

Examples of Sectored Flowers on *sac* Plants Observed in the Greenhouse, Winter 2004-2005

Tom Haas

tjhaas@wisc.edu



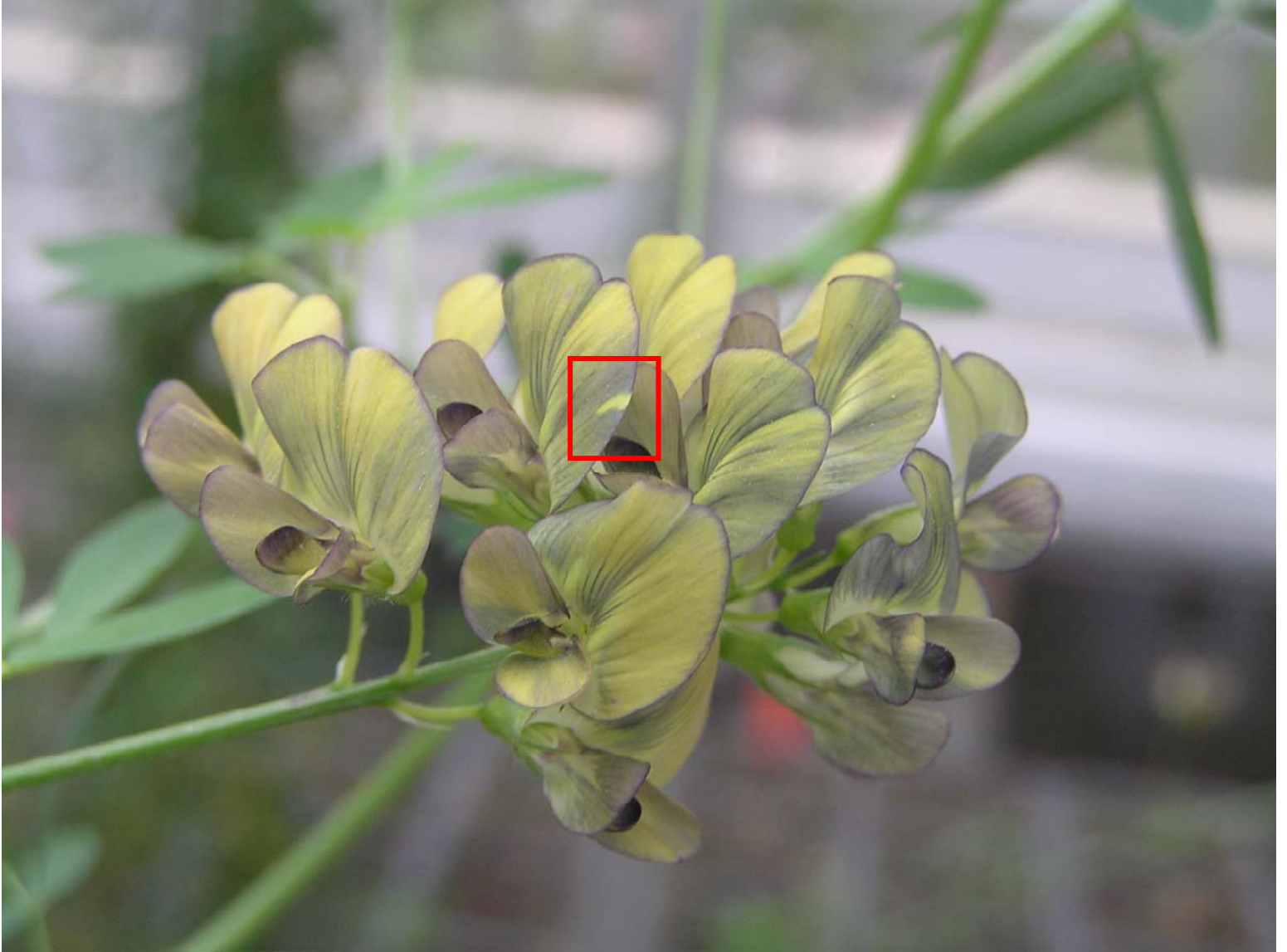
A yellow sector on a *Medicago sativa* × *M. arborea* cross (*sac*) plant, representing the loss of a P locus, probably due to the loss of a chromosome in that sector. The “loss of chromosome” explanation is used for many of these *sac* plants because of confused hybrid development and major problems in cell division, seen in the lab during microscope work while studying anthrogametogenesis on certain *sac* plants.



