

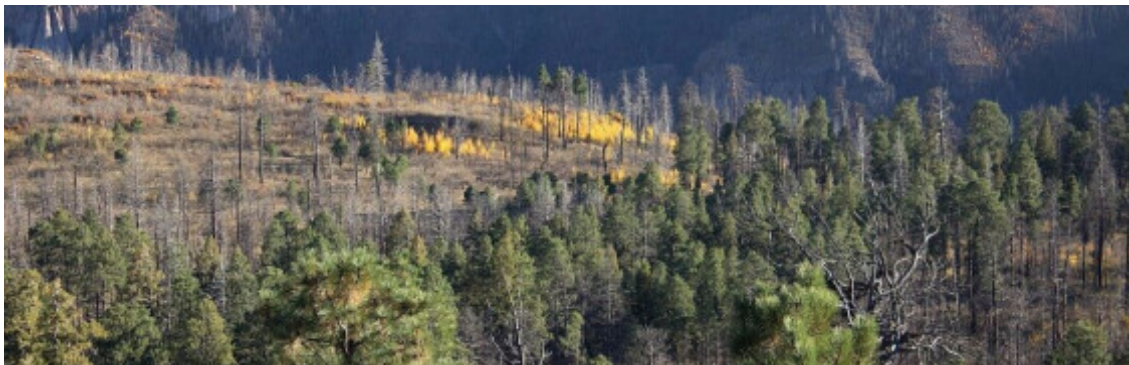
# The Week in Botany

Monday October 9, 2017

Skip to: [Botany One](#) | [News and Links](#) | [Scientific Papers](#)

We're trying something a little different this week. In theory, this could be a slightly faster system to create the email. We pick up what's popular with the people we follow [@BotanyOne](#) on Twitter and run it through systems to import into an email formatter at [Publicate.It](#). In reality the various ways journals present data mean they need more work formatting them. But it should look prettier. Comments or complaints to [webmaster@botany.one](mailto:webmaster@botany.one).

## On Botany One

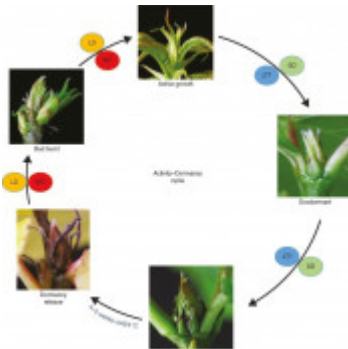


### Remember the dry times: functional legacies of drought in trees

Lanky grey skeletons stained the landscape before me, now tall lifeless masts, fading shadows of their former green glory—there were dead trees everywhere. Ponderosa pine, pinyon pine, and alligator juniper snags coated the mountainsides. I was in northern New Mexico, in October of 2016, when I saw for the first time with my own eyes what widespread tree die-off looks like. My mouth was agape as I considered how long it had taken these charismatic megafauna to become the dominant landscape figures they must have been in the prime of their lives. Even in death, they dominated the view, towering above anything living. During this trip, I would travel to multiple sites and bear witness to forest die-off events spanning the last seventy years. Drought, insects, and fire had all played roles in the ongoing decimation of these forests. Something about seeing these corpses first hand was gripping, as photographs fail to convey the enormity of it all.



 botany.one

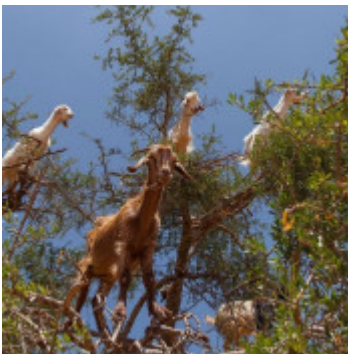


## Molecular mediation of photoperiodic control in activity-dormancy tree growth cycles - Botany One

Plants residing in temperate and boreal regions undergo annual activity-dormancy cycles in order to cope with the extreme variations in climate that accompany changes in seasons....



 botany.one



## Seed dispersal that's hard to swallow

The argan tree doesn't have to be annoying to really get your goat.



 botany.one



## Mixotrophy in boreal pyroloids does not vary with tissue age or light level

Mixotrophic species obtain their carbon by mixing autotrophy and heterotrophy. Some forest mixotrophs gain their energy and carbon from both photosynthesis and mycorrhizal fungi colonizing...



