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An EM map of chromosome 6 of *D. hydei*.

Among the various species probably the most difficult polytene chromosomes to investigate are the so called "dot" or small rod shaped chromosomes. In contrast to the relatively well defined banding pattern of the longer

chromosomes these extremely short chromosomes are characterized by their faint and unclear bands. To complicate the problem further, they are usually attached to or embedded in the chromocenter along with the proximal ends of the other chromosomes. Together, this makes good photo-cytological maps of these chromosomes extremely difficult and rather lacking in detail (see for example the photo-maps by Ananiev & Barsky 1982; Parkash & Rajput 1983).

We found recently working with other polytene chromosomes that a combination of the surface spread polytene (SSP) chromosome technique (Kalisch & Hägele 1981, 1982; Kalisch 1982a,b; Kalisch & Whitmore 1983) and fluorochrome staining with Hoechst 33258 led to an improved resolution over routine squash preparations (in prep., see also Whitmore & Kalisch 1984, this issue). We have attempted, therefore, to provide a more detailed photomap of the dot chromosome of *D. hydei* using fluorescence light microscopy (Fig. 1 a,b) in addition to transmission electron microscopy (Fig. 1c1-2). We have used in both cases SSP chromosome preparations.

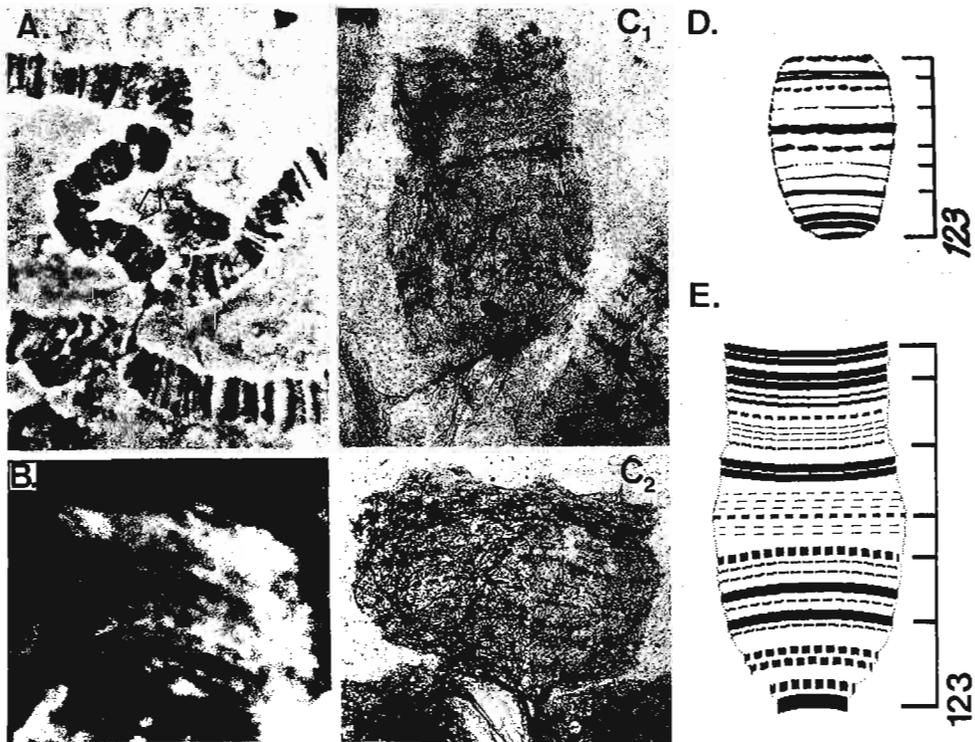


Fig. 1. *D. hydei*, salivary gland chromosome 6. (A) Squash preparation, orcein stained, indicates chromosome 6. $\times 1,450$ (B) Fluorescence microscope photo of chrom. 6 complexed with DNA specific fluorochrome Hoechst 33258. $\times 3,200$. (C1-2) Two EM micrographs from SSP chrom. preparations showing typical forms of chrom. 6. $\times 3,200$ (D) Chrom. map based on squash preparations (from Berendes 1963). (E) Computerized map based on 6 electron micrographs (width shown is 2:1 reduction due to the limitation of plotter used).

As previously described by Berendes (1963) chromosome 6 of *D. hydei* is partly heterochromatic and consists of 17(15) concentric bands (Fig. 1d). Its shape is variable, but usually takes on a top- or rod-like configuration. Based on the data obtained from an analysis of 6 EM micrographs we have tentatively included in our computerized map (Fig. 1e) 30 bands (for details on the computerization of polytene chromosomes (see Reiling, Kalisch & Whitmore this issue). We have not included those bands seen only once or twice and which would bring the total number of bands 34.

References: Ananiev, E.V. & V.E. Barsky 1982, *Chromosoma (Berl.)* 87:239-345; Berendes, H.D. 1963, *Chromosoma (Berl.)* 14:195-206; Kalisch, W.-E. 1982a *Genetica* 60:21-24; Kalisch, W.-E. 1982b *DIS* 58:85-87; Kalisch, W.-E. & K. Hägele 1982, In: S. Lakovaara (ed.): *Advances in Genetics, Development and Evolution of Drosophila*, p1-10, Plenum Publ. Corp, New York; Kalisch, W.-E. & T. Whitmore 1983, *Cytobios* 37:37-43; Parkash, R. & P.S. Rajput 1983, *DIS* 59:96-97.