

TABLAS DE CONTENIDO

OCTUBRE 16 AL 31 DE 2013

Annual review of plant biology 64:2013	02
Conservation biology 27(3):2013	04
Journal of economic entomology 106(3):2013	06
Páginas 90:2011	11
Phytopathology 103(5):2013	12
The plant cell 25(3):2013	14
Plant physiology 162(2):2013	16

Annual review of plant biology 64:2013.

Benefits of an inclusive US education system. Elisabeth Gantt	1
Plants, diet, and health. Cathie Martin, Yang Zhang, Chiara Tonelli, and Katia Petroni	19
A bountiful harvest: Genomic insights into crop domestication phenotypes. Kenneth M. Olsen and Jonathan F. Wendel	47
Progress toward understanding heterosis in crop plants. Patrick S. Schnable and Nathan M. Springer	71
Tapping the promise of genomics in species with complex, nonmodel genomes. Candice N. Hirsch and C. Robin Buell	89
Understanding reproductive isolation based on the rice model. Yidan Ouyang and Qifa Zhang	111
Classification and comparison of small RNAs from plants. Michael J. Axtell	137
Plant protein interactomes. Pascal Braun, Sébastien Aubourg, Jelle Van Leene, Geert De Jaeger, and Claire Lurin	161
Seed-development programs: A systems biology-based comparison between dicots and <i>ulrich wobus</i>	189
Fruit development and ripening. Graham B. Seymour, Lars Ostergaard, Natalie H. Chapman, Sandra Knapp, and Cathie Martin	219
Growth mechanisms in tip-growing plant cells. Caleb M. Rounds and Magdalena Bezanilla	243
Future scenarios for plant phenotyping. Fabio Fiorani and Ulrich Schurr	267
Microgenomics: Genome-scale, cell-specific monitoring of multiple gene regulation tiers. J. Bailey-Serres	293
Plant genome engineering with sequence-specific nucleases. Daniel F. Voytas	327
Smaller, faster, brighter: Advances in optical imaging of living plant cells. Sidney L. Shaw and David W. Ehrhardt	351
Phytochrome cytoplasmic signaling. Jon Hughes	377
Photoreceptor signaling networks in plant responses to shade. Jorge J. Casal	403
ROS-mediated lipid peroxidation and RES-activated signaling. Edward E. Farmer and Martin J. Mueller	429

Potassium transport and signaling in higher plants. Yi wang and Wei-Hua Wu	451
Endoplasmic reticulum stress responses in plants. Stephen H. Howell	477
Membrane microdomains, ratfs, and detergent-resistant membranes in plants and fungi. Jan Malinsky, Miroslava Opekarová, Guido Grossmann, and Widmar Tanner	501
The endodermis. Niko Geldner	531
Intracellular signaling form plastid to nucleus. Wei Chi, Xuwu Sun, and Lixin Zhang	559
The number, speed and impact of plastid endosymbioses in eukaryotic evolution. Patrick J. Keeling	583
Photosystem II assembly: From cyanobacteria to plants. Jorg Nickelsen and Birgit Rengstl	609
Unraveling the heater: New insights into the structure of the alternative oxidase. Anthony L. Moore, Tomoo Shiba, Luke Young, Shigeharu Harada, Kiyoshi Kita, and Kikukatsu Ito	637
Network analysis of the MVA and MEP pathways for isoprenoid synthesis. Eva Vranová, Diana Coman, and Wilhelm Gruissem	665
Toward cool C4 crops. Stephen P. Long and Ashley K. Spence	701
The spatial organization of metabolism within the plant cell. Lee J. Sweetlove and Alisdair R. Fernie	723
Evolving views of pectin biosynthesis. Melani A. Atmodjo, Zhangying Hao, and Debra Mohnen	747
Transport and metabolism in legume-rhizobia symbioses. Michael Udvardi and Philip S. Poole	781
Structure and functions of the bacterial microbiota of plants. Davide Bulgarelli, Klaus Schlaeppi, Stijn Spaepen, Emiel Ver Loren van Themaat, and Paul Schulze-Lefert	807
Systemic acquired resistance: Turning local infection into global defense. Zheng Qing Fu and Xinnian Dong	839

Indexes

Cumulative index of contributing authors, volumes 55-64	865
Cumulative index of article titles, volumes 55-64	871

Errata

An online log of corrections to Annual review of plant biology articles may be found at <http://www.annualreviews.org/errata/arplant>

Conservation biology 27(3):2013.

Editorial

Fads, funding, and forgetting in three decades of conservation. Kent H. Redford, Christine Padoch, and Terry Sunderland 437

Letter

Application of lessons from the euro crisis to climate change. Kelvin S.-H. Peh and Franziska Schrodt 439

Conservation focus: Human dimensions of coral reefs

Introduction. Joshua Cinner 441

Effects of human population density and proximity to markets on coral reef fishes vulnerable to extinction by fishing. T.D. Brewer, J.E. Cinner, A. Green, and R.L. Pressey 443

Global effects of local human population density and distance to markets on the condition of coral reef fisheries. Joshua E. Cinner, Nicholas A. J. Graham, and M. Aaron MacNeil 453

Bayesian decision-network modeling of multiple stakeholders for reef ecosystem restoration in the coral triangle. Divya A. Varkey, Tony J. Pitcher, and Rashid S. Sumaila 459