 botany.one

## Methane emissions from emergent



## aquatic macrophytes

Aquatic plants can function as conduits for methane from sediment to the air, and thus contribute to the global methane balance. In a recent Editor's Choice article published in AoB PLANTS,...



 botany.one



## Persecuted fruit bat may be key to Durian's survival in Asia - Botany One

The fruit bat has been persecuted due to the belief it destroyed crops of Durian. Now critically endangered, it seems that it is a key pollinator for the fruit tree.



 botany.one



## Does the seed bank contribute to the build-up of a genetic extinction debt

Many plant species manage to postpone eventual local extinction, through longevity-conserving strategies such as building a soil seed bank. test whether seed banks can achieve temporal...



 botany.one

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## Call for Papers: Special issue on the Ecology and Evolution of Plant Reproduction

Botanists have long been fascinated by the extraordinary diversity in

flowering plant reproductive patterns and have sought to understand the ecological processes and genetic mechanisms influencing plant mating. Over the last five years, research progress in this discipline has rapidly accelerated. Important new insights in this field often combine elegant theoretical models with innovative field and laboratory experiments. *Annals of Botany* will release a Special Issue on the Ecology and Evolution of Plant Reproduction in January 2019, and it will highlight papers from 3 symposia at the XIX International Botanical Congress in Shenzhen, China. [See the full call for papers](#) for more information.

## News and Links



### Badger or Bulbasaur - have children lost touch with nature?

In August 1913 the children's writer Eleanor Farjeon visited the poet Edward Thomas and his family at their home near the South Downs. On their first walk together, Thomas's 11-year-old...



 [theguardian.com](https://www.theguardian.com)



### Ten simple rules for structuring papers

Brett Mensh, Konrad Kording Subject Areas For more information about PLOS Subject Areas, click [here](#). We want your feedback. Do these Subject Areas make sense for this article? Click the...



 [journals.plos.org](https://journals.plos.org)


**We hail individual geniuses, but**

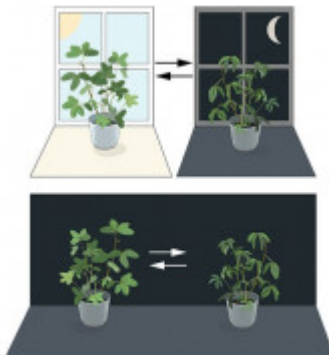


## success in science comes through collaboration | Jeremy Farrar

When we think of famous scientists, we think of Albert Einstein, perhaps Marie Curie or Francis Crick. More recently, there's Peter Higgs, known for the Higgs boson, Andre Geim for...



 theguardian.com



## The 2017 Nobel Prize in Physiology or Medicine - Press Release

The Nobel Assembly at Karolinska Institutet has today decided to award the 2017 Nobel Prize in Physiology or Medicine jointly to Jeffrey C. Hall, Michael Rosbash and Michael W. Young for their discoveries of molecular mechanisms controlling the circadian rhythm.



 nobelprize.org



## The Evolutionary Event That Gave You Pumpkins and Squash

It's been nice hanging out with you over the summer. But the seasons are changing, and it's time I move on to pumpkins and squash. It's not you, it's me. You're light, and sweet, and...



 nytimes.com

## Pollen & Plants

The loneliest plant in the world is called *Welwitschia mirabilis*, or tree tumbo, or simply *welwitschia*. It grows in the middle of the Namib desert, miles from almost any other living...



 [pollenandplants.com](http://pollenandplants.com)



## Botanic Gardens and Native Seed Production

Botanic gardens play a leading role in the conservation of rare and threatened plant species around the world. Increasingly they are active in ecological restoration. Scaling up the use of...



 [ser-insr.org](http://ser-insr.org)



## Miles of Algae Covering Lake Erie

A potentially harmful algae bloom covered more than 700 square miles in the western basin of Lake Erie last week, turning the lake bright green and alarming residents and local officials....



