On the Cover: Diatoms constitute a major phylum of phytoplankton biodiversity in ocean and freshwater ecosystems. They are known to respond to variations of the environment, in particular to nutrient shortage, by the accumulation of triacylglycerol (or oil). Oil is considered a plausible alternative resource to fossil hydrocarbons; therefore, its accumulation in diatoms has become a critical question in the current decade. Triacylglycerol biosynthesis is connected with membrane glycerolipids, but the fine remodeling of membrane glycerolipids and the balance with storage glycerolipids upon nutrient shortage have not yet been characterized in a model organism. Abida et al. provide a reference for the diatom *Phaeodactylum tricornutum* and an in-depth comparison of glycerolipid changes occurring after variations of nitrogen and phosphate, and they describe two distinct glycerolipid remodeling programs. The cover shows a confocal microscopy image of *P. tricornutum* cells, with both triradiate and fusiform morphotypes, grown in artificial seawater lacking nitrogen. Chloroplasts appear in red (chlorophyll autofluorescence), and triacylglycerol droplets appear in yellow (Nile Red staining). Cover image credits: Coline Mei (Laboratoire de Physiologie Cellulaire et Végétale, Grenoble).

THANK YOU TO REVIEWERS
Acknowledgment of *Plant Physiology* Reviewers.

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The terminal step in cocaine biosynthesis is catalyzed by an acyltransferase that utilizes benzoyl-CoA and methylecgonine as substrates and is localized to the spongy mesophyll.

Deficits in de novo vitamin B₆ biosynthesis impair hormone homeostasis and root development but are a consequence of differential regulation of the genes.

Nitrogen and phosphorus limitations trigger distinct remodeling processes and adaptive responses at the level of membrane and storage glycerolipids in a marine model diatom.

A vacuolar receptor is required for osmotic stress regulation of abscisic acid biosynthesis by maintaining intracellular pH homeostasis.

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