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The Atlantic Monthly | November 1973

## The Force That Drives the Flower

*What is it about fecundity that so appalls? Is it that with nature's bounty goes a crushing waste that threatens our own cheap lives?*

BY ANNIE DILLARD

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I wakened myself last night with my own shouting. It must have been that terrible yellow plant I saw pushing through the flood-damp soil near the log by Tinker Creek, the plant as fleshy and featureless as a slug, that erupted through the floor of my brain as I slept, and burgeoned into the dream of fecundity that woke me up.

I was watching two huge luna moths mate. Luna moths are those fragile ghost moths, fairy moths, whose five-inch wings are swallow-tailed, a pastel green bordered in silken lavender. From the hairy head of the male sprouted two enormous, furry antennae that trailed down past his ethereal wings. He was on top of the female, hunching repeatedly with a horrible animal vigor.

It was the perfect picture of utter spirituality and utter degradation. I was fascinated and could not turn away my eyes. By watching them I in effect permitted their mating to take place and so committed myself to accepting the

More on the environment from *The Atlantic Monthly*.

### From the archives:

"September Harvest" (September 1953)

"This small aromatic world of falling golden willow leaves and rounded stones is almost uninhabited, except for the water thrush and the field sparrows." By Josephine Johnson

"Chesuncook" (June, July, and August, 1858)

"After a dinner, at which apple-sauce was the greatest luxury to me, but our moose meat was oftenest called for by the lumberers, I walked across the clearing into the forest, southward returning along the shore. For my dessert, I helped myself to a large slice of the Chesuncook woods, and took a hearty draught of its waters with all my senses..." By Henry David Thoreau

From *Atlantic Unbound*:

**Flashbacks: "Thoreau's Wild Apples"** (March 8, 2000)

At the end of his life Henry David Thoreau was working on essays commissioned by The Atlantic. One of them, "Wild Apples," has recently resurfaced.

**Flashbacks: "John Muir's Yosemite"** (May 9, 1997)

From the journals of a young amateur naturalist who changed our relationship to the land.

consequences—all because I wanted to see what would happen. I wanted in on a secret.

And then the eggs hatched and the bed was full of fish. I was standing across the room in the doorway, staring at the bed. The eggs hatched before my eyes, on my bed, and a thousand chunky fish swarmed there in a viscid slime. The fish were firm and fat, black and white, with triangular bodies and bulging eyes. I watched in horror as they squirmed three feet deep, swimming and oozing about in the glistening, transparent slime. Fish in the bed!—and I awoke. My ears still rang with the foreign cry that had been my own voice.

Fool, I thought: child, you child, you ignorant, innocent fool. What did you expect to see—angels? For it was understood in the dream that the bed full of fish was my own fault, that if I had turned away from the mating moths the hatching of their eggs wouldn't have happened, or at least would have happened in secret, elsewhere. I brought it on myself, this slither, this swarm.

I don't know what it is about fecundity that so appalls. I suppose it is the teeming evidence that birth and growth, which we value, are ubiquitous and blind, that life itself is so astonishingly cheap, that nature is as careless as it is bountiful, and that with extravagance goes a crushing waste that will one day include our own cheap lives. Every glistening egg is a *memento mori*.

Now, in late June in the Blue Ridge, things are popping outside. Creatures extrude or vent eggs;

larvae fatten, split their shells, and eat them; spores dissolve or explode; root hairs multiply, corn puffs on the stalk, grass yields seed, shoots erupt from the earth turgid and sheathed; wet muskrats, rabbits, and squirrels slide into the sunlight, mewling and blind; and everywhere watery cells divide and swell, swell and divide. I can like it and call it birth and regeneration, or I can play the devil's advocate and call it rank fecundity—and say that it's hell that's a-poppin'.

This is what I plan to do. Partly as a result of my terrible dream, I have been thinking that the landscape of the intricate world that I have cherished is inaccurate and lopsided. It's too optimistic. For the notion of the infinite variety of detail and the multiplicity of forms is a pleasing one; in complexity are the fringes of beauty, and in variety are generosity and exuberance. But all this leaves something vital out of the picture. It is not one monarch butterfly I see, but a thousand. I myself am not one, but legion. And we are all going to die.

In this repetition of individuals is a mindless stutter, an imbecilic fixedness that must be taken into account. The driving force behind all this fecundity is a terrible pressure I also must consider, the pressure of birth and growth, the pressure that squeezes out the egg and bursts the pupa, that hungers and lusts and drives the creature relentlessly toward its own death. Fecundity, then, is what I have been thinking about, fecundity and the pressure of growth. Fecundity is an ugly word for an ugly subject. It is ugly, at least, in the eggy animal world. I don't think it is for plants.

I never met a man who was shaken by a field of identical blades of grass. An acre of poppies and a forest of spruce boggle no one's mind. Even ten square miles of wheat gladdens the hearts of most people, although it is really as unnatural and freakish as the Frankenstein monster; if man were to die, I read, wheat wouldn't survive him more than three years. No, in the plant world, and especially among the flowering plants, fecundity is not an assault on human values. Plants are not our competitors; they are our prey and our nesting materials. We are no more distressed at their proliferation than an owl is at a population explosion among field mice.

After the flood last year I found a big tulip tree limb that had been wind-thrown into Tinker Creek. The current dragged it up on some rocks on the bank, where receding waters stranded it. A month after the flood I discovered that it was growing new leaves. Both ends of the branch were completely exposed and dried. I was amazed. It was like the old fable about the corpse growing a beard; it was as if the woodpile in my garage were suddenly to burst greenly into leaf. The way plants persevere in the bitterest of circumstances is utterly heartening. I can barely keep from unconsciously ascribing a will to these plants, a do-or-die courage, and I have to remind myself that coded cells and mute water pressure have no idea how grandly they are flying in the teeth of it all.

