

Uniparental progeny in *Neurospora crassa*

Edward G. Barry, Department of Biology, University of North Carolina, Chapel Hill, NC 27599-3280

Seven ascospores from one ascus of a biparental mating were all the genotype of one parent. Neither mating type substitution nor mutation of the mating type explain this aberrant result.

An ordered meiotic tetrad (an octad) had seven viable members all with the same genotype. A uniparental self-mating occurred in one ascus. Thirty six other tetrads isolated from the same mating were biparental. This is the first such *Neurospora* tetrad that I have isolated in countless numbers (certainly hundreds) of ordered and unordered tetrads. The parents in the cross were *chol-2 ylo-1 trp-2* mating type *a* and *T(IIR;VIR)R2459 arg-12 fl* mating type *A*. The number 4 spore of the unusual octad was yellow, did not ripen into a typical black spore, and did not germinate: an apparent spontaneous abortion. The other seven ascospores produced cultures which were *chol-2 ylo-1 trp-2; a*, exactly like one parental type. All seven produced abundant ascospores in matings with *A* tester strains (*fl*, FGSC# 4317) and were infertile in tests with a standard *a* mating type (*fl*, FGSC# 4347). They all had normal chromosome sequence, not the *II:VI* translocation of the other parent of the intended cross. With the expectation that a mating type mutation might have occurred, all seven tetrad members were crossed in all combinations between each other and in effect by themselves. All combinations were infertile. Zickler *et al* (1995 Genetics **140**:493-503) report that mutants of mating type genes of *Podospora anserina* lead to selfish nuclei which produce uniparental progeny and haploid meiosis. This unique tetrad of *Neurospora crassa* does not have the same explanation but suggests a one time failure to distinguish self from non-self when two same mating type nuclei entered one ascus where fusion and meiosis followed.
