2L chromosome: Its distal end is characteristically flared at the tip. Next seen are the eight darkly stained bands separated into two groups of four each. The region 20c shows three bands fused together to form a V; this is preceded by five consecutive thin bands and followed by two light and two dark bands. The region 28c to 30b appears like graded capsules. The centromeric end is bulbous in shape.

2R chromosome: The free end, consisting of three bands, is bell-shaped. The six bands of segment 39c to 41b look like a snake charmer's flute. The region 46a to 47c is spindle in shape. The barrel-like centromeric end is preceded by a narrow region of two divisions, i.e., 49 and 50.

3L chromosome: Its club-shaped free end makes its identification easy. The region 55c to 57b looks characteristically like a spindle. The segment 60c to 61c showing a prominent puff is immediately followed by a dark band and then by heart-shaped structure. The centromeric end of about two divisions is conical in shape. This is preceded by a spindle-like structure and a thin sparsely banded segment of four divisions.

3R chromosome: The pointed and slender free end is an important feature of this chromosome. A weak spot appears at sub-division 81b. Most of the chromosomal arm, particularly the region 88b to 98b, shows scattered banding pattern. The region 98b to 99c is rectangular. The centromeric end of about one division length appears cylindrical in shape; this is preceded by two thin faint bands and then a thick dark band.

Fourth chromosome: This is the smallest arm of two divisions only. In most of the nuclei it lies embedded in the chromocentre. Only in a few cells its distal end has been observed but the bands are not clear.

Pascual, L. R.de Frutos & A.Latorre.
University of Valencia, Spain. Polytene chromosomes of Drosophila subobscura at the end of the prepupal stage.

The developmental time in D. subobscura is longer than in other Drosophila species such as D. pseudoobscura, D. melanogaster, D. hydei, etc. We have established that 24 hours is the duration of the prepual stage in D. subobscura at 19°C, whereas in D. melanogaster at 25°C (Ashburner 1967)it is 12 hr; in D. pseudoobscura 15 hr (Stocker & Kastritsis 1972) and in D. hydei 13 hr at 25°C (Berendes 1965).

The prepupal stage extends (Ashburner 1967) from the end of third instar to the beginning of true pupation. These two moments are related to morphological changes in the individuals. The beginning of prepupa (end of third instar) is related to the eversion of the anterior

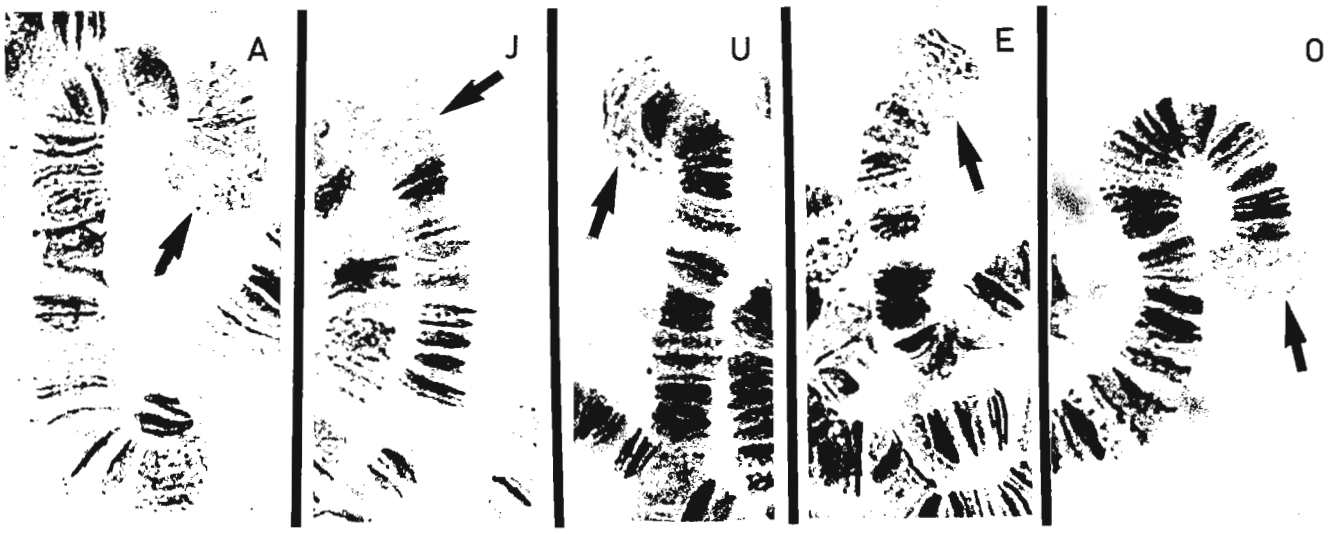

Figure 1. A, J. U, E and O chromosomes. The terminal region of each chromosome is indicated with an arrow.

spriacles and the end of prepupa to the head eversion (Ashburner 1967). Stocker & Kastritsis (1972) related the end of prepupa to the disappearance of the abdominal bubble.

