Marques, E.J. and L.E. de Magalhães.
University of Mato Grosso and University of São Paulo, Brazil. The Frequency of SR-female of Drosophila nebulosa in a natural population.

Four samples of D. nebulosa collected in nature near Campo Grande, State of Mato Grosso, Brasil were analysed to detect the occurrence of SR-females. The results observed were the following:

Date	No. of ♀♀ collected	No. ♀♀ "SR"	%
1/18/73	206	13	6.31
4/12/73	259	9	3.47
5/24/73	65	0	-
6/ 7/73	99	6	6.06

It was found that the SR-condition was due to the presence of Treponema as described by Poulson and Sakaguchi, 1961.

Reference: Poulson, D.F. and B. Sakaguchi 1961, Science 133:1489-90.

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Kirschbaum, W.F. and R.L. Cabrini.
Comisión Naçional de Energía Atómica, Buenos Aires, Argentina. Lineal microphotometric scanning of Drosophila melanogaster salivary gland chromosomes.

Considering that the microphotometry could be a contribution to the cytogenetic analysis of polytenic chromosomes, several tests have been made under different measurement conditions.

Two systems have been used, direct microphotometry and microdensitometry of the photographic image. In both cases equipment consisting of a Zeiss Photomicroscope I, a Zeiss Photometerhead, a Zeiss case with an R.C.A. Photomultiplier model 1P28 and a Zeiss monochromator model M4GII, using monochromated light of 560 m μ, was used. A lineal scanning of the chromosomes was performed following the longitudinal axis of the chromosomes and of the photography of the chromosome according to the technique of Cabrini, R.L. et al. (Acta histochem. 36, 399:403, 1970).

In direct microphotometry a Feulgen stain of the chromosomes was used, because this is a permanent stain and allows a stequiometric determination of the chromosomes DNA. The chromosome staining technique was used with the modification of the hydrolysis at room temperature with 5N HCl, because better results were obtained with it (DIS 50, 1973). For the photographic method the chromosomes stained with Feulgen have been photographed with positive Ferrania film of 36 mm, using therefore the same optics of the same microscope used for the direct microphotometry.

For comparative purposes always the same piece of the X-chromosome was taken for the direct microphotometry and this same piece photographed for the determination of the photographic densities.

Testing with direct microphotometry we have seen that the best resolution was obtained with a great optic magnification associated with the least possible measurement diaphram, using a field diaphragm that does not surpass the surface illumination of the measurement diaphragm.

With direct microphotometry, the maximum magnification of the optic microscope was used. One could not diminish the diaphragms of measurements and of field to a considered optimum, because of the limiting factor of quantity of light.

The second method, obtention of the optical density of photographies was measured using the same equipment as for the direct microphotometry.

Comparing both methods, the analysis of the photographs gives a superior resolution of the number of bands than direct microphotometry. On the other hand, the direct microphotometry is the best method of giving a quantification of the DNA of the chromosomes.

In pilot tests both methods demonstrated sufficient reproducibility and there one could think of using them in routine analysis of polytene chromosomes giving objective data in a way that eliminates the personal factor of observation.

The possibility of obtaining absolute or relative numeric data of the distribution of DNA in these chromosomes, shows that computation methods may be used for this kind of analysis.