, 65°.

0603 - DIF leaves.

0606½ - She returns to the W side of the nest tree, 6 to 8 inches from the nest, takes 2 seconds to hop to the W rim, feeds l, probes for 6 seconds, broods facing E. This is a virtually invariable pattern and only deviations from it will be mentioned.

MD1 is singing loud 7-note buzzes about 35 yards from the nest. He has sung quite consistently so far today. His interval at the moment is 10 to 15 seconds, averaging no more than 12.

0621½ - DIF leaves.

0626½ - She feeds l, in 13 seconds broods E.

0639 - DIF leaves.

0643 - She feeds l, in 16 seconds broods E. I could see the food item that time, a small green object. I've seen no more than 1 thing at anytime here, and I'm sure this has been the rule with her.

She may have eaten something small from the nest, perhaps feces.

0654 - DIF leaves after 30 seconds of looking around. She finally probed, then left from a standing position.

0658½ - She feeds l a fairly large (3/16 inch) object broods E. Sometimes the direction she faces inclines a

little to the S.

0700 - It's still partly cloudy, will clear enough for the sun to shine soon. There's a light S breeze.

MD1 sang skids about 20 minutes in the last 30.

0707½ - D1F leaves.

0713 - She feeds 1, distinctly eats a small dark object, broods E.

0725 - D1F leaves.

0728½ - She feeds 1, broods E after 15 seconds.

0730 - It's 70°, very rapidly changeable, breezy, moderately sunny at the moment.

MD1 sang little during the period but is now singing frequent regular insipids from his favorite cherry tree 40 yards NE of the nest. He goes on 12 minutes.

0751 - D1F leaves, hopping first 6 inches N, then seeming to drop down N just by the nest tree.

0759 - She feeds 1, broods E in 15 seconds.

0800 - It's 74°, sunny but threatening in the W, windy.

MD1 sang 15 of the 30 minutes, all songs insipids. He seems to sing those and skids nearly equally, with buzzes sometimes rather frequent.

0812½ - D1F leaves the nest. I inspect it and can see no change in egg 1.

0819 - She feeds 1 or 2, broods E in 30 seconds.

She probably ate feces.

0830 - It's warm but dark and looking like rain.

0831½ - DIF leaves the nest to the S, her most frequent direction of departure.

0836 - She feeds 1, probably eats feces (still dark and evidently not encased in a sac yet), broods E in 10 seconds.

0843 - DIF leaves.

0847 - She feeds 1 or 2, in 25 seconds broods E.

0857 - DIF leaves.

0900 - It's 75°, very breezy, fully cloudy but with a glare.

MD1 sang hardly at all.

0904½ - DIF flies in 1 foot above the nest, feeds 1, in 10 seconds leaves.

0906 - DIF feeds 1, in 10 seconds broods E.

0930 - The weather is unchanged.

MD1 has sung skids while moving frequently during the last 20 minutes, but he never goes to the nest.

DIF has done a lot of probing during the past 5 minutes, or it may be that she is preening her belly.

0933 - DIF leaves, hopping out and straight down below the nest to the W. Egg 1 is unchanged.

0942 - DIF takes what looks like a small whitish moth, broods E after 20 seconds' probing.

It's about to rain, and I can't wait any longer for MD1 to bring food. I'll miss knowing the exact time lapse before he feeds and his reaction to the sight of the young.

Egg 1 undoubtedly will not hatch.

At 1010 MD1 is sitting skidding only 30 yards from the nest. He has been near it many times today and surely has seen the female gathering food.

TD9 - The nest still has no egg.

TD3 - I found a nest in a crataegus, the nest about 7½ feet and the tree 12, yesterday, but I thought it was old. Today it has a fresh PW egg, so it must be a second brood nest.

*N yet + N
+ egg*

TD2 - Two young, their heads very shabby looking, are out in the open together, perhaps foraging for themselves. I see 2 PW's, one a singing male, on the territory and think the female may now be building.

gg

TD5 - I'm pretty sure I heard MD5 singing today W of TD1.

TD8 - D8F-A is at her nest at 1020, standing on the rim when I walk up almost within reach of her and see her (so I may have scared her from a sitting position.) She's gone 20 minutes later, and I mark her egg 1. The male sings 1 or 2 times from the center

Y

of the territory. Later a male sings very frequently from the big locusts to the E; I'll have to wait to establish his identity, but he may be MD8 [correct].

TD4 - The male still acts unmated. I see him give one upward stretch: The wings aren't used; the legs stretch to their full length while the body comes to the horizontal and pauses there a moment, then tips forward in a bow that ends as the normal stance is resumed.

TD7 - MD7 sings type-8's in the E-W fence row. I see and hear a banded young in the dense growth of sumac in the field just S of D10F's nest; it looks about full-grown and has no yellow on the breast yet.

TD12 - The last egg has hatched, so clearly this is a nest whose nestling period began yesterday just when I found it. The female broods.

TD10 - I make no search for nest-building.

TD11 - Eggs 1 and 2 are gone, and egg 3 has been laid. MD11 sings loud type-8's in the big sycamores to the E.

TD6 - The young are alive, the parents not present as I pass.

I forgot to note D6F's extreme shyness during incubation. When I passed the nest 12 feet away she

stretch

gg

y

NB -
singing
taking very
much

N

jumped to the rim, and if I stopped to look she left. *shy?*
This is in sharp contrast with most female's, which
will practically let you touch them on the nest. *q*

1100 - I leave the Dunn tract.

T63 - The first egg has been laid. M63 is silent. *N*

T61 - 61F is on the nest. On XI I find that female B has laid her second egg but that it or egg 1 has been taken. The nest holds 1 egg, and under it is the small half of another. *Y*
N

A strange male, unbanded, sings loud type-8's on XI at intervals of from 10 to 15 seconds. He acts as if it's his territory, and in 15 minutes M61 doesn't appear to dispute the claim. The male is very active, perching high but dropping down to forage near the ground. He responds instantly to a hiss, flies right up. *U.S. Marshall*

The situation here is obscure. *✓*

T65 - 65F is incubating.

1200 - I leave.

1500 - I return. It's over 80°, humid, sometimes threatening.

T61 - M61 sings loud insipids 25 feet up at the S end of 2, in 5 minutes flies to XI and sings loud skids (significant?) at the N end. I see no signs of

421
6/14/57
VN

the other male in 25 minutes; he must have been a wanderer
of some sort and taken advantage of M61's temporary ab-
sence.

1600 - I leave.

422
6/15/57
VN

June 15, 1957

Log: See p 424

A cloudy windless dawn with a heavy dew; temperature 65° at 0500. Present from 0500 to 1200 and from 1500 to 2030; Ryckman present from 0838 to 1740.

TD6 - MD6 sings insipids and gives excitement calls.

TD2 - MD2 does as MD6.

TD1 at 0510 - The female is on the nest and the male is singing insipids and giving excitement calls.

0519 - D1F leaves the nest.

0520 - She returns, may feed, probes for 20 seconds, broods E.

MD1 is singing very fast insipids, seems to have quit calling.

0521 - She probes, broods E in 15 seconds.

0527 - D1F leaves after 6 seconds of probing.

0527½ - She returns, may feed, looks in for 30 seconds, broods E.

0530 - MD1 has sung about 63 insipids since 0510, the indefiniteness coming from the similarity of all males' songs at this hour.

0539 - MD1 brings food. The female pulls back to the nest rim. I can't see which one feeds. He goes in 10 seconds and she sits in 5 more.

0544 - MD1 gives food to the female, watches for 5

seconds. She sits in 5 more.

0547½ - MD1 passes food to DIF; both probe for 10 seconds; he goes E as always so far; she broods E in 10 more seconds.

0600 - It's 66, cloudy, very lightly breezy from the S.

I lost track of MD1's songs when I found I was counting another male's.

0607 - DIF leaves.

0608 - MD1 feeds 1, in 15 seconds goes W.

0614½ - DIF pauses 5 seconds about 6 inches from the nest, feeds 1, in 8 seconds broods E. This may well have been her first real feeding trip; the two earlier were so short that perhaps she simply jumped down below the nest. It was too dark for me to see if she brought anything back on those trips.

0700 - DIF leaves after looking around for 1 minute. I can't account for her long stay on the nest.

0700 - It's 69°, cloudy but with enough light to cast weak shadows, mildly breezy from the S.

I haven't been able to follow MD1's songs.

0701½ - MD1 feeds, looks in for 10 seconds, flies low 30 yards N to near me, where in 30 seconds he sings loud buzzes of 6 or 7 notes. He feeds from the W rim.

When he gave food to the female he stood on the S rim.

Where my notes today don't specify the number fed, the gap will mean I don't know.

N 13

0710 - DIF feeds 1 from the W rim, in 15 seconds broods E.

0718½ - MD1 after 5 or 6 insipids gives DIF food from the S rim. Both then put their bills in the nest. She eats feces. He leaves 20 seconds after his arrival, and she broods in 5 more. He came rather slowly, stopping for 2 or 3 seconds S of the nest.

02

0730 - It's 72°, unchanged.

Again I've not been sure of MD1's songs. The reason for this is that I think MD9 and MD2 have encroached somewhat, and I'm not sure of MD5's present location.

0736 - DIF leaves.

0736 - MD1 arrives in 10 seconds, feeds from the N rim, in 20 seconds goes W.

07

I inspect the nest. All 3 young are alive, and egg 1 is still present.

0742 - DIF feeds 1, I think (she takes the food back twice), broods E after 10 seconds. In a minute she eats small objects (unseen) from the nest rim, taking them with sharp, darting motions of her bill.

B

0800 - It's 76°. It became sunny 10 minutes ago;

and the sky is now somewhat more thinly overcast generally now, about 15% unclouded.

0805½ - MD1 brings a ¾-inch caterpillar and gives it to D1F. She delivers it, but each adult takes it back at least once. She eats feces. He leaves 25 seconds after arriving, and she waits another 15 to brood. At 0811 she eats something from the nest.

0821 - D1F leaves to the S, going low.

0828 - MD1 brings a green caterpillar to the W rim, delivers and takes it back, gets to the S rim, delivers it about 4 times and softens it when he re-takes it. He probes and looks for 15 seconds, 30 seconds after arriving hops a few inches NW, a few more, goes.

0829½ - D1F feeds a round object, maybe something else, in 20 seconds broods E.

0830 - It's 80°, unchanged.

0838 - Ryckman relieves me.

TD5 - MD5 is foraging within a few yards of his successful nest. He responds to my squeaking and calls loud "checks."

TD9 - The nest contains a Cowbird egg, no PW eggs. It has probably failed.

TD3 - The new nest has only 1 egg, so its status isn't clear. A nest from which an egg is taken rarely

C long after failure
N

goes on to succeed.

MD3 is tending young near the nest. The bird I see is unbanded and has a wide V of yellow on the breast with brownish-olive in between. The rest of the feathers are neat, except for the head.

first location

TD2 - MD2 is singing loud frequent skids and moving about a good deal. Once, at least, I see the female; she neither gathers nest material nor shapes, but her inattention to food and her staying in the grass and brush make me think she may be building or getting ready to. I never see the young, although I'm near the parents for 10 or 15 minutes. (See this afternoon.)

TD8 - Female A is on the nest at 1030, just as she was yesterday. I'll return later to mark her (tiny) eggs.

Y

I'm not sure where MD8 is spending his time now. A male sings loud and repeated skids often from 35 feet or more up in the E locusts, and this may be MD8. If so he is acting unmated, e.g., just like MD4.

3 B

TD4 - MD4 sings as usual, flies normally, surely has no female. An interesting point is that female B of the D8's must not have been attracted to MD4. Perhaps she is beyond breeding again this year.

*NB 9 photos
up on un-
marked 3*

TD7 - D7F feeds and moves quietly through the N

field within 20 yards of the D12 nest, then goes back to the E-W fence row where she came from. I watch her for 5 minutes, don't see the other D7's.

TD11 - The nest still holds only egg 3. I'll look out for new building tomorrow.

TD10 - I think I've found the new nest, an unfinished structure 3 feet up on a bent over, horizontal blackberry cane. It looks exactly like 66F's nest in its location. The male moves a lot, always stays in trees 20 feet or more high (except once in 25 minutes). He sings sotto voce, sometimes inaudibly; he looks as though he's putting forth normal physical effort to sing, but little or nothing can be heard on these occasions. He never sings loudly. I see the female only once, not at the nest. [This nest never was completed, probably was an earlier one. I think MD10 had 2 females. The one whose nest just failed didn't rebuild.]

TD12 - The young are alive, D12F perching on the rim.

TD6 - The young are alive, the parents absent.

1030 - I leave and go to the farm area.

T66 - The female is at the nest, leaves when I come up. I band all 4 young red over silver left, numbers 25-66028 to -31, the right legs marked with

*I hope - don't
get in field
now*

*Sotto voce
discuss*

4

4

yellow, red, blue, and green in that order. No trouble of any sort. I hear the male only once.

