

JAMES RENNIE BEQUEST

REPORT ON EXPEDITION/PROJECT/CONFERENCE

Expedition/Project/Conference Title: XIII International Conference.....

Travel Dates: June 28th to July 2, 2002

Location: Seville, Spain

Group Member(s): Peter Eтчells

Aims: To learn about recent advances in *Arabidopsis* research, and get feedback on my work

OUTCOME (not less than 300 words):-

Seville, Spain, was the setting of the 13th International Conference on Arabidopsis Research from June 28 to July 2, 2002. This fascinating city, with its medieval walls, Mudéjar royal palaces, and Gothic cathedral, provided a fantastic setting for the conference. The Seville Conference and Exhibition Center handled the 900-plus visitors with smoothness and efficiency.

As regards to my work, the main point of interest was a talk given by Philip Brewer (Monash, Australia) where the *PETAL LOSS* gene was discussed. *petal loss* mutants have reduced petal number, and any petals developed demonstrate incorrect orientation. *PTL* is a GT-2 like transcription factor at the base of chromosome 5, but until the conference this was unpublished data. In activation tagging screens that I had carried out, a mutant was isolated with increased petal number and defects at the leaf margins. This phenotype, we had determined, was caused by upregulation of a GT-2 like transcription factor, also present on the long arm of chromosome 5 that we had named *BIG PETALS* and this was identical to *PETAL LOSS*. Gain of function phenotypes generated in the Smyth lab at Monash were also presented. These plants, expressing *PTL* from the *35S::CaMV* promoter were severely stunted leading the Australian group to suggest a role for *PTL* arresting growth. They suggested that areas of expression that they had interpreted as between petals mark a boundary on the floral meristem between petals, and arresting development of tissues in the areas where *PETAL LOSS* is expressed. These results contradict ours as up regulated *PTL* under control of the *35S* enhancer causes increased petal number.

Another point of interest was the keynote lecture, given by Caroline Dean (JIC, UK), concerned “the molecular basis of vernalisation requirement and response”. Vernalisation is the acceleration of flowering by a long period of cold temperature (winter in other words) which has important implications in agriculture. Work was presented demonstrating a reduction in the mRNA of the floral repressor *FLC* following vernalisation, and its subsequent increase in plants developing in warm conditions. The *FRIGIDA* locus was also discussed which demonstrates a dominant allele ensuring that plants overwinter vegetatively.

Complete abstracts of the meeting can be found at <http://www.arabidopsis2002.com/>