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Aula 10. Determinação do sexo. Fatores citoplasmáticos

Ciliados – macronúcleos (poliploidia/eliminação de heterocromatina)

Nematódeos – blocos heterocromáticos dos cromossomos (soma)

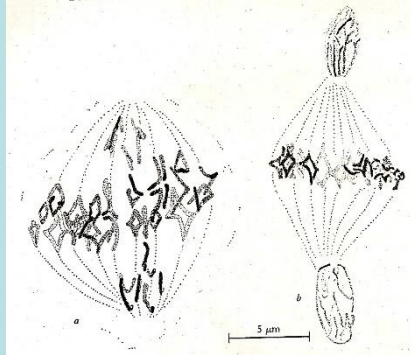
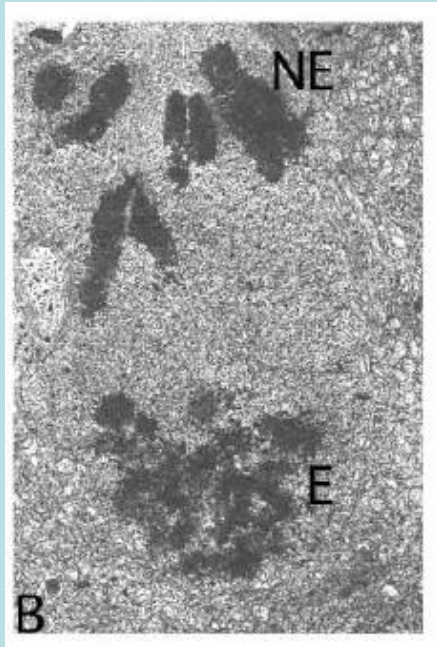
Copépodos – blocos heterocromáticos dos cromossomos (soma)

Insetos – várias famílias, heterocromatina, cromossomos, genoma (soma)

Peixes – 8 espécies de “peixe-bruxa” (blocos heterocromatina/ cromossomos)

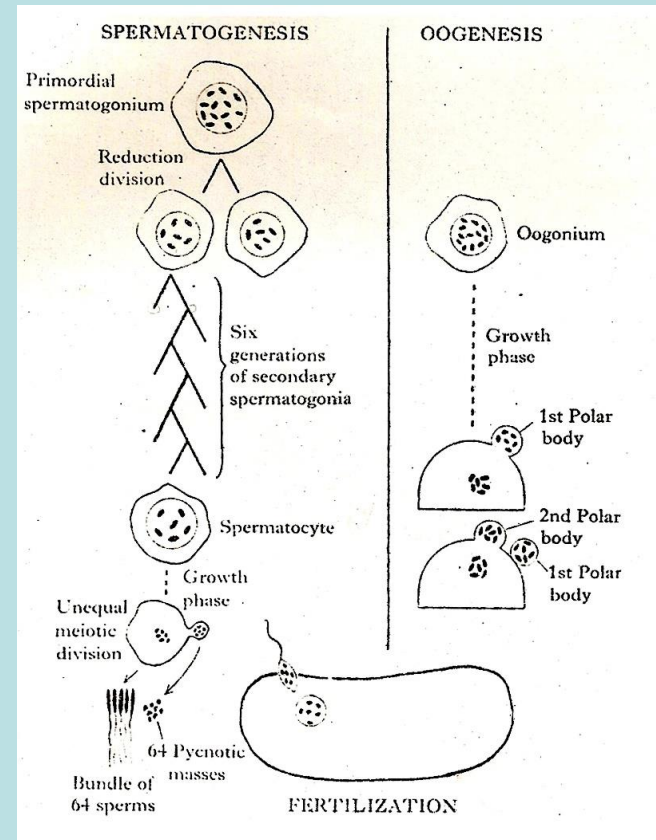
Marsupiais – algumas famílias: 1 X fêmeas/ Y machos; alguns tecidos (soma)

Eliminação de cromossomos



SPERMATOGENESIS	OOGENESIS
<p>Spermatogonial metaphase</p>	<p>Oogonial metaphase</p>
<p>First anaphase</p>	<p>Diakinesis</p>
<p>Interkinesis</p>	<p>First metaphase ?</p>
<p>Second anaphase</p>	<p>Residual cell</p>
<p>Sperms</p>	<p>Residual cell</p>
	<p>P.B. I Second metaphase ?</p>
	<p>P.B. I P.B. II Mature egg ?</p>

