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*Goosey, L., and R.A. Sharrock. 2001. The Arabidopsis Compact Inflorescence Genes: Phase-specific Growth Regulation and the Determination of Inflorescence Architecture. The Plant Journal 26(5): 549-559.*

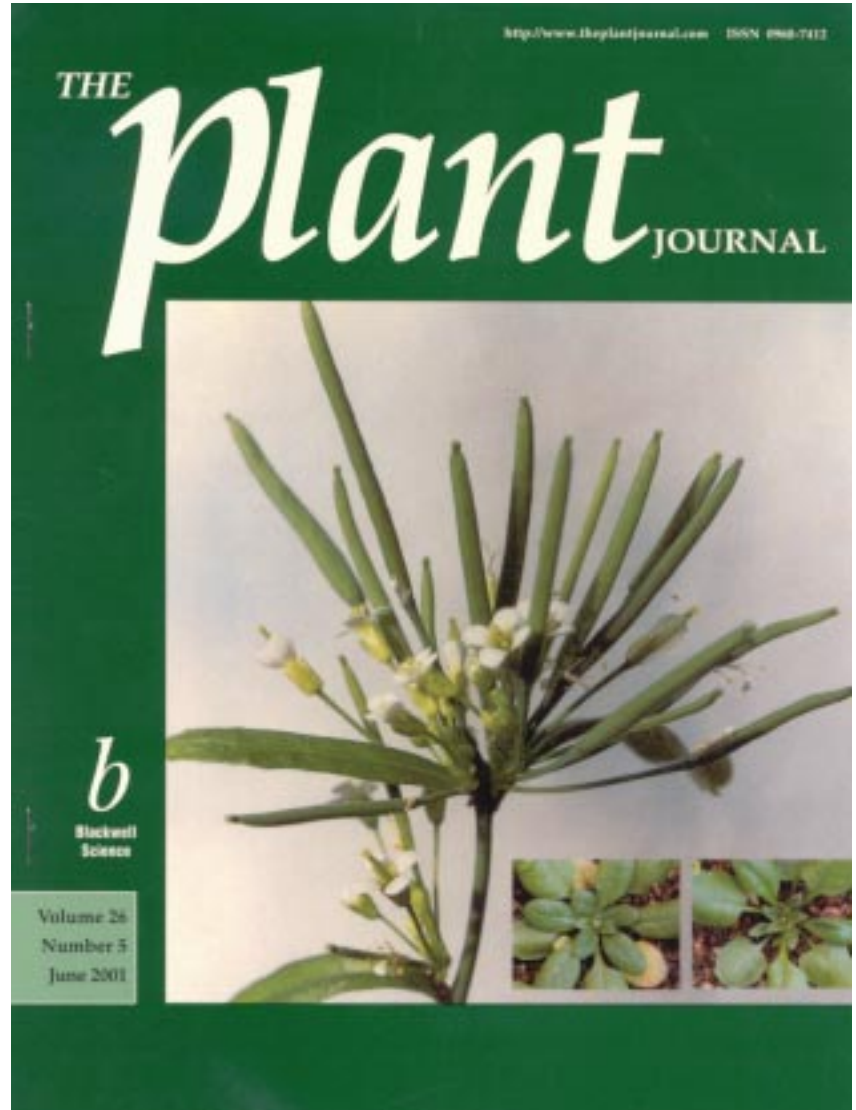
**D**uring their life cycle, higher plants pass through a succession of developmental phases that are characterized by the production of morphologically

distinct vegetative and reproductive organs. Three major phases have been described: juvenile vegetative, adult vegetative, and reproductive. Using NRI funding, Goosey and Sharrock isolated a mutant in the model plant *Arabidopsis* called *compact inflorescence* (*cif*). The *cif* mutant exhibits altered development of adult vegetative organs, while juvenile and floral organs develop normally. The most striking aspect of the *cif* trait is the transformation of the elongated flower-bearing bolt of wild-type plants into a compacted stem such that the flowers and fruits are presented in a cluster. The cover photograph shows a *cif* floral cluster, and the inset illustrates how onset of the *cif* trait corresponds to the transition from juvenile to adult growth. The *cif* trait demonstrates that growth and development of vegetative components of the flowering bolt are controlled by pathways associated with adult vegetative identity, rather than by pathways controlling reproductive identity. *cif* also serves as a tightly linked marker for vegetative phase change, an important transition during the plant life cycle wherein flowering plants gain reproductive competency. Finally, the *cif* trait uncovers and makes accessible a major genetic pathway for determination of plant structure. Inheritance of *cif* involves both a dominant and a recessive locus. Goosey and Sharrock are currently working to isolate the two *cif* genes in hopes of gaining a better understanding of the molecular pathways that control vegetative phase change and the specification of plant architecture.

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