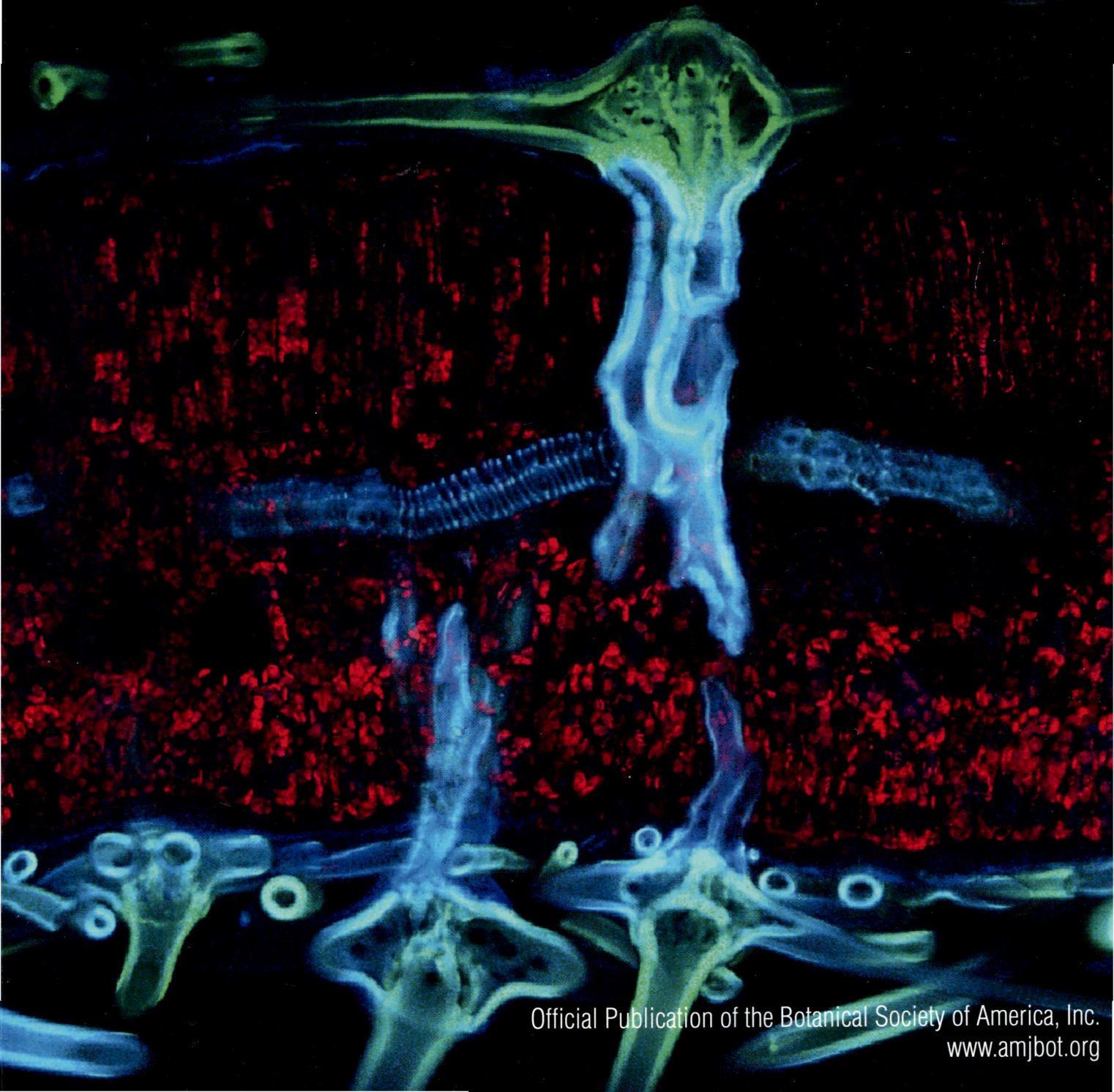


AMERICAN JOURNAL OF Botany

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Cover Illustration: Confocal fluorescence image of a hand-cut section through a leaf of silverleaf nightshade (*Solanum elaeagnifolium*; Solanaceae), highlighting one of the abundant, multicellular stellate trichomes that ornament both sides of these leaves. Blue autofluorescence arises from thick, lignified walls and red autofluorescence from chloroplasts. Berberine sulfate staining generates green fluorescence, showing suberin in the numerous (usually 12–16) horizontal trichome ray cells. This view also shows blue autofluorescence from horizontal xylem vessels in a leaf vein running behind, and close to, the trichome basal cells. The deep penetration of the basal cells into these leaves and their close proximity to leaf veins had led to speculation that the trichomes may provide a conduit between the leaf surface and the veins. However, direct application of fluorescent tracer dyes to trichomes showed that there was no functional connection between them [See the article by Burrows et al.—Intrusive trichome bases in the leaves of silverleaf nightshade (*Solanum elaeagnifolium*; Solanaceae) do not facilitate fluorescent tracer uptake, pp. 2307–2317). Instead, the authors suggest that the dense trichome layer may form a barrier to gas and water exchange between the leaf surface and vascular system, with additional functions in leaf protection. Image credit: Rosemary White.