Conservation practice and policy

A transactional and collaborative approach to reducing effects of bottom trawling. Mary Gleason, Erika M. Feller, Matt Merrifield, Stephen Copps, Rod Fujita, and Chuck Cook 470

Six common mistakes in conservation priority setting. Edward T. Game, Peter Kareiva, and Hugh P. Possingham 480

Review

Conflicting and complementary ethics of animal welfare considerations in reintroductions. Lauren A. Harrington, Axel Moehrensclager, and David W. MacDonald 486

Essays

Effect of monitoring technique on quality of conservation science. Zoe Jewell 501

Edge-effect interactions in fragmented and patchy landscapes. Lauren M. Porensky and Truman P. Young 509

Contributed papers

Estimating extinction risk with metapopulation models of large-scale fragmentation. Jessica K. Schnell, Grant M. Harris, Stuart L. Pimm, and Gareth J. Russell 520

Effect of land cover and ecosystem mapping on ecosystem-risk assessment in the little Karoo, south Africa. Karine Payet, Mathieu Rouget, Karen J. Esler, and Jan H.J. Vlok 531

Reexamining the minimum viable population concept for long-lived species. Kevin T. Shoemaker, Alvin R. Breisch, Jesse W. Jaycox, and James P. Gibbs 542

Accuracy of short-term demographic data in projecting long-term fate of populations. Anne Jakalaniemi, Heini Postila, and Juha Tuomi	552
A comparison of linear demographic models and fraction of lifetime egg production for assessing sustainability in sharks. Taylor K. Chapple and Louis W. Botsford	560
Conservation outside protected areas and the effect of human-dominated landscapes on stress hormones in savannah elephants. M.A. Ahlering, J.E. Maldonado, and J.L. Brown	569
Contrasts in livelihoods and protein intake between commercial and subsistence bushmeat hunters in two villages on Bioko island, equatorial Guinea. María Grande Vega, Bruno Carpinetti, Jesús Duarte, and John E. Fa	576
Understanding the role of representations of human-leopard conflict in mumbai through media-content análisis. Saloni Bhatia, Vidya Athreya, and David W. MacDonald	588
Evaluating the effects of anthropogenic stressors on source-sink dynamics in pond-breeding amphibians. John D. Willson and William A. Hopkins	595
Current near-to-nature forest management effects on functional trait composition of saproxylic beetles in beech forests. Martin M. Gossner, Thibault Lachat, and Jorg Muller	605
Effects of oil-palm plantations on diversity of tropical anurans. Aisyah Faruk, Daicus Belabut, Norhayati Ahmad, and Trenton W. J. Garner	615
The ability of landowners and their cooperatives to leverage payments greater than opportunity costs from conservation contracts. Gareth D. Lennox and Paul R. Armsworth	625
Diversity	
The missing skill set in community management of tropical forests. Miguel N. Alexiades, Charles M. Peters, Sarah A. Laird, and Patricia Negreros Castillo	635
Book reviews	
Heating up conservation, Andrew E. Derocher / A big resource with big gaps. Ryan K. Brook / Noted with interest	638
Erratum	642

Journal of economic entomology 106(3):2013.

Apiculture and social insects

Effect of chemical additives on *Bacillus thuringiensis* (Bacillales: Bacillaceae) against *Plutella xylostella* (Lepidoptera: Pyralidae). L. Zhang, S. Qiu, T. Huang, and X. Guan 1075

A fluctuating thermal regime improves long-term survival of quiescent prepupal *Megachile rotundata* (Hymenoptera: Megachilidae). Joseph P. Rinehart, George D. Yocum, William P. Kemp, and Kendra J. Greenlee 1081

Effects of extended prepupal storage duration on adult flight physiology of the alfalfa leafcutting bee (hymenoptera: megachilidae). Meghan M. Bennett, Kelsey Petersen, George Yocum, Joseph Rinehart, William Kemp, and Kendra J. Greenlee 1089

Biological and microbial control

Different toxicity of the novel *Bacillus thuringiensis* (Bacillales: Bacillaceae) Strain LLP29 against *Aedes albopictus* and *Culex quinquefasciatus* (Diptera: Culicidae). Lingling Zhang, Baozhen Tang, Enjiong Huang, Zhipeng Huang, and Lei Xu 1098

Modeling the integration of parasitoid, insecticide, and transgenic insecticidal crop for the long-term control of an insect pest. David W. Onstad, Xiaoxia Liu, and Anthony M. Shelton 1103

Efficacy of entomopathogenic *Steinernema* and *Heterorhabditis* nematodes against white grubs (Coleoptera: Scarabaeidae) in peanut fields. W. Guo, X. Yan, G. Zhao, and R. Han 1112

Biocontrol of *Bactrocera oleae* (Diptera: Tephritidae) with *Metarhizium brunneum* and its extracts. M. Yousef, M.D. Lozano-Tovar, I. Garrido-Jurado, and E. Quesada-Moraga 1118

Comparing effects of insecticides on two green lacewings species, *Chrysoperla johnsoni* and *Chrysoperla carnea* (Neuroptera: Chrysopidae). K.G. Amarasekare and P.W. Shearer 1126

Intraspecific variation of host plant and locality influence the lepidopteran-parasitoid system of *Brassica oleracea* crops. S. Santolamazza-Carbone, P. Velasco, and M.E. Cartea 1134

