

COMPARISON OF DEFENCE BODY MOVEMENTS OF *APIS LABORIOSA*, *APIS DORSATA DORSATA* AND *APIS DORSATA BREVIIGULA* WORKER BEES

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The giant Asian honeybees are well known for their high defence behaviour. We compared the defence behaviour of *Apis laboriosa*, *A. d. dorsata* and *A. d. breviligula*, whose colonies exhibit different defensiveness. The main objective of this study was to determine whether differences exist in defence behaviour of individual workers of those three kinds of bees. Investigations were conducted in Nepal, India and the Philippines.

The results show that disturbed worker bees respond with characteristic defence body twisting (DBT). The workers twist their bodies forth and back in dorso-ventral direction. The least defensive *A. laboriosa* workers twist the thorax on avg by 55°. The more defensive *A. dorsata* of both subspecies twist it by about 10° more. The tip of the abdomen is lifted by *A. laboriosa* on avg by 90° and by *A. dorsata* worker bees about 20° higher. The maximal lifting of abdominal tip reached even 140°. *A. laboriosa* twists the body together with the wings, while both *A. dorsata* subspecies make one wing strike.

The whole cycle of defensive body twisting is the most vigorous in the high defensive *A. d. breviligula*. The defence cycle of 0.11 sec is twice as vigorous as in *A. d. dorsata* and trice as in *A. laboriosa*. DBT followed by neighbouring workers results in defence waves on the surface of the curtain. Defence waving does not continue after the disturbing stimulus stop, independently is it an alive hornet or an artificial object.



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