

The electronic form of this issue, available as of January 7, 2014, at [www.plantphysiol.org](http://www.plantphysiol.org), is considered the journal of record.

**On the Cover:** Natural variation in grape leaf morphology is immense. Before the advent of genetics, the science of ampelography (*αμπελος*, “vine” and *γραφος*, “writing”) would distinguish grapevine varieties by their phenotypes. Leaves are one of the most distinctive, variable features of grapevines, and ampelographers quantified leaves to an unprecedented degree. In this issue, Chitwood et al. (pp. 259–272) describe modern morphometric techniques, such as generalized Procrustes analysis and elliptical Fourier descriptors, to quantify the complex shapes of grape leaves. These results are compared to previous ampelographic measurements, and heritabilities are calculated to demonstrate a strong genetic basis underlying grape leaf shape. The cover shows a small selection of the over 9,500 leaves from more than 1,200 *Vitis vinifera* accessions sampled. Cover design: Daniel Chitwood. Leaf sampling and photography: Aashish Ranjan, Ciera Martinez, Lauren Headland, and Think Thiem.

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