To obtain each generation, 10 to 15 males from the previous generation were crossed to females of the appropriate stock (No. 2 for (a) and No. 269 for (b)). The substitution required about one year. $F_{14}$ males from series (a) and (b) were individually crossed to yw($H^-$) females. Crosses of No. 2 and No. 269 males to yw($H^-$) females served as control. The rate of somatic mosaicism determined in $F_1$ females resulting from the crosses. Individual analysis of ♂♂ for the presence of H showed that ♂♂ $F_{14}$ sn v wy ($H^+$), (a) with autosomes replaced by the autosomes of stock No. 2 ($H^-$) had not lost H (contained the same two H dosages as ♂♂ No. 296,$H^+$) and ♂♂ $F_{14}$ (b) which had received the autosomes of stock No. 296 ($H^+$) had not received the H factor with them. Now the autosome substitution in the (b) series led to an unexpected result. All the $F_{14}$ (b) males, which were phenotypically indistinguishable from the parental No. 2 males (red-eyed), produced brown-eyed females in the $F_1$ of the cross to yw females. Since the $F_1$ females were heterozygous with respect to the _white_ gene, we supposed that all the $F_{14}$ (b) males carried a coloured _white_ allele phenotypically indistinguishable from the wild-type $w^+$ allele.

Further analysis, including crosses to $w^{1187}$, $w^{1393}$ and $w^{lemon}$ alleles independently obtained at different times, confirmed the above supposition. We termed the new _white_ allele _white_-mysterious ($w^{my}$). The $w^{1187}/w^{my}$, $w^{1393}/w^{my}$, $w^{le}/w^{my}$ heterozygotes have dark brown eyes. The colouring of $w^{my}/w^{my}$ females and $w^{my}/Y$ males is phenotypically indistinguishable from the wild type.

The $w^{my}$ mutation seems to have emerged in the process of autosome substitution. Possibly the $w^{my}$ males develop at a somewhat faster rate than the wild-type males, which would have given them a higher probability of getting from $F_i$ to $F_{i+1}$. The case described is an instance of genetic drift in small laboratory populations.

References: Khovanova, E.M. 1977, Genetics 13(11):1966-1975; Khovanova 1977, Genetics 18(12): 2173-2180.

Kidwell, M.G., T. Frydryk & J.B. Novy. Brown University, Providence, Rhode Island. The hybrid dysgenesis potential of _Drosophila melanogaster_ strains of diverse temporal and geographical natural origins.

A large survey of D. melanogaster strains has been conducted in order to determine their potential for the P-M and I-R systems of hybrid dysgenesis (for review see Bregliano & Kidwell 1983). The summarized results and analysis of this survey will be published elsewhere (Kidwell 1983). Here a list of tested strains is provided together with the results of standard tests for hybrid dysgenesis.

In order to test for each system of hybrid dysgenesis, two crosses, denoted A and A*, were routinely made en masse with each strain as indicated in Table 1. Sterility frequencies of the gonadal (GD) and sterilite femelle (SF) types characteristic of the P-M and I-R systems, respectively, were estimated using the methods described by Kidwell (1979). The results of the sterility tests were interpreted and the strains were characterized according to the criteria given in Table 2. The distinctions made between P and Q and between R and N strains are somewhat arbitrary and may reflect quantitative rather than qualitative variation.

A list of tested strains together with sterility frequencies observed and strain designations with respect to hybrid dysgenesis are presented in Table 3. With respect to GD sterility, the cross A results provide an estimate of P factor activity and the cross A* results indicate the cytotype. With respect to SF sterility, the cross A results provide an estimate of I factor activity and the cross A* results estimate the degree of reactivity. Individual

Table 1. Details of reference strains used in mass matings in order to test strains of unknown dysgenic potential with respect to the two systems of hybrid dysgenesis.

| Hybrid dysgenesis system | Type of cross A | Type of cross A* | Developmental temp. | Sterility assay |
|---|---|---|---|---|
| P-M | Canton-S (M)♀♀ | Harwich (P)♂♂ | 29° | GD freqency |
| I-R | seF$_8$ (R) or Cockaponsett Forest (R)♀♀ | Luminy (I)♂♂ | 20° | SF frequency |

Table 2. Interpretation of the results of the sterility tests outlined in Table 1.

| % Sterility cross A | % Sterility cross A* | Strain Characteristic | |
|---|---|---|---|
| >10 GD | <10 GD | P | |
| <10 GD | <10 GD | Q | I-R system |
| <10 GD | >10 GD | M | |
| >10 SF | <10 SF | I | |
| <10 SF | <10 SF | N | P-M system |
| <10 SF | >10 SF | R | |

strains are listed according to the geographical area and decade of origin in the wild.