Cecidomyidae



Mallophaga

White (1946) J Morphol 79: 323-369

Kloc & Zagrodzinska (2001) Differentiation 68: 84-91

Determinação do sexo em Coccídeos

DGS + heterocromatinização + eliminação de cromossomos

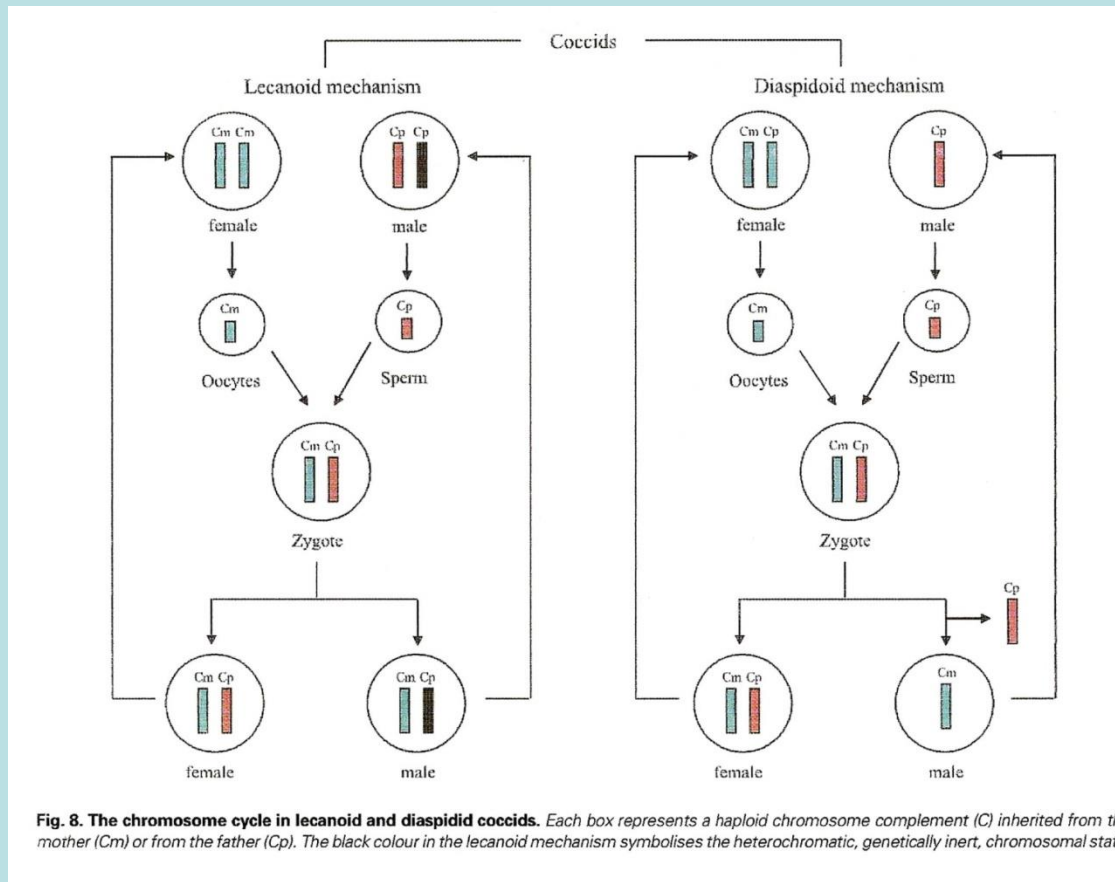
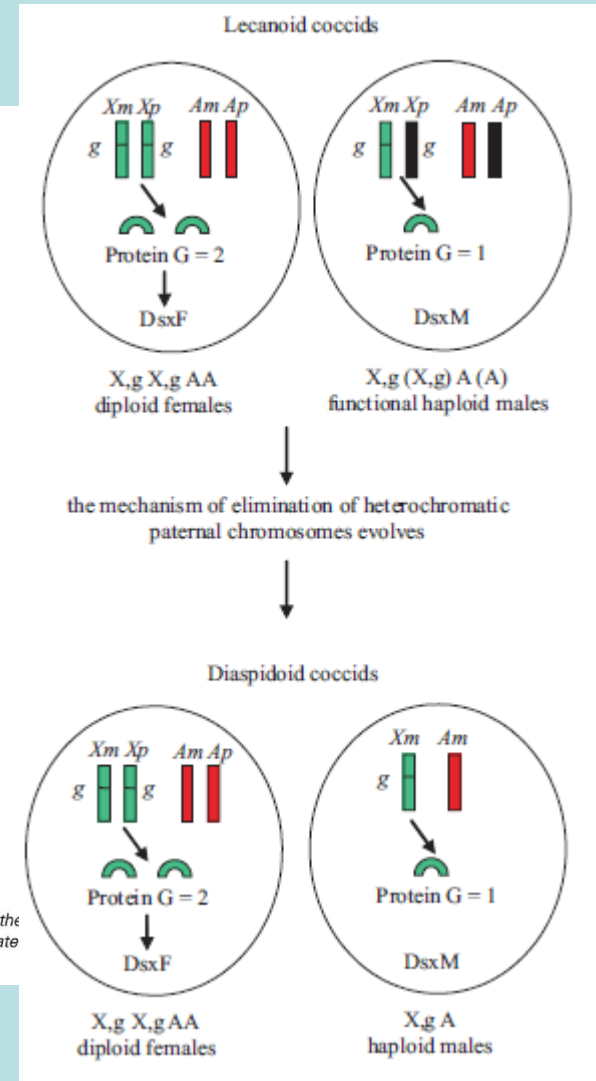


