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On the Cover: In this issue, apical dominance and correlative inhibition are shown to regulate bud outgrowth in strigolactone (a novel branching inhibitor) mutants of pea (*Pisum sativum*; see Ferguson and Beveridge, pp. 1929–1944). Moreover, reductions in the level or transport of auxin, or in strigolactone biosynthesis gene expression, did not always correlate with bud outgrowth. In contrast, increased cytokinin biosynthesis gene expression did correlate. The technique of stem girdling, which locally kills tissues, was used to elucidate many of these findings. The cover image depicts untreated (far left) or girdled pea stems. Photo provided by Dr. Brett Ferguson (Australian Research Council Centre of Excellence for Integrative Legume Research, Brisbane, Australia).

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- [C][W][OA] Rubisco Oligomers Composed of Linked Small and Large Subunits Assemble in Tobacco Plastids and Have Higher Affinities for CO₂ and O₂. *Spencer Michael Whitney, Heather Jean Kane, Robert L. Houtz, and Robert Edward Sharwood* 1887

CELL BIOLOGY AND SIGNAL TRANSDUCTION

- [OA] Biologically Closed Electrical Circuits in Venus Flytrap. *Alexander G. Volkov, Holly Carrell, and Vladislav S. Markin* 1661
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- [W][OA] A Role for the TOC Complex in Arabidopsis Root Gravitropism. *John P. Stanga, Kanokporn Boonsirichai, John C. Sedbrook, Marisa S. Otegui, and Patrick H. Masson* 1896
- [C][OA] SnRK1 Isoforms AKIN10 and AKIN11 Are Differentially Regulated in Arabidopsis Plants under Phosphate Starvation. *Selene Fragoso, Laura Espíndola, Julio Páez-Valencia, Alicia Gamboa, Yolanda Camacho, Eleazar Martínez-Barajas, and Patricia Coello* 1906

DEVELOPMENT AND HORMONE ACTION

- [C][W][OA] Autophagy Is Enhanced and Floral Development Is Impaired in *AtHVA22d* RNA Interference Arabidopsis. *Ching-Nen Nathan Chen, Hau-Ren Chen, Su-Ying Yeh, Gina Vittore, and Tuan-Hua David Ho* 1679
- [W][OA] Silencing the Hydroxyproline-Rich Glycopeptide Systemin Precursor in Two Accessions of *Nicotiana attenuata* Alters Flower Morphology and Rates of Self-Pollination. *Beatrice Berger and Ian T. Baldwin* 1690
- [C][W][OA] Auxin and Ethylene Regulate Elongation Responses to Neighbor Proximity Signals Independent of Gibberellin and DELLA Proteins in Arabidopsis. *Ronald Pierik, Tanja Djakovic-Petrovic, Diederik H. Keuskamp, Mieke de Wit, and Laurentius A.C.J. Voeselek* 1701
- [W][OA] MIKC* MADS Domain Heterodimers Are Required for Pollen Maturation and Tube Growth in Arabidopsis. *Benjamin J. Adamczyk and Donna E. Fernandez* 1713
- [C][W][OA] The Short-Rooted Phenotype of the *brevis radix* Mutant Partly Reflects Root Abscisic Acid Hypersensitivity. *Americo Rodrigues, Julia Santiago, Silvia Rubio, Angela Saez, Karen S. Osmont, Jose Gadea, Christian S. Hardtke, and Pedro L. Rodriguez* 1917
- [C][W][OA] Roles for Auxin, Cytokinin, and Strigolactone in Regulating Shoot Branching. *Brett J. Ferguson and Christine A. Beveridge* 1929
- [W] Preferential Up-Regulation of G2/M Phase-Specific Genes by Overexpression of the Hyperactive Form of NtmybA2 Lacking Its Negative Regulation Domain in Tobacco BY-2 Cells. *Kiichi Kato, Ivan Gális, Shiori Suzuki, Satoshi Araki, Taku Demura, Marie-Claire Criqui, Thomas Potuschak, Pascal Genschik, Hiroo Fukuda, Ken Matsuoka, and Masaki Ito* 1945

ENVIRONMENTAL STRESS AND ADAPTATION TO STRESS

- [W][OA] The Low-Oxygen-Induced NAC Domain Transcription Factor *ANAC102* Affects Viability of Arabidopsis Seeds following Low-Oxygen Treatment. *Jed A. Christianson, Iain W. Wilson, Danny J. Llewellyn, and Elizabeth S. Dennis* 1724
- [W][OA] Exploring the Mechanism of *Physcomitrella patens* Desiccation Tolerance through a Proteomic Strategy. *Xiao Qin Wang, Ping Fang Yang, Zheng Liu, Wei Zhong Liu, Yong Hu, Hui Chen, Ting Yun Kuang, Zhen Ming Pei, Shi Hua Shen, and Yi Kun He* 1739