Establishment and abundance of *Tetrastichus planipennis* (Hymenoptera: Eulophidae) in Michigan: Potential for success in classical biocontrol of the invasive emerald ash borer (Coleoptera: Buprestidae). Jian J. Duan, Leah S. Bauer, and Roy van Driesche 1145

Commodity treatment and quarantine entomology

Postharvest treatment of fresh fruit from California with methyl bromide for control of light brown apple moth (Lepidoptera: Tortricidae). Spencer S. Walse, Scott W. Myers, Yong-Biao Liu, David E. Bellamy, David Obenland, Greg S. Simmons, and Steve Tebbets 1155

Survival of hessian fly (Diptera: Cecidomyiidae) puparia exposed to simulated hay harvest conditions, location and windrow drying in Washington and California. Victoria Y. Yokoyama and Sue E. Cambron 1164

Potential for hypobaric storage as a phytosanitary treatment: Mortality of *Rhagoletis pomonella* (Diptera: Tephritidae) in apples and effects on fruit quality. Rajshekhar Hulasare, Mark E. Payton, Guy J. Hallman, and Thomas W. Phillips 1173

Intercepting aliens: Insects and mites on budwood imported to south Africa. Davina L. Saccaggi and Welma Pieterse 1179

Preharvest quarantine treatments of chlorantraniliprole, clothianidin, and imidacloprid-based insecticides for control of Japanese beetle (Coleoptera: Scarabaeidae) and other scarab larvae in the root zone of field-grown nursery trees. Jason B. Oliver, Christopher M. Ranger, Michael E. Reding, James J. Moyseenko, Nadeer N. Youssef, and Alicia M. Bray 1190

Ecology and behavior

Combination of plant and insect eggs as food sources facilitates ovarian development in an omnivorous bug *Apolygus lucorum* (Hemiptera: Miridae). Wei Yuan, Wenjing Li, Yunhe Li, and Kongming Wu 1200

Compensation of *Lygus hesperus* induced preflower fruit loss in cotton. Apurba K. Barman and Megha N. Parajulee 1209

Patterns of spatial and temporal distribution of the asparagus miner (Diptera: Agromyzidae): Implications for management. William R. Morrison III and Zsofia Szendrei 1218

Ecotoxicology

Effects of pesticides used on citrus grown in Spain on the mortality of *Ceratitis capitata* (Diptera: Tephritidae) Vienna-8 strain sterile males. María Juan-Blasco, Beatriz Sabater-Muñoz, Rafael Argilés, Joseph A. Jacas, and Alberto Urbaneja 1226

Field and forage crops

Relationship between time to flowering and stalk and ear damage by second generation corn borers. B. Ordas, A. Alvarez, P. Revilla, A. Butron, and R. A. Malvar 1234

Corn defense responses to nitrogen availability and subsequent performance and feeding preferences of beet armyworm (Lepidoptera: Noctuidae). Li-Li Ren, Giles Hardy, Zhu-Dong Liu, Wei Wei, and Hua-Guo Dai 1240

Corn earworm (Lepidoptera: Noctuidae) in northeastern field corn: Infestation levels and the value of transgenic hybrids. Eric Bohnenblust, Jim Breining, and John Tooker 1250

Relative influence of plant quality and natural enemies on the seasonal dynamics of *Bemisia tabaci* (Hemiptera: Aleyrodidae) in cotton. Peter Asiimwe, Steven E. Naranjo, and Peter C. Ellsworth 1260

Western bean cutworm survival and the development of economic injury levels and economic thresholds in field corn. S. Paula-Moraes, T.E. Hunt, R.J. Wright, and E.E. Blankenship 1274

Costs of *Lygus* herbivory on cotton associated with farmer decision-making: An ecoinformatics approach. Jay A. Rosenheim 1286

Differential performance of *Sitobion avenae* (Hemiptera: Aphididae) clones from wheat and barley with implications for its management through alternative cultural practices. Suxia Gao and Deguang Liu 1294

Soybean aphid (Aphididae: Hemiptera) population growth as affected by host plant resistance and an insecticidal seed treatment. M.T. McCarville and M.E. O'Neal 1302

Single and multiple in-season measurements as indicators of at-harvest cotton boll damage caused by verde plant bug (Hemiptera: Miridae). Michael J. Brewer, J. Scott Armstrong, and Roy D. Parker 1310

Does feeding by *Halyomorpha halys* (Hemiptera: Pentatomidae) reduce soybean seed quality and yield?. D.R. Owens, D.A. Herbert, Jr., G.P. Dively, D.D. Reisig, and T.P. Kuhar 1317

Forest entomology

Evaluation of digital photography for quantifying *Cryptococcus fagisuga* (Hemiptera: Eriococcidae) density on american beech trees. D.J. Wieferich, D.B. Hayes, and D.G. McCullough 1324

Effect of temperature and tree species on damage progression caused by whitespotted sawyer (Coleoptera: Cerambycidae) larvae in recently burned logs. Sébastien Bélanger, Eric Bauce, Richard Berthiaume, Bernard Long, and Christian Hébert 1331

Horticultural entomology

Impact of early season apical meristem injury by gall inducing tipworm (Diptera: Cecidomyiidae) on reproductive and vegetative growth of cranberry. S. Tewari, and A.L. Averill 1339

