Grain morphology has been an important agronomic trait even in very early farming societies. Gegas et al. (pages 1046–1056) identified the genetic components that underlie the variation in grain size and shape in modern elite wheat. A comprehensive survey of the variation in grain morphology in modern and ancestral wheat indicates the occurrence of significant, and surprisingly recent, bottlenecks in the evolution of modern hexaploid wheat. This work provides an important advance in understanding the genetic and historical basis of natural diversity of grain traits in domesticated wheat. The cover image shows the diversity in grain morphology in the genus *Triticaceae* with an illustration of a modern hexaploid wheat spike in the background.
RNA Loci within the Arabidopsis Genus
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miR390, Arabidopsis TAS3 tasiRNA, and Their AUXIN RESPONSE FACTOR Targets Define an Autoregulatory Network Quantitatively Regulating Lateral Root Growth
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DAY NEUTRAL FLOWERING Represses CONSTANS to Prevent Arabidopsis Flowering Early in Short Days
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Phosphorylation of Conserved PIN Motifs Directs Arabidopsis PIN1 Polarity and Auxin Transport
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Functional Modules in the Arabidopsis Core Cell Cycle Binary Protein–Protein Interaction Network
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The Activity of a Wall-Bound Cellulase Is Required for and Is Coupled to Cell Cycle Progression in the Dinoflagellate Cryptophycus cohnii
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Five Arabidopsis Reticulon Isoforms Share Endoplasmic Reticulum Location, Topology, and Membrane-Shaping Properties

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Endocytic and Secretory Traffic in Arabidopsis Merge in the Trans-Golgi Network/Early Endosome, an Independent and Highly Dynamic Organelle

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RNA-Dependent RNA Polymerase 1 from Nicotiana tabacum Suppresses RNA Silencing and Enhances Viral Infection in Nicotiana benthamiana

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Cucumber Mosaic Virus Movement Protein Severs Actin Filaments to Increase the Plasmodesmal Size Exclusion Limit in Tobacco

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Translocation of Magnaporthe oryzae Effectors into Rice Cells and Their Subsequent Cell-to-Cell Movement

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A Single-Electron Reducing Quinone Oxidoreductase Is Necessary to Induce Haustorium Development in the Root Parasitic Plant Triphysaria

Pradeepa C.G. Bandaranayake, Tatiana Filippova, Alexey Tomilov, Natalya B. Tomilova, Denneal Jamison-McClung, Quy Ngo, Kentaro Inoue, and John I. Yoder

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