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).

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PRAIRIE WARBLER NOTES
1963
BLOOMINGTON, INDIANA

Val Nolan Jr.
All times this year are central daylight saving.
PAIR D114 - 1


18  5  MD114 is on TD102 (of 1962); fights newly returned MD116.

19  9  MD114 is on TD102.

20 11  MD114 visits TD114 (last year's territory), returns to TD102.

21 13  On TD102.

22 16  "

23 17  "

24 18  MD114 in SW corner of E field.

25 20  MD114 takes up territory on TD114.

26 22  MD114 courts old female, unbanded.

27 23  Female gathers nest material.

28 25  Nest fragment found.

29 27  No progress on fragment.

May 1  29  MD114 with the female, later on Kerr farm.

2 31  Singing, fluttering in SW part of E field.

3 33  MD114 seems to have lost the female.

4 35  D114F(A) [D102F of 1962] arrives, is with MD120. MD114 encounters MD120.

5 38  D114's are paired.

6 39  Pair seen.

7 40  Female gathers nest material.

8 41  Pair seen.

9 42  Female has nest material.

10 44  Only male seen.
<table>
<thead>
<tr>
<th>May 11</th>
<th>Page 46</th>
<th>Song.</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>48</td>
<td>Pair together.</td>
</tr>
<tr>
<td>13</td>
<td>49</td>
<td>Female has nest material.</td>
</tr>
<tr>
<td>14</td>
<td>50</td>
<td>Only male seen.</td>
</tr>
<tr>
<td>15</td>
<td>51</td>
<td>Not found.</td>
</tr>
<tr>
<td>16</td>
<td>52</td>
<td>Song.</td>
</tr>
<tr>
<td>17</td>
<td>53</td>
<td>Not found.</td>
</tr>
<tr>
<td>18</td>
<td>55</td>
<td><strong>First nest found; egg 1.</strong></td>
</tr>
<tr>
<td>19</td>
<td>57</td>
<td>Egg 2.</td>
</tr>
<tr>
<td>20</td>
<td>58</td>
<td>Egg 3.</td>
</tr>
<tr>
<td>21</td>
<td>59</td>
<td>Egg 4.</td>
</tr>
<tr>
<td>22</td>
<td>60</td>
<td>Egg 5; incubation begins.</td>
</tr>
<tr>
<td>23</td>
<td>61</td>
<td>Incubation.</td>
</tr>
<tr>
<td>24</td>
<td>62</td>
<td>&quot;</td>
</tr>
<tr>
<td>25</td>
<td>63</td>
<td>&quot;</td>
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<tr>
<td>26</td>
<td>64</td>
<td>&quot;</td>
</tr>
<tr>
<td>27</td>
<td>65</td>
<td>&quot;</td>
</tr>
<tr>
<td>28</td>
<td>66</td>
<td>Incubation. MD114 sings in wooded field.</td>
</tr>
<tr>
<td>29</td>
<td>67</td>
<td>5 eggs.</td>
</tr>
<tr>
<td>30</td>
<td>69</td>
<td>Incubation.</td>
</tr>
<tr>
<td>31</td>
<td>70</td>
<td>5 eggs.</td>
</tr>
</tbody>
</table>

**June 1**

<table>
<thead>
<tr>
<th>Page 71</th>
<th>Eggs weighed; egg 1 pipped at 1115. Discover female B and her first nest, unpadded shell. MD114 near.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Female A on 5 eggs at 0830; by 2000 nest has failed without evidence.</td>
</tr>
<tr>
<td>3</td>
<td>B: Nest complete. Others not found.</td>
</tr>
<tr>
<td>June 4</td>
<td>Page 74</td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>5</td>
<td>75</td>
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<td>6</td>
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<td>16</td>
<td>92</td>
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<td>17</td>
<td>92</td>
</tr>
<tr>
<td>18</td>
<td>93, [94]</td>
</tr>
<tr>
<td>19</td>
<td>94</td>
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<td>20</td>
<td>96</td>
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<td>21</td>
<td>97</td>
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<tr>
<td>22</td>
<td>99</td>
</tr>
<tr>
<td>Date</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
</tr>
<tr>
<td>June 25</td>
<td>101</td>
</tr>
<tr>
<td>26</td>
<td>102</td>
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<tr>
<td>27</td>
<td>102</td>
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<tr>
<td>29</td>
<td>104</td>
</tr>
<tr>
<td>30</td>
<td>106</td>
</tr>
<tr>
<td>July 1</td>
<td>107</td>
</tr>
<tr>
<td>2</td>
<td>109</td>
</tr>
<tr>
<td>3</td>
<td>110, 117</td>
</tr>
<tr>
<td>5</td>
<td>112</td>
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<tr>
<td>7</td>
<td>114</td>
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<td>8</td>
<td>115</td>
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<td>9</td>
<td>116</td>
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<td>10</td>
<td>117</td>
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<td>11</td>
<td>118</td>
</tr>
<tr>
<td>16</td>
<td>122</td>
</tr>
<tr>
<td>17</td>
<td>124</td>
</tr>
</tbody>
</table>
PAIR D115 - 1

April 17

Page 4

MD115 [MD110 of 1962] returns to his old territory.

18 7

On territory.

19 9

MD115 in circular pursuit with unbanded male.

20 11

No female.

21 14

On territory.

No female.

22 16

MD115 with D115F.

First nest begun, found.

24 18

Nest feels complete.

25 20

Nest complete.

26 22

Egg 1; I take it.

27 24

Nest empty.

28 26

New egg; I take it.

29 27

New egg; I leave it.

May 1

30

New egg; I take it - 1 egg left.

3

Nest empty, [has failed].

31

5

34

38

41

42

45

46

48

49

50

51, [52]
PAIR D115 - 2

May 16       Page 52          No change.
17            53
24            62            MD115 is on TD117 at 0935, near D117F's nest.
29            67            MD115 flutters near an unbanded female.
<table>
<thead>
<tr>
<th>Date</th>
<th>Page</th>
<th>Event Description</th>
</tr>
</thead>
</table>
| April 18 | 5, 7  | **PAIR D116 - 1**
<p>| 19     | 9     | MD116 (MD101 of 1962) returns to old territory, fights MD114. Fully territorial behavior.                                                        |
| 20     | 11    | MD116 on TD116 and far S of it.                                                                                                                   |
| 21     | 13    | No female.                                                                                                                                      |
| 22     | 16    | No female.                                                                                                                                      |
| 24     | 18    | MD116 on TD116 and TD102.                                                                                                                       |
| 25     | 20    | TD116 is confined to N field.                                                                                                                    |
| 26     | 22    | No female.                                                                                                                                      |
| 27     | 23    | Song.                                                                                                                                           |
| 28     | 25    | MD116 encounters a D107 young (?) and an old female.                                                                                              |
| 29     | 27    | No female.                                                                                                                                      |
| May 1  | 29    | Silence, then frequent song.                                                                                                                     |
| 2      | 31    | Frequent song.                                                                                                                                |
| 3      | 33    | No female.                                                                                                                                      |
| 4      | 35    | D116F (D109F(2) of 1962) arrives on TD116. D120F also present.                                                                                   |
| 5      | 38    | Not found.                                                                                                                                     |
| 6      | 39    | MD116 seen.                                                                                                                                     |
| 7      | 40    | First nest found, 1 day old.                                                                                                                    |
| 9      | 43    | Nest complete.                                                                                                                                  |
| 10     | 44    | Egg 1; disappears between 1415 and 1900. I insert a D115 egg.                                                                                     |
| 11     | 46    | Egg 2, taken by me; also a cowbird egg; puncture in egg 2. D115 egg also present.                                                              |
| 12     | 48    | Egg 3; all else gone. I substitute egg 2.                                                                                                       |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Page</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 13</td>
<td>49</td>
<td>Egg 4. I take it, leaving egg 2. Nest has failed, seems disarranged; empty.</td>
</tr>
<tr>
<td>14</td>
<td>50</td>
<td>No information.</td>
</tr>
<tr>
<td>15</td>
<td>51</td>
<td>Not found.</td>
</tr>
<tr>
<td>16</td>
<td>52</td>
<td>Second nest found, not examined.</td>
</tr>
<tr>
<td>17</td>
<td>53</td>
<td>Egg 1.</td>
</tr>
<tr>
<td>18</td>
<td>54</td>
<td>Egg 2; I take it.</td>
</tr>
<tr>
<td>19</td>
<td>55</td>
<td>Egg 3; I take eggs 1 and 3, put in 1 egg from another female.</td>
</tr>
<tr>
<td>20</td>
<td>56</td>
<td>Egg 4; I take it, leaving 1 egg.</td>
</tr>
<tr>
<td>21</td>
<td>57</td>
<td>No change; nest has been deserted.</td>
</tr>
<tr>
<td>22</td>
<td>58</td>
<td>Third nest found, 1 day old.</td>
</tr>
<tr>
<td>23</td>
<td>59</td>
<td>Nest looks complete.</td>
</tr>
<tr>
<td>24</td>
<td>60</td>
<td>No egg.</td>
</tr>
<tr>
<td>25</td>
<td>61</td>
<td>Egg 1; I take it, insert one.</td>
</tr>
<tr>
<td>26</td>
<td>62</td>
<td>No change.</td>
</tr>
<tr>
<td>27</td>
<td>63</td>
<td>New egg, plus 2 cowbird eggs.</td>
</tr>
<tr>
<td>28</td>
<td>64</td>
<td>No change in contents; 1 cowbird egg punctured. (Nest had failed.)</td>
</tr>
<tr>
<td>29</td>
<td>65</td>
<td>Only male found. Odd motionless perching.</td>
</tr>
<tr>
<td>30</td>
<td>66</td>
<td>Fourth nest found, a full shell.</td>
</tr>
<tr>
<td>31</td>
<td>67</td>
<td>Nest complete.</td>
</tr>
<tr>
<td>June 1</td>
<td>68</td>
<td>Egg 1.</td>
</tr>
<tr>
<td>2</td>
<td>69</td>
<td>Egg 2, plus cowbird egg; I substitute 1 PW egg for the 2 here.</td>
</tr>
<tr>
<td>3</td>
<td>70</td>
<td>Only cowbird egg left; nest has failed.</td>
</tr>
</tbody>
</table>
PAIR D116 - 3

<table>
<thead>
<tr>
<th>June 5</th>
<th>Page 76</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>77</td>
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<tr>
<td>7</td>
<td>79</td>
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<td>8</td>
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<td>18</td>
<td>93</td>
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<td>21</td>
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<td>27</td>
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<td>28</td>
<td>103</td>
</tr>
<tr>
<td>29</td>
<td>104</td>
</tr>
<tr>
<td>30</td>
<td>106</td>
</tr>
</tbody>
</table>

Fifth nest found, 1 day old. D116F takes some material from nest 2.

Probably building.

No egg.

Egg 1.

Egg 2; I substitute 2 FS eggs.

No change; D116F near nest.

Nest fails without evidence.

Sixth nest found, high, about 1 day old.

Nest looks ok.

Not visited.

Nest looks ok.

D116F incubating. I cut off branch. 3 eggs.

Seventh nest found, begun yesterday.

Nest nearly complete.

Nest complete, empty. MD116 on TD122 at 1015.

Egg 1; female on.

Egg 2; I substitute egg for egg 1.

Egg 3.

D116F incubates eggs 1-3; I take them.

Pair together.

Eighth nest found, high, 1 day old.

Building.

Nest looks ok.
<table>
<thead>
<tr>
<th>July 1</th>
<th>Page 107</th>
<th>Frequent songs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>109</td>
<td>D116F on nest.</td>
</tr>
<tr>
<td>3</td>
<td>110</td>
<td>&quot;</td>
</tr>
<tr>
<td>4</td>
<td>111</td>
<td>Incubation. I cut down tree; 3 eggs.</td>
</tr>
<tr>
<td>5</td>
<td>112</td>
<td>Ninth nest found; D116F gets some material from nest 3.</td>
</tr>
<tr>
<td>6</td>
<td>113</td>
<td>Building in misty rain.</td>
</tr>
<tr>
<td>7</td>
<td>114</td>
<td>Nest looks complete.</td>
</tr>
<tr>
<td>8</td>
<td>115</td>
<td>No egg.</td>
</tr>
<tr>
<td>9</td>
<td>116</td>
<td>Egg 1.</td>
</tr>
<tr>
<td>10</td>
<td>117</td>
<td>Egg 2.</td>
</tr>
<tr>
<td>11</td>
<td>118</td>
<td>Egg 3. I substitute 3 FS eggs.</td>
</tr>
<tr>
<td>12</td>
<td>118</td>
<td>I remove FS eggs.</td>
</tr>
<tr>
<td>13</td>
<td>119</td>
<td>Pair together.</td>
</tr>
<tr>
<td>14</td>
<td>120</td>
<td>MD116 sings irregularly; D116F is near, calls faintly. She is not building. [Never seen again.]</td>
</tr>
<tr>
<td>15</td>
<td>121</td>
<td>MD116 sings.</td>
</tr>
<tr>
<td>16</td>
<td>122</td>
<td>Much song, some directed at MD117.</td>
</tr>
<tr>
<td>17</td>
<td>124</td>
<td>MD116 is on TD116, later on TD114 following D114F(A) as she tends. No molt.</td>
</tr>
<tr>
<td>Date</td>
<td>Page</td>
<td>Events</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>April 18</td>
<td>Page 5</td>
<td>MD117 [MD104 of 1962] returns, fights unbanded male to regain old territory.</td>
</tr>
<tr>
<td>19</td>
<td>9</td>
<td>MD117 on the 1961 end of his territory. Other male gone.</td>
</tr>
<tr>
<td>21</td>
<td>13</td>
<td>On territory. No female.</td>
</tr>
<tr>
<td>22</td>
<td>16</td>
<td>Not found.</td>
</tr>
<tr>
<td>24</td>
<td>18</td>
<td>On territory.</td>
</tr>
<tr>
<td>25</td>
<td>20</td>
<td>&quot;</td>
</tr>
<tr>
<td>26</td>
<td>22</td>
<td>&quot;</td>
</tr>
<tr>
<td>27</td>
<td>23</td>
<td>No female.</td>
</tr>
<tr>
<td>28</td>
<td>26</td>
<td>MD117 with bright female.</td>
</tr>
<tr>
<td>29</td>
<td>27</td>
<td>Not found.</td>
</tr>
<tr>
<td>May 1</td>
<td>29</td>
<td>&quot;</td>
</tr>
<tr>
<td>2</td>
<td>31</td>
<td>&quot;</td>
</tr>
<tr>
<td>3</td>
<td>33</td>
<td>MD117 with bright female.</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>Female builds an advanced shell [fragment].</td>
</tr>
<tr>
<td>5</td>
<td>38</td>
<td>Padding not complete.</td>
</tr>
<tr>
<td>7</td>
<td>40</td>
<td>Fragment abandoned and second being built (by a different female?).</td>
</tr>
<tr>
<td>9</td>
<td>43, [44]</td>
<td>D117F(A) on fragment. [She begins first nest.</td>
</tr>
<tr>
<td>10</td>
<td>44</td>
<td>Fragment abandoned. First nest found.</td>
</tr>
<tr>
<td>11</td>
<td>46</td>
<td>Padding nest.</td>
</tr>
<tr>
<td>12</td>
<td>48</td>
<td>Nest complete.</td>
</tr>
<tr>
<td>13</td>
<td>49</td>
<td>No egg. I introduce 2 eggs.</td>
</tr>
<tr>
<td>14</td>
<td>50</td>
<td>No egg. I introduce third egg.</td>
</tr>
<tr>
<td>15</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>May 16</td>
<td>Page 52</td>
<td>Egg 1 (so 4 in nest).</td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
<td>---------------------</td>
</tr>
<tr>
<td>17</td>
<td>53</td>
<td>Egg 2.</td>
</tr>
<tr>
<td>18</td>
<td>55</td>
<td>Egg 3 [of 3-egg set].</td>
</tr>
<tr>
<td>19</td>
<td>57</td>
<td>Incubation, 6 eggs.</td>
</tr>
<tr>
<td>20</td>
<td>58</td>
<td>6 warm eggs.</td>
</tr>
<tr>
<td>21</td>
<td>59</td>
<td>&quot;</td>
</tr>
<tr>
<td>22</td>
<td>60</td>
<td>&quot;</td>
</tr>
<tr>
<td>23</td>
<td>61</td>
<td>Incubation.</td>
</tr>
<tr>
<td>24</td>
<td>62</td>
<td>Incubation. MD115 near nest.</td>
</tr>
<tr>
<td>25</td>
<td>63</td>
<td>1 of 6 eggs is undeveloped.</td>
</tr>
<tr>
<td>26</td>
<td>64</td>
<td>Incubation.</td>
</tr>
<tr>
<td>27</td>
<td>65</td>
<td>Incubation, 6 eggs.</td>
</tr>
<tr>
<td>28</td>
<td>66</td>
<td>&quot;</td>
</tr>
<tr>
<td>29</td>
<td>67</td>
<td>5 eggs left (1 dead). D117F(B) discovered, building first nest, unpadded shell. MD117 watches.</td>
</tr>
<tr>
<td>30</td>
<td>69</td>
<td>Nest A has failed, is empty, perhaps disarranged. Inactive fragment found. Female A not seen again. D117F(B) builds.</td>
</tr>
<tr>
<td>June 1</td>
<td>71</td>
<td>Nest complete; I put net up.</td>
</tr>
<tr>
<td>2</td>
<td>72</td>
<td>Egg 1 in nest B.</td>
</tr>
<tr>
<td>3</td>
<td>73</td>
<td>Egg 2. D117F(B) caught.</td>
</tr>
<tr>
<td>4</td>
<td>74</td>
<td>Egg 3.</td>
</tr>
<tr>
<td>5</td>
<td>76</td>
<td>Egg 4.</td>
</tr>
<tr>
<td>6</td>
<td>77</td>
<td>Incubation.</td>
</tr>
<tr>
<td>7</td>
<td>79</td>
<td>&quot;</td>
</tr>
<tr>
<td>8</td>
<td>81</td>
<td>Incubation, 4 eggs.</td>
</tr>
<tr>
<td>Date</td>
<td>Page</td>
<td>Notes</td>
</tr>
<tr>
<td>------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>June 9</td>
<td>Page 83</td>
<td>Incubation.</td>
</tr>
<tr>
<td>10</td>
<td>85</td>
<td>&quot;</td>
</tr>
<tr>
<td>11</td>
<td>86</td>
<td>&quot;</td>
</tr>
<tr>
<td>12</td>
<td>87</td>
<td>&quot;</td>
</tr>
<tr>
<td>13</td>
<td>88</td>
<td>&quot;</td>
</tr>
<tr>
<td>15</td>
<td>90</td>
<td>4 warm eggs.</td>
</tr>
<tr>
<td>16</td>
<td>92</td>
<td>4 eggs hatch between 0745 and 1945.</td>
</tr>
<tr>
<td>18</td>
<td>93</td>
<td>4 young.</td>
</tr>
<tr>
<td>19</td>
<td>94</td>
<td>&quot;</td>
</tr>
<tr>
<td>20</td>
<td>96</td>
<td>&quot;</td>
</tr>
<tr>
<td>21</td>
<td>97</td>
<td>Nest tilts with 4 young; band them. Find disused nest.</td>
</tr>
<tr>
<td>22</td>
<td>99</td>
<td>4 young.</td>
</tr>
<tr>
<td>24</td>
<td>101</td>
<td>Nest fails, may be more tilted.</td>
</tr>
<tr>
<td>25</td>
<td>101</td>
<td>Pair together.</td>
</tr>
<tr>
<td>26</td>
<td>102</td>
<td>Both Dll7's (female B) found.</td>
</tr>
<tr>
<td>27</td>
<td>102</td>
<td>Not found.</td>
</tr>
<tr>
<td>28</td>
<td>103</td>
<td>Second nest of female B found, ready to be lined.</td>
</tr>
<tr>
<td>29</td>
<td>104</td>
<td>Female lines nest, disregards FS nestling inserted by me.</td>
</tr>
<tr>
<td>30</td>
<td>105</td>
<td>Egg 1. I introduce 4 PW eggs.</td>
</tr>
<tr>
<td>July 1</td>
<td>107</td>
<td>Egg 2.</td>
</tr>
<tr>
<td>2</td>
<td>109</td>
<td>Egg 3 (so a total of 7); incubation.</td>
</tr>
<tr>
<td>3</td>
<td>110</td>
<td>Incubation; 3-egg set.</td>
</tr>
<tr>
<td>4</td>
<td>111</td>
<td>Incubation.</td>
</tr>
<tr>
<td>5</td>
<td>112</td>
<td>Not visited.</td>
</tr>
</tbody>
</table>
PAIR D117 - 4

<table>
<thead>
<tr>
<th>July 6</th>
<th>Page 113</th>
<th>6 of the 7 eggs are developing; 1 was dead when inserted.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>114</td>
<td>Constant chatters. Nest not visited.</td>
</tr>
<tr>
<td>8</td>
<td>115</td>
<td>Regular song.</td>
</tr>
<tr>
<td>9</td>
<td>116</td>
<td>Not visited.</td>
</tr>
<tr>
<td>10</td>
<td>117</td>
<td>6 of 7 eggs are alive.</td>
</tr>
<tr>
<td>11</td>
<td>118</td>
<td>D117F(B) near nest; 7 eggs.</td>
</tr>
<tr>
<td>13</td>
<td>119</td>
<td>Nest has failed without evidence.</td>
</tr>
<tr>
<td>14</td>
<td>120</td>
<td>Irregular song; [female has gone].</td>
</tr>
<tr>
<td>15</td>
<td>121</td>
<td>Regular song.</td>
</tr>
<tr>
<td>16</td>
<td>122</td>
<td>MD117 sings at MD116.</td>
</tr>
</tbody>
</table>
PAIR D118 - 1

April 28 Page 26
No PW's here yet.

May 1 29
MD118 is on territory.
2 31
No female.
3 33

4 36
D118F (young) arrives on TD118.

7 40
1 song heard.

9 43
Not visited.
10 44
First nest found, 1 day old.

11 46
Not visited.
12 48
Nest complete.
13 49
Cowbird egg.

14 50
Egg 1.
15 51
No change.

16 52
New egg (3?).

17 53
Not visited.
18 55
New egg (so 3 plus cowbird egg).

19 57
New egg.

20 58
New egg (so 5 plus cowbird egg).

21 59
1 PW egg gone; incubation.

22 60
Incubation of 4 PW eggs, 1 cowbird.

24 62

27 65
New cowbird egg; other cowbird egg and 1 PW egg remain. MD118 calls.

June 7 79
MD118 heard.

