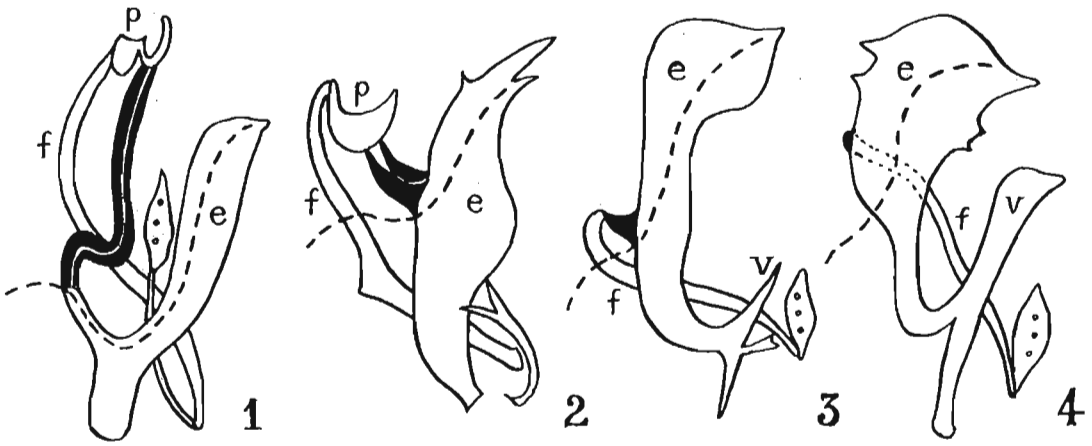
Okada, Toyohi. Tokyo Metropolitan University, Tokyo, Japan. Homology in the components of the phallic organs of Leucophenga and Microdrosophila.

The genera Leucophenga and Microdrosophila show close resemblance to each other in their U-shaped elements of phallic organs (compare figs. 1 and 4), which is found, however, to be merely superficial. Misinterpretation (Okada, 1966. Bul. Brit. Mus. NH, Suppl. 6:121) was caused by the treatment of cleared material. The true homology can be established basing on the innervation of ejaculatory duct (shown by broken lines in figures) into aedeagus (e), which is traceable in fresh and non-cleared material. The aedeagus corresponds to the ventral arm of the U-shaped elements in Leucophenga (e.g., nigroscutellata Duda, fig. 1), while it corresponds to the dorsal arm in Microdrosophila (figs. 3, 4). The ventral arm in Leucophenga (shaded black in figures), which had been mistaken as aedeagus, is paired, elongated and connected to ventral fragma (f: left half obliterated) by means of unpaired posterior parameres (p). This paired structure shows gradual reduction in size in Microdrosophila species. It is still paired and large in M. maculata Okada (fig. 2), unpaired and smaller in M. purpurata Okada (fig. 3), while it becomes vestigial in M. nigrohalterata Okada (fig. 4) with the aedeagus attached nearly directly to the ventral fragma. Furthermore, it is observed that in Microdrosophila the ventral process (v = ventral arm) tends to develop in compensation to the reduction of the paired structure in question and parallel to the development of aedeagus (compare figs. 2, 3, and 4).

