

Chung, Y.J. Ewha Woman's University, Seoul, Korea. Biochemical genetic study of *Drosophila* populations in Korea.

Enzyme polymorphism has been extensively investigated from various places by many authors. In order to establish a biochemical genetic system in *Drosophila* populations in Korea, six enzyme (ADH,  $\alpha$ -GPDH, MDH-1, MDH-2,

ACPH and ME) alleles of natural populations of *D.melanogaster* from 10 localities (Kangreung, Seoul-Seungsudong, Seoul-Wangsibri, Seoul-Sinchon, Seoul-Seungsandong, Jeonju, Pusan, Mokpo, Jeju-Hanrim and Jeju-Moseulpo) in Korea were analyzed by means of starch gel electrophoresis.

The results obtained were as follows: (1) the natural populations of *D.melanogaster* from 10 localities in Korea showed polymorphism as to ADH,  $\alpha$ -GPDH, MDH-1, ACPH and ME alleles. But MDH-2 alleles were found to be monomorphic. (2) Heterozygosity was calculated to be 48.40% for  $\alpha$ -GPDH and 28.00% for ADH allele. The rest of enzymes showed a low heterozygosity below 10%. (3) The FF genotypes of ACPH and ADH alleles were most frequently distributed through the Korean Natural populations of *D.melanogaster*, whereas the SS genotypes of MDH-1, MDH-2 and ME alleles were most frequently involved in all populations, and the commonest genotype of  $\alpha$ -GPDH alleles were found to be the FS genotype. (4) The F gene frequency was found to be higher than the S gene in ACPH, ADH and  $\alpha$ -GPDH, whereas S gene frequency was found to be higher than the F gene in MDH-1, MDH-2 and ME alleles. (5) The predominance of the FF genotype and the F gene of ADH alleles was weakened in the second year experiment compared to first year's but the genotype and gene frequencies of  $\alpha$ -GPDH alleles showed no difference between the first and the second year experiment. However, heterozygosity revealed still high values in average (ADH:0.3048;  $\alpha$ -GPDH:0.4645). (6) This investigation is desired to extend the other localities in Korea so that a biochemical genetic system of *Drosophila* populations in Korea may be established more robustly.

References: Chung, Y.J.&K.S.Lee 1972, J.Kor.Res.Inst.Bet.Liv. 9:123-132; Chung,Y.J., Y.S.Han & Y.L.Chung 1982, Kor.J.Zool. 25:123-129.

Coyne, J.A. University of Maryland, College Park, Maryland USNA. Report of J.A. Coyne.

Burgundy (bg) is a sex-linked recessive mutant of *D.mauritiana* that confers a dark ruby eye color with no pseudo-pupil. The mutant, available from the Bowling Green Stock Center, is one of only two described in this species

(Woodruff 1980). Because of the importance of *D.mauritiana* in studies of the genetics of speciation, mapping of this and other markers is essential. Burgundy females of *D.mauritiana* were crossed to white (w, 1-4.1) males of the sibling species *D.simulans*. The hybrid females are fertile and heterozygous for both markers. These were crossed to wild-type *D.simulans* males, and the male offspring scored for recombination between w and bg (the two species are homosequential and the hybrid females show free recombination). Since w bg males almost certainly have white eyes, there are only three phenotypes among the backcross males; the numbers scored were 362 white, 342 burgundy, and 20 wild-type. I assumed that 20 of the white males were actually w bg. A rough estimate of recombination between the loci is thus  $40/724$  or  $0.055 \pm 0.017$ . An approximate location for burgundy is thus either 1-9.6 or near 1-0, the base of the X chromosome. Crosses of burgundy females to similar eye-color mutants of *D.melanogaster* in this region showed that the mutant is allelic with prune (pn, 1-0.8). Burgundy should thus be regarded as identical to prune.

Reference: Woodruff, R.C. 1980, DIS 55:217.

