Myrmecological News
myrmecologicalnews.org
Myrmecol. News 34
Digital supplementary material

Digital supplementary material to

FUJIOKA, H. & IWATAKE, M. 2024: Comparison of daily activity rhythms in individual workers of five Japanese ant species. – Myrmecological News 34: 81-89.

Tab. S1. Effect of light cycles (LD or DD) on the strength of daily rhythms (linear mixed model). Colony ID and worker types/morphological castes were treated as random effects. (strength of daily rhythms ~ light condition (LD or DD) + (1/colony) + (1/caste))

Sp.	Estimate	Std. Error	df	t value	p value
Camponotus vitiosus	-0.002	0.0025	340.99	-0.93	0.35
Formica japonica	0.013	0.0037	69.2	3.58	< 0.001
Lasius japonicus	-0.0004	0.0031	0.017	-0.149	0.88
Nylanderia flavipes	0.0004	0.002	0.33	0.18	0.85
Pristomyrmex punctatus	0.0042	0.0003	0.0035	11.9	< 0.001

Tab. S2. Comparison of the strength of daily rhythms among species. The different letter indicates significant differences in the Tukey-Kramer test ($p < 0.05$). n.s. means no significant differences.

sp.	LD	DD
Camponotus vitiosus	0.048±0.02 c	0.051±0.027 n.s
Formica japonica	0.064±0.027 b	0.053±0.024 n.s
Lasius japonicus	0.048±0.024 c	0.049±0.017 n.s
Nylanderia flavipes	0.055±0.02 bc	0.054±0.02 n.s
Pristomyrmex punctatus	0.098±0.053 a	0.052±0.021 n.s

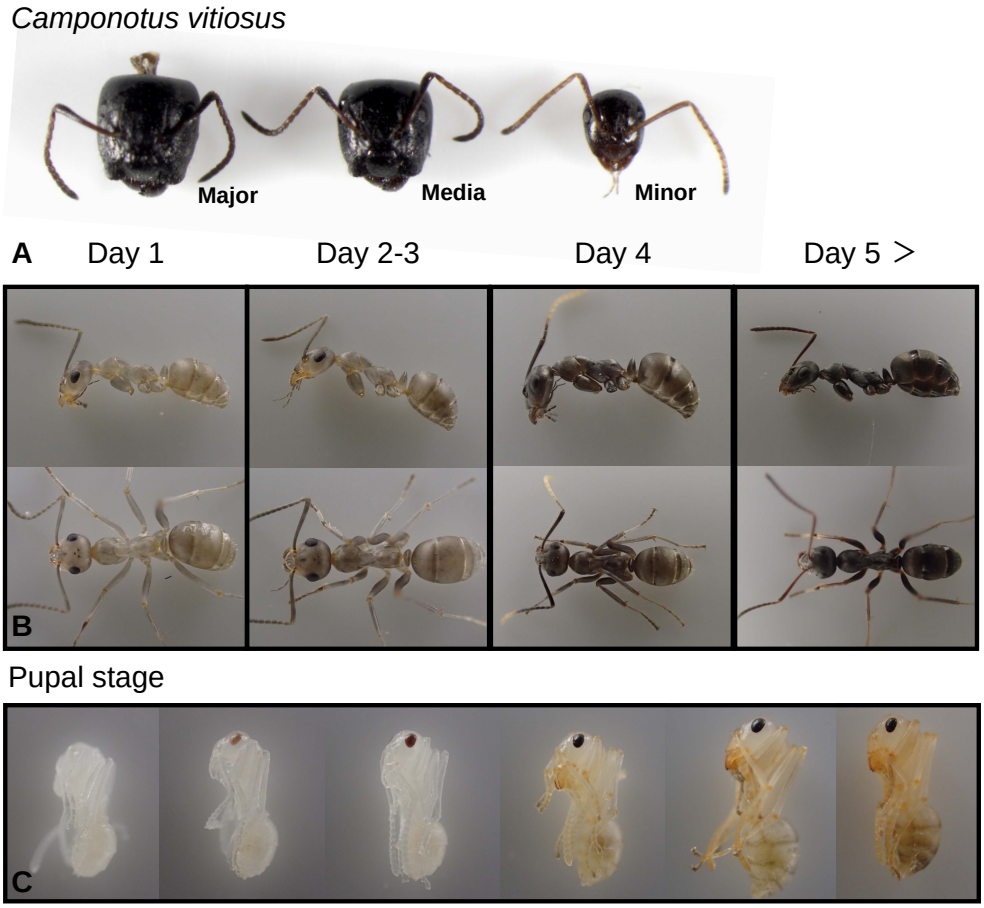

Fig. S1. Head size in *Camponotus vitiosus* (a) and temporal body color change of callows (b) and pupal stages (c) in *Formica japonica*. The body colors were recorded every day after post-emergence. We recorded pupal stage when their body color characteristics changed (no data of day).