- [W][OA] Methyl Jasmonate Reduces Grain Yield by Mediating Stress Signals to Alter Spikelet Development in Rice. *Eun Hye Kim, Youn Shic Kim, Su-Hyun Park, Yeon Jong Koo, Yang Do Choi, Yong-Yoon Chung, In-Jung Lee, and Ju-Kon Kim* 1751
- [W][OA] AtMyb41 Regulates Transcriptional and Metabolic Responses to Osmotic Stress in Arabidopsis. *Felix Lippold, Diego H. Sanchez, Magdalena Musialak, Armin Schlereth, Wolf-Ruediger Scheible, Dirk K. Hincha, and Michael K. Udvardi* 1761
- [W][OA] Molecular and Genetic Evidence for the Key Role of AtCaM3 in Heat-Shock Signal Transduction in Arabidopsis. *Wei Zhang, Ren-Gang Zhou, Ying-Jie Gao, Shu-Zhi Zheng, Peng Xu, Su-Qiao Zhang, and Da-Ye Sun* 1773
- [W] Computer Simulation of the Dynamic Behavior of the Glutathione-Ascorbate Redox Cycle in Chloroplasts. *Edelmira Valero, María I. González-Sánchez, Hermenegilda Maciá, and Francisco García-Carmona* 1958

PLANTS INTERACTING WITH OTHER ORGANISMS

- [C][W][OA] The Temperature-Sensitive *brush* Mutant of the Legume *Lotus japonicus* Reveals a Link between Root Development and Nodule Infection by Rhizobia. *Makoto Maekawa-Yoshikawa, Judith Müller, Naoya Takeda, Takaki Maekawa, Shusei Sato, Satoshi Tabata, Jillian Perry, Trevor L. Wang, Martin Groth, Andreas Brachmann, and Martin Parniske* 1785
- [W][OA] Ethylene Modulates the Role of NONEXPRESSOR OF PATHOGENESIS-RELATED GENES1 in Cross Talk between Salicylate and Jasmonate Signaling. *Antonio Leon-Reyes, Steven H. Spoel, Elvira S. De Lange, Hiroshi Abe, Masatomo Kobayashi, Shinya Tsuda, Frank F. Millenaar, Rob A.M. Welschen, Tita Ritsema, and Corné M.J. Pieterse* 1797
- [W][OA] Inhibition of Tobacco Mosaic Virus Movement by Expression of an Actin-Binding Protein. *Christina Hofmann, Annette Niehl, Adrian Sambade, André Steinmetz, and Manfred Heinlein* 1810
- [W][OA] Subcellular Localization and Functional Analysis of the Arabidopsis GTPase RabE. *Elena Bray Speth, Lori Imboden, Paula Hauck, and Sheng Yang He* 1824
- [C][W][OA] Engineered Polyamine Catabolism Preinduces Tolerance of Tobacco to Bacteria and Oomycetes. *Panagiotis N. Moschou, Panagiotis F. Sarris, Nicholas Skandalis, Athina H. Andriopoulou, Konstantinos A. Paschalidis, Nickolas J. Panopoulos, and Kalliopi A. Roubelakis-Angelakis* 1970

WHOLE PLANT AND ECOPHYSIOLOGY

- [OA] Crassulacean Acid Metabolism and Epiphytism Linked to Adaptive Radiations in the Orchidaceae. *Katia Silvera, Louis S. Santiago, John C. Cushman, and Klaus Winter* 1838
- [W][OA] The Control of Autumn Senescence in European Aspen. *Yvan Fracheboud, Virginia Luquez, Lars Björkén, Andreas Sjödin, Hannele Tuominen, and Stefan Jansson* 1982
- Water Relations of *Chusquea ramosissima* and *Merostachys clausenii* in Iguazu National Park, Argentina. *Sonali Saha, Noel M. Holbrook, Lía Montti, Guillermo Goldstein, and Gina Knust Cardinot* 1992
- [W][OA] Drought and Abscisic Acid Effects on Aquaporin Content Translate into Changes in Hydraulic Conductivity and Leaf Growth Rate: A Trans-Scale Approach. *Boris Parent, Charles Hachez, Elise Redondo, Thierry Simonneau, François Chaumont, and François Tardieu* 2000

SYSTEMS BIOLOGY, MOLECULAR BIOLOGY, AND GENE REGULATION

- [C][W] Alternative Splicing Studies of the Reactive Oxygen Species Gene Network in *Populus* Reveal Two Isoforms of High-Isoelectric-Point Superoxide Dismutase. *Vaibhav Srivastava, Manoj Kumar Srivastava, Kamel Chibani, Robert Nilsson, Nicolas Rouhier, Michael Melzer, and Gunnar Wingsle* 1848

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^[W]^[OA]Inhibition of SNF1-Related Protein Kinase1 Activity and Regulation of Metabolic Pathways by Trehalose-6-Phosphate. *Yuhua Zhang, Lucia F. Primavesi, Deveraj Jhurrea, P. John Andralojc, Rowan A.C. Mitchell, Stephen J. Powers, Henriette Schluemann, Thierry Delatte, Astrid Wingler, and Matthew J. Paul*

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^[C] Some figures in this article are displayed in color online but in black and white in the print edition.

^[W] Indicates Web-only data.

^[OA] Open Access articles can be viewed online without a subscription.