September 14 129
Find nest in site used last year by D112F.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>9</td>
<td>Full territorial behavior.</td>
</tr>
<tr>
<td>20</td>
<td>11</td>
<td>&quot;</td>
</tr>
<tr>
<td>21</td>
<td>14</td>
<td>&quot;</td>
</tr>
<tr>
<td>22</td>
<td>16</td>
<td>&quot;</td>
</tr>
<tr>
<td>24</td>
<td>18, 19</td>
<td>&quot;</td>
</tr>
<tr>
<td>25</td>
<td>20</td>
<td>No female.</td>
</tr>
<tr>
<td>26</td>
<td>22</td>
<td>&quot;</td>
</tr>
<tr>
<td>27</td>
<td>23</td>
<td>On territory.</td>
</tr>
<tr>
<td>28</td>
<td>26</td>
<td>No female.</td>
</tr>
<tr>
<td>29</td>
<td>27</td>
<td>Few songs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>May 1</th>
<th>29</th>
<th>MD119 with young female.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>31</td>
<td>Female looks old today.</td>
</tr>
<tr>
<td>3</td>
<td>33</td>
<td>Pair together.</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>&quot;</td>
</tr>
<tr>
<td>5</td>
<td>38</td>
<td>MD119 seen.</td>
</tr>
<tr>
<td>8</td>
<td>41</td>
<td>Not found.</td>
</tr>
<tr>
<td>9</td>
<td>42</td>
<td>D119F lines a nest, sits in it.</td>
</tr>
<tr>
<td>10</td>
<td>45</td>
<td>Nest feels unlined.</td>
</tr>
<tr>
<td>11</td>
<td>46</td>
<td>No egg [and none ever laid here].</td>
</tr>
<tr>
<td>15</td>
<td>51</td>
<td>No change; I'm checking daily.</td>
</tr>
<tr>
<td>16</td>
<td>52</td>
<td>Water standing in nest.</td>
</tr>
<tr>
<td>17</td>
<td>53</td>
<td>No egg.</td>
</tr>
<tr>
<td>18</td>
<td>55</td>
<td>No change; I quit visiting TD119.</td>
</tr>
<tr>
<td>Date</td>
<td>Page</td>
<td>Notes</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>April 24</td>
<td>18</td>
<td>Unbanded MD120 arrives on territory.</td>
</tr>
<tr>
<td>25</td>
<td>20</td>
<td>On territory.</td>
</tr>
<tr>
<td>26</td>
<td>22</td>
<td>&quot;</td>
</tr>
<tr>
<td>27</td>
<td>23</td>
<td>Song.</td>
</tr>
<tr>
<td>28</td>
<td>25</td>
<td>&quot;</td>
</tr>
<tr>
<td>29</td>
<td>27</td>
<td>No female.</td>
</tr>
<tr>
<td>May 1</td>
<td>29</td>
<td>MD120 with bright female.</td>
</tr>
<tr>
<td>2</td>
<td>31</td>
<td>Irregular song.</td>
</tr>
<tr>
<td>3</td>
<td>33</td>
<td>No female.</td>
</tr>
<tr>
<td>4</td>
<td>35</td>
<td>MD120 with newly arrived D114F.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D120F [D110F(A) of 1962] arrives, is on TD116.</td>
</tr>
<tr>
<td>5</td>
<td>38</td>
<td>D120's are paired.</td>
</tr>
<tr>
<td>6</td>
<td>39</td>
<td>Not found.</td>
</tr>
<tr>
<td>7</td>
<td>40</td>
<td>First nest found, high, about 1 day old.</td>
</tr>
<tr>
<td>8</td>
<td>41</td>
<td>Nest looks complete from below.</td>
</tr>
<tr>
<td>9</td>
<td>42</td>
<td>Nest ok.</td>
</tr>
<tr>
<td>10</td>
<td>44</td>
<td>&quot;</td>
</tr>
<tr>
<td>11</td>
<td>46</td>
<td>No egg (climbed).</td>
</tr>
<tr>
<td>12</td>
<td>48</td>
<td>&quot;</td>
</tr>
<tr>
<td>13</td>
<td>49</td>
<td>Egg 1.</td>
</tr>
<tr>
<td>14</td>
<td>50</td>
<td>Nest looks ok.</td>
</tr>
<tr>
<td>15</td>
<td>51</td>
<td>&quot;</td>
</tr>
<tr>
<td>16</td>
<td>52</td>
<td>&quot;</td>
</tr>
<tr>
<td>17</td>
<td>53</td>
<td>Nest has failed, holds cowbird egg.</td>
</tr>
<tr>
<td>18</td>
<td>55</td>
<td>No information.</td>
</tr>
<tr>
<td>19</td>
<td>58</td>
<td>&quot;</td>
</tr>
<tr>
<td>May 20</td>
<td>Page 59</td>
<td>Not found.</td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
<td>------------</td>
</tr>
<tr>
<td>25</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>June 3</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>86</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>87</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>88</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>97</td>
<td>Nest (number?) begun.</td>
</tr>
<tr>
<td>22</td>
<td>99</td>
<td>Nest incomplete. I put up female cowbird mount; D120F reacts.</td>
</tr>
<tr>
<td>23</td>
<td>100</td>
<td>Nest looks complete.</td>
</tr>
<tr>
<td>24</td>
<td>101</td>
<td>Nest ok.</td>
</tr>
<tr>
<td>25</td>
<td>101</td>
<td>Egg 1. I add 4 FS eggs.</td>
</tr>
<tr>
<td>26</td>
<td>102</td>
<td>Egg 2.</td>
</tr>
<tr>
<td>27</td>
<td>102</td>
<td>Egg 3 (so 7 eggs present).</td>
</tr>
<tr>
<td>28</td>
<td>103</td>
<td>1 FS egg has hatched; 6 eggs.</td>
</tr>
<tr>
<td>29</td>
<td>104</td>
<td>2 young FS's, no shells; 5 eggs. No sign D120F is still active at this nest. MD120 may tend.</td>
</tr>
<tr>
<td>30</td>
<td>106</td>
<td>Nest deserted, FS's dead. Find fragment or remnant. D120F probably building.</td>
</tr>
</tbody>
</table>
**PAIR D120 - 3**

<table>
<thead>
<tr>
<th>July 1</th>
<th>Page 107</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nest found, high, probably just being finished. MD120 in encounter with persistent invader male.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>109</td>
</tr>
<tr>
<td>Nest looks ok.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>110</td>
</tr>
<tr>
<td>&quot;</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>111</td>
</tr>
<tr>
<td>&quot;</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>112</td>
</tr>
<tr>
<td>D120F at nest.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>113</td>
</tr>
<tr>
<td>D120F on.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>114</td>
</tr>
<tr>
<td>D120F drops off nest at my approach.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>115</td>
</tr>
<tr>
<td>Incubation.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>116</td>
</tr>
<tr>
<td>&quot;</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>117</td>
</tr>
<tr>
<td>&quot;</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>118</td>
</tr>
<tr>
<td>D120F goes to nest.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>118</td>
</tr>
<tr>
<td>MD120 seen.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>119</td>
</tr>
<tr>
<td>Nest has failed. MD120 is high in trees, sings.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>120</td>
</tr>
<tr>
<td>Irregular songs. No female.</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>122</td>
</tr>
<tr>
<td>Regular songs.</td>
<td></td>
</tr>
</tbody>
</table>
PAIR D121 - 1

April 19

Page 9

MD121 [MD100 of 1962] returns to territory of 1962.

20

11

On territory.

21

13


22

16

Frequent song.

24

18

Pair together.

25

20

MD121 on territory.

26

22

Pair together.

27

23

First nest found (and first of 1962), 1 day old. MD121 encounters MD122.

28

25

Building. MD121 watches TD116.

29

27

Not visited.

30

28

Nest unlined.

May 1

29

Song.

2

31

Nest looks complete.

3

33

No egg.

4

35

" No egg. Nest shows more work on it.

5

38

Egg 1, first FW egg of 1962.

6

39

Egg 2.

7

40

Nest fails without evidence.

8

41

MD121 seen.

9

42

" No information.

10

44

Song.

11

46

MD121 seen.

12

48

No information.

13

49
<table>
<thead>
<tr>
<th>Date</th>
<th>Page</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>May 15</td>
<td>51</td>
<td>Not visited.</td>
</tr>
<tr>
<td>May 16</td>
<td>52</td>
<td>Not found.</td>
</tr>
<tr>
<td>May 17</td>
<td>53</td>
<td>No information.</td>
</tr>
<tr>
<td>May 18</td>
<td>55</td>
<td>MD121 seen.</td>
</tr>
<tr>
<td>May 19</td>
<td>58</td>
<td>Not visited.</td>
</tr>
<tr>
<td>May 20</td>
<td>59</td>
<td>MD121 seen.</td>
</tr>
<tr>
<td>May 22</td>
<td>60</td>
<td>Pair together.</td>
</tr>
<tr>
<td>May 25</td>
<td>63</td>
<td>MD121 seen.</td>
</tr>
<tr>
<td>May 26</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>May 27</td>
<td>65</td>
<td>Song.</td>
</tr>
<tr>
<td>June 5</td>
<td>75</td>
<td>Pair together. Disused nest found.</td>
</tr>
<tr>
<td>June 6</td>
<td>77</td>
<td>Another disused nest found. Cannot find female.</td>
</tr>
<tr>
<td>June 7</td>
<td>79</td>
<td>Only male found.</td>
</tr>
<tr>
<td>June 8</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>June 9</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>June 10</td>
<td>85</td>
<td>Third disused nest found.</td>
</tr>
<tr>
<td>June 11</td>
<td>86</td>
<td>Only MD121 seen.</td>
</tr>
<tr>
<td>June 12</td>
<td>87</td>
<td></td>
</tr>
<tr>
<td>June 13</td>
<td>88</td>
<td>MD121 seen. ReV dismantles old PW nest.</td>
</tr>
<tr>
<td>June 14</td>
<td>89</td>
<td>No information.</td>
</tr>
<tr>
<td>June 15</td>
<td>90</td>
<td>MD121 seen.</td>
</tr>
<tr>
<td>June 16</td>
<td>92</td>
<td></td>
</tr>
<tr>
<td>June 17</td>
<td>92</td>
<td>Song.</td>
</tr>
<tr>
<td>June 18</td>
<td>93</td>
<td>Nest (number?) found, high, when engages in anticipatory food-bringing, female on, at 1000.</td>
</tr>
</tbody>
</table>
PAIR D121 - 3

June 19  Page 94  No information.
20  96  D121F near nest.
21  97  D121F on.
22  99  "
23  100  No information.
24  101  "
25  101  D121F on.
26  102  "
27  102  "
28  103  MD121 shows alarm at me.
29  105  "
30  106  D121F carries food to nest.
July 1  107  Brooding. MD121 goes to nest.
2  109  MD121 calls near nest.
3  110  Both D121's near nest.
4  111  MD121 near nest.
5  112  Nest has failed. Glimpse MD121 with banded female.
6  113  Frequent song. [D121F not seen again.]
7  114  Not found.
8  115  Regular song.
9  116  Occasional song.
10  117  Silence.
11  118  1 or 2 songs.
15  121  MD121's song recognized.
<table>
<thead>
<tr>
<th>Date</th>
<th>Page</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>26</td>
<td>On territory.</td>
</tr>
<tr>
<td>29</td>
<td>27</td>
<td>No female.</td>
</tr>
<tr>
<td>May 1</td>
<td>29</td>
<td>&quot;</td>
</tr>
<tr>
<td>2</td>
<td>31</td>
<td>MD122 with unbanded, bright female.</td>
</tr>
<tr>
<td>3</td>
<td>33</td>
<td>&quot; &quot; &quot;</td>
</tr>
<tr>
<td>5</td>
<td>38</td>
<td>Dl22's together.</td>
</tr>
<tr>
<td>7</td>
<td>40</td>
<td>First nest found, 1 day old.</td>
</tr>
<tr>
<td>8</td>
<td>41</td>
<td>Nest unlined.</td>
</tr>
<tr>
<td>9</td>
<td>43</td>
<td>&quot;</td>
</tr>
<tr>
<td>10</td>
<td>44</td>
<td>Some lining has been added.</td>
</tr>
<tr>
<td>11</td>
<td>46</td>
<td>Nest complete.</td>
</tr>
<tr>
<td>12</td>
<td>48</td>
<td>Egg 1: I add 2 PW eggs.</td>
</tr>
<tr>
<td>13</td>
<td>49</td>
<td>Egg 2.</td>
</tr>
<tr>
<td>14</td>
<td>50</td>
<td>Egg 3.</td>
</tr>
<tr>
<td>15</td>
<td>51</td>
<td>Egg 4, so there are 6 eggs. Incubation begins.</td>
</tr>
<tr>
<td>16</td>
<td>52</td>
<td>Incubation, 6 eggs.</td>
</tr>
<tr>
<td>17</td>
<td>53</td>
<td>Incubation.</td>
</tr>
<tr>
<td>18</td>
<td>55</td>
<td>6 warm eggs.</td>
</tr>
<tr>
<td>19</td>
<td>57</td>
<td>Incubation, 6 eggs.</td>
</tr>
<tr>
<td>20</td>
<td>58</td>
<td>Odd song of MD122 heard.</td>
</tr>
<tr>
<td>21</td>
<td>59</td>
<td>Nest fails; egg 2 left in it.</td>
</tr>
<tr>
<td>22</td>
<td>60</td>
<td>Not found.</td>
</tr>
<tr>
<td>23</td>
<td>61</td>
<td>Second nest found, high, well advanced.</td>
</tr>
</tbody>
</table>
## PAIR D122 - 2

<table>
<thead>
<tr>
<th>Date</th>
<th>Page</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 26</td>
<td>64</td>
<td>MD122's odd songs heard.</td>
</tr>
<tr>
<td>27</td>
<td>65</td>
<td>&quot; &quot;</td>
</tr>
<tr>
<td>28</td>
<td>66</td>
<td>D122F on. Some odd songs.</td>
</tr>
<tr>
<td>29</td>
<td>67</td>
<td>D122F on.</td>
</tr>
<tr>
<td>30</td>
<td>69</td>
<td>Incubation.</td>
</tr>
<tr>
<td>31</td>
<td>70</td>
<td>&quot; &quot;</td>
</tr>
<tr>
<td>June 2</td>
<td>72</td>
<td>&quot; &quot;</td>
</tr>
<tr>
<td>3</td>
<td>73</td>
<td>&quot; &quot;</td>
</tr>
<tr>
<td>4</td>
<td>74</td>
<td>&quot; &quot;</td>
</tr>
<tr>
<td>5</td>
<td>75</td>
<td>&quot; &quot;</td>
</tr>
<tr>
<td>6</td>
<td>77</td>
<td>&quot; &quot;</td>
</tr>
<tr>
<td>7</td>
<td>79</td>
<td>&quot; &quot;</td>
</tr>
<tr>
<td>8</td>
<td>81</td>
<td>Song.</td>
</tr>
<tr>
<td>9</td>
<td>83</td>
<td>D122F at nest.</td>
</tr>
<tr>
<td>10</td>
<td>85</td>
<td>D122F on.</td>
</tr>
<tr>
<td>11</td>
<td>86</td>
<td>D122F takes food to nest.</td>
</tr>
<tr>
<td>12</td>
<td>87</td>
<td>No activity at nest, [which had failed].</td>
</tr>
<tr>
<td>13</td>
<td>88</td>
<td>No developments. Only MD122 seen.</td>
</tr>
<tr>
<td>14</td>
<td>89</td>
<td>MD122's behavior suggests building is going on [but nothing further happened at the location].</td>
</tr>
<tr>
<td>15</td>
<td>90</td>
<td>Nest begun; very beginning watched.</td>
</tr>
<tr>
<td>16</td>
<td>92</td>
<td>Nest ok; not examined.</td>
</tr>
<tr>
<td>17</td>
<td>92</td>
<td>Nest has been torn out.</td>
</tr>
<tr>
<td>18</td>
<td>93</td>
<td>Song; odd songs in evening.</td>
</tr>
<tr>
<td>19</td>
<td>94</td>
<td>MD122 found.</td>
</tr>
</tbody>
</table>
PAIR D122 - 3

June 20   Page 96
21  97  Third nest being built in woods.
22  99  Nest found, very high; building.
23 100  Silence. MD116 visits TD122 at 1015.
25 101  1 song.
26 102  Songs, some odd.
28 103  
29 105  
30 106  MD122 seen. (I am not trying to follow the nest - too high.)

July 1  Page 107
2 109  Song.
3 110  
6 113  Odd songs.
7 114  
8 115  
9 116  
10 117  Silence.
11 118  
15 121  Odd songs.
16 122  

<table>
<thead>
<tr>
<th>Date</th>
<th>Page</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 24</td>
<td>18</td>
<td>Unbanded male sings type-8's in S half of far N field, may be MD123.</td>
</tr>
<tr>
<td>25</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>22</td>
<td>Not found.</td>
</tr>
<tr>
<td>27</td>
<td>23</td>
<td>MD123 on TD123.</td>
</tr>
<tr>
<td>28</td>
<td>26</td>
<td>No female.</td>
</tr>
<tr>
<td>29</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>May 1</td>
<td>29</td>
<td>MD123 with bright unbanded female.</td>
</tr>
<tr>
<td>2</td>
<td>31</td>
<td>Regular type-8's.</td>
</tr>
<tr>
<td>3</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>Fragment being built, ½ day old. MD123 goes onto it.</td>
</tr>
<tr>
<td>5</td>
<td>38</td>
<td>Not visited.</td>
</tr>
<tr>
<td>7</td>
<td>40</td>
<td>Fragment abandoned. Only MD123 seen.</td>
</tr>
<tr>
<td>9</td>
<td>43</td>
<td>First nest found, complete.</td>
</tr>
<tr>
<td>10</td>
<td>44</td>
<td>No egg. A second pair seems to be on this territory [temporarily].</td>
</tr>
<tr>
<td>11</td>
<td>46</td>
<td>Egg 1.</td>
</tr>
<tr>
<td>12</td>
<td>48</td>
<td>Egg 2.</td>
</tr>
<tr>
<td>13</td>
<td>49</td>
<td>Egg 3.</td>
</tr>
<tr>
<td>14</td>
<td>50</td>
<td>D123F on nest.</td>
</tr>
<tr>
<td>15</td>
<td>51</td>
<td>D123F on 4 eggs.</td>
</tr>
<tr>
<td>16</td>
<td>52</td>
<td>Incubation.</td>
</tr>
<tr>
<td>17</td>
<td>53</td>
<td>Not visited.</td>
</tr>
<tr>
<td>18</td>
<td>55</td>
<td>Incubation.</td>
</tr>
<tr>
<td>19</td>
<td>57</td>
<td>4 warm eggs.</td>
</tr>
<tr>
<td>20</td>
<td>58</td>
<td>Incubation.</td>
</tr>
<tr>
<td>Date</td>
<td>Page</td>
<td>Event Description</td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>May 21</td>
<td>59</td>
<td>Only 3 eggs being incubated.</td>
</tr>
<tr>
<td>22</td>
<td>60</td>
<td>Cowbird egg has just been laid; 3 PW eggs.</td>
</tr>
<tr>
<td>23</td>
<td>61</td>
<td>Nest has failed, with only cowbird egg left.</td>
</tr>
<tr>
<td>24</td>
<td>62</td>
<td>No developments.</td>
</tr>
<tr>
<td>June 7</td>
<td>79</td>
<td>MDL23 very interested in commotion caused by my finding Blue-Golden-wing pair.</td>
</tr>
<tr>
<td>8</td>
<td>81</td>
<td>Song.</td>
</tr>
<tr>
<td>9</td>
<td>83</td>
<td>Disused nest found.</td>
</tr>
<tr>
<td>10</td>
<td>85</td>
<td>Not found.</td>
</tr>
<tr>
<td>July 4</td>
<td>111</td>
<td>Silence today, as also several days recently.</td>
</tr>
<tr>
<td>7</td>
<td>114</td>
<td>Silence.</td>
</tr>
</tbody>
</table>
PAIR D124 - 1

April 21

22  16  Unbanded male on this territory
    encounters MD115.

24  19  Unbanded male present.

25  20  "    "

Male present; no female.

26  22  No female.

27  24  Not found.

28  26  "    "

29  27  "    "

May 1

2   30  MD124 present; is he the same
     male that was here first?

3   31  No female.

4   33  MD124 has bright female.

5   36  Pair together.

8   41  First nest found, an unlined shell.

9   42  Nest complete.

10  45  D124F on; no egg.

11  46  No egg.

12  48  Egg 1.

13  49  Egg 2 and cowbird egg; egg 1 gone.

14  50  Egg 3.

15  51  D124F gives distraction display from
       nest.

16  52  Eggs may be cold.

17  53  Nest has failed; 1 cowbird egg and
       2 PW eggs.

18  55  1 PW, 1 cowbird egg left in nest.

29  67  Song heard here.
PAIR D125 - 1

May 5  Page 38  
9     42  Pair found on old TD39, courting.
13    49  A male temporarily in BV field may be this one.
24    62  The male is back in the BV field briefly.
29    67  MD125 chatters on TD39.
31    70  First nest found; 1 cowbird egg and 3 PW eggs.

June 2  Page 72  
3     73  All 4 eggs have hatched, about 24 hours ago.
4     74  
5     75  Nest contains 1 PW, 1 cowbird. I find 1 dead PW under nest.
6     77  Nestlings present at 1730.
7     79  Nest empty and somewhat disarranged at 2000.
8     81  Find PW near nest; cowbird clearly dead. Catch both adults.
PAIR on Franklin's

April 25  Page 20  G11R acts territorial here.
26       22   No PW's present.
27       24   
28       26   
May 1     30  Unbanded male chatters here.
2          31  Not visited.
3          34  No female.
9          42  Find a pair together. Copulation attempted.

PAIR on Doerr's

April 26  22  No PW's.
27       24  
28       26  
May 1     30  Unbanded male present, sings type-8's.
2          31  Not visited.
3          34  Male with a bright female.
8          41  Male sings type-8's on S end of TD29.
9          42  Female is carrying nest material to an unseen nest.
PAIR G16

25  20  MG16 still at IU.
28  25  MG16 has moved to Griffey, W field.
29  27  In W field at Griffey.
May 1  29  MG16 now on territory, in E field.
3  33  Not found.
4  36  MG16 has bright female. Nest-shaping by male, then female, in tree.
10  44  Complete empty nest (first) found in site of nest-shaping movements.
11  46  No egg.
12  47  
13  49  Egg 1.
14  50  Egg 2. I take egg 1.
15  51  Nest empty.
16  52  New egg present.
17  53  No change; nest has failed.
18  55  No change.
PAIR G17

May 1  Page 29

MG17, young male, arrives in W part of Griffey.

3  33  On territory.

10  44  MG17 with a female.

12  48  Songs heard.

G11R

April 25  20  G11R sings and behaves territorially on Franklin's.

26  22  Not found, [and not seen again].

D107 young

April 28  25  Banded bird, behaving like a male, glimpsed on TD116; bands appear to be those of a yearling D107.

IU PW'S

April 28  25  No PW's at either end of IU.

May 3  33  No PW's at N end.

6  39  Unbanded male on territory on T66.

13  49  No PW's found, S end.

25  63  Unbanded male acts territorial on IV-N at N end.

June 23  100  Unbanded pair on T66; disused nest found. No other PW's at S end.
PAIR on TD123

<table>
<thead>
<tr>
<th>Date</th>
<th>Page</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 10</td>
<td>44</td>
<td>There appears to be a pair on E part of TD123. A young female explores.</td>
</tr>
<tr>
<td>15</td>
<td>51</td>
<td>I probably see a male on E TD123.</td>
</tr>
<tr>
<td>June 7</td>
<td>79</td>
<td>A song on TD123 may be that of this male. [I cannot be sure that there was a pair settled here. If there was, it was for a brief time.]</td>
</tr>
</tbody>
</table>
A House Sparrow carries nest material at 1320. It is 32°, sunny.

In general, after a record cold winter the early migration was a month behind schedule. By mid- or late March (March was warm and dry) things had caught up pretty well. Early April was warm, sunny, and dry, and the overall plant development was ahead of schedule.

First field trip to study area. No changes on it since last year. Sunny and cool, about 45°, warming. Present from 0800 to 1015.

No PW’s; no migration. Cardinals, towhees, Field Sparrows are paired. Golden-crowned Kinglet.

A flock of cowbirds has four males, 2 females.

Tent caterpillars have hatched and made webs, are 1/2” long.

Sunny and chilly, about 45° in the early morning. Present from 0830 to 1100.

No PW’s. No migration.

Towhee: Find a nest on the ground by a 2' cedar, the female on 3 eggs. They are warm and fresh. One rolls out of the nest 2” when she flies (or perhaps did earlier). [Failed without evidence, 4/18.]
April 13

Cloudy and cool with occasional very brief misty rain, then clearing; N breeze. Present from 0945 to 1145.

No PW's. No migration.

Towhee: Female still on 3 eggs. (This is the nest found on 4/12.) A Cooper's Hawk makes a "check" several times; sounds a little like a Pileated.

Chimney Swift over yard (1) in evening.

April 14

Clear and a little warmer but with a stiff N breeze most of the day. Present from 0930 to 1130.


Towhee: Female on 3 eggs. In another field see a male carry grape bark 30 yards to the ground, stay 2-3 minutes. No search by me.

Cowbird: A male gives a 1- (sometimes 2-) note whistle or "peep," almost like a lark's.

Vegetation: Redbud in full bud, not open. Wahoo has 1" leaves, All cherries have 1/2 to 1 1/2" leaves, are quite green. Sassafras buds are swollen (some). Some elms (a few) have 1/2" leaves; the pink haw is leafed out, the more common one less so. A maple in our yard has a few small unfolding leaves.
April 15

Clear and calm; 38° early, with some frost. Present from 0700 to 0900.

No PW's. No migration except for 1 Grasshopper Sparrow (seen).

Grouse in thin growth W of N field.

Towhee: Female on 3 eggs. (The 4/12 nest.)

April 16

Cloudy and moderate with a rain from 0945 to 1130, then clearing and warming slowly. Present from 0830 to 0945.

No PW's. No migration.

April 17

Warm with a gusty S wind, mostly sunny; clearly a warm front passed through. Present from 0830 to 1045, the last few minutes at Griffey.

Migration last night, including 2 male PW's, 1 WeV, a Sycamore Warbler.

**TD 114 (old TD 98):** At 0845 old MD98 (BlaR plastic, each leg) is chattering on old TD 104 in the N field, 50 yards E of the gun trees and probably 300 yards N of his 1962 territory. He goes SE to the tree row separating the E and N fields (TD 102); 1-2 flights are of 30 yards, most are 10 or so. In 5 minutes 20 songs, and song continues every 15-18 seconds as I go on.

At 0915 there are the same songs in the thick elms just N of the N field sink hole. Singer goes W to woods, N past the gun trees and falls silent. At 0930 I go on; no songs on old TD 98. From 1000 to
1020, silence as I stand at the N end of the E field.

**TD 115 (old TD 110):** At 0942, old MD110 (B-R, R-L) is back, on the first day, as usual. He is in the SE corner of the W field, singing slow chatters, feeding constantly but not rapidly at heights of 10' down to the ground. I count 10 moves in 20 seconds as he feeds; most are 1/4 to 1', some are 20'. Then 9 moves in 25 seconds, all but the last covering about 4", the last, 25 yards. Songs: steady but irregular, every 15 to 25 seconds.

At 0950, MD115 is by the W cherry; falls silent for 3 minutes. He then goes N to the W sycamore and beyond, then starts S on E side of hill. At 1000 he's on the hilltop at the S end, so he's covered the field. Songs have been loud normal chatters, every 10 to 15 seconds much of the time. At 1003 he sings 1 step song.

**Griffey:** No PW's.

**Vegetation:** Many elms now have 1/2-3/4" leaves. Redbud in full bloom, dogwood not yet (except for an occasional one in town). Cherries quite green, with 1-2" leaves. A form of wild rose on study area has 1/2" leaves, as do some raspberries and blackberries. Many haws are leafing out; a wild apple is in full bloom. Wild plum in bloom.

**Other notes:** First box turtle and tick. Towhee's 3 eggs uncovered. Hear a male towhee sing very much like a Bachman's Sparrow.

**Summary:** First PW's return, 2 males (old MD98, MD110).
April 18

Warm and with sun shining through a haze most of the day. Present from 1000 to 1230, at Dunn.

Migration continues, bringing 4 more male Ph's, another WeV, 2-3 YtV's, a House Wren, and a Grasshopper Sparrow.

**TD 114:** MD114 and MD116 (old MD101, S each leg, newly arrived) are having an encounter in the N-S tree row, W of the TD 102 sink. Both sing chatters; at first MD116 sang only faint insipids. There is a pass between them at 20', then songs while perched at 20' (MD114 singing loudly), then a slow bobbing chase of MD114 by MD116 E into the field. MD114 then sings on old TD 100 W of the path, and MD116 chases him there. There follow several short chases, mostly in the S 40 yards of the tree row. Both act as the chaser at times. In 1 long chase (150 yards long, curving, high, slow, 15 yards apart) each is the chaser half the distance; goes from near the TD 102 sink to the TD 101 projecting woods.

