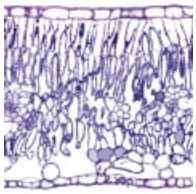
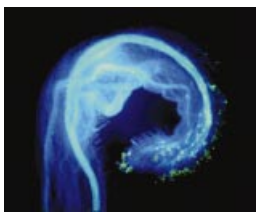
Content*Snapshots*



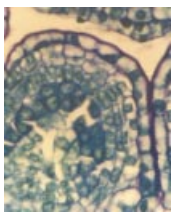
Poplar as a model tree

Taylor (pp. 681–689) reviews features that make poplar a suitable model tree species. These include the anticipated release of its nuclear genome sequence by the end of 2003, a small genome size, several mapping populations, large collections of ESTs and the existence of a poplar microarray. These assets will benefit forestry and help answer a wide range of questions related to tree and ecosystem function.



Breeding system in a dichogamous hermaphrodite species

The mechanics and dynamics of the breeding system in endemic *Silene acutifolia* is examined by **Buide and Guitián (pp. 691–699)**. Protandry has been considered as an effective barrier to self-fertilization. Pollen germinability and stigma receptivity are shown to establish the degree of protandry. Although protandry reduces seed-set at the floral level, self-fertilization is effected through geitonogamy.



Anther wall formation in Solanaceae

Layers comprising the anther wall are formed early in development through different patterns of cell divisions and types of anther wall formation. **Carrizo García (pp. 701–706)** analyses wall formation in 32 solanaceous species. Dicotyledonous and basic types are shown to predominate, but deviations arising from subsequent divisions are also described.

Seed dormancy and after-ripening patterns

In the highly seasonal Mediterranean climate, seedling survival depends on the appropriate timing of seed germination. **Schütz *et al*. (pp. 707–714)** show that primary dormancy, after-ripening and variable light requirements among seeds of four south-western Australian annuals help time germination, thereby increasing fitness.

Responses of carrot to salinity

A large root to shoot ratio, minimal retention of Cl^- in the root system and high affinity for Cl^- uptake at low (1–7 mM) salinity result in the accumulation of high (up to 200 mM) Cl^- concentrations in the shoots of carrot. In this context, **Gibberd *et al.* (pp. 715–724)** examine how growth and leaf gas exchange of carrot respond to saline irrigation.

Conservation genetics of *Viola palmensis*

High levels of genetic variation and high levels of gene flow among natural populations in the threatened Canarian endemic species *Viola palmensis* were detected by **Batista and Sosa (pp. 725–733)** using allozyme markers. A strategy for conservation genetics of this Canarian pansy is suggested based on the distribution of the genetic diversity.

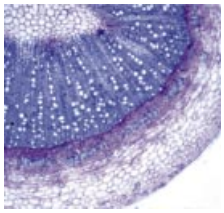
Unusual root branching in the riverweed family

Podostemaceae, aquatic angiosperms that grow on water-worn rocks in waterfalls and rapids, have diversely structured roots. **Hiyama *et al*. (pp. 735–744)** show that in *Zeylanidium* not only do sub-cylindrical and ribbon-like roots branch exogenously by means of meristem splitting, but so too do foliose roots. This arises from the arrest of a part of the apical or marginal meristem under the influence of the root-borne adventitious shoots.

Effect of P deficiency on growth and N_2-fixation in white clover

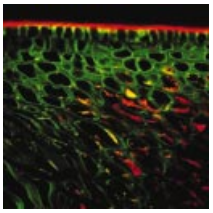
There is a need to maintain N_2-fixation in legumes in grasslands with spatial and temporal fluctuations in the P supply. **Høgh-Jensen *et al.* (pp. 745–753)** examine the consequences of varying P supply on white clover on a whole plant level and conclude that N_2-fixation does not limit the growth of clover plants experiencing P deficiency.

Continued overleaf



Pedicel vascularization and fruit growth

Growth of fruit depends on transport in the pedicel. **García-Luis *et al*. (pp. 755–764)** show that both phloem and xylem formation in citrus pedicels are directly related to early fruit growth rate. They also demonstrate that the capacity of pedicel phloem limits neither transport to the fruit, nor growth of fruit.



Structural basis of oleocellosis in navel orange

Oleocellosis is an unattractive surface blemish on citrus fruit induced by phytotoxic rind oils. By following a time sequence of visual and microscopic changes in *Citrus sinensis*, **Knight *et al.* (pp. 765–773)** show oleocellosis involves oil gland rupture, surface oil release and infiltration into the tissue. This leads to rapid cellular degeneration, cell collapse and the formation of precursors that darken the rind.