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DISTRIBUTION AND FREQUENCY OF B-CHROMOSOMES
IN A POPULATION OF *URGINEA FUGAX* (LILIACEAE)
FROM SARDINIA

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Received: 25th June 1966

The existence of B-chromosomes in the genus *Urginea* has been already reported by one of us (BATTAGLIA 1964*a* and *b*).

The species *U. fugax* (Moris) Steinh. var. *typica* Lit. & Maire also exists in the var. *major* Lit. & Maire (MAIRE 1958). The chromosome complement of both forms with regard to the presence of B-chromosomes can be summarized as follows:

	<i>Source</i>	<i>Author</i>
<i>U. fugax</i> var. <i>typica</i>	$2n=20+1B$, Capo S. Elia (Sardinia)	MARTINOLI, 1949
» » » »	$2n=20+2B$'s, Aïn Draham (Tunisia)	BATTAGLIA, 1957
» » » ⁽¹⁾ <i>major</i>	$2n=20+4B$'s, Cala Regina (Sardinia)	MARTINOLI, 1949
» » » »	$2n=20+6B$'s, reg. of Rabat, Ma-mora (Morocco)	BATTAGLIA, 1964

One of the most typical characteristics of the B-chromosomes of *Urginea* and of various other plant species is their variability in number from plant to plant. The present investigation deals with a population of *Urginea fugax* present in Geremeas, Cagliari (Sardinia) near Cala Regina, growing on granite soil. The plants, sixty in number, were collected at random.

For the study of the chromosome complement the root-tips were pre-

* Ricerca eseguita con un contributo del Centro Nazionale di Genetica (C.N.R., Roma).
(¹) probably.

treated with colchicine-paradichlorobenzene, fixed and stained according to the Feulgen method (BATTAGLIA 1964a).

The results can be summarized as follows:

1) All the plants possess a diploid complement (BATTAGLIA 1964a: $z = 2n = 20 = 2L_1 + 2L_2 + 2M_1 + \dots + 2M_8$), with B-chromosomes in varying numbers from 0 to 8.

2) The number of B's is constant in the different root-tips of a given plant.

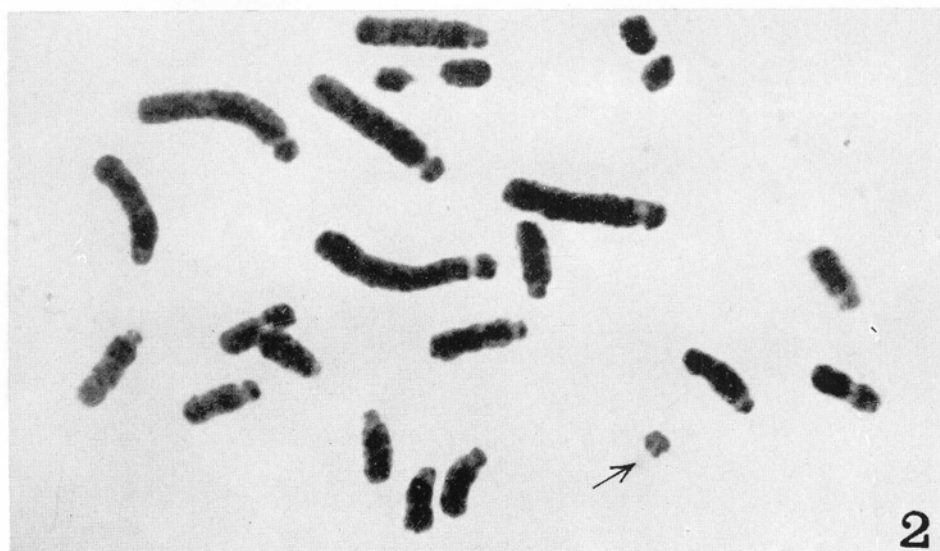
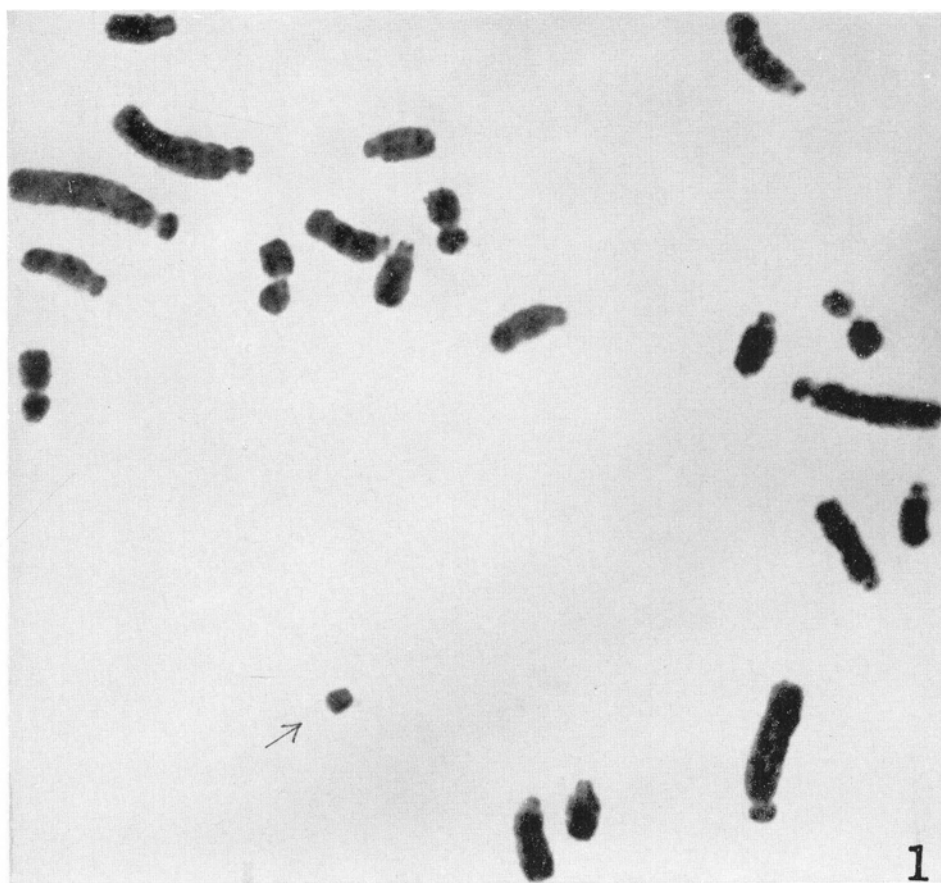
3) The B-chromosomes are euchromatic.

