



THE BOTANY OF DESIRE

Wednesday, October 28, 2009

8:00-10:00 p.m. ET on PBS

– A Plant’s-Eye View of the World, Based on Michael Pollan’s Best-Selling Book –



*Rembrandt Tulip in Hortus
Bulborum Gardens,
Netherlands.
Credit: ©Ruth Dundas*

Flowers. Trees. Plants. We’ve always thought that *we* controlled *them*. But what if, in fact, *they* have been shaping *us*? Using this provocative question as a jumping off point, **THE BOTANY OF DESIRE** takes viewers on an eye-opening exploration of the human relationship with the plant world — seen from the *plant’s* point of view. Based on Michael Pollan’s best-selling book of the same name and narrated by Frances McDormand, the special airs **Wednesday, October 28, 2009, 8:00-10:00 p.m. on PBS.**

Every schoolchild learns about the mutually beneficial dance of honeybees and flowers: To make their honey, the bees collect nectar and in the process spread pollen, which contains the flowers’ genes. **THE BOTANY OF DESIRE** proposes that people and domesticated plants have formed a similarly reciprocal relationship. “We don’t give nearly enough credit to plants,” says Pollan. “They’ve been working on *us* — they’ve been using *us* — for their own purposes.”

THE BOTANY OF DESIRE examines this unique relationship through the stories of four familiar species, relating how they evolved to satisfy humankind’s most basic yearnings. Linking fundamental human desires for sweetness, beauty, intoxication and control with the plants that satisfy them — the apple, the tulip, marijuana and the potato — **THE BOTANY OF DESIRE** shows that we humans are intricately woven into the web of nature, not standing outside it.

“*The Botany of Desire* is a perfect story for television,” says producer/director Michael Schwarz. “It takes a world we thought we knew, and allows us to see it in an entirely new way.” Shot in stunning high-definition, the program begins with Pollan in a California garden and sets off to roam the world: from the potato fields of Idaho and Peru to the apple orchards of New England; from a medical marijuana hot house to the tulip mecca of Amsterdam, where in 1637, one Dutchman, crazed with “tulip mania,” paid as much for a single bulb as the going price of a townhouse. How could flowers, with no real practical value to humans, become so desperately desired that they drove many to financial ruin?

THE BOTANY OF DESIRE argues that the answer lies in the powerful but often overlooked relationship between people and plants. With Pollan as on-screen guide to this frankly sensuous natural world, **THE BOTANY OF DESIRE** explores the dance of domestication between humans and plants. Through the

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history of these four familiar plants, the film seeks to answer the question: Who is really domesticating whom?

THE BOTANY OF DESIRE traces the apple's journey from its origin in the ancient forests of Central Asia, across the Silk Road to Europe, and eventually to America, where it found the ultimate promoter — an eccentric character named John Chapman, a.k.a. Johnny Appleseed. Unlike most of the apple trees that growers raise today, which are started by grafting, Chapman's apple trees were grown from seed. They bore fruit that was wildly diverse, but not particularly tasty. Yet these bitter apples were perfect for something — the making of hard cider, a potent libation that became the drink of choice for everyone from paupers to presidents. Soon, drunkenness was on the rise, and an outcry, led by the hatchet-wielding Carrie Nation, arose against the evil apple.

It wasn't until after 1900 that the apple became the fruit we know today. Growers cloned the sweetest apples and ingeniously marketed them as the ultimate health food, guaranteed to keep the doctor away. Soon, only a handful of varieties of apples were being grown, in vast operations that scientists call "monocultures," which grow just one genetic variety. Stripped of genetic diversity, monoculture crops become increasingly vulnerable to pests and diseases. Today, apple growers are some of the biggest consumers of pesticides. Scientists in Geneva, New York, are trying to help the apple prosper with fewer pesticides by harnessing the defenses that lie hidden in its genes. And in Northern New Hampshire, an independent-minded apple grower, who raises a variety of antique apples, hopes to revive the market for that once vilified drink, hard apple cider.

By satisfying the human desire for beauty, the tulip has risen from obscurity to fame — but along the way, it has wreaked havoc. **THE BOTANY OF DESIRE** travels to the Netherlands, the home of "tulip mania," and introduces the viewer to growers and breeders in thrall to the endless variety of this lovely flower, which serves no practical human purpose other than to bring pleasure to our eyes.

Like the apple, the first wild tulips sprang up in Central Asia. They made their way to Turkey, where they bewitched one of the world's most powerful men, Sultan Ahmed III, whose profligate spending on the flowers helped to topple him from his throne.

