Section 4 Abstracts: Ecology and Genetics of the Chestnut Blight Fungus

Maternal Inheritance and Diversity of Mitochondrial DNA in the Chestnut Blight Fungus, *Cryphonectria parasitica.* Michael Milgroom and Susanne Lipari. Department of Plant Pathology, Cornell University, Ithaca, NY 14853-5908, USA

Inheritance of mitochondrial DNA (mtDNA) in *Cryphonectria parasitica* was investigated using ascospore progeny from controlled laboratory crosses and field-collected perithecia. Progeny from reciprocal crosses between EP155 and EP67 where maternal (perithecial) strains were controlled had mtDNA RFLP haplotypes identical to the maternal strains and unlike the conidial parents. Progeny from another lab cross showed uniparental inheritance for all progeny (n = 43). All ascospore isolates from eight field-collected perithecia, including one with 49 ascospore progeny, had mtDNA haplotypes identical to the maternal canker isolate. In a sample of 39 canker isolates from a natural population at Mt. Lake, Virginia, we found 24 different mtDNA haplotypes. Fifteen haplotypes each occurred only once, while only one haplotype occurred more than three times. The genotypic diversity of mtDNA in this population was 0.968. Maternal inheritance and high levels of polymorphism make mtDNA an ideal genetic marker for studying the dispersal of ascospores using a genealogical approach.