4) They behave regularly during the mitotic cycle (the observations were also carried out in not pre-treated material) but in some cases they showed a certain amount of stickiness.

5) The following chromosome complements have been observed and can be seen documented in the illustrations (two metaphases from the same root-tip, the B's indicated by arrows):

	<i>2n</i>	<i>no. of B's</i>	
a)	20	0	These plants yield only few very poor metaphases and have not been illustrated.
b)	20	1	fig. 1 & 2
c)	20	2	fig. 3 & 4
d)	20	3	fig. 5 & 6
e)	20	4	fig. 7 & 8
f)	20	5	fig. 9 & 10
g)	20	6	fig. 11 & 12
h)	20	7	Although there is no apparent reason for its absence, no plant with 7 B's has yet been found.
i)	20	8	fig. 12, 13 & 14. In these illustrations some associations of B's in threes can be seen indicated by the three pointed arrows. This may be due to stickiness.

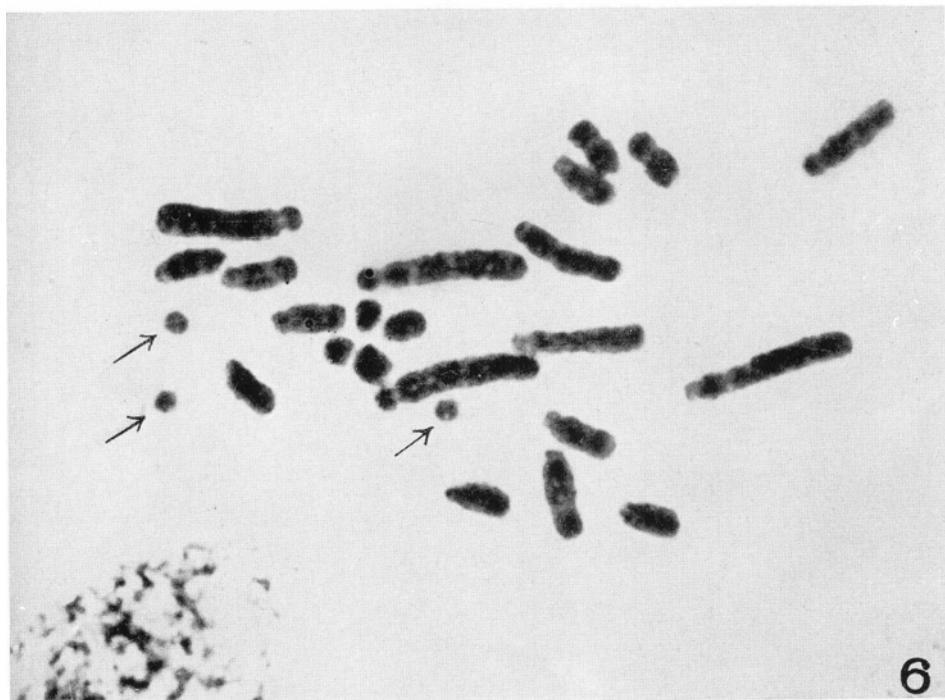
6) A certain number of plants yield few and very bad metaphases giving unreliable chromosome counts. These plants will be re-examined at a future date. The presence of natural stickiness (D'AMATO 1949) was observed in some of the metaphases studied.