But the trouble tulips caused for the sultan paled in comparison to what happened to the Dutch in the early 17th century. Between 1634 and 1637, tulips swept the Dutch into a collective frenzy that became known as "tulip mania." As the Dutch became rich through their dominance of world trade, it became fashionable to cultivate impressive gardens. And nothing said success like the tulip — particularly the variety called the Semper Augustus. Single bulbs of Semper Augustus were so hotly desired that they were being sold for a price equivalent today to 10 or 15 million dollars. But when the tulip bubble burst, fortunes were wiped out and the Dutch economy reeled from the blow.

THE BOTANY OF DESIRE visits Dutch scientists, breeders and the awe-inspiring Aalsmeer Flower Market, through which passes one of out every three flowers sold in the world. One of the largest buildings on the planet — larger than 200 football fields — the Aalsmeer market sees some 19 million flowers from all over the world change hands each day. As Pollan says, "Flowers are exquisitely useless. They're this great froth of extravagance in our lives. But that there is a multibillion-dollar trade in these wonderful, useless, beautiful things is kind of great."



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While tulip breeders may spend long days tending their cultivars, nothing compares to the high-tech, 24-hour intensive care given another plant — cannabis, a.k.a. marijuana. **THE BOTANY OF DESIRE** explores the history and physiology of this lowly weed that has made itself so desirable that nearly 15 million Americans risk arrest each month by smoking it.

While fruits produce sweetness and flowers produce beauty, some plants produce chemicals that have the power to alter human consciousness. And, like our craving for sweetness or love of beauty, the desire to change consciousness appears to be hardwired into humans. Cannabis has cashed in on that desire and spread from its birthplaces in India and China throughout the world, where passionate — and mostly illegal — gardeners tend to its needs with slavish devotion.

Almost every society in the world permits the use of some form of intoxicant, deciding which substance to favor and which to declare forbidden. Although cannabis is now illegal in most countries, many cultures throughout history have embraced it; in 19th century America, it was a common treatment for labor pains, asthma and rheumatism. All that changed when Mexican immigrants brought the “marijuana” smoking habit with them across the border. It spread to the jazz community and was embraced by an entire generation in the 1960s. The U.S. government crackdown and the ensuing “war on drugs” drove cannabis growing underground, with modern-day growers paying passionate attention to their plants’ every need. Pollan calls these illicit cultivators of cannabis “the best gardeners of my generation.”

From the secret marijuana hothouse to the university laboratory, **THE BOTANY OF DESIRE** visits scientists who are studying THC, the chemical in cannabis that affects the human brain. Researchers, who are making great strides in understanding how memory, consciousness and emotions work, hope to tap cannabis’ power to help sufferers of post-traumatic stress syndrome and other ailments.

The potato — a plant that yields an abundant amount of food per acre — has succeeded by gratifying our desire to exert control over our environment. But not content with the potato in its natural state, we have tried to alter this plant by means of genetic engineering — a recently developed technology that marks a quantum leap in our relationship to plants.

Our relationship to the potato began in the Andes Mountains of Peru. It was there, more than 8,000 years ago, that the plant was first domesticated, and more than 5,000 different varieties of potatoes are still grown there today. When the Spaniards conquered Peru in the 16th century, they took the potato back with them to Europe, where it helped to change the course of history. Here was a plant that would grow in abundance in cool, rainy places with poor soils, like Ireland. But, unlike the Peruvians, the Irish grew mainly one single type of potato, the Lumper. The Irish potato fields, with their genetic uniformity, soon became vulnerable to biological pests. In the 1840s, when a virulent spore swept through the island nation, almost the entire potato crop was wiped out. The ensuing famine was so severe that it killed one out of every eight people in Ireland.

Says Pollan, “The Irish potato famine is the great cautionary tale of putting all your eggs in one basket, and the great cautionary tale about monocultures of all kinds. It’s a parable about the importance of biodiversity and it’s a parable we forget at our peril.”

Yet this parable has already been forgotten in America, where consumer demand for smooth, perfectly uniform French fries has resulted in the planting of another monoculture potato crop — the Russet Burbank.



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The Russet Burbank is grown in abundance in the vast potato fields of Idaho, where it is watered by huge irrigation systems and sprayed with large amounts of fertilizer and chemicals. The film contrasts this “industrial” method of agriculture with organic farming, which avoids toxic chemicals and encourages genetic diversity. Though organic yields may be lower, organic farmers’ costs are, too, because they save money by not using chemicals. **THE BOTANY OF DESIRE** also examines the story of the genetically modified New Leaf potