ON THE COVER

An early illustration of a Mediterranean blood orange by P.A. Poiteau. Color drawing in the Redouté-Bessa style of "Orange de Malte" (Maltaise Sanguine). Original photograph from Histoire Naturelle des Orangers, published in 1818 by P.A. Poiteau and J.A. Risso. The article by Butelli et al (1242–1255) establishes that all "Mediterranean blood oranges" have been derived from a single event involving insertion of a retroelement upstream of the Ruby gene, which regulates anthocyanin production. The retroelement provides a promoter for expression of the Ruby gene, which is fruit specific and induced by low temperature during fruit ripening and post harvest.

IN BRIEF

SHAT1, A New Player in Seed Shattering of Rice 839
Nancy R. Hofmann

A MicroRNA Cascade in Plant Defense 840
Nancy A. Eckardt

A Global View of Hybrid Vigor: DNA Methylation, Small RNAs, and Gene Expression 841
Nancy R. Hofmann

REVIEW

Boosting Crop Yields with Plant Steroids 842
Cécile Vriet, Eugenia Russinova, and Christophe Reuzeau

LARGE-SCALE BIOLOGY ARTICLES

A MicroRNA Superfamily Regulates Nucleotide Binding Site–Leucine-Rich Repeats and Other mRNAs 859
Padubidri V. Shivaprasad, Ho-Ming Chen, Kanu Patel, Donna M. Bond, Bruno A.C.M. Santos, and David C. Baulcombe

Genome-Wide Analysis of DNA Methylation and Gene Expression Changes in Two Arabidopsis Ecotypes and Their Reciprocal Hybrids 875
Huaishun Shen, Hang He, Jigang Li, Wei Chen, Xuncheng Wang, Lan Guo, Zhiyu Peng, Guangming He, Shangwei Zhong, Yijun Qi, William Terzaghi, and Xing Wang Deng

RESEARCH ARTICLES

Physiological Genomics of Response to Soil Drying in Diverse Arabidopsis Accessions 893
David L. Des Marais, John K. McKay, James H. Richards, Saunak Sen, Tierney Wayne, and Thomas E. Juenger

Comparative Analysis of Benzoxazinoid Biosynthesis in Monocots and Dicots: Independent Recruitment of Stabilization and Activation Functions 915
Regina Dick, Thomas Rattei, Martin Haslbeck, Wilfried Schwab, Alfons Gierl, and Monika Frey
Acquisition and Diversification of Cladodes: Leaf-Like Organs in the Genus Asparagus
Hokuto Nakayama, Takahiro Yamaguchi, and Hirokazu Tsukaya

Analysis of the Developmental Roles of the Arabidopsis Gibberellin 20-Oxidases Demonstrates That GA20ox1, -2, and -3 Are the Dominant Paralogs

Alternative Splicing Mediates Responses of the Arabidopsis Circadian Clock to Temperature Changes
Allan B. James, Naeem Hasan Syed, Simon Bordage, Jacqueline Marshall, Gillian A. Nimmo, Gareth I. Jerkins, Pawel Herzyk, John W.S. Brown, and Hugh G. Nimmo

The Arabidopsis E3 Ubiquitin Ligase HOS1 Negatively Regulates CONSTANS Abundance in the Photoperiodic Control of Flowering
Ana Lazaro, Federico Valverde, Manuel Pinéiro, and Jose A. Jarillo

Regulation of Arabidopsis Embryo and Endosperm Development by the Polypeptide Signaling Molecule CLE8
Elisa Fiume and Jennifer C. Fletcher

Arabidopsis WD REPEAT DOMAIN55 Interacts with DNA DAMAGED BINDING PROTEIN1 and Is Required for Apical Patterning in the Embryo
Katrine N. Bjerkand, Sabrina Jung-Roméo, Gerd Jürgens, Pascal Genschik, and Paul E. Grini

Genetic Control of Seed Shattering in Rice by the APETALA2 Transcription Factor SHATTERING ABORTION1
Yan Zhou, Danfeng Lu, Canyang Li, Jiachong Luo, Bo-Feng Zhu, Jingjie Zhu, Yingying Shangguan, Zixuan Wang, Tao Sang, Bo Zhou, and Bin Han

The MADS29 Transcription Factor Regulates the Degradation of the Nucellus and the Nucellar Projection during Rice Seed Development
Lin-Lin Yin and Hong-Wei Xue

The Arabidopsis ARCP Protein, CSI1, Which Is Required for Microtubule Stability, Is Necessary for Root and Anther Development
Yu Mei, Hong-Bo Gao, Ming Yuan, and Hong-Wei Xue

Regulation of Root Greening by Light and Auxin/Cytokinin Signaling in Arabidopsis
Koichi Kobayashi, Shinsuke Baba, Takeshi Obayashi, Mayuko Sato, Kiminori Toyoooka, Mika Kerän, Eva-Mari Aro, Hidehiro Fukaki, Hiroyuki Ohta, Keiko Sugimoto, and Tatsuru Masuda

Probing the Arabidopsis Flagellin Receptor: FLS2-FLS2 Association and the Contributions of Specific Domains to Signaling Function
Wenxian Sun, Yangrong Cao, Pascal Bittel, Thomas Boller, and Andrew F. Bent