T65 - 65F is not incubating at 1145.

1200 - I leave.

TD1 at 0838 - I [Ryckman] relieve Nolan.

0844 - D1F probes from the rim for 15 seconds, settles.

0851 - She repeats for 30 seconds, settles.

0853 - She repeats for 15 seconds, settles.

0854 - She repeats for 20 seconds, settles.

0859 - MD1 sings W 49 times to 0908.

0900 - It's 80°, sunny with scattered clouds.

0905 - D1F probes for 15 seconds, settles.

0907 - D1F probes for 20 seconds, settles.

0910 - MD1 sings immediately to the SW, 3 times.

0914 - D1F leaves, flies high to a large tree to the W.

0915 - MD1 comes with food, goes W low in 90 seconds.

0922 - D1F feeds for 65 seconds, settles.

0926 - D1F probes from the rim for 20 seconds.

0929 - D1F probes from the rim for 45 seconds.

She broods after each time she puts her head into the nest.

0930 - It's unchanged.

0931 - DIF probes for 25 seconds, broods.

0935 - DIF probes for 40 seconds, broods.

0936 - DIF probes for 45 seconds, broods.

0942 - DIF probes for 65 seconds, broods.

✓ 0944 - MDI takes food. DIF perches beside him as he feeds. He goes NE low in 90 seconds. She resettles after 20 more seconds.

0951 - DIF probes for 15 seconds, settles.

0958 - DIF probes for 20 seconds, settles.

1000 - It's 81⁰, calm, nearly completely overcast.

1002 - DIF leaves low to the W.

✓ 1004 - MDI feeds for 90 seconds, goes W low.

12 1006 - MDI sings in a large tree to the W, 12 times to 1009.

1026 - DIF returns without food, settles immediately.

MDI sings SW 5 times.

1030 - It's 83⁰, unchanged otherwise.

1039 - MDI sings 8 times in 2 minutes, NW.

✓ 1042 - MDI arrives and DIF gets to the rim. I see no feeding for 30 seconds [error]. He may transfer the food to her, puts his head in once, stays 75 seconds.

DIF then probes, broods.

1047 - DIF gets to the rim, seems to eat something

from the nest, settles in 90 seconds.

1052 - MD1 sings SE.

1053 - D1F repeats her 1047 activity for 20 seconds. 13

1056 - She repeats for 35 seconds.

1058 - She repeats for 75 seconds.

1100 - D1F leaves low to the W without resettling.

It's 90°, sunny, partly overcast.

1114 - MD1 sings E 6 times.

1116 - D1F feeds for 25 seconds, for 10 seconds
faces away from the cavity, for 15 seconds feeds or
probes, then broods.

1119 - D1F leaves.

1124 - D1F feeds for 30 seconds. She came from
the W, paused several seconds above the nest. She
now broods.

1126 - D1F leaves, going to the ground to the SE.

1128 - She feeds for 15 seconds, broods. She came
from the SE.

1130 - It's 88°, momentarily cloudy, calm.

D1F gets to the nest rim, sits quietly for 6 minutes,
settles at 1136. She put her head in several times.

1137 - D1F gets to the rim, stays there nearly
motionless till 1144, broods.

1143 - MD1 sings E 4 times.

1150 - MD1 brings a large green larva, stays 2 minutes, flies S low. He seemed to feed the young and DIF. [Clearly he just passed the food to her.]

1158 - MD1 sings S 25 times to 1208.

1200 - It's 87°, the sky partly cloudy and the sun in and out.

1228 - DIF leaves.

1229 - MD1 feeds for 45 seconds.

1230 - It's 88°, sunny, nearly calm.

1239 - DIF feeds for 35 seconds, hops down low out of sight for 45 seconds, returns and broods.

1256 - MD1 brings food, passes it to DIF. She feeds, then hops to a lower branch and returns. He stays 3 minutes.

1300 - It's 89°, partly overcast, calm.

1310 - MD1 brings food. He and DIF perch on the rim, backs to me; he goes SE low after 125 seconds.

1317 - DIF leaves, returns without food in 45 seconds.

1325 - DIF leaves but stays in the nest tree a foot away. In 55 seconds she hops back; no food.

1330 - It's 90°, sunny, the breeze increasing.

1340 - DIF leaves. MD1 sings E 15 times to 1343.

1346 - MD1 arrives; I can't see his bill. He

stays 15 seconds on the rim, hops down below the nest for 30 seconds, returns for a few seconds to the rim, leaves.

1349 - DIF feeds for 30 seconds, stays on the rim.

1357 - MDI feeds. DIF and he perch on the rim, backs to me. In 3 minutes he goes S. She stays on the rim, probes a little, broods at 1403.

1400 - It's 89⁰, sunny, slightly breezy.

1405 - DIF gets to the nest rim, seems to eat something in the nest from time to time to 1416, continues to stay largely motionless.

1427 - DIF leaves, goes W.

1427 - MDI brings a large larva within 20 seconds after DIF leaves. He stays on the rim to 1432, leaves a moment, hops back at 1433, immediately goes SE.

1430 - It's 89⁰, sunny, slightly breezy. The sun is very hot.

- 1453 - DIF returns, I think without food. She stays on the rim.

1500 - It's unchanged except that it's breezier.

1517 - DIF leaves.

1517½ - DIF feeds, stays on the rim.

1528 - DIF leaves.

1529 - MDI feeds a larva for 45 seconds, hops down

below the nest, leaves.

1530 - It's unchanged.

1535 - DIF forages low within 10 feet of me for 2 minutes, calls "check."

1539 - DIF feeds, stays on the rim.

1542 - MD1 sings W 6 times.

1544 - MD1 sings N 3 times.

1600 - It's 88⁰, unchanged.

1609 - DIF leaves.

1613 - She feeds, stays on the rim.

1627 - DIF leaves.

1627 - MD1 arrives just after she goes. He feeds for 35 seconds, goes S low.

1630 - It's 86⁰, scattered clouds, slightly breezy.

1636 - DIF feeds, perches as usual.

1642 - MD1 feeds, with DIF staying on the rim by him. In 105 seconds he goes E low.

1656 - DIF leaves.

1656 - MD1 arrives just after she goes.

He feeds for 35 seconds.

1700 - It's 85⁰, clear.

1712 - DIF feeds a larva.

1717 - DIF hops to a branch above the nest, returns with a brown insect. For the first time I can see the

nestlings' heads reaching for food.

1730 - MD1 comes from the E, perches just E of the nest tree.

1730 - D1F leaves exactly as MD1 arrives, goes N. He feeds.

1736 - MD1 arrives.

1736 - D1F arrives simultaneously. He clearly feeds; she probably does. He goes at 1738.

1740 - Nolan relieves me.

1500 - I return. It's sunny, humid, hot.

T62 - 62F is at the nest. I don't hear the male.

T63 - The nest seems to contain 2 eggs (mirror).

A male that looks and sounds like M63 chatters on the N hillside just E of the pines. As I come up he flies to a female on the ground, then flutters 12 yards away to a 2-foot perch. The female gathers outer shell nest material, flies up to 25 feet in a dead tree. Undoubtedly she was going to fly to the nest, but she begins to take dead bark from the tree. She goes NE and I lose her. I see no more in 5 minutes.

I've decided polygyny, promiscuity, second matings in succession, are most likely the result of the very poor nest success in PW's. It's the only way anything

like full reproduction can occur given the low success and the fact that the duration of sex drive differs from bird to bird. Thus I think polygyny cases are all June re-matings. *NO*

T61 - 61F is on the nest. A male skids in N2 and later step-buzzes in S3. I can't see him. *U*

The nest of female B is empty. I'll check for her presence tomorrow, but my guess is that these matings are unstable and seldom survive nest loss. Compare the polygynous female that left her young in 1954. *NO*

I - IV S - A male sings loud type-8's on old T59. He looks and sounds like the male on XI yesterday. This sort of thing, the appearance of strange males, is a kindred phenomenon to polygyny.

T65 - 65F returns to the nest while I wait for her. She opens her bill in threat at me, leaves it open 40 seconds, several times turns her head toward me. *N - 2 open bill threat*

1645 - I go to the Dunn tract.

TD2 - MD2 sings rather quietly S of the path.

TD1 at 1740 - I relieve Ryckman. D1F is perched on the W nest rim. It's 83°.

1749 - D1F leaves.

1749 - MD1 arrives 10 seconds later, feeds from the W rim, looks in for 30 seconds, flies 20 yards N and skids *10*

twice from 5 feet up, near me.

1759 - D1F comes into an apple 10 yards from me, lands 10 feet up (the top). She is carrying 1 item, small and black. She is silent, flirts her tail a little as the only evidence she notices me. She then flies straight to the nest tree and lands 6 inches from the nest, hops to the N rim and feeds. She gets no sac; after feeding she stands on the NW rim for an indefinite time. The sun hits the nest directly and touches the female's body; it probably wouldn't shine into the cavity much at its present angle.

1800 - It's 81° , clear in the E and somewhat cloudy in the W, breezy from the SW.

1817½ - D1F leaves.

✓ 1817½ - About 10 seconds later MD1 arrives, feeds from the N rim so I can't see what he does, flies NW past me in 20 seconds. 01

1827 - D1F returns, feeds, perches on the NW rim. She is standing with tarsi bent but not so that her belly touches the perch. Her wings are closed.

1829 - D1F leaves.

1830 - It's 79° , The sun has just gone behind a large cloud and may stay.

1831 - D1F returns, feeds 1, looks in 15 seconds,

leaves.

✓ 1842 - MD1 feeds a large object, taking it back 2 or 3 times, looks in, in 20 seconds goes NW.

1847 - D1F flies 20 feet high from the S, coming from quite a distance from the nest. She has food, 1 item I think. She lands 20 yards E of the nest, 15 feet high, in 20 seconds goes straight to the tree. After feeding (no sac), she broods E in 10 seconds. It's 77°; she sits well down at first, backs off very slightly after a minute.

1852 - D1F leaves.

1900 - It's 77°, unchanged.

✓ 1905 - MD1 brings food and feeds 1 from the S.

1905 - D1F lands on the W rim 10 seconds later. She feeds 1. I see no sanitation. In 20 seconds the male goes E, and 20 seconds after that the female broods E at normal depth. The sun just came out fully. After some 2 or 3 minutes she rises, sits half on the rim, her tarsi bent so that she's also half over the cavity.

1926 - MD1 comes, but the female screens him from my sight. Both probe once or twice. He goes W in 15 seconds.

1930 - It's 76°, almost perfectly clear, but the sun is behind a small cloud; calm.

1932 - DIF jumps onto the nest and begins to brood for the first time in some 20 or 25 minutes.

1940½ - MD1 lands in the nest tree below the nest, on the NE side. DIF instantly leaves. The male then hops around the tree to the S and doesn't appear at the rim for 6 or 7 more seconds. This is undoubtedly the explanation of the slight time lag between the female's departures and the male's arrivals today. The deception ~~effect~~ is maintained if she leaves when he lands, even if he thereafter moves to a different place in the tree. N13

He feeds possibly 2 items, eats a full-sized white sac, the first I've seen here. He goes E in 25 seconds.

1952 - DIF feeds 1, probes 2 or 3 times, in 15 seconds, broods E.

2000 - It's 73⁰, perfectly clear, calm. The sun will set behind the hill in a few minutes.

2008 - The sun sets. DIF is sitting low.

2020½ - MD1 comes and the female backs off the nest. She screens him, and that and the dusk prevent my seeing any details. He drops E in 15 seconds. She settles deep. o

2025 - I can scarcely see the nest and can see DIF only when she moves. There will be no more activity.

439
6/15/57
VN

2030 - I leave. It's been 80% sunny, with all conditions normal for attentive behavior.

A few PW skids (is this the typical late song?) and insipids are still being sung at 2030; it will be really dark in a few minutes.

late song

440
6/16/57
VN

June 16, 1957

A clear windless morning with a heavy dew; it's 68° or so at 0600 and promises to get very hot. By afternoon it's in the 90's, the first typical summer day of the season. Present from 0700 to 1330 and from 1830 to 1900.

T63 - My mirror shows that the fourth nest is empty, so I'm sure the female I saw building yesterday was not a polygynous mate but 63F.

M63 sings in the big trees remaining in the sink hole on old T5; his songs are all loud, and for a minute he sings the strange chickadee-like song heard from him before. I actually identify it as a chickadee at first. I find 63F immediately, deliberately gathering grape bark from 5 to 10 feet up in a tree covered with grape. After 2 or 3 minutes of picking at countless fibers, she goes to a nest 20 yards away and about 40 yards from where I saw her yesterday. It is low, which makes 63F's high climb with her nest material yesterday seem rather odd. The nest is about 5 feet out on a low horizontal branch of a 20-foot elm near the branch end. The tree grows in a little ravine, so the nest may be 7 feet high or so from the tree base, but it's below shrub level of much ground very near it.