At 1020, MD114 is on old TD 102 near sink, and MD116 chatters and calls on his 1962 territory in E tree row. Is MD116 aggressive, as toward a stranger? I go, with both singing loudly and often; MD116 "checked" softly for a while, and twice MD114 sounded like a FS. See TD 114, below.

**TD 116** **(old TD 101):** See TD 114, above and below.

**TD 117** **(old TD 104):** MD117 (S-R, BaO O BaO-L) and an unbanded male are fighting just NE and E of gun trees at 1025. This was MD117’s 1962 territory. Few songs, both chatters and insipids; a few calls
after 20 minutes have passed. All fights are circular, weaving, twisting pursuits covering a 50 x 60-yard area; 4 to 25' high, usually 4 to 15'; 2 to 20' apart, usually about 12'. Most flying is slow (sometimes fast) with relatively intermittent beats; on fast turns they bank and spread tail and set wings. MD117 is always the pursued; he constantly renews the fight; he's the one working his way in against the unbanded male. The line accepted by the unbanded male is just W of the gun trees, and MD117's invasions are 50 to 60 yards long. During 20 minutes they are in flight about 96% of the time. Twice the unbanded male has an open bill when he lands. Occasionally he has a flattened look, with his wrists extended.

At 1050, the fight continues. Most songs are insipids; MD117 may sing more; songs are irregular and few. Once while MD117 is 15 yards from him, the unbanded male eats something. Hear 1 or 2 high loud "tsips."

At 1105, MD117 sings chatters and insipids and "checks," about 40 to 50 yards N of the accepted line of 15 minutes ago. I thought then he seemed to be moving N a little about 5 minutes before I left at 1050. Chasing has stopped; MD117 has all his 1962 territory (the W, open area N of the gun trees). Note that this fight was not "necessary"; there is no male S of MD117 (and that was his 1961 territory), and he fought for a specific place today, the 1962 territory. Note that old males familiar with each other do not fight for fighting's sake when they return to familiar territory.

I now see that the unbanded male chases MD117 once, on a straight line, for 15 yards. They are then 20 yards apart, both singing chatters
and insipids and MD117 calling "checks." MD117 then goes 50 yards S and sings. I leave them at 1115.

[The unbanded male had left by 4/19.]

TD 114: At 1120, the 2 males are singing at each other (mostly insipids, some chatters) at the E fence corner. MD116 "checks" occasionally.

TD 115: MD115 is in NE part of the field, from the E cherry on N.

TD 119 (old TD 108): MD108 (S-R, 3 Wh a Bl-L) is back, chattering exactly on his 1962 territory.

Feeding: I watch MD115 singing and feeding at 1145, while he moves constantly, covers whole territory. In 7 minutes:

1. 18', high, on end of budding tulip.
2. 12', center of budding maple.
3. 18', top of same maple.
4. 19', ditto.
5. 3', low budding haw.
6. 6', center of different haw.
7. 12', elm, near trunk.
8. 20', top of same elm.
9. 30', tip of horizontal in 45' ash.
10. 20', near top of cedar.

Other notes: The towhee nest has failed; 1 egg left. GF songs.

May beetle, tick.

A FS chases a 1/4" butterfly or moth on the wing, twisting in
in flight from 6' to 1' high and covering 3'; it catches and eats the insect.

Summary: Three more old males (MD116, 104, 108) return, and an unbanded male in N field acts territorial [but leaves immediately].
April 19

Cloudy and warm after a gusty S wind all night; windy, with a few drops of rain at 0810 and heavy storm at 1200; tornadoes in state. Present at Dunn from 0800 to 1100, at Griffey at 1100, and at I.U. (S end) from 1115 to 1200.

Migration: Many migrants last night, B. Oriole, Olive-back, Black and White, Blue-winged, and Palm Warbler, Wood Thrush, flocks of Whitethroats. Also Tennessee, Yellowthroat.

TD 121 (old TD 100): MD100 (ROS-R) is back on his old territory at 0840. At 0850 he is calling, perhaps at MD114.

TD 114: MD114 is on old TD 102, just W of sink, then just W of N-S fence. Full song.

TD 116: MD116 is on territory, just W of the N-S fence. Sings as though fully territorial.

TD 117: MD117 is singing loud chatters 200 yards S of yesterday's position, in elms; this is his 1961 territory. The male he fought yesterday is gone. Later MD117 is 200 yards to N again.

TD 119: MD119 sings faint insipids at MD115 on the hilltop, then chatters as if fully territorial in his usual spot.

TD 115: MD115 sings faint insipids at MD119 at the hilltop, then chatters regularly S of E chinquapin.

Griffey: No Pw's. Schneider heard a song at 0800.

I.U., S end: No Pw's.

Far NW field (BV field): No Pw's.

Feeding: At 0830, MD117 fed at 12' around leafy elm buds.

Blue-wings: Heard B-W's today.
Other notes: Bachman’s Sparrow acts territorial on S end of I.U. GF songs heard.

See chickadees building a nest at 6 or 7’ in woods edge sassafras.

Male and female box turtle seen.

Antennaria is 2” high.

Tent caterpillars are very unusually abundant this year and are about 1” long today.

Summary: Another old male returns, MD100 of last year. Thus there are 6 males on territory, all of them old birds.
April 20

Clear and cool after yesterday's rain, which ended at 2000; NW breeze. Present at Dunn at 0730, with my class from 0830 to 1045, and with Karl Rinehart till 1230.

Little migration. Kingbird, Yellow Warbler.

TD 114: MD114 is W of the path on the N end of old TD 102 at about 0900. MD121 is singing loudly at the sink, so he may have forced MD114 to the W. No fighting seen. At 1030 and 1045, MD114 sings loudly in the wooded field, so he has moved 250 yards to the S to his 1962 territory. At 1215, he is back N again, where he was at 0900.

TD 121: See TD 114, above. MD121 is on his 1962 territory. At 1215 he is singing insipids in the N-S fence row.

TD 116: MD116 at 0945 is in the W end of the E-W fence row. At 1100 he is singing by the path in the SW corner of the E field, then in the TD 8 clump. He then goes E to the elm thicket on old TD 98 [TD 114], calling faint "checks," singing occasionally. He goes N, crosses to W maple, sings loud chatters 30 yards S of the maple.

TD 119: Fully territorial behavior on W hillside; no female.

TD 115: MD115 sings chatters and a series of half-volume insipids.

Feeding: At 1100, MD116 while moving in S half of E field and singing and calling:

1. On ground.
2. At 4', branch in center of 6' elm.
3. At 6', same tree.
4. At 3', in canopy of 8' haw.
5. At 20', in top of 22' elm.

At 1140, MD119 while chattering regularly, feeding steadily, and covering 18 yards in 3 minutes:

1. At 2', in dead weedy patch.
2. At 4', in 5' elm.
3. At 12', inner end of diagonal limb, 28' cherry.
4. At 9', near leader of 15' elm.
5. At 4', on horizontal branch, near trunk, in 28' cherry.
6. At 7', on diagonal, in 12' elm.
7. At 9', on long horizontal cherry twig, near top.
8. At 4', on tip of long horizontal cherry branch in 28' tree.
9. At 4', at trunk of 10' elm.
10. At 1', at base of 9' haw.

Other notes: Catch small milk snake. See racer on ground; quickly enters a hole. See 5' pilot black at 4 1/2' in tree.

Summary: No new arrivals and apparently no migration.
April 21

Clear and warm, with a fresh NW breeze. Present at I.U. (S end) from 0745 to 0830, at Dunn from 0850 to 1100, at Griffey from 1100 to 1130.

**Migration:** a little; chat, Orchard Oriole, TB, Parula, Kentucky, Scarlet Tanager, Sycamore.

**I.U.:** Last year’s male from V, banded as a nestling in 1961 (D94Y)(RaYOS-L, Y-R) is on old T66, singing loud regular chatters. Note that he was discovered here last year. [He ultimately moved to Griffey and became MD16.] No Pw’s on V today.

**TD 116:** Constant chatters in tree row, 40 yards S of the big maple. No female.

**TD 121:** MD121 has a female, DIU-62F of 1962 (RaYOS-R, OaBO0aB-L). She is a plotted 2350 yards from her 1962 range. She moves a lot, rapidly, calls “check.” MD121 follows. At 0915 there is a big noisy fight with MD114 S of the sink. The female stays behind, calls for 1 or 2 minutes. Once she flies to him on a perch and he goes. They cover all of TD 121 (including S of the sycamore). Twice MD121 flutters mildly. His song is loud and very irregular (e.g., 4 or 5 times between 1000 and 1015).

**TD 117:** MD117 chatters constantly in cherry tops, SE corner of territory, then in elms W of old TD 102 [i.e., W of TD 122]. No female.

**Note:** There are no Pw’s N of TD 117, 0930-1000.

**TD 114:** At 0915, MD114 is on his [temporary] territory, i.e., old TD 102. Thereafter I can’t find him in a careful search.
TD 119: Full territorial singing.

TD 115: MD115 and a new male, unbanded, have a typical circular pursuit 15 yards N of the E cherry; MD115 is the pursuer. Insipids at times. Ten minutes later the new male chatters at and SE of the cherry.

TD 124: See TD115, above. This male just arrived. [He stayed till about 4/26, disappeared, and either returned or was replaced.]

Griffey: No PW's.

Feeding: MD16 for 7 minutes on IU T66 feeds at 25 to 35' in the opening-out leaf buds and outer parts of a 45' sugar maple. He then goes to the ground. This ought to yield 10 feeding heights.

MD116 feeds once at 45' in a 50' walnut.

MD119 perches at 22' in a 25' cherry and sings from 1040 to 1045.

Other notes: See a green snake, 2' high in a tree.

Mockingbird carries nest material near Elam's.

Tent caterpillars are about 1 1/2" long.

Yellowthroat song heard.

Blue-wings: Two males are in an encounter with PW-like backing and filling at 8-3' heights. Some songs, with a good many "check" calls and "wee see wee see" calls not noted before. The males take turns as pursuers, covering 10 to 12 yards back and forth. Resembles PW boundary fight. The area is very brushy.
Chat: First bird noted: 1-2 call notes on V at I.J. at 0815. [I had no doubt at the time, but note the delay till 4/26.]

Summary: One new male (TD 124) arrived, as well as the first female, old IU-62 F. Also Mud on Tab 4/21/63.
April 22

Dark, threatening, and cool with a N wind; cloudy but warm at noon; tornado at Indianapolis. Present at Dunn from 0625 to 0750.

Migration: Duck Hawk, Crested Flycatcher, Nashville and Yellow Warbler, Wood Thrush.

TD 114: Loud frequent songs all over TD 102.
TD 121: Loud frequent songs; 1 long silence.
TD 117: Not seen (it's very dark and unfavorable). Songs heard.
TD 119: Full territorial behavior. No female.
TD 124: Present.
TD 115: Loud song on NE part of field. No female.

Note: Several periods of silence today; probably the weather is responsible.

Important: A young unbanded male chatters about once a minute in our yard at noon; 35' to 20' high; responds to hisses.

Feeding: MD115 covers 30 yards in 5 minutes, singing and feeding:

1. At 11', at buds of 15' sugar maple.
2. At 5', at outer buds of 10' haw.
3. At 7', in leaves of same tree.
4. At 9', ditto.
5. At 8 1/2', ditto.
6. At 9', ditto.
7. At 9 1/2', ditto
8. At 9', hovering, ditto.
9. At 9', in center of 11' haw.
10. At 15', near trunk of a 23' elm pole.

Summary: No developments at all.
April 23

Windy (N and NW), cool, with fine rain and lightening at times.

Present at Dunn from 1420 to 1520.

I cover E, N, far N fields. See only 1 Pw.

TD 114: MD114 sings 2 short step songs. He's still on TD102.
April 24

Clear and cool (31°) at dawn, with frost; 60° at 1300. Present at Dunn from 1340 to 1600.

Migration: Green Heron, Warbling Vireo.

TD 114: MD114 sings loud chatters high in TD 8 clump, goes SW to sycamores.

TD 120 (new): See a bright unbanded male in and S of the W maple on old TD 99. He sings insipids and thin fast songs between chatters and skids.

TD 121: MD121 and probably MD116 [?] are at the E fence corner, and a female [that at the time seemed to have a bright red plastic R but that later similar experiences showed to be old IU-62F] calls loud “checks” by path, goes E. I lose the D121’s, find the male fluttering and singing little, high in and near his sycamore. I then find both D121’s S of the sycamore; infrequent songs; female silent.

TD 116: MD116 sings at the N end of the tree row at the N end of the E field, then goes E into TD 102, comes S and sings about halfway S in these trees. Later he is by the path fork on TD 102 again, singing; goes SW.

TD 117: MD117 chatters loudly from gun trees S to the elms N of the sink; often at high perches.

TD 123 (new): An unbanded male that is probably MD105 of last year sings type-3’s (the first of 1963) in the S half of the far N field.

TD 115: Once MD115 sings insipids at MD119 and MD124, which do the same at each other and him. He goes S to 15 yards NW of the
cherry.

**TD 119:** See TD 115, above. No female.

**TD 124:** See TD 115, above.

**Feeding:** MD120 feeds at 8' near haw buds. MD119 from 1510 to 1530 covers his territory, sings, meets MD124, and feeds:

1. At 11', in top of 12' elm.
2. At 30', in 40' walnut.
3. At 35', ditto.
4. At 12', in 18' maple pole.
5. At 10', in 13' elm.
6. At 8', in 15' elm.
7. At 15', in 16' cherry top.
8. At 40', in 45' cherry.
9. At 41', ditto.
10. Ditto (no change in position).

**Other notes:** Racer on ground, 4' long. Same 5' black snake as on 4/20, at 6' in same tree. I saw a big black snake here last year too.

Parula responds to hisses; singing, eats 1/2" green caterpillar.

**Summary:** MD120 and MD123 arrive, the first unbanded males on territory. **No-TD124 occupied by U & O 4/21.**
April 25

Warm and nearly clear. Present at Dunn from 1030 to 1200, at Griffey from 1200 to 1230, at I.U. (S end) from 1245 to 1330.

Migration: Cerulean.

TD 114: Regular chatters in wooded field. Note that this male has been so little on his former territory that if I hadn’t found him elsewhere before today I’d have thought him a late arrival.

TD 116: Songs in the N-S fence row between E and N fields. This male is on only the N part of his previous territories, which used to run S into the E field. [This use of only the N field continued all summer.]

TD 121: MD121 sings from sink hole to sycamore; some silences.

TD 117: Loud regular songs from same area as yesterday.

TD 123: Regular type-8’s, still from far N field.

TD 120: This male chatters today near the maple.

TD 119: Regular song; no female.

TD 115: Regular song; no female.

TD 124: Regular song; no female.

Franklin’s: Find old G11R, banded as a nestling in 1960 (bBOR-R, S-L) singing regularly from Brown’s S line to Daugherty’s pines. He “checks” as he flies to Brown’s, then chases a PW 200 yards to the N at a height of 70’; they fly fast but also a little bouncily. The male then sings at Allen’s.

Griffey: No PW.

I.U.: On old T 66 is MG16 (Y-R, RaYOS-L). Steady singing while
feeding in the big maple, much the biggest tree on the territory except trees in the woods edge (where any particular one would be inconspicuous).

Other notes: A young Cooper's Hawk is molting a pair of low-numbered primaries.

Summary: Only the male on Franklin's (G11R of 1960) is new. As regards the very slow arrival, note that other species are affected; I have only 1 chat so far and that was a call note or two about which I could have been mistaken.
April 26

Sunny, warm. Present at Dunn from 0730 to 1000.

Migration: Considerable movement including chats, B.S., many ReV’s, Black-throated Green, Golden-wing.

**TD 114:** An old unbanded female is here, calling. MD114 sings irregularly, at times often; some silences. They are in and near the wooded field. At 0930, MD114 glides down from 10’ to 2’ and pursues the female but doesn’t catch her. See her scratch, over wing.

**TD 120:** MD120 covers W tree row S to the maple; insipids.

**TD 121:** Pair together S of E fence corner.

**TD 116:** MD116 sings constantly from the fence row and from N of the TD 102 sink.

**TD 117:** Constant chatters from gun trees and on toward the S.

**TD 123:** Not found.

**TD 115:** No female.

**TD 119:** No female.

**TD 124:** No female.

Franklin's: No PW’s S of the fence.

Other notes: Chat seen on study area for first time.

Yellowthroat calls "chick chick chick" and then sings several regular songs in a flight rising to 15’ and descending to ground.

Summary: One additional PW found, the female on TD 114.
April 27

Warm and getting hazy in the morning, clearing at noon. Present at Dunn from 1130 to 1330.

**TD 114**: Occasional songs in wooded field at 1130, in TD 8 clump at 1330. The bright female gets much tent caterpillar web at 15' in a cherry, goes 40 yards to an elm, places it at 3 1/2'. No other material there.

**TD 120**: A few chatters and insipids N of the maple at 1140. Not found later.

**TD 122** (old TD 102): MD122 (R-R) has arrived. He and MD121 fight just S of the sink, a chase with insipids (and MD122's odd song at times). A female calls. Ten minutes later the males are 30 yards apart, S of the sink. DL21F has begun a nest only 45 yards S of the sink, which used to be MD122's, and this may cause unusual fighting. First song of MD122 was his odd one.

**TD 121**: See TD 122, above. DL21F's nest is a solid saddle, begun 4/25 or yesterday.

**TD 116**: Regular chatters in E fence row. MD116 seems not to be trying to hold any of TD 122, which he had been on recently. Note this.

**TD 117**: Loud chatters, perhaps all of them from gun trees on toward the S. No female.

**TD 123**: MD123 must be old MD105. Today he sings his type-8's, covers exactly the 1962 territory, including the southward extension on the E side of the field.

**TD 119**: Regular song on usual territory.
TD 124: Not found. See TD 115, below.

TD 115: Silence, then chatters in the E cherry. No female.

Franklin's: No PM's S of the fence.

Chat: Hear about 3 chats in N field. Songs are same as in display flight, but the birds aren't flying. On TD 29, 2 chats seem to sing at each other in a low berry thicket; 25 yards apart; no response to hissing.

Other notes: Racer on ground, 5' long.

Summary: No new PM's. Only 2 females are here, yet both are building or starting to.
April 28

Cloudy and warming until it clears at noon. Present at Griffey from 0830 to 0845, at I.U. (both ends) from 0845 to 0930, at Dunn from 0930 to 1200.

No migration.

**TG 16(new):** M616 is here (RayOS-L, Y-R), chattering frequently. He has moved a plotted 1700 yards [which later was nearer 1500 when he settled] from the IU(S) territory of last and this year.

**I.U.:** No PM's, at either end. Note M616 wasn't pushed out.

**TD 114:** Yesterday's "nest" is not visible. Today there is a very loose beginning of a cup, by the N-S path.

**TD 120:** MD120 sings his fast chatter in and N of the maple.

**TD 121:** D121F builds at 1100; nest not quite a full shell. MD121 concentrates on MD116 and a bright female he is courting, sings step-buzzes. He flies NW of E fence corner and is chased back. MD121, at the fence corner, once gives little shrill, sharp squeaks when MD116 flies from the projecting woods at him and is 10 yards away.

Note that MD121 is on his own line at this time. He calls "check" a lot during this period of watching. At another time he chatters often in the top of the E field sink, which he seems to own.

**TD 116:** See TD 121, above. MD116 flutters slowly before the female at times. At my arrival MD116 was in a fast, close, twisting pursuit with what I first thought was a female. However there are songs, and MD116 renews the encounter and I think is pursued by the other. This occurs several times in a minute; flights are fast, not the slow ritualistic circling of a male invaded by a newcomer that is
destined to win. I glimpse bright red plastic R on the new male during 1 circular pursuit; this would make him a 1962 bird, necessarily a D107 young. [Never see him again. Note D121F was building and in any case would hardly have engaged in pursuits with MD116.] I soon see the bright unbanded female noted under TD 121. Later I cannot find her and MD117 has such a female, so I'd guess she moved.

**TD 122:** Frequent chatters N of sink. D121F's nest location may [temporarily] have cost MD122 the sink, which directly overlooks the nest. No fighting.

**TD 117:** When I first pass, MD 117 chatters loudly and often. On my return he is with a bright unbanded female, sings irregularly but often.

**TD 123:** Type-8's in N center of N field. No female.
Far N field: No PW's.

**TD 119:** Loud regular chatters. No female.

**TD 124:** Not found.

**TD 115:** Loud regular chatters around E cherry. No female.

**Franklin's:** No PW's S of fence.

**Far NW:** No PW's.

**Chats:** Increasingly vocal. Two are in a twisting chase for 2 seconds, 5 to 6' high, in TD 116 sink. One pulls out of the chase with a large-beat display flight; don't recall if he sings. Five minutes later, one gives a song flight to 15'. Hear about 6 today.

**Other notes:** Spittle bug found.

**Summary:** One new female is here, [temporarily] with MD116; only D121 is building. A yearling D107 may have been seen.
April 29

Cloudy with showers and sunny, warm periods from 0630 to 1900, when a heavy rain begins. Present at Dunn from 0600 to 0730, at Griffey from 0730 to 0745.

Migration: Black-billed Cuckoo.

TD 114: Nest fragment not advanced.
TD 115: No female.
TD 116: Song. Can't find female.
TD 117: Not found.
TD 119: See MD119; only 2 or 3 songs.
TD 120: No female.
TD 121: Not visited.
TD 122: No female.
TD 123: No female.
TD 124: Not found.
TG 16: MG16 sings often in the field of small pines behind Schneider's.

Summary: No developments noted.
April 30

Cold after a cold front with rain and very heavy W winds last night; windy all day. Present at Dunn from 1700 to 1715.

Migration: Val saw a hummingbird.

TD 121: Nest unlined, with padding of milkweed seed down. Nest condition corresponds to end-of-second-day stage, if it were summer.

Female heard.

Summary: Not enough field work to know if there were arrivals.
May 1

Clear and cool with a light frost. Present at Griffey from 0800 to 0820; at Dunn from 0820 to 1030.

Migration: Many FW’s arrive.

TG 16: M316 has gone E of the valley and has the E field.

TG 17 (new): A young unbanded male chatters back of Schneider’s.

TD 114: MD114 watches a bright unbanded female feeding in the wooded field, sings occasionally, flutters when he follows her (but doesn’t pursue her). Two hours later he sings far to the SW in Kerr’s field [which he later held, when D114F(C) had a nest there.]

TD 120: Loud chatters in maple top. Later MD120 is with a bright unbanded female in mid-field.

TD 116: After 15 minutes’ song, frequent song in E-W fence row.

TD 122: No female. To the E, an unbanded male, surely a migrant, sings infrequently at 60’, around oak flowers. I hiss and an unbanded female comes.

TD 121: Nest not examined, in order to avoid frightening female.

MD121 sings insipids at MD116.

TD 117: Not found.

TD 123: MD123 sings constant type-8’s, follows an old unbanded female. He disregards an unbanded (migrant?) male singing to the NW in the N-S fence row which was TD 104 and not TD 105, last year. This male sings weakly.

TD 118 (new): This is the far N field, where a new unbanded male chatters frequently.

TD 119: MD119 sings little, is with a young (?) unbanded female.
TD 115: No female.

TD 124: Not found. This male has clearly left, at least temporarily.

Doerr's (new): An unbanded male sings type-8's here, an arrival.

Franklin's: An unbanded male chatters here, also an arrival.

Feeding: The female with MD114 feeds for 3 minutes around flower buds of 10' haw trees, between 7' and 10'.

Chat: Much noise today. See a full-scale display flight as well as a pursuit or following of one by another.

Other notes: Towhee nest found, on ground near base of 20' pine. Female on 1 cowbird and 3 well incubated towhee eggs. This is year's first cowbird egg.

Summary: At least 4 birds seem to have taken territory (TG 17, TD 118, 2 birds S of the fence), and there were 2 migrant males. New females were on TD 120, TD 123, TD 119, but they may not stay. A migrant female was E of TD122.
May 2

Clear and cool. Present at I.U. (S end) from 1000 to 1100, at Dunn from 1100 to 1300.

Migration: No influx. Some of yesterday's FW's gone.

TD 119: MD119 has a female with red on the back, bright and probably old. He flutters with shallow beats, sometimes not beating his wings at all. Two or 3 chatters in 5 minutes.

TD 115: MD115 is unmated, chatters from the W part of TD 29 E to the E hillside.

TD 124: An unbanded male chatters here at 10'. Is he the male here earlier?

TD 114: MD 114 chatters and flutters in the TD 8 clump.

TD 120: MD120 sings very irregularly, flutters, flycatches by the maple.

TD 121: Nest looks complete at 1215; lining not heavy.

TD 116: Frequent chatters N of fence.

TD 122: MD122 is with an old unbanded female N of the sink; little singing.

TD 117: Not found.

TD 123: Not present long enough to see if a female is here.

Regular type-8's.

TD 118: Regular chatters; no female.

S of fence - not visited.

Feeding: MD118 sings at 1245, feeds for 4 minutes:

1. On ground.
2. At 3', at trunk of 5' elm.
3. At 4', at trunk of 5 1/2' elm.
4. At 4 1/2' in outer end of branch of 13' cherry.
5. At 11′, on bare branch of 12′ sassafras.

Vegetation: Dogwood in full bloom since 4/29, the leaves tiny. Blackberry leaves sparse, 1″ long. Cherry nearly fully leafed out. Tulip, sumac, locust, haw with leaves half-size. Antennaria 6″, some in flower, bending over. Goldenrod 3″ high. About half the elms are half leaved out, the rest less. Sugar maple leaves are 1/2-to 3/4-size. Some sassafras has 1″ leaves, some only buds. Redbud flowers are faded or gone, the leaves 1/2″ to 1″ long. There was a good deal of killing back of plantain, Virginia creeper, poison ivy. Some elm and maple leaf tips were blackened (all this by the frost).

