

THE TWILIGHT SONG OF THE WOOD PEWEE:
A PRELIMINARY STATEMENT.¹

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THE twilight song of the Wood Pewee is composed of three different phrases which may be represented as follows:



The bird sings regularly at dawn, and occasionally at sunset, a long composition consisting of these three phrases repeated in a varying order of succession. The morning song contains 500 to 1,000 or more phrases, and it may last for 40 minutes. The evening song is probably not so long. This entire composition is what I call "the twilight song."² Although the song is of such extraordinary length, it is actually a continuous piece of music. Each phrase occupies one bar, with a quarter-rest at the end, as shown in the musical notation; thus the rhythm is continuous throughout the entire composition.

The order of the phrases in this composition is full of significance. Sometimes the three different phrases are repeated again and again in the order in which they are given above: 1 2 3 1 2 3. . . . Sometimes they are repeated in the order 1 3 2 1 3 2. . . . , and sometimes 1 3 2 3 1 3 2 3. . . . There are also other sequences which are regularly sung. A sequence such as 1 2 3 or 1 3 2 I shall speak of as a "simple sentence." These simple sentences are organized into compound sentences. The formation of compound sentences is governed by laws which favor certain sequences of simple sentences, and exclude others; for example, the sequence 1 2 3 1 3 2 is common, but the sequence 1 3 2 1 2 3 does not occur once in all my records.

¹ From the Biophysics Laboratory of Harvard University.

² The name is adopted from the writings of Henry Oldys. He gave the name "twilight song" to that small bit of melody which I have called "phrase 3." But I think it is better to speak of the entire composition as the twilight song, and to speak of each of the three elements of the composition as a "phrase."

Often the same simple sentence, or the same compound sentence, is repeated many times in succession. Such a repetition of the same sentence I name a "series." These series are governed by certain laws, and they recur in a more or less regular manner. Finally, in some cases at least, the entire composition exhibits an orderly succession of divisions, each division of the composition containing a somewhat different sequence of sentences.

There are very great individual differences in the composition of the twilight song. All individuals sing the same three phrases, and most of them sing the same simple sentences; but (so far as can be judged from my records) there are no two individuals whose compositions are precisely alike in regard to the compound sentences, the series, and the divisions of the whole composition. Each individual adheres to his own style of composition. Two or more records from the same singer, obtained on different mornings, are very similar to each other and very different from the records obtained from other singers.

The facts which have been thus briefly summarized are so astonishing that they would be scarcely credible, were not the evidence for them perfectly clear and definite. Herein lies a great advantage in studying the song of this species. Wood Pewees (with few exceptions) keep the three phrases perfectly distinct, so that a record can be made with few or no errors, and the order of succession of the phrases can be studied with great accuracy.

In this short article, no attempt is made to present a complete account of the song, for three reasons. First, a complete account cannot be given in an article in a journal: it will require a monograph with many tables and graphs. Secondly, although I have already thirteen records of the twilight song, containing a total of more than 7500 recorded phrases, these are quite inadequate for a study of the song as a whole and of the individual variations. The primary object in publishing this article at the present time is to ask other observers to make some records for me. Thirdly, it will be best for new observers, in making their records, to be entirely unprejudiced by any theory as to what should be the order of succession of the phrases.

I request that persons who have time and opportunity to do so will make records of the twilight song of the Wood Pewee and

send them to me. It is desirable to have some records from widely distributed localities. At present I have only eleven records (some of them very incomplete) which I made in Maine, and two which were made for me by Mrs. L. A. Test, of Lafayette, Indiana. I need more records from Maine, more from Indiana, and others from other states.

To make the record, you simply listen to the song and as each phrase is sung you write its number, 1, 2 or 3 as the case may be. In order to get a complete record you will need to be at the Wood Pewee's station, with paper and pencil ready, before he begins to sing. He begins commonly before sunrise, when the day is dawning. You may need to make more than one attempt before you succeed in getting a complete record. But if you once locate your bird and get a partial record of his twilight song you can count pretty surely on getting a complete record from the same bird if you go to the same place the next morning, or a few mornings later.

The season when the song can be heard, so far as known, extends approximately from June 2 to July 20. You can be most sure of hearing the song in the early and middle part of the season.

In requesting these records, I am asking a great favor. Few persons have the time to spare and also the necessary interest and enthusiasm to rise and go out at three o'clock¹ in the morning to hear a bird sing. If you, kind reader, are one of these few persons, please plan to make some records of the twilight song during the coming summer. If you can get even one complete record it will be very valuable. I intend to publish all records sent to me, with the name of the observer in each case.

There is no technical difficulty in making the records. It can be done by any person who is careful and accurate and can follow a tune. But there are some details, not mentioned in this article, which should be attended to if possible. Therefore I have written a sheet of directions for making the records. Please write to me for a copy of these directions.

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¹The time will vary greatly according to the latitude, the date, and the relation between standard time and "sun time" at each locality.