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Endomixis and encystment in Spathidium spathula.

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In a pedigree culture of *Spathidium spathula* there has been no indication of endomixis at any time during active vegetative life, and experiments were undertaken to determine the possibility of inducing an independent reorganization process in conjugating individuals by preventing nuclear interchange. Since conjugation in this race produces a significant increase in the division rate of the majority of exconjugant lines,[1] it was expected that a similar physiological effect would follow endomixis. Pairs in an early stage of fusion were separated by spurting from a pipette, and the division rates of lines derived from such split-conjugants were compared with those of normal exconjugant and non-conjugant lines.

Of seventeen exconjugant lines, thirteen produced an average of 7.3 generations more than the parent lines during the first fifteen days. Of thirty-nine split-conjugant lines, however, all but four produced essentially the same number of generations as the parent lines, indicating, apparently, that endomixis had not occurred. Additional evidence further supported this view.

Endomixis, however, has been observed in this race during encystment. Cytological study of encysted individuals at various stages in the process has revealed the fragmentation and resorption of macronuclear material, the persistence of micronuclei, and the formation of macronuclear anlagen. The physiological significance of endomixis during encystment has not been determined.

The complete paper will appear in the *Journal of Experimental Zoölogy.*

[1] L. L. Woodruff and Hope Spencer, PROC. SOC. EXP. BIOL. AND MED., 1921, xviii, 240.