Other notes: FS on 2 fresh eggs, at 18″ in 3 3/4′ cedar; note the above-ground site for the first FS nest.

Robin fledglings on the campus.

Summary: At least 5 males are with females; Dl21F’s nest appears complete. No more males are arriving, so the numbers seem down this year. [They were down.]
May 3

Gray and cool till 1000, then clear and warm. Present at Dunn from 0730 to 0800 and from 0900 to 1145, at Griffey from 0800 to 0830, at I.U. (N end) from 0830 to 0900.

I.U. (N end): No PM’s.

TG 17: MG17 chatters behind Schneider’s.

TG 16: Not found.

TD 114: MD114 sings much in TD 8 clump and SW of it. The female may be gone. [I found 2 nests or shells during the summer that may have been built by the female here in April, or by the female called D114F(B); or the April female and D114F(B) may just possibly have been the same bird.]

TD 120: No female. MD120 sings from the hackberry used by MD99 last year, N nearly to the fence corner. MD116 is not using this N part of the E field [and he never did this year].

TD 121: No egg. MD121 flies up to within 10’ of me as I go to the nest. He sings “bee buzzes.”

TD 116: Frequent chatters. No female.

TD 122: MD122 is with the bright female.

TD 117: MD117 is with a bright female, intent, singing whispers. They’re at N end of the N elms, i.e., at N end of his 1962 territory.

Type-8’s from here in response to MD123 must be MD117’s.

TD 123: Type-8’s. [D123F perhaps begins to build.]

TD 118: Chatters. No female.

TD 119: Pair together; song irregular.

TD 124: No female.
TD 115: MD115 is with a bright unbanded female S of E sycamore.

Song frequent, irregular.

Doerr's: The type-8 singer is with a bright unbanded female that eats a spittle insect at 10' in a pine tree.

Franklin's: The chatter-singer has no female.

Feeding: See Doerr's above.

Chat: A chat at 35' in a tree stripped bare by caterpillars flies out, bouncing in flight.

Summary: Apparently only MD116, 118, 120, and 124 have no females (excluding the birds S of the fence, where I check only irregularly).
May 4

Hot and clear. Present at Dunn with class from 0830 to 1100, alone from 1130 to 1400, at Griffey from 1400 to 1415.

Migration: No sign of migration, unless it was a large turnover of female PNN’s.

TD 114: MD114 sings at 0900 in wooded field, at noon in and N of TD 8 clump. He fights MD120 in latter place. No female with MD114. See TD 120, below.

TD 120: See TD 116, below. MD120 is with last year’s D102F (S-R, Ray-L). She calls in area N of TD 8 trees, about 220 yards from her 1962 range. Note that MD122 was her 1962 mate. See TD 116, below.

TD 121: No egg. MD121 has encounter with MD122 near sink. Insipids.

TD 116: At 1300, just S of W fence corner I see a male and D110F(A)(R plastic O GaR-R, S-L). Then I immediately see MD116 just N of the fence with D99F(2) of 1962 (S-R, Bk-L). He sings a few type 8’s, his first of 1963. Later he drops on and chases this female [D116F] and she (?) gives 1 or 2 very faint “peep” or “sip” notes and flies away from him. He lands for 1/2 second, flutters on with his bill open for 8 or 10 yards, lands at 6’ with his bill open. This female is about 175 yards from her 1962 range; I suspect MD120 was MD99, her 1962 mate.

The first female seen, D110F(A), is 350 yards from her 1962 range, and MD115 was her mate. [She became D120F.]
TD 117: D117F is building a nest shell [fragment], is about half way to completing the nest; she must have begun on 5/2. MD17 sings some type-8's, some chatters, wanders S and N of gun trees and doesn't pay much attention to the female.

TD 123: MD123 chatters on the SW part of his territory, at 1245 flies to a nest shell [fragment] 1/2 day old, enters it but doesn't sit down in it, flies on. D123F (no bands) flies up with bast fibers.
Nest may have been begun yesterday.

TD 118: MD118 has a young female.

TD 119: Pair together (female old).

TD 115: Female not seen. MD115 sings on center of hill.

TD 124: MD124 has a bright female.

TG 16: MG16 has a bright unbanded female. She gathers webs at 7' in an elm, after 30 to 40 seconds goes 8 or 10 yards to a 17' elm pole with many green twigs on the trunk. MG16 is there, at 8', in a twiggy nest site, going through all nest shaping motions (i.e., stretching wings, turning the body, lowering the belly). Gl6F stays 6" above while the male shapes for 30 seconds. She seems to drive him from the spot and I watch her. She hops to 2" below the male's site and attaches her webs, jumps up to the male's site and goes through all the movements he did. She goes in 30 seconds. I hear 1 chatter 3 minutes later, leave at 1415.

Chat: I spend 30 minutes trying to show display flights to the class, but there are none. Several birds (after typical peering about by them) go through bouncing flights between perches, with
exaggerated wing beats.

Other notes: BS on TD 120.

See 5' racer on ground. The same old 5' black snake is at 5' in his usual tree.

Summary: Many developments in pairing and building. All males seem to have mates. Last year's D99F(2), D102F, and D110F(A) return. D121F, 123F, 117F are building.
May 5

Clear until a high haze comes in at 1030. Present at Dunn from 1100 to 1300.

TD 125 (new): This is old TD 39. An unbanded male chatters here, flutters with shallow beats before a female, probably young.

No PW's in the BV field.

TD 114: Last year's D102F (RaY-L, S-R) is now with MD114. Frequent chatters.

TD 120: D110F(A) is now mated with MD120.

TD 121: No egg. Nest shows more work since 5/3, maybe since 5/4.

TD 116: Not found.

TD 122: Pair together.

TD 117: Nest incompletely padded. Male chatters without pause at S end of territory, W of TD 122.

TD 123: Not visited.

TD 119: Male seen.

TD 124: Pair together.

TD 115: D115F builds a little platform at 1230, probably begun today.

Other notes: Catch 2 Killdeer, a day or two old.

See the usual black snake in his tree.

Summary: No need for summary from here. All pairs have formed and building is general. [First egg laid on 5/6.]
May 6

Clear and warm. Present at I.U. (S end) from 0630 to 0745 and from 1630 to 1715.

I.U.: An unbanded male chatters on T 66. No PW's on V.

TD 114: Pair seen.

TD 120: Not found.

TD 121: Egg 1, the first of the year.

TD 116: Male seen.

Far NW: No PW's.
May 7

Clear and warm. Present at Dunn from 1330 to 1530.

Far NW: No PW's.

TD 114: High thin insipids at S center of field, N of path, chatters to E. Later "bee-buzz buzz buzz" songs at the S end. At 1320, D114F(A) gathers broom sedge and goes SW to the corner of the field.

TD 121: Egg 2; female on at 1400, off at 1410. High thin insipids.

TD 122: MD122 sings high thin insipids in the sink, which he has had for several days. Pair together; female calls. Find nest, a half-padded shell begun 5/5 or 5/6.

TD 117: Nest fragment abandoned. Find female building a full shell, begun yesterday. She is young; there may have been a change in mates here.

TD 123: Nest a partly padded shell, now abandoned. The only male seen is singing chatters W of the fragment.

TD 118: One type-8, several chatters at far N end. No information.

TD 116: Find nest, a partly padded full shell just N of projecting woods, begun 5/5 or 5/6. MD116 high in projecting woods and sink. See TD 120, below.

TD 120: D120F at 1500 builds a full unpadded shell, begun 5/5 or 5/6. The location is odd, N of the dead elm that MD116 has used for years and high in a dying elm. MD120 sings here with no resistance. I think MD116 never has used this area this year.

Chat: See a display flight up to 40' high.

Other notes: A Sparrow Hawk flies over the E field with a small bird-size object.
May 8

Clear, hot, and windy, getting cloudy in SW at noon. Present at Dunn at 0730 and from 1400 to 1520.

Far NW: No PW's.

TD 114: Pair in SW part of E field, female calling, male singing high thin insipids.

TD 120: Nest complete looking from below.

TD 121: Nest fails without evidence.

TD 122: High thin songs a lot like a FS's, in the sink trees. Nest unlined.

TD 119: Not found; (it's quite windy).

TD 124: Type-8's. Find nest, an unlined shell.

TD 115: Nest feels complete.

Doerr's: This male must be the type-8 singer sometimes heard on the S end of TD 29.
May 9

Hot and clear. Present at Dunn at 0720 and from 1000 to 1300.

Far NW: An unbanded male chattered steadily at 0730, is gone at 1000.

 TD 114: D114F(A) is at the S end of the wooded field with nest material. I try to follow, trace her all over, as far W as TD 8 clump. Probably not building. MD114 sings high insipids most of the time. Sometimes he chatters, maybe when he has lost the female. She calls at times.

Franklin's: Irregular chatters. I hiss when I hear loud "chebec"-like "chips" and a bright unbanded female comes to within 3' and sits stiffly. Suddenly she raises her tail and a male flies up and tries to mount her. His bill is open. She probably pecks at him, and he flies away.

 TD 119: See female building, sitting for 10 minutes in a shell she is padding. She seems to reach out and work on the rim. Once she is 6" away from the nest when I come into view and she quickly gets into it. All this at first led me to think she was incubating. At 1225 she gathers grassy lining 20 yards from the nest.

 TD 124: Nest complete. Type-8's 6 yards from it.

 TD 115: Nest complete.

 Doerr's: See both of pair; unbanded; female is building but I don't find nest. The male's songs are type-8's and the insipid that begins with 3 whistled "bee" notes and ends with harsh buzzes.

 TD 120: No activity.

 TD 121: See MD121.
TD 116: Nest complete.

TD 122: Nest unlined, little advanced.

TD 117: Dll7F is on at 1245 and then watches me closely so I don't go to the nest. She scratches over her R wing.

TD 123: Nest found, complete.

TD 118: Not visited.

Other notes: The towhee nest found on 5/1 contains 3 young towhees about 3 days old and the unhatched cowbird egg.

FS nest found, female on 3 fresh eggs, 2" above ground. [On 5/11, 4 eggs; wet, deserted, 5/16.]

A FS gets a big brown larva, softens it, hops around watching me so that I expect to see a nest. The bird then flies to a spot on the ground, lands by a motionless adult FS, passes the food. The recipient eats it and they hop away.

Yellow-billed Cuckoo heard for first time this year.
May 10

Sultry with some sun but often threatening to storm. Present at Dunn from 1145 to 1215 and from 1230 to 1430, at Griffey from 1215 to 1230.

Migration: Pewee (maybe heard one yesterday evening), Bobolink.

TG 17: Male with an unbanded female, shabby and probably young.

TG 16: The place where I saw the male nest-shaping now holds a complete nest, the first time this has ever happened.

TD 118: Find the young female padding a nest begun 5/8 or 5/9, nearly ready to line it. She scratches and opens her bill.

TD 114: Songs and "check" calls near stream at cross-over. See MD114 once, "checking" in wooded field. I doubt if the female is building.

TD 120: Nest ok. High thin insipids.

TD 121: See MD121. No search for nest.

TD 116: Egg 1 at 1415, gone at 1900. Female on at 1345, again at 1405. I put in the egg from TD 115 at 1900.

TD 122: Nest advanced. A green leaf fragment put in by me yesterday has been lined over. Pair together.

TD 117: Yesterday's fragment is not much padded, [abandoned]. D117F is near a full, thin shell begun yesterday.

TD 123: Nest ok; no egg. See a pair of the W tree row, near this nest. Male sings insipids.

A new male [given no number because he was very temporary and was never really pinned down--called him MD123X] chatters constantly in the center of the field, by the D123 fragment. A young female is
there. MD123 perhaps yielded the area because D123F's nest is to the W. I think the young female explores. Once there is a long chase by the male, which holds the female's tail in flight.

Analyzing the male's sex flight: The wings are never closed. Flight is slow and the tail is a little lowered, so that the body angle in flight is . The wings may be beaten more forward , than the usual or , as it appears. The beats are about usual in size; thus male doesn't fly on the wing tips like a king bird, though he does keep the wings a little stiff and doesn't fold them. It may be a false comparison to refer to normal wing beat size when the angles and kinds of beat are dissimilar.

**TD 119:** Nest soft, probably unlined.

**TD 124:** D124F on an empty nest at 1350, off at 1400.

**TD 115:** Egg 1. I'm getting egg data and also testing to see if laying is determinate, so I take it and put it in TD 116 nest. See appendix.

**Vegetation:** The fields have made the quick change to summer appearance during the last 2 days. Vegetation is near luxuriant, the trees heavily leafed out and hard to spot nests in.
May 11

Very cool with a N wind all day, and dark and cloudy until it clears at 1130. Present at Dunn from 0700 to 0730 and from 1100 to 1245, at Griffey at 1245.

TD 114: Song.
TD 120: No egg.
TD 121: MD121 sings a series of type-8's.
TD 116: Egg 2 and a cowbird egg, plus the egg from TD 115. Egg 2 has a tiny 1 mm. puncture. Female on at 1200. Note that the cowbird removed egg 1 and left the nest empty, which Mayfield thought rare. I take egg 2 to weigh it.

TD 122: No egg.
TD 117: Nest being padded. Female is young.
TD 123: Egg 1. There are chatters N and E of the nest, probably from 2 males.
TD 118: Not visited.
TD 119: No egg. [None was ever laid. Visits to the nest continued until 5/18.]

TD 124: No egg.
TD 115: No egg when I visit nest.
TG 16: No egg.

Other notes: In the middle of the N field a male Blue-wing and a female Golden-wing are watching each other with interest. [They mated; see June and early July.]

Find a pair of Bob-whites beside an empty nest on TD 39.

At 0630 a Catbird is building very actively at 18' in our apple
The weather is most unfavorable.
May 12

Cool, cloudy, and windy from the N; threatening most of the day but warmer and sometimes nearly clear in the afternoon. Present at Dunn from 1105 to 1120, from 1135 to 1230, and from 1645 to 1730; at Griffey from 1125 to 1135.

TG 16: No eggs. Silence.


TD 114: Pair together near TD 8 clump. Male E to tree row.

TD 120: No egg.

TD 121: See male.

TD 116: Egg 3; rest of contents gone (egg 2 was at home, so predator got only cowbird egg and Dll5F's egg). I now replace egg 2; take egg 3.

TD 122: Egg 1. I add an egg taken today from Dll5F's nest and egg 3 from Dll6F's. This is at 1700. So there are 3 eggs.

TD 117: Nest seems complete.

TD 123: Egg 2.

TD 118: Nest well lined, probably finished yesterday.

TD 124: Egg 1.

TD 115: New egg, probably 3. I take it at 1215, so nest is empty.

Other notes: FS nest found on ground in sweet clover; 4 eggs. [On 5/24, there are 3 young, hatched on 5/23, I feel sure. On 5/29, 3 alert young. On 6/1, young have fledged. No Protocalliphora.]
May 13

Cloudy early, warming and clearing by late morning. Present at
I.U. (S end) from 0700 to 0800, at Dunn from 0645 to 0700 and from
1615 to 1730, at Griffey from 1600 to 1615.

I.U. (S end): No PW's found.

FarNW field: A male sings here constantly early. [Probably MD125
from TD 39.]

TD 124: Egg 2 and cowbird egg; egg 1 gone. Male sings harsh
"bee-buzz" songs.


TD 120: Egg 1.

TD 111: DllhF(A) has bast fibers at 1730 by the N-S path; she
wipes them from her bill when she sees me.

TD 121: No information.

TD 116: Egg 4. I take it, leaving egg 2 as only egg.

TD 122: Egg 2, so 4 PW eggs in nest.

TD 117: Nest complete. Songs.

TD 123: Egg 3, smaller than other two. Dl23F on at 1700.

No sure sign the other male (MD123-X) has been here since the day
I found him.

TD 118: A cowbird egg is here.

Chat: Find first nest of 1963, incomplete. For all nest data,
see appendix.

TG16: Egg 1.
May 14

Clear and warm. Present at Dunn from 1400 to 1630, at Griffey at 1355.

Far N: No PW's.

TG 16: Egg 2. I take egg 1, put it in TD 117 nest.

TD 114: See only male, which sings insipids and a few faint chatterers W to TD 8 clump.

TD 120: No activity at nest.

TD 121: Not visited.

TD 116: Nest has failed, is empty, tilted, and a little crushed.

TD 122: Egg 3 (so 5 are present).

TD 117: No eggs. I put 2 (G16F's and D115F's fourth) in.


TD 118: Egg 1, which I measure as 16.5 x 12.3 (wreath fused).

TD 124: Egg 3 (so 1 cowbird, 2 PW eggs).

TD 115: Another egg, probably 5; I remove it, so only 1 is present.

Chat: At 1530, see a 70'-high display flight.
May 15

Rain last night and during most of the morning, then turning cool.

Present at Griffey at 1730, at Dunn from 1735 to 1900.

TG 16: Nest is empty.
TD 114: Not found.
TD 120: Nest looks ok from below.
TD 121: Not seen.
TD 116: No developments.
TD 122: Egg 4, so there are 6 eggs. Female on on 3 visits, so I flush her off; very tame.

TD 117: No egg. I add the most recently taken Dll5 egg to my other introductions, so there are 3.

TD 123: Female on 4 eggs. See a male I think is MD123-X.
TD 118: Egg 1 and a cowbird egg are only ones present.
TD 119: I'm still checking the nest; no egg. See MD119, probably in an encounter with MD115.

TD 124: D12HF flies off the nest and gives a distraction display, so I go on. She flies/yards in her display.

TD 115: Nest empty; I had left 1 egg. See MD115.

Idea: How many mates has a male PW in the average lifetime?
May 16

Rain most of the day after much rain last night. Present at Grif-
rey at 1400, at Dunn from 1405 to 1515.

TG 16: A new egg is present. I see MD16.

TD 114: Songs E of the path.

TD 120: No change.

TD 121: No information.

TD 116: Not seen.

TD 122: Female on 6 eggs, the same ones as yesterday.

TD 117: Egg 1, so 4 are present.

TD 123: Incubation.

TD 118: Egg 3 (so 1 cowbird and 2 PW eggs).

TD 119: Water standing in empty nest.

TD 124: Female not on; eggs may be cold to my touch.

TD 115: No eggs, so nest has failed.
May 17

Cloudy and raining until 0730 after rain during much of the night. Present at Dunn from 0930 to 1000, from 1015 to 1200, and from 1700 to 1730, at Griffey at 1005.

TG 16: Still 1 egg, wet and cold and surely deserted.
TD 114: Not seen.
TD 120: Climb to nest; it contains only a cowbird egg and has surely failed.

TD 117: Egg 2, the female on at 1030. I measure egg 1 at 15.7 x 12.5 and egg 2 at 15.0 x 12.4. Five eggs are here, and this is true at 1715; cold. MD117 chatters nearby.

TD 121: Not seen.
TD 116: Find second nest, about 10' high in elms NE of sink. D116P is feeding in the tree row, about 15 yards away. No examination of nest.

TD 122: Incubation
TD 123: Not visited.
TD 118: Not visited.
TD 119: No developments.
TD 124: Nest contains 1 cowbird and 2 PW eggs, cold and wet; probably a cowbird failure.

TD 115: No developments.

Chat: See 2 chats 4 yards apart in a chase; one "chucks." Nest 1 (appendix) egg 1 was laid on 5/16.

Other notes: Find a new FS nest on far N area, on ground; it contains 4 young in their second day of life. [Young were present on 5/22,
and had left by 5/24.

IB nest which had egg 1 yesterday today has a cowbird egg and egg 2.

[On 5/20, either egg 2 or 3 was gone, and on 5/21 the nest was empty.]

All cowbird eggs found will be mentioned in these PW notes.
May 18

Clear and warm, very fine. Present at Dunn from 0930 to 1100 and from 1700 to 1730, at Griffey from 0915 to 0930.

TD 16: I remove the egg laid after failure, i.e., after desertion was assured. MG16 sings soft type-3's at the S end by the path.

TD 122: Six warm eggs.

TD 117: Egg 3, so there are six. Female off at 1007, on at 1715.

TD 123: Incubation. A male sings regular chatters to the E.

TD 118: Eggs 3 and 4, plus the first one measured and the cowbird egg; cold. A male chatters constantly in the NE corner of the N field.

TD 124: I get 1 Pw egg (unmarked by me) and 1 cowbird egg from the nest; it contains nothing else.

TD 119: Last visit; no egg.

TD 111: Find nest; egg 1 present.

TD 120: No information.

TD 121: See MD121.

TD 116: Egg 1; female on at 1045, off at 1715.

Idea: Do cowbirds ever take eggs just because they see them, are hungry, etc.?

Other notes: Find towhee nest on ground under the big mapé at the fence at the S end of the E field; 3 eggs. [Egg 4 on 5/19 and 4 eggs thereafter.

Check nest daily. On 5/31 at 12:00, there are 3 young and 1 egg with 2 small bumps. At 1730, this egg has hatched and the shells disposed of. Continue to check daily. On 6/9 young have left (4 were
here yesterday morning) by 1200. Nest has no foundation, is just a cup of grasses in the ground. No Protocalliphora.]
Partly cloudy with a N wind; warm only when sun is out. Present at Dunn from 1000 to 1115.

TD 114: Egg 2. Chatters high in N-S tree row.

TD 122: Incubating 6 eggs.

TD 117: Female on the same 6 eggs at 1030, off at 1055; so set is a 3-egg one.

TD 123: Four warm eggs.

TD 118: Egg 5, so nest contains 1 cowbird and 4 PW eggs; (egg 2 is gone). MD118 comes and chatters.

TD 116: Egg 2. I remove it and leave 1.

Other notes: A male Downy with his bill full of 2 to 4 big caterpillars beats them violently on a branch, flies around me a lot; must have young.
May 20

Cool and mostly sunny after rain much of the night from 1900 on.

Present at Dunn from 0845 to 1000.

TD 114: Egg 3. I bring all in and weigh them (putting substitutes in the nest while I have them).

TD 120: Not seen.

TD 121: Not visited.

TD 116: Egg 3; female on at 0915, off at 1000. I bring in eggs 1 and 3, replace them with 1 egg from Gl6F. MD116 sings N of the nest, in an area he probably has taken because of the nest's location at his territorial limit.

TD 122: Odd song heard.

TD 117: Six warm eggs.

TD 123: Incubation.

TD 118: Scare female off nest, which now has egg 6, so it holds 1 cowbird, and 5 PW eggs.

[I.e., I have found 5 eggs, laid between 5/14 and 5/20, 7 days. It is probable a sixth egg was laid on 5/15 and taken by a cowbird. If so, this would mean there were 2 clutches of 3 eggs with a day between them.

Chat: A fragment of nest [never completed] was built with a thin outer layer of grass on top of which is a layer of whole dead leaves.
May 21

Cool and clear. Present at Dunn from 1115 to 1215.

TD 114: Egg 4 (weighed); female not on at 1115 or 1140.

TD 120: No information.

TD 121: MD121 seen.

TD 116: Egg 4. I take it, leaving only G16F's egg.

TD 122: Nest has failed, with egg 2 (cold) remaining.

TD 123: D123F incubates 3 eggs; 1 is gone.

TD 117: Six warm eggs.

TD 118: D118F is on 4 PW eggs and 1 cowbird egg; a PW egg is missing.
May 22

Sunny and cool, with a strong NW wind. Present at Dunn from 0845 to 1000.

TD 114: Egg 5; female on at 0910, off at 1000. See male.

TD 121: See both D121's near the sycamore, where they seem interested in 2 FS's that are calling at me.

TD 122: Silence. Note that no female PW has ever nested in the sink.

TD 116: Nest has failed; Gl6F egg is present. Insipids at sink.

TD 117: Six warm eggs.

TD 123: A cowbird egg has been laid; 3 PW eggs; very interesting.

TD 118: Four PW eggs, 1 cowbird egg; warm.
May 23

Clear and cool. Present at Dunn from 1210 to 1310.

**TD 114**: Female on 5 eggs. Measure egg 5 as 16.3 x 12.9; it is more pointed in shape than the others.

**TD 116**: Nest 3 found at S end of sink; begun yesterday. DL16F builds at 1220 and male sings soft l-note "buzz buzz buzz buzz" songs nearby.

**TD 123**: Nest holds only a cold cowbird egg. Did the late cowbird take the 3 host eggs?

**TD 122**: DL22F gathers down for a high nest in the N woods edge; well advanced. MD122 drives MD121 from N of the sink. MD122 sings half-volume chatters and normal (not odd) insipids.

**TD 117**: Incubation.

Other notes: A newly discovered Cardinal nest holds only a cowbird egg with a large hole in it; yolk still soft.
May 24

Clear and moderate. Present at Dunn from 0915 to 1030.

**TD 125:** MD125 chatters on TD 39, N center.

**TD 114:** Incubation. MD114 sings in SW sycamores.

**TD 116:** Nest looks complete at 0950.

**TD 115:** MD115 is on TD 117, at 0935, 5 yards from the nest, on which D117F is sitting.

**TD 117:** See TD 115, above.

**TD 123:** No developments. I take the cowbird egg.

**TD 118:** Incubation of 1 cowbird and 4 chalky PW eggs. MD118 chatters nearby.

Other notes: A chat nest I'm following has had no eggs. Today it holds a cowbird egg with a fine puncture like a cowbird's. Did the cowbird remove a chat egg or puncture her own egg somehow after laying it?
May 25

Clear and cool. Present at I.U. (N end) from 0900 to 0930, at Dunn from 0930 to 1045.

I.U.: On IVN an unbanded male chatters constantly.

TD 114: Incubation. MD114 sings high insipids.

TD 120: Songs (insipids) and calls in NW corner of field.

TD 116: No egg.

TD 117: Six eggs, one of which is not developing. D117F returns, "tsips," scratches over her wing.

TD 121: See MD121, singing insipids.

Other notes: Find a fresh FS egg in a plowed field on new Hway 37.

See 3 1/2' racer on ground. Find a 4 1/2' keeled snake skin at 5' in a tree.
May 26

Cool and cloudy with 1 or 2 very brief sunny spells. Present at Dunn from 1900 to 1930.