5/16/57

odd song

NB

let B gather

get a diet

Bw

gather

A loose mass, it was begun yesterday.

*done in early
morn*

T62 - M62 is at the nest.

IV S - The male that sang type-8's here yesterday has gone.

T61 - 61F is on the nest. I go to XI, where M61 sings skids. Shortly after I arrive he drops from a high perch to the field cover, and I see the unbanded female B there. I then begin a long search for her second nest; I see her carry fiber several times into a heavily grown-up area where the dogwoods are high. It takes over an hour to find the nest, a bare beginning but still too much to have been begun today. It must have been started yesterday afternoon, or else she let it stand idle since yesterday morning. It is about 20 feet up in a typical outer fork of a spreading diagonal dogwood branch.

✓

M61 stays on XI the entire 2 hours I do except that for a few 5-minute intervals of silence he may be elsewhere. He sings 20 songs in 1 interval of 5 minutes, 56 songs in 20 minutes; and this is typical. All songs are skids, all loud, most sung within the usual 30- or 40-yard radius of the nest. Sometimes he peers down intently, and once he swoops on the female as she gathers (or comes up with) material and flutters away 10 yards

♂ 6/29 -

24

♂ 2

while singing in flight. Note that he never seems to attend 61F in this way while she builds. Cf. his behavior last year.

- NB -
long to
check

As I leave, M61 is singing insipids in the tree tops at the S end of 2.

T65 - 65F is incubating.

Y

T66 - The young are settled in the nest, evidently unaffected by my banding.

1030 - I leave and go to the Dunn tract. In the N field here I find a 2-foot Copperhead, the first I've seen on any of my areas.

TD8 - I measure the eggs:

1 - 15.3 X 12.3 mm.

2 - 15.4 X 12.2 mm.

3 - 15.8 X 12.1 mm.

The nest has a small depression or hole into which an egg nearly fits, so much so that I expect one won't hatch.

small hole
egg

MDS is almost surely the male that sings in the big locusts of the E tree row. I've never heard songs simultaneously from there and from anywhere else that could be TD8. Also I think I've followed him from his known territory to the locusts. If I'm right, he is singing loud, regular skids from high perches and doing so most of the day. There is no apparent difference between

his vocal behavior and that of MD4, which has no mate.

TD4 - MD4 sings as before.

TD6 - The young are alive, but I can never find the nest unguarded by the female so that I can band them.

TD7 - MD7 sings in the N-S tree row E of the N field. His song is usually a type-8 or an insipid. He is clearly feeding young, but I never see them, nor do I see D7F. Since I spend 2 hours covering these fields looking for the D10's and D11's, I'd probably have seen D7F if she were building.

TD12 - The young are alive.

TD10 - The nest I found yesterday is no farther along and it won't be completed. Despite a long search I never clear up the status of the D10's. It seems pretty sure that I'd have seen D10F if she were still building, so she must have finished or not rebuilt / pretty surely the latter/.

TD11 - At my arrival I find the pair near the road between their recent nest and the N-S fence row where MD7 is. They go on E 100 yards or so to the edge of the field, MD11 following D11F in a general way, staying low most of the time, and singing at half volume about a quarter of the time. At the end of the morning

519
putting
egg -
see
444

I can tell that she is building somewhere near the place in which I first saw her. I'd guess she began before I arrived today; her leaving the nest vicinity suggests that for a little while building is sporadic and the nest site doesn't have a very strong attraction for the female.

TD1 - The young are alive.

TD9 - The nest is now empty and has clearly failed.

TD3 - The nest contains a second egg; there may therefore have been a break in laying yesterday.

1330 - I leave.

1830 - I return. It has been very hot and sunny and still is.

TD6 - I came to band the young, but D6F is sheltering them so I'll let it go.

TD11 - I find the new nest, a very loose cup, in a blackberry bush, about 2 feet high. D11F is building at 1900.

1900 - I leave.

N

f-shelter
have

bdy h.

445
6/17/57
VN

June 17, 1957

A clear, humid, very hot morning. It gets to 94° during the day, showers lightly at 1300, never cools off much. Present from 0600 to 1200.

TD6 - D6F is not near, so I band the 3 young. They are silver over green right, numbers 25-66032 to -34. On their left legs respectively are yellow, red, and green bands. This operation is quiet and without incident. The young gape at me as I come to the nest, though they are in the 7th day. When I band them they look at me; I can't say they show fear yet, but they are surely almost sufficiently aware to be afraid.

I opened the unhatched D6 egg and found a very small embryo, about 1/8-inch long. It must have died after a few hours.

TD8 - D8F is incubating for the first day. MD8 does nothing to contradict my opinion of his behavior or of the extent of his territory.

TD4 - MD4 sings as usual about half the time I'm here, is silent the rest. Is he beginning to lose drive?

TD7 - I'm in the N end of the E field for 3 hours, so I see MD7 many times. The fact that I never see D7F suggests she is nesting again.

MD7 seems to hold the N-S tree row almost N to where the D10's' nest was; he sometimes goes S into the E field, but rarely. Today he twice gets into territorial fights with MD11, which has been pulled W by the female's new nest location. The line is along the dirt track or road. Fight behavior is typical. Both males fly along more or less parallel to each other, always in short moves, at the road, sometimes make brief trial sorties, which immediately draw the other and therefore are quickly terminated. Flight is bouncing, tail spread, and depressed wings beating in bursts. There are no calls, but occasionally there is sotto voce singing. In a total of about 5 minutes of fighting on 2 occasions, there is 1 interval when at least MD11 postures as he perches. He opens his bill, sits a little more horizontally, thrusts his head downward and forward slightly so that his back looks humped, lowers his wing tips about $\frac{1}{2}$ -inch. He may possibly crouch a little. Note that this encounter occurs while 1 male's mate is building and the other male is feeding fledglings.

8187

head

I've seen surprisingly little fighting on these big fields so far. Is it usually associated only with the

establishment or re-establishment of boundaries, or with the acquisition of females?

Most of the time MD7 stays in the tree row. He sings often but irregularly, feeds young. I see 1 young: It has a well-developed inverted yellow V on the breast, about 3/16-inch wide. Once when MD7 is foraging and feeding it, I'm sure I see it flycatch on the wing, dropping and twisting about 3 feet like an adult. It quivers its wings when fed.

TD11 - See above under TD7. MD11 is attending the female as she builds, singing sotto voce, most of the time perching in the tops of the low trees (5 to 10 feet), the only ones within 25 yards of the nest. I hear him too in the E sycamore and once see him go. N to the shallow sink hole.

The nest is now shaped but is very flimsy and not built up. I'd say D11F's trips are not as frequent as usual.

TD12 - The young are alive.

TD10 - I never quite settle the situation as to the D10's, but in searching I make some discoveries.

N of the old territory I find a fledgling PW alone in the field; it is 2/3 to 3/4 grown, must be some 4 or 5 days younger than the D7's. As I watch it I

gg -
flycatch
gg

51 Hdg

see a male PW fly up from the field near the W tree row and leave something 35 feet up in a tree at the edge of the N woods. If it's a sac I never find the nest. He returns and forages near where he flew up from, but I learn nothing. The location of this is not far from the old D10 nest, maybe 60 yards N. It is possible that there is 1 pair of PW's unaccounted for here, and even that doesn't answer all questions raised by the facts. [The best supposition is 2 D10F's.]

TD13 - W of the N-S tree row and only 25 yards from D12F's nest I find a female PW incubating 3 eggs which I'd guess are 5 or 6 days old. She is E of D12F, therefore between her and the former D10F nest. I'll call her D13F.

TD1 - D1F is at the nest, and the young are alive.

TD2 - MD2 is singing loudly and frequently on the ridge top. He ranges so far N (30 or 40 yards beyond the D1 nest) that I think it is possible the current nest I've been calling D3F's is really D2F's. This male gets to within 10 yards of it, though he stays high. I'll not change my numbers yet, but it's clear that the D2's have begun to use the area N of their old haunts, that the D9's have quit the ridge top and shifted W, and that the D3's range N to the end of the

habitat, probably N both of the D3's and D9's.

TD3 - See above under TD2. The nest has the third egg today. N

1000 - I leave Dunn and go to the farm.

T66 - I put up a net near the nest in an unsuccessful effort to catch 66F. She is too shy to come near, calls loud "tsu's," won't respond to squeaking. M66 sings a few times, never appears.

I cross the ravine to the E and find a male singing loud skids from high in the trees there. He is unbanded; I'll check later.

T65 - 65F is on the nest. When I pass through the territory at 1130 going back to my car, an unbanded male is singing loud chatters from the walnut we sit under to watch the nest (about 30 yards from it). 65F is quietly incubating and the male is not challenged. He sounds like M63, for what it's worth. Y

T61 - 61F is on the nest. On XI M61 is singing loud skids near the nest. Female B carries material to it. From below on the outside it looks complete. Y
07 04 129

1200 - I leave.

450
6/18/57
VN

June 18, 1957

feed: P451

A warm morning with a few clouds, a moderate dew, no wind; temperature 66°. Present from 0450 to 1317, from 1630 to 1800, and from 1845 to 2000; Ryckman present from 1317 to 1930.

Damn

TD8 - MD8 sings insipids and gives excitement calls.

TD2 - A male, I'm pretty sure MD2, sings and calls.

TD1 at 0500 - D1F is on the nest.

0502½ - D1F leaves.

0502½ - MD1 comes and feeds, leaves in 10 seconds.

0505 - An adult, probably MD1, feeds, goes in 10 seconds. It's too dim to see.

0507½ - Both adults feed. MD1 leaves in 8 seconds. D1F broods E.

0509½ - MD1 feeds and D1F stands on the rim. In 10 seconds he leaves and she broods E.

0515 - MD1 feeds; D1F stands on the rim. He stays 15 seconds. She continues to stand on the W rim and to probe.

0517½ - D1F leaves.

0521 - Both adults feed, 1 about 2 seconds after the other. Both leave. It's still too dim to be sure of sex.

0524 - DIF feeds, in 10 seconds broods E.

0530 - It's 66⁰, partly cloudy, calm. MD1 seems not to be singing much.

0531 - MD1 feeds while DIF stands on the rim.

Both probe. MD1 eats a sac, in 10 seconds goes. In 10 more DIF broods.

0539 - DIF keeps backing off and picking 1 or 2 times at the young.

0544½ - MD1 feeds while DIF stands by. He goes in 7 seconds and she broods.

0555 - MD1 feeds and both take the food back several times. He leaves in 15 seconds and DIF broods.

0600 - It's 68⁰, completely cloudy, extremely humid. A light S breeze is just coming up.

Every few minutes DIF bends deep into the nest and tugs so hard that her tail and hind parts vibrate.

0615 - DIF leaves, hopping out W into the nest tree and going.

0615 - MD1 arrives at the rim 1 second after the female hops away. He feeds for 5 seconds, turns away into the tree a few inches, in 5 more seconds goes.

0630 - It's 68⁰, unchanged, so humid it's almost raining.

0631 - DIF feeds 1, the first time today I've been

able to see how many. After 1 minute on the rim, she broods E.

0648 - DIF leaves.

0659½ - She returns and feeds 1, after 25 seconds of probing broods E.

0700 - It's 71⁰, beginning to clear a little in the W, calm. It has looked much like rain till now.

I can't be sure, but I'd say MD1 is singing very little.

DIF continues to tug or push at something in the nest, sometimes so vigorously that she is nearly standing on her head. Also she occasionally seems to eat small objects, pecking at them quickly.

0713½ - DIF leaves. I go up to get the young to band them, but they are so tightly grouped and so sound asleep that I can't get at any of them without risking breaking the egg still in the nest. I don't try.

0727 - DIF feeds 1, probes for 25 seconds, broods E. She's doing much more brooding than I'd expect a female to do with young of this age. It doesn't seem to be a matter of weather, since conditions are quite normal.

0730 - It's 72⁰. The sky has been slowly clearing of a high overcast, which is just now becoming so thin in the E that the sun can be located; the W half is

clear.

0734 - MD1 has just chattered weakly about 5 times and he now lands 1 foot N of and a little below the nest. D1F is perched on the S rim, where she's been for 2 minutes. She jumps to an inch or so W of the nest. MD1 flies up and offers her the food. She doesn't take it; he goes to the W rim. She hops 6 inches away but stays in the nest tree. He feeds probably 2, and while he does so she hops back to just below and beside the nest. In 10 seconds he goes rather high and far NW. She gets to the W rim and in 30 seconds broods E.

0745 - MD1 feeds while D1F stands beside him on the rim. He leaves in 7 seconds. She probes for a minute.

0746 - D1F leaves.

