

BLUEBIRD NESTLING DROPPINGS ANALYSIS – AUGUST, 1990

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[Note: This informal memo describes experiences from her summer after graduating from Catlin Gabel School, assisting on the Bluebird Study in Wheeler County, Oregon, including a week camping and working alone at a few of the study sites while working on her own project. Char Corkran]

Along with taking visual diet samples of the bluebirds, Char and I thought it might be interesting and of some value to study the droppings of the bluebird nestlings. We could then, theoretically, compare the two sets of data to see if our visual results were accurate.

With the help of an article titled “Analysis of Droppings to Describe Diets of Small Birds”¹ and a microscope loaned to me by Paul Dickinson [teacher at Catlin Gabel School], I was able to work on the droppings that I obtained from fledged nest boxes. I used two techniques, both described in the article, to get at the contents of the droppings. The first was to moisten a sample with a few eyedroppers of water and then pick it apart carefully. This method worked fairly well, although a lot of the time I felt that I was crushing more specimens than I was getting. The second method was to place the specimen in a vial of water, shake it thoroughly, and throw it onto a paper towel. This method was a little less time-consuming. The possibility of breaking or harming specimens either by shaking or picking is fairly high, but I believe shaking the specimens may yield better results. Once I had the parts cleaned I placed them into piles with similar parts.

Unfortunately, this was my first experience working with insects or insect parts. Therefore, one mandible looked very similar to another to me, and I found I could not distinguish the insects by their families.

Working with the microscope was a real treat. Over my high school years I had a lot of practice using microscopes, so the difficult part came only when figuring out what I was looking at. As talked about in the article, the major problem in identifying the body parts is that the parts are so fragmented, and rarely consistent in size from one dropping to the next. That is, with the exception of the red hind legs of the grasshoppers. These legs were found in almost every dropping I dissected.

Dissecting droppings of birds is a worthwhile process where there is a large diversity in the type of insects that the birds digest. For this particular study, where, in many areas where the boxes occur, grasshoppers are eaten so abundantly, a visual diet sample may be just as accurate as a careful analysis of the droppings. If the person analyzing the droppings had a background in entomology, this process might prove to be a productive one.

How much time did I spend analyzing the droppings? For three days in Fossil I first attempted dissecting the droppings. It was in the afternoons that I

¹ [C. P. Ralph, S. E. Nogata, and C. J. Ralph. 1985. *Journal of Field Ornithology* 56(2):165-174.]

worked with the microscope, while in the mornings I checked boxes. Between our last visit out to Fossil in the last week of July to August 12th, I spent three full days working with the droppings, using the two methods described above. I suspect at least 35 hours were spent on this side project [of the bluebird study].

From this side project I gained a lot of experience working with small things. Rarely have I stopped to just look at insects. “Life,” to me, typically was always big or bigger and visibly moving. Even though the insects I was looking at were dead and torn apart, I really gained an appreciation of them because of their vitalness to the birds, and the minor intricacies of their bodies.

Not only did I gain experience by working with the microscope, but I also got experience with starting my own project, and seeing what I could accomplish with no previous training in the dissection of bird droppings. Although I didn’t obtain any real information that Char can use when she writes up her report, I feel that it was worthwhile time spent to see if this process would be useful to this particular bluebird study.

[Note: The prevalence of grasshopper legs in the droppings was in fact good confirmation of the evidence found by doing the visual diet samples that grasshoppers were the predominant food delivered to bluebird nestlings in this study.]