Evaluation of acute toxicity of essential oil of garlic *Allium sativum* and its selected major constituent compounds against overwintering *Cacopsylla chinensis* (Hemiptera: Psyllidae). Na Na Zhao, Hang Zhang, Xue Chang and Zhi Long Liu 1349

Population genetics of invasive *Bemisia tabaci* (Hemiptera: Aleyrodidae) cryptic species in the United States based on microsatellite markers. Aaron M. Dickey, Lance S. Osborne, Robert G. Shatters, Jr., Paula M. Hall, and Cindy L. McKenzie 1355

Relationship of almond kernel damage occurrence to navel orangeworm (Lepidoptera: Pyralidae) success. Kelly A. Hamby and Frank G. Zalom 1365

Mating behavior of *Cnephasia jactatana* (Lepidoptera: Tortricidae), an important pest of kiwifruit. Alfredo Jiménez-Pérez, Qiao Wang, and R. Arzuffi 1373

Effects of high-gossypol cotton on the development and reproduction of *Bemisia tabaci* (Hemiptera: Aleyrodidae) MEAM1 cryptic species. Jian-Ying Guo, and Fang-Hao Wan 1379

Nectar and flower traits of different onion male sterile lines related to pollination efficiency and seed yield of F1 hybrids. Verónica C. Soto, Irma B. Maldonado, Raúl A. Gil, Iris E. Peralta, María F. Silva, and Claudio R. Galmarini 1386

Household and structural insects

Ability of field populations of *Coptotermes* spp. *Reticulitermes flavipes*, and *Mastotermes darwiniensis* (Isoptera: Rhinotermitidae; Mastotermitidae) to damage plastic cable sheathings. Michael Lenz, Brad Kard, James W. Creffield, and Marie Pommier de Santi 1395

Insecticide resistance and resistance management

Monitoring changes in *Bemisia tabaci* (Hemiptera: Aleyrodidae) susceptibility to neonicotinoid insecticides in Arizona and California. S.J. Castle and N. Prabhaker 1404

Detection of resistance, cross-resistance, and stability of resistance to new chemistry insecticides in *Bemisia tabaci* (Homoptera: Aleyrodidae). Muhammad Basit, Shafqat Saeed, Mushtaq Ahmad Saleem, Ian Denholm, and Maqbool Shah 1414

Baseline toxicity of metaflumizone and lack of cross resistance between indoxacarb and metaflumizone in diamondback moth (Lepidoptera: Plutellidae). Shem K. Khakame, Xingliang Wang, and Yidong Wu 1423

Cotton aphid (Heteroptera: Aphididae) susceptibility to commercial and experimental insecticides in the southern United States. J. Gore, D. Cook, A. Catchot, and D. Kerns 1430

Molecular entomology

Methods for rapid and effective PCR-based detection of *Candidatus liberibacter solanacearum* from the insect vector *Bactericera cockerelli*: Streamlining the DNA extraction/purification process. Julien Lévy, Joseph Hancock, Aravind Ravindran, and Elizabeth Pierson 1440

Selection of endogenous reference genes for gene expression analysis in the mediterranean species of the *Bemisia tabaci* (Hemiptera: Aleyrodidae) complex. Yun-Lin Su, Wen-Bo He, Jia Wang, Jun-Min Li, Shu-Sheng Liu, and Xiao-Wei Wang 1446

Plant resistance

Insect resistance in traditional and heirloom sweetpotato varieties. D. Michael Jackson and Howard F. Harrison, Jr. 1456

Host plant resistance of cool-season (C3) turfgrasses to above-and below ground feeding by *Tipula paludosa* (Diptera: Tipulidae). Matthew J. Petersen and Daniel C. Peck 1463

Response of wheat germplasm to infestation of english grain aphid (Hemiptera: Aphididae). Fenqi Li, Lingrang Kong, Yusheng Liu, and Junhua Peng 1473

Identification of novel sources of host plant resistance to known soybean aphid biotypes. Raman Bansal, M.A.R. Mian, and Andy P. Michel 1479

Sampling and biostatistics

Seasonal phenology, spatial distribution, and sampling plan for the invasive mealybug *Phenacoccus peruvianus* (Hemiptera: Pseudococcidae). A. Beltra, F. Garcia-Marí, and A. Soto 1486

Use of black light traps to monitor the abundance, spread, and flight behavior of *Halymorpha halys* (Hemiptera: Pentatomidae). Anne L. Nielsen, Kristian Holmstrom, George C. Hamilton, John Cambridge, and Joseph Ingerson-Mahar 1495

Stored product

Economic feasibility of methoprene applied as a surface treatment and as an aerosol alone and in combination with two other insecticides. Emily A. Fontenot, Frank H. Arthur, James R. Nechols, and Michael R. Langemeier 1503

Short communication

Genetic identification of an unknown *Rhagoletis* fruit fly (Diptera: Tephritidae) infesting Chinese crabapple: implications for apple pest management. Gilbert St. Jean, Scott P. Egan, Wee L. Yee, and Jeffrey L. Feder 1511

Páginas 90:2011.

