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Elytra, Tokyo, **36**(2): 309–310, November 22, 2008

Spectrophotometric Analysis of Dorsal Coloration in *Phelotrupes auratus* (Coleoptera, Geotrupidae): A Comparison of Beetles Collected in 2001 and 2005

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The coprophagous beetle, *Phelotrupes auratus* (MOTSCHULSKY) (Coleoptera, Geotrupidae), is known to exhibit considerable variation in color (MIZUNO, 1964). TSUKAMOTO (1994) introduced a possibility that the coloration of this species may have changed over time in the Nara City population. However, based on qualitative assessments of dorsal coloration by eye, MIZUTA (2000) reported that there were no significant differences in beetles collected from Nara City in 1972–1975 and 1996–1997.

On the other hand, WATANABE *et al.* (2002) conducted spectrophotometric analyses of the dorsal coloration in *Phelotrupes auratus*, and found that the wavelength of the highest peak in the reflectance spectrum of visible region (400–700 nm), which they named $\lambda_{\max}(\alpha)$, was the optimal parameter for discriminating the coloration of this species.

Following the methods of WATANABE *et al.* (2002), we measured reflectance spectra of the elytra in *Phelotrupes auratus* specimens from Mt. Wasamata in Nara Prefecture using a spectrophotometer (UV-240, Shimadzu, Japan), and compared the $\lambda_{\max}(\alpha)$ between beetles collected in 2001 and 2005. Since there was no significant difference in $\lambda_{\max}(\alpha)$ between sexes in samples caught in 2001 and 2005, respectively (Mann-Whitney *U*-test, $P > 0.05$), male and female data were pooled for this study. As the result, no significant difference in $\lambda_{\max}(\alpha)$ was detected between beetles collected in 2001 (mean \pm SD; 491 ± 13.5 nm, $n = 26$) and in 2005 (490 ± 13.6 nm, $n = 25$) (Mann-Whitney *U*-test, $P > 0.05$). These findings suggest that the frequency distribution of $\lambda_{\max}(\alpha)$ in the Wasamata population did not change in the four-year period from 2001 to 2005, though the present sample size was not so large.

Lastly, we wish to express our sincere thanks to emeritus Prof. M. IMAFUKU for use of the spectrophotometer. This study was supported in part by a Grant-in-Aid from the Japan Society for the Promotion of Science (No. 18570091).

Specimens examined. 9 ♂♂, 13 ♀♀, Mt. Wasamata, Nara Pref., 25-VIII-2001, M. AKAMINE leg.; 2 ♂♂, 2 ♀♀, ditto, 3-IX-2001; 4 ♂♂, 5 ♀♀, ditto, 3~5-VI-2005; 9 ♂♂, 7 ♀♀, ditto, 11-VIII-2005.

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