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References: Bregliano, J.C. & M.G. Kidwell 1983, In: Mobile Genetic Elements (Shapiro, ed.), Academic Press (p363-410): Kidwell, M.G. 1979, Genet.Res. 33:205-217; Kidwell, M.G. 1983, Proc.Natl.Acad.Sci USA (80:1655-1659).

Table 3. List of wild type strains tested with their sterility frequencies and designations in the P-M and I-R systems of hybrid dysgenesis.

| Strain | Location | % GD sterility A | | % GD sterility A* | | P-M designation | % SF sterility A | | % SF sterility A* | | I-R designation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NORTH AND SOUTH AMERICA | | | | | | | | | | | |
| 1920-29 | | | | | | | | | | | |
| Oregon S | Oregon | 0 | (26)* | 96 | (26)* | M | 2 | (111)† | 5 | (64)† | N |
| Oregon R | Oregon | 0 | (26) | 100 | (24) | M | 3 | (325) | 5 | (342) | N |
| Princeton | New Jersey | 2 | (26) | 100 | (26) | M | 3 | (167) | 0 | (32) | N |
| 1930-39 | | | | | | | | | | | |
| Canton-S | Ohio | 0 | (50) | 87 | (50) | M | 51 | (155) | 0 | (52) | I |
| Inbred | Massachusetts | 0 | (26) | 92 | (26) | M | 46 | (334) | 12 | (98) | I |
| Oregon R-C | Oregon | 2 | (52) | 93 | (30) | M | 6 | (237) | 2 | (184) | N |
| If-38 | Idaho | 8 | (25) | 38 | (56) | M | 70 | (110) | 7 | (107) | I |
| NB-1 | Connecticut | 0 | (22) | 76 | (38) | M | 2 | (159) | 53 | (101) | R |
| O2L | Connecticut | 0 | (25) | 75 | (60) | M | 4 | (764) | 7 | (269) | N |
| Cockaponsett For. | Connecticut | 0 | (17) | 61 | (51) | M | 8 | (124) | 100 | (210) | R |
| Amherst-3 | Massachusetts | 4 | (26) | 97 | (20) | M | 51 | (145) | 3 | (64) | I |
| 1940-49 | | | | | | | | | | | |
| Florida | Florida | 0 | (26) | 100 | (24) | M | | | | | |
| 1950-59 | | | | | | | | | | | |
| Boa Esperance | Brazil | 0 | (26) | 96 | (26) | M | 2 | (490) | 1 | (255) | N |
| Gruta | Argentina | 4 | (26) | 100 | (26) | M | 1 | (588) | 60 | (393) | R |
| San Miguel | Argentina | 0 | (26) | 73 | (26) | M | 65 | (116) | 16 | (114) | I |
| 731 C | Minnesota | 4 | (26) | 97 | (86) | M | 100 | (71) | 0 | (43) | I |
| 91 C | Minnesota | 0 | (26) | 64 | (84) | M | 46 | (95) | 7 | (30) | I |
| NO 1 | Louisiana | 25 | (51) | 100 | (50) | M | 46 | (255) | 7 | (372) | I |
| NO 2 | Louisiana | 0 | (22) | 96 | (25) | M | 51 | (306) | 1 | (187) | I |
| RC 1 | California | 12 | (26) | 96 | (26) | M | 49 | (82) | 0 | (26) | I |
| SC 1 | Chile | 2 | (51) | 91 | (23) | M | 86 | (80) | 10 | (68) | I |
| Ber 1 | Bermuda | 0 | (22) | 100 | (26) | M | 45 | (155) | 3 | (245) | I |
| Ber 2 | Bermuda | 54 | (26) | 0 | (11) | P | 100 | (38) | 0 | (58) | I |
| BV-1 | Virginia | 13 | (135) | 5 | (84) | P | 95 | (41) | 5 | (44) | I |
| Ica | Peru | 0 | (26) | 96 | (26) | M | 50 | (42) | 16 | (187) | I |

Table 3 (contin.): [Kidwell]