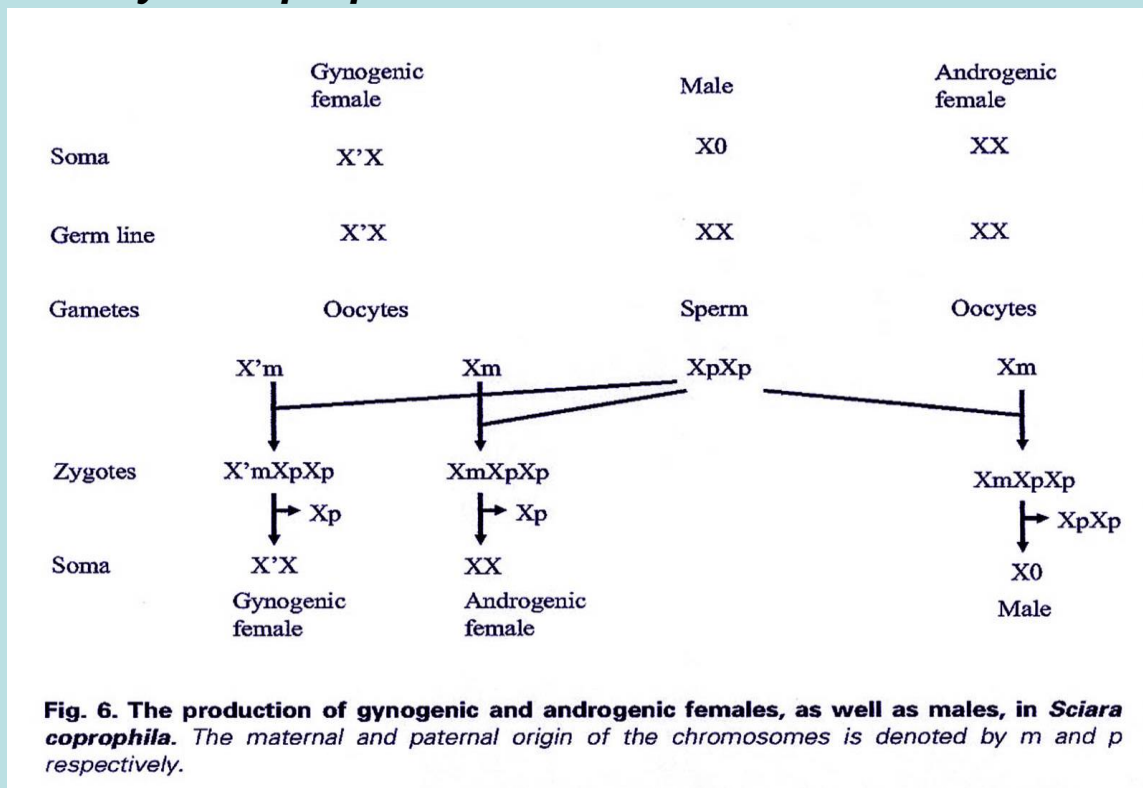
Fig. 8. The chromosome cycle in lecanoid and diaspidoid coccids. Each box represents a haploid chromosome complement (C) inherited from the mother (Cm) or from the father (Cp). The black colour in the lecanoid mechanism symbolises the heterochromatic, genetically inert, chromosomal state



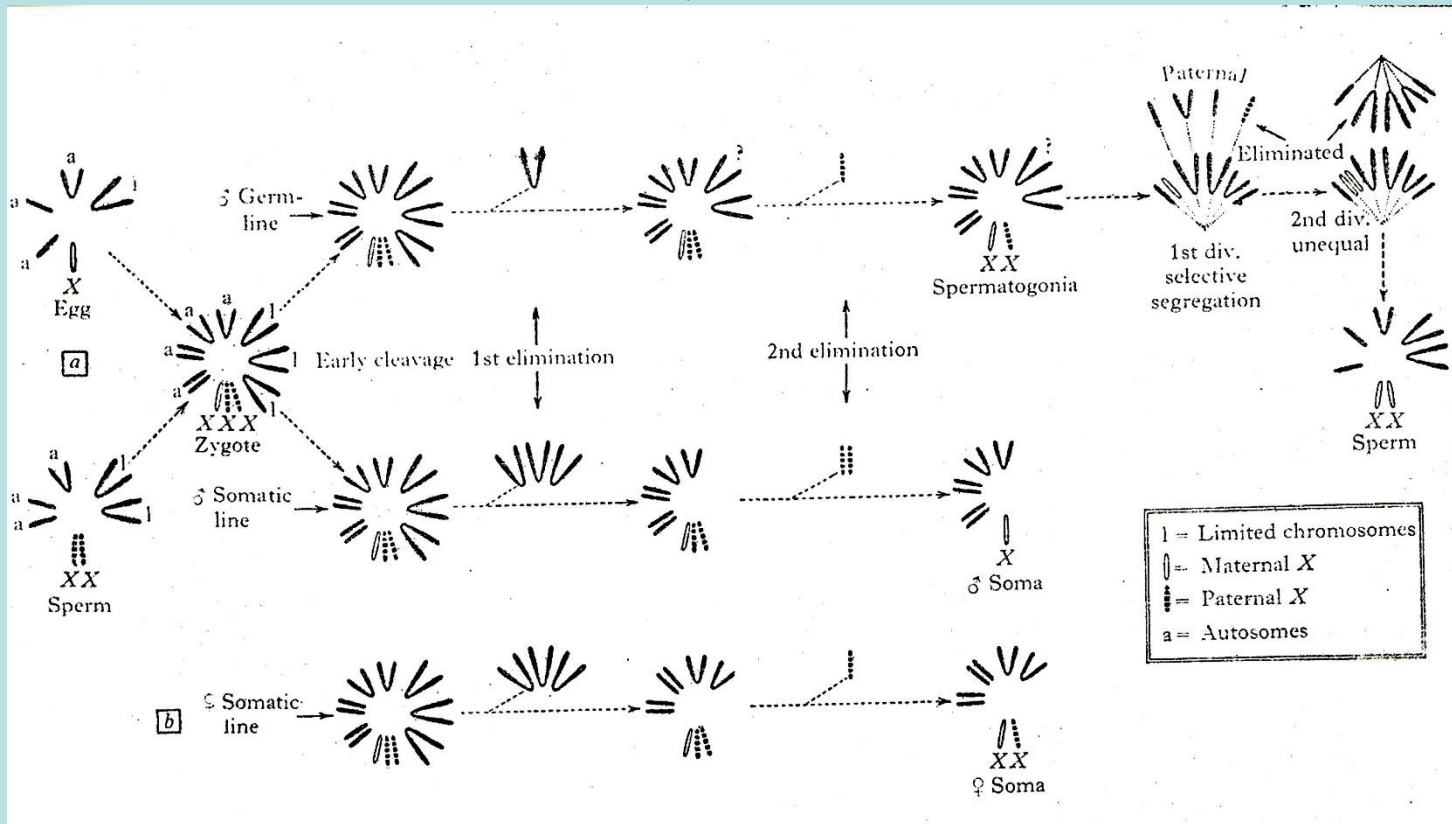
DSG + Fatores citoplasmáticos + eliminação de cromossomos

