

MOVING BEHAVIOUR OF THE GERMAN COCKROACH, *BLATTELLA GERMANICA* (L.) (DICTYOPTERA: BLATTELLIDAE) AT THE SITE OF FOOD AND WATER

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Cockroaches are common pests in urban environments around the world. A tremendous amount of papers have appeared on the behaviour of cockroaches. However, the details of their behaviour have not been completely clarified. We have already investigated the nocturnal behaviour of the German cockroach, *Blattella germanica* (L.) in reference to sex and maturation to obtain a basic understanding of movement behaviours in them. Part of these results was already reported in The 1st International Conference on Insect Pest in the Urban Environment in Cambridge.

Furthermore, we have observed the behaviour of German cockroaches at the feeding site (food or water) both in day and night time under the following conditions. A large container (68×42×15cm) for observation of cockroaches was connected with a dark small box (11×15×8cm), served as a hiding place, through a tube of 5cm length and 3cm in diameter.

An automatic motor-drive camera was set above the center of the observation container. Cockroaches, which appeared at the feeding site, were photographed every two, eight or fifteen minutes. In the daytime, pictures of cockroaches were taken with a video camera as well.

Ten or fifteen adult males and females were marked with white paint, and released in the small box.

The results were summarized as follows.

1. The behavior of male adults was very active and male adults did not stay at the feeding site for a long time.
2. A few adult females appeared at the feeding site from hiding place, even at night and individuals appeared once tended to concentrate at the food site.
3. Under observation with video camera during the day, feeding time of the adult male is very shorter than that of female.
4. Few cockroaches appeared at the water site under observation with pictures taken every fifteen, eight minutes or two minutes at night.
5. The behaviour of drinking water is much faster than the ingestion of food.
6. Under observation with video camera during the day, the time for drinking water is very short within a minute.