0756 - D1F feeds 1 large item, picking at it twice in what looks like an effort to tuck it into the nestling's mouth. In 5 seconds she gets a sac (the second seen today), flies low 15 yards N, stops, turns E and goes on. She stopped a second so she may have dropped the sac.

0757½ - MD1, having chattered 6 or 7 times in the last 2 minutes, feeds, in 10 seconds leaves.

0800 - It's 73° and for 15 minutes has been sunny.

It's nearly wholly clear and there's a light S breeze.

0820 - DIF feeds 1, probes for 30 seconds, broods
E.

0821½ - DIF leaves.

0821½ - MD1 arrives, feeds, in 10 seconds leaves
N.

0825 - DIF feeds 1, stands on the W rim probing and tugging, after 3 minutes broods high. She soon withdraws to sit partly on the W rim; from there she tugs, probes, picks at the nest and its surroundings almost endlessly. Sometimes, however, she broods for several (4) minutes at a time. Once she preens her back.

0830 - It's 76⁰, sunny but periodically clouded over by high white clouds, mildly breezy.

0849 - DIF leaves.

0849 - MD1 feeds, in 5 seconds flies low a few yards
N.

0900 - It's 77⁰, unchanged.

0905 - MD1 feeds 1, in 6 seconds takes a sac NW.

I lose sight of him before he lands, but he almost surely goes to the big cherry 65 yards away.

0908½ - DIF feeds 1 (I think), stays on the rim probing and tugging.

0913½ - DIF leaves.

0913½ - MD1 arrives in 5 seconds, feeds, in 5 seconds goes W.

I band the young silver right, red beneath left. They are 25-66036 to -38, blue, green, and yellow respectively.

0922 - D1F feeds after I have banded 2 and while I still have 1. All goes well. She remains on the W rim.

The young utter very faint cries when taken.

0929 - D1F jumps to the cavity and broods E.

0930 - It's 79°, 50% lightly clouded, sunny at the moment.

0932 - D1F quits brooding and stands on the rim. The stimulus for getting to the rim seems to have been the urge to probe. She broods again in a minute or so; sits quite low.

0938½ - MD1 comes after 5 faint chatters. D1F gets to the rim. He feeds for 10 seconds, goes. She perches on the S rim; for a little while it looks as if her back is to the nest. She then probes and tugs from the S (the first time), finally from the W. At 0948 after doing this almost continuously, she broods E. After 5 minutes the tugging resumes. Note that it antedates my banding the young, though she may be doing it more now.

0958½ - DIF leaves.

3 0958½ - MD1 arrives 5 seconds later from somewhere below and a little NE of the nest. He had sung 3 weak chatters since 0957. He feeds 1, eats a sac, goes SE in 8 seconds.

1000 - It's 79⁰, wholly overcast, slightly breezy from the S.

Note that DIF today scarcely ever leaves without the stimulus of the male's arrival.

1013 - MD1 feeds 1, pokes 4 or 5 times, probably at the gape of the young eating. He then stands there, probes, 2 or 3 times reaches out and seems to eat something from leaves near the nest, in 25 seconds goes NW.

1014½ - DIF feeds, remains on the rim probing.

1023 - DIF hops away from the nest but remains in the tree, out of sight. In 30 seconds she leaves the tree. In 30 more she's back at the rim without food; she tugs as usual.

1030 - It's 81⁰, completely overcast but with a glare. There's no wind.

1038 - DIF leaves.

8 1038 - MD1 arrives with an adult insect or a spider. He had begun to chatter to the SW at 1035, sang 8 weak songs. He feeds, in 10 seconds gets a sac and

goes NW.

MD1's songs today almost always come from the SW;
I'd say that in connection with the territory switch
[?] mentioned yesterday the D1's have shifted both S (to
the D9's' advantage) and W (to the D2's').

1044½ - D1F feeds 1.

1044½ - MD1, having chattered weakly twice, arrives
a few inches below D1F about 10 seconds after her. She
goes on feeding, eats a sac. He stays below her for 10
seconds, hops up beside her on the W rim (her invariable
feeding spot), feeds, goes in 5 seconds. She remains
and picks at the young.

1100 - It's 83°, cloudy but with a strong glare,
calm.

1102 - D1F leaves to the S.

1102 - MD1 arrives 1 second later. He had sung 9
spiritless, slow chatters since 1100. He feeds 1, in
10 seconds goes NW.

1109 - D1F feeds, remains on the rim and probes and
picks.

1127 - D1F leaves. MD1 began his chatters at 11²₃₅
and for nearly a minute she has clearly been turning
her head to see him come in.

1128 - MD1 arrives after 10 songs. He feeds 1,
gets a sac in 7 seconds, flies low NW past me but turns

W, goes high, deposits the sac 40 feet up in the big cherry 65 yards from the nest.

1130 - It's 85⁰, sunny, 50% clear.

1135 - DLF feeds, remains on the W rim as usual.

She goes right on picking at or touching the young. 13

At 1145 one has its head up above the rim; I've seen motion today but this is the first real raising of the head.

1150-DLF leaves.

1150 - MD1 arrives without any preliminary song, feeds from the N rim, in 10 seconds goes N, possibly with a sac. His body screens my view. 14

1200 - It's 91⁰, sunny, slightly overcast in places.

One nestling has its head up, bill wide open.

1206½ - DLF feeds the highest gape, stands on the W rim.

1209 - MD1 feeds while the female stands on the rim. He leaves E in 7 seconds. He didn't chatter, may possibly be singing insipids now before he comes. 15

Idea: Regarding male inconstancy and also wandering to other territories, it seems likely that none of my cases of male late summer desertions occur after there are young to be fed, either in or out of No

the nest. [See the D13's.]

1225 - D1F hops about 1 inch S of the nest, looks SW 15 seconds, returns to the W rim. She perches quietly and looks in.

1230 - It's 88⁰, wholly overcast but bright, breezy from the S.

1235 - D1F leaves.

3^v 1243½ - MD1 arrives after 3 weak chatters in 1 minute. He perches 6 inches away for 3 seconds, goes and feeds the first to gape. He seems to give an item dropped by the first nestling to a second one. He touches them with his bill for 15 seconds, goes NW 30 seconds after arriving. He paused 2 seconds in the nest tree before taking off.

1247 - D1F feeds, stands on the W rim looking in and touching the young gently. In 1 minute she hops 1 inch N of the nest but returns in 3 seconds.

1300 - It's 88⁰, sunny at the moment, glaring always, slightly breezy.

1306 - D1F leaves.

1315 - She feeds, stays on the rim.

1317 - I leave.

TD1 at 1317 - I [Ryckman] arrive. D1F is on the nest.

1332 - DIF leaves with a fecal sac, low to N past me.

1333 - MD1 feeds 2 gaping young 1 object each, in 30 seconds goes low W.

1343 - DIF feeds from the N rim, stays there.

1356 - MD1 sings SW 10 times.

1358 - DIF leaves, goes W.

1358 - MD1 arrives, feeds 2, the nearest first.
In 20 seconds he goes W.

1400 - It's 94°, sunny, the nest itself shaded.

1413 - DIF arrives from the S. All young gape.
She reaches over the nearest and feeds 2.

1430 - It's unchanged, the nest shaded. DIF is on the rim, picking from time to time at the nestlings, which are constantly in motion.

1440 - DIF leaves.

1441 - MD1 arrives after 3 songs to the SW. All young thrust their heads up some 20 seconds before he arrives. He feeds 2, goes W high in 1 minute. I'm able to see the heads each time.

1456 - MD1 begins to sing to the SW, sings 7 to 1459.

1459 - MD1 comes, feeds 2.

1500 - DIF arrives and MD1 leaves at the same time.
She feeds from the N, so I can't see; she stays on the

rim.

It's 95⁰, sunny, the nest in the shade.

3 1508 - MD1 sings SW 3 times.

✓ 1509 - MD1 passes food to D1F, stays 10 seconds
on a lower limb, goes SE low.

1530 - It's 96⁰, sunny, the nest shaded.

1531 - D1F leaves.

1547 - She feeds all 3, stays.

✓ 1549 - MD1 arrives from the N. D1F hops to a lower
branch when she sees him coming. He feeds 1, which
breaks off part of a caterpillar; then he feeds the
rest to another, flies low to the W. At 1551 D1F hops
up to the rim again.

MD1 did not sing before he came.

1600 - It's 93⁰, unchanged.

1601 - D1F takes a fecal sac W high.

1607 - She returns, feeds 2 birds, the second
gaping high. She stays.

17 1615 - MD1 sings SW 12 times to 1618.

1620 - MD1 arrives, perches beside D1F, feeds 1
nestling.

1630 - It's 90⁰, sunny, the light now shining on
the cavity and the nestlings' heads. D1F doesn't take
up a noticeably different position.

1630 - DIF leaves.

1649 - MD1 sings 7 to 1651.

1651 - MD1 arrives, DIF hopping to a branch below the nest just as he neared the tree. The nestlings gape, he goes to the rim, and she flies W low. He feeds the highest, goes S.

1657 - DIF feeds 2 young. All gaped. She stays (as always this afternoon, on the rim).

1700 - It's 86°; the sun shines directly on the nest.

1703 - MD1 feeds the nearest, goes W low in 25 seconds.

1705 - DIF leaves low to the W.

1714 - DIF returns [and presumable feeds].

1720 - MD1 arrives and DIF leaves. He feeds all 3, each one getting part of a green larva [surely error]. He then takes a sac 30 yards SW to a small tree, where I lose him.

1730 - It's 86°, scattered clouds. The sun is usually on the nest. DIF has sat on the rim every-time she's been at the nest, but she hasn't spread her wings.

1731 - MD1 sings W 15 times to 1736.

1737 - DIF feeds 1 (all are invisible), takes a sac

W.

1739 - DIF feeds 1, immediately goes E. MD1 sings
E 4 times.

1744 - DIF returns. I see no food, but her position
screens her head. She's on the N rim.

1748 - MD1 sings SW 11 times to 1751.

1758 - MD1 sings E 3 times.

1759 - MD1 arrives, perches beside DIF, feeds 2.

DIF leaves W after 20 seconds and in 5 more he
goes W.

1800 - It's 78°. The sky is $\frac{3}{4}$ overcast with heavy
clouds. No sun.

1807 - DIF returns without food. It's about to
storm.

[It begins at an unstated time.]

1833 - The rain stops. DIF spent the whole time
on the nest.

1900 - DIF leaves, returns almost immediately.

It's still raining lightly.

1930 - It's still raining. I can't see anything
so I'm leaving.

1930 - I leave.

1630 - I return. It's very hot and sultry and at
1800 shows signs of raining.

TD6 - The young have been taken without trace, the

nest left intact.

TD11- The nest is complete, empty. ✓

TD12 - The young have been taken; again the nest is in perfect condition.

TD13 - The eggs have been taken. The nest is intact.

TD4 - MD4 is silent.

TD8 - The eggs are present.

TD3 - The eggs are gone; the nest is untouched.

1715 - I leave the Dunn tract and go to the farm area.

T62 - The young are alive. I can see the head of one.

T63 - The nest is still empty. ✓

1800 - I leave. It rains violently at 1830, gets nearly dark, extremely windy.

1845 - I return. It's still raining, lightly now; this continues for an hour.

IV S - A male sings chatters S of the successful nest of the 59's. He is unbanded.

T61 - 61F is on the nest; her eggs must have hatched. I watch her nest for 45 minutes and at 1933 after 6 or 7 loud skids M61 flies to her tree carrying a large green caterpillar. He hops up to within 6 inches of the nest Y

but is quite nervous at my presence. After 30 seconds of switching his tail and watching me, he eats the food and goes. Note that a light rain is falling at this time.

M61 skids in the pine field 10 or 15 more times before I leave.

T65 - The female is incubating, the male unnoted.

T66 - M66 begins to call "tsu" the minute I come on the territory, and I find that the young have left the nest. It is tilted nearly on its side, as it has been for several days, and I take it the increasing weight and activity of the 4 young got to be too much for it. This must be taken as a 9-day natural fledging, though not a normal one. I'd guess it occurred recently, but I doubt if the wind or rain can be considered responsible.

2000 - I leave. It's clearing up a little. The day was 50% sunny, most of the rest of the time bright.

June 19, 1957

A clear calm morning with the temperature about 62° at 0600; it's very wet, both dew and last night's rain. Present from 0615 to 1045 and from 1400 to 1730.

T66 - I set up a net and go about catching the female. Both adults are more than usually shy and alarmed and both put on distraction displays, sometimes flying through the air with small quivering beats. Once one drops straight down from a 7- or 8-foot perch, displaying all the while.

I catch only 2 young, both within 12 feet of the nest, both very noisy despite my presence within 2 or 3 feet of them. However, I've heard no young for the first 30 minutes I've been here except when the female Bob-white flushes from her nest and flies past a fledglings perch; it calls noisily then. One young is actually down in the grass only a few inches from the ground, and I note that by 0830 when I free them one (the same?) is quite cold to the touch and has its eyes closed. The other is normally vigorous.

