

The electronic form of this issue, available as of October 11, 2006, at [www.plantphysiol.org](http://www.plantphysiol.org), is considered the journal of record.

**On the Cover:** Companion cells (CCs) have been implicated to play an important role in phloem loading and maintenance of basic life functions in the neighboring, enucleate sieve elements (SEs), including membrane lipid and protein turnover. Pore-plasmodesma units between CCs and SEs are known to link the cytosol of these cells intimately. However, the role of the endoplasmic reticulum (ER) compound in the pore-plasmodesma units remains unknown. In this issue, Martens et al. (pp. 471–480) demonstrate that the ER of CCs and SEs is continuous, using an ER-specific fluorochrome and fluorescence redistribution after photobleaching. Compared to other cell types, the highest degree of ER coupling was measured between SE and CC. The cover photograph shows three optical sections of a series through living phloem as visualized by confocal and two-photon microscopy. CCs of collection and transport phloem were highlighted by green fluorescent protein (GFP) fluorescence in a tobacco transformant expressing GFP under the *SUC2* promoter and targeted to the ER. SEs are linked to one another and to the CCs by sieve pores, appearing blue after callose staining. The image series was recorded by Helle J. Martens and Alexander Schulz.

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<sup>[OA]</sup> Open Access articles can be viewed online without a subscription.