TD 114: Incubation.

TD 120: Chatters.

TD 121: See and hear male.

TD 116: Egg 1. I take it, put in another.

TD 122: MD122 sings his odd song.

TD 117: Incubation.
May 27

Cloudy all day with a fine rain at times, especially in the afternoon. Present at Dunn from 1530 to 1630.

**TD 114:** Incubation.

**TD 120:** Song.

**TD 121:** Song.

**TD 116:** Still only 1 egg, the one I introduced.

**TD 122:** Odd songs.

**TD 117:** Incubation; 6 eggs.

**TD 118:** A second cowbird egg is here and all but the other cowbird egg and 1 unmarked Pw egg are gone. This is a late laying apparently leading to a heavy raid on host eggs. Pw egg is 15.9 x 12.0. The cowbird eggs don't look alike, are different sizes. MD118 comes and "checks" (at me?) 8 to 10 yards from the nest. The eggs are cold.

Other notes: FS nest found, with 2 fresh eggs; at 4" in grass and dead, fallen weeds.

A BS sings a lot at 1530 in middle of the E field. I have heard one only once before here this year.
May 28

Sultry after a little rain and loud thunder until 0900. Present at Dunn from 1050 to 1220.

TD 114: Incubation. The male sings in the wooded field.

TD 122: Female on at 1115. MDL22 sings chatters, his odd songs, and a "bee buzz" song which falls in pitch at the buzz notes.

TD 117: Female on 6 eggs, 5 still developing, I'd say.

TD 116: A new PW egg (egg 3, presumably) and 2 cowbird eggs, plus the egg I substituted. I take egg 3.

Blue-wings: There are more B-wgs this year, but the species is not conspicuous. I'm going to note locations of songs, which aren't frequent: One at N end of N field, one near tulips at E center of N field. [I'd guess there were 5 or 6 in the N field in 1963.]
May 29

Cloudy and threatening most of the day, clearing a little at times. Present at Dunn from 1030 to 1300.

Far NW: I cover the whole area. No PW's.

TD 125: Find the nest, at 6 1/2' and well concealed in Japanese honeysuckle, covering a 7' sugar maple. Three PW eggs, 1 cowbird egg. D125F is unbanded.

TD 115: MD115 is with an unbanded female, flutters once a distance of 15'.

TD 124: A male chatters often by SE fence; not seen, so could be any male.

TD 116: Nest unchanged, [failed]. One cowbird egg is punctured.

TD 117: Incubation of 5 eggs; 1 developing egg is gone.

A second, bright female is here, D117F(B). The male watches her building a fully developed unpadded shell. Chatters.

TD 122: Female on.

TD 111: Female incubating 5 eggs.

Blue-wings: Find a brood of newly fledged young at 1130, in N field, NW center of it, 30 yards N of Dl23F's first nest. I hear at least 3 young, catch one as it sits at 1 1/2'. No cowbird young heard. The bird I get can fly 1'. Both adults get very excited, display much as PW's do but tilting forward a little more often, perhaps. The young do not react to adults' calls and keep right on calling themselves.

Other notes: A fledgling FS in E field has a 1" tail and flies strongly.

Tufted Titmouse fledgling with a 2" tail seen.
WeV nest found with 3 WeV eggs and 1 very recently hatched cowbird.

[Only 1 WeV egg remained next day.]
May 30

Clear and fresh, with a light N wind. Present at Dunn from 0945 to 1130.

**TD 114**: Incubation. MD114 in TD 8 clump.

**TD 116**: Search for D116F; no luck. Only 1 or 2 songs at a time, with pauses of 20 or 30 minutes. MD116 once lands at 20' in a tulip on the W side of the field and sits apparently tensely and observantly for 1 1/2 minutes with little or no movement and no sound. I never see the cause of this.

**TD 122**: Incubation. One series of chatters.

**TD 117**: D117F(A)'s nest has failed and looks as though something had pecked at it. I find a fragment on the E side of the field, at 7'; it looks old; [no further development].

Female (B) is building.

**Chat**: See a fast chase for at least 20 yards, out of sight to the ground. After 2 seconds one seems to jump up a few inches. One flies in a very slow display flight with much bouncing, covers 10 yards and goes up to 18'. The other, probably less bright, sits quietly at 2' for 30 seconds, goes on about its business (i.e., doesn't leave).

**Blue-wings**: Song at S end of N field.

**Other notes**: A female GF dismantles a 1962 nest 10' high, but doesn't take the material anywhere, drops it.

FS adult feeds a second adult. Find a nest with 1 egg (not near the foregoing pair), at 5 1/2' in an 8' haw. [On 6/1, 3 eggs, and on 6/13, 3 young about 24 hours old.] Find a nest with 4 incubated eggs, at 6", in dry weed stems. [By 6/6, it has failed without evidence.]
May 31

Clear and cool, turning hot. Present at Dunn from 1100 to 1230 and at 1730.

**TD 114**: Incubation, 5 eggs. MD114 chatters in the wooded field at 1730.

**TD 116**: Nest 4 found, a full shell in elms SE of the sink. Note that this is not near MD116's observation site of yesterday. D116F is building and MD116 is in the nest tree clump 2 or 3 times, only 8' above and 10' to 1 side of it. Insipids.

**TD 122**: Incubation.

**TD 125**: At 1215 there are 3 young PW's, 1 cowbird. All look as if they hatched yesterday.

*Idea*: How many successful females that returned the following year had also molted on the area? I think maybe all but D110F(A) had; I can think of 3 that had. Maybe females return simply to their molting site without regard to anything else. [D110F(A) did molt on area.]

*Other notes*: FS nest found at 6" in a rose-haw tangle; 4 incubated eggs.

Sparrow Hawk flies over E field.
June 1

Clear and hot, turning very sultry. Present at Dunn from 0900 to 1215 and from 1900 to 1930.

TD 114: I come to get eggs and weigh them just before hatching.

D114P(A) is on at 0903. At 0935 the sun shines right on the nest and at 0950 she is sheltering it with spread wings, bill open, her belly up off the cavity, her feet in the cavity presumably touching about where they rest during normal incubation. I substitute FS eggs for hers and weigh them, having finally to scare her off the nest after 115 minutes of waiting (probably because of the heat). I flush her again to replace her eggs. Egg 1 has a 1.5 x 1 mm. pipped spot. Egg 3 has a tiny inward dent. The others are unpipped at 1115.

Meanwhile, MD114 sings insipids and "bee buzzes" from 0915 on in the wooded field, where he sang last night. I find a female working on an unpadded, well-developed shell. Very shy. MD114 stays close to nest tree, fairly high.

TD 116: Nest complete at 1030.

TD 117: Nest (B) completed. I put hoop net up.
June 2

Cloudy, humid, with a light afternoon rain. Present at Dunn from 0815 to 0900 and at 2000.

TD 116: Egg 1. Dll6F sees me at nest.

TD 122: Incubation.

TD 114: Dll4F(A) on 5 eggs at 0830. At 2000, nest has failed without evidence. Nest (B) progressing.

TD 125: At 0900, 1 cowbird and 3 PW nestlings.

Other notes: See a 4 1/2' pilot black snake.

TD 117: Egg 1 in nest (B).
June 3

Cloudy and sultry and threatening to rain; it may have rained last night. Present at Dunn from 0915 to 1200.

**TD 114:** Female (A) not seen. Nest (B) complete but with lining not very tight at 0915. Male not seen.

**TD 120:** Insipids and buzzes in mid-field.

**TD 116:** Egg 2 and a cowbird egg, plus egg 1. I put a FW egg in and remove the 2 D101 eggs. (I’m going to see how many nests D116F will build and get data on as many eggs as possible.)

**TD 117:** Egg 2. I have had a hoop up here, and now I try to catch the female. At 1110 she comes to the nest and I get her. She is bright, has a full incubation patch (which is what I wanted to see). Right outer rectrix is 15 mm. short, the next 10 mm. short. I band her 64-J542-R, Ray 0 Ray 0 YaR-L. When released she works hard to remove the bands.

**TD 122:** Incubation. Frequent chatters.

**TD 125:** At 1200, 3 FW’s are still present with the cowbird.

**Blue-wings:** A male sings SE of the gun trees. [This male seemed to range S to the N end of the elm thicket N of the sink.] A male on TD 122 in the E field sings NW of the sink.

**Chat:** See a bird carrying food on TD 116. Analyze 2 failed nests. In one, the base is a very large number of whole maple and elm leaves, with the rim made of long pieces of broom sedge apparently wound around it at the time the leaves were put in. Then there is a rim of grape bark inside this. A layer of fine grass forms a lining cup. The second is exactly the same except that the grape bark forms a thin cup or hemisphere, not just a ring.
June 4

Cloudy and sultry, with thunder all afternoon and a heavy rain late in the afternoon. Present at Dunn from 0645 to 0730.

**TD 125:** At 0700 the nest holds 3 young PW's and the cowbird. The warblers seem to be in good shape and their heads are in as favorable positions to be fed as is the cowbird's. But it's very crowded.

**TD 114:** Egg 1 in nest (B).

**TD 116:** Only the cowbird egg is present; the nest has failed.

**TD 117:** Egg 3. All eggs have big (5 x 2.5 mm.) light brown blotches.

**TD 122:** Incubation.
June 5

Sunny but very humid until a storm gathers and breaks, from 1300 to 1530. Present at Dunn from 0930 to 1230.

TD 125: Only 1 Pw is left at 1000, with the cowbird. One dead Pw is under the nest, with some ant damage. It probably fell out yesterday evening. It seems clear it would have lived, but there simply wasn’t room. MD125 gives a big distraction display. On a perch his body-tail profile is . His wings often don’t rest above the horizontal in their fanning, are left extended and fanned downward; sometimes there is a higher stroke.

TD 114: D114F(B) is on at 0930 and 0945. Hoop put up at 1015.

Egg 2. I visit nest at 1045 and 1100, find female on at 1100 and catch her. She snaps at me, squawks. Fully developed incubation patch, which was what I wanted to see. Band her 64-34543-L, WhaB1 O WhaB1 O YaR-R; she is old. She makes a great effort to remove her bands.

I am on TD 114 for 75 minutes and see no sign of female (A) or MD114.

TD 120: Frequent chatter-skid (half way between) songs. See Blue-wings, below.

TD 122: Incubation. MD122 sings his odd songs near the N-S tree row. He may be watching TD 116 and later TD 121. See TD 121, below.

TD 121: At 1215, MD121 sings and I watch. See a female with what looks like bright red plastic over silver-R, but this is the effect I have got several times from D121F’s RaYOS-R. MD121 watches
her as she seems to move around nest 1, and MD122 may be watching too. MD121 goes NE of sink, falls silent. I lose them.

I then find a disused FW nest in an elm S of the sycamore, surely built by some mate of MD121's. [No further developments. No reason to think MD121 ever had a second mate.]

**TD 116:** No change at nest; 1 cowbird egg. At 1145, D116F goes to nest 2, calls 2 or 3 sharp "checks" (perhaps at me), and takes a big billful of material from the nest. She goes 50 yards W, and I soon see her going to a nest, this time from the SW. This is nest 5, N of the sink in the dense elms, a high well-built shell, begun before today, probably yesterday. MD116 has sung insipids at about 40' in the E tree row several times this morning, and MD122 sings his odd songs to the E. MD116 may be watching the female, or guarding against MD122, or paying no attention to either.

**TD 117:** Nest (B) has egg 4. MD117 is 15-20 yards from the nest; calls nearby may be female (B).

**Blue-wings:** Several songs in the E field S of the sycamore. A B-wg joins a Kentucky and MD120 near the W maple to call and show nervousness; a Sparrow Hawk flies up and sits at 40' on one of the dead elms, but it goes after 1 1/2 minutes, without any thing's happening.

**Other notes:** See a 3 1/2' pilot black snake at 6'.

Find a FS nest near the successful nest on BV territory, at 8" between blackberry canes; 1 egg. [On 6/12, adult on 3 eggs.]
June 6

Hot and humid, with intermittent sunshine. Present at Dunn from 0900 to 1145 and at 1715.

TD 114: Egg 3 in nest (B); warm at 0900. I find MD114 singing 2 types of insipids (regular insipid and a 7-note rasping "buzz" song) high in the N end of the tree row by the wooded field [right above female A's current, unfound nest].

TD 121: I spend 1 hour trying to find the female seen yesterday. MD121 chatters constantly, never concentrates, ranges from the SE fence corner (once a little SW of it) to a little NE of the sink. The latter point is within 15 yards of the D122 nest 1; no resistance by MD122.

I find a [disused] nest by the path in a creeper-covered elm used by PW's for a nest in other years.

TD 122: Incubation. Once MD122 sings a series of odd songs as he forages.

TD 117: Female (B) on.

TD 116: D116F probably goes to the new nest.

TD 125: Nestlings present at 1730. Both adults call and MD125 gives a big display, sidling along a limb, I'm pretty sure putting 1 foot after another.

Blue-wings: Songs E of TD 122 sink and just N of TD 120 maple (i.e., different males).

Chat: A chat sings in the W center of the wooded field, a dense spot for chats.

Other notes: A 4' pilot black snake is spread through a 13' sassafras, 1' from the top.
Find a FS nest hollowed into the ground; 4 incubated eggs.

[On 6/7, 1 young and 3 eggs.]
June 7

Hot and humid but clear, finally changing and storming at night. Present at Dunn from 0900 to 1245 and at 2000.

**TD 114:** Nest (B) contains eggs 1-3, warm. D114F(B) is not on at 0900 or 1245. Find a fragment 15' high, near which MD114 chatters weakly at 0900; [no later developments].

**TD 121:** After 25 minutes of silence, MD121 sings a lot on the S half of the territory. D121F not seen.

**TD 116:** No eggs.

**TD 122:** Female on. MD122 sings various kinds of songs over the whole territory, once goes to within 10 yards of the nest.

**TD 117:** Female (B) on. See MD117.

**TD 123:** This male is near the ground hog hole and is much interested in the Blue-Golden-wing pair's calls. I also hear songs to the E that might be MD123-X.

**TD 125:** The nest is empty and disarranged at 2000. The male displays very intensively at me.

**TD 118:** See and hear this male.

**Blue-wings:** A male sings in the middle of the tree row between the N and far N fields.

In the N field by the ground hog hole (just S of it), a male B-wg carries food. He calls and a female Golden-wing appears. The two call and show alarm and after a 1 1/2-hour delay the male takes the food to a nest; he's carried the food the whole time. The female stays near, never carries food, once goes to within a few feet of the nest. MD123 comes and flies around but is utterly disregarded by the male,
even though once MDL23 is only 5 yards from the nest and 6" from the male. MDL23 calls at times, and a Yellowthroat, an IB, and a FS also come. At 1230 the nest contains 4 [really 5] large young, crouching and alert. I have to get very close to spot the nest.

Chat: A failed chat nest is built as usual; I'm impressed with the wetness of the leaves in it. Is this functional? An abandoned nest-beginning is a very thin grassy cup, a few leaves, and a fairly tight rim ring of grass and grape bark with a few pieces of grape running down into the bottom.
June 8

Cloudy after a heavy thunderstorm, clearing at 0815; then very hot and clear. Present at Dunn from 0730 to 1100.

TD 125: Put up a mist net at 0730 and catch both adults, after finding the young Pw. The cowbird is gone, undoubtedly got by a predator (because of its greater conspicuousness?), At 0800, the young is 17 yards in the grass. It can't fly.

Band the male 64-34544-R, Ray 0 plastic Y O Ya-R-L. The female is bright; 64-34545-L, plastic Y O Bla Wh 0 Ga-R-R. The fledgling is banded with metal bands: YOS(-46)-R, YOY-L.

TD 114: Female (B) incubates. Songs in S end of row.

TD 120: Song.

TD 121: MD2l sings by the sycamore.

TD 116: Egg 1.

TD 122: Songs.

TD 117: Female (B) incubates 4 eggs.

TD 123: Songs.

Blue-wings: I go to the Blue-Golden nest at 0915. All young have left. I put up a mist net and get the G-w immediately. She is in perfect plumage. I then catch a fledgling and using it get the male, also in perfect plumage. I next catch 4 more young. They are at heights of 2' to 4' and distances of 15 to 30 yards from the nest. They can fly 5 to 10 yards. After my first 10 minutes here, all call a rattling note steadily, paying little attention to me (although the last 2 caught become quiet when I am very close). I keep the parents until I have the young. Heard 1 B-wgsong shortly after I came up.
One young, 25 yards from nest, is injured in catching and must be collected. Weight 6.885 g. I inspect young with care; all look alike.

The nest spot is pretty grassy and sunny, with trees 20' high or so. The young have dispersed in all directions, probably in the directions of heavy growth rather than toward sunny areas.


A different B-wing sings by the gun trees.
June 9

Very hot and sultry, clear. Present at Dunn from 1000 to 1200.

TD 114: Female (B) at nest but not on at 1200; 3 eggs at 1000.

Songs by nest at 1200.

TD 120: Constant song.

TD 121: MD121 spends most time in E sycamore; faint type-8's for 2 or 3 minutes, later chatters.

TD 122: Female at nest. Regular song.

TD 117: Female (B) incubating. MD117 sings a lot in center of field.

TD 116: Egg 2; female on at 1040, 1115. I finally get the 2 eggs and put in as substitutes 2 FS eggs.

TD 123: Find a [disused] nest in mid-field, just N of the ground-hog hole. It is about 2 1/2' high.

Feeding: MD121 drops from 35' in his sycamore and feeds at 2' and 3' in dwarf sumac on the commonbeetle larvae from that plant; at 10' in an 18' tulip, in outer tips.

Blue-wings: The hybrid family is not seen or heard during some 30 minutes near the nest.

Details on the Blue-Golden nest: It is at the base of 2 little elms 1" thick at the ground and 6' tall, and a poison ivy vine 1/4" thick. Goldenrod and grasses surround it, and at 1100 the sun shines into the cavity; the ground must be touched by some sun all day.

Blackberries around. There are about 30 small elms in a 5 x 5-yard square around the nest, the highest 12'. The field is eroded upland.

The nest is shell-(scallop) shaped, deeper at the "back," the
rim pressed down at the front. The cavity is 3" across at this point, is 2 1/2" across, measured where the rim isn't depressed. Maximum depth is 2 1/2". The cup is lined with dry grasses (and axes of inflorescence), more pieces placed horizontally around the cup than vertically across it. Many leaves have been pressed into a foundation, mostly of American elm, with some white oak, black cherry, sugar maple, and beech; about 95 whole leaves. They are quite wet. Above them and between them and the lining are about 150 strips of stiff weed bark 2 to 8" long (the great majority about 4") and 3/16" to 1/4" wide, plus a few thin 1/16" strands an inch or so long. These are placed across and around the foundation at all angles and make quite a stiff cavity. Above this is a thin layer of stiff grasses and weed fibers (the latter more numerous than grasses) 3" to 9" long. In the cup are 3 or 4 elm leaves, the final surface. The lining is tightly made, i.e., stiff and fairly solid and consisting of 150 to 200 pieces; it is more rigid on bottom than on sides. No Protocalliphora.
June 10

Very hot and clear, clouding in the afternoon and blowing enough to cause wind damage at 1830, raining a little. Present at Dunn from 1000 to 1230.

**TD 114:** Nest (B) fails without evidence, may have just failed when the female was near it yesterday. MD114 sings irregularly over the whole territory, SW to the corner of the E field. Once he floats down on a banded female in the wooded field; I see only silver [but the spot was near female (A)’s current nest]. Much song in TD6 clump. [Female (B) never seen again.]

**TD 120:** Songs.

**TD 121:** MD121 sings type-8’s in the sycamore. A PW flies from the nearby sassafras clump SE to the woods, where I can see a nest at 30’ against a dead sycamore trunk covered by creeper. I never see a female near it, but once the male seems to watch it from some 10 to 20 yards away.

**TD 116:** Still 2 FS eggs. D116F flies up suddenly as I pull nest tree over to put a mirror up. She is 6 yards from it.

**TD 122:** Female on. Regular song.

**TD 117:** Female (B) on. Regular song.

**TD 123:** No sign of a PW N of TD 117.

**Blue-wings:** The Blue-Golden family is not found during 20 minutes. [Not found until further note, but I spent very little time this far N.]

An unbanded B-ng sings on TD 117 W of the N end of the E field.

**Other notes:** FS nest found on TD 114 at 1’ in a 3’ elm; 1 egg.

BS sings in NW part of E field.
June 11

Changeable and a little cooler after rain last night and bad winds.

Present at Dunn from 0930 to 1230 and from 1415 to 1440.

**TD 114:** MD114 is with a young female. I hear a few weak songs, see him flutter slowly 12 yards between 2 tree tops at 20' in the SW corner. Ten minutes later he "seeps" and flutters E of the E path. The female explores. Later the male chatters regularly, high in a SW sycamore. In the wooded field is an unbanded male, right where I saw the banded female yesterday. I see him twice during 4 minutes. Each time he calls "seeps" very faintly and hops around. Is he watching a female?

**TD 120:** Regular songs. Also see MD120 moving silently E of fence in low growth.

**TD 121:** No developments at the sycamore nest [none ever], except that I may see a FW near it. MD121 sings frequent weak type-B's, no chatters, in the E sycamore. He acts as if his female is in the laying period.

**TD 116:** Nest 5 is empty. Pair not seen.

**TD 122:** DL22F takes food to the nest.

**TD 117:** Female (B) incubates.

**Blue-wings:** A male sings in the N field elms just N of the sink.
June 12

Cool and cloudy until 1:00, when it clears and becomes fresh and pleasant. Present at Dunn from 0915 to 1100 and from 1130 to 1345.

TD 114: MD114 flutters both from high and low perches (level flight) in the SW corner. The young female (D114F(C)) is here, explores.

TD 120: Songs, including l insipid in mid-field.

TD 121: Faint and irregular insipids in the sycamore. Female not found.

TD 116: I finally find her nest six high in a sassafras by W woods edge. For a long time (40 minutes) the male is silent; then he sings chatters on the W half of the territory and goes high into the W woods. The nest is a full cup, probably in the second day.

TD 122: Song. D122F is not at nest [which had failed].

TD 117: Female (B) incubates.

Blue-wing: Song in the TD 116 projecting woods.

Other notes: I catch and band a fledgling Wood Thrush; its calls produce a big reaction from a Robin, in our woods.
June 13

Clear and fresh, but clouding and storming at about 1700. Present at Dunn from 1020 to 1220.

**TD 114:** MD114 chatters loudly by path in elms. He doesn't act as though he has a female building [but female (C) was building].

**TD 120:** Song.

**TD 121:** MD121 concentrates W of the path, sings 2 types of insipids, a rasping "bee buzz" and a step buzz with 2 or 3 high steps, then a series of buzzes. Hear "checks" near the high disused sycamore nest and watch it. While I'm watching a ReV goes to it and removes material from the bottom.

**TD 116:** Nest ok.

**TD 122:** No activity at nest, [which had failed]. MD122 sings short songs over the whole territory.

**TD 117:** Female (B) incubates.

**Other notes:** Hear a racer crawl away.

See a newly fledged towhee, which looks like a female or young IR.
June 14

Hot, clear, and fresh. Present at Dunn from 0900 to 1215.

TD 114: MD114 sings in W field and in high trees of Kerr meadow. D114F(C) is in the SW corner of the E field. Hear a call and find female (A) near the big sycamore W of the W tree row. She acts as if she is off a nest. I lose her here. [Her nest was far away, across the territory.] Note again that often a polygynous male has a very big territory.

TD 121: Nothing learned.

TD 116: Not visited.

TD 122: Frequent high faint insipids in the far NW corner. This song is without buzzes; there are 4 slow notes on the same pitch, 5 or 6 accelerated and rising, the last high and longer in duration. The female may be building [a fragment?] here, since MD122 never leaves the woods in the corner during 30 minutes.

Other notes: A FS copulates with a female at 0900 at 3 1/2' in berries. He starts to repeat but does not; wings 3/4 extended.
June 15

Sunny and cool, turning cloudy and humid after 1330 and thundering a good deal. Present at Dunn from 0900 to 1215.

**TD 122:** MD122 sings very slow chatters of half length, full volume, also 4-note buzzes. At 1030 I'm watching both D122's at N edge; not building, I'd say. At 1130, MD122 goes and shapes in a creeper-covered elm in the center of the field. He leaves in 40 seconds and the female comes 15 seconds later, stays 1 minute. Part of this minute MD122 is singing insipids (4 or 5) in a tree 10' from the top. When she leaves, he goes to the site and hops into and all around the cluster of twigs. She returns; they are going over the spot together, quietly and with no sign of excitement. Three minutes later I can see D122F working webs into place. I'd judge she has just this minute begun to build a nest.

**TD 114:** Because of MD114's songs there, I go to Kerr's meadow and find a complete empty nest [of D114F(C)] in the E fence row of the meadow, 50 yards S of the E field line.

**TD 121:** Nothing learned. MD121 stays mostly on the W part.

**TD 116:** Nest looks ok. MD116 sings high in E tree row, opposite nest.

**TD 117:** Four warm eggs in nest (B).

**Blue-wings:** A B-Wg acts alarmed in NE part of E field. Another is opposite the E fence corner, near the TD 121 sycamore. B-Wg calls are like PW calls, but louder and sharper.

**Other notes:** Find FS nest at 3' in 12' cedar, nest in twigs, etc., only 8" within the periphery of leaves; 4 fresh eggs. [on 6/30, 3 young
about 6 days old. On 7/2, young are out; adults take food. No Protocalliphora.

A BS sings once at 1100 by E fence corner of E field.
June 16

Cloudy and wet after a steady rain last night; clearing and cool at mid-day. Present at Dunn from 0700 to 0745 and at 1945.

**TD 121**: MD121 is in E fence corner.

**TD 117**: At 0745 there are 4 warm eggs; at 1945, 4 nestlings.

**TD 114**: Nest (C) has no egg.

**TD 122**: Nest is intact, but I don't approach it.

Other notes: BS sings in center of E field.

