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The ever-ready pollen

Nature's oddities are often well beyond the best imagination of human mind. Some of these have indeed been the inspirations for a few of the most artistic and aesthetic creations by man. Often these oddities also pose clear challenges to his inquiring mind. Indeed as Stephen Jay Gould remarks, these oddities of Nature are the scientists' bread and butter. One such bizarre feature of the plant reproduction is reported in this issue by Sharma and Koul (page 598): the precocious germination of pollen grains in a species of *Trifolium*.

Normally pollen grain are released as well-protected units such that they could beat the odds of weather during their long journey, often hitch-hiking on the body of insects or birds or mammals from the anthers of a flower to the stigma of another flower of probably another plant. Obviously they are induced to germinate only by the uniquely suitable conditions prevailing on the target stigma. The conditions are so unique to each species that plant breeders have to frequently struggle to construct suitable growth media for germinating the pollen grains of different species.

However, occasionally in certain species the pollen grains are precociously germinated even before they are released from the anthers. Sharma and Koul report that in *Trifolium dubium* the pollen grains germinate well within the anther in all the anthers of all the flowers of all the spikes of all the plants they studied. They also found that in some situations the pollen tubes enter the stigma from the undehisced anthers. They interpret it as a strategy to facilitate obligate self-pollination. This, however, is not consistent with their statement that the

'species practices high pollen competition'; one cannot visualize a severe level of pollen competition in a species that is obligate self-pollinated. There could be alternate explanation also: precocious germination of the pollen grains has also been interpreted as a strategy for gaining a head start in the severe competition among the pollen grains for the limited ovules in the ovary — a form of male-female competition in plants. This possibility is especially likely in *Trifolium dubium*, as there are only two ovules of which one at the base eventually aborts. Thus pollen grains would indeed be selected to be competitive to gain access to the ovule at the stigmatic end. But if this be true, Sharma and Koul might have to reevaluate the level of selfing in this species.

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