I catch the male, repaint his tail and put him in a Potter trap near the net. The female soon catches but gets out. Thereafter she won't go near the net while I'm present, so I leave the territory for 5 minutes. She's

dis. dis. flt

add B.G. 28

B.G. 28

pos. term

in the net when I return. I band her silver over green right, 25-66035.

T68 - I go across the ravine to the E, a territory I'll call T68, and in 20 minutes find the nest. It's 2½ feet high in a blackberry bush, unshaded. In it are 4 well incubated eggs. The female is unbanded. She flushes from the nest at my approach, flutters away with slightly shallow, rapid, even wing beats, a sort of slow semi-display flight. The male is singing skids.

T65 - 65F is on the nest. I don't see or hear M65.

T61 - 61F is at the nest. She has young, ~~2 or 3~~. I don't know how many. M61 sings insipids in the S end of 2.

Female B's nest looks complete. I don't see her, and M61 doesn't come on XI during my few minutes there.

0930 - I leave and go to the Dunn area.

TD8 - The female is incubating.

TD6 - MD6 sings loud type-8's from the woods edge E of the last nest. I see D6F go high into the woods, and MD6 sings sotto voce at the time. She may be building in the woods; I'll check later.

TD4 - MD4 sings series at times, but he isn't as

Y
dis dis 9
flr

Y

Y

2 ♂ 29

Y

study?

vocal as he has been. I haven't time to check his behavior.

TD11 - The nest is still empty. MD11 sings insipids in the low tree tops near it, so I take it that the nest hasn't been deserted. N?

TD7 - MD7 sings in the N-S tree row.

TD12 and TD13 - Two males are singing W of the fence row; the farthest W bird is actually based on the W woods, while the E bird (MD13) seems to come out into the field from the N end of the N-S tree row.

MD12 is a bird banded as a nestling last year, 54S, the brother of 62F and the son of M61. He is about 1 1/4 miles from his birthplace. He sings normally and does nothing to show that he's lost a female or that she's building. He is poorly marked, an interesting point.

MD13 sings many insipids, moves about very actively all over the field. He acts as though he is excited but I don't find D13F.

1045 - I leave.

1400 - val and I return. It's still clear, fresh, in the high 70's.

T63 - The first egg is present. N
Y

T62 - 62F is at the nest, and M62 is singing.

1500 - I go to the Dunn tract.

TD1 - The young are alive; one has its head thrown yg - heat

back on its back, its throat exposed from above as though prostrate with heat.

TD2 - A PW flies to the SE corner of the habitat, S of the path where it starts down to the ravine.

TD8 - I still think that MD8 is the singer from the E edge of the E field. Since D8F began to incubate his singing may have become less continual, and in any event his behavior is now more consistent with the status of his family.

TD6 - D6F is building 15 yards in the woods, about 25 feet high on a large diagonal elm branch. The branch isn't much shaded, so the site isn't so unusual, but it's the opposite of her last.

site

MD6 watches D6F closely, moves in the tree tops a lot, sings sotto voce half the time. Once he swoops down on her as she gets ready to carry material, flutters away with arched back, shallow beats, singing a type-8 in flight.

19 24

The nest looks well formed, is clearly in its second day.

TD10 - I think MD10 has moved N along the W tree row and MD7 has moved in to take the space (or maybe he pushed MD10 out).

TD7 - See just above. MD7 also goes out W into the

field, and I see him have a brief encounter there with MD13. He sings a lot, almost surely is tending young in the tree row. ♂ ♂

TD13 - I see MD13 many times as he keeps in constant restless motion from the woods at the N end of the tree row to perches at the tops of the little trees in the field. He seems very alert and excited, but I see D13F only once and the male's behavior is the only sign that she may be building. One other time he flutters and skids in flight as though he had made a pass at a female. See above under TD7, below under TD12. ♂ ♀

TD12 - MD12 comes E to the middle of the field once and MD13 drives him away quickly. Otherwise I scarcely see MD12, and I don't think any building is going on. I cover the area many times. ♂ ♂

TD11 - MD11 holds the area N of the nest, S of the shallow sink hole, E of the road, W of the woods. The nest is thus at the S edge of his territory or perhaps only of his utilized territory (S of the nest there are very few trees to sing from).

1730 - I leave.

June 20, 1957

A clear windless morning with a very heavy dew; 66° at 0600, reaching 84° at 1400 or so. Present from 0600 to 1045 and from 1530 to 1730.

TD10 - A male just N of the location of the nest that failed is feeding a $\frac{3}{4}$ -grown fledgling. My present appraisal of the situation is that MD10 has 2 females, 1 of which is the parent of the brood on TD10, the other of which was on the nest that failed. The latter may have left. This is all a guess to explain the facts. [Nothing ever contradicted it.]

TD11 - The nest still contains no eggs. MD11 sings W of the road and at 0630 I see him fight MD7 about where they've been fighting. I note that MD11 flies across the road to chase MD7 back once, circles to return to his own territory, and calls excitement calls just as he is about to land, i.e., after pursuit is broken off. MD7 may call too. Then in 20 seconds MD11 flies 40 yards W into TD7 and lands in the trees of the tree row. I watch him hop through them, near the tops and rather conspicuous but silent. In from 45 to 60 seconds he returns to his own territory without having been challenged. MD7 was pretty surely in the tree row somewhere. Is this wandering in a densely

crowded population?

TD7 - I see MD7 many times during about 3 hours in his general area. See above. At about 1000 he and MD12 have a fight W of the fence on TD12, in the woods. D7F is near, calling loud "checks" as the males fight for 20 seconds or so, and I then see her and MD7 about 25 yards to the S, near the spot where their young went just after fledging and where I used to find her at that period. She calls "tsu" at me and hops about nervously in a very small area, moving through the trees about 7 to 12 feet up. MD7 accompanies her closely, staying within 6 feet of her, usually 3 or 4. He doesn't act nervous or bob his tail but does call "tsu." At her every move he goes with her. My first thought is that she is building or getting ready to, so I leave to avoid scaring her. Later I think it much more likely that she was returning to a nest nearby. [Neither.]

TD13 - MD13 is as vocal and active as he was yesterday, but I see no sign of a female after a very careful search. (I find 2 recent elm nests of this pair or the D12's; both are about 4 feet up, against the trunks of 6- or 7-foot trees; one may have been disarranged a little by a predator.) Once MD13 flies W across the field and stays for a minute near the woods, on what

must be TD12. Note these excursions seen today.

TD12 - I see MD12 only as described above under TD7 and for about 10 minutes preceding that encounter. He sings loudly and regularly at this time, otherwise is silent. No sign of a female, and I'm not clear on the situation here. [She never appeared again.]

TD4 - MD4 sings from high perches in the tree row, loud regular skids from about 0600 to 0700. Thereafter he is much less vocal. He may be losing interest; I don't think he is mated. [Correct.]

TD6 - I see D6F gather grass very near her old nest in the middle of the field and carry it about 80 or 90 yards W to her nest. MD6 sings at the woods edge at the time. *didn't carried*

TD1 - The young are alive.

TD2 - MD2 sings at the extreme S edge of the habitat as I arrive, then flies N. Within 10 minutes he has come back S about 3 more times, sung once or twice each time, looked around, and left after 30 to 60 seconds. I see nothing to explain this, and he seems to quit doing it in 10 minutes.

TD3 - MD3 sings on the usual hillside, and I see a female twice. The second time she flies into the center of a little grape-covered elm, as though she is exploring

for a nest site. She leaves quickly, and I lose her.
MD3 sings over so wide an area that I doubt if the
female is building yet. [Error.] All this suggests
that I was right in thinking the nest that failed was
hers.

1045 - I leave.

1530 - I return to the university farm. It's
sunny and hot.

T62 - The young are still alive.

T63 - Egg 2 is present.

T68 - The female is incubating the eggs, still
unhatched.

T65 - 65F is incubating. An unbanded male is
singing loud chatters from the center of the territory,
and M65 is not present so far as I can tell. I've seen
an unbanded bird here before. It looks as if M65 is gone.
It will be interesting to see if the male stays, if he
fosters 65F's young (or carries food in anticipation),
or if he has his own mate.

T61 - 61F is at the nest. She may just have got to
it because she flies quickly away as I come up. M61
sings skids from 15 to 20 feet up in the W edge of 1,
then flies across W to 3 or more likely 4 and sings on.

475
6/20/57
VN

His range over his territory is surprising. I suppose
he doesn't use the W half of V to speak of, except at
the S end.

1730 - I leave.

476
6/21/57
VN

June 21, 1957

A cloudless, windless morning with a very heavy dew; cool (see chart). Present from 0445 to 1345 and from 1500 to 1830; Ryckman present from 1325 to 2038.

TD8 - MD8 and 2 or 3 other males sing insipids and call.

TD1 at 0450 - The male sings insipids and gives excitement calls. The song rate is 5 a minute, but with irregular intervals. The calls are 2 a second at the fastest, usually 15 to 18 between songs.

0508 - DIF leaves. She spent the night brooding.

0513 - She feeds and in 5 seconds leaves N.

0516 - DIF feeds the highest 1 object, may get a sac, leaves in 8 seconds.

0516 - MD1 arrives 2 seconds after DIF goes, feeds 1, stays 5 seconds.

0519 - DIF feeds 1 after little or no gaping, in 6 seconds broods E. She sits fully on the nest. The young stuck their heads up once or twice when the female was gone.

0525 - MD1 feeds 1 while DIF stands on the rim. He goes in 5 seconds and she broods.

MD1 quit singing series at 0506; he has sung a few times since.

all feed
Sue
Cousins -
2:45
4:77 - from table
brooding when
off to sleep
Dawn

call note

or

y

o

0530 - It's about 60°, unchanged.

0531 - DIF leaves.

0531 - MD1 arrives within 1 second, feeds 1, leaves
in 3 seconds.

0535 - DIF feeds at least 2 objects, the latter of
which she seems almost to regurgitate. She broods in
20 seconds. The young couldn't be seen during her ab-
sence. She is dozing on the nest.

0538½ - MD1 arrives. DIF leaves 1 second later
(asleep?). He feeds 1, stays 5 seconds.

0541 - MD1 feeds 1 large clear-winged insect, I
would say a fly. He stays 3 seconds.

0546 - DIF feeds 1, in 20 seconds broods E.

For all feedings today, it can be taken that unless
the notes say otherwise only 1 item was seen to pass.

DIF is sleeping.

0555 - MD1 feeds. DIF pulls back to the rim,
broods again 15 seconds after he leaves, which he does
in 4 seconds.

0600 - It's about 64, still perfectly clear and
calm.

0608 - MD1 arrives, having chattered 4 times in the
last 1½ minutes. DIF leaves 1 second later. He feeds
the highest, leaves in 6 seconds. The young reached

very high to get the food.

F ✓ 0610 - MD1 feeds the highest, goes in 7 seconds. S

0612 - D1F feeds 1, seeming to reach past the highest.

✓ 0612 - MD1 arrives in 3 seconds, feeds 1. Each adult leaves 5 seconds after arriving. S

0618 - D1F feeds 1.

✓ 0618 - MD1 arrives within 1 second, feeds 1, in 3 seconds takes the day's first fecal sac NW. S

D1F broods after 1 minute, dozes.

The sun has just begun to touch the top of the nest tree.

✓ 0626 - MD1 feeds 1 a green larva and a small item carried in front of it. He sat 18 feet up, 20 yards from the nest and sang at least twice in 40 seconds before coming. D1F backs off onto the rim. MD1 gets a sac in 5 seconds, carries it W, probably to a big walnut 75 yards from the nest. S

0630 - It's about 66°, unchanged.

✓ 0634 - MD1 arrives with 1 large item; he sang 4 chatters in the preceding minute. D1F leaves 1 second later. He feeds the highest. He then picks 2 or 3 times at the nest, in 10 seconds hops down about 6 inches from it, sits quietly for 45 seconds. He returns S

to the rim, seems to eat small objects from the rim and cavity about 5 times, leaves after 1½ minutes' presence. A few rays of sunlight touched him at the nest.

✓ 2 0642½ - MD1 arrives in the nest tree. He had sung twice from the same tree mentioned above. He carried a large object, possibly a spider.

0642½ - DIF arrives a second after the male but goes to the rim and feeds first. MD1 feeds in 2 seconds, leaves in 3 more. She probes, after 2 minutes broods E.

✓ 2 0651 - MD1 arrives and DIF leaves immediately. He sat for 10 seconds in the usual tree, chattered twice before coming. He feeds 1 large adult insect, stays 10 seconds.

0655½ - DIF arrives, takes 5 seconds before jumping to the rim, feeds the highest a large object and a sort of residue, stays on the rim.