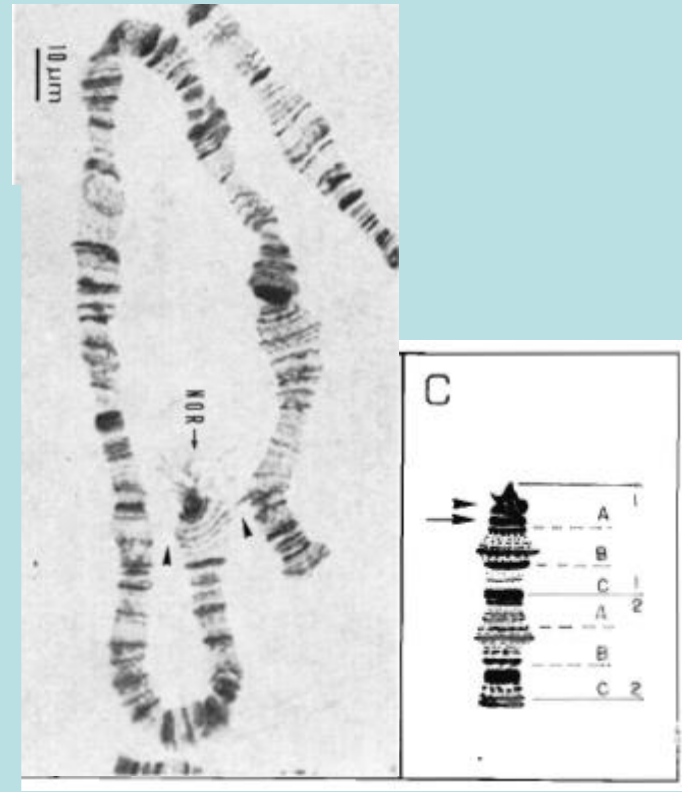
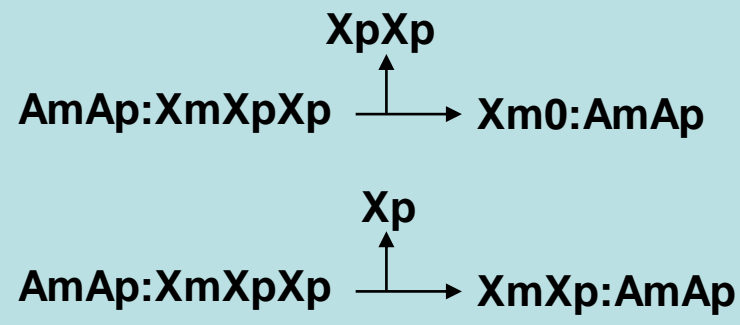
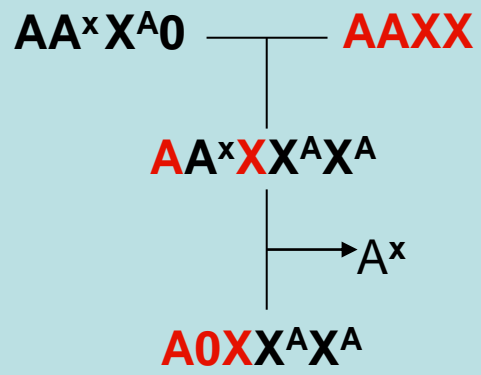
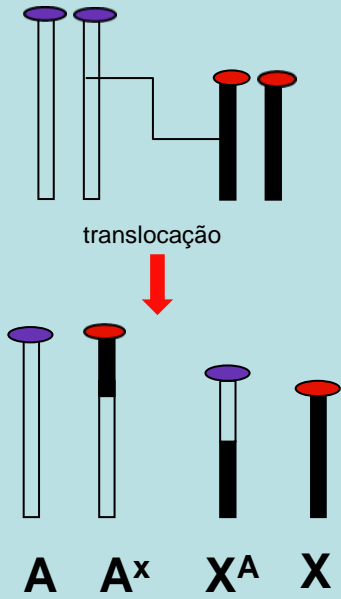
Sciaridae. Espécies monogênicas

