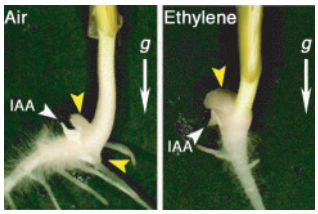
# Content*Snapshots*

### Distyly and pollination

Distyly is a widespread floral polymorphism characterized by reciprocal herkogamy, heteromorphic incompatibility and various ancillary polymorphisms. **Massinga *et al.* (pp. 389–399)** demonstrate the occurrence of distyly in two *Pentanisia* species and report unusual differences in incompatibility sites and pollen colour between morphs. Distyly promotes efficient intermorph pollen transfer in these taxa, with butterflies being the main vectors.

### Dynamics of leaves and tillers in a rice cultivar

Tillering is a major yield component in rice. **Jaffuel and Dauzat (pp. 401–412)** reveal a strong relationship between tiller development, its location, timing of emergence and the stage of development of the main stem.

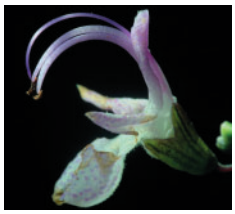



### Interaction between an auxin-inducible gene and ethylene

In response to gravity, cucumber seedlings develop a peg-like protuberance at the transition zone between hypocotyl and root. Auxin treatment of the transition zone also induces the peg. **Saito *et al.* (pp. 413–422)** suggest that the expression of the auxin-inducible gene, *CS-ACS1*, is involved in peg formation and that ethylene together with auxin facilitates peg development.

### Genomic regions conferring seedling vigour in rice

Cultivars with strong seedling vigour improve the probability of establishing stable stands of rice in the field. **Zhang *et al.* (pp. 423–429)** identify five major genomic regions associated with seedling vigour and show that significant genotype × temperature interactions are specific to certain parts of the genome.



### Inconstant size of wild rosemary flowers

In southern Spain, shrubs of *Rosmarinus officinalis* have flowers that vary in mass between 12 and 38 mg. Part of this variation relates to altitude. **Herrera (pp. 431–437)** investigates three sources of floral variability (habitat, site within habitat, individual plant) and searches for leaf–flower size covariations.

### Contribution of cell number and size to tomato fruit size

The relative importance of cell number and size in the determination of fruit size fluctuates in response to temperature, plant fruit load and fruit position within the inflorescence. **Bertin (pp. 439–447)** shows a dominant role of cell number with compensation effects between cell size and cell number in response to environmental and internal factors. Correlations between cell size and ploidy are examined.

### Determining patterns of seed abortion in a tropical legume

In many legumes, seeds are arranged linearly within the pod. This simplifies the task of studying the effect of ovule position on the probability of seed set. In *Bauhinia ungulata*, **Mena-Alí and Rocha (pp. 449–455)** found a non-random pattern of seed abortion with ovules located far from the stigma having a significantly higher probability of being aborted.

### Nitrogen stores and grass regrowth

Nitrogen reserves in below-ground organs are important for regrowth following severe defoliation. **Kavanová and Gloser (pp. 457–463)** show that free amino acids are mobilized from roots to support shoot regrowth of a rhizomatous grass, whereas rhizomes are not used to store nitrogen.

### Allozymic differentiation of the *Antirrhinum majus* and *A. siculum* species groups

**Mateu-Andrés and de Paco (pp. 465–473)** examine 881 individuals

from 52 wild populations of Antirrhinum to establish the taxonomic relationships of eight taxa belonging to the *majus* and *siculum* groups. Their results support the recognition of *A. majus, A. tortuosum, A. linkianum, A. cirrigherum, A. litigiosum* and *A. barrelieri* as one specific rank that is grouped into two series: *Sicula* and *Majora*.

### A mechanical study of cleavers

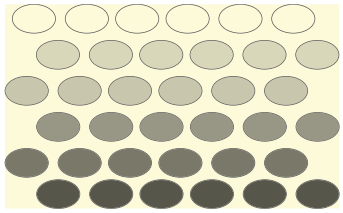
Cleavers (*Galium aparine*) is a fast-growing herbaceous annual with a scrambling-ascending growth habit. Mature plants often use upright species for support and are common in hedgerows. In this study, **Goodman (pp. 475–480)** investigates the mechanical behaviour of cleavers and shows that the basal region of the stem and first-order lateral roots are highly extensible.

### Overview of the Monsi and Saeki theory (Review)

Monsi and Saeki (1953) published the first mathematical model of canopy photosynthesis 50 years ago. To commemorate their work, **Hirose (pp. 483–494)** assesses the evolution and subsequent development of their theory. He discusses the concept of optimal leaf area index, cost–benefit analysis, light and nitrogen distribution, resource use in multiple species stands, and competition and coexistence of individuals in a stand.

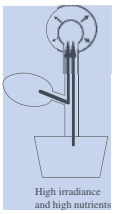
### Optimal characteristics of individual plants in vegetation stands (Review)

**Anten (pp. 495–506)** discusses how the application of game theory has shown vegetation structure to be the result of a tragedy of the commons. Plants increase their own light capture and photosynthesis at the expense of whole-stand photosynthesis. But can game theory also predict species coexistence: can more than one player stay in the game?



### Construction and maintenance of photosynthetic mechanisms (Review)

In the light of the pioneering 1953 paper by Monsi and Saeki, **Terashima *et al.* (pp. 507–519)** review construction and maintenance mechanisms of the photosynthetic systems of the leaf, herbaceous plant and tree.

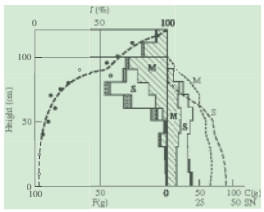



### The leaf canopy as a dynamic system (Review)

In a canopy, leaves eventually senesce and then fall, with the rate of turnover being affected by environmental factors and by species characteristics. **Hikosaka (pp. 521–533)** reviews these dynamics in terms of leaf production, senescence and the optimization of leaf turnover.

### Light gradients through tropical forest canopy

Dominant canopy trees are the major determinant of a forest's light environment. Using a tower crane for canopy access, **Kitajima *et al.* (pp. 535–547)** report the first comparative study of how contrasting shoot architecture, leaf traits and sucessional status of canopy trees predict light extinction characteristics through tree crowns in a tropical forest.



### Translation of original Monsi and Saeki paper

The original development and theory of the Monsi and Saeki equation is presented in a new translation of the original 1953 paper by **M. Schortemeyer (pp. 549–567).** A historically significant letter from Boysen Jensen to Monsi, dated 1955, is also translated **(pp. 569–570)**.