

A microscopic image of plant tissue, likely a cross-section of a stem or root, showing various cellular structures. The central part of the image shows a large, elongated cell with a complex, textured internal structure, possibly a vascular bundle or a specialized cell. Surrounding this are other cells, some of which are stained a reddish-brown color, indicating the presence of certain pigments or structures. The overall appearance is that of a detailed biological specimen under a microscope.

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Cover Illustration: Light micrograph of a heart-shaped embryo of *Zeylanidium lichenoides* (Podostemaceae) showing the expression of a *SHOOT MERISTEMLESS (STM)* ortholog, a shoot apical meristem marker gene. Podostemaceae is an aquatic eudicot family growing on submerged rocks in rapids and waterfalls in the tropics and subtropics of the world. Among the remarkable features of this family is the reduced shoot with only a few leaves, which arise in the absence of a typical shoot apical meristem. This reduction of the shoot system would seem to be advantageous for adaptation to the turbulence and velocity of rapids and waterfalls. Katayama et al. (see Origin and development of the cryptic shoot meristem in *Zeylanidium lichenoides* (Podostemaceae), pp. 635–646 in this issue) describe the origin and development of the reduced shoot apical meristem by tracing the expression of the *STM* ortholog through embryogenesis and primary shoot development in *Z. lichenoides*. The expression pattern revealed that a cryptic shoot apical meristem with the organizing center but without an obvious layer of meristematic initial cells was established in the embryo. The authors suggest that modification in meristem organization could be responsible for the ephemeral nature of the primary shoot apical meristem and its products in the Podostemaceae. Image credit: Natsu Katayama.

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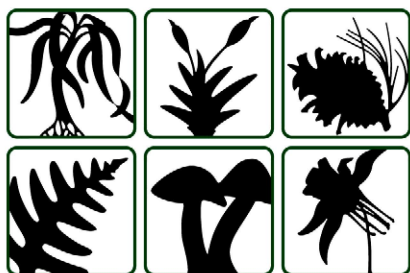
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Abbreviations

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