Bradysia coprophila



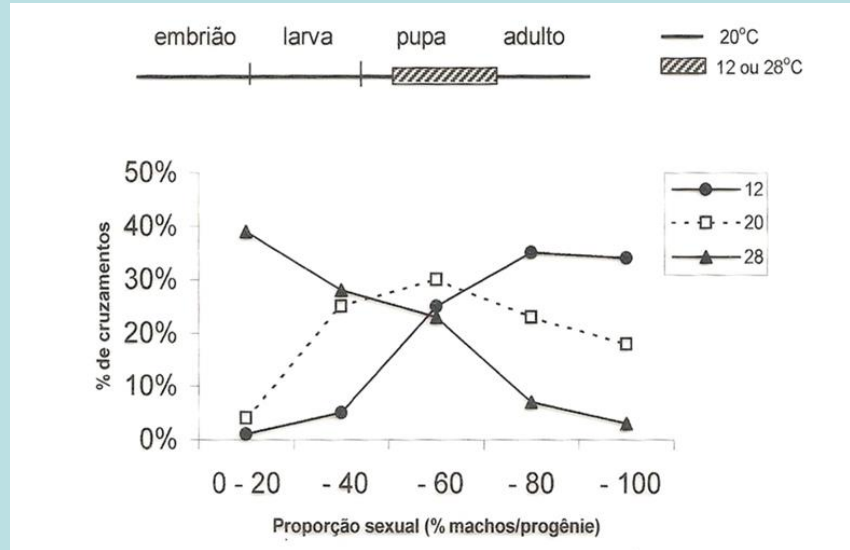
Sciara coprophila





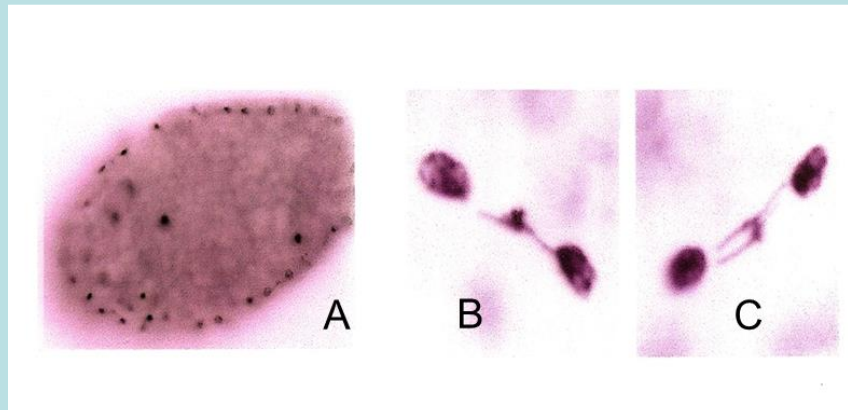
Sciaridae – Espécies digênicas (anfigênicas)

Sciara ocellaris (*Bradysia tritici*)