0700 - It's about 68°, unchanged.

3 ✓ 0703½ - DIF leaves. MD1 had sung from NE of the nest the second before, and I think there is a correlation.

0704½ - MD1 feeds 1. He came after 3 chatters in a minute, goes in 5 seconds.

0708½ - DIF feeds, goes in 15 seconds.

9 ✓ 0722 - MD1 feeds a green larva to the highest. He sang 9 times in the preceding 3 minutes, all short weak chatters. He had the food all of that time, I'd say. At 0720 he sat with it, 20 yards NE of the nest; at 0721 he moved on a little. He leaves in 10 seconds.

0722 - DIF arrives 5 seconds behind MD1, feeds the highest, picks up a small object it drops and feeds another. She stays on the rim, at 0726 broods, sitting high but covering the whole cavity.

0730 - It's about 70°, unchanged except that a light S breeze blows at times.

✓ 0739 - DIF leaves. A male is singing skids a little distance to the NE; it may be MD1.

0800 - It's about 72°, unchanged.

The young are gaping at the moment, most of the time can't be seen.

0803 - DIF feeds the highest twice, both objects small. She goes in 10 seconds, hopping down S.

✓ 0804 - MD1 feeds (details unseen). He'd sung 6 chatters to the NW in 2 minutes. He goes in 10 seconds. Note the scarcity of sacs.

0809 - DIF arrives a foot above the nest.

✓ 0809 - MD1 arrives a second later a few inches to the S. DIF probably feeds 2. She screens him from view. The young gape wildly. MD1 takes a sac to the

3

cherry 65 yards NW, leaving 7 seconds after he gets to the nest. DIF stays 45 seconds, goes.

0817½ - DIF feeds 1, in 10 seconds hops 6 or 7 times through the nest tree, leaves in 4 seconds from the top of it.

0824 - DIF feeds, in 5 seconds hops down below the nest, then up above it, then 4 feet away to another tree, in 10 seconds (total) out of sight.

0827 - MD1 (6 or 7 songs, NE, last 3 minutes) feeds the highest, in 5 seconds hops down S.

0830 - It's about 73°, unchanged.

0830 - DIF feeds 1, coming in high from the W. In 8 seconds she hops down S.

0834 - DIF feeds, leaves the nest in 5 seconds and hops around in the nest tree for 15 more.

So far today not the slightest attention has been paid to me.

0837½ - MD1 feeds 1, in 5 seconds takes a sac NW about 80 yards. He flies at 6 feet, probably goes to or beyond the edge of the territory.

0849 - DIF feeds (1, I think), in 10 seconds hops down W. The nestlings' bills can be seen occasionally, little else.

0851 - DIF feeds, perches on the NW rim and probes indefinitely.

The sun has not shone on the nest today except for very occasional rays; I'd say this nest never gets enough direct sun to produce abnormal or unusually prolonged sheltering.

0856 - DIF leaves. Thereafter a nestling preens vigorously.

0900 - It's 74⁰, unchanged. (Temperatures are approximate today.)

0905 - DIF feeds 1, remains on the W rim probing.

0907 - MD1 arrives and DIF goes. He feeds, leaves in 5 seconds.

0926 - DIF feeds 1, in 6 seconds takes a sac high at least 75 yards W.

0929 - DIF feeds, in 10 seconds hops down below the nest, in 5 more leaves.

0930 - It's 76⁰, a little breezier, cloudless.

0933 - DIF feeds, probes and watches from the W rim till she leaves the nest tree at 0939 after short hops for 10 seconds.

0957 - DIF feeds.

0957 - MD1, having sung some 10 faint insipids NE of the nest during the last 2 minutes, flies 20 yards from a 15-foot perch and arrives 5 seconds after DIF. He leaves, probably with a sac, after 6 seconds. DIF stays on the W rim 1 minute. The young are active

while she's there; I think they continue to gape. There have been no bursts of activity of the sort associated with nest-leaving.

1000 - It's 80°, unchanged.

1004 - DLF feeds, leaves in 4 seconds, almost surely with a sac.

15 ✓ 1012 - MD1 (15 chatters in 3 minutes, 25- 30 yards NW) feeds 1, stays 10 seconds on the rim and 50 in the tree just below the nest, goes NE.

1015 - DLF feeds, after 10 seconds hops down below the nest and moves about in the lower part of the trees for at least 1 minute.

1024 - DLF feeds, remains on the W rim poking at the young. They raise their heads to her with their bills closed. In 2 minutes she hops 2 inches away, but in a minute she returns to the W rim.

1030 - It's 79°, unchanged.

3 ✓ 1030½ - MD1 begins to sing weak insipids 20 yards NE of the nest, 15 feet up in a scrub elm he uses as a stopping point when carrying food. He has a large brown lepidopterous larva, over 1 inch long. He sings 3 times, drops in 1 flight to the nest tree.

1033 - DLF leaves.

1033 - Simultaneously MD1 arrives. He feeds on

the second try, in 10 seconds takes a sac low at least 80 yards N, flying within 2 feet of my head. It almost looks as if sacs are carried off the territory.

1043 - DIF feeds, in 8 seconds leaves with a sac.

1053 - DIF feeds 2, pausing 5 seconds before going the last 6 inches to the nest. She then sits on the W rim and looks in. The sun is nearly straight overhead, and the nest is in complete shade.

1100 - It's 79°, unchanged.

1101 - DIF hops down 6 inches below the nest and sits.

1103 - MD1 begins faint insipids from 15 feet up, 30 yards NE of the nest. He has 2 long very thin larvae and an adult winged insect. He sings 6 times.

DIF hops back to the W rim, in 10 seconds leaves.

1104 - MD1 arrives, feeds 2, in 10 seconds hops into the nest tree, leaves after 1 minute of moving around in the tree. He pushed his bill into 1 nestling's gape, had 1 item left and gave it to a second. He then took a larva from the first and gave it to the second.

1117 - MD1 feeds, gets a sac, carries it N and circles NE to deposit it 100 yards from the nest, 20 feet up in the top of a little elm.

1123 - DIF feeds 1, getting little gaping. She

stays on the rim till 1125.

1126 - DIF returns; I think she feeds 1. She must have hopped just below the nest. She now stands looking in and most of the time putting her head in, constantly pottering around.

1130 - It's 82⁰, unchanged.

1135 - MD1 begins weak type-8's NE of the nest.

8 18
In a minute he goes to the tree 30 yards from it. He has 1 long very thin larva, probably 2 other items. He sings 8 times.

1137 - DIF leaves.

1137 - MD1 arrives 10 seconds later. He feeds 2, in 6 seconds takes a sac NW to the big cherry.

1147 - DIF feeds 1. For 2 minutes she looks in, etc., from the W rim. Then she turns to face W, leaves at 1150.

1200 - It's 82⁰, quite breezy at times, very bright and virtually cloudless.

18 18
1227½ - MD1 (18 type-8's in 3½ minutes, 30 yards NE, usual bare tree there) feeds 2 items, 1 a larva, to 1 young. He hops down 4 inches below the nest and sits quietly till 1231.

1230 - It's 84⁰, unchanged except for an occasional small white cloud.

1236 - DIF feeds, in 10 seconds hops down 6 inches

below the nest and sits quietly. At 1246 she returns to the rim, looks in while the young gape, in 20 seconds leaves.

9m
✓
1249 - MD1 (9 chatters in 2 minutes 25 yards SW of the nest, 15 feet) feeds 2 long thin larvae to 1 young, in 5 seconds takes a sac low NW at least 75 yards.

1252 - I start to inspect the nest and D1F comes up to a tree 20 yards away; she has 1 green larva. She begins to call "chick," and I retreat. She comes close to me, but quits calling soon.

1254 - D1F feeds 1, in 30 seconds hops down below the nest out of sight.

1300 - It's 84°, unchanged.

I check the nest; there are only 2 young. Maybe the one I saw stretched out the other day really was dying. These nestlings have been comparatively inactive and so far as I can tell quite silent. The nest is still shaded.

1312 - D1F feeds, perches on the W rim and probes, etc. Most of the time she just moves her head alertly and looks in.

1325 - Ryckman relieves me. D1F is still sitting on the rim.

1345 - I leave.

TD1 at 1325 - I [Ryckman] relieve Nolan.

1329 - D1F leaves with a sac.

1329 - MD1 sings NE 4 times, beginning just before
D1F leaves. He has food.

1330 - MD1 feeds 1, stays 30 seconds.

1339 - D1F feeds, details missed.

1341 - D1F leaves.

1352 - MD1 sings SW 31 times [?] to 1358.

1358 - MD1 feeds 1, goes to a lower branch for 15
seconds, leaves low SW.

1400 - It's 84°, sunny, the nest shaded.

1401 - D1F returns, [feeds?].

1403 - D1F leaves.

1408 - I check the nest; 2 nestlings.

1412 - D1F feeds 1, stays.

1421 - MD1 begins to sing in a tree he often uses,
to the NE. After 2 songs D1F hops from the rim to a
lower limb in the nest tree.

1422 - D1F leaves. MD1 has sung twice more.

1423 - MD1 feeds 1, the highest. He landed above
the nest and the young became active. He goes W imme-
diately.

1430 - It's unchanged.

1431 - MD1 sings SW 9 times to 1437.

1438 - MD1 feeds the highest, stays 65 seconds on

a lower branch, goes.

1440 - DIF feeds, details missed.

1441 - MD1 sings SW 5 times.

1442 - DIF leaves.

1445 - DIF feeds 1.

1446 - DIF leaves, pauses near the nest tree several seconds, flies high W.

1457 - DIF feeds the highest.

1458 - MD1 sings 2 to the NE.

1458 - DIF now leaves. MD1 sings 3 more.

1459 - MD1 feeds the highest, takes a sac W in 20 seconds.

1500 - It's unchanged except for a slight breeze.

1515 - DIF, feeds, details missed.

1530 - It's 84°, the sun now shining directly into the nest.

1537 - MD1 sings SW 5 times.

1537 - DIF leaves after the songs.

1539 - MD1 feeds 1, takes a sac NE.

1549 - DIF feeds 1, stays.

1600 - It's 83°, the sun on the nest.

1606 - DIF leaves.

1613 - DIF feeds the highest. She then perches on the W rim, wings outspread. She remains motionless in this position till 1737.

1630 - It's 79⁰, shining on the female's back instead of the cavity.

1636 - MDI sings NE 8 times, a larva in his bill. He then flies to the nest tree, perches on a S limb. DIF stays in her position. MDI doesn't go to the nest, flies W in 25 seconds.

1700 - MDI sings some 8 times.

1701 - He feeds; the female stays with wings spread, so I miss details. He goes W in 25 seconds. She never moves.

1730 - It's 78⁰, shining on the nest.

1737 - MDI sings NE 3 times.

1737 - DIF now leaves. He sings 4 more.

1738 - MDI feeds the highest, quickly takes a sac

N.

1749 - DIF feeds 1, leaves NW immediately.

1750 - DIF feeds the highest, leaves immediately.

1800 - DIF repeats.

It's 77⁰, sunny, calm. By 1730 the force of the sun on the nest was greatly diminished.

1810 - MDI sings SW 23 times.

1814 - MDI feeds the highest and another, in 2 minutes flies SW low.

1820 - DIF feeds 1, immediately takes a sac W.

1830 - It's 77°, shining on the nest.

1831 - DIF feeds 1, takes up sheltering position on the W rim.

1839 - DIF leaves.

1839 - MD1 arrives as she goes, feeds 1, in 35 seconds goes W low.

1853 - MD1 feeds after 1 loud song S.

1853 - DIF arrives, perches beside MD1, feeds the other nestling. MD1 takes a sac low W. DIF stays on the rim, not sheltering.

1900 - It's unchanged.

1901 - DIF leaves SW.

1906 - MD1 sings NE 8 times. Nearly all his NE songs are from the same tree today.

1909 - MD1 feeds 1, stays 80 seconds on a lower branch, hops up and gets a sac, goes SW low.

1915 - DIF feeds 1.

1917 - MD1 sings SW 6 times.

1918 - DIF now leaves. MD1 sings 3 more.

1919 - MD1 feeds the highest, goes to a lower branch for 5 seconds, goes back up and gets a sac, flies low SW.

1930 - It's 72°, sunny, calm.

1946 - MD1 sings NW 8 times.

1948 - MD1 feeds the highest, takes a sac low W.

2000 - It's 70⁰, the sun about to set.

2011 - MD1 sings NE 8 times.

2014 - MD1 feeds 1, leaves immediately.

2018 - MD1 sings NE to 2021.

2022 - D1F feeds, leaves immediately. It's too dark to see details.

2022 - MD1 sings NE 15 times. As usual he has food (not at 2018 though). He doesn't sing and then catch his food.

2025 - MD1 feeds 1 (?), goes SW immediately.

