

to the song of *Hyla arborea*. The note of our own sounds like the distant croaking of toads (*Bufo*), at spawning season, but is somewhat feebler. McNeill says he has "been struck with the resemblance of its note to that of *Ecanthus niveus*. To my ear the only discernible difference is that of pitch. This song is a simple chirp, very low in pitch for an Orthopteran, repeated at intervals of about a second." I have also observed its resemblance to that of *Ecanthus*, where the latter is heard at some distance.

*Gryllus neglectus* Scudd. The note of this common cricket, which Saussure regards as only a form of *G. pennsylvanicus* Burm, is *cr-rur-ri*, or *crrri*, or *krrrd*; the rapidity with which it is uttered seems to vary very much even in a single strain by one insect. Sometimes the notes are produced as slowly as two per second, but they may be twice as rapid; the mean seems to be the usual rate. The note is sharp and shrill and is apparently pitched at E natural, two octaves above middle C.



Fig. 37.—Note of *Gryllus neglectus*.

In listening one night in midsummer to the chirping of insects, I heard two choirs, one on either side of me, separated by a garden fence. The individuals of each chirped together at the rate of about two notes per second, but whether owing to the influence of a warmer situation, or a fuller exposure to the moonlight, one choir invariably chirped a trifle faster than the other, and fourteen seconds elapsed between the perfect accord of the choirs and their complete discord; from this, fourteen seconds more to their former synchronism. These cycles occurred twice per minute, and followed each other with remarkable regularity for about an hour.

The first notes of *Gryllus* (species undetermined), were heard in Cambridge, Mass., in 1867, on June 15; in 1868 on June 13; but in 1880 (if *Nemobius* was not mistaken for it), on May 16. I think that in New England all fully developed males that go into hibernation die during the winter and that the earliest stridulation comes from those which have hibernated as pupae.

I may add that when in Cairo, Egypt, early in the month of November, I heard a *Gryllus* chirping in the early evening when the thermometer was about 67° Fahr. at the rate of about 230 notes per minute; when three weeks later at the same hour, the thermometer standing at 61° Fahr., the notes were produced by what was apparently the same insect at the rate of only 130 per minute.

*Nemobius vittatus* Harr. The chirp of this cricket is very similar to that of *Gryllus* and can best be expressed by *ru* or *rruu*, pronounced as though it were a French word.



Fig. 38. Note of *Nemobius vittatus*.

The note is trilled forcibly and lasts a variable length of time; sometimes for several seconds, at others it is reduced to a short sharp click.

I once observed one of these insects singing to its mate. At first the song was mild and frequently broken; afterward it grew impetuous, forcible and more prolonged; then it decreased in volume and extent till it became quite soft and feeble. At this time the male began to approach the female, uttering a series of twittering chirps; the female ran

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McNeill "seems to *angustipennis* by me with revision of 5 (