 [nytimes.com](http://nytimes.com)



## Taproot Podcast S1E6: Population genetics, authorship lists, work/life balance and raining cockroaches with Jeffrey Ross-Ibarra

In this episode Ivan and Liz talk with Jeffrey Ross-Ibarra, a professor in the Department of Plant Sciences and a faculty member of the Center for Population Biology and the Genome Center...



 plantae.org



## Liverwort Genes and Land Plant Evolution

Though it's found around the world, it's easy to overlook the common liverwort - the plant can fit in the palm of one's hand and appears to be comprised of flat, overlapping leaves.



 jgi.doe.gov



## Phone-Powered AI Spots Sick Plants With Remarkable Accuracy

Listen, you're kinda spooked about the rise of artificial intelligence, and I get that. It's a tremendously powerful technology that promises to transform the very nature of work,...



 wired.com

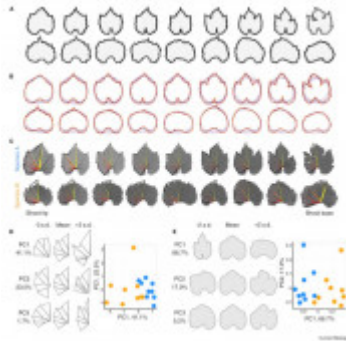
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### Call for papers: Developing sustainable bioenergy crops for future climates

Rapid progress has been made over the last five years with respect to emerging new genomic technologies for crop improvement and this Annals of Botany Special Issue will be devoted to highlighting the latest findings and considering the potential of these technologies for the future deployment of bioenergy crops in the face of climate change. At the same time, cutting-edge research that provides insights into the complex plant traits underpinning drought tolerance and response to other abiotic and biotic stresses is required for these relatively new crops. Knowledge in

this area will be brought together in this Special Issue, and there will be a focus on recent advances in high throughput phenotyping to unravel these complex responses. [See the full call for papers](#) for more information.

## Scientific Papers

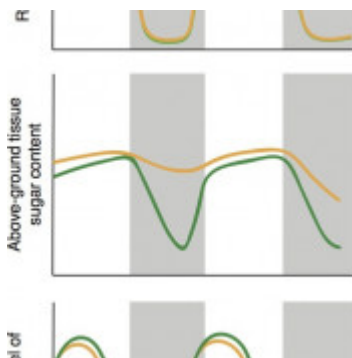


### Evolutionary and Environmental Forces Sculpting Leaf Development

Leaf shape is spectacularly diverse. As a major component of plant architecture and an interface for light capture, gas exchange, and thermoregulation, the potential contributions of leaves to plant fitness are innumerable.



 cell.com



### Drought Stress: Into the fourth dimension

The influence of time on the drought response of *Brassica rapa*, an agriculturally important species of plant, has been clarified.



 elifesciences.org



### The fossil flip-leaves (*Retrophyllum*, Podocarpaceae) of southern South America

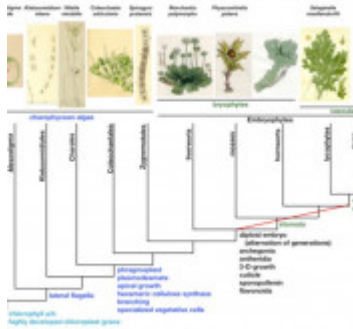
The flip-leaved podocarp *Retrophyllum* has a disjunct extant distribution in South American and Australasian tropical rainforests and a Gondwanic fossil record since the Eocene. Evolutionary, biogeographic, and



paleoecological insights from previously described fossils are limited because they preserve little foliar variation and no reproductive structures.



 amjbot.org



## Insights into Land Plant Evolution Garnered from the *Marchantia polymorpha* Genome

The evolution of land flora transformed the terrestrial environment. Land plants evolved from an ancestral charophycean alga from which they inherited developmental, biochemical, and cell biological attributes.




 cell.com

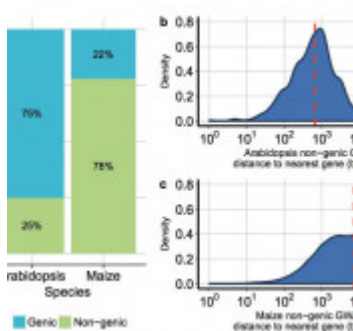


## Framework for gradual progression of cell ontogeny in the Arabidopsis root meristem

Plants have the ability to live and grow for many thousands of years due to the activity of groups of cells called meristems. Meristems contain stem cells that can survive the entire life...