2027 - D1F returns to the nest.

2030 - It's about 70⁰, almost dark.

2038 - I leave. D1F seems to be at the nest.

1500 - I return. The weather is unchanged.

T68 - The female is on the nest, the eggs unhatched.

T65 - 65F is incubating. The new male sings chatters. M65 has left or been killed.

T61 - 61F is on the nest. Female B's nest tells me nothing from below. I don't hear M61.

T63 - The nest, 63F's fifth, with no evidence of the predator, is empty. I don't wait and I hear nothing.

T62 - At least 3 young are in the nest, their heads raised above the level of the rim.

I go to the Dunn tract at 1630.

TD8 - D8F is on the nest. MD8 sings N of it, in the field. Y

TD6 - MD6 sings a few loud type-8's over near the nest.

TD11 - The nest contains the first egg. Note the long wait between building and laying. N ←

TD13 - I find a nest 7 feet high in a 10-foot scrub elm, about in the center of the area of MD13's activity the last few days. In it is 1 fresh egg, so it looks as if it's D13F's new nest. Note the very fast rate of building and laying. N

TD12 - I see and hear nothing in 10 minutes of looking.

TD7 - I search for D7F where I saw her and MD7 yesterday, but I see no sign of building.

TD4 - Silence.

TD2 - MD2 sings on the center of the territory, and a male singing later S of the path is probably he too. I find an empty but pretty surely a new nest, 7 feet up in the center of a 10-foot crataegus, S of the recently failed nest I've been attributing to D3F. This present one seems clearly to be on TD2, but the timing suggests it is a successor to the failed nest. I'll

have to await developments. Note too the question raised by the recent activity of MD1 far S of this nest, at the S limits of the habitat.

[Subsequent developments revealed that nests were built on TD2 and TD3 exactly simultaneously, beginning on June 19. The nest that failed on June 18 was probably D3F's as originally assumed.]

TD3 - MD3 sings a few times where he was yesterday, and I may see the female moving about near him.

1830 - I leave.

The day was 100% sunny, perfect for watching the nest on TD1. All fecal sacs were counted. My thermometer is inaccurate below about 70°.

$$\begin{array}{r} 3.6 \\ 44 \overline{) 156} \\ \underline{132} \\ 240 \\ \underline{264} \end{array}$$

494
 6/22/57
 VN

June 22, 1957

A clear, dry dawn, clouding over and becoming a little breezy from the SE at 0600; temperature 67° at 0500. Present from 0450 to 1145, from 1315 to 2020, and from 2200 to 2230; Ryckman present from 0830 to 1645.

II - A very red-backed unbanded male is singing step-buzzes, sometimes just buzzes, low in the S end of the habitat. He gives excitement calls between songs. Some proof of the excitement nature of the calls is that he comes immediately and calls more loudly when I squeak.

T65 at 0505 - The female is on the nest. I hear no male.

0546½ - A male begins to chatter in the vicinity of the osages. He goes on steadily.

0600 - It's 67°, lightly overcast, breezy.

The male still sings, a short chatter.

0630 - It's 68°, nearly clear.

The male has sung 156 times without any interruption since he began. The female is still incubating quietly. For the last 10 minutes the male has been near her, within 25 yards.

0641 - The male quits at 189, but he begins in 1 minute. He's still in the NW part of T65, near the nest.

down

calls

1st song

156(3.5)02

33

1

11
28
7
6
0646½ - The male has sung 200 songs since he began, and he's still singing.

0700 - It's 70°, sunny, lightly breezy. The male quit singing at 0659 and he sang only 7 times after 0655. His singing suggests that he is acting unmated.

65F sits quietly, facing SE. Her remaining on the nest may be a reaction to me, but she doesn't seem to pay any attention to me; 60F last year sometimes sat late into the morning, and she was very tame.

10
0705 - The male sings 10 songs well to the S, stopping at 0708.

Note that both 60F and 65F, the 2 females that have sat on the nest so late, had lost their mates. Significant?

27

0730 - It's 72°, sunny, breezy.

0734 - 65F finally leaves the nest.

0745 - A little sunlight touches the nest.

60
0800 - 65F goes straight to the nest without calling or paying attention to me, so I think her odd behavior so far today can't be attributed to fear of me.

0800 - It's 72°, unchanged.

0830 - It's 73°, unchanged.

0837 - Ryckman relieves me.

T62 at 0900 - There is a lot of activity at the nest, the young rising up and calling noisily. The

N13

parents call when I arrive, so I leave for fear I'll retard fledging.

I go to the Dunn tract.

TD1 - The young have been taken by a predator, the dead egg too. The nest seems more bent down than it was yesterday. The parents are present, calling "tsu" when I go to the nest. I try without success to net them.

These young would have left the nest tomorrow, the eleventh day.

TD2 - The nest I found yesterday has the first egg. MD2 sings a few times but I never see him.

TD3 - I work pretty carefully here without seeing any signs of building. The female is foraging about where I saw her yesterday; she calls "check" a good deal, as though perhaps my presence alarms her. An unbanded young, fully immature but for its head, calls within 20 yards of the female, but my impression is that MD3 may be tending it. MD3 sings occasionally nearby.

TD8 - The eggs are intact.

TD4 - MD4 sings nearly constantly from 1030 to 1130.

TD6 - MD6 sings a few type-8's.

TD11 - The nest still contains only egg 1.

TD10 - I see a male carry something like a fecal sac from the N-S tree row. I'll explore tomorrow.

TD13 - The nest I found yesterday has a second egg. N

TD12 - I see MD12 singing loud regular skids in the W woods edge. In 10 minutes there is no sign of a female.

TD7 - D7F is in the field about 30 yards from her successful nest, near the tree row. Her light "sip" calls attract my attention. MD7 is about 6 feet away, apparently attending her. He flies a few feet once and she follows to the perch he left, or possibly she flies to his perch and he leaves as she arrives. They then go W of the fence and I lose them, but I hear an occasional faint song from him. My impression is that they were courting in some fashion; I saw them for less than a minute. 079

Some 20 or 30 minutes later I find D7F foraging W of the fence. An unbanded young is foraging within 15 yards and calling single notes rarely; probably there is another young out of sight. D7F never carries food, but I see nothing to suggest that she isn't doing so.

When I saw the 2 D7's together the female was not moving in the rapid way she would if she were away from a nest under incubation.

1145 - I leave.

T65 at 0837 - I [Ryckman] relieve Nolan.

0900 - It's 77⁰, sunny, slightly breezy.

0915 - The male sings about 7 times to the S.

Tractors are making noise nearby and song counts are difficult.

0926 - 65F leaves.

0930 - It's 82⁰, sunny.

0957 - 65F returns.

1000 - It's 83⁰, sunny. The tractors still make noise.

1030 - It's unchanged.

1100 - It's unchanged. The tractors are gone.

1101 - 65F leaves.

1123 - 65F returns. She always comes in low from the E. part of the tree, so I can't tell where she is flying from.

1130 - It's 83⁰, partly overcast.

1200 - It's 83⁰, sunny, the breeze rising.

1205 - The male sings S 17 times to 1211.

1230 - It's 83⁰, partly overcast.

1235 - 65F leaves.

1255 - She returns from the E.

1330 - It's 84⁰, sunny, the wind increasing and

buffeting the nest.

1340 - 65F leaves low to the E.

1400 - It's 86⁰, scattered clouds, windy.

1409 - 65F returns.

1430 - It's 81⁰, unchanged.

1445 - The male sings far S 9 times.

1455 - 65F leaves.

1500 - It's 81⁰, rapidly getting stormy looking
to the W.

1507 - 65F returns.

1514 - The male sings S 8 times to 1517.

1525 - It begins to rain.

1645 - Nolan relieves me. The rain has been
nearly continuous, and 65F has stayed on.

1315 - I return to the farm area. It's sunny,
hot, sultry.

T62 - There are 3 young at the nest, 1 in it, 1
either on the rim or an inch or so off it, and 1 about
4 inches away on a branch that supports the nest. I
later find a fourth, 25 feet away and 2 feet high in
a sassafras. All call noisily much of the time, not
like nestlings but like fledglings.

About a minute after I arrive I hear the adults

fledge line

500
6/22/57
VN

calling "check" in an alarmed way some 20 feet from the nest. I attribute their fear to me until I see a 3-foot racer 4 feet up in a tree. It is very alert, looks about, glides slowly through the tops of little sassafrasses that are close together. It moves steadily, and I think its behavior suggests that it is searching; certainly it doesn't keep on 1 course. The adults get within 6 feet or so but in general don't exhibit any inclination to follow it. Once the female starts a regular distraction display but she doesn't go on more than a few seconds. The rate of the "check" call is 13 times per 15 seconds, sometimes a few more or less. The snake in 3 minutes leaves the tree and disappears on the ground. The PW's, which presumably can still see it, go on calling and hopping rapidly from perch to perch. In 2 minutes I see the snake again; it has ascended a 5-foot tree 10 feet from the first. In a minute it goes to the ground, and I see it no more. Surely it was looking for food.

dis d -
snake

Meanwhile the young give food calls at the nest, and I hear one near me, within perhaps 10 or 15 feet of where the snake was. I catch it, band it silver left, blue above right for its brood mark, blue below right for its individual. The number is 25-66039.

I leave with the 3 young in and near the nest, still

calling. They called when I was just beneath them. yg B
M62 fed them without regard to me, and they called
very loudly. I shall regard the fledgling period here main?
mute
as 10 days; they surely don't act like nestlings.

T63 - After 30 minutes I hear M63 singing loud
chatters on the E end of the ridge and discover 63F
working on her sixth nest. I don't see it--it's in on Bldg
the woods growing up from the ravine--but I know
generally where it is.

1500 - It has become very dark and threatening.

1530 - It begins to rain, goes on irregularly,
sometimes hard. It's dark and thundering, not very
windy.

T68 - I scare the female off; still 4 eggs. y

T61 - 61F is on the nest. Female B is not on her y
nest. M61 is silent.

T65 - I relieve Ryckman at 1645. The female is
on the nest. It's raining moderately and steadily.

1700 - It's 68°, raining.

1704 - 65F leaves. It's raining but not hard now.

1715 - It quits raining.

1725 - 65F returns, faces SE as before.

1740 - A little sun comes out.

1750 - 65F leaves the nest.

1800 - It's 74°, gray but with some sun in the W.

1812 - 65F returns silently, enters in 3 seconds, faces SE. In 5 minutes or so she turns to face W.

1836 - 65F leaves the nest.

1855 - 65F returns directly to a spot 1 foot above the nest. She climbs down the nest branch, which is so densely covered with twigs that she has difficulty getting into the nest. She faces E.

1900 - It's 70°, cloudy but with a little filtered sun getting through, windy from the N.

1918 - 65F leaves the nest.

1929 - 65F returns, faces SE.

1930 - It's 70°, clearer, otherwise unchanged.

2000 - It's 68°, clearing but cloudy on the horizon.

The wind has nearly died down.

2015 - 65F is in for the night. It's getting hard to see her on the nest.

2020 - I leave. It's been 60% sunny, and till 1500, 65F's attentive behavior should have been normal.

2200 - I return. A very light rain is falling.

T62 - By the light of a flashlight I examine the nest from below. No PW's are visible, and a good sized moth is crawling around on the rim. The young have left or have gone back into the nest, I'd guess the former. The

503
6/22/57
VN

situation tomorrow will tell me something.

2230 - I leave.

June 23, 1957

A clear hot day without unusual weather conditions .
Present from 0800 to 1145 and from 1600 to 1730.

T62 - The territory is very quiet for 10 minutes, and I then hear a fledgling call. Within 15 minutes I catch two, one 10 yards S of the nest, the other 25 yards. Each is about 5 feet high, one in a crataegus in a light thicket, the other in a clump of vegetation around a large tree trunk. The male is feeding both, in fact, in 40 minutes I never see the female. I band the two (only one is a strong flyer--it flies 20 yards and gains altitude) silver left, blue above right. One is 25-66040, yellow; one is -41, red.

*Porter
28*

I'd say from the quiet and the clear fact that the female is tending young some distance from the nest that fledging occurred yesterday for all. Note that for three it was after 1400.

T63 - There is no sign of activity near the spot where 63F was building yesterday. In 15 minutes M63 begins a series (10 or so) of loud chatters to the W, on the middle of the hillside. Note how he behaves at this stage, singing short series usually of full volume; then keeping silent for 10 or 15 or more minutes.

I find both 63's about 15 feet up in a dogwood.

