the various resistant populations suggests that most of the resistance is contributed by the effects of one or a small number of almost completely dominant genes.

Reference: Dyer, K.F. and P.J. Hanna 1972, Mutation Res. 16:327-331.

Garcia-Bellido, A. and J. Dapena. Centro de Investigaciones Biologicas, C.S.I.C., Madrid, Spain. Recovery of cell marker mutants in Drosophila.

This is a preliminary report on some new cell marker mutants detected by mitotic recombination in somatic cells. Wild type males were mutagenized, with EMS (0.3%), and crossed for three subsequent generations with their sisters. The males of the third generation were then crossed to cn bw;e females, their offspring were irradiated (1.000R X-rays) as 84 ± 12 hrs. old larvae to induce mitotic recombination (MR) and the adult males were singly mated to SM5/ $T(2,3)$ e/Ubx^{130};C(4)RM spa^{pol} females. Once their offspring were ensured, the males were sacrificed and one by one mounted for microscopic examination. Their dorsal thoraces and abdomens were then scored for the appearance of clones of abnormal cuticular structures. The treated chromosomes of the presumptive mutant-carrying males were kept balanced over SM5; Ubx^{130}. Identification of the mutant-carrying autosomes and arm localization was again carried out by mitotic recombination. Quantitative analysis of twin spots with known cell marker mutants (Garcia-Bellido, 1972 Mol. Gen. Genetics 115:54 -) gave the approximate mitotic location in the chromosome. In order to locate them meiotically the balanced stocks were crossed to a standard multiply marked (MM) chromosome and the F_1 daughters were backcrossed to the same MM stock. Their offspring were irradiated and the different crossover classes studied for the presence of MR spots of the cell marker mutant. Since this mutant could simultaneously be accompanied by some induced lethals, a viability test of the cell marker mutant was carried out by crossing the complementary left and right recombinant classes carrying the mutant.

As to the usefulness of the new mutants found, a ranking (RK 1-3) has been attempted which states the penetrance of the marker in different organs and cuticular structures. For the sake of comparison mwh is ranked RK 1.

The present method allows the detection of induced - or spontaneous - cell differentiation mutants located anywhere in the Drosophila genome already in heterozygous flies, independently of whether the mutant or the chromosome is a zygotic lethal.

pawn (pwn, 2:58.3 between pr and c); in 2R, 52.2% of the MR between centromere and sdp). Affects both chaetes and trichomes. Chaetes appear truncate due to the depigmentation and subsequent loss of the tip. Trichomes are pin-shaped with a thin transparent process. Homozygous poorly viable in zygote. RK1 in abdomen, RK1 for trichomes and chaetes in the thorax.

sandpaper (sdp, 2:83.1 between pr and px; in 2R, 62.6% of the MR between centromere and y($Dp\ sc^{S2}$). Affects only the pigmentation and the trichome pattern on the tergites (RK1). Cuticle depigmented, trichomes super-numerary, thick, densely packed and uncombed. Lethal - or associated with lethal - in homozygotes. Non-detectable in the thorax.

flare (flr, 3:38.8 between h and th; in 3L, 69% of the MR between centromere and jv). Affects both chaetes and trichomes. The former have a rudimentary socket and their shaft is frequently crooked and branched. Trichomes are transformed into multiple short outgrowths over the entire cell surface. Lethal - or closely associated with a lethal - in homozygotes. An allele of flare, non complementing for lethality, has been independently found. RK1 in both thorax and abdomen. Affects cell viability in thorax.

bald (bld, 3:48.1 between st and cu; in 3R, 87.5% of the MR between centromere and Ki). Affects chaetes, trichomes and cuticle pigmentation. Cuticle completely depigmented, which manifests in transparent chaetes and thin, wooly trichomes. Lethal - or associated with lethal - in homozygotes. RK1 in both thorax and abdomen.

comet (cmt, 3:57.2 between cu and sr; in 3R, bld is 44.5% of the MR between centromere and cmt). Affects chaetes and trichomes. Chaetes small and thin. Trichomes similar to mwh but less regular and with a lower number of processes per cell. Lethal - or associated with lethal - in homozygotes. RK3 in abdomen, for trichomes in thorax RK1.