June 17

Clear and pleasant. Present at Dunn from 1300 to 1340 and at 1930.

**TD 121**: Insipids on W part of territory.

**TD 122**: At 1320, the nest has been torn out of the site; part hangs in the tree.

**TD 114**: No eggs in nest (C) at 1930.
June 18

Pleasant and clear with a very slight haze. Present at Dunn from 0900 to 1215, at 1730 and at 2020.

TD 114: Nest (C) has egg 1. The female is on at 0916. I put a hoop up and get her at 1100, but she escapes through a hole. MD114 sings over all of TD 114, N into mid-field. I see female (C) later.

TD 121: At 1000, MD121 takes a caterpillar to a nest in the sassafras clump near the sycamore; he leaves without the food. I scare the female off the nest there and find that she is D121F. [This turned out to be a case of anticipatory food bringing.] This the sassafras from which a FW flew on 6/10.

TD 120: Songs on SW part of the territory.

TD 116: I cut off the nest branch at 1200, to try to get the eggs, but fail. Three eggs fall out and break. The female was incubating.

TD 122: The male sings from the sink to the NE corner. I don't see the female. In the evening, many odd songs NE of the sink.

TD 117: Four young.

Feeding: MD120 at 1100 feeds at 17' in a 20' tulip, then at 18' in the same tree. At 1115, D114F(C) feeds at 13' in a 15' sassafras.
June 19

Cool and dewy with some clouds at dawn; later hot and sunny.

Present at Dunn from 0500 to 0730, from 0800 to 1000, and from 1015 to 1130.

**TD 114:** I arrive at 0510 but female (C) never comes to the nest. I wait till 0600 and see nothing; so I scared the female too much yesterday. At 1015 there is a cowbird egg, which wasn't here yesterday at 1730 and was surely laid before 0510 today.

I search for a female on TD 114 and find none. At the path through the wooded field, by the entrance, is a nest, high, empty, probably old. It is overlooked by the S end of the tree row.

**MD114** sings frequently over his whole territory at mid-morning. At 1000 I see a male approaching the point (wooded field) where MD114 is singing. The male seems to go on.

**TD 120:** Frequent song toward S part of TD 120.

**TD 121:** Nothing learned.

**TD 116:** At 0820, MD116 is on TD 122 near the sink; silent. At 1030 he sings frequent faint insipids for a long time. At 1100 I find D116F building nest 7 in the N end of the sink; it is a saddle, surely begun after noon yesterday (which is about when I sawed the nest down).

**TD 122:** MD122 sings chatters a lot N of the sink. I see no female.

**TD 117:** In nest (B) are 4 young.

Idea: The less attentive a male is to his mates, the higher his chances to be noticeable and to attract new mates; but are his chances of producing young lower?
Feeding: MD117 at 0610 feeds 3 times in 2 minutes or more at 23' in a 30' walnut in the woods edge.

Other notes: Find a FS nest at 8' in a rose; 3 slightly incubated eggs.

A full-grown young cowbird is in our woods. A cowbird egg has been laid in the BV nest, which was incomplete and deserted on 6/14, since 6/15.

A BS sings 3 songs at 1115 by the E fence corner in the E field.
June 20

Cloudy and cool all day, with a light rain at mid-morning and a downpour from 1500 to 1530. Present at Dunn from 0800 to 0815 and from 1545 to 1730.

TD 114: Female (C)'s nest is unchanged. A few insipids, step-buzzes, and many chatters in wooded field. Once in normal flight MD114 sings, his head a little back.

TD 121: D121F seen near nest. MD121 sings in sink.

TD 122: D122F is carrying material into the E woods while MD122 sings high in the edge. He permits MD121 to sing in the sink.

TD 117: Four young in nest (B).

Idea: Re white in tail of FW, this lets me identify a FW at a long distance. Why shouldn't it do the same for a FW? What associates of FW's also have white?

Other Notes: At 1545 there is a burst of frequent BS songs in E field near E fence corner.
June 21

Fresh, clear, breezy. Present at Dunn from 0900 to 1230.

TD 117: Nest (B) is tilted $10^\circ$ to the S by the weight of the birds. They sit facing N, 3 on the bottom and one on top of them as a second layer. I band them plastic yellow over S-R, metal color over plastic BlaWh-L. 64-34557 is R; -58 is Y; -59 is G; -60 is bB.

MD117 calls "tsip" at me while carrying food. A male B-wgcomes when he calls. D117F(B) was on the nest. Find an empty (old) nest by gun trees. Is it female (A)'s?

TD 116: Nest 7 is nearly or entirely lined at 1100. See below.

TD 114: MD114 chatters regularly on his entire territory except Kerr's. At 1215 he is following a calling PW in mid-field (an area unused by any female this year). The caller goes NE toward the D121 nest in fast moves and MD121 follows. It is probably D120F. They are near the nest.

TD 120: At 0930 I see D120F with nest material. She is shy, sits 5 minutes even after I have backed up a great distance (half across E field). At 1200 I see her working on a small saddle in a tulip. MD120 sings faint insipids at 40' in nearby tree row treetops. Note his selecting the highest perches available.

TD 121: See TD 114, above. Female on at 1030.

TD 116: Nest is probably complete at 1200. See TD116, above.

TD 122: D122F is carrying grass to a nest 40 to 45' high and 30 yards into the woods. The trees are all very high and dense, but note that the nest tree is sassafras and is covered with Virginia creeper. MD122 at 1030 is singing loud buzz songs nearby.
Feeding: At 1030, DL22F gets a 1 1/2" caterpillar at 2' in a 4' sumac.

Blue-wings: A male B-wg flies up when the DL7's call as I band their young.

Other notes: I stand near a 12' sassafras in mid-field and after a minute a chipmunk jumps out, from about 11' high.

A cowbird egg was laid today in an IB nest which holds 2 eggs and has been under incubation since 6/15.
June 22

Clear and fresh with a S breeze. Present at Dunn from 0945 to 1145.

**TD 120:** At 0950 I put a mounted female cowbird at 7' in an elm 3 yards from the nest tree and 4' from the nest itself. Within 1 minute the female comes, without material. She flips her tail, perches 1 second 5 yards from the cowbird, then flies straight at it but veers off when about 3' away. Then she lands in the nest tree opposite and below the nest (i.e., not near it) and sits and hops there for 5 minutes flipping her tail, which she carries a little spread and depressed. I hear nothing but I am 35 yards away from her. She continues to watch the cowbird, hops a little, pays no attention to me. After 6 minutes I remove the mount; she falls back silently as I come up. Nest still lacks walls of full height. She is building at 1100.

**TD 121:** Regular chatters. Female on.

**TD 122:** Silence from 1000 to 1020. MD116 is N of the sink at 1015, in the top of a 20' dogwood and looking around. After 1 faint song he goes W to his territory.

**TD 116:** See TD 122, above. At 1100, nest shows more work since yesterday, is complete.

**TD 117:** Nest (B) is more tilted; exposed to sun, so that at 1050, 2 young have their bills open. The nest found yesterday shows no developments [and never did].

**TD 114:** MD114 sings many chatters in TD 8 clump, may be watching DL20F.
June 23

Clear, hot, and fresh. Present at IU (S end) from 0900 to 1015, at Dunn from 1030 to 1215.

I.U. (S end): A bright unbanded pair are on old T66. Find a disused nest.

There are no other PW's on this end. V is nearly closed over by trees, except for a 30 x 50 yard area on the S part. The rest is grown up in pines and locusts, etc., now 20 to 30' tall, with 3 x 5 yard openings in them. Kentucky Warblers, towhees, and Cardinals are probably the typical nesting birds. At low levels the vegetation is very dense but shading-out is not much advanced.

TD 114: Loud regular chatters in SW corner. I find a thin shell at 20' against a dead sycamore stub covered with creeper. [Nothing more ever happened re this fragment.]

TD 120: Nest looks complete. Faint type-8's nearby.

TD 121: No information.

TD 122: One song at sink.

TD 116: Egg 1; female on at 1130. It is quite round. MD116 sings frequent insipids at the very treetops in the E row.

Other notes: A RhW flycatches 2 times S of V at I.U., carries the food into the woods. One-half mile to the E Rinehart caught a RhW last evening. They are apparently nesting in small numbers over all of Monroe Co. I have seen several in Greene Co.
June 24

Hot, fresh, and clear. Present at Dunn from 1645 to 1800.

TD 121: No information.

TD 117: Nest (B) is on its side but in place, at 1840. No PW's around; nothing happens when I hiss. [The nest had failed.]

TD 116: Egg 2. I take egg 1, put in a substitute PW egg.

TD 120: Nest ok.

Other notes: A BV nest has a cowbird egg and egg 3 today; egg 1 is gone.

A FS nest is found at 15" in blackberries, supported by 3 stems; there are 3 incubated eggs.

June 25

Hot and clear. Present at Dunn from 0900 to 1100.

TD 114: No information.

TD 120: Egg 1. I put 4 FS eggs in nest with egg 1.

TD 121: Female on.

TD 116: Egg 3. At 1030 the male is at or very near the nest, the female not there.

TD 122: Irregular songs; some are his odd ones.

TD 117: The pair are in mid-field E of the gun trees. The male flutters, moves a lot, once sings in flight.
June 26

Very hot and clear. Present at Dunn from 0900 to 1130.

TD 120: Egg 2, plus 4 FS eggs.

TD 122: MD122 sings his odd song.

TD 116: D116F is on eggs 1-3 at 0915. I get them at 1000; she is off and doesn't see me.

TD 114: Frequent insipids in mid-field.

TD 121: Female on.

TD 117: I spend 1 hour looking for signs of building; none seen. I see the female once. The male after a long silence sings a few chatter, weak and 1/3 normal length, W of TD 122 tree row.

Chat: See a chat's display flight to 60'.

June 27

Very hot and sunny. Present at Dunn from 0900 to 1215.

TD 114: Insipids occasionally at the S end of the E field. I see nothing.

TD 120: Egg 3; nest holds 7 eggs.

TD 121: Female on.

TD 116: Pair together in elms N of sink; no building seen. For a while MD116 sings insipids high in E tree row, then in W woods edge.

TD 117: Long unsuccessful search for the D117's.

Other notes: A FS has some of its tail gone, apparently is molting.

At 1215 a BS sings in middle of E field.
June 28

Very hot and sultry, threatening but not raining in the afternoon. Present at Dunn from 0830 to 1145.

TD 120: At 0845 there are 6 eggs, 3 FS and 3 PW, and 1 FS egg has hatched (presumably without incubation and because it is so hot). The egg shell is gone, but I see no sign of a PW nearby. Songs to N.

TD 121: MD121 "tsips" in alarm when I stand near his nest. I scared both D121's the day I found the nest.

TD 116: Dll6F at 0900 is building nest 8, high in the W woods edge. MDll6 spends nearly all his time singing insipids in the E tree row, completely across the territory. The nest is a finished-looking shell, was clearly begun yesterday. Dll6F gathers some material W of the W woods edge.

TD 122: Frequent songs, some odd. I have quit trying to follow this territory because the nest is so high.

TD 117: Dll7F(B) is found building a nearly fully padded shell far NW of her last nest. MDll7 sings near her, high. They are NW of the old TD 123 line, e.g., NW of the first Dl23 nest.

Idea: Are snakes mostly in the woods or heavier growth in mid- and late summer? Do they get too hot or dry in the fields?

Other notes: A chat nest that had egg 1 removed on 6/24 has received a cowbird egg yesterday or today.
June 29

Very hot and clear after a cloudy dawn. Present at Dunn from 0930 to 1200.

TD 120: Two young FS's and 5 eggs at 0930. I take the larger FS (which is very small) to use it, return it at 1200. I strongly believe the male alone is feeding the young. At 1200 he is singing insipids in the tree row, acting as if D120F is building.

TD 114: Not found.

TD 116: Building. The female flies to the nest and the male flies on beyond her to the big trees to the S. At noon he chatters and sings both insipids and 5-note buzzes.

TD 117: Nest looks complete at 1000, but I introduce the young FS from TD 120 and sit to watch. The male sang far to the S when I came up.

At 1020, female (B) brings grass to the rim and M117 chatters nearby. She looks in for 30-40 seconds and puts her bill in but probably does not put the grass in. She then enters, sits, settles and shapes the cavity, works on the rim. After 1 minute she sees me. (I'm hidden 20 yards away.) In 30 seconds she comes toward me, "tsips" 10 times in 2 minutes in my general vicinity. The male is singing nearby and some "tsips" and once a "seep" follow his songs. At 1034 there is a long series of loud chatters near the nest; she probably "seeps" after some. I go at 1040 because she's aware of me.

At 1130 I return and hide. At 1143 female (B) brings nest material, for 2 minutes goes through normal building and shaping. It
is hot, and her bill is open part of the time. She goes and at 1150 I take the young FS and leave. She ignored it. MD121 moves a lot, sings over the whole territory.

**TD 122:** Hear the male's odd songs.

**TD 121:** MD121 "tsips" at me at the nest.

**Other notes:** Kingbird in E field today and yesterday.
June 30

Very hot and sunny, with much thunder in the afternoon and a slight shower from 1900 to 1915. Present at Dunn from 1000 to 1200, at 1300, and from 1815 to 1830.

**TD 120:** Nest has failed, the 2 FS's dying and the 5 eggs remaining. I doubt if D12OF ever sat or tended.

MD120 acts as if he has a building female and I find a large nest [fragment or remnant]. I watch it, see D12OF go to a high walnut site and appear to shape. Nothing is there, and she doesn’t return. The male sings in bursts and frequently, moves a lot. The female may have quit building after starting. The male's behavior could suggest that he is not aware of the state of building and is singing to stay in touch.

**TD 114:** Song in SW corner.

**TD 121:** D121F takes food to nest.

**TD 116:** Nest ok.

**TD 122:** See and hear MD122.

**TD 117:** Egg 1 in nest (B). I introduce 4 FW eggs, 3 of them alive.

Other notes: See a Robin anting on an ant hill in our front yard.

FS nest found yesterday at 4' in a 5 1/2' haw, 2 eggs, TD 120, today has 3 eggs. [On 7/9, nest has failed without evidence.] In TD 114 find a FS nest at 2' against a 7' maple; 4 incubated eggs.

A Kentucky Warbler shows great alarm at me near the TD 120 W maple. It did so yesterday too.
July 1

Very hot and humid, with clouds at noon and a little rain at 1300. Present at Dunn from 0830 to 1030.

TD 121: DL21F is on and MD121 has food.

TD 116: MD116 sings frequent insipids on his usual 40' cherry perch in the E row.

TD 114: Not found.

TD 120: MD 120 sings high insipids in the tree row, as yesterday. A second male (no bands) comes and the two have a 2-minute chase at heights of 4 to 25'. They weave through the tree row and edge, always silently. Sometimes the pursued bird goes slowly, its wings beating shallowly I think. Once I see an open bill. Both land at times for just a second. Is the other male MD124?

Find the present nest [as I learn later] at 15' in the tree row, just where the male has sung.

TD 122: Song.

TD 117: Egg 2; female on the 6 eggs at 1000.

Idea: Nest heights on this tract have been nearer the old I.U. farm heights, at least since 1961.

Blue-wings: I find the banded male feeding hybrid young in the W woods edge between the gun trees and the DL17 (S) nest, about 150 yards from the nest of the hybrids. One young is S-R; it or another is SOY-L, S-R. The male is silent and the young call(s) thin "zeep" notes in series of 1 to 10 at a time; these sound like the buzzes in the typical B-wg second song. The male is tending and the young act(s) as if also catching food for self. I think there are 2 young because
I seem to see differences in belly color. One is gray, the other yellow. Both have a black line through the eye, messy nape, the beginnings of 2 white wing bars, and a generally yellow cast or wash; the foreheads are yellow. The male may be molting a little on the nape.

Find a towhee nest at 20" in a 4 1/2' elm, the nest well below high field cover; 3 fresh eggs. [On 7/2, nest has failed without evidence.]
July 2

Hot and sultry, clouding and with a short shower at 1700. Present at Dunn from 0900 to 1115.

**TD 114:** Female (A) has brought off a brood. The nest was surely in the N end of the wooded field tree row, or just N of there in the woods. Both adults call and display, and I hear 3 or 4 young at 1030. I catch one at 5', and band it 64-34563 over bB-L, bB0bB-R.

**TD 120:** Songs. Nest ok. See TD 116, below.

**TD 121:** MD121 is near nest, calls at me.

**TD 116:** DL16F is on at 0930. MD116 is S of the E-W fence, singing in what used to be his dead elm, is now MD120's.

**TD 122:** Songs.

**TD 117:** Egg 3 in nest (B), so there are 7 PW eggs. Female on at my first visit. Constant songs from mid-field; see male singing.
July 3

Clear and pleasant. Present at Dunn from 0900 to 1100.

TD 114: MD114 calls at me at the place I caught the fledgling.

TD 120: Nest looks ok.

TD 121: Both adults at and near nest.

TD 116: Female on at 0930.

TD 122: Songs.

TD 117: Nest unchanged; 7 eggs; set was 3-egg. Incubation.

MD117 sings over whole territory.

Blue-wing: See the banded B-wg and a hybrid young about 20 yards N of the 7/1 location.
July 4

Clear and fresh, with a cloudy interval from 1200 to 1430. Present at Dunn from 1000-1145.

TD 120: Nest looks ok. MD120 sings at mid-field.

TD 121: MD121 sings near nest.

TD 116: I saw down nest tree when female is off nest. There were 3 eggs; I get 2.

TD 117: Female (♀) on nest. MD117 sings loudly on all TD 117, once near nest.

TD 123: I have been within earshot of this territory much of the time recently and have heard nothing.
July 5

Clear and moderate. Present at Dunn from 0900 to 1100.

**TD 114:** Both adults call at me near the fork in the path.

**TD 120:** D120F is at the nest for the first time.

**TD 121:** Nest has failed. MD121F sings near the sink. A banded female (no details seen) is near D121F's first nest, and MD121F flies up to within 6' of her. They go SE.

**TD 116:** Nest 9 found at 1000, when D116F has a small saddle SW of the sink. She is dismantling her third nest to get material, the second time I've definitely seen her do this and probably at least the third time she's done it. MD116F sings only 2 or 3 times, at the tops of the projecting trees.

**TD 122:** Songs.

**TD 117:** Not visited.

Idea: Re return of females in succeeding years, you might define "return" 1 way to test success hypothesis , another way for the "dimorphic" hypothesis.

Other notes: A female Scarlet Tanager has food. A 2-note "tick-tack" sound, like an adult Summer Tanager's call, comes from nearby and must be a young.

See a mockingbird fly N into E field.

Find 2 new FS nests [1 already inactive], both with 1 egg. One is at 2' in 4' haw; one at 2 1/2' in 5' elm.
July 6

Rains steadily from 0500 to 0800, intermittently all day. Present at Dunn from 1030 to 1130.

TD 120: Female on.

TD 121: MD121 sings S of the sycamore, then frequently (step-buzzes) high in it.

TD 116: D116F builds in a misty rain at 1030; nest looks full size.

TD 122: Odd songs heard.

TD 117: Six of the 7 eggs are developing; 1 dead when inserted.

Blue-wing: The banded male tends SOY-L, Y-R 75 yards S of the nest in the open field. The young is neat; its breast is gray, perhaps with a yellow cast; its forehead is lemon-yellow. It calls a 2-note loud "zt zt" reminding me of the B-wg's second song.
July 7

Cloudy and humid, clearing at 1230. Present at Dunn from 1000 to 1300.

TD 114: No information.
TD 120: D120F flushes off the nest at my approach; this odd because the nest is high.
TD 121: Not a trace of the D121's in 1 hour.
TD 116: Nest looks complete, but I don't go close.
TD 122: Odd songs.
TD 117: Constant chatters. I don't go to nest.
TD 123: Not a sound in 1 1/2 hours.

Blue-wings: I attempt to collect a hybrid and fail. I see two up close (just possibly the same one twice). They are silent, at heights of 4' to 7', sit tight and permit approach; once one sits"on its heels." The spots are 15 and 40 yards from the nest in fairly dense tree stands in mid-field. Both are neat. One has a gray belly. The second's noticeable character is a well-defined lemony-gold wing patch with a diagonal feather texture. No adults. [These birds were not seen again.]

Chat: See a 40' high song flight.

Other notes: See a pair of GF's.

Find a new FS nest at 1 1/2' in a 3' haw; 3 incubated eggs.
Clear and fresh. Present at Dunn from 0845 to 1030.

**TD 117:** Very regular chatters during 1 hour over all of TD 117.

Incubation.

**TD 121:** Regular songs and no sign of a female.

**TD 122:** Odd songs heard.

**TD 120:** Incubation. Songs.

**TD 114:** Not seen.

**TD 116:** No egg yet.

**Feeding:** I record all heights at which I first see birds and all heights of birds that are feeding:

- **MD 117** at 35', in 36' cherry.
- **MD 120**, at 45', in 50' hackberry; at 35' in 45' walnut.
- **MD 121**, at 2' to 4' in 4' elms; at 23' in top of a sassafras; at 20' in a 25' sassafras; at 1 1/2' in a 3' sumac; at 1 1/2' in a different 3' sumac 20 yards away.

**Other notes:** Found a FS nest at 15'' in a 3' elm; 1 brand new young, 2 eggs.
Fresh and clear. Present at Dunn from 0900 to 1100.

**TD 120:** Incubation.

**TD 114:** Not found.

**TD 121:** Occasional song. No sign of a female.

**TD 116:** Egg 1; rounded and with wreath near middle; female on at 0900, off at 0910. MD116 sings a lot.

**TD 122:** Odd songs once or twice.

**TD 117:** Not visited.

*Feeding:* MD120 at 20' in top of a 21' cherry. MD121 at 12' in a 1½ sassafras. MD116 at 20' in a 25' cherry; at 23' in a 25' elm; at 25' in a 30' elm; at 40' in a 40' cherry (where he stays a long time).

**Other notes:** A FS is at 16' in a 21' tree. A second approaches twice and nearly mounts the first. She (?) puffs out her feathers, so that her body has a heavily under-loaded look; her tail is pointed upward. One of the two (the approacher?) twitters, i.e., gives the usual FS call.

A female GF nest-shapes, using her wings, at 4' in a 6' elm. She flew there from a 15' tulip.
Clear and fresh. Present at Dunn from 0900 to 1030.

**TD 114:** D114F(A) calls "checks" at me by the N-S path at the entrance. No molt. MD114 is not seen; he has quit singing, as of about the date the young left the nest.

**TD 120:** Incubation. Silence.

**TD 121:** Silence.

**TD 116:** Egg 2; female on at 0930. MD116 sings chatters at 25' in a 25' elm.

**TD 122:** Silence.

**TD 117:** Nest (B) has 7 eggs, 6 developing. MD117 has a song like a FS's, i.e., same cadence and rhythm. I can tell easily that it's not a FS, but the pattern is the same; no initial 4 notes in this insipid.

**Other notes:** A Robin ants in our back yard in the sun, nearly falls over sideways.
July 11

Hot and clear after a cool night. Present at Dunn from 1030 to 1145; in Griffey valley from 0900 to 1030.

Griffey valley: No BV or PW songs, but the scrub is very narrow and limited.

TD 114: No PW.

TD 120: D120F goes to nest. Song.

TD 121: One or 2 slow songs.

TD 116: Egg 3; female on at 1130. When D116F leaves the nest I take the eggs and put in 3 FS eggs. Insipids.

TD 122: Silence.

TD 117: D117F(E) calls at me near the nest, which still has 7 eggs. Several songs.

Other notes: At Griffey see 2 hummingbirds in U-shaped courtship; the female (seen) sits while a presumed male does the flying.

July 12

Clear, fresh, and hot. Present at Dunn from 2015 to 2030.

TD 120: M120 is singing at 10\' in a 15\' sassafras, then drops and feeds along in weeds and berries at 2\'.

TD 116: I scare D116F off the 3 FS eggs. She seems to go on after I withdraw. Presumably she's feeding. I then slip to nest and remove the eggs unseen.

Feeding: See TD 120, above.
July 13

Cloudy; raining lightly from 1100 to 1130, steadily thereafter.

Present at Dunn from 1000 to 1130.

**TD 120**: Nest has failed; it looks ok from below. MD120 sings high.

**TD 116**: D116F is at 20' in the projecting woods. MD116 flies up to within 4' of her, then follows as she moves. This is good evidence that a failure to nest will be attributable to the female.

**TD 117**: Nest has failed without evidence. MD117 sings his FS-type songs in the S end.

**Feeding**: MD120 is at 50' in a 53' hackberry, on a dead branch, on 2 occasions.

**Other notes**: Find the first GF nest of 1963, at 10' in a 12' elm with grape. It is incomplete, is about 1 day's work if built at mid-season speed.
July 14

Mostly sunny, with a steady fresh breeze. Present at Dunn from 0930 to 1200.

**TD 120:** Irregular singing. No female.

**TD 117:** Very regular songs for an hour or more, on the S part of TD 117. D117(F) must be gone.

**TD 116:** Spend 2 hours here. MD116 sings chatters in bursts of 3-4 minutes with long silences (20-30 minutes) between. At 1130 he is singing in the W trees and does so for 10-15 minutes. I hear 1 or 2 faint "seeps" after several songs and finally spot D116F at 20'. She is not molting. She preens her wings, sits, moves through a grape tangle. MD116 is nearby singing. He then comes, sits silently about 10 yards away from her. No sign at all that she is building. [She was not. This was the last time I saw her.]
July 15

Hot and clear. Present at Dunn from 0830 to 1030.

TD 121: Hear MD121's slow chatters.

TD 122: Six of MD122's odd songs at 0935.

TD 117: Regular songs by gun trees.

TD 116: After a long silence (30 minutes), a few songs, then a similar silence, and then steady singing. I cover territory and am sure D116F is gone.

