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E. R. Sears, U.S. Dept. Agriculture, Columbia, Missouri, USA. A TRITICUM TIMOPHEEVII CHROMOSOME HOMOEOLOGOUS TO T. AESTIVUM CHROMOSOME 6B. The failure of T. timopheevii chromosomes to pair fully with those of other tetraploid wheats is generally believed due to timopheevii's having the A genome of the others but a second genome G instead of B. However, pairing failure in aestivum-timopheevii hybrids could be due to a genetic system favoring asynapsis, as Wagenaar suggested, rather than to non-homology. If this were true, a single timopheevii chromosome added to T. aestivum should pair with its homologue. Mukade found only 4-18% pairing of such an added chromosome with the wheat chromosome for which it spontaneously substitutes. I find this wheat chromosome to be 6B and have observed 4.4% pairing of the timopheevii chromosome with 6B and none with 6A or 6D. Thus at least one chromosome of T. timopheevii is sufficiently differentiated from its B-genome homoeologue that it pairs with it only rarely against the aestivum background.

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