The Role of a 14-3-3 Protein in Stomatal Opening Mediated by PHOT2 in Arabidopsis
Tong-Seung Tseng, Craig Whippo, Roger P. Hangarter, and Winslow R. Briggs
Ion Exchangers NHX1 and NHX2 Mediate Active Potassium Uptake into Vacuoles to Regulate Cell Turgor and Stomatal Function in *Arabidopsis* 1127
Verónica Barragán, Eduardo O. Leidi, Zaida Andrés, Lourdes Rubio, Anna De Luca, José A. Fernandez, Beatriz Cubero, and José M. Pardo

Gain and Loss of Photosynthetic Membranes during Plastid Differentiation in the Shoot Apex of *Arabidopsis* 1143
Dana Charuvi, Vladimir Kiss, Reinat Nevo, Eyal Shimoni, Zach Adam, and Ziv Reich

TONNEAU2/FASS Regulates the Geometry of Microtubule Nucleation and Cortical Array Organization in Interphase *Arabidopsis* Cells 1158
Angela Kirik, David W. Ehrhardt, and Viktor Kirik

The GCP3-Interacting Proteins GIP1 and GIP2 Are Required for γ-Tubulin Complex Protein Localization, Spindle Integrity, and Chromosomal Stability 1171
Natacha Janski, Kinda Masoud, Morgane Batzenschlager, Étienne Herzog, Jean-Luc Evrard, Guy Houlné, Mickael Bourge, Marie-Edith Chabouté, and Anne-Catherine Schmit

Pulsing of Membrane Potential in Individual Mitochondria: A Stress-Induced Mechanism to Regulate Respiratory Bioenergetics in *Arabidopsis* 1188
Markus Schwarzländer, David C. Logan, Iain G. Johnston, Nick S. Jones, Andreas J. Meyer, Mark D. Fricker, and Lee J. Sweetlove

Lysine Decarboxylase Catalyzes the First Step of Quinolizidine Alkaloid Biosynthesis and Coevolved with Alkaloid Production in Leguminosae 1202
Somnuk Bunsupa, Kae Katayama, Emi Ikeura, Akira Oikawa, Kiminori Toyooka, Kazuki Saito, and Mami Yamazaki

A Previously Unknown Oxalyl-CoA Synthetase Is Important for Oxalate Catabolism in *Arabidopsis* 1217
Justin Foster, Hyun Uk Kim, Paul A. Nakata, and John Browse

Sulfamethazine Suppresses Epigenetic Silencing in *Arabidopsis* by Impairing Folate Synthesis 1230
Huiming Zhang, Xiangyang Deng, Daisuke Miki, Sean Cutler, Honggui La, Yueh-Ju Hou, JeeEun Oh, and Jian-Kang Zhu

Retrotransposons Control Fruit-Specific, Cold-Dependent Accumulation of Anthocyanins in Blood Oranges 1242
Eugenio Butelli, Concetta Liciardiello, Yang Zhang, Jianjun Liu, Steve Mackay, Paul Bailey, Giuseppe Reforgiato-Recupero, and Cathie Martin

The Lectin Receptor Kinase-VL2 Is Required for Priming and Positively Regulates *Arabidopsis* Pattern-Triggered Immunity 1256
Prashant Singh, Yi-Chun Kuo, Swati Mishra, Chia-Hong Tsai, Chih-Cheng Chien, Ching-Wei Chen, Marie Desclos-Theveniau, Po-Wei Chu, Birgit Schulze, Delphine Chinchilla, Thomas Boller, and Laurent Zimmerli

Abscisic Acid Deficiency Antagonizes High-Temperature Inhibition of Disease Resistance through Enhancing Nuclear Accumulation of Resistance Proteins SNC1 and RPS4 in *Arabidopsis* 1271
Hyung-Gon Mang, Weiqiang Qian, Ying Zhu, Jun Qian, Hong-Gu Kang, Daniel F. Klessig, and Jian Hua
A Maize Cystatin Suppresses Host Immunity by Inhibiting Apoplastic Cysteine Proteases

Karina van der Linde, Christoph Hemetsberger, Christine Kastner, Farnusch Kaschani, Renier A.L. van der Hoorn, Jochen Kumlehn, and Gunther Doehlemann

CORRECTION


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

Online version contains Web-only data.

Open Access articles can be viewed online without a subscription.
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>eTOCs</td>
<td>Sign up for eTOCs at: <a href="http://www.plantcell.org/cgi/alerts/ctmain">http://www.plantcell.org/cgi/alerts/ctmain</a></td>
</tr>
<tr>
<td>CiteTrack Alerts</td>
<td>Sign up for CiteTrack Alerts at: <a href="http://www.plantcell.org/cgi/alerts/ctmain">http://www.plantcell.org/cgi/alerts/ctmain</a></td>
</tr>
<tr>
<td>Subscription Information</td>
<td>Subscription Information for <em>The Plant Cell</em> and <em>Plant Physiology</em> is available at: <a href="http://www.aspb.org/publications/subscriptions.cfm">http://www.aspb.org/publications/subscriptions.cfm</a></td>
</tr>
</tbody>
</table>