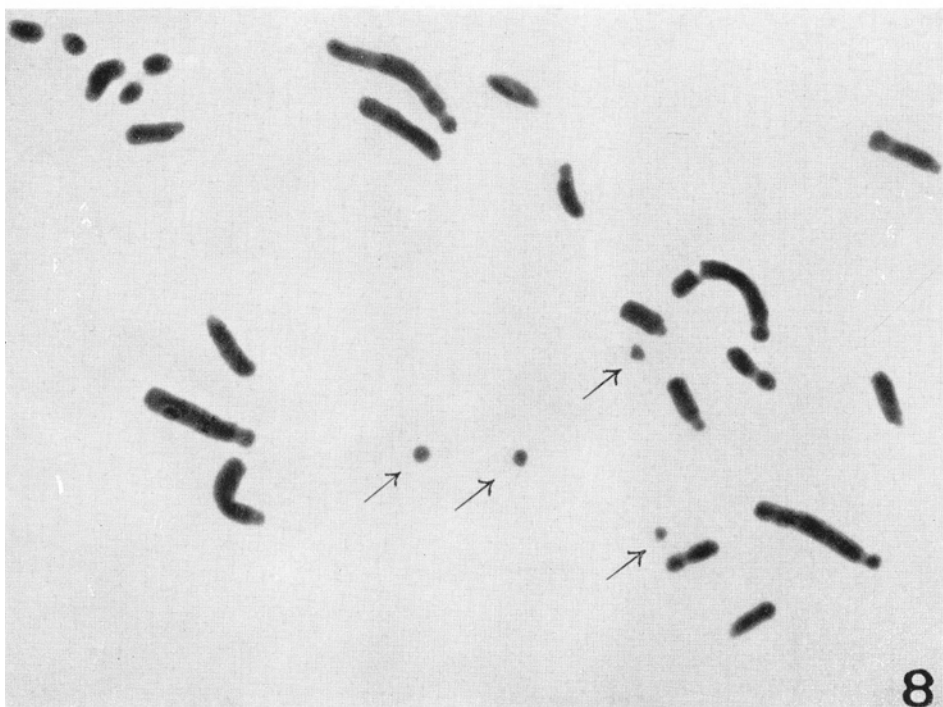
Figs. 1-2. — Caryotype with 1 B chromosome. ($\times 2200$).



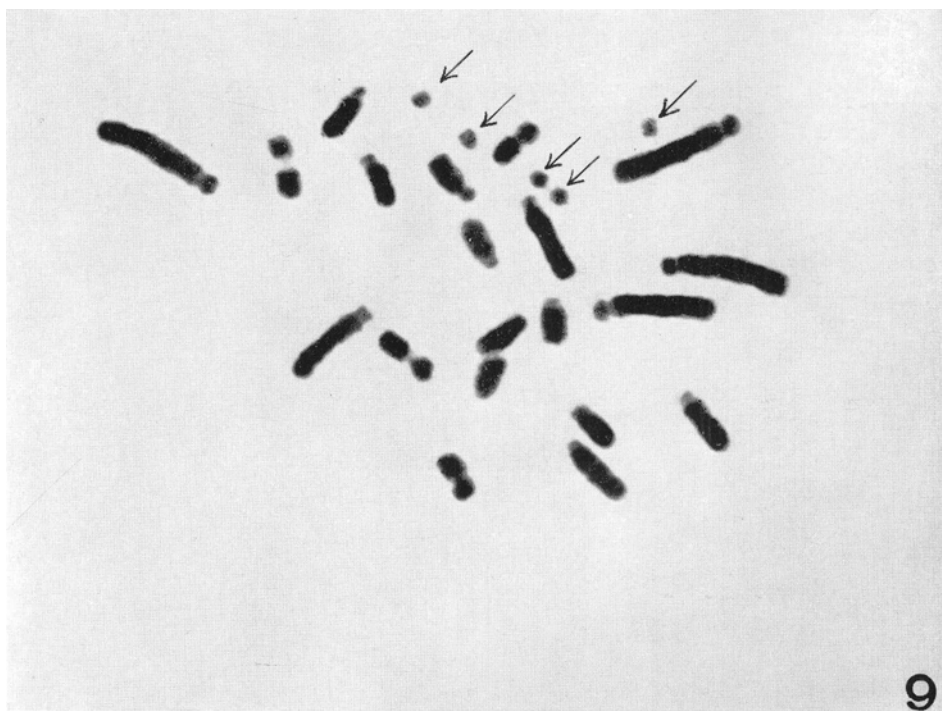
Figs. 3-4. — Caryotype with 2 B's. ($\times 2200$).