| Strain | Location | % GD sterility A | | A* | | P-M designation | % SF sterility A | | A* | | I-R designation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pacific | U.S. West Coast | 0 | (50) | 100 | (50) | M | 95 | (85) | 37 | (73) | I |
| J#1 | Minnesota | 0 | (31) | 98 | (80) | M | 96 | (135) | 5 | (61) | I |
| 1960-69 | | | | | | | | | | | |
| CO 3 | New York | 1 | (66) | 100 | (26) | M | 24 | (96) | 0 | (30) | I |
| CO 7 | New York | 0 | (26) | 100 | (26) | M | 94 | (227) | 3 | (97) | I |
| EV 1 | New York | 0 | (23) | 100 | (17) | M | 45 | (263) | 5 | (513) | I |
| MO 1 | New York | 3 | (30) | 100 | (19) | M | 26 | (31) | 0 | (31) | I |
| MO 12 | New York | 89 | (26) | 8 | (16) | P | 85 | (106) | 3 | (90) | I |
| MO 18 | New York | 24 | (25) | 0 | (26) | P | 52 | (161) | 0 | (81) | I |
| Bog 1 | Colombia | 0 | (23) | 94 | (16) | M | 57 | (14) | 0 | (28) | I |
| Bog 2 | Colombia | 79 | (24) | 0 | (28) | P | 61 | (110) | 15 | (117) | I |
| Bog 3 | Colombia | 25 | (56) | 95 | (48) | M | 81 | (206) | 8 | (125) | I |
| Ottawa | Canada | 0 | (39) | 100 | (13) | M | 36 | (94) | 3 | (39) | I |
| RVC 2 | California | 8 | (25) | 100 | (26) | M | 89 | (251) | 5 | (276) | I |
| RVC 3 | California | 6 | (56) | 100 | (56) | M | 46 | (151) | 0 | (29) | I |
| RVC 4 | California | 64 | (22) | 0 | (25) | P | 52 | (436) | 1 | (133) | I |
| Cranston | Rhode Island | 75 | (52) | 2 | (52) | P | 99 | (105) | 12 | (109) | I |
| Madison | Wisconsin | 0 | (25) | 96 | (26) | M | 34 | (105) | 6 | (72) | I |
| Amherst | Massachusettes | 0 | (128) | 0 | (111) | Q | 76 | (46) | 1 | (183) | I |
| 2A | Ohio | 0 | (25) | 100 | (26) | M | 72 | (29) | 5 | (80) | I |
| 2C | Ohio | 0 | (26) | 100 | (26) | M | 76 | (80) | 6 | (32) | I |
| 2D | Ohio | 0 | (25) | 100 | (27) | M | 31 | (112) | 1 | (93) | I |
| 3A | Ohio | 4 | (26) | 92 | (26) | M | 91 | (33) | 0 | (33) | I |
| 3B | Ohio | 90 | (19 | 0 | (33) | P | 87 | (163) | 2 | (68) | I |
| 3C | Ohio | 5 | (18) | 100 | (34) | M | 42 | (624) | 7 | (452) | I |
| 4B | Kentucky | 4 | (26) | 92 | (26) | M | 69 | (29) | 2 | (97) | I |
| 4C | Kentucky | 77 | (26) | 0 | (25) | P | 71 | (370) | 2 | (280) | I |
| 5A | Georgia | 0 | (26) | 4 | (26) | Q | 83 | (140) | 10 | (185) | I |