Editorial 3

Autor invitado

Drug trafficking, money laundering and international trade restrictions after the wto panel report in Colombia-ports of entry: How to align wto law with international law. Tráfico de drogas, lavado de dinero y restricciones al comercio internacional a la luz del informe del grupo especial de la organización mundial de comercio en el caso Colombia – puertos de entrada: Cómo alienar de derecho a la OMC y el derecho internacional. Alberto Alvarez-Jiménez 5

Temas generales

Reflexiones de familia. Reflections from the family. Mireya Ospina Botero 43

Discurso y pensamiento crítico en la docencia. Speech and critical thinking in teaching. Olga Patricia Bonilla Marquinez 55

Apuntes sobre la construcción de un modelo pedagógico para el uso de redes sociales. Notes about the construction of a pedagogical model for the use of social networks. Gustavo Adolfo Peña Marín 63

Sobre la actividad como intuición de proyecto. Activity as project intuition. Gustavo Adolfo Correa Vanegas 75

Logística y competitividad en Colombia. Competitiveness and logistics in Colombia. Juan Alejandro Vásquez Ruiz 83

Catolicidad y disciplinas – profesiones

La pastoral del matrimonio debe fundarse en la verdad. Pastoral marriage must be based on the truth. Benedicto XVI, Papa 91

Estudios regionales

Procesos de localización de las grandes superficies comerciales en la conurbación Pereira – Desquebradas. Location processes for large shopping areas in the conurbation Pereira – Desquebradas. Lady Jazzmín Salcedo Rodríguez, Jaime Alberto Echeverri Restrepo, Mario Alberto Gaviria Ríos 99

Nuestros colaboradores 115

Instrucciones para el autor 116

Nuestros repositorios institucionales 120

Phytopathology 103(5):2013.

Letter to the editor

One fungus, one name: Defining the genus *Fusarium* in a scientifically robust way that preserves longstanding use. David M. Geiser, Takayuki Aoki, Charles W. Bacon and Ning Zhang 400

Bacteriology

Evidence for acquisition of copper resistance genes from different sources in citrus-associated xanthomonads. F. Behlau, J.C. Hong, J.B. Jones, and J.H. Graham 409

Zebra chip disease and potato biochemistry: Tuber physiological changes in response to "*Candidatus liberibacter solanacearum*" infection over time. A. Rashed, C.M. Wallis, L. Paetzold, F. Workneh, and C.M. Rush 419

Biological control

A host-specific biological control of grape crown gall by *Agrobacterium vitis* Strain F2/5: Its regulation and population dynamics. Supaporn Kaewnum, Desen Zheng, Cheryl L. Reid, Kameka L. Johnson, Jodi C. Gee, and Thomas J. Burr 427

Ecology and epidemiology

A study of weeds as potential inoculum sources for a tomato-infecting begomovirus in central Brazil. S.S. Barreto, M. Hallwass, O.M. Aquino, and A.K. Inoue-Nagata 436

Verticillium dahliae populations from mint and potato are genetically divergent with predominant haplotypes. Jeremiah K.S. Dung, Tobin L. Peever, and Dennis A. Johnson 445

Fusarium graminearum infection and deoxynivalenol concentrations during development of wheat spikes. Christina Cowger and Consuelo Arellano 460

Genetics and resistance

Novel *Capsicum* gene inhibits host-specific disease resistance to *Phytophthora capsici*. Gregory Reeves, Ariadna Monroy-Barbosa, and Paul W. Bosland 472

Mycology

Sequence variation in two protein-coding genes correlates with mycelial compatibility groupings in *Sclerotium rolfsii*. Efrén Remesal, Blanca B. Landa, and Juan A. Navas-Cortés 479

Virology

A novel virus of the genus *Cilevirus* causing symptoms similar to citrus leprosis. Avijit Roy, Nandlal Choudhary, Leon M. Guillermo, and R.H. Brlansky 488

Complete genome sequence and biological characterization of Moroccan pepper virus (MPV) and reclassification of lettuce necrotic stunt virus as MPV. William M. Wintermantel and Laura L. Hladky 501

Dynamics of southern rice black-streaked dwarf virus in rice and implication for virus acquisition. Keiichiro Matsukura, Tomomi Towata, Junichi Sakai, and Masaya Matsumura 509

Strong resistance against rice grassy stunt virus is induced in transgenic rice plants expressing double-stranded RNA of the viral genes for nucleocapsid or movement proteins as targets for RNA interference. Takumi Shimizu, Takumi Ogamino, Akihiro Hiraguri, and Takahide Sasaya 513

The plant cell 25(3):2013.

In brief

RNA polymerase IV defines epigenetic variation in maize. Jennifer Lockhart 777

Special delivery: In vitro functional examination of the twin-arginine transport complex core component cpTatC. Jennifer Mach 778

Alternative splicing confers a dual role in polar auxin transport and drought stress tolerance to the major facilitator superfamily transporter ZIFL1. Nancy A. Eckardt 779

Large-scale biology articles

Genomic distribution of maize facultative heterochromatin marked by trimethylation of H3K27. Irina Makarevitch, Steven R. Eichten, Roman Briskine, and Nathan M. Springer 780

The potential of text mining in data integration and network biology for plant research: A case study on Arabidopsis. Sofie Van Landeghem, Stefanie De Bodt, and Yves Van de Peer 794

Research articles

Maize RNA polymerase IV defines trans-generational epigenetic variation. Karl F. Erhard, Jr., Susan E. Parkinson, Stephen M. Gross, and Jay B. Hollick 808

Interlocking feedback loops govern the dynamic behavior of the floral transition in Arabidopsis. Katja E. Jaeger, Nick Pullen, Sergey Lamzin, and Philip A. Wigge 820

