

- A721** Genetic and Morphological Variation of *Pheidole fervida*
(Hym., Formicidae) in Korea
Park Seong-Joon and Byung-Jin Kim*
Division of Biological Science, Wonkwang University

Analysis of morphometrics and isozyme variation were performed to estimate genetic and morphological variation and to assess phylogenetic relationships and biogeographic distribution of the *Pheidole fervida* in Korea. In order to investigate relationships between populations of this species, they were collected from six regions. Quantitative morphological data were analyzed, as were genetic variances of isozyme on the basis of electrophoretic data by SGE. The results were computed using UPGMA by SPSS/PC+ and NTSYS program. As a result of comparing both the morphological and electrophoretic phenograms, it was found that Ch'ilgapsan and Ch'iaksan populations were genetically closer ($D=0.335$) than those between others, Naksan-sa and Yösu populations were genetically remote ($D=1.167$) from each conspecific populations.

- A722** Systematic Study and Variation of Ants Genus *Camponotus*
from Korea Using RAPD-PCR Data (Hym.; Formicidae)
Kim, Ki Gyoung and Byung-Jin Kim
Division of Biological Science, Wonkwang University

Systematic study of *Camponotus* in Korea was made using both morphological analysis (morphometrics) and RAPD-PCR. Eleven and three ssp. were recorded for the Genus *Camponotus* in Korea.

Morphometric analysis showed that in *Camponotus* the most variable character was clypeus (CL), the second most variable was the propodeum width (PDW), the third head width (HW), the fourth petiole width (PTW), and fifth mesonotum width (MW). The least variable characters were eye width (EW) and eye length (EL) the coefficients of variation were $CV (EW) = 57.74\%$ and $CV (EL) = 57.14\%$. Therefore the most stable characters were EW and EL, which were significant diagnostic characters in the systematics of this group.

Camponotus sp.1 group and *quadrinotatus* group were separated at 80% degree of similarity, while each species became independent group in 80% similarity, and 9 groups appeared at 40%. *C. jejuensis* and *tokioensis* were thought to be the same species by several authors, owing to their morphological similarity (95%), but it was suggested by the present author that they are full species because they showed only 29.54% similarity in RAPD analysis. *C. atrox* and sp.1 differ slightly in propodeum declination and the degree of anterior protrusion of the petiole. They were 82% similar in morphological analysis, but only 8.89% in RAPD, so the author also considers these as full species.

Each primer produced unique bands according to each species, but of the primers used in this study, primers 5 and 9 were the most useful in species level systematics. These 2 primers were used as markers in discriminating 8 species from among 12 of *Camponotus*.

The other useful primer ranked in order of importance were numbers 10, 5, 16, 19, 11, 2 and 15.