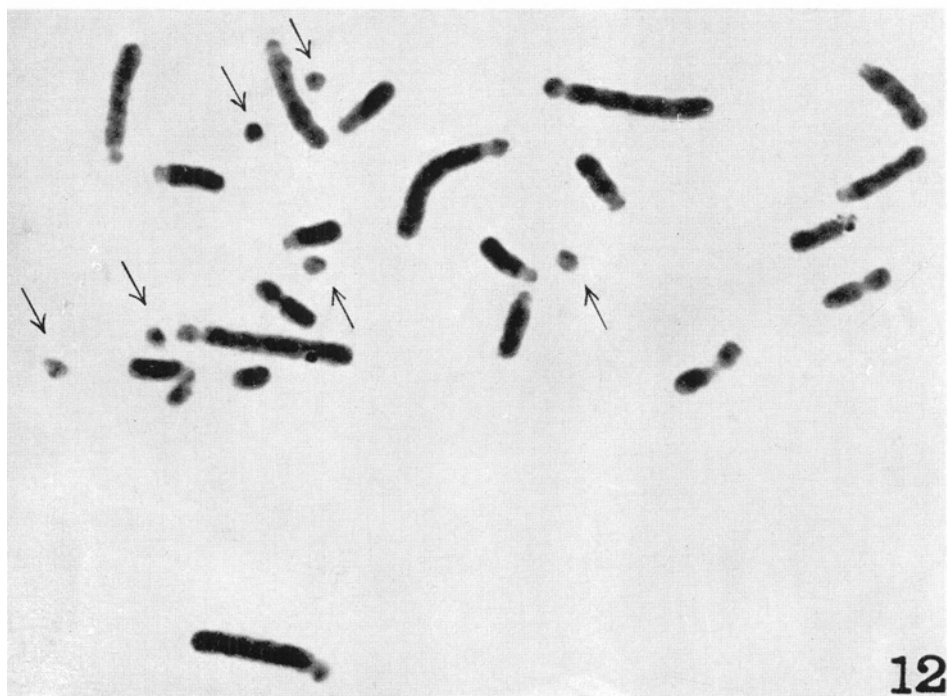
Figs. 5-6. — Caryotype with 3 B's. ($\times 2200$).



