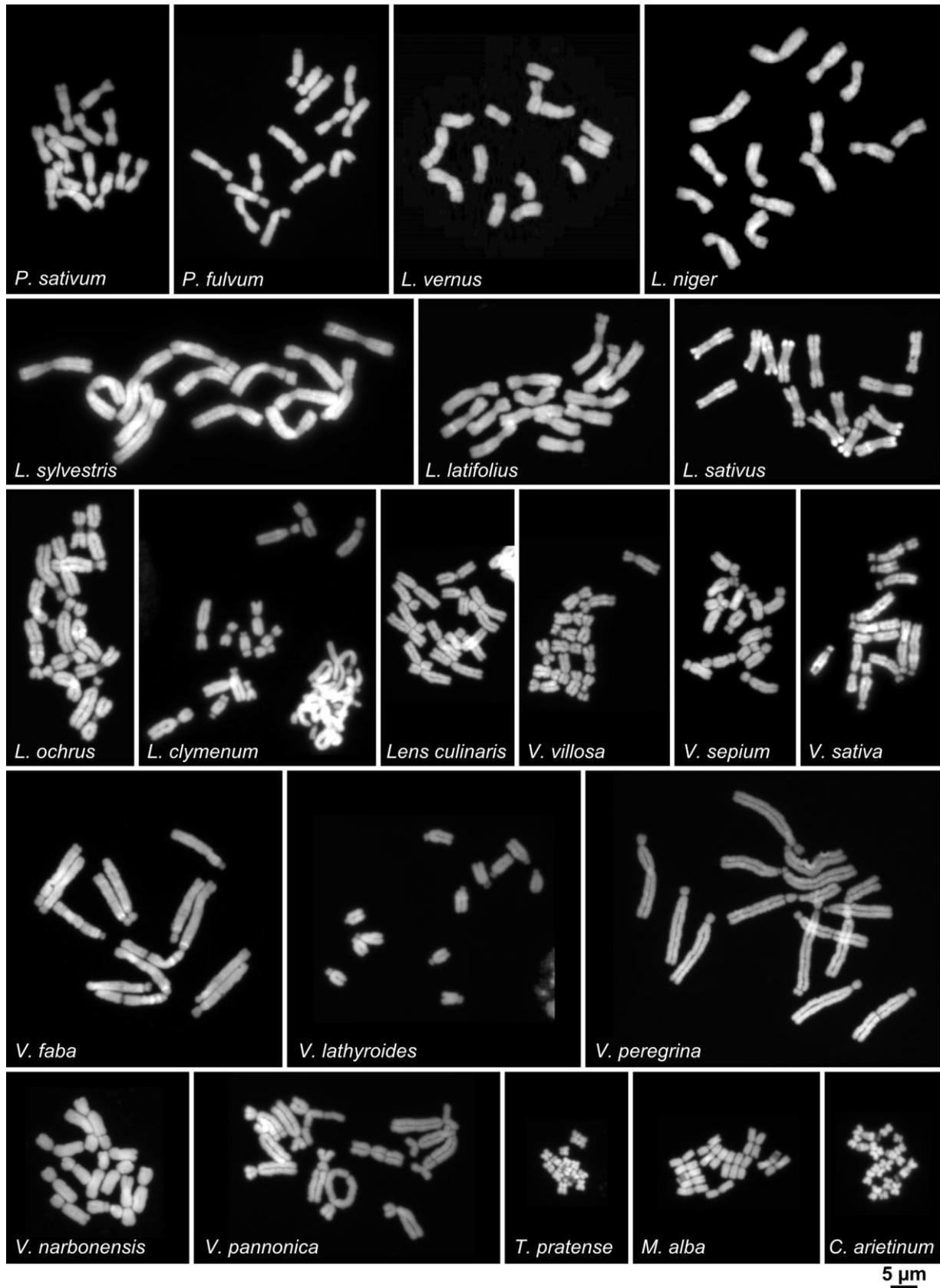
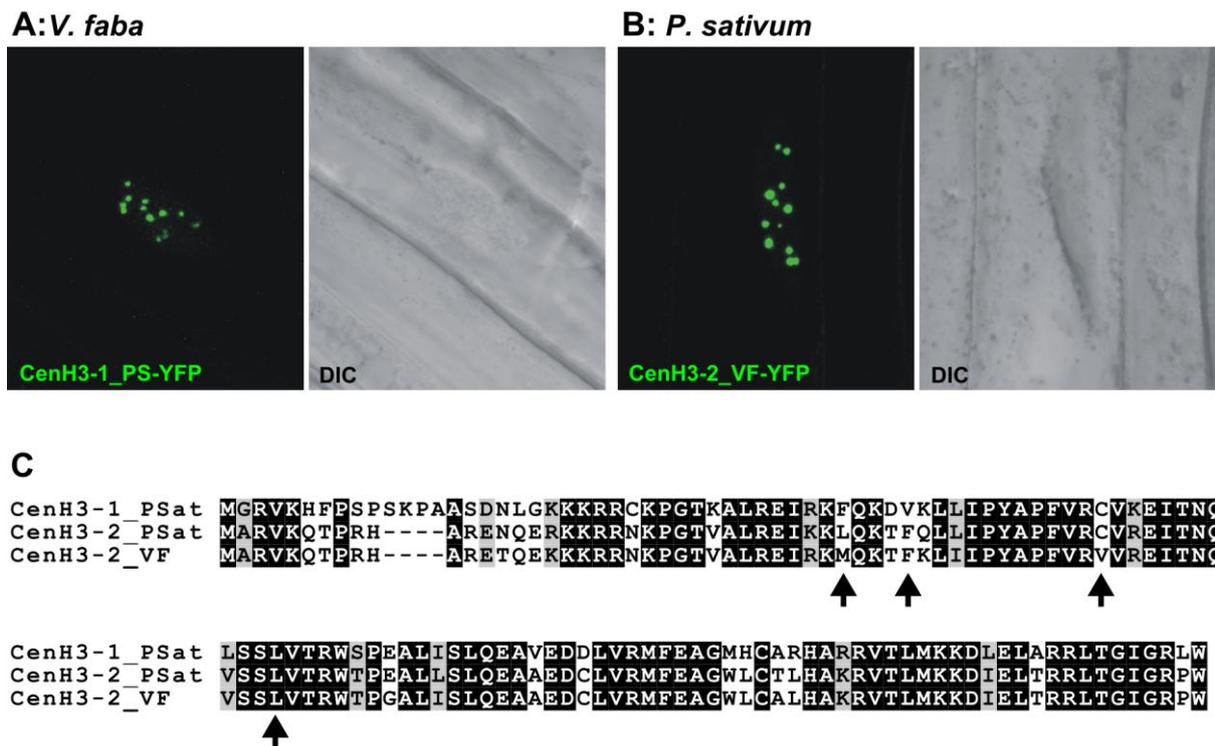


**Figure S1. Metaphase chromosome figures for all *Fabeae* and certain non-*Fabeae* species used in this study.**



Chromosomes of all species were fixed in 3:1 fixative (methanol:acetic acid) and were prepared using the same technique. The staining was done with DAPI. Bar = 5 µm.

Figure S2. CenH3 localization in heterologous *Fabeae* species.



A-B: Direct visualization of CenH3-1\_PSat-YFP and CenH3-2\_VF-YFP fusion proteins in *V. faba* (A) and *P. sativum* (B), respectively, revealed up to 12 and 14 spots, corresponding to the number of chromosomes in diploid nuclei of the respective species. Cell images on the left side of each panel were taken using differential interference contrast (DIC) optics. C: Comparison of CenH3 sequences identified in *P. sativum* and *V. faba* with the positions of adaptively evolving sites predicted in CenH3-2 marked with arrows.