

Courtship in *Falcicula hebardii* (Orthoptera: Gryllidae, Trigonidiinae)¹

JOHN D. SPOONER

University of South Carolina, Aiken Campus, Aiken 29801

Sound production by males for the attraction of mates, and courtship behaviors involving sound and sometimes dance, are well known in crickets. No record of sound production and courtship in the small (4-5 mm long) cricket, *Falcicula hebardii* Rehn, has been published. Further, the only published account of mating in trigonidiine crickets is a note by Alexander and Otte (1967a) of T. J. Walker's observations of 2 copulations of *Crytoxipha columbiana* Caudell. The male of *C. columbiana* "lowered his forewings and dashed back under the female, attached the spermatophore, and dashed out in a total time of about one second." Alexander and Otte stated, "we have watched males of *Phyllopalpus pulchellus* trill while backing toward females with their genitalia extruded and spermatophores in evidence, but we have seen no copulations."

A pair of *F. hebardii* collected at Augusta, Ga., was maintained on lettuce in a 3.5×7×12-in. clear-plastic tray with a screen top. On 2 occasions in a lighted laboratory, I saw the male stridulating with raised tegmina and producing a broken trill so low in intensity that it was barely audible 3 ft away. The song was rattly and of low frequency containing no pure tone. During most of the singing the male moved about slowly, antennating the surroundings and not in contact with the female. During one observation, he carried a spermatophore in his extended genitalia. The female, always very active in the cage, occasionally passed within antennal contact of the male at which times he quickly turned his posterior end toward the female while continuing to stridulate. No copulation was seen because the female never stopped at the male while I watched. Such behaviors suggest courtship (Alexander and Otte 1967a). Courtship songs are

typically low in intensity. Courting males may follow females around, and courtship can occur without the female responding. Males may court without being in contact with a female if contact was recently made.

A 3rd observation was of postcopulatory behavior, mating apparently having taken place just before I made the observation. The male produced a call similar to that described hereinbefore while facing the female in antennal contact and making short lunges toward her. A spermatophore protruded from her genitalia. I do not know how long the postcopulatory attention would have persisted because I accidentally disturbed the pair after a few minutes. Alexander (1967) concluded that important functions of postcopulatory signals in crickets are to prevent the female from removing the spermatophore before insemination is complete and to keep the female with the male prior to another copulation.

I observed no signal that can be considered a calling song (female attracting). It is possible that the calling song is absent in this species. The weakly developed stridulatory apparatus could not broadcast signals over a significant distance, and the postcopulatory behavior reduces the need for recalling the female for repeated inseminations. Very possibly the male may follow the female around as in *Hapithus agitator* Uhler (Alexander and Otte 1967b).

ACKNOWLEDGMENT

Grateful thanks are due Dr. Thomas J. Walker of the University of Florida for his suggestions and review of the manuscript. This study was supported by NSF Grant GY 2218.

REFERENCES CITED

- Alexander, R. D. 1967. Acoustical communication in arthropods. *Annu. Rev. Entomol.* 12: 495-526.
Alexander, R. D., and D. Otte. 1967a. The evolution of genitalia and mating behavior in crickets (Gryllidae) and other Orthoptera. *Misc. Publ. Mus. Zool. Univ. Mich.* 133: 1-62.
1967b. Cannibalism during copulation in the brown bush cricket, *Hapithus agitator* (Gryllidae). *Fla. Entomol.* 50(2): 79-87.

¹ Received for publication Feb. 1, 1972.

Reprinted from the

ANNALS OF THE ENTOMOLOGICAL SOCIETY OF AMERICA
Volume 65, Number 6, p. 1419, November 1972