| 5B | Georgia | 0 | (26) | 100 | (26) | M | 26 | (362) | 3 | (212) | I |
| 5C | Georgia | 0 | (26) | 100 | (26) | M | 46 | (104) | 7 | (62) | I |
| 8D | Florida | 77 | (26) | 0 | (26) | P | 66 | (58) | 1 | (128) | I |
| 9A | Georgia | 79 | (14) | 0 | (32) | P | 61 | (119) | 3 | (110) | I |
| 10A | South Carolina | 92 | (26) | 0 | (26) | P | 85 | (221) | 3 | (58) | I |
| 10D | South Carolina | 73 | (26) | 0 | (26) | P | 81 | (264) | 0 | (78) | I |
| 10E | South Carolina | 0 | (26) | 100 | (19) | M | 42 | (31) | 0 | (37) | I |
| 11A | North Carolina | 12 | (52) | 96 | (52) | M | 84 | (331) | 3 | (336) | I |
| 11C | North Carolina | 0 | (10) | 100 | (16) | M | 29 | (282) | 2 | (177) | I |
| 11D | North Carolina | 0 | (17) | 100 | (19) | M | 2 | (228) | 2 | (135) | N |
| Harwich | Massachusetts | 100 | (150) | 0 | (150) | P | 94 | (100) | 11 | (100) | I |
| S.H. A | New Jersey | 0 | (26) | 0 | (26) | Q | 13 | (345) | 3 | (114) | I |
| S.H. P | New Jersey | | | | | | 64 | (161) | 0 | (45) | I |
| 1970-80 | | | | | | | | | | | |
| Clearwater | Florida | 41 | (27) | 2 | (48) | P | 92 | (131) | 2 | (125) | I |
| Margarita | Venezuela | 0 | (26) | 43 | (44) | M | 59 | (152) | 0 | (190) | I |
| Marion | North Carolina | 0 | (23) | 84 | (25) | M | 26 | (123) | 5 | (100) | I |
| Mt. Carmel | Illinois | 0 | (38) | 0 | (25) | Q | 44 | (191) | 1 | (217) | I |
| Palos Heights | Illinois | 42 | (25) | 4 | (25) | P | 24 | (652) | 1 | (222) | I |
| Riverside | California | 54 | (26) | 8 | (25) | P | 48 | (236) | 1 | (175) | I |
| S.H. G | New Jersey | 14 | (35) | 0 | (26) | P | 22 | (192) | 1 | (171) | I |
| S.G. 71G | New Jersey | 0 | (22) | 41 | (34) | M | 18 | (107) | 1 | (218) | I |
| OK-1 (II) | Oklahoma | 50 | (26) | 4 | (26) | P | 30 | (88) | 3 | (109) | I |
| MK 74f | Massachusetts | 40 | (50) | 0 | (50) | P | 21 | (326) | 3 | (115) | I |
| Weymouth 74g | Rhode Island | 57 | (51) | 0 | (51) | P | 34 | (501) | 1 | (516) | I |
| EP 74i | Rhode Island | 33 | (52) | 4 | (51) | P | 36 | (139) | 15 | (145) | I |
| Weymouth 74i | Rhode Island | 57 | (51) | 0 | (52) | P | 30 | (60) | 3 | (103) | I |
| RWI 74 | Rhode Island | 40 | (52) | 8 | (52) | P | 18 | (253) | 4 | (185) | I |