AMERICAN JOURNAL OF Botany

December 2013 · Volume 100 · Number 12

TABLE OF CONTENTS

Anatomy and Morphology

- Intrusive trichome bases in the leaves of silverleaf nightshade (*Solanum elaeagnifolium*; Solanaceae) do not facilitate fluorescent tracer uptake
GEOFFREY E. BURROWS, ROSEMARY G. WHITE, JOHN D. I. HARPER, ROGER D. HEADY,
REX A. STANTON, XIAOCHENG ZHU, HANWEN WU, AND DEIRDRE LEMERLE 2307

- Moss stomata in highly elaborated *Oedipodium* (Oedipodiaceae) and highly reduced *Ephemerum* (Pottiaceae) sporophytes are remarkably similar
AMELIA MERCED AND KAREN S. RENZAGLIA 2318

Ecology

- Soil nitrogen, and not phosphorus, promotes cluster-root formation in a South American Proteaceae, *Embothrium coccineum*
FRIDA I. PIPER, GABRIELA BAEZA, ALEJANDRA ZÚÑIGA-FEEST, AND ALEX FAJARDO 2328

- Mycorrhizal preferences and fine spatial structure of the epiphytic orchid *Epidendrum rhopalosteles*
MARÍA L. RIOFRÍO, DARIO CRUZ, ELENA TORRES, MARCELINO DE LA CRUZ, JOSÉ M. IRIONDO,
AND JUAN PABLO SUÁREZ 2339

- Fire structures pine serotiny at different scales
ANA HERNÁNDEZ-SERRANO, MIGUEL VERDÚ, SANTIAGO C. GONZÁLEZ-MARTÍNEZ,
AND JULI G. PAUSAS 2349

- Influence of light conditions on the allometry and growth of the understory palm *Geonoma undata* subsp. *edulis* (Arecaceae) of neotropical cloud forests
OLIVIA SYLVESTER AND GERARDO AVALOS 2357

- Differential survival and growth of wild and cultivated seedlings of columnar cacti: Consequences of domestication
SUSANA GUILLÉN, ALEJANDRO CASAS, TERESA TERRAZAS, ERNESTO VEGA,
AND ALEJANDRO MARTÍNEZ-PALACIOS 2364

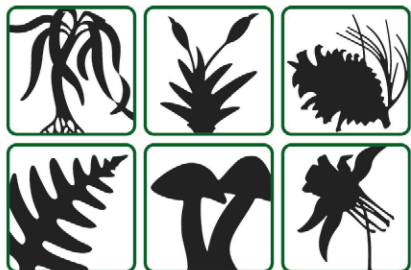
Evolution and Phylogeny

- Phylogenetic lineages in Vanguerieae (Rubiaceae) associated with *Burkholderia* bacteria in sub-Saharan Africa
BRECHT VERSTRAETE, STEVEN JANSSENS, BENNY LEMAIRE, ERIK SMETS,
AND STEVEN DESSEIN 2380

- Evolution of leaf anatomy and photosynthetic pathways in Portulacaceae
GILBERTO OCAMPO, NURIA K. KOTYEVA, ELENA V. VOZNESENSKAYA, GERALD E. EDWARDS,
TAMMY L. SAGE, ROWAN F. SAGE, AND J. TRAVIS COLUMBUS 2388

- Shifts in diversification rates and clade ages explain species richness in higher-level sedge taxa (Cyperaceae)
MARCIAL ESCUDERO AND ANDREW HIPPI 2403

- The evolution of substrate differentiation in *Minuartia* series *Laricifoliae* (Caryophyllaceae) in the European Alps: In situ origin or repeated colonization?
ABIGAIL J. MOORE AND JOACHIM W. KADEREIT 2412



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TABLE OF CONTENTS CONTINUED

Paleobotany

Pinaceae-like reproductive morphology in *Schizolepidopsis canicularis* sp. nov. from the Early Cretaceous (Aptian-Albian) of Mongolia

ANDREW B. LESLIE, IAN GLASSPOOL, PATRICK S. HERENDEEN, NIIDEN ICHINOROV,
PATRICK KNOPF, MASAMICHI TAKAHASHI, AND PETER R. CRANE 2426

