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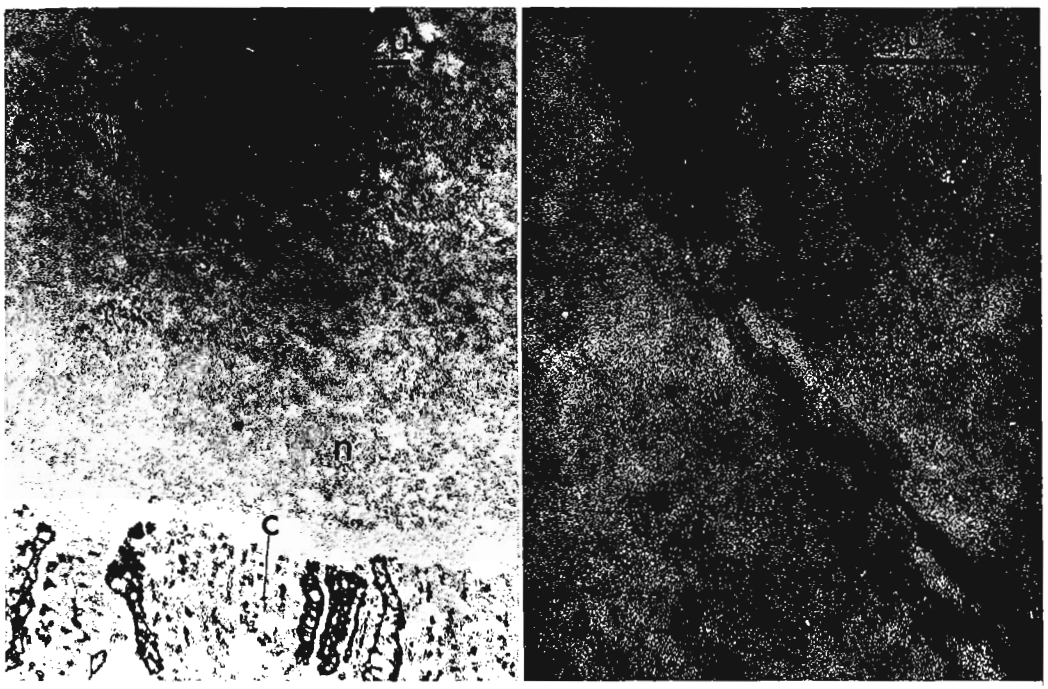
Multi-stranded nucleolar DNA in polytene salivary gland cells of Samoaia leonensis Wheeler (Drosophilidae).

The Feulgen positive bodies in the nucleoli of salivary gland cells from late third instar larvae were first described by Nash and Plaut (1965). Barr and Plaut (1966) showed that these bodies vary greatly in morphology among the various species of Drosophila. In S. leonensis these bodies take the form of strands of varying degrees of development and appear in both sexes. In extreme instances periodic banding can be seen at the light microscope level which is reminiscent of salivary chromosome banding. The salivary glands were prepared as described elsewhere (Ellison, D.I.S. 45). The electron micrographs showed that the strands were multiple in nature. Some banding could be seen. In general the strands resembled very severely stretched polytene salivary chromosomes. The strands did not appear to be connected to the chromosomes.

Barr, H.H. and Plaut, W., 1966, J. Cell Biol., 31, C17. Nash, D. and Plaut, W., 1965, J. Cell Biol., 27, 682.



Electron micrographs of S. leonensis female nucleolar DNA.

s. Nucleolar chromatin strand
c. Polytene chromosome
n. Edge of the nucleolus
b. Periodic banding

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Amphetamine sulfate treatment at 1.0 and 1.5gr/100ml apparently causes a reduction in the percentage of successful F_1 crosses of heterozygous Bar females and "Basc" males. Methamphetamine hydrochloride does not seem to alter the success of F_1 pair matings significantly. There appears to be an elevation of the frequency of recessive lethality in 1.5 amphetamine sulfate treated flies. Further investigation is necessary to substantiate this elevation. Injection experiments are planned for subsequent experimentation.