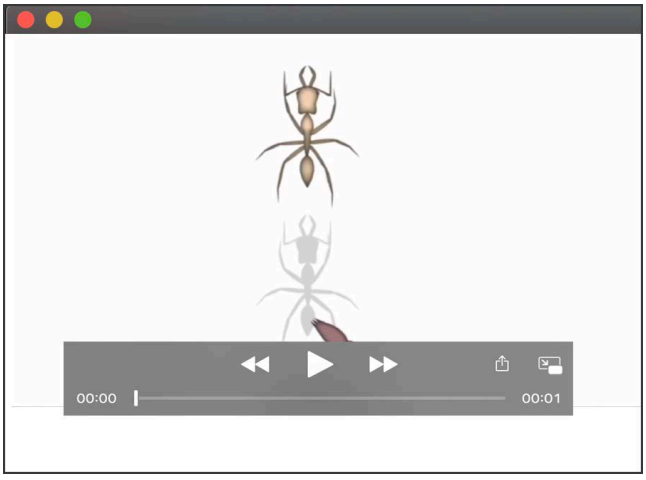
Supplementary Information

Movie 1. Hunting behavior of the trap-jaw ant *Odontomachus kuroiwae*. The ant orients to a small insect while opening the mandibles widely. After it detects and identifies the prey using the antennae, the mandibles close extremely fast, to bite, and then it stings to inject venom into the prey.



Movie 2. Behavioral responses of the trap-jaw ant to unexpected tactile stimuli to the abdomen. The movie indicates the *Level -1* dart response, *Level 0* no response, *Level 1* turn response without open mandibles, and *Level 2* turn response with open mandibles.

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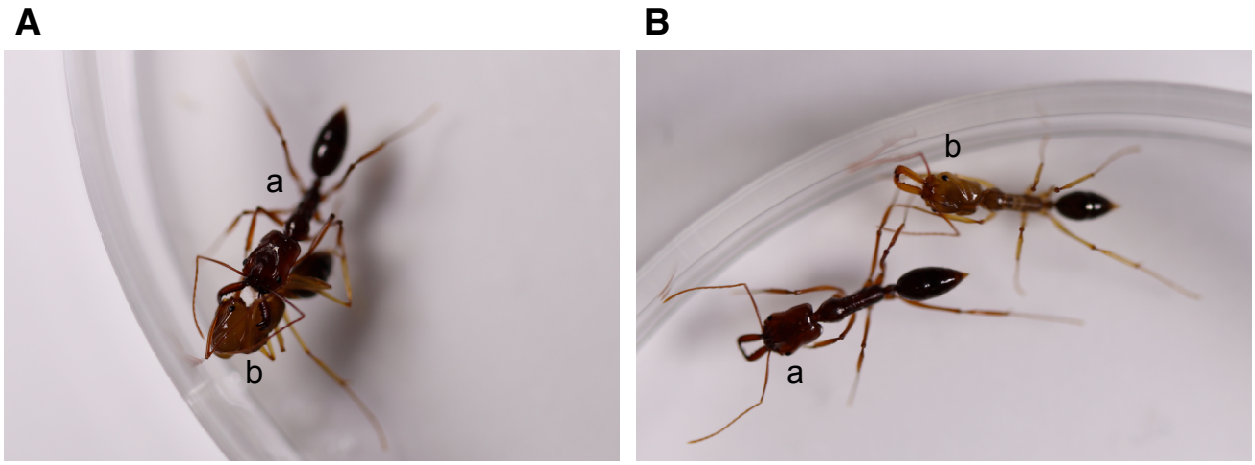

Fig S1. Aged worker and newly emerged worker. **A**: An aged worker (a) hold a newly emerged worker (b) using mandibles. **B**: The body color of aged worker (a) is much darker than that of newly emerged worker (b).

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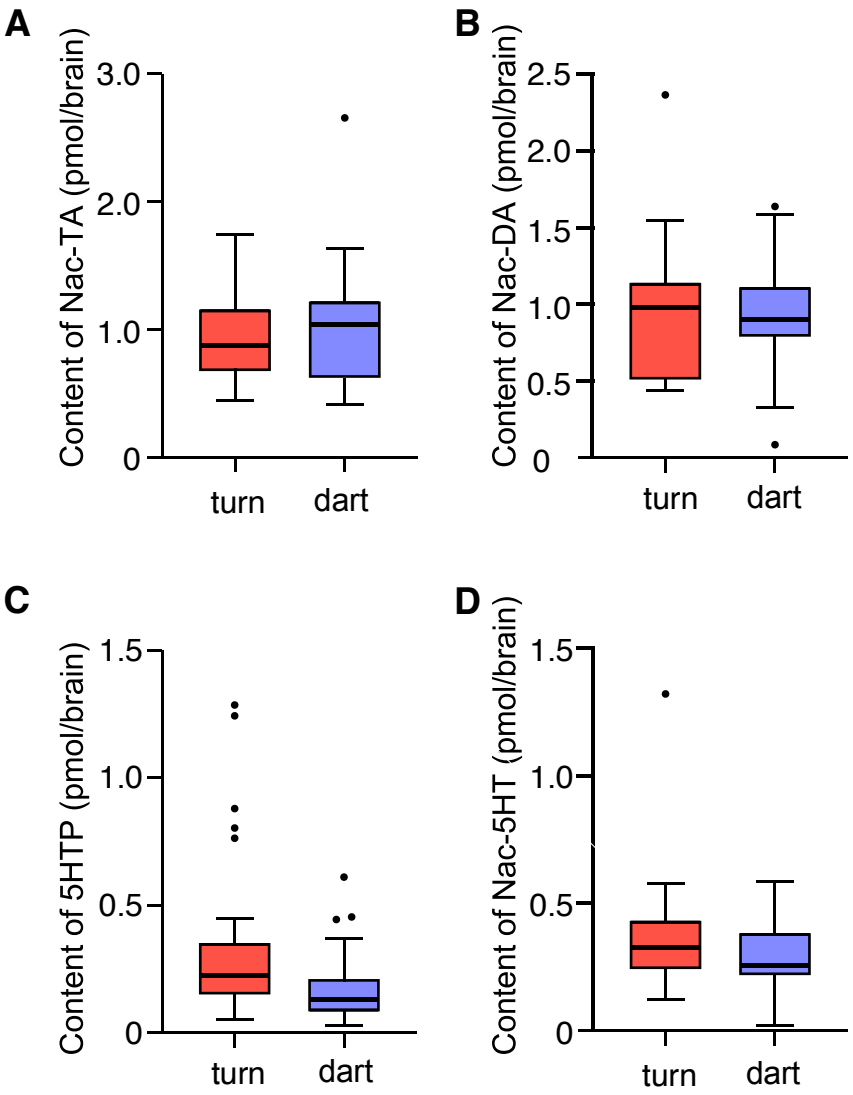

Fig S2. Amount of precursor and catabolites of biogenic amines in the brain. Box-and-whisker graphs indicate minimum, median, maximum, 25% percentile and 75% percentile. **A:** Amount of 5HTP in the brain. There was no significant difference between turn and dart (Unpaired t test with Welch's correction: $p = 0.21$). **B:** Amount of Nac-5HT in the brain. There was no significantly difference between turn and dart (Unpaired t test with Welch's correction: $p = 0.18$). **C:** Amount of Nac-DA in the brain. There was no significant difference between turn and dart (Unpaired t test with Welch's correction: $p = 0.80$). **D:** Amount of Nac-TA in the brain. There was no significant difference between turn and dart (Unpaired t test with Welch's correction: $p = 0.75$).

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