Herreros, A.S. Universidad de Barcelona, Spain. Sensibility of the larvae of Drosophila to the electric field.

The larvas of several species of Drosophila are sensibles at the electric field. This may be easily shown by placing the larvae on the surface of agar-ethanol-acetic humidified on a watch glass 6 cm in diameter. In this medium two electrodes are inserted separated by 4 cm and a current of 9 V is passed through it.

After approximately 8 minutes, the number of larvae emigrating to each pole (or to within 1 cm of the pole) and the number of larvae that continue to move about the medium (neutral larvae) are counted.

The results I obtained are grouped from different time periods of the day and can be seen in the following table:

| | number of larvae | | | |
|---|---|---|---|---|
| | at - pole | at + pole | neutral | total |
| D. subobscura | 204 | 9 | 124 | 337 |
| D. simulans | 269 | 16 | 355 | 640 |
| D. melanogaster | 514 | 25 | 290 | 829 |

Testing for variation of sensibility throughout the day was omitted.

The behavior of the larvae is therefore significantly different from what would be expected in a random distribution. They are directed to the negative pole.

When the position of the electrodes are exchanged, many larvae also change their position quickly, thus indicating that the sensitivity is electrical and not chemical.

On the contrary, the larvae appear to not be oriented to the light or a magnetic field.

Holm, D.G. University of British Columbia, Vancouver, Canada. Analysis of nonrandom segregation of compound autosomes in males.

Several studies on the meiotic behavior of compound autosomes (Scriba 1967, 1969; Grell 1970; Evans 1971; Lutolf 1972; Fitz-Earle, Holm & Suzuki 1973; Holm & Chovnick 1975) have revealed that the recovery from females of gametes nonsegregational (disomic and nullosomic) for compound autosomes is not limited by the availability of complementary nonsegregational sperm. The regular and frequent production of sperm disomic and nullosomic for compound autosomes has led to the generally accepted concept that in males these aberrant chromosomes assort independently. Further support for this interpretation is offered by the frequency of egg hatch, which in most compound-autosomal strains is approximately 25%. While studies on a few compound-2 strains revealed egg-hatch frequencies somewhat greater than 25% (Clark & Sobels 1973; Holm 1976) recent findings disclose that in most strains of compound-2 males, C(2L) and C(2R) assort almost, if not totally, at random (Hilliker, Holm & Appels 1982). However, a major exception had been noted in earlier studies involving males carrying one particular compound-2R chromosome (Sandler et al. 1968; Evans 1971; Gethmann 1976). This compound, designated C(2R)cn, carries a duplication for a proximal segment of the 2L euchromatin and thus may carry a duplication for a 2L euchromatic pairing site.

In a recent study by Hilliker et al. (1982) a second major exception was uncovered, this one involving a pair of compound-2 chromosomes that had been generated in females heterozygous for the standard cn bw chromosome and the small pericentric inversion associated with the SD-72 chromosome. The breakpoints of the pericentric inversion in SD-72 lie in the proximal 2L euchromatin and proximal 2R euchromatin (Lewis 1962). Consequently, the C(2L)SD-72/+ is heterozygous for a proximal deficiency in 2L but carries a duplication for proximal 2R extending to 42A of the polytene chromosome map; the C(2R)SD-72/cn bw chromosome is heterozygous deficient for proximal 2R, but duplicated for proximal 2L extending to band position 39D3-4 (Ganetzky 1977; Hilliker et al. 1982).

From crosses involving males carrying these asymmetrical compound autosomes, which are designated C(2L)V12,SD72/+;C(2R)V43,SD72/cn bw, the recovery of nonsegregational progeny is reduced greatly in comparison to corresponding crosses involving males bearing compound-2 chromosomes in which the attached arms are homozygous for the proximal euchromatic segments. Such comparisons are revealed by the results entered in Table 1. Normally, when C(1)RM/Y; C(2L);C(2R) females are crossed to differentially marked compound-2 males, between 27 and 30%