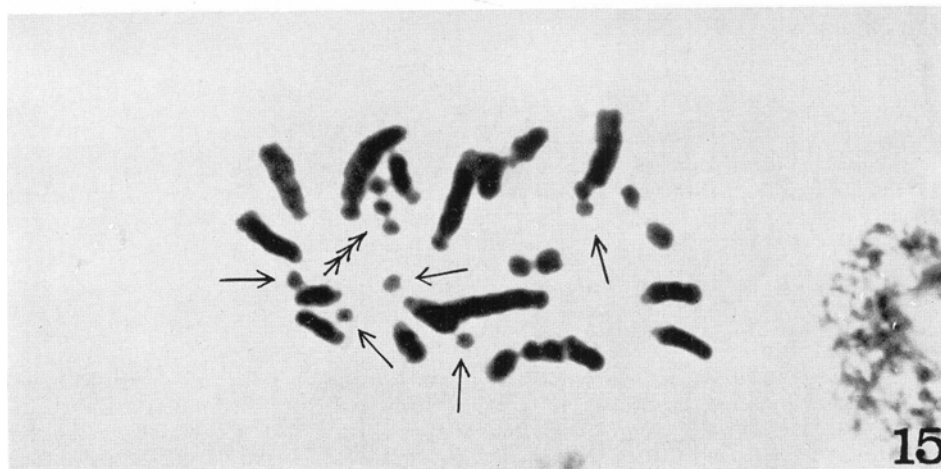
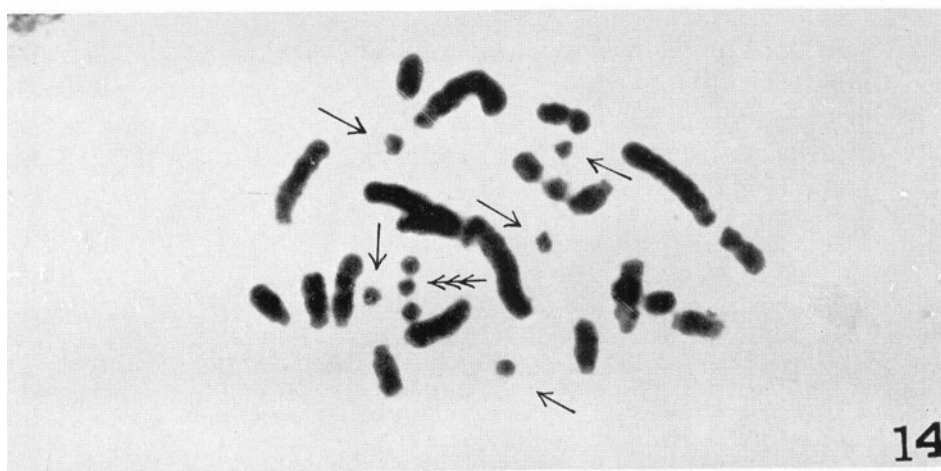
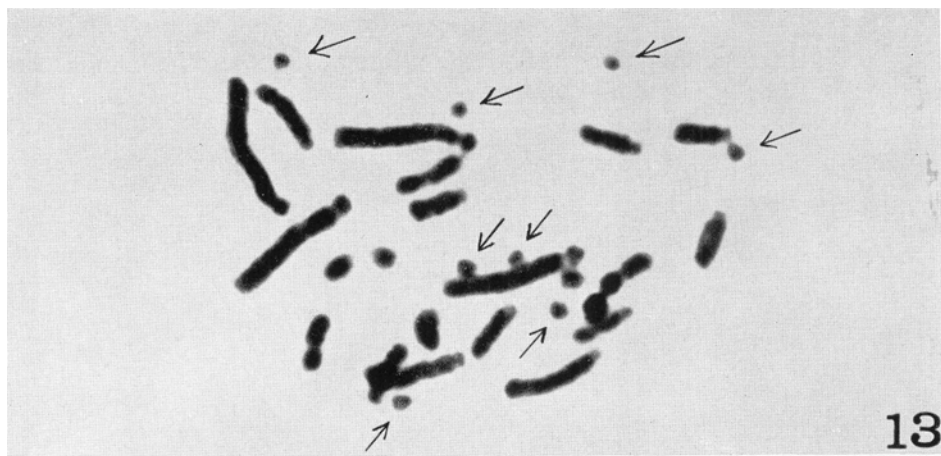
Figs. 7-8. — Caryotype with 4 B's. ($\times 2200$).



Figs. 9-10. — Caryotype with 5 B's. ($\times 2200$).



Figs. 11-12. — Caryotype with 6 B's. ($\times 2200$).



Figs. 13, 14-15. — Caryotype with 8 B's. ($\times 2200$).

7) In the population studied the different chromosome complements were found in the following percentages:

<i>complement type</i>	<i>no. of B's</i>	<i>%</i>
a)	0	7
b)	1	31
c)	2	17
d)	3	14
e)	4	4
f)	5	11
g)	6	13
h)	8	3

8) Based on the number of leaves (5-11), on their length (cm. 8-16), and width (cm. 0.10-0.15, rarely cm. 0.20 or little more) all the plants examined belonged to the var. *typica* Lit. & Maire. The var. *major* is in fact differentiated by its longer (cm. 25-36) and wider (cm. 0.20 or more) leaves (BATTAGLIA 1964a).

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SUMMARY

During the investigation of the chromosome complements of a population of *Urginea fugax* from Sardinia, plants possessing 0-8 B-chromosomes were found. No plant with 7 B's has yet been found although the presence of such individuals can be inferred. All the plants were identified as *Urginea fugax* (Moris) Steinh. var. *typica* Lit. & Maire.

RIASSUNTO

È stato effettuato il controllo cariotipico in una popolazione di *Urginea fugax* (Liliaceae) della Sardegna. È stata osservata una presenza di B cromosomi compresa fra 0 e 8. Il cariotipo avente 7 B cromosomi, ritenuto verosimilmente esistente, non è stato tuttavia ancora reperito. Gli individui studiati sono stati identificati come appartenenti ad *Urginea fugax* (Moris) Steinh. var. *typica* Lit. & Maire.