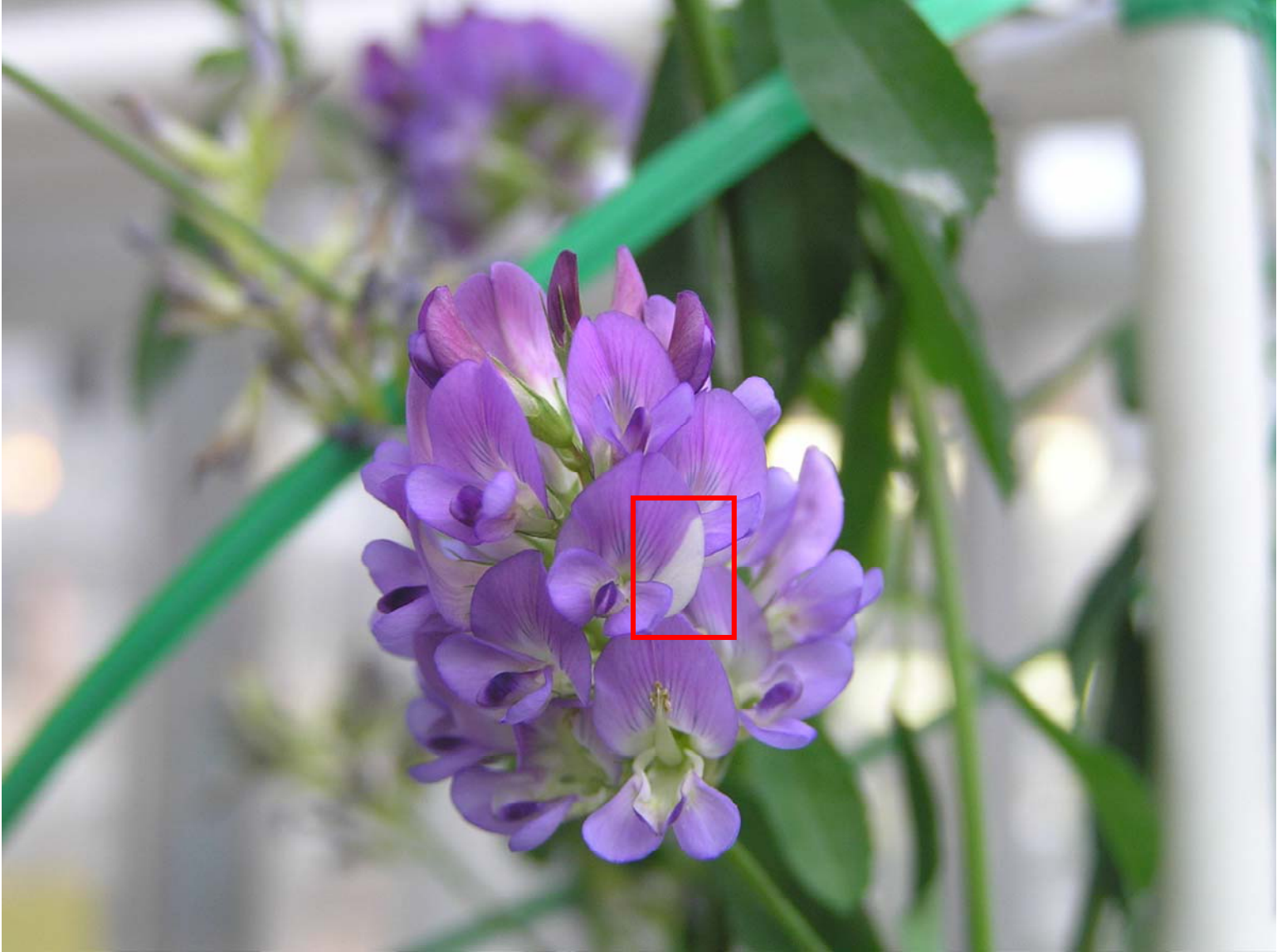
A light and dark sector next to each other, representing the loss and gain of a P locus, respectively, in each of the mother cells for its respective sector. The loss/gain is probably due to a mistake in mitosis of the “last common ancestor” cell of both sectors, with the mother cell of the dark sector “stealing” a chromosome from the mother cell of the light sector during mitosis. That is, the mother cells of each sector are probably daughter cells from the same mother cell, with the light sector daughter cell having  $2n-1$  chromosomes and the dark sector daughter cell having  $2n+1$  chromosomes.



Another *sac* plant with a probable non-functional P locus. If the locus or the locus' chromosome is missing, a more complicated explanation is needed due to the reappearance of purple pigment in the younger cells.



Another small sector of the banner petal of a *sac* plant missing a P locus or chromosome or having a non-functional P locus.



A large sector of the banner petal of this *sac* plant with a missing P locus. This particular sector could be explained by a missing chromosome.