FLORA

FIRE, FLOWERS AND SUNDEWS

Kingsley Dixon

WESTERN AUSTRALIA has many fire-flowering species. You only need to visit any bushland the spring after a summer fire, to realise just how closely the flowering and seeding cycles of many Western Australian plants are linked to fire. But just what is the agent that is involved in triggering many species to flower?

Research has now indicated that smoke and ash have little to do with the flowering response in some of our *Drosera* species. Indeed, our original suspicions that the common fruit ripening gas, ethylene, was involved, was proven correct when we injected small quantities of the gas into bushland soil where the common red-ink sundew (*Drosera erythrorhiza*) was lying as dormant tubers. Four months later in early winter we were rewarded with a display of the sweetly scented flowers only on plants subjected to the gas treatment. The next step was to measure the amount of ethylene produced during a 'hot' summer fire. A device to trap the ethylene was devised and a fire set - the results were truly remarkable with ethylene production to such a degree within the the first 5 minutes of the fire front passing that the instrument being used went off scale!

The role of ethylene in flowering is well understood in many plants. For example the pineapples you enjoy have been forced to flower on cue by application of ethylene. So our little Western Australian sundews have adopted the same mechanism as many other plants to 'sense' the passage of a fire. So the next time you see a red-ink sundew flowering just remember that this smart plant has captured the essence of a summer fire - literally!

Drosera erythrorrhiza

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For the full story, read "Defining the role of fire in south-west Western Australian plants", K. Dixon & R. Barrett. 2003. IN *Fire in ecosystems of south-west Western Australia: Impacts and management. pp205-223.* Ed. *Abbott & Burrows. Backhuys, Leiden.*