 pnas.org

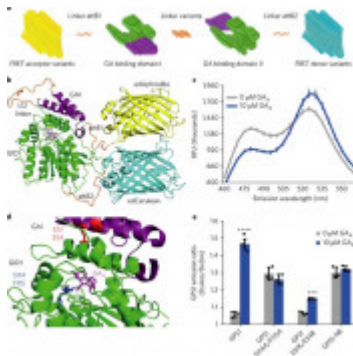


## Adaptation in plant genomes: bigger isn't better, but it's probably different

In this paper, we propose the functional space hypothesis, positing that mutational target size scales with genome size, impacting the number, source, and genomic location of beneficial...



 bioRxiv.org



## In vivo gibberellin gradients visualized in rapidly elongating tissues

The phytohormone gibberellin (GA) is a key regulator of plant growth and development. Although the upstream regulation and downstream responses to GA vary across cells and tissues,...



 nature.com

	V04	V4	V6	V8	V12	V18
<i>E. coli</i>	129004	128944	128904	128864	128824	128784
<i>H. pylori</i>	128807	128807	128807	128811	128815	128819
<i>B. subtilis</i>	128780	128780	128780	128780	128780	128780
<i>E. faecalis</i>	111150	111150	111150	111150	111150	111150
<i>L. plantarum</i>	301419	301419	301419	301419	301419	301419
<i>A. baumannii</i>	128719	128719	128719	128719	128719	128719
<i>S. pneumoniae</i>	128719	128719	128719	128719	128719	128719
<i>S. aureus</i>	128719	128719	128719	128719	128719	128719
<i>E. coli</i>	128719	128719	128719	128719	128719	128719
<i>S. agalactiae</i>	128719	128719	128719	128719	128719	128719
<i>M. luteus</i>	128719	128719	128719	128719	128719	128719
<i>S. pneumoniae</i>	128719	128719	128719	128719	128719	128719
<i>S. pneumoniae</i>	128719	128719	128719	128719	128719	128719
<i>P. aeruginosa</i>	128719	128719	128719	128719	128719	128719
<i>N. meningitidis</i>	128719	128719	128719	128719	128719	128719
<i>A. baumannii</i>	128719	128719	128719	128719	128719	128719
<i>S. aureus</i>	128719	128719	128719	128719	128719	128719
<i>C. difficile</i>	128719	128719	128719	128719	128719	128719
<i>H. pylori</i>	128719	128719	128719	128719	128719	128719
<i>P. aeruginosa</i>	128719	128719	128719	128719	128719	128719
<i>P. aeruginosa</i>	128719	128719	128719	128719	128719	128719

## Accuracy of microbial community diversity estimated by closed- and open-reference OTUs

Next-generation sequencing of 16S ribosomal RNA is widely used to survey microbial communities. Sequences are typically assigned to Operational Taxonomic Units (OTUs). Closed- and...




 peerj.com

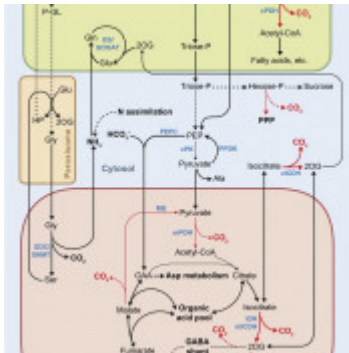


## Bringing ecology blogging into the scientific fold: measuring reach and impact of science community blogs

The popularity of science blogging has increased in recent years, but the number of academic scientists who maintain regular blogs is limited. The role and impact of science communication...



 rsos.royalsocietypubl...



## Leaf day respiration: low CO<sub>2</sub> flux but high significance for metabolism and carbon balance

Tansley review Corresponding author Research School of Biology, College of Science, and ARC Center of Excellence for Translational Photosynthesis, Australian National University, Canberra,...



 onlinelibrary.wiley.com

This closes the email for this week. If the new layout isn't working so well for you, please let me know. If you see anything interesting, or just want to plug your own new paper, let us know by tweeting [@BotanyOne](https://twitter.com/BotanyOne)

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