CHROMOSOMAL MONOMORPHISM IN BRAZILIAN AND ARGENTINE POPULATIONS OF *DROSOPHILA SIMULANS* AND *DROSOPHILA REPLETA*¹

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NATURAL populations of *Drosophila* are generally composed of complex arrays of different gene arrangements, but show a remarkable uniformity regarding the outward appearance of the flies. Therefore, color polymorphism is rare and chromosome polymorphism is common in this genus. Only a few species are either polymorphic with respect to externally visible traits or monomorphic with respect to gene arrangements (cf. FREIRE-MAIA 1964 and STONE 1955 for reviews).

Table 1 presents some data on the analysis made of the salivary gland chromosomes of samples of *D. simulans* and *D. repleta* obtained in Brazilian and Argentine domestic populations. The technique was the usual one (FREIRE-MAIA 1961). No chromosome rearrangement has been found in any one of the 540 strains of *D. simulans* and 56 of *D. repleta* which have been examined.

This chromosome monomorphism is not the rule among the domestic species whose samples we have analysed (FREIRE-MAIA, ZANARDINI and FREIRE-MAIA 1953; FREIRE-MAIA 1955, 1961; FREIRE-MAIA and FREIRE-MAIA 1964). In *D. ananassae*, *D. pararepleta*, *D. melanogaster* and *D. immigrans*, for instance, respectively 1.42, 1.12, 0.64 and 0.28 inversions per larva have been verified. It is interesting to observe that *D. simulans* and *D. melanogaster* are sibling species, but show very clear differences regarding adaptation to climate. At least in the populations we have studied, *D. simulans* is commoner in the colder regions (a type of "preference" also found in *D. immigrans*), while *D. melanogaster* is more frequent in the warm areas. It deserves to be mentioned, however, that *D. simulans* seems to be just as successful in the cold regions (in spite of its monomorphism) as is *D. melanogaster* (with its 13 different paracentric inversions) in the warm ones.

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TABLE 1

Numbers (N) of strains of D. simulans and D. repleta whose salivary gland chromosomes have been analysed

Locality	Time	N	Locality	Time	N
<i>D. simulans</i> (Brazil)			Pirassununga, SP	Aug. 1952	17
Porto Alegre, RGS	Mar. 1952	4	São Paulo, SP	Feb. 1953	5
	Nov. 1952	41		May 1954	7
	Sept. 1955	27	Ilha dos Porcos, RJ	July 1954	9
Florianópolis, SC	Nov. 1952	20	Boa Esperança, MG	Feb. 1952	18
	July 1954	6		Jan. 1953	25
Armação de Itapicoroi, SC	Oct. 1952	7		Jan. 1954	25
Itajai, SC	Nov. 1952	46	Belo Horizonte, MG	Feb. 1953	3
	June 1953	21		Aug. 1953	8
Gaspar, SC	June 1952	15		Feb. 1954	1
Blumenau, SC	Sept. 1951	1	Uberlândia, MG	July 1954	2
Monte Pelado, SC	Sept. 1951	10	Sooretama, ES	?	2
Camboriu, SC	July 1953	14	Ilhéus, Ba	Feb. 1953	23
	July 1954	1	Salvador, Ba	Feb. 1953	9
Guaratuba, Pr	Apr. 1954	5	Alagoinhas, Ba	Feb. 1954	2
Curitiba, Pr	Oct. 1951	14	Floriano, Pi	Feb. 1953	1
	Nov. 1951	32		Feb. 1953	4*
	Feb. 1952	6	Goiânia, Go	Sept. 1953	7
	June 1952	13	<i>D. simulans</i> (Argentina)		
	July 1952	3	Cordoba (Gruta)	Feb. 1954	4
Morrêtes, Pr	Mar. 1954	9	Buenos Aires	Feb. 1955	4
	Oct. 1951	14	El Destino	Mar. 1955	17
	Sept. 1954	3	<i>D. repleta</i> (Brazil)		
Paranaguá, Pr	Sept. 1952	1	Porto Alegre, RGS	Feb. 1955	3
	Oct. 1953	5	Florianópolis, SC	Nov. 1952	13
	Sept. 1954	1	Itajai, SC	Nov. 1952	8
Ilha do Mel, Pr	Sept. 1952	12	Paranaguá, Pr	Mar. 1952	1
Irati, Pr	Apr. 1952	3		Oct. 1953	19
Londrina, Pr	Sept. 1954	11	Curitiba, Pr	Mar. 1952	2
Cornélio Procópio, Pr	July 1954	1	Cornélio Procópio, Pr	Nov. 1952	6
Lins, SP	Apr. 1954	1	Salvador, Ba	Feb. 1953	4

With the exception of one sample (*), all the others have been collected in domestic habitats (orchards, fruit deposits, markets, etc.).

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