NOTE ON MEIOTIC BRIDGES IN TRITICUM

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While trying to find a suitable method for studying the meiosis in *Triticum*, the author noticed some pecularity in the frequency of anaphase bridges in the P. M. C. of a plant of *Triticum spelta, L., var. brunaxig.*

The bridges were formed by a single chromatid and were never accompanied by fragments. They occurred at first anaphase as well as at second anaphase. (Figs. *a* and *b*.)

The bridges were observed in 23 first anaphases out of 152 (15,2 %) and in 4 out of 113 second anaphases (3,5 %).

There were no other abnormalities. The metaphases were normal, with a «usual» frequency of univalents of 10,7 % in 291 M. I examined. (c. THOMPSON and ROBERTSON, 1930; LE ROY POWERS, 1932; HOLLINGSHEAD, 1932; CÁMARA, 1945).

The bridges were resolved by breakage and the tetrad cells did not show any micronuclei.

Other authors have studied bridge formations and various suggestions have been made as to the possible ways of such formation.

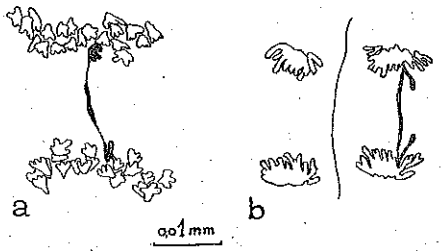
The most common way is by C. O. within relatively inverted segments. While MCCLINTOK (139, 1941) gives two schemes of dicentric bridge formation in *Zea;* one by C. O. in the homologous region of semihomologous chromosomes and the other one by the presence of a duplication. And AZEVEDO COUTINHO (1937) and CÁMARA (1938, 1939), working respectively in *Vicia* and *Aloe* explain the bridge formation by fusion of chromonemata at different levels.

In these cases, the bridges, however are always accompanied by fragments, which we did not find in our material.

LEVAN (1942) explains the bridge formation in haploid *Secale* by a fusion at zygotene of heterochromatic ends of non homologous chromosomes. This

(1) This study has been carried out at the Estaçao Agronómica Nacional, Sacavem, Portugal. The author is very much indebted to Professor A. Câmara, director of this Institute, for the guidance and working facilities, he received.

is not probable either, because of the regularity in homologous pairing we found in our case.



Bridge formation at meiosis in *Triticum spelta, L.*
a.—At first anaphase.
b.—At second anaphase.

DARLINGTON and UPCOTT (1940) observing bridges without fragments in *Tradescantia* give an explanation that is partially applicable to the present case. They state that non-sister-reunion is responsable for the bridges at A. I, and sister reunion of ends of «bygone breakages better than by a special and unexpected combination of cross-overs» for the bridge formation at A. II.

In the present case assuming the plant was heterozigous for fragmentation, the sister-reunion at prophase of meiosis and a combination of cross-overs may explain the bridge formation both at first and second anaphases. The frequency of bridges at A. I and A. II would be in the same ratio as the amount of single C. O. plus half the double C. O. to the amount of non C. O. plus half the double C. O. in the chromosome arm affected by the breakage.

SUMARIO

En una planta de *Tricticum spelta, L., var. brunaxig,* el autor encontró irregularidades en la meiosis, consistentes en la formación de puentes monocromatídicos, tanto en la primera (15,2 por 100) como en la segunda (3,5 por 100), anafase.

El autor explica la presencia de los puentes y su relativa frecuencia en las dos anafases por reunión de cromatidios hermanos en la profase y una combinación de «cross-overs».

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