Table 3 (contin.): [Kidwell]

| Strain | Location | % GD sterility A | | % GD sterility A* | | P-M designation | % SF sterility A | | % SF sterility A* | | I-R designation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RWJ 74 | Rhode Island | 8 | (52) | 8 | (52) | Q | 30 | (133) | 24 | (195) | I |
| Chepachet 74i | Rhode Island | 26 | (51) | 2 | (52) | P | 51 | (77) | 3 | (177) | I |
| NH 74 i | New Hampshire | 48 | (52) | 0 | (52) | P | 32 | (50) | 0 | (14) | I |
| Belize | Central America | 33 | (52) | 4 | (52) | (P) | 60 | (208) | 2 | (126) | I |
| Cambridge | Massachusetts | 29 | (52) | 2 | (52) | P | 21 | (463) | 2 | (285) | I |
| NH 75f | New Hampshire | 50 | (52) | 0 | (52) | P | 62 | (98) | 12 | (93) | I |
| St. Louis | Missouri | 54 | (26) | 0 | (26) | P | 53 | (34) | 4 | (57) | I |
| Weymouth 76g | Rhode Island | 44 | (52) | 2 | (52) | P | 44 | (91) | 3 | (35) | I |
| Maine 76i | Maine | 33 | (52) | 0 | (52) | P | 30 | (92) | 2 | (92) | I |
| N.H. 76i | New Hampshire | 27 | (52) | 0 | (52) | P | 47 | (485) | 9 | (275) | I |
| Parbo | Surinam | 0 | (25) | 6 | (25) | Q | | | | | |
| Des Moines | Iowa | 61 | (50) | 0 | (50) | P | 76 | (182) | 0 | (100) | I |
| Weymouth 76i | Rhode Island | 59 | (51) | 0 | (50) | P | 60 | (125) | 5 | (41) | I |
| Weymouth 78i | Rhode Island | 33 | (24) | 9 | (25) | P | 64 | (207) | 1 | (140) | I |
| Santa Domingo 1 | Dominican Rep. | 0 | (26) | 0 | (26) | Q | 22 | (46) | 4 | (26) | I |
| Santa Domingo 2 | Dominican Rep. | 0 | (26) | 0 | (26) | Q | 15 | (152) | 0 | (181) | I |
| Santa Domingo 3 | Dominican Rep. | 19 | (26) | 0 | (26) | P | 37 | (202) | 5 | (112) | I |
| Santa Domingo 4 | Dominican Rep. | 23 | (26) | 0 | (26) | P | 27 | (82) | 6 | (36) | I |
| $\pi_2$ (inbred) | Wisconsin | 100 | (26) | 0 | (8) | P | 40 | (120) | 4 | (114) | I |
| EUROPE, AFRICA AND THE NEAR EAST | | | | | | | | | | | |
| 1920-29 | | | | | | | | | | | |
| Swedish-b-6 | Sweden | 4 | (51) | 91 | (52) | M | 3 | (203) | 4 | (111) | N |
| 1930-39 | | | | | | | | | | | |
| Porvoo | Finland | 0 | (25) | 100 | (25) | M | | | | | |
| Crimea | USSR | 0 | (26) | 92 | (25) | M | 0 | (64) | 15 | (26) | R |
| Samarkand | USSR | 3 | (38) | 100 | (14) | M | 6 | (198) | 8 | (180) | N |
| Finn 6 | Finland | 8 | (26) | 100 | (26) | M | 1 | (159) | 6 | (87) | N |
| Swedish C | Sweden | 8 | (26) | 100 | (26) | M | 2 | (43) | 2 | (56) | N |
| Lausanne | Switzerland | 4 | (26) | 100 | (30) | M | 2 | (429) | 1 | (237) | N |
| 1940-49 | | | | | | | | | | | |
| Kaduna | Nigeria | 9 | (22) | 96 | (26) | M | 85 | (123) | 14 | (324) | I |
| Champetieres | France | 0 | (26) | 27 | (26) | M | 85 | (550) | 5 | (102) | I |
| Paris | France | 7 | (14) | 100 | (8) | M | 9 | (129) | 4 | (51) | N |
| Gaiano | Italy | 0 | (26) | 100 | (26) | M | 1 | (72) | 0 | (19) | N |
| Inhaca 47 | Mozambique | 0 | (25) | 100 | (25) | M | | | | | |
| Graaff Rienet | S. Africa | 0 | (25) | 100 | (25) | M | | | | | |
| 1950-59 | | | | | | | | | | | |
| Charolles | France | 4 | (26) | 58 | (26) | M | 0 | (107) | 74 | (31) | R |
| Algeria | Algeria | 0 | (26) | 96 | (26) | M | 1 | (137) | 5 | (371) | N |
| Karsnas | Sweden | 0 | (26) | 100 | (26) | M | 93 | (147) | 9 | (58) | I |
| Oslo | Norway | 0 | (26) | 92 | (26) | M | 92 | (153) | 4 | (118) | I |
| Skaftö | Sweden | 9 | *42) | 76 | (52) | M | 48 | (141) | 4 | (51) | I |
| Stäket | Sweden | 0 | (26) | 100 | (26) | M | 0 | (160) | 4 | (97) | N |
| Seoclen | Switzerland | 4 | (26) | 72 | (85) | M | 3 | (494) | 1 | (474) | N |
| Valdagno | Italy | 12 | (26) | 96 | (26) | M | 2 | (392) | 6 | (343) | I |
| Aspra | Sicily | 0 | (25) | 100 | (26) | M | 32 | (860) | 7 | (134) | I |
| QA-A | Israel | 0 | (25) | 100 | (25) | M | | | | | |
| Inhaca 53 | Mozambique | 0 | (24) | 100 | (25) | M | | | | | |
| QI-2 | Israel | 0 | (24) | 100 | (56) | M | 67 | (191) | 4 | (82) | I |
| CA-1 | S. Africa | 0 | (26) | 100 | (26) | M | 69 | (16) | 8 | (13) | I |
| CA-2 | S. Africa | 0 | (26) | 100 | (53) | M | 68 | (65) | 2 | (49) | I |
| Inhaca 55 | Mozambique | 0 | (25) | 100 | (25) | M | | | | | |