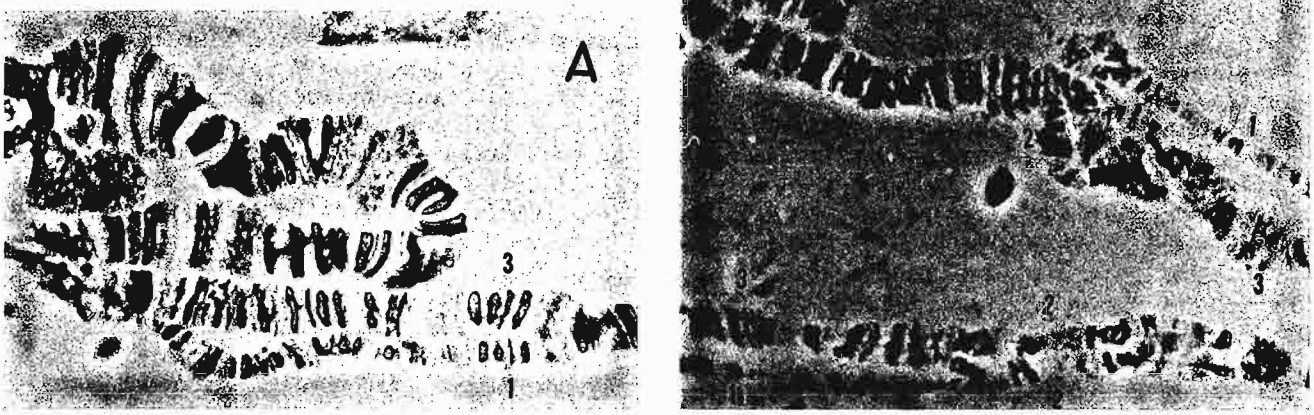


Figs. 1 ~ 4. Phallic organs of Leucophenga (1) and Microdrosophila (2 ~ 4), sinistral aspects. For explanation see the text.

Gersh, Eileen S. University of Pennsylvania, Philadelphia, Pennsylvania. Chromatid asynapsis in salivary gland nuclei.

The accompanying photos were made from a single slide from a rst^2/yw larva. While Figure A suggests a triploid condition with partial asynapsis of one of the chromosomes, Figure B clearly illustrates quadripartite structure in both the regions shown. It is probable, therefore, that these are all examples of chromatid asynapsis, with Figure A showing a 3-1 separation of strands.

Similar conditions were found in a few other nuclei. Such nuclei appeared to have in common a higher degree of polyteny than others (in the same pair of glands) in which pairing was complete or in which, if asynapsis occurred, it was as usual, between two chromosomes.



Schalet, A. University of Connecticut, Storrs, Connecticut. Evidence for a different function associated with the locus of suppressor of forked.

Females of the genotype f su-f/f su-f have bristles that are nearly wild type. Females of a genotype that includes f su-f/f su-f$^-$ have bristles that are nearly wild type with respect to forked but also exhibit a distinct phenotype: Bristles - small, minute-like; some head and thoracic bristles may be absent. Eyes - invariably roughened to some extent, anterior indentation. Wings - in some flies any or all of the following effects - blistery, broader, extra veins, held somewhat upward and outward. This phenotype is also shown by females of a genotype that includes f su-f/f$^+$ su-f$^-$. It is not shown by f su-f$^+$/f su-f$^-$ or f su-f$^+$/f$^+$ su-f$^-$ females. The genotype f$^+$ su-f/f$^+$ su-f$^-$ has not been tested. Males that are f su-f/Y, f su-f/0, f su-f/Ysu-f$^+$ or f$^+$ su-f$^-$/Ysu-f$^+$ do not show this phenotype.

Most of the 13 radiation treated chromosomes which show the new phenotype were of a genotype that included f$^+$ su-f$^-$/f su-f. Nine were picked up in sc^8 inversion chromosomes as induced y or ma-1 mutants. Four others were picked up in non-inverted chromosomes, 1 as a ma-1 mutant and 3 as proximally located lethals. In addition to su-f, all chromosomes were tested for a number of other markers in the region (see my note this D.I.S.). These included 120, close to but not immediately to the left, and bb to the right in the normal order. Lethal 20 as well as su-f is covered by B^{S}Y. The results were: 4) 120$^-$ su-f$^-$ bb$^-$; 1) 120$^-$ su-f$^-$ bb; 6) 120$^-$ su-f$^-$ bb$^+$; 1) 120$^+$ su-f$^-$ bb$^-$; 1) 120$^+$ su-f$^-$ bb$^+$. (Here bb$^-$ means lethal over a bb lethal and bb means a viable bb phenotype over a bb lethal.) In the chromosome that was 120$^+$ su-f$^-$ bb$^-$, there was evidence for another lethal locus between 120 and su-f. The chromosome that was 120$^+$ su-f$^-$ bb$^+$ behaved as sex-linked lethal with a regular Y but was covered by a B^{S}Y. Unfortunately, it has been lost. One of the cases that was 120$^-$ su-f$^-$ bb$^+$ was tested and found to be normal over the bb deficiency chromosome y sc^4 B InS w^a sc^8 chromosome. In addition to the above 13 chromosomes there were a number of cases of deficiencies to the left and to the right of su-f which were su-f$^+$. There were no cases of 120$^-$ su-f$^+$ bb$^-$ or 120$^-$ su-f$^+$ bb.