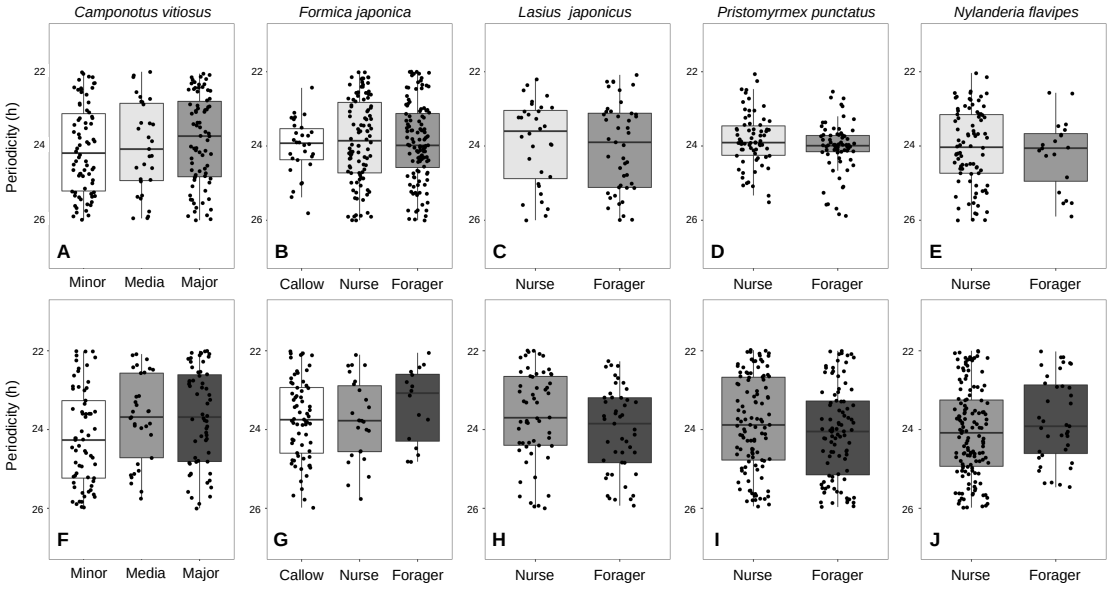

Fig. S2. Periodicity of circadian activity rhythms in five ant species. The periodicity (h) of an individual ant was calculated by a chi-square periodogram using five days activity data.

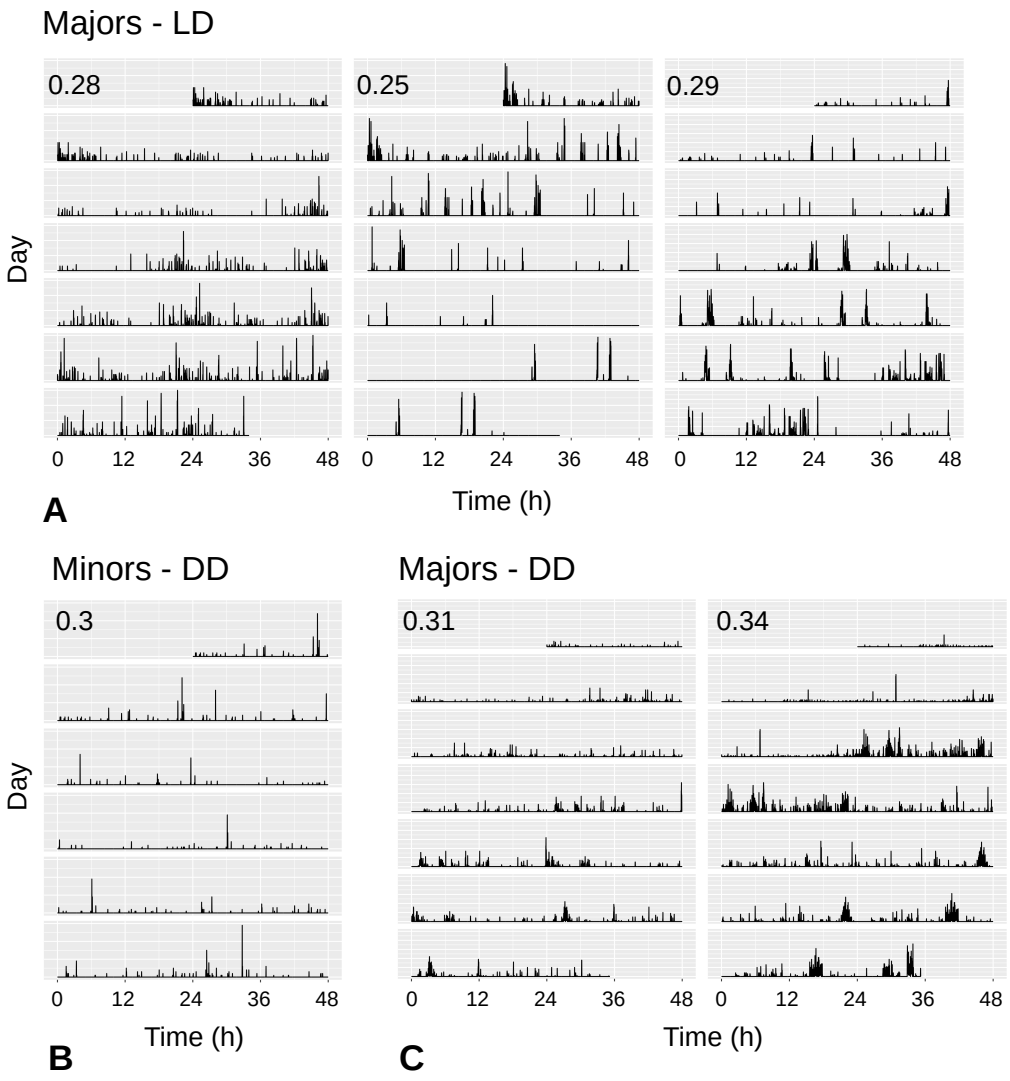

Fig. S3. Double-plotted actogram of individual major workers in *Camponotus vitiosus.* Major workers under the LD (a), the minor under the DD (b) and majors under the DD conditions (c). These six workers had lower ratio (< 0.35) of daytime activity per total activity (the number at upper left).