One, I'm 95% sure it's the male, goes to a fork and begins to nest-shape with great vigor. The other comes to within 2 inches above and watches. In 5 seconds the actor quits and climbs out of the fork; the other moves almost into it for a split second but doesn't stay. The two move around in the center of the tree for a few seconds and again the male (virtually sure) nest shapes in the same crotch, just as before. 63F comes to within 3 or 4 inches and looks down at him as he turns, kicks, uses his wings; then she gets into the crotch with him, so that they are touching each other. In a second both leave and in another they move out of the tree. I hear 1 faint skid at the ravine but see nothing more. Since it seems clear that building stopped on the nest being worked on yesterday (the effect of rain on a female which must be getting worn out?) and that a new one hasn't been begun, I leave. The male's stimulation by nest-shaping is analogous to early season behavior.

51 8 pages
51 9

While the 63's were together in the tree their actions were quick and alert, not nervous.

I go to the Dunn tract.

TD6 - In 2 widely separated visits to the nest I find it empty.

TD11 - D11F is on the nest at 1000, gone at 1010.

J
Y

Egg 2 is present.

TD8 - D8F is incubating.

TD4 - MD4 skids.

TD7 - MD7 appears at various times at the fence row, in the field W of it, and in the more grown-up area where the young seem to stay (NW of their nest). I see 1 young, which is in full immature plumage except for its head, its wing coverts, and its flanks at the rear near the under tail coverts.

TD13 - D13F is on the nest, so egg 3 will be present and incubation possibly has begun.

TD12 - MD12 now sings from the woods edge W of his field; his behavior is that of a male whose female is incubating [or gone].

TD10 - A male with a skid song that is nearly a monotone like a Chipping Sparrow's sings near the area of the old nest, at the fence row. A female is nearby calling. He flies to a sassafras fork and crouches down in it and nest-shapes and she sits a few inches above him and looks at him. I.e., this is a repetition of what I saw today on T63. Here again it all happens so fast and in so shady a spot that I can't be completely certain that it's the male that does the shaping, but I'm virtually sure. The female then goes to a number of leafy forks and explores, but she never shapes.

odd -
type 3 song

79

A young bird here in fully immature plumage, calling about once a second, picks 4 or 5 times at a dried fruit from a cluster of dwarf sumac fruits.

I'd guess that MD10 had 2 females, that the nest I first found was of a female no longer present, and that the female today is the mother of a first brood.

TD1 - MD1 skids and also sings insipids, perches 20 feet up, clearly watches something below him, moves every minute or so at the most. Occasionally he sings sotto voce. I follow and see him fly to the female, about 6 inches above the ground. There is a fluttering physical contact; I'm nearly sure the male is below, his wings beating as he pulls at the female's tail. He sings a loud skid, then flutters away. She immediately carries material, already gathered, to her nest. It is 6½ feet high, a few loose fibers against the trunk of a 10-foot elm. It probably was begun today.

TD3 - MD3 sings. In searching briefly for a nest I find an old one in an Ostrya. The first I've ever seen in that tree.

TD2 - D2F is on the nest at 1130 and 1145.

1145 - I leave.

1600 - I return. It's hot and pleasant.

508
6/23/57
VN

T68 - 68F returns to the nest when I wait. The male sings on the territory.

T65 - 65F is incubating; the new male is silent.

T61 - 61F is at the nest. M61 sings rather faint type-8's SE of V in the woods when I arrive, and I follow him trying to establish his identity. He moves N to V and finally carries food to the nest.

I spend 20 minutes watching female B's nest, but she never appears.

1730 - I leave.

509
6/24/57
VN

June 24, 1957

A rainy morning with light rain nearly constant; it stops at noon, and the afternoon clears somewhat. Present from 0830 to 1130 and from 1800 to 1830.

T63 - In 1 hour I see 63F once, and M63 sings 2 or 3 short series. Both birds are at the very E end of the ridge, just about where 63F was building on June 22 and some 50 yards from where the pair was yesterday. Evidently 63F abandoned the nest she started to work on, but she may be beginning another here on the ridge. [Error; she must have continued the nest of June 22; see tomorrow's notes.]

*pr fog -
the 2-nest
area*

I go to the Dunn tract.

TD6 - I think I see D6F on the nest. (I'm using old binoculars.)

TD8 - D8F is incubating.

TD4 - MD4 skids.

TD11 - D11F is on the nest at 1000 and every time I return during an hour. She must have begun to incubate, has only 3 eggs.

y

TD7 - MD7 is back in the area where I first caught him and his family. The young are there too and I think the female. It looks as though the D10's have moved back S to where they were when I found their nest ori-

feed

ginally, thus taking back the territory relinquished by the D7's. See below.

TD10 - D10F (as I'll call her, though she may be a second female) is clearly building, although she won't go to the nest when I'm near. I can see her going into the tree row regularly, but my glasses are too bad to let me see a nest. MD10 is typically attentive, moving a great deal N and S in the tree row and singing irregularly. Most songs are insipids or step-buzzes; a few are the monotone skid. He watches the female's movements, of course.

There is some by-play with a full-grown fledgling in juvenile plumage. It seems to beg for food when the male and female are moving together, but I can't tell what happens.

TD13 - D13F is incubating.

TD12 - MD12 sings his usual loud skids from the trees. His songs are not continuous enough to suggest that he's unmated. [He probably is.]

1130 - I leave.

1800 - I return. It has cleared a good deal and has been dry since noon.

T63 - In half an hour I see and hear nothing.

1830 - I leave.

511
6/25/57
VN

June 25, 1957

A sunny morning with a heavy dew; temperature in the 60's at 0600. Present from 0630 to 1200 and from 1730 to 1800.

T65 - 65F is on the nest. She should have young today; but she never gets off the nest, so I can't tell. The male is silent, may have left. Y

T61 - 61F is at the nest. M61 sings. Female B is not on her nest, and I'm confident it has failed and that she didn't build again. M61 never repeated his attending behavior, possibly because he had to begin caring for 61F's young at about the time that female B's nest failed. very probably she gave up and left. Y

T68 - The eggs are unhatched.

T66 - I find 66F near the big maple, in the middle of the field, and M66 comes to that spot too from the N edge. Both call in alarm, especially 66F. alarm Presumably young are near. I don't stay, since I'm affecting their behavior so.

T63 - M63 sings periodic (about every 5 minutes) bursts of chatters and of his chickadee-like song near the end of the ridge. I see nothing till he suddenly sings sotto voce and in a minute flies at 63F and on beyond her. She is 15 feet up in a tree

or 1/2 way
odd
song

19

festooned with grape and she gathers several short stiff fibers and takes them into the woods. After much effort I find what looks like a complete nest near the top of a dogwood in the rather thick woods growing up from the ravine. She must make several trips because M63 goes to a big overhanging hickory and looks down. This is almost surely the nest under construction on June 22; it's just where 63F was going on that day. How then explain the interlude of behavior on the 23rd? Note it occurred well W of this nest, perhaps 60 yards or so.

I go to the Dunn tract.

TD8 - The eggs are intact.

TD6 - D6F is incubating.

TD4 - MD4 sings loud frequent skids.

TD12 - MD12 sings loud skids in the usual place.

TD13 - D13F is incubating.

TD11 - The nest is empty, the lining very slightly disturbed. I don't see D11F but MD11 is much in evidence. He sings frequently from little tree tops, moves about a lot. Most songs are step-buzzes. Twice I see males engage in long, high, circling pursuit flights over the field, moving slowly and with slight bounces, separated by 15 or 20 feet. Once when they pass I hear faint "sip" calls. MD11 then breaks out of the chase,

518
circling
sip

lands, sings a long series of step-buzzes. The other male is probably MD10.

Another time MD11 and MD7 have a typical encounter at the usual place by the road. They move along low and in silence, flutter up once.

TD10 - See above under TD11. I find the nest D10F was working on, about 20 feet up in a small fork on a major diagonal of a 30-foot elm. It looks complete. She probably visits it once while I'm here; I can't be sure. MD10 no longer sings near the nest or otherwise pays it special attention. He seems to be feeding the young, which are full grown but still lack yellow on the breast. His return to the young is interesting.

TD7 - MD7 fights MD11 at the old place, so he hasn't given up that area as I thought yesterday. Later I find him, D7F, and the young in their usual spot NW of their nest, across the fence. It now seems pretty sure that D7F won't build again. The young are in full immature plumage except for the feathers of the cheeks and perhaps of the throat, chin, and nape.

TD1 - The new nest looks complete.

TD2 - D2F is incubating. I don't know when she began. [Today; there are 4 eggs.]

1200 - I leave.

1730 - I return. It's sunny, pleasant.

T65 - 65F is off the nest, and I wait to see if the young have hatched. In 5 minutes the unbanded male begins to sing in the area, the first songs heard from him in 2 or 3 days. He goes to the dead elm 30 yards from the nest and sits singing some 30 feet up. Suddenly he glides down on set wings, a long glide to the ground 20 or 25 feet from the tree, wings at a slight angle above the horizontal. He then immediately flutters on some 10 yards. In 1 minute 65F, the obvious subject of his courtship, goes to the nest tree with a green larva. So she evidently paid no attention - ? to him, and the young have hatched.

019

1830 - I leave.

June 26, 1957

A sunny morning with a heavy dew; temperature in the 60's. During the day it gets lightly overcast at times and breezy from the S, but predicted storms don't materialize. Present from 0700 to 1030, from 1400 to 1700, and from 1930 to 2030.

T65 - 65F is on the nest, the male chattering. I doubt very much if he feeds, though I think he'd feed fledglings. Y

T61 - 61F is at the nest, and M61 is carrying food. I go to XI to look at the nest of female B (she's not on it) and hear loud type-8 songs. It's M64, back after over a month and apparently over his wing trouble. He perches 30 feet up and sings 6 or 7 type-8's, then switches to a less ringing song that begins as an insipid and concludes as a skid. I seem to recall this song from past years. He evidently isn't very aggressive; after 5 minutes he moves to the SE corner and quits singing. I lose him. It's too bad female B isn't still here, so I could see how M61 would react to M64's return. Y

Back on T61 there is a short pursuit near 1 and a poorly marked male lands in the locusts. He sits and preens, looks around alertly, finally begins insipid 5757

steps, 2 or 3. M61 meanwhile has sat in a pine top where he couldn't see the male. He has sung insipids which end with loud fight notes. He doesn't move in to fight when the stranger begins to sing. I lose them and in a minute find M61 on a pine top with a green larva in his bill, 61F calling "tsu" at the edge of l. I don't see the male again.

T64 - See above under T61.

T66 - 66F may have spider webs in her bill, but if she does she won't build while I'm present. Both adults are at the big maple and they show continued alarm at me.

T68 - The 4 eggs are unhatched. I go to the Dunn tract. N

TD6 - D6F is incubating. Later, when I'm going at 1015, MD6 and a female that I'm virtually sure is not D6F are going through mild courtship out in mid-field, near and at first W of the last nest. They move from 1 little tree or cluster of brush to another, staying low. The female seems to follow MD6 about half the time, the rest to move on her own initiative. He never really flutters in flight. The female's behavior is in no way like that of one during an inattentive period. I'll check to see if polygyny develops. Y

TD4 - MD4 is silent. 819

TD7 - MD7 and a young bird are in the fence row.

TD10 - MD10 is with a full-grown juvenile which may just be getting its yellow ventral tract; if so, it's the first few hours it has shown. The young follows the parent and calls, falls silent at the parents' "tsu" note, I'm pretty sure.

TD11 - I find MD11 singing type-8's high in the E woods after an interval of silence. Thereafter he behaves erratically, moves over the whole territory and sings from small trees, falls silent for long periods, never goes to a female or seems interested in any particular spot. D11F may have quit for the year.

Warming
TB

TD13 - D13F is incubating.

Y

TD12 - MD12 behaves exactly as he has for several days, sings from the woods edge. He is poorly marked, a characteristic that may be confined to young adults.

A Cooper's Hawk flies along the fence row.

Cooper's

1030 - I leave.

1400 - I return. It's sunny, pleasant.

T62 - In 1 hour here I hear M62 sing 4 times, find none of the family.

I go to the Dunn tract.

TD6 - MD6 sings a few type-8's in the E woods and behaves typically. There is no sign on the territory of

the female seen this morning. /D6F's nest was discovered to have failed next day; the female seen was probably she.]

TD11 - MD11 behaves as he did this morning. I cover the territory thoroughly; clearly no building is going on.

TD7 - MD7 and 1 or 2 young are foraging together well off the territory, the young calling loudly. (Note that its immature plumage is nearly complete, so that the period taken to acquire it coincides with the period of parental care.) They go NE in the big field some 150 yards from the fence corner, about 100 yards beyond their usual point in the fence row. This is TD10, but they are not attacked so far as I see. Do adults always lead young off territories at this age?

TD2 - D2F is on the nest.

TD1 - The nest is still empty.

1700 - I leave.

1930 - I return.

T68 - The eggs have not hatched yet.

T65 - 65F is not on the nest, but I don't check again when I pass at dark. The male is chattering.

T61 - 61F stays on the nest at night, coming at 2015. M61 feeds 2 times between 1955 and 2010.

2030 - I leave.