Feeding: MD117 sings and feeds as follows at 0845:

1. At 23', in 24' cherry.
2. At 12', in 18' cherry.
3. At 18', in same tree.
4. At 17', hovering, in same tree.
5. At 16', in same tree.
6. At 28', in outer tip of 35' walnut.
7. At 26', same tree.
8. At 27', same tree.
9. At 28', same tree.
10. At 30', flying to branch tips of same tree.

Schneider's: Schneider says he's heard no FW's near his house (and he's been out a lot). [On 8/1 he heard odd FW songs in his yard, said the bird had been singing for a day or two.]
Sunny and very hot and dry. Present at Dunn from 0900 to 1115.

**TD 114:** A male sings 4 weak chatter-skids at 45' in a 50' tree row hackberry, then goes W. I think it may have been MD120.

**TD 120:** Regular chatter-skids at 35' in a 40' walnut, then in the usual hackberry. See TD 114, above.

**TD 122:** Odd songs (1 or 2) at 0930, 1000, 1015.

**TD 116:** Silence from 0925 to 0950, then a few chatters in sink and E tree row. I cover TD 116 but don't see the female. At 1020, MD116 goes N to beginnings of elm thicket N of the sink where MD117 has just started to sing FS songs and give anger calls.

MD116 sings in the identical way and also calls. He then goes E to the tree row, keeps on singing. His song changes to his more usual insipid with 3 initial long notes and then 6-8 rising notes. MD117 goes N after 10 minutes, and MD116 flies out into the field N of the sink, continues to sing. He then returns to the E tree row at 1030, switches to chatters at 1037 and sings there till 1055, goes to the sink and still sings. His chatter song sometimes falls in pitch on the last 1 or 2 notes.

Clearly D116 is gone.

**TD 117:** See TD 116, above.

**Other notes:** ReV in our yard feeds a large cowbird, the first fledgling I've seen this year.

GF nest shell on TD 120, at 8' in 10' tulip; no lining. The male sings at 40' in the TD 120 dead elm. [On 7/30, there were 5 eggs. One was undeveloped and 4 were in about the third day of incubation.]
Cicada killer seen catching a cicada.

New FS nest at 2 3/4 in a 4 1/2 elm with three incubated eggs. Another new FS nest, also at 2 3/4 in a 4 1/2 elm, holds two incubated eggs.
July 17

Hot and clear. Present at Dunn from 1000 to 1130.

TD 116: MD116 sings steadily, from 1015 to 1053, then quits; I lose him. There is no female here. See TD 114, below.

TD 114: At 1112 I find Dll4F(A) just W of the wooded field, at 5'. She begins to "check" and "tsip" at me, and within 1 minute MDll6 comes up. He is 300 yards off territory. He goes along at from 5' to 8' from the female, moving deliberately, silently, watchfully, wagging his tail. She does not seem to react in any way to him, calls half-heartedly at me.

MDll6 is very bright, shows no molt. Dll4F(A) may be a little shabby, has some gray flank feathers sticking upward from under her wings.
July 24

Hot and clear. Present in Griffy valley from 0900 to 1020.

I walk up the other fork of Griffey (than the one I took last time) and find that the flat areas of scrub suitable for BV's and FW's have been cut over as though in preparation for cultivation.

July 30

Hot and clear. Present at Dunn from 1000 to 1015.

No FW's in E field.

August 2

In our woods a Robin chases a chipmunk for about 10 yards, flying right above it a few inches high. The chipmunk's mouth is puffed out, but they are in the high wood where I would not have thought there would be a nest, unless quite high.
August 3 - September 1

No field trips. Out of town most of the time. August mostly clear, unusually cool.

September 1

Clear, fresh, and hot. Present at Dunn from 1030 to 1145, in far NW and far W areas. No FW's. No RhW's.

September 2

Clearing at 1100 after a cloudy early morning. Present at Dunn from 1100 to 1200. No FW's. No RhW's.

September 3

Hot, sultry, cloudy with a glare; a trace of rain at 0900. Present at Dunn from 1115 to 1145.

RhW: 1) Unaged, 1150, low, SE.

September 4

Cloudy and almost raining most of the day; once a few drops. No field trip.

September 5

Cool and mostly clear. No field trip. Weigh a light green caterpillar that is 30 mm. long, normally fat, very flaccid and sluggish. It weighs 575 mg.
September 6

Clear and fresh. Present at Dunn from 0915 to 1030. See 1 PW, probably a male; unbanded.

**PW:** On TD120, a bright, post-molt unbanded male (?) calls three or four times and I find it; at 3' in a dogwood and then in blackberries. Big response to hissing.

**Rhw:** 1) Unaged, 0927, high, NW 2) Adult, 0940, medium, N 3) Adult, 1004, low, NW, h 4) Unaged, 1007, high, NW 5) Unaged, 1030, high, N, turning NW.

September 7

Clear but with a high haze; warm. Present at Dunn from 1110 to 1215. No PW's. No Rhw's.

**Other notes:** GF nest found at 5' 10" in 6' sugar maple; 4 young about 8 or 9 days old.

Olive-sided Flycatcher sun.

A BS jumps from the ground cover in the E field and perches at 3' bobbing its head up and down about 3/4-1", looking at me. The sides of the neck show raggedness when it bobs; this is the only sign of molt; the rectrices seem ragged and therefore old. The bird erects its crown feathers as it keeps watching me; it moves a little, climbs to 4½'. I'm 20 yards from it; it seems ready to watch me indefinitely, but I go after 3 minutes.

September 8

Sunny, warm, calm, and slightly hazy. Present at Dunn from 1015 to 1145.

**Rhw:** 1) Adult, 1140, N, low.
September 9
Clear and warm. Present at Dunn from 1100 to 1200. No FW's. No RhW's.

September 10
Hot and clear. No field trip.

September 11
Hot, clear until it clouds over in the afternoon. Worked in yard all day and kept an eye out for RhW's; can count on about 2 hours of observation. No RhW's.

September 12
Clear after almost raining last night; cold front passes through at 1600. Present at Dunn from 1015 to 1130. No FW's. No RhW's.

September 13
Cloudy and cool after yesterday's front, with a N wind, clearing at noon. Present at Dunn from 0945 to 1100. No FW's.

RhW's: 1-4) Three unaged and 1 adult, 0945, N, medium and high; strung out over 400 yards, N to S.

Other notes: New GF nest found, at 5'6" in 8' sugar maple; adult on 3 perfectly fresh eggs.
September 14

Clear and cool, with a N wind. Present at Dunn from 1000 to 1100.

PW: Find a 1963 nest on TD118, in the exact site used last year by D112F. D112F was banded, so this nest is known not to be hers. It contains a PW egg shell and contains no quill debris.

RhW: 1) Young, 0945, SW, low, passing over our yard. 2) Young, 1027, SE, medium.

Other notes: Find a new GF nest at 7' in an 11' sugar maple pole, the female on 4 well incubated eggs.

September 15

Warm and clear, getting steadily warmer since yesterday. Present at Dunn from 1130 to 1215. No PW's. No RhW's.

Other notes: See an Olive-backed Thrush.

September 16, 17, 18

Very hot, clear, and now very dry. No field trips.

September 19

Quite hot, clear, and dry. Present at Dunn from 0945 to 1030. No PW's.

RhW: 1) Unaged, 1015, SE, low. 2) Hear a call, 1020; don't see the caller.
**September 20**

Very hot, clear, and dry, until it clouds over and gets windy in the afternoon. Present at Dunn from 13h5 to 14h5. I worked in the yard from 0930 to 1130 and kept my eyes open all the time for RhW's. No PW's.

RhW: 1) Adult, 1355, E from Kerr's beeches, probably landing after a short flight.

Other notes: Palm Warbler seen.

**September 21**

Cool and clear after a windy night when it threatened to rain but never did; a noticeable front passed. Present at Dunn from 1030 to 1145. No PW's.

RhW: 1) Young, 1145, high, SW.

**September 22**

Clear and between 60 and 70° all day. No field trip.

**September 23, 24, 25**

Hot and clear and exceedingly dry, approaching a record in dryness. No field trips. I'm outside in the late afternoon and see no RhW's.
September 26
Clear and pleasant, cool at night, but it turns hot during the day. Watch the sky steadily from the yard from 0930 to 1145.

RhW's: 1) Young, 1000, medium, SE. 2) Adult, 1130, low, SE. 3) Young, 1140, medium, SE.

Other notes: Jays came over in 1's and 2's all morning, with 7 at 1030; they are heading S and SW; a total of about 25-30.

September 27
Weather unchanged. Present at Griffey from 0930 to 1015. No FW's. No RhW's.

September 28
Clear and pleasant. Present at Dunn from 1045 to 1130. No FW's. No RhW's.

September 29
Steady rain beginning during the night and lasting until noon; clearing in the late afternoon. No field trip.

September 30, October 1, 2
Clear and pleasant. No field trips.

October 3
Clear, warm. Watch the sky from the yard from 1215 to 1245.
No RhW's.
**October 4**

Clear and warm. Watch sky from yard from 1100 to 1145. No RhW's. A few Blue Jays pass over all morning.

**October 5**

Clear and hot. Watch sky from yard from 1300 to 1415. No RhW's.

**October 6**

Clear and hot. Watch sky from yard from 1300 to 1400. No RhW's.

**October 7, 8, 9**

Clear and hot most of the time; no field trips and no sustained watching of the sky. However, I could keep my eyes open enough to make me think there was no RhW movement.

**October 10**

Hot and clear. Watch sky from 1145 to 1230 from our yard. No RhW's.

**October 11**

Sultry, getting cloudy and raining a few drops in the late afternoon. No field trip. In the yard from 1700 to 1815; see no RhW's.
October 12

Clear and fresh. In the yard from 1030 to 1130 and driving to Indianapolis from 1300 to 1430. No RhW's.

October 13

Clear and fresh. In the yard from 1345 to 1630, keeping an eye on the sky. No RhW's.
APPENDIX I

Nest Sites by Pairs

Pair Dll4, female A -
Nest 1: At 62" in 82" sugar maple, against leader and on 2 diagonals. Tree in open with similar sugar maples 3 and 6' away. Medium concealment; sun in morning.
Nest 2 (successful): Location known, but exact site not found.

Pair Dll4, female B -
Nest 1: At 5' in 62' Rhus copallina, on the diagonal leader and in Virginia creeper. Tree in open but with 2 walnuts, 15' high, 8' to S. Good concealment; little sun.

Pair Dll4, female C -
Nest 1: At 6' 4" in 13' hackberry, in twiggy upright fork of a horizontal growing to NW. 1' 1/2' from trunk and at tip of branch. Tree in fence row in the open, with mowed field to E and clear ground for 10-35 yards to W; 10' red elm 5' to NW. Good concealment; light sun at times on female's back (as opposed to eggs).

Pair Dll5, female unknown
Fragment of 6/28: At 1' in 8' Am. elm.
Fragment of 6/7: At 15' in 20' Am. elm.
Nest of 6/19: At 15' in 25' sugar maple, in upright fork of a diagonal, in W part of tree. Tree in open woods with large (25-50') trees around it in all directions. Poor concealment except for height; shade.
Fragment of 6/23: At 20' against a 30' dead sycamore stub covered with Virginia creeper. Tree in small open clump of similar trees; nest in open. Good concealment; flickering sun.

Pair Dll6 -
Nest 1: At 7' in 11' Crataegus, in twiggy NE part of crown, 1/2' from center axis of tree. Trees in open hawthorn stand, with similar trees 10 to 15' to N and SW. Medium concealment; medium shade.

Pair Dll7 -
Nest 1: At 14' in 62' Am. elm pole, on N side of leader, against 2 diagonals. Tree at N. edge of a thin, open 3x5-yard clump of elms. Poor concealment; considerable sun.
Nest 2: At 10' in 12' Am. elm, against leader and in a vertical 3-way fork. Tree in S center of a 5x10-yard clump; nest near top of the foliage canopy. Good concealment; flickering sun. (A Cedar Waxwing nest was found in this nest site on 9/8.

Nest 3: At 59' in 6½' Am. elm, against a fork of the leader and on diagonal twigs. Tree in a very open stand of similar elms. Poor concealment; considerable sun.

Nest 4: At 7' 6" in 11' Am. elm in vertical fork formed by leader and twigs from it. Tree in a row of elms about 1 tree wide and 20 yards long, running N-S; nest above the closed foliage level; exposed to E and W. Medium concealment; flickering sun.

Nest 5: At 9' 1" in 11½' Am. elm, against diagonal leader and on twigs. Tree is 3 yards from S edge of a very dense 30x50-yard stand of elms and other trees, i.e., in the stand; but nest tree is higher than most others, so nest is exposed in all directions but S and E. Medium concealment; flickering sun.

Nest 6: At 11' 3" in 20' sassafras, 40" S of trunk in a typical twiggy cluster, 10" from tip of horizontal. Tree is 2 yards E of woods edge and 4' NW of 2 similar sassafras trees. Good concealment; full shade.

Nest 7: At 53' in 6' Am. elm in a twiggy vertical fork of leader. Tree at N. edge of open stand of 6-12' elms; nest well above field cover and quite exposed. Medium concealment; flickering sun.

Nest 8: At 27' in 3½' red elm, built in grape that runs through the crown, in center of crown. Tree is in W woods edge, overhanging the field to the E, so it is exposed except to the W, NW, and SW. Concealment impossible to judge because of height; flickering sun.

Nest 9: At 8' 1" in 11' Am. elm, in fork formed by leader and a twig facing E. Nest tree is one of a loose N-S line of elms, with nest fully exposed to E and sheltered to S only by an elm 1 yard away. Poor concealment; flickering sun.
Pair D117, female A -
Fragment of 5/4: At 5' in 6' Am. elm.
Fragment of 5/7: At 3½' in 1½' Am. elm.
Nest 1: At 53" in 6'3" Am. elm pole in a vertical fork of a diagonal from leader on N side of tree. Tree in NE edge of a thin 10x20-yard elm-sumac stand; nest fully exposed. Poor concealment; considerable sun.

Pair D117, female B -
Nest 1: At 2' in 6' 3" Am. elm, against S side of leader and on diagonal twigs. Tree stands alone among herbs and berries, which reach to nest height. Medium concealment; considerable sun.
Nest 2: At 68" in 7'10" sugar maple pole with a 3-way fork in leader; against 2 of the forks, and on a twig. Tree at S edge of a very extensive moderately dense mixed stand of saplings. Poor concealment; nearly full shade from next tree leaves.

Pair D117, female unknown but probably A -
Fragment of 5/30: At 6½' in 9' Am. elm.
Nest of 6/21: At 5' 9" in 8' Am. elm, against leader and on twigs, on N side of tree. Tree is just N of h or 5 similar trees, fully exposed except to S. Medium concealment; flickering sun.

Pair D118 -
Nest 1: At 35" in ½' sugar maple, against leader and on twigs. Tree splits at ground, so a second leader is just S of nest, and 5 elms ½-7' high are within 1 yard to NE and SE; otherwise nest tree is in open. Medium concealment; flickering sun.
Nest found 9/11: At 78" in 8½' Am. elm, pulled over at top by Virginia creeper; nest in creeper in center of foliage. Tree at S edge of moderately dense line of elms, with clear lane to S, so nest is exposed to S. Good concealment; nearly full shade.

Pair D119 -
Nest (never used): At 70" in 1½' Am. elm, in vertical fork of a 1" diagonal, 1' S of center of tree. Tree in open. Medium concealment; flickering sun.
Pair DL20 -  
Nest 1: At 12' in 22' Am. elm that is dead or dying in the top, i.e., in the part where the nest is [nearly all foliage was off the entire tree by late summer], 1½' N of trunk in twiggy fork of a vertical. Tree is 10 yards W of the N-S tree row and just N of a 22'-high hawthorn-redbud clump; nest fully exposed to N, NE, NW. Poor concealment (none); considerable sun.

Nest of 6/21: At 10' 9'' in 14' tulip with several leaders from just above ground; in W center of tree in a diagonal fork of leader. Tree in open. Medium concealment; flickering sun.

Nest of 7/1: At 12' in 25' Am. elm covered with grape, built on and in grape, 2' from center of tree and 1½' from outer tips of tree at this point; nest hangs out over open field, NE of tree trunk. Tree in N-S tree row, which is fairly thin here. Good concealment; some sun during middle of day.

Fragment or remnant of 6/30: At 10' in a 20' tangle of mulberry and grape, half-way between the N-S tree row and the woods to the W.

Pair DL21 -  
Nest 1: At 57'' in 72' Am. elm, in 3-way vertical fork of leader. Tree at SW edge of a 5x5-yard clump of similar elms. Poor concealment; considerable sun.

Nest 5: At 17' in 20' sassafras, in very center of crown. Tree is at W end of an E-W group of 20 similar trees, the group extending about 12 yards. Good concealment (note concealment from an animal in the tree's crown might not be good); full shade.

Nest of 6/5: At 52'' in 11' Am. elm, in a fork from the leader; Virginia creeper covers the tree. Tree at E edge of 1x5-yard mixed clump, with a large tulip engulfing the nest tree. Good concealment; full shade.

Nest of 6/6: At 38'' in 62' Am. elm covered with Virginia creeper, against the SE one of two forks in the leader; on a diagonal and in vines. Tree in open but with 3 similar-sized elms and sassafras within 6'. Good concealment; little sun.
Nest of 6/10: At 30' in a 35' dead sycamore stub with Virginia creeper climbing it, against the trunk and in the vines. Tree is 20 yards into woods edge and 8' higher than woods, so nest is in open and 3' above the foliage. Medium concealment; flickering sun.

Pair D122
Nest 1: At 37" in 5' Am. elm, in a vertical fork of the leader, on twigs. Tree in open except for rounded 7' cherry 2 yards to W. Poor concealment; moderate sun.
Nest 2: At 20' in 35' red elm, on a 3/4" diagonal from a large horizontal, 1' S of center of tree, which is covered with Virginia creeper. Tree in S edge of a woods, exposed except to N. Concealment appears medium; flickering sun.
Nest 3: At 45" in 50' sassafras covered with Virginia creeper, on a 3-1/4" horizontal and in creeper. Tree is 1 of 10 sassafrases 25 yards back in a mature oak - ash - hickory woods, apparently "trapped" there as woods succeeded scrub; canopy is open, so nest is somewhat exposed. Concealment uncertain; flickering sun at mid-day.

Pair D123
Nest 1: At 6' in 9' sugar maple pole, against E side of leader and on twigs. Tree in open field, except that 6' elms about 6' high are within 3 yards of it. Medium concealment; flickering sun.
Nest of 6/9: At 28" in 61/2' Am. elm, just SE of leader on a 1/4" diagonal and a twig. Tree fully in open. Poor concealment; probably considerable sun.

Pair D124
Nest 1: At 8h" in 11' Am. elm, 2' E of trunk in a fork of a nearly vertical branch from leader. Tree in open except for a similar elm 8" away. Medium concealment; flickering sun.

Pair D125
Nest 1: At 72" in 32" sugar maple covered with Lonicera japonica, which pulls the tree over a little; in dead center of the foliage. Tree exposed toward W, with similar saplings 5-15' away in other directions.
Pair G 16 -

Nest 1: At 7' in 18' Am. elm, against SE side of thick leader, on a little bunch of twigs. Tree in open. Poor concealment; considerable sun.
APPENDIX II

Summary of Nest Sites

The following list includes all completed nests and excludes only fragments abandoned by the birds:

- American elm - 21
- hackberry - 1
- sugar maple - 6
- sassafras - 3
- red elm - 2
- Rhus copallina - 1
- Crataegus - 1
- sycamore - 1
- tulip - 1

Of 7 fragment sites recorded, 5 were in American elm, 1 was in sycamore, and 1 was in mulberry.

Seven of the foregoing nests were built more or less in Virginie creeper, 1 in grape, and 1 in Lonicera japonica.

For 37 completed nests the average height was between 8' and 8'1". Extremes of height were 2' and 45'. The median height was 5' 10".
APPENDIX III

Relationships of Nest Locations

Distances Apart

The following data include only cases in which nest sequences are known beyond doubt. Measurement was by pacing.

<table>
<thead>
<tr>
<th>Pair</th>
<th>Nest 1 to Nest 2</th>
<th>Yards</th>
</tr>
</thead>
<tbody>
<tr>
<td>D114(A)</td>
<td>1 to 2</td>
<td>130</td>
</tr>
<tr>
<td>D116</td>
<td>1 to 2</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td>2 to 3</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>3 to 4</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>4 to 5</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td>5 to 6</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>6 to 7</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>7 to 8</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>8 to 9</td>
<td>30</td>
</tr>
<tr>
<td>D117(B)</td>
<td>1 to 2</td>
<td>285</td>
</tr>
<tr>
<td>D120</td>
<td>next last to last</td>
<td>130</td>
</tr>
<tr>
<td>D122</td>
<td>1 to 2</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>2 to 3</td>
<td>185</td>
</tr>
</tbody>
</table>

Locations re Territory Lines

Pair  Location

D114(A) Both in middle, which in the present context is intended to mean that neither was at the edge.

D114(B) Middle.

D114(C) 81 yards S of male’s utilized territory, in a separate field. Note male had no neighbors to the S.

D115 Middle

D116 Nest 2 was about at the NE corner, nest 5 at the N edge and thus near an inhabited territory, nest 6 at the W edge, and nest 8 into the W woods edge. The rest were in the middle.

D117(A) Middle.

D117(B) Nest 1 was 15 yards N of the S line and adjacent to an inhabited territory. Nest 2 was at the opposite end, beyond the original N line of TD117.
<table>
<thead>
<tr>
<th>Pair</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>D118</td>
<td>Middle.</td>
</tr>
<tr>
<td>D119</td>
<td>Middle.</td>
</tr>
<tr>
<td>D120</td>
<td>Nest 1 in NW corner, next-to-last in middle, and last 20 or 25 yards E of W edge, i.e., on territory.</td>
</tr>
<tr>
<td>D121</td>
<td>Nest 1 at N line, nest 5 in center; of other 3, whose sequence is unknown, 1 in middle, 1 at E edge, and 1 well into woods beyond E edge.</td>
</tr>
<tr>
<td>D122</td>
<td>Nest 1 in middle, nest 2 in woods edge in NW corner, and nest 3 25 yards beyond line in mature woods.</td>
</tr>
<tr>
<td>D123</td>
<td>Middle.</td>
</tr>
<tr>
<td>D124</td>
<td>Middle.</td>
</tr>
<tr>
<td>D125</td>
<td>Territory lines not known.</td>
</tr>
<tr>
<td>G16</td>
<td>Middle.</td>
</tr>
</tbody>
</table>
**APPENDIX IV**

**Territory Sizes**

Territory sizes were calculated as stated in my notes for 1960, Appendix IV. The E-W dimension is given first, and length is in yards.

<table>
<thead>
<tr>
<th>Pair</th>
<th>Defended territory</th>
<th>Utilized territory</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>TD114</td>
<td>8.75 acres</td>
<td>6.0 acres (?)</td>
<td>100 EW in wooded field and 180 EW in E field; 100 NS at W edge and 200 NS at E edge; all this plus 1 acre on Kerr farm at time of D114F(C)'s presence.</td>
</tr>
<tr>
<td>TD116</td>
<td>4.0</td>
<td>4.0</td>
<td>155 x 127 yards.</td>
</tr>
<tr>
<td>TD117</td>
<td>8.0</td>
<td>7.0 (?)</td>
<td>After MD123 left, the defended territory was 10 acres. The shape was like 3 rectangles on top of each other, the smallest at the top and the largest at the bottom; the W line of each square was a continuation of the W lines of the others. These squares were 100 x 100, 200 x 130, and 240 x 70.</td>
</tr>
<tr>
<td>TD120</td>
<td>3.5</td>
<td>2.25</td>
<td>92 x 190 yards. Of the EW yards, 25 were W of the fence row. At least 30 EW yards lay in rather bare field and were scarcely used.</td>
</tr>
<tr>
<td>TD121</td>
<td>3.0</td>
<td>3.0</td>
<td>125 x 165 yards, the same as in 1962.</td>
</tr>
<tr>
<td>TD122</td>
<td>5.5</td>
<td>3.75</td>
<td>180 x 150 yards, the same as in 1962.</td>
</tr>
</tbody>
</table>
### APPENDIX V

#### Egg Data

**Eggs of D116F**

<table>
<thead>
<tr>
<th>Clutch</th>
<th>Egg number</th>
<th>Date Layed</th>
<th>Date Weighed</th>
<th>Weight</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>5/10</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>5/11</td>
<td>5/11</td>
<td>1.260 g</td>
<td>15.8 × 12.3 mm.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>5/12</td>
<td>---</td>
<td>---</td>
<td>15.6 × 12.3 &quot;</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5/13</td>
<td>5/13</td>
<td>1.275 g</td>
<td>15.6 × 12.2 &quot;</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>5/18</td>
<td>5/20</td>
<td>1.315 g</td>
<td>15.5 × 12.5 &quot;</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>5/19</td>
<td>5/19</td>
<td>1.335 g</td>
<td>15.5 × 12.6 &quot;</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>5/20</td>
<td>5/20</td>
<td>1.330 g</td>
<td>16.0 × 12.5 &quot;</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5/21</td>
<td>5/21</td>
<td>1.342 g</td>
<td>15.8 × 12.4 &quot;</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>5/26</td>
<td>5/26</td>
<td>1.318 g</td>
<td>15.4 × 12.5 &quot;</td>
</tr>
<tr>
<td></td>
<td>2 (?)</td>
<td>5/27</td>
<td>---</td>
<td>---</td>
<td>1.310 g 15.5 × 12.4 &quot;</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>5/28</td>
<td>5/28</td>
<td>1.310 g</td>
<td>15.5 × 12.4 &quot;</td>
</tr>
<tr>
<td>failed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>6/2</td>
<td>6/3</td>
<td>1.300 g</td>
<td>15.5 × 12.5 &quot;</td>
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<tr>
<td></td>
<td>2</td>
<td>6/3</td>
<td>6/3</td>
<td>1.368 g</td>
<td>15.8 × 12.6 &quot;</td>
</tr>
<tr>
<td>failed</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>6/8</td>
<td>6/9</td>
<td>1.165 g</td>
<td>15.0 × 12.0 &quot;</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6/9</td>
<td>6/9</td>
<td>1.250 g</td>
<td>15.5 × 12.2 &quot;</td>
</tr>
<tr>
<td>failed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>6/15(?)</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6/16(?)</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>6/17(?)</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
</tbody>
</table>

* Egg punctured, probably leaked.
### Eggs of D. l. f. (continued)

<table>
<thead>
<tr>
<th>Set</th>
<th>Egg</th>
<th>Date</th>
<th>Weight</th>
<th>Size</th>
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</thead>
<tbody>
<tr>
<td>7</td>
<td>1</td>
<td>6/23</td>
<td>6/24</td>
<td>1.330 g. 15.2 x 12.8 mm.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6/24</td>
<td>6/26</td>
<td>1.343 g. 15.1 x 12.8 &quot;</td>
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<tr>
<td></td>
<td>3</td>
<td>6/25</td>
<td>6/26</td>
<td>1.344 g. 15.5 x 12.5 &quot;</td>
</tr>
<tr>
<td>8</td>
<td>1-3</td>
<td>7/2(?)</td>
<td>7/4</td>
<td>1.287 g. 15.2 x 12.4 &quot;</td>
</tr>
<tr>
<td></td>
<td>1-3</td>
<td>7/3(?)</td>
<td>---</td>
<td>--- 15.0 x 12.2 &quot;</td>
</tr>
<tr>
<td></td>
<td>1-3</td>
<td>7/4(?)</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>7/9</td>
<td>7/11</td>
<td>1.349 g. 15.3 x 12.8 &quot;</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>7/10</td>
<td>7/11</td>
<td>1.362 g. 15.4 x 12.7 &quot;</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>7/11</td>
<td>7/11</td>
<td>1.346 g. 15.5 x 12.5 &quot;</td>
</tr>
</tbody>
</table>

**Notes on Markings**

**Set 1:** Eggs 1 and 2 wreathed half-way to small end or beyond middle. Egg 2 with cluster of spots on 1 side only, toward small end. Egg 3 about like 2 with noticeable cluster on 1 side, toward small end. Egg 4 with most spots on big end, some all over, wreath in middle.

