INTRODUCTION

During a study of structure and function of spermatophores in insects other points of interest connected with sexual behaviour and instincts have been encountered. It is well known that copulation is achieved in Gryllidae and Tettigoniidae by producing spermatophores and that they are deposited by the males in such a way that they remain hanging outside the female's body for a varying length of time. This mode of sperm transference has been evolved in conjunction with a very complicated pattern of behaviour which shows itself in diverse forms in the different species; this paper is a prelude to a contemplated study of sexual behaviour patterns in those forms which keep their spermatophores outside their genital organs subject to loss and destruction by various factors.

The sexual activity of *G. domesticus* can be generally represented in the following way:

```
Spermatophore production

"Watching"

"Mating display"

Delivering the spermatophore
```

This cycle goes on for a certain period during the intense activity, the duration of which and the number of spermatophores involved being at the moment unknown. These points together with the processes of sperma-
trophore production and delivery will form the subject of another paper and it is intended to deal here only with details of behaviour, namely courtship and “watching” 1).

OBSERVATIONS AND EXPERIMENTS

Courtship.

This is performed among crickets in different ways and in *G. domesticus* it is only in form of chirping which is a common habit among Gryllidae. It is confined to the male in the house cricket, but according to Turner (1916) the female mole cricket chirps as well. There are two types of song in *G. domesticus*: a “calling” song which is produced by the male at any time irrespective of the presence or absence of spermatophore, and a “mating” song which is performed when a male possesses a spermatophore and is sexually excited. The former reaches a shrill high pitch with the tegmina raised to an angle of about 45° from the body (Fig. 1a), while

Fig. 1a. A male house cricket performing the “calling” song. b. Same performing the “mating” song.

1) Thanks are due to Dr W. H. Thorpe who drew my attention to the problem and under whose direction the work was carried out, to Dr J. S. Kennedy for his criticism and to Mr C. W. Coombs for reading the manuscript.