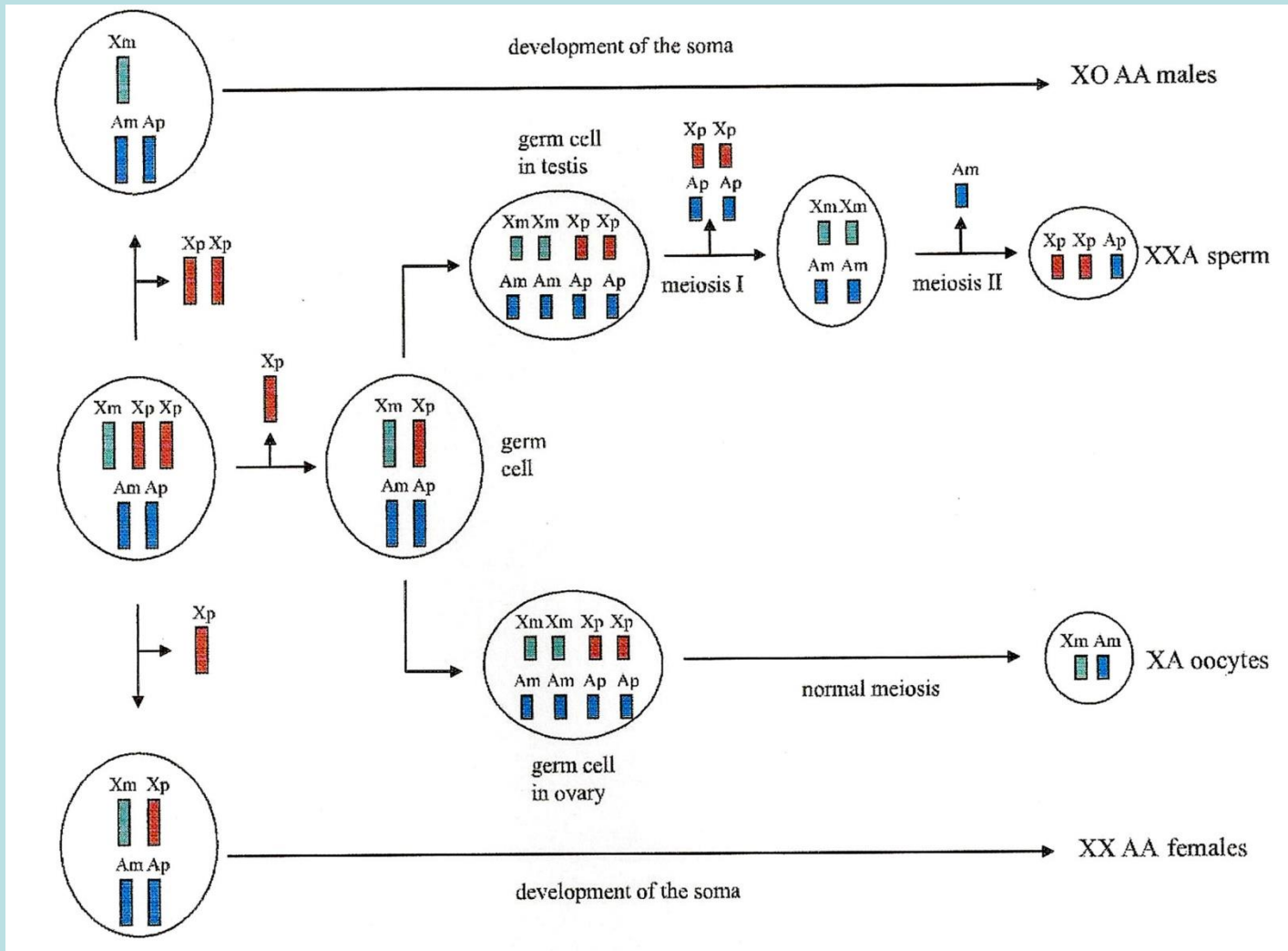
Proporção sexual

Nigro, Campos, Perondini (2007) Genet Mol Biol 30: 152-158



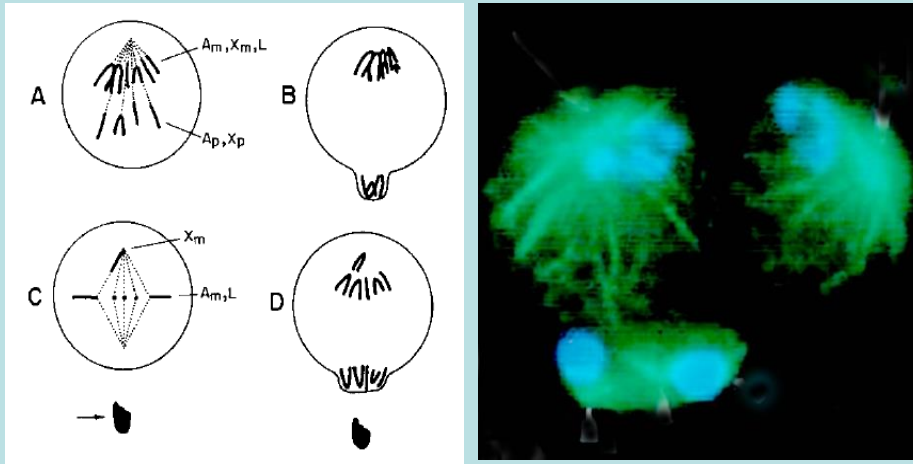
Eliminação cromossomo X no soma

A. Embrião de *Sciara* com os núcleos corados
B,C: Telófases com eliminação de 1 X (B) e 2 X (C)

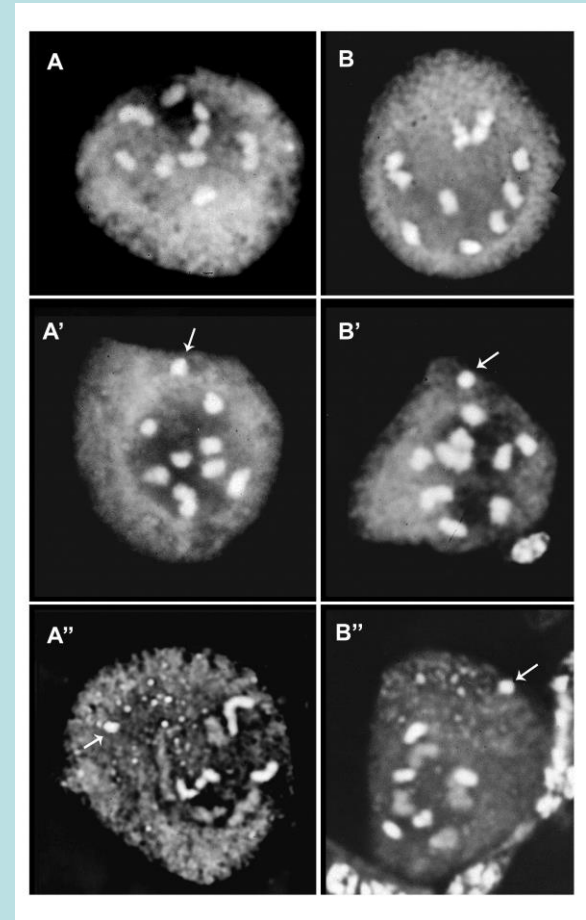


Sciara ocellaris

meiose



Trissomia X

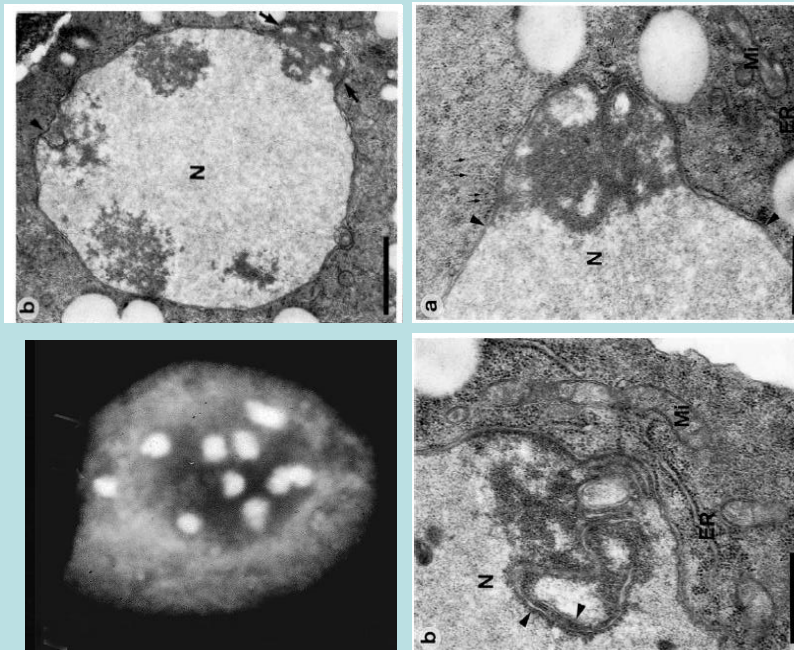


$2n=8$

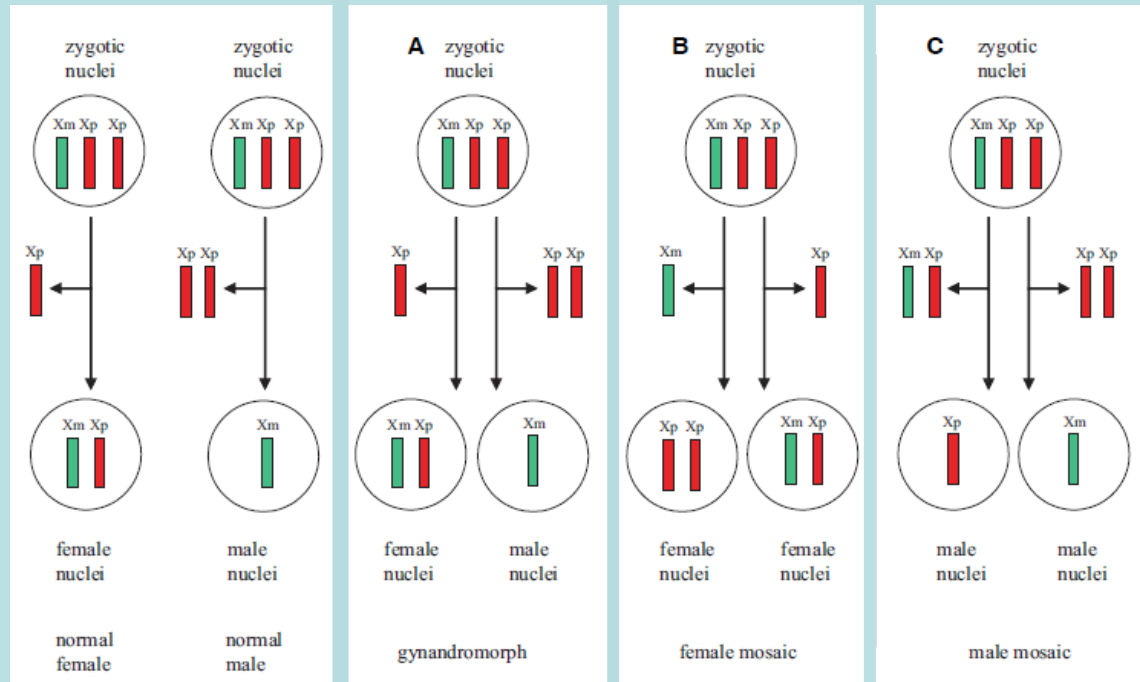
$2n = 9$

Células germinativas embrionárias

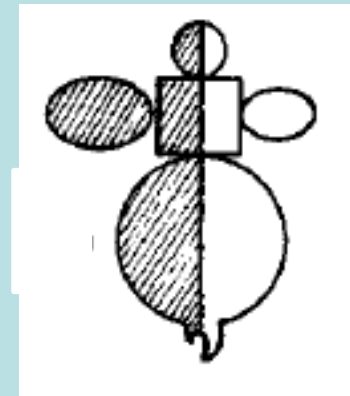
CGE