| Table 3 (contin.): [Kidwell] | | % GD sterility | | | | P-M | % SF sterility | | | | I-R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Strain | Location | A | | A* | | designation | A | | A* | | designation |
| 1960-69 | | | | | | | | | | | |
| Bacup | England | 8 | (26) | 96 | (26) | M | 77 | (142) | 3 | (94) | I |
| Chieti V 6-9 | Italy | 0 | (26) | 92 | (26) | M | 85 | (423) | 2 | (149) | I |
| LM | USSR | 8 | (25) | 100 | (25) | M | 14 | (209) | 6 | (125) | I |
| Nettlebed | Scotland | 8 | (25) | 93 | (27) | M | 51 | (155) | 0 | (52) | I |
| Varese | Italy | 0 | (26) | 92 | (26) | M | 57 | (155) | 0 | (32) | I |
| Woodbury | England | 4 | (26) | 77 | (26) | M | 0 | (321) | 4 | (114) | N |
| Finn 7 | Finland | 0 | (18) | 95 | (22) | M | 30 | (88) | 4 | (57) | I |
| Finn 8 | Finland | 0 | (26) | 97 | (56) | M | 45 | (304) | 0 | (26) | I |
| BS 1 | Spain | 0 | (26) | 100 | (25) | M | 98 | (48) | 5 | (41) | I |
| BS 2 | Spain | 0 | (17) | 96 | (23) | M | 46 | (304) | 4 | (175) | I |
| Groningen | Netherlands | 4 | (26) | 0 | (26) | Q | 49 | (99) | 2 | (94) | I |
| Magaliesburg | S. Africa | 8.3 | (25) | 4.2 | (24) | Q | | | | | |
| KSA 2 | S. Africa | 0 | (26) | 96 | (26) | M | 65 | (252) | 1 | (71) | I |
| KSA 3 | S. Africa | 0 | (15) | 100 | (31) | M | 75 | (96) | 0 | (14) | I |
| KSA 4 | S. Africa | 4 | (25) | 89 | (26) | M | 100 | (83) | 5 | (42) | I |
| Dilizhan 64 | USSR | 0 | (26) | 96 | (26) | M | 75 | (120) | 1 | (113) | I |
| MWA 1 | Madeira Is. | 2 | (54) | 100 | (49) | M | 27 | (242) | 3 | (162) | I |
| MWA 3 | Madeira Is. | 3 | (34) | 100 | (15) | M | 27 | (397) | 2 | (215) | I |
| PVM | Madeira Is. | 8 | (96) | 100 | (103) | M | 88 | (32) | 12 | (33) | I |
| PYR-1 | Spain | 8 | (52) | 100 | (61) | M | 76 | (41) | 2 | (48) | I |
| PYR-2 | Spain | 4 | (26) | 92 | (26) | M | 89 | (36) | 0 | (14) | I |
| PYR-3 | Spain | 6 | (56) | 81 | (58) | M | 73 | (258) | 0 | (73) | I |
| Reids 1 | Madeira Is. | 0 | (21) | 100 | (26) | M | 50 | (128) | 1 | (91) | I |
| Reids 2 | Madeira Is. | 4 | (55) | 96 | (57) | M | 25 | (95) | 2 | (60) | I |
| Vag 1 | Greece | 0 | (24) | 100 | (27) | M | 83 | (121) | 11 | (46) | I |
| Vag 2 | Greece | 9 | (27) | 100 | (52) | M | 81 | (154) | 0 | (31) | I |
| Vag 3 | Greece | 12 | (26) | 100 | (26) | M | 28 | (148) | 3 | (480) | I |
| Dilizhan 66 | USSR | 6 | (52) | 100 | (52) | M | 38 | (269) | 4 | (225) | I |
| Turku | Finland | 2 | (23) | 100 | (25) | M | | | | | |
| Mysore | India | 0 | (26) | 100 | (26) | M | 67 | (443) | 8 | (62) | I |
| Ashwood | England | 0 | (26) | 73 | (26) | M | 91 | (349) | 18 | (45) | I |
| Kerbiniou | France | 100 | (32) | 3 | (36) | P | 96 | (110) | 30 | (53) | I |
| Luminy | France | | | | | | 99 | (100) | 3 | (100) | I |
| Saille | France | 0 | (26) | 96 | (26) | M | 54 | (295) | 4 | (257) | I |
| 1970-80 | | | | | | | | | | | |
| Mancha | Spain | 0 | (26) | 27 | (64) | M | 24 | (180) | 0 | (4) | I |
| Prevosti | Spain | 6 | (45) | 96 | (26) | M | 42 | (123) | 0 | (14) | I |
| Riuidevella | Africa | 4 | (25) | 70 | (30) | M | 27 | (104) | 0 | (45) | I |
| Sexi | Spain | 4 | (26) | 29 | (110) | M | 23 | (110) | 3 | (30) | I |
| Ponza | Italy | 0 | (24) | 96 | (26) | M | 2 | (152) | 7 | (240) | N |
| Uman 70 | USSR | 6 | (52) | 21 | (47) | M | 32 | (142) | 12 | (75) | I |
| Haren | Netherlands | 0 | (25) | 22 | (25) | M | | | | | |
| Nokia | Finland | 80 | (46) | 0 | (75) | P | | | | | |
| Beaune | France | 2 | (54) | 45 | (32) | M | | | | | |
| B2' | France | 7 | (61) | 3 | (77) | Q | 62 | (109) | 0 | (54) | I |
| Dahomey | Africa | 0 | (25) | 22 | (25) | M | | | | | |
| Hamenlinna | Finland | 9 | (35) | 0 | (25) | Q | | | | | |
| Pellworm | Germany | 2 | (25) | 4 | (25) | Q | | | | | |
| Hacettepe | Turkey | 0 | (25) | 0.5 | (25) | Q | | | | | |
| LeMontet | France | 0 | (72) | 5 | (113) | Q | 96 | (149) | 0 | (122) | I |
| Tulle | France | 0 | (46) | 53 | (55) | M | 54 | (190) | 8 | (132) | I |
| Naantali | Finland | 2 | (25) | 85 | (50) | M | | | | | |
| Krasnodar | USSR | 4 | (26) | 4 | (26) | Q | 28 | (120) | 9 | (129) | I |
| Strom 7 | Sweden | 0 | (20) | 100 | (26) | M | 54 | (314) | 5 | (226) | I |
| Strom 8 | Sweden | 4 | (26) | 100 | (26) | M | 47 | (159) | 4 | (73) | I |
| Strom 10 | Sweden | 0 | (26) | 100 | (22) | M | 66 | (259) | 5 | (87) | I |