BRANCHED1 promotes axillary bud dormancy in response to shade in Arabidopsis. Eduardo González-Grandío, César Poza-Carrión, and Pilar Cubas 834

MAP18 regulates the direction of pollen tube growth in Arabidopsis by modulating F-actin organization. Lei Zhu, Yan Zhang, Erfang Kang, Qiangyi Xu, and Ying Fu 851

Empty pericarp5 encodes a pentatricopeptide repeat protein that is required for mitochondrial RNA editing and seed development in maize. Yu-Jun Liu, Zhi-Hui Xiu, and Bao-Cai Tan 868

Expression of 9-cis-epoxy carotenoid dioxygenase4 is essential for thermoinhibition of lettuce seed germination but not for seed development or stress tolerance. Hegang Huo, Peetambar Dahal, Keshayulu Kunusoth, and Kent J. Bradford 884

A major facilitator superfamily transporter plays a dual role in polar auxin transport and drought stress tolerance in Arabidopsis. Estelle Remy, Tania R. Cabrito, and Paula Duque 901

DELLA proteins and their interacting RING finger proteins repress gibberellin responses by binding to the promoters of a subset of Gibberellin-responsive genes in Arabidopsis. Jeongmoo Park, Khoa Thi Nguyen, Eunae Park, and Giltso Choi 927

FLYING SAUCER1 is a transmembrane RING E3 ubiquitin ligase that regulates the degree of pectin methylesterification in Arabidopsis seed mucilage. Catalin Voiniciuc, Gillian H. Dean, Jonathan S. Griffiths, and George W. Haughn 944

An RNA virus-encoded zinc-finger protein acts as a plant transcription factor and induces a regulator of cell size and proliferation in two tobacco species. Nina I. Lukhovitskaya, Anna D. Solovieva, Santosh K. Boddeti, and Eugene I. Savenkov	960
Allosteric regulation of transport activity by heterotrimerization of Arabidopsis ammonium transporter complexes in vivo. Lixing Yuan, Riliang Gu, and Nicolaus von Wirén	974
Small interfering RNA-mediated translation repression alters ribosome sensitivity to inhibition by Cycloheximide in <i>Chlamydomonas reinhardtii</i> . Xinrong Ma, Eun-Jeong Kim, Insun Kook, Fangrui Ma, Adam Voshall, Etsuko Moriyama, and Heriberto Cerutti	985
Mapping the signal peptide binding and oligomer contact sites of the core subunit of the pea twin arginine protein translocase. Xianyue Ma and Kenneth Cline	999
14-3-3 regulates 1-aminocyclopropane-1-carboxylate synthase protein turnover in Arabidopsis. Gyeong Mee Yoon and Joseph J. Kieber	1016
Regulation of Arabidopsis leaf hydraulics involves light-dependent phosphorylation of aquaporins in veins. Karine Prado, Yann Boursiac, Colette Tournaire-Roux, and Christophe Maurel	1029
The Arabidopsis YELLOW STRIPE LIKE4 and 6 transporters control iron release from the chloroplast. Fanchon Divol, Daniel Couch, and Catherine Curie	1040
Roles of N-terminal fatty acid acylations in membrane compartment partitioning: Arabidopsis h-type thioredoxins as a case study. José A. Traverso, Chiara Micaella, Carmela Giglione	1056
Modularity of plant metabolic gene clusters: A trio of linked genes that are collectively required for acylation of triterpenes in oat. Sam T. Mugford, Thomas Louveau, Anne Osbourn	1078
PROTEIN S-ACYL TRANSFERASE 10 is critical for development and salt tolerance in Arabidopsis. Liang-Zi Zhou, Sha Li, Qiang-Nan Feng, and Yan Zhang	1093
Formation of the unusual semivolatile diterpene rhizathalene by the Arabidopsis class I terpene synthase TPS08 in the root stele is involved in defense against belowground herbivory. Martha M. Vaughan, Qiang Wang, and Dorothea Tholl	1108
Phosphorylation of an ERF transcription factor by Arabidopsis MPK3/MPK6 regulates plant defense gene induction and fungal resistance. Xiangzong Meng, Juan Xu, Shugun Zhang	1126
VE-SIGNALING KINASE1 physically associates with FLAGELLIN SENSING2 and regulates plant innate immunity in Arabidopsis. Hua Shi, Qiujing Shen, Dingzhong Tang	1143
Barley MLA immune receptors directly interfere with antagonistically acting transcription factors to initiate disease resistance signaling. Cheng Chang, Deshui Yu, Qian-Hua Shen	1158
RABA members act in distinct steps of subcellular trafficking of the FLAGELLIN SENSING2 receptor. Seung-won Choi, Takayuki Tamaki, and Akihiko Nakano	1174

Plant physiology 162(2):2013.

