A particular detail has always stuck with me from *The BFG*, Roald Dahl's dark-as-hell children's book that's actually about giants snatching kids from their bedrooms. The one good, non-kid-eating giant tells his friend about superhuman hearing: "if I is twisting the stem of the flower till it breaks, then the plant is screaming. I can hear it screaming and screaming very clear."

Is it so hard believe that plants are silently "talking" all around us, but we just don't know how to listen to them? In fact, as the tools and techniques of botany advance, we are getting better and better at eavesdropping on plants. *Quanta Magazine* has a lovely feature by Kat McGowan about an area of research field that has "leapfrogged from electrifying discovery to decisive debunking to resurrection." Plant "language" ranges from chemicals released into the air to electric pulses from individual plant cells.

That latter bit about electric signals should especially interest us humans, whose own brains are also powered by charged particles moving in and out of cells. This isn't to say that plants have
brains or that they feel pain, but the evolutionary parallels are nonetheless striking. McGowan writes about how scientists listened into the electric signals of a wounded plant in one study published in *Nature* earlier this year.

To prove that electrical signals are at work, Ted Farmer's team placed microelectrodes on the leaves and leaf stalks of Arabidopsis thaliana (a model organism, the plant physiologist's equivalent of a lab rat) and allowed Egyptian cotton leafworms to feast away. Within seconds, voltage changes in the tissue radiated out from the site of damage toward the stem and beyond. As the waves surged outward, the defensive compound jasmonic acid accumulated, even far from the site of damage. The genes involved in transmitting the electrical signal produce channels in a membrane just inside the plant's cell walls; the channels maintain electrical potential by regulating the passage of charged ions. These genes are evolutionary analogues to the ion-regulating receptors that animals use to relay sensory signals through the body.

Electric signals have a number of other functions in plants, too. When Venus flytraps snap around an unlucky insect, for example, that fatal interaction is also mediated by electric signals. The same is true of sundews, whose tentacles curl to trap prey. Plants, sometimes, are surprisingly animal-like. [Quanta Magazine]