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Xiphidium fasciatum Serv. The note of this species resembles that of an *Orchelimum*, but is very faint. McNeill says of it: "Its song is a faint echo of that of *Orchelimum vulgare* with the *zip*-*zip* omitted. . . . Its faint little quaver is the first note of the great chorus that sounds in all the meadows from the first of August until the first of October or until cold weather."

Xiphidium nemorale Scudd. "The song," says McNeill, "is louder than that of *fasciatum*; it consists of two parts, the first a short abrupt note which is very well represented by the syllable *zip*, the second is the familiar *zee-e* which lasts about half a second and is made from one to five times; the *zip* is not repeated."

ACRIDIDAE.

Dictyophorus reticulatus. Many years ago I received a couple of females of this bulky species alive from the south and kept one of them for some time. In the sunshine she stridulated by raising her tegmina directly upward against the half opened wings, making a rough scratching sound which was repeated rather rapidly, but variably, from two to ten times.

Subsequently Dr. Shufeldt figured this insect in Science (vol. 2) and gave an interesting account of it from observations in southern Louisiana. He says: "The only sound that I ever heard this grasshopper give vent to is now indulged in by the male. It consists simply of a series of peculiar hisses (this word expresses it better than anything else) and is only heard when we seize and handle one of them, or during their mating. The sound seems to be produced largely by the [fore] wings; for these members are elevated at this time, as I have shown them in my plate, where the male exhibits his beautiful hind-wings,—a relief to his otherwise sombre tints that is only to be experienced on such occasions." And later: "Whatever part of the entertainment these sable gentlemen [the males] entered into, they constantly kept up a very audible buzzing racket with their [fore] wings, which they elevated and lowered at few seconds' intervals, showing the inferior carmine pair each time they did so, with telling effect."

Melanoplus femur-rubrum. At Andover, Mass., I once observed on Oct. 5 a pair of this species, male and female, near together alternately answering each other with a slight quick movement of the hind legs on the tegmina as if in stridulation. I made no note of whether any sound was actually produced and do not now recall any.

Chloealtis conspersa Harr. The song of this insect is of varied rapidity, according to the amount of sunshine; in the sun this insect makes from nine to twelve notes, at the rate of fifty-three in fifteen seconds; the usual number of notes is ten. In the shade the



Fig. 50.—Note of *Chloealtis conspersa* in the sun.

rate falls to forty-three in fifteen seconds, the number of notes remaining the same. The femur is evidently scraped gently upon the tegmina to produce the sound, for frequently, at the beginning, two or three noiseless movements are made, the leg failing

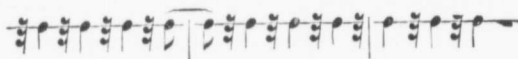


Fig. 51.—Note of *Chloealtis conspersa* in the shade.

to touch the tegmina. I once found three males singing to a single female, who was busily engaged laying eggs in a stick of wood, her abdomen plunged into a hole she had bored to the depth of half an inch; two of the males were near enough each other to cross antennae.

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