Table 3 (contin.): [Kidwell]

| Strain | Location | % GD sterility A | % GD sterility A* | P-M designation | % SF sterility A | % SF sterility A* | I-R designation |
|---|---|---|---|---|---|---|---|
| Bierbeek | Belgium | 0 (20) | 65.7 (19) | M | | | |
| Bocholt | Belgium | 65 (20) | 0 (25) | P | | | |
| Nazzano | Italy | 4 (26) | 0 (26) | Q | 38 (136) | 26 (43) | |
| Orval | Belgium | 0 (20) | 27.5 (20) | M | | | |
| Schio | Italy | 0 (26) | 0 (22) | Q | 26 (141) | 2 (141) | I |
| Watou | Belgium | 0 (20) | 0 (20) | Q | | | |
| Pedroso | Spain | 0 (25) | 95 (21) | M | | | |
| Formia | Italy | 19 (26) | 0 (14) | P | | | |
| Bizerte | Tunisia | 0 (23) | 100 (22) | M | | | |
| Cinisi | Sicily | 0 (21) | 4 (26) | Q | | | |
| Kibris | Turkey | 0 (20) | 100 (20) | M | | | |
| Menetreol | France | 7 (26) | 0 (20) | Q | 30 (174) | 2 (161) | I |
| Plumpton | England | 38 (24) | 0 (19) | P | 60 (106) | 3 (37) | I |
| Aix | France | 9 (105) | 6 (97) | Q | 52 (111) | 2 (198) | I |
| Beausoleil | France | 0 (18) | 0 (26) | Q | 57 (97) | 5 (79) | I |
| Biziat | France | 2 (120) | 4 (122) | Q | 47 (213) | 12 (78) | I |
| Chantelle | France | 1 (123) | 30 (140) | M | 60 (136) | 2 (134) | I |
| Haute Corse | France | 1 (92) | 3 (121) | Q | 45 (208) | 15 (215) | I |
| Bujumbura | Africa | 4 (51) | 2 (50) | Q | 11 (469) | 1 (437) | I |
| Eurigtai | Africa | 4 (52) | 6 (52) | Q | 68 (271) | 1 (175) | I |
| Krasnodar 80 | USSR | 0 (52) | 28 (52) | M | 15 (104) | 3 (61) | I |
| LaPoujade | France | 4 (26) | 4 (26) | Q | 63 (160) | 0 (31) | I |
| Senegal | Senegal | 56 (63) | 0 (25) | P | | | |
| Sremska Kamenica | Yugoslavia | 0 (25) | 4 (25) | Q | | | |
| Uman 80 | USSR | 2 (52) | 56 (52) | M | 58 (221) | 11 (153) | I |
| Sancerre | France | 2 (26) | 0 (26) | Q | | | |
| THE FAR EAST AND AUSTRALIA | | | | | | | |
| 1950-59 | | | | | | | |
| Hikon J | Japan | 0 (25) | 100 (26) | M | 2 (164) | 11 (138) | R |
| Australia | Australia | 0 (25) | 0 (26) | Q | 83 (114) | 0 (110) | I |
| Wellington | New Zealand | 0 (26) | 100 (26) | M | | | |
| Kochi R | Japan | 4 (26) | 96 (26) | M | 3 (506) | 13 (272) | R |
| Oahu | Hawaii | 0 (26) | 100 (26) | M | 21 (273) | 2 (263) | I |
| Toonda | Australia | 0 (26) | 88 (17) | M | 29 (358) | 2 (185) | I |
| Kolonia | Ponape Island | 0 (24) | 81 (26) | M | 55 (227) | 6 (328) | I |
| Canberra | Australia | 0 (26) | 100 (15) | M | 32 (347) | 4 (533) | I |
| 1960-69 | | | | | | | |
| Kuala Lumpur | Malaysia | 0 (26) | 100 (18) | M | 65 (57) | 5 (37) | I |
| Katsunuma 63 | Japan | 8 (26) | 85 (26) | M | 15 (153) | 1 (70) | I |
| Nankang | Taiwan | 4 (26) | 67 (24) | M | 7 (493) | 7 (540) | N |
| I-lan | Taiwan | 0 (68) | 61 (97) | M | 11 (427) | 1 (146) | I |
| Agana | Guam | 100 (26) | 27 (26) | P | 36 (102) | 13 (40) | I |
| Daekwanryeŏng | Korea | 0 (26) | 100 (26) | M | 24 (297) | 2 (109) | I |
| Bojo | Malaysia | 0 (26) | 88 (26) | M | 4 (334) | 3 (216) | N |
| 1970-80 | | | | | | | |
| Ken-ting | Taiwan | 0 (26) | 100 (26) | M | 24 (532) | 1 (175) | I |
| Para Wirra | Australia | 100 (25) | 0 (26) | P | 71 (206) | 5 (58) | I |
| Ishigaki 73 | Japan | 4 (26) | 0 (26) | Q | 54 (105) | 1 (171) | I |
| Hunter Valley | Australia | 0 (25) | 0 (26) | Q | 61 (225) | 3 (124) | I |
| New Guinea | New Guinea | 0 (26) | 0 (26) | Q | 76 (111) | 4 (139) | I |
| Sydney | Australia | 4 (26) | 0 (22) | Q | 34 (287) | 6 (292) | I |
| Darwin | Australia | 0 (26) | 77 (26) | M | 61 (599) | 4 (169) | I |
| Ishigaki 79 | Japan | 8 (52) | 4 (23) | Q | 52 (270) | 2 (90) | I |
| Melbourne | Australia | 4 (26) | 0 (26) | Q | 69 (90) | 2 (44) | I |
| Melville Is. | Australia | 0 (26) | 0 (26) | Q | 49 (142) | 5 (58) | I |