In the lower Bronx, for example, enthusiasts found an ailanthus tree that was fifteen feet long

growing from the corner of a garage roof. It was rooted in and living on "dust and roofing cinders." Even more spectacular is a desert plant, *Ibervillea sonorae*—a member of the gourd family—that Joseph Wood Krutch describes. If you see this plant in the desert, you see only a dried chunk of loose wood. It has neither roots nor stems; it's like an old gray knothole. But it is alive. Each year before the rainy season comes, it sends out a few roots and shoots. If the rain arrives, it grows flowers and fruits; these soon wither away, and it reverts to a state as quiet as driftwood.

Well, the New York Botanical Garden put a dried *Ibervillea sonorae* on display in a glass case. "For seven years," says Joseph Wood Krutch, "without soil or water, simply lying in the case, it put forth a few anticipatory shoots and then, when no rainy season arrived, dried up again, hoping for better luck next year." That's what I call flying in the teeth of it all.

(It's hard to understand why no one at the New York Botanical Garden had the grace to splash a glass of water on the thing. Then they could say on their display case label, "This is a live plant." But by the eighth year what they had was a dead plant, which is precisely what it had looked like all along. The sight of it, reinforced by the label, "Dead *Ibervillea sonorae*," would have been most melancholy to visitors. I suppose they just threw it away.)

The growth pressure of plants can do an impressive variety of tricks. Bamboo can grow three feet in twenty-four hours, an

accomplishment that is capitalized upon, legendarily, in that exquisite Asian torture in which a victim is strapped to a mesh bunk a mere foot above a bed of healthy bamboo plants whose woodlike tips have been sharpened. For the first eight hours he is fine, if jittery; then he starts turning into a colander, by degrees.

Down at the root end of things, blind growth reaches astonishing proportions. So far as I know, only one real experiment has ever been performed to determine the extent and rate of root growth, and when you read the figures, you see why. I have run into various accounts of this experiment, and the only thing they don't reveal is how many lab assistants were blinded for life.

The experimenters studied a single grass plant, winter rye. They let it grow in a greenhouse for four months; then they gingerly spirited away the soil—under microscopes, I imagine—and counted and measured all the roots and root hairs. In four months the plant had set forth 378 miles of roots—that's about three miles a day—in 14 million distinct roots. This is mighty impressive, but when they get down to the root hairs, I boggle completely. In those same four months the rye plant created 14 *billion* root hairs, and those little things placed end to end just about wouldn't quit. In a single *cubic inch* of soil, the length of the root hairs totaled 6000 miles.

Other plants use water power to heave the rock earth around as though they were merely shrugging off a silken cape. Rutherford Platt tells about a larch tree whose root had cleft a

one-and-a-half-ton boulder and hoisted it a foot into the air. Everyone knows how a sycamore root will buckle a sidewalk, a mushroom will shatter a cement basement floor. But when the first real measurements of this awesome pressure were taken, nobody could believe the figures.

Rutherford Platt tells the story in *The Great American Forest*, one of the most interesting books ever written:

In 1875, a Massachusetts farmer, curious about the growing power of expanding apples, melons, and squashes, harnessed a squash to a weight-lifting device which had a dial like a grocer's scale to indicate the pressure exerted by the expanding fruit. As the days passed, he kept piling on counterbalancing weight; he could hardly believe his eyes when he saw his vegetables quietly exerting a lifting force of 5 thousand pounds per square inch. When nobody believed him, he set up exhibits of harnessed squashes and invited the public to come and see. *The Annual Report of the Massachusetts Board of Agriculture, 1875*, reported: "Many thousands of men, women, and children of all classes of society visited it. *Mr. Penlow* watched it day and night, making hourly observations; *Professor Parker* was moved to write a poem about it; *Professor Seelye* declared that he positively stood in awe of it."

All this is very jolly. Unless perhaps I were strapped down above a stand of growing, sharpened bamboo, I am unlikely to feel the faintest queasiness either about the growth pressure of plants or their fecundity. Even when the plants get in the way of human "culture," I don't mind. When I read how many thousands of dollars a city like New York has to spend to keep underground water pipes free of ailanthus, ginko, and sycamore roots, I cannot help but give a little cheer. After all, water pipes are almost always an excellent source of water. In a town where resourcefulness and beating the system are highly prized, these primitive trees can fight city hall and win.

But in the animal world things are different, and human feelings are different. While we're in New York, consider the cockroaches under the bed and the rats in the early morning clustered on the porch stoop. Apartment houses are hives of swarming roaches. Or again: in one sense you could think of Manhattan's land as high-rent, high-rise real estate; in another sense you could see it as an enormous breeding ground for rats, acres and acres of rats. I suppose that the cockroaches don't do as much actual damage as the roots do; nevertheless, the prospect does not please. Fecundity is anathema only in the animal. "Acres and acres of rats" has a suitably chilling ring to it that is decidedly lacking if I say instead "acres and acres of tulips."

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**The Atlantic Monthly**; November 1963; *The Force That Drives the Flower* - 73.11; Volume 232, No. 5; page 69-77.

"The Force That Drives the Flower" was later included as a chapter in Annie Dillard's [A Pilgrim at Tinker Creek](#), published in 1974.

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