

In conclusion, loss of cytosolic SHMT appears to necessitate alternative sources of methyleneTHFA and glycine. The partial reactions of the glyoxylate cycle appear to generate the latter metabolite in the mutant but the localization of this reaction sequence remains to be elucidated. The mitochondrial SHMT may have importance in serine synthesis as is indicated by serine labelling in the mutant (table 2). Further studies of such compartmentation of folate metabolism in *Neurospora* appear warranted. Mutants like those of *Saccharomyces*<sup>4</sup> which lack the mitochondrial enzyme could be useful in this regard.

Table 2. Major products of [1-<sup>14</sup>C]glyoxylate metabolism

Product	Feeding (min)		Formate mutant	
	Wild type		5	15
Glycine	35.1	223	158	1348
Serine	29.3	84	64	108
Aspartate	87	537	49	216

Data are expressed in cpm  $\times 10^{-2}$ /μmole of product.

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## Natural hybridization in *Drosophila*

J.P. Gupta, Y.N. Dwivedi and B.K. Singh<sup>1</sup>

Genetics Laboratory, Department of Zoology, Banaras Hindu University, Varanasi (India), 21 February 1979

**Summary.** Although at least 159 cases of interspecific hybridization between closely related species of *Drosophila* have been obtained under laboratory conditions, only 7 cases of natural interspecific hybridization have been recorded. We report yet another case, concerning *D. malerkotliana* and *D. bipectinata*.

The genus *Drosophila* contains well over 1000 valid species, many quite wide-spread<sup>2</sup>. The genus is remarkable in that laboratory-induced interspecific hybridizations between closely related species have been obtained rather commonly but natural hybridization between them seems to be very rare. Only 7 cases of natural interspecific hybridization have been recorded in the genus so far, viz.: *mulleri* and *aldrichi*; *montana* and *flavomontana*; *melanogaster* and *simulans*; *metzii* and *pellewae*; *pseudoobscura* and *persimilis*; *setosimentum* and *ochrobasis*; *heteroneura* and *silvestris*<sup>3</sup>. *Drosophila malerkotliana* Parshad and Paika and *D. bipectinata* Duda are 2 very closely related species which are the commonest, and also coexist in various localities, in the subcontinent of India. Females of these species are practically indistinguishable, while males can be very easily separated on the basis of abdominal tergites pigmentation and of the sex-comb pattern. Male genital structures in these species are apparently identical. However, the male hybrids are easily distinguished from either parental species, being intermediate for tergites pigmentation and sex-comb<sup>4</sup>. Reciprocal crosses between *D. bipectinata* and *D. malerkotliana* in the laboratory produce hybrid individuals of both sexes, males being sterile while females are fertile. Besides this, much is known regarding the karyotypes of the 2 species, and their phylogenetic relationships<sup>5-8</sup>. During the survey of various areas for *Drosophilid* fauna, it was found that these species are not only sympatric but also dominant in Kushmahi forest, an ecologically undisturbed area. Several collections were undertaken in this region to obtain an adequate number of individuals representing both species. While sorting out the captures, 3 males were found among 5000 specimens belonging to both species and to either sex, which had all the morphological characteris-

tics of F<sub>1</sub> hybrids. These males were then tested for fertility by back-crossing to virgin females of both parental species in separate culture vials, but in no case were offspring produced. It is thus inferred that the female of 1 species had been inseminated by an alien male in nature.

Besides this, 397 wild-caught females representing both species, separated immediately after collection, were tested for the possibility of insemination by alien males in nature. These females were placed singly in separate culture vials. Among them, 78 had no offspring (flies died or no eggs were laid), 318 yielded progeny exclusively belonging either to one or the other species, while 1 culture contained offspring which were intermediate, characteristic of F<sub>1</sub> hybrids. In order to test male hybrids from this vial for fertility, backcross and inbreeding tests were employed which confirmed them as sterile.

Based on the above findings, we infer a certain amount of hybridization and, since hybrid females are fertile, introgression occurs between the 2 species in wild populations. To our knowledge, this is the 8 case of natural interspecific hybridization in the genus reported to-date.

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