Erros na eliminação de cromossomos – *S. ocellaris* – mutação *sépia*



ginandro



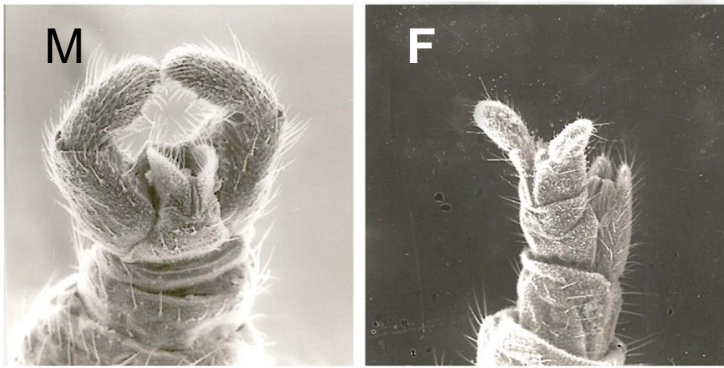
Type	Female	Pair matings Male*	N	Zygotes	Progenies			
					N†	Abnormals‡ Mos. Gyn. Excp.		
1	+/+	s (s)	66	+ s s	8,266	0	14	14 s ♂
2	+/+	s (+)	181	+ s s	20,399	0	28	91 s ♂, 5s/s ♀
3	s / s	+(+)	50	s +++	5,485	1	14	6 + ♂
4	s / +	+(+)	88	+++ s +++	7,651 6,860	0 2	0 107	0 0
controles	+/+	+(+)	110	+++	15,739	0	0	0
	s / s	s (s)	100	s s s	8,160	0	0	0

Mori, Dessen, Perondini (1979) Heredity 42: 53-357

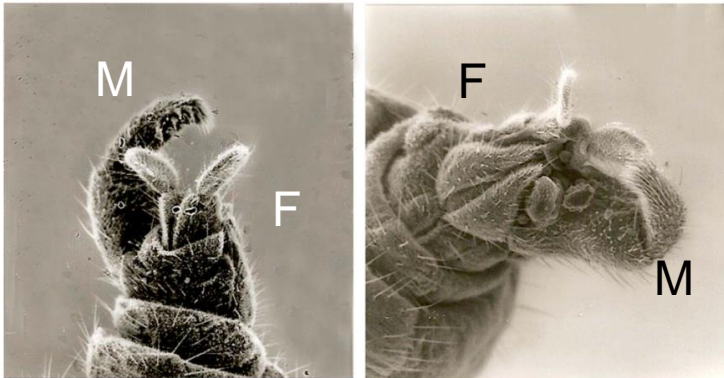
Mori, Perondini (1980) Genetics 94: 663-673