On the inside

Peter V. Minorsky 535

Breakthrough technologies

Dynamic transcriptomic profiles between tomato and a wild relative reflect distinct developmental architectures. Daniel H. Chitwood, Julin N. Maloof, and Neelima R. Sinha. 537

Identifying genotype-by-environment interactions in the metabolism of germinating Arabidopsis seeds using generalized genetical genomics. Ronny Viktor Louis Joosen, Danny Arends, Yang Li, Leo A.J. Willems, and Henk W.M. Hilhorst 553

Research articles

Biochemistry and metabolism

Arabidopsis 3-ketoacyl-coenzyme A synthase9 is involved in the synthesis of tetracosanoic acids as precursors of cuticular waxes, subierins, sphingolipids, and phospholipids. Juyoung Kim, Jin Hee Jung, Saet Buyl Lee, Young Sam Go, and Mi Chung Suh 567

Identification of mitochondrial coenzyme A transporters from Maize and Arabidopsis. Rémi Zallot, Gennaro Agrimi, Claudia Lerma-Ortiz, and Andrew D. Hanson 581

Functional redundancy and divergence within the Arabidopsis RETICULATA-RELATED gene family. José Manuel Pérez-Pérez, David Esteve-Bruna, and José Luis Micol 589

Genetic analysis of the biosynthesis of 2-methoxy-3-isobutylpyrazine, a major grape-derived aroma compound impacting wine quality. Sabine Guillaumie, Andrea Ilg, Stéphane Réty, Maxime Brette, and Eric Gomés 604

Sporopollenin biosynthetic enzymes interact and constitute a metabolon localized to the endoplasmic reticulum of tapetum cells. Benjamin Lallemand, Mathieu Erhardt, Thierry Heitz, and Michel Legrand 616

In vivo packaging of triacylglycerols enhances Arabidopsis leaf biomass and energy density. Somrutai Winichayakul, Richard William Scott, and Nicholas John Roberts 626

Elucidation of the structure and reaction mechanism of sorghum hydroxycinnamoyltransferase and its structural relationship to other co enzyme A-dependent transferases and synthases. Alexander M. Walker, Robert P. Hayes, Buhyun Youn, and ChulHee Kang 640

A chloroplast ABC1-like kinase regulates vitamin E metabolism in Arabidopsis. Jacopo Martinis, Gaétan Glauser, Sergiu Valimareanu, and Felix Kessler 652

Responses of nanochloropsis oceanica IMET1 to long-term nitrogen starvation and recovery. Hong-Po Dong, Ernest Williams, Da-zhi Wang, and Allen R. Place 1110

Cell biology

A guanine nucleotide exchange factor for rab5 proteins is essential for intracellular transport of the proglutelin from the Golgi apparatus to the protein storage vacuole in rice endosperm. Masako Fukuda, Liuying Wen, Mio Satoh-Cruz, and Toshihiro Kumamaru 663

Patterning and lifetime of plasma membrane-localized cellulose synthase is dependent on actin organization in Arabidopsis interphase cells. Arun Sampathkumar, Ryan Gutierrez, Heather E. McFarlane, Martin Bringmann, and Staffan Persson 675

The endoplasmic reticulum is a reservoir for WAVE/SCAR regulatory complex signaling in the Arabidopsis leaf. Chunhua Zhang, Eileen Mallery, and Daniel B. Szymanski 689

Involvement of the sieve element cytoskeleton in electrical responses to cold shocks. Jens B. Hafke, Katrin Ehlers, Jens Foller, and Aart J.E. van Bel 707

AUXIN RESPONSE FACTOR17 is essential for pollen wall pattern formation in Arabidopsis. Jun Yang, Lei Tian, Ming-Xi Sun, and Zhong-Nan Yang 720

Ecophysiology and sustainability

Characterization of the complex regulation of AtALMT1 expression in response to phytohormones and other inducers. Yasufumi Kobayashi, Yuriko Kobayashi, and Hiroyuki Koyama 732

Genes, development, and evolution

A significant fraction of 21-Nucleotide small RNA originates from phased degradation of resistance genes in several perennial species. Thomas Kallman, Jun Chen, and Ulf Lagercrantz 741

Identification of novel loci regulating interspecific variation in root morphology and cellular development in Tomato. Mily Ron, Michael W. Dorrity, Miguel de Lucas, Siobhan M. Brady 755

Function relaxation followed by diversifying selection after whole-genome duplication in flowering plants. Hui Guo, Tae-Ho Lee, Xiyin Wang, and Andrew H. Paterson 769

Cytochrome P450 CYP78A9 is involved in Arabidopsis reproductive development. Mariana Sotelo-Silveira, Mara Cucinotta, Anne-Laure Chauvin, and Stefan de Folter 779

Using Arabidopsis to study shoot branching in biomass willow. Sally P. Ward, Jemma Salmon, Steven J. Hanley, Angela Karp, and Ottoline Leyser 800

EMBRYONIC FLOWER1 and ULTRAPETALA1 act antagonistically on Arabidopsis development and stress response. Li Pu, Mao-Sen Liu, Sang Yeol Kim, and Zinmay Renee Sung 812

The ATM-dependent DNA damage response acts as an upstream trigger for compensation in the fas1 mutation during Arabidopsis leaf development. Tetsuya Hisanaga, Ali Ferjani, Gorou Horiguchi, and Hirokazu Tsukaya 831

EBE an AP2/ERF transcription factor highly expressed in proliferating cells affects shoot architecture in Arabidopsis. Mohammad Mehrnia, Salma Balazadeh, and Bernd Mueller-R 842

COLLAPSED ABNORMAL POLLEN1 gene encoding the Arabinokinase-like protein is involved in pollen development in rice. Kenji Ueda, Fumiaki Yoshimura, and Hiroetsu Wabiko 858