**Set 2:** Egg 1 with wreath in middle. Egg 2 with wreath half-way between ends but going only 1/3 around egg. Fewer spots on large end. Egg 3 with wreath one-third of distance from big end. Egg 4 with a cap of spots on large quarter of egg.

**Set 3:** Egg 1, with wreath a cluster of spots going 1/3 around egg, a little closer to big end. Egg 3 with wreath of big spots, half-way from each end.

**Set 4:** Egg 1 with blotch or cluster of dots on side only as in egg 1 of set 3. Egg 2 with spots well scattered.

**Set 7:** Egg 3 with a little cap of spots on pole of big end.
Eggs of Dll6F (continued)

Set 8: Egg with wreath in middle and egg like egg 3 of set 7.

Set 9: Egg 1 is rounded and has a wreath near the middle.
Egg 3 like egg 3 of set 7: other 2 with spots more a wreath in middle.

Eggs of Other Females

<table>
<thead>
<tr>
<th>Female and clutch</th>
<th>Egg number</th>
<th>Date laid</th>
<th>Date weighed</th>
<th>Weight</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dll5F:1</td>
<td>1</td>
<td>5/10</td>
<td>5/10</td>
<td>1.177 g.</td>
<td>15.3 x 12.0 mm.</td>
</tr>
<tr>
<td></td>
<td>3(?)</td>
<td>5/12</td>
<td>5/12</td>
<td>1.298</td>
<td>16.2 x 12.3</td>
</tr>
<tr>
<td></td>
<td>5(?)</td>
<td>5/14</td>
<td>5/14</td>
<td>1.313</td>
<td>16.2 x 12.3</td>
</tr>
<tr>
<td>Gl6F:1</td>
<td>1</td>
<td>5/13</td>
<td>5/14</td>
<td>1.305</td>
<td>17.1 x 11.8</td>
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<tr>
<td></td>
<td>4(?)</td>
<td>5/16</td>
<td>5/18</td>
<td>1.360</td>
<td>16.2 x 12.4</td>
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<tr>
<td>Dll24F:1</td>
<td>3(?)</td>
<td>5/17(?)</td>
<td>5/18</td>
<td>1.443</td>
<td>17.0 x 12.7</td>
</tr>
<tr>
<td>Dll8F:1</td>
<td>1</td>
<td>5/14</td>
<td>--</td>
<td>---</td>
<td>16.5 x 12.3</td>
</tr>
<tr>
<td></td>
<td>3-5</td>
<td>5/18</td>
<td>--</td>
<td>---</td>
<td>15.9 x 12.0</td>
</tr>
<tr>
<td>Dll7F(A) 1</td>
<td>1</td>
<td>5/16</td>
<td>--</td>
<td>---</td>
<td>15.7 x 12.5</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>5/17</td>
<td>--</td>
<td>---</td>
<td>15.0 x 12.4</td>
</tr>
<tr>
<td>Dll4(A) 1</td>
<td>1</td>
<td>5/18</td>
<td>5/20</td>
<td>1.445</td>
<td>16.4 x 12.8</td>
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<td></td>
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<td>5/19</td>
<td>5/20</td>
<td>1.358</td>
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<tr>
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<td>3</td>
<td>5/20</td>
<td>5/20</td>
<td>1.417</td>
<td>16.2 x 12.7</td>
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<tr>
<td></td>
<td>4</td>
<td>5/21</td>
<td>5/21</td>
<td>1.415</td>
<td>16.1 x 12.7</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5/22</td>
<td>--</td>
<td>---</td>
<td>16.3 x 12.9</td>
</tr>
<tr>
<td>same set</td>
<td>1</td>
<td>6/1</td>
<td></td>
<td>1.165</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6/1</td>
<td></td>
<td>1.157</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>6/1</td>
<td></td>
<td>1.208</td>
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</tr>
<tr>
<td></td>
<td>4</td>
<td>6/1</td>
<td></td>
<td>1.207</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>6/1</td>
<td></td>
<td>1.222</td>
<td></td>
</tr>
<tr>
<td>Dll4F(C) 1</td>
<td>1</td>
<td>6/18</td>
<td>6/22</td>
<td>1.100</td>
<td>15.7 x 11.6</td>
</tr>
</tbody>
</table>

Notes on Eggs of Dll4F(A)

Egg 1 had no spots on large end; there was a wreath of spots in the middle and a scattering on the small end. Eggs 2 and 3 had a fine cap of dots on the large third. Egg 4 had a cap like eggs 2 and 3; it also had big blotches on the large pole and fine dots on small end. No notes on egg 5.
<table>
<thead>
<tr>
<th>Weight</th>
<th>Measurements</th>
<th>Date laid</th>
<th>Date weighed</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.480 g.</td>
<td>22.1 x 17.1 mm.</td>
<td>5/28</td>
<td>5/29</td>
</tr>
<tr>
<td>2.815</td>
<td>21.3 x 15.5</td>
<td>5/28</td>
<td>5/29</td>
</tr>
<tr>
<td>3.335</td>
<td>23.2 x 16.0</td>
<td>5/22</td>
<td>5/24</td>
</tr>
<tr>
<td>3.180</td>
<td>21.8 x 16.4</td>
<td>5/17</td>
<td>5/18</td>
</tr>
<tr>
<td>3.165</td>
<td>21.5 x 16.4</td>
<td>5/17</td>
<td>5/19</td>
</tr>
<tr>
<td>3.560</td>
<td>22.6 x 17.0</td>
<td>6/3</td>
<td>6/5</td>
</tr>
<tr>
<td>3.540</td>
<td>22.4 x 17.1</td>
<td>5/26(?)</td>
<td>5/28</td>
</tr>
<tr>
<td>---</td>
<td>21.0 x 15.9</td>
<td>5/15</td>
<td>--</td>
</tr>
<tr>
<td>3.430</td>
<td>21.9 x 17.0</td>
<td>6/18(?)</td>
<td>6/22</td>
</tr>
<tr>
<td>3.198</td>
<td>22.1 x 16.5</td>
<td>6/19</td>
<td>6/22</td>
</tr>
</tbody>
</table>
APPENDIX VI

Distances

1. Between simultaneous nests of mates of polygynous males:
   - D114F(A)'s first and D114F(B)'s first - 145 yards
   - D114F(A)'s second and D114F(B)′s first - 110
   - D114F(A)'s second and D114F(C)'s first - 250
   - D117F(A)'s first and D117F(B)′s first - 120

2. Between returning females' last 1962 and first 1963 nests:
   - D121F-I162F - 2350 yards
   - D114F(A) - D102F - 390
   - D116F-D116F(2) - 265
   - D120F-D110F(A) - 350

3. Between 1962 and 1963 territories of a male that moved:
   - MG16-MIUgolf - 1500 yards

4. Between 1961 hatch site and 1963 territory:
   - D94Y-MG16 - 1400 yards

5. Between 1961 and 1963 sightings of bird not breeding here:
   - G11R - 500 yards

6. Between 1960 hatch site and 1963 sighting of non-breeder here:
   - G11R - 1100 yards

7. Between 1962 hatch site and 1963 sighting of non-breeder here:
   - D107yg - 300 yards

8. Between contemporaneous of females on adjacent territories, selected because the nests were close together:
   - 1962:
     - D99F(A)'s first to D99F(2)′s first - 155 yards
     - D99F(2)′s first to D100F(1)′s first - 112
     - D100F(1)′s first to D101F′s first - 105
     - D99F(1)′s first to D101F′s first - 140
     - D100F(1)′s first to D102F′s - 170
   - 1963:
     - D115F′s first to D124F′s first - 153
     - D115F′s first to D119F′s first - 93
     - D119F′s first to D124F′s first - 140
     - D121F′s first to D122F′s first - 65
     - D120F′s first to D116F′s first - 80
     - D120F′s first to D122F′s first - 200
     - D121F′s last to D122F′s last - 167
     - D116F′s fourth to D117F(B)′s first - 125
     - D116F′s first to D122F′s first - 185
     - D117F(A)′s first to D123F′s first - 180


## APPENDIX VII

### 1963 Returns and Bandings

#### Returns

<table>
<thead>
<tr>
<th>Designations</th>
<th>1962</th>
<th>1963</th>
<th>Date</th>
<th>Number</th>
<th>Bands</th>
<th>Year banded</th>
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<tbody>
<tr>
<td>MD98</td>
<td>MD114</td>
<td>4/17</td>
<td>(103-12012)</td>
<td>BkаБ, both</td>
<td>1962</td>
<td></td>
</tr>
<tr>
<td>MD110</td>
<td>MD115</td>
<td>4/17</td>
<td>29-01157</td>
<td>R-L, B-R</td>
<td>1959</td>
<td></td>
</tr>
<tr>
<td>MD101</td>
<td>MD116</td>
<td>4/18</td>
<td>32-01512</td>
<td>S, both</td>
<td>1960</td>
<td></td>
</tr>
<tr>
<td>MD104</td>
<td>MD117</td>
<td>4/18</td>
<td>101-10640</td>
<td>S-R, BаБ O BaC-L</td>
<td>1961</td>
<td></td>
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<tr>
<td>MD108</td>
<td>MD119</td>
<td>4/18</td>
<td>103-12050</td>
<td>S-R, 3 Wh a Еk-L</td>
<td>1962</td>
<td></td>
</tr>
<tr>
<td>MD100</td>
<td>MD121</td>
<td>4/19</td>
<td>32-01527</td>
<td>Рос-R</td>
<td>1960</td>
<td></td>
</tr>
<tr>
<td>IU62F</td>
<td>D121F</td>
<td>4/21</td>
<td>103-12025</td>
<td>РaYOS-R, ОаБ O CaЕ-L</td>
<td>1962</td>
<td></td>
</tr>
<tr>
<td>MD102</td>
<td>MD122</td>
<td>4/27</td>
<td>29-01155</td>
<td>R-R</td>
<td>1959</td>
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#### Adult Bandings

<table>
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<th>Number</th>
<th>Colors</th>
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</tr>
</thead>
<tbody>
<tr>
<td>D114F(B)</td>
<td>old</td>
<td>64-34543</td>
<td>WhаБk O WhаБk</td>
<td>6/5</td>
</tr>
<tr>
<td>D117F(B)</td>
<td>old</td>
<td>64-34542</td>
<td>S-R, RaY O RaY</td>
<td>6/3</td>
</tr>
<tr>
<td>MD125</td>
<td></td>
<td>64-34544</td>
<td>S-R, RaY O plastic</td>
<td>6/8</td>
</tr>
<tr>
<td>D125F</td>
<td>old</td>
<td>64-34545</td>
<td>S-L, plasticYOBkaWh</td>
<td>6/8</td>
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</table>

#### Nestling Bandings

<table>
<thead>
<tr>
<th>Designations</th>
<th>Number</th>
<th>Colors</th>
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</thead>
<tbody>
<tr>
<td>D125Y</td>
<td>64-34546</td>
<td>YOS-R, YOY-L</td>
<td>6/8</td>
</tr>
<tr>
<td>D117R</td>
<td>64-34557</td>
<td>plasticYOS-R, Р больWh-L</td>
<td>6/21</td>
</tr>
<tr>
<td>D117Y</td>
<td>64-34558</td>
<td>plasticYOS-R, YOBkaWh-L</td>
<td>6/21</td>
</tr>
<tr>
<td>D117G</td>
<td>64-34559</td>
<td>plasticYOS-R, GOBkaWh-L</td>
<td>6/21</td>
</tr>
<tr>
<td>D117bB</td>
<td>64-34560</td>
<td>plasticYOS-R, bBOBkaWh-L</td>
<td>6/21</td>
</tr>
<tr>
<td>D114bB</td>
<td>64-34563</td>
<td>bBObB-R, СObB-L</td>
<td>7/2</td>
</tr>
</tbody>
</table>

**Note:** The 4 young D117's did not live to leave the nest.
APPENDIX VIII

Nesting Data on Other Species

Not included here are data for species on which separate records are kept, but the facts about these species are summarized to reflect cowbird molestation.

Yellow-breasted Chat

<table>
<thead>
<tr>
<th>Nest</th>
<th>Date Found</th>
<th>Condition</th>
<th>Site</th>
<th>History</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>5/18</td>
<td>1 egg</td>
<td>26'' in 48'' elm, open</td>
<td>5/19: egg 2. 5/23: egg at S edge 2x2 yard clump.</td>
</tr>
<tr>
<td>3</td>
<td>5/18</td>
<td>complete</td>
<td>34'' in 72'' haw; W edge of grape bark. 5/20: dense 4-6'' messy grassy lining. berry-elm-haw clump.</td>
<td>5/19: still a shell, lining of grape bark. 5/20: dense 4-6'' messy grassy lining. berry-elm-haw clump.</td>
</tr>
<tr>
<td>4</td>
<td>5/23</td>
<td>2 eggs, fresh</td>
<td>18'' in 48'' elm; 3-4 little elms near; below cover of field. fwoe.</td>
<td>5/25: same 2 eggs; 1 has fine spots like tow-hee's, other heavy spots.</td>
</tr>
<tr>
<td>5</td>
<td>5/26</td>
<td>2 eggs, fresh</td>
<td>37'' in mid of 72'' elm</td>
<td>5/27: female on 2 fresh eggs. 5/28: no change.</td>
</tr>
<tr>
<td>6</td>
<td>6/3</td>
<td>4 eggs, fresh</td>
<td>12'' in 54'' elm on SW side tree row, well below level of grass.</td>
<td>6/4-6/11: 4 eggs. 6/12: female on 3 eggs. 6/14: young in nest, dead; little ant damage. Probably last to hatch and predator got first 3.</td>
</tr>
<tr>
<td>7</td>
<td>6/6</td>
<td>4 eggs, fresh</td>
<td>14'' in 54'' elm in herbs and below field cover.</td>
<td>6/7: fwoe.</td>
</tr>
<tr>
<td>Nest</td>
<td>Date found</td>
<td>Condition</td>
<td>Site</td>
<td>History</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>------------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>8</td>
<td>6/22</td>
<td>2 eggs</td>
<td>32&quot; in 78&quot;</td>
<td>6/23: egg 3. 1 of first elm, in fork a-gainst leader, NW side dense clump, at level of field cover. 6/24: no change. 6/30: female on 3 eggs. 7/2: since 6/30 has fwoe.</td>
</tr>
<tr>
<td>9</td>
<td>6/22</td>
<td>empty</td>
<td>19&quot; in 60&quot;</td>
<td>6/23: egg 1. 6/24: egg 2; egg 1 gone. 6/25: egg 3, fork a-gainst leader. Open site. 7/4: no change. 7/5: Below tops goldenrod.</td>
</tr>
</tbody>
</table>

**Field Sparrow**

<table>
<thead>
<tr>
<th>Nest</th>
<th>Date</th>
<th>Condition</th>
<th>Site</th>
<th>History</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5/2</td>
<td>2 fresh eggs 18&quot; in 45&quot; cedar</td>
<td></td>
<td>5/11: 4 eggs. 5/16: eggs present but deserted.</td>
</tr>
<tr>
<td>2</td>
<td>5/9</td>
<td>3 fresh eggs at 2&quot;</td>
<td></td>
<td>5/24: 3 yg 24 hrs old. 5/29: 3 yg. 6/1: yg have fledged. No Proto.</td>
</tr>
<tr>
<td>3</td>
<td>5/12</td>
<td>4 eggs</td>
<td>ground</td>
<td>5/22: 4 yg. 5/24: have fledged.</td>
</tr>
<tr>
<td>4</td>
<td>5/17</td>
<td>4 yg</td>
<td>ground</td>
<td>6/1: 3 eggs. 6/13: 3 yg about 24 hrs. 6/2: has fwoe.</td>
</tr>
<tr>
<td>5</td>
<td>5/27</td>
<td>2 fresh eggs at 4&quot; in grass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>5/30</td>
<td>1 egg</td>
<td>66&quot; in 96&quot; haw</td>
<td>6/1: 3 eggs. 6/13: 3 yg about 24 hrs.</td>
</tr>
<tr>
<td>7</td>
<td>5/30</td>
<td>4 inc eggs</td>
<td>at 6&quot; in haw</td>
<td>6/2: has fwoe.</td>
</tr>
<tr>
<td>8</td>
<td>5/31</td>
<td>4 inc eggs</td>
<td>at 6&quot; in weeds</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>6/5</td>
<td>1 egg</td>
<td>8&quot; in black-berry</td>
<td>6/12: adult on 3 eggs.</td>
</tr>
<tr>
<td>10</td>
<td>6/6</td>
<td>4 inc eggs</td>
<td>hollow in ground</td>
<td>6/7: 1 new yg, 3 eggs.</td>
</tr>
<tr>
<td>11</td>
<td>6/10</td>
<td>1 egg (condition?)</td>
<td>1' in 3' elm.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>6/15</td>
<td>4 fresh eggs 3' in 12&quot; cedar</td>
<td></td>
<td>6/30: 3 yg about 6 days old. 7/2: have fledged. No Proto.</td>
</tr>
<tr>
<td>13</td>
<td>6/19</td>
<td>3 eggs, inc about 4 days</td>
<td>8&quot; in rose berries</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>6/24</td>
<td>3 inc eggs</td>
<td>15&quot; in black berries</td>
<td></td>
</tr>
</tbody>
</table>
Field Sparrow

<table>
<thead>
<tr>
<th>Nest</th>
<th>Date found</th>
<th>Condition</th>
<th>Site</th>
<th>History</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>6/30</td>
<td>4 inc eggs 2' in 7' sugar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>7/5</td>
<td>1 fresh egg 2' in 4' haw</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>7/5</td>
<td>1 old egg 30&quot; in 5' elm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>7/7</td>
<td>3 inc eggs 16&quot; in 3' haw</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>7/8</td>
<td>1 new yj, 15&quot; in 3' elm, 2 eggs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>7/16</td>
<td>3 inc eggs 33&quot; in 54&quot; elm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>7/16</td>
<td>2 inc eggs 32&quot; in 54&quot; elm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Summary of chat and Field Sparrow**

Chat parasitized 2 times in 9 nests, in 1 case apparently leading to female's laying no eggs, in other having no effect except removal of 1 host egg 3 days before cowbird egg (which was laid 2 days after 3-egg set was completed.

Field Sparrow not parasitized in 15 sets known or judged to be complete. Five of these complete-set nests were on or within 6" of the ground. On 5/29, saw fledgling FS wih 1" tail.

**Rufous-sided Towhee**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
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<tbody>
<tr>
<td>1</td>
<td>4/12</td>
<td>3 fresh eggs, ground</td>
</tr>
<tr>
<td>2</td>
<td>5/1</td>
<td>1 cowbird egg, ground &amp; 3 towhee eggs</td>
</tr>
<tr>
<td>3</td>
<td>5/18</td>
<td>3 eggs, ground</td>
</tr>
</tbody>
</table>

4/18: fwoe.
5/9: 3 towhees about 3 days old, 1 dead cowbird egg.
5/19: egg 4, 5/31: at 1200, 3 yj, 1 egg with bumps; at 1730, 4 yj.

**Summary of towhee**

Towhee parasitized 1 time in 3 complete ground nests. The cowbird egg did not hatch.

**Blue-winged Warbler**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5/29</td>
<td>fledglings, not found just out</td>
</tr>
</tbody>
</table>

6/8: fledged. Female a Golden-wing. See notes.

**Bob-white**

1/11 5/11 empty ground

Male and female at nest.

**Cedar Waxwing**

1 9/8 ? 10' in 12' elm

Adult on. D16F's site.
Indigo Bunting

Of 13 nests studied, 2 were parasitized by cowbirds. In 1 an IB egg was taken and a cowbird egg laid on the second day of laying, and the nest later failed. In the second, the cowbird egg was laid at least 7 days after incubation had begun, and 1 of 2 IB eggs was taken and the other dented. Ten days after this, the nest failed.

Cardinal

Of 13 active nests, none were parasitized. Ten probably had complete sets, or at least had progressed to the point at which it is probably safe to say that they had escaped cowbird molestation that might have resulted in the production of a cowbird. A nest found on 5/23 had a freshly broken egg in it, probably a cowbird’s.

Bell’s Vireo

Of 2 nests begun, one was parasitized between 2 and 6 days after building had been abandoned (in the shell stage), and the other received a cowbird egg and lost a BV egg on the third day of BV laying; this led to the desertion of the nest.

White-eyed Vireo

One nest was found; it held a newly hatched cowbird and 3 apparently alive, unpipped vireo eggs. It failed next day.

Miscellaneous

Carolina Chickadee seen building on 4/19 at 6 or 7’ in sassafras in a woods edge.
Mockingbird seen carrying material just off the study area on 4/21.
Miscellaneous

Robins were seen with newly fledged young on the campus on 5/2. Killdeer brought off 2 (at least) young in Belcher's pasture on about 5/3 or 5/4.

Catbirds were building in an apple (30' high) in our yard at about 0600 at a height of about 18' on 5/11.

Tufted Titmouse fledgling with a 2" tail on study area on 5/29.

Wood Thrush fledgling caught by hand in our woods, 6/12.

Cowbird fledgling, full grown, in our woods on 6/19.

Red-eyed Vireo feeding a nearly full-size cowbird in our yard on 7/16.
### APPENDIX IX

#### 1963 Bloomington Weather

From I.U. weather station, as reported in U.S. Department of Commerce, Weather Bureau, Climatological Data, Vol. 68, nos. 1 (Jan.) et seq. Because data were lacking, all high temperatures for March and April and all temperatures for May are from the Spencer station; the May precipitation figures are from the Bloomington airport, 5 miles SW of town. Summaries of significant facts for each month, from the same publication, are on the next page.

<table>
<thead>
<tr>
<th>March</th>
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<th>May</th>
<th>June</th>
</tr>
</thead>
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<tr>
<td>H</td>
<td>L</td>
<td>PH</td>
<td>L</td>
</tr>
<tr>
<td>1</td>
<td>46</td>
<td>27</td>
<td>1126</td>
</tr>
<tr>
<td>2</td>
<td>34</td>
<td>12</td>
<td>83</td>
</tr>
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<td>3</td>
<td>44</td>
<td>30</td>
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</tr>
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**Average** 54.1 34.3 41.3 44.8 77.3 47.3 85.7 60.9

**Total** 54.1 34.3 41.3 44.8 77.3 47.3 85.7 60.9
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**Average**

**Total**

Jan.: Very cold and dry, being among the 3 coldest Januaries in Indiana history.

Feb.: Very cold (mean temperatures between third and sixth lowest) and below normal in precipitation.

Mar.: Reversal of cold dry weather of last 3 months occurred sharply in early March, when spring began. Warm and wet.

April: Only comment is re extraordinary number and severity of tornadoes; In Jackson-Lawrence Cos., 4/19, Sullivan-Greene on 4/29. (Apparently a dry month.)

May: Unusual for high temperatures of 5/8-9, for minimal storm
activity, and for the late freeze of 5/22-23, which
damaged strawberries and tomatoes. It was also cold
on 5/1.
June: Soil moisture had become alarmingly low by the last third
of the month. No other trends.
July:

Aug.:

Sept.:

Oct.:

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<th>Month</th>
<th>Average Temp.</th>
<th>Temp. departure from long-term mean</th>
<th>Degree Days</th>
<th>Precip. departure from long-term mean</th>
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Note: Numbers on this page underlined in red are
from Spencer, Ind. In evaluating the averages
from Spencer for March and April, for which
months there are only low data from Bloomington,
note that Spencer's lows are lower than Bloom-
ington's; so Bloomington's averages may have
higher than Spencer's. Spencer's average low
for March was 30.7 and for April 40.0