Table 3 (contin.): [Kidwell]

| Strain | Location | % GD sterility A | | % GD sterility A* | | P-M designation | % SF sterility A | | % SF sterility A* | | I-R designation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Akita | Japan | 0 | (26) | 0 | (17) | Q | 59 | (112) | 7 | (103) | I |
| Best's | Australia | 5 | (20) | 58 | (26) | M | 64 | (452) | 4 | (391) | I |
| Bridgewater | Australia | 0 | (26) | 0 | (26) | Q | 62 | (127) | 5 | (62) | I |
| Ettiwada | Australia | 0 | (26) | 3 | (16) | Q | 52 | (279) | 2 | (232) | I |
| Fairfield | Australia | 0 | (26) | 77 | (26) | M | 61 | (110) | 4 | (81) | I |
| Katsunuma 80 | Japan | 0 | (26) | 4 | (26) | Q | 25 | (80) | 5 | (56) | I |
| Lake Boga | Australia | 2 | (52) | 13 | (45) | M | 67 | (255) | 1 | (112) | I |
| Mildura | Australia | 0 | (26) | 0 | (25) | Q | 71 | (113) | 0 | (8) | I |
| Mourguong | Australia | 0 | (26) | 4 | (25) | Q | 66 | (443) | 12 | (372) | I |
| Sarina | Australia | 0 | (26) | 0 | (26) | Q | 57 | (127) | 5 | (20) | I |
| Shimane | Japan | 0 | (21) | 0 | (20) | Q | 73 | (138) | 1 | (109) | I |
| Tottori | Japan | 0 | (26) | 0 | (24) | Q | 60 | (424) | 1 | (146) | I |
| Niigata | Japan | 8 | (52) | 22 | (46) | M | 96 | (274) | 12 | (196) | I |
| Ishikawa 2 | Japan | 5 | (42) | 4 | (48) | Q | 22 | (195) | 7 | (398) | I |
| Aomori | Japan | 35 | (20) | 0 | (21) | P | 58 | (224) | 2 | (128) | I |

* Figures in parentheses are the number of $F_1$ females tested.
† Figures in parentheses are the number of eggs observed for hatchability.

Koene, P. & R. Bijlsma. University of Groningen, The Netherlands. Differences in mating success between G6pd and Pgd genotypes of *Drosophila melanogaster*.

Since some time it has become clear that the adult component of selection, besides viability selection, may be an important component of the total selection in D. melanogaster (Prout 1971a, b; Bundgaard & Christiansen 1972). Especially factors concerning the mating process may be of significance for the maintenance of polymorphisms in nature. Differences in mating preference and mating success have been demonstrated for a number of genetic factors in Drosophila (for a review see Petit & Ehrman 1974). Here we want to report differences in mating success in a female-choice experiment with respect to the allozyme variation at the loci G6pd (glucose-6-phosphate dehydrogenase) and Pgd (6-phosphogluconate dehydrogenase). Both loci are located on the X-chromosome in D. melanogaster and both are found to be polymorphic in natural populations with, electrophoretically, a fast (F) and a slow (S) allele. There are thus four possible homozygous (males are hemizygous) genotypes: FF, FS, SF and SS. These genotypes are denoted by two letters: the first stands for G6pd and the second for Pgd. The flies used for the experiment were isolated from the Bogota population as described by Bijlsma (1980) and maintained as mixed populations at 25°C on standard food.

The test was started by bringing together in a vial, without etherization, 1 virgin female and 4 males: one of each hemizygous genotype. During 30 minutes after entry the flies were observed. When a mating occurred the genotype of the male was determined and the time

Table 1. Number of matings between different genotypes for G6pd and Pgd together with the number of females that did not mate within 30 minutes.

| Female Genotype | Male genotype FF | FS | SF | SS | total | not mated |
|---|---|---|---|---|---|---|
| FF | 20 | 24 | 24 | 11 | 79 | 41 |
| FS | 16 | 18 | 30 | 11 | 75 | 45 |
| SF | 20 | 35 | 24 | 19 | 98 | 22 |
| SS | 33 | 22 | 29 | 28 | 112 | 8 |
| Total | 89 | 99 | 107 | 69 | | |

Table 2. The mean mating latency time (MLT) of different female and male genotypes together with the number of matings observed.*

| Females Genotype | MLT in min. | No. of matings | Males Genotype | MLT in min. | No. of matings |
|---|---|---|---|---|---|
| SS | 8.99 | 112 | SS | 10.49 | 69 |
| SF | 11.38 | 98 | FF | 10.72 | 89 |
| FF | 12.17 | 79 | FS | 12.02 | 99 |
| FS | 14.35 | 75 | SF | 12.08 | 107 |

*data arranged according to increasing MLT.