MULTI-FLORET SPIKELET1 which encodes an AP2/ERF protein determines spikelet meristem fate and sterile lemma identity in rice. Deyong Ren, Yunfeng Li, Fangming Zhao, Guanghua He 872

The methylation of the PcMYB10 promoter is associated with green-skinned sport in max red bartlett pear. Zhigang Wang, Dong Meng, Aide Wang, and Tianzhong Li 885

Ubiquitin-specific proteases UBP12 and UBP13 act in circadian clock and photoperiodic flowering regulation in Arabidopsis. Xia Cui, Falong Lu, Yue Li, and Xiaofeng Cao 897

A change in SHATTERPROOF protein lies at the origin of a fruit morphological novelty and a new strategy for seed dispersal in Medicago genus. Chloé Fourquin, Carolina del Cerro, Filipe C. Victoria, and Cristina Ferrándiz 907

Genome-wide prediction of nucleosome occupancy in Maize reveals plant chromatin structural features at genes and other elements at multiple scales. Justin A. Fincher, Daniel L. Vera, Diana D. Hughes, and Hank W. Bass 1127

Membranes, transport, and bioenergetics

Proton-dependent coniferin transport, a common major transport event in differentiating xylem tissue of woody plants. Taku Tsuyama, Ryo Kawai, Nobukazu Shitan, Kazufumi Yazaki 918

Preferential delivery of zinc to developing tissues in Rice is mediated by P-type heavy metal ATPase OsHMA2. Naoki Yamaji, Jixing Xia, Namiki Mitani-Ueno, and Jian Feng Ma 927

Reduced tonoplast fast-activating and slow-activating channel activity is essential for conferring salinity tolerance in a facultative halophyte, Quinoa. Edgar Bonales-Alatorre, Sergey Shabala, Zhong-Hua Chen, and Igor Pottosin 940

Functional characterization and determination of the physiological role of a calcium-dependent potassium channel from Cyanobacteria. Vanessa Checchetto, Elide Formentin, Luca Carraretto, and Elisabetta Bergantino 953

ROOT ULTRAVIOLET B-SENSITIVE1/WEAK AUXIN RESPONSE3 is essential for polar auxin transport in Arabidopsis. Hong Yu, Michael Karampelias, and Mark Estelle 965

Quantification of extracellular carbonic anhydrase activity in two marine diatoms and investigation of its role. Brian M. Hopkinson, Christof Meile, and Chen Shen 1142

Deletion of the transcriptional regulator cyAbrB2 deregulates primary carbon metabolism in Synechocystis sp. PCC 6803. Yuki Kaniya, Ayumi Kizawa, and Yukako Hihara 1153

Signaling and response

Divergent DNA-binding specificities of a group of ETHYLENE RESPONSE FACTOR transcription factors involved in plant defense. Tsubasa Shoji, Masaki Mishima, Takashi Hashimoto 977

A regulatory cascade involving class II ETHYLENE RESPONSE FACTOR transcriptional repressors operates in the progression of leaf senescence. Tomotsugu Koyama, Haruka Nii, Nobutaka Mitsuda, and Fumihiko Sato	991
Negative feedback control of jasmonate signaling by an alternative splice variant of JAZ10. Javier E. Moreno, and Gregg A. Howe	1006
The <i>Pseudomonas syringae</i> type III Effector AvrRpt2 promotes pathogen virulence via stimulating <i>Arabidopsis</i> auxin/indole acetic acid protein turnover. Fuhao Cui, Shujing Wu, Libo Shan	1018
CYCLIN H;1 regulates drought stress responses and blue light-induced stomatal opening by inhibiting reactive oxygen species accumulation in <i>Arabidopsis</i> . Xiao Feng Zhou, Yin Hua Jin, Chan Yul Yoo, and Jing Bo Jin	1030
ANTI-SILENCING FUNCTION1 proteins are involved in ultraviolet-induced dna damage repair and are cell cycle regulated by E2F transcription factors in <i>Arabidopsis</i> . Luciana D. Lario, Elena Ramirez-Parra, and Paula Casati	1164
A basic helix-loop-helix transcription factor, ptrbhlh, of <i>Poncirus trifoliata</i> confers cold tolerance and modulates peroxidase-mediated scavenging of hydrogen peroxide. Xiao-San Huang, Wei Wang, Qian Zhang, and Ji-Hong Liu	1178
Involvement of AtPoll in the repair of high salt- and DNA cross-linking agent-induced double strand breaks in <i>Arabidopsis</i> . Sujit Roy, Swarup Roy Choudhury, and Kali Pada Das	1195
Systems and synthetic biology	
Deciphering herbivory-induced gene-to-metabolite dynamics in <i>Nicotiana attenuata</i> tissues using a multifactorial approach. Jyotasana Gulati, Sang-Gyu Kim, and Emmanuel Gaquerel	1042
Responses to light intensity in a genome-scale model of Rice metabolism. Mark G. Poolman, Sudip Kundu, Rahul Shaw, and David A. Fell	1060
Gene discovery of modular diterpene metabolism in nonmodel systems. Philipp Zerbe, Bjorn Hamberger, and Jorg Bohlmann	1073
RNA-seq of <i>Arabidopsis</i> pollen uncovers novel transcription and alternative splicing. Ann E. Loraine, Sheila McCormick, April Estrada, Ketan Patel, and Peng Qin	1092