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On the Cover: In situ hybridization with the thioredoxin *m* (*TRX m*) antisense probe of a flower longitudinal section. The chloroplastic *TRX m* signal is prominent in pollen grains, tapetal cells of the anthers, and connective tissue. The two signals in pollen grains appeared to be localized in the generative cell and the tube cell, the latter of which is involved in the process of forming the pollen tube for pollination. The pollen grain cells contain several organelles, endoplasmic reticulum, and plastids with starch used in pollen tube formation and storage substances such as the lipids, proteins, and vitamins. Until recently, the function of the chloroplastic *f* and *m* isoforms in carbon metabolism was very well established in the chloroplast of photosynthetic tissues. The precise function of these proteins in floral organs is not yet clear; however, it appears evident that chloroplastic *TRXs* are localized in heterotrophic tissues and are likely involved in redox regulation of some processes related to ovule and pollen grain maturation, fertilization, and embryo formation. In situ hybridization micrograph image by Juan de Dios Barajas-López.

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Peter V. Minorsky

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