The polytene chromosomes of the salivary glands show a decondensed aspect 24 hours after the eversion of the anterior spiracles and they tend to remain grouped, which makes their observation difficult. At over 24 hours, the appearance of the chromosomes is more degraded every time; not only is recognition of the bands, or the possible puffing pattern more difficult, but also chromosomal identification. Samples have been taken up to 30 hr. At this moment of development, salivary glands were observed in several individuals, but chromosomal structures were not seen in any case.

In stages before 24 hr, the polytene chromosomes tend to maintain their characteristic structure. However, four and six hours before (20 and 18 hr) the polytene chromosomes show, in addition to the respective puffing pattern, a tendency to decondensation of the telomeric regions. Indeed, the terminal region of the five chromosomes of the cariotype of D.subobscura generally appears decondensed, taking on a fan-shaped structure. In Figure 1, the terminal region of the sexual chromosome A and of the autosomes, chromosomes J, U, E and O can be observed. The photograph of the A and E chromosomes were taken from preparations done at 18 hours and the rest (J, U and O chromosomes) at 20 hr. In this study, the Ral21 strain, homozygotic for the A_2, J_1, U_{1+2}, $E_{1+2+9+12}$ and O_{3+4} arrangements, was used. The decondensed terminal regions extend to the following chromosomal regions:

A CHROMOSOME: region 16D. The fine bands of the region become decondensed, whereas the strong bands of the 16C region remain condensed.

J CHROMOSOME: region 35DE. There is a decondensation of all the bands located between the strong band of the 35C region and the end of the chromosome.

U CHROMOSOME: region 53CD. This is formed from the decondensation of the right-hand strong band of the 53C region and all the rest of the fine bands up to the end of the chromosome.

E CHROMOSOME: region 74BD. At maximum decondensation of all the bands of region 74BD, even the three of region 74D, become decondensed. In the photograph the three bands remain condensed.

O CHROMOSOME: region 99BC. The strong band 99B and the two of region 99C become decondensed.

References: Ashburner, M. 1967, Chromosoma 21:398-428; Berendes, H.D. 1965, Chromosoma 17:35-77; Stocker, A.J. & C.D. Kastritsis 1972, Chromosoma 37:139-176.

Payant, V. Laboratoire de Biologie et Genetique Evolutives, C.N.R.S., Gif-sur-Yvette, France. Temperature sensitive period of abdominal tergites pigmentation in Drosophila melanogaster females.

Polymorphism of the abdominal tergites pigmentation of Drosophila melanogaster females has been pointed out in natural populations on several occasions (Jacobs 1956; Zurcher 1960). Males are monomorphic. Robertson et al. partly cleared up its genetical basis: it is polygenic. Flies that hatch from eggs maintained at low temperatures are darker than those maintained

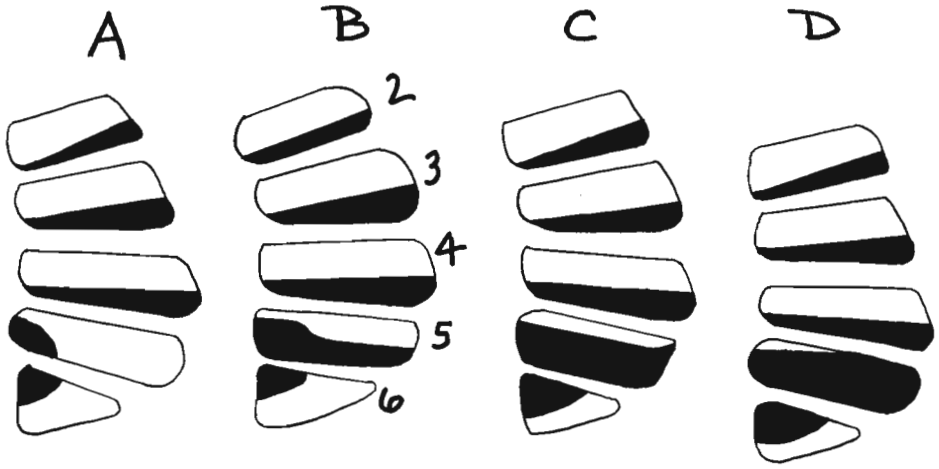

Figure 1. Phenotypes of hybrids issued from crosses between dark females and light males reared at 24°C (patterns A and B) or at 17°C (patterns C and D).