Sciara ocellaris

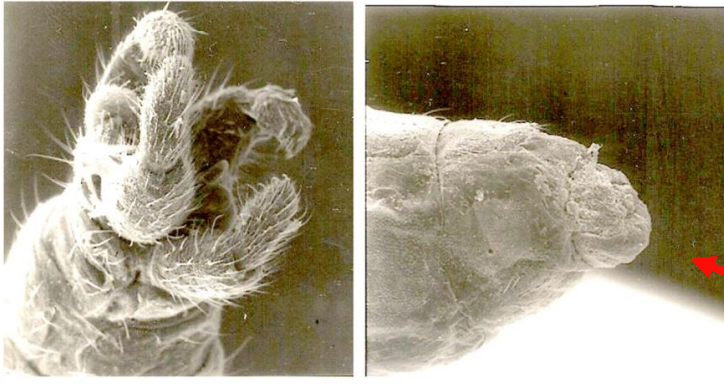
normal



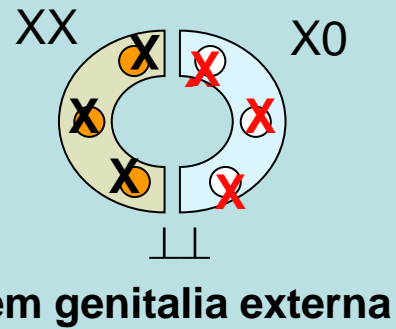
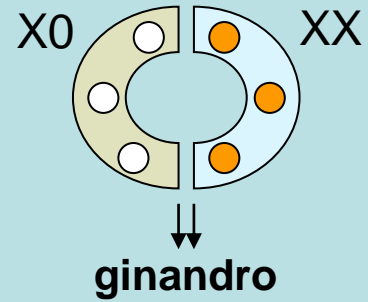
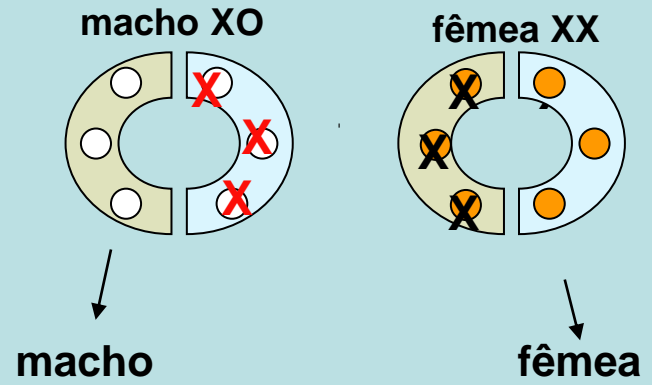
Ginandro

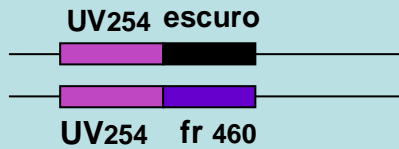


???



Disco imaginal genital

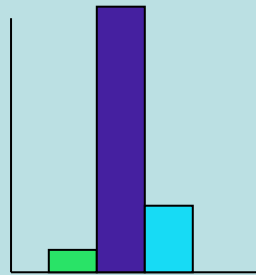
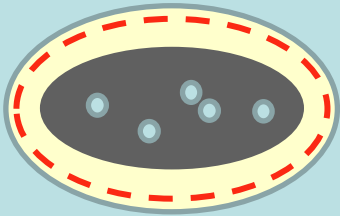




Irradiação com UV germicida + fotoreparo

citoplasma

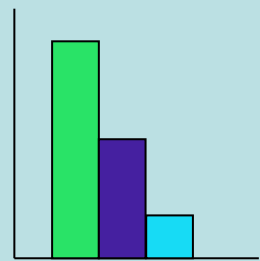
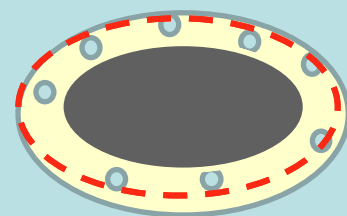
UV-254nm



M G fr

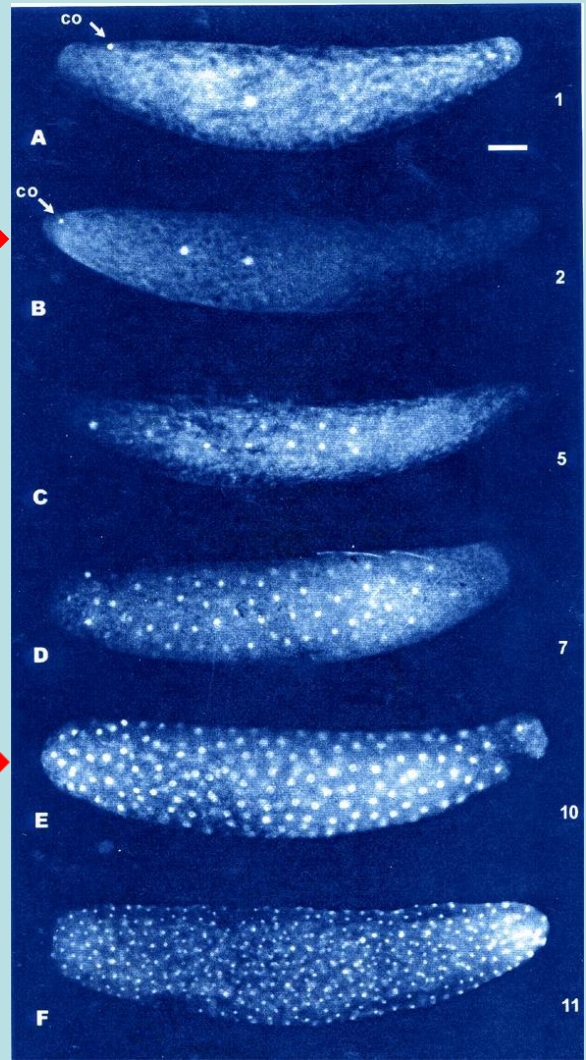
citoplasma + núcleos

UV-254nm



M G fr

M = mosaico
 G = ginandro (X⁰AA / XXAA)
 fr = fotoreparo (X_m0AA / X_p0AA)



Modelo : mecanismo de controle da eliminação de cromossomos