Potomacarpnos apeleutheron gen. et sp. nov., a new Early Cretaceous angiosperm from the Potomac Group and its implications for the evolution of eudicot leaf architecture

NATHAN A. JUD AND LEO J. HICKEY 2437

New methods reveal oldest known fossil epiphyllous moss: *Bryiidites utahensis* gen. et sp. nov. (Bryidae)

RICHARD S. BARCLAY, JENNIFER C. McELWAIN, JEFFREY G. DUCKETT, MAARTEN H. VAN ES,
ANIKA S. MOSTAERT, SILVIA PRESSEL, AND BRADLEY B. SAGEMAN 2450

Physiology and Biochemistry

Chalcone synthase family genes have redundant roles in anthocyanin biosynthesis and in response to blue/UV-A light in turnip (*Brassica rapa*, Brassicaceae)

BO ZHOU, YU WANG, YAGUANG ZHAN, YUHUA LI, AND SANHEYUKI KAWABATA 2458

Life history and resource acquisition: Photosynthetic traits in selected accessions of three perennial cereal species compared with annual wheat and rye

NIKHIL S. JAIKUMAR, SIEGLINDE S. SNAPP, AND THOMAS D. SHARKEY 2468

A simple SDS-PAGE protein pattern from pitcher secretions as a new tool to distinguish *Nepenthes* species (Nepenthaceae)

FLORE BITEAU, ESTELLE NISSE, SISSI MIGUEL, PAUL HANNEWALD, VINCENT BAZILE,
LAURENCE GAUME, BENOIT MIGNARD, ALAIN HEHN, AND FREDERIC BOURGAUD 2478

Reproductive Biology

Multiple *Plantago* species (Plantaginaceae) modify floral reflectance and color in response to thermal change

ERIN R. ANDERSON, MARY E. LOVIN, SCOTT J. RICHTER, AND ELIZABETH P. LACEY 2485

Systematics and Phylogeography

Radiation and repeated transoceanic dispersal of Schoeneae (Cyperaceae) through the Southern Hemisphere

JAN-ADRIAAN VILJOEN, A. MUTHAMA MUASYA, RUSSELL L. BARRETT, JEREMY J. BRUHL,
ADELE K. GIBBS, JASPER A. SLINGSBY, KAREN L. WILSON, AND G. ANTHONY VERBOOM 2494

Brief Communication

Developmental origins of the conjoined twin mature embryo sacs in *Smilax davidiana*, with special notes on the formation of their embryos and endosperms

CHENG-QI AO 2509

Abbreviations

Miscellaneous: AFLP, amplified fragment length polymorphisms; a.s.l., above sea level; bp, base pair; BP, before present; BSA, bovine serum albumin; cpDNA, chloroplast DNA; CTAB, hexadecyltrimethylammonium bromide; cv., cultivar; ddH₂O, double-distilled water; dNTP, deoxyribonucleotide E.C., Enzyme Commission; EDTA, ethylene diamine tetra-acetic acid; f. sp., forma specialis; indels, insertions and deletions; ITS, internal transcribed spacer; LM, light microscopy; mya, million years ago; PAGE, polyacrylamide gel electrophoresis; PCR, polymerase chain reaction; RAPD, random amplified polymorphic dimorphism; SDS, sodium dodecyl sulfate; SEM, scanning electron microscopy; s.l., sensu lato; s.s., sensu stricto; subsp., subspecies; TEM, transmission electron microscopy

Genetics: *A*, mean number of alleles per locus; *D*, mean genetic distance; CI, consistency index; *F*, fixation index; *F_{IT}*, total deviation from Hardy-Weinberg expectations; *F_{ST}*, genetic diversity among populations; *F_{IS}*, inbreeding within populations; *G_{ST}*, the proportion of genetic diversity among populations; *H_e*, Hardy-Weinberg expected heterozygosity; *H_o*, observed heterozygosity; MP, most parsimonious tree; *n*, individual chromosome number; *N_m*, mean number of migrants per generation; *P_p*, percentage of polymorphic loci; RI, retention index; *x*, base chromosome number

Statistics and math: ANOVA, analysis of variance; CV, coefficient of variation; df, degrees of freedom; *N*, number of individuals; *p*, probability; *P*, level of significance; PCA, principal components analysis; *r*, coefficient of correlation; SE, standard error; SD, standard deviation

STATEMENT OF OWNERSHIP FOR V100:12, DECEMBER 2013

STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION OF AMERICAN JOURNAL OF BOTANY, REQUIRED BY ACT OF 12 AUGUST 1970: SECTION 3685, TITLE 39, UNITED STATES CODE, FILED OCTOBER 1, 2005.

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I certify that the statements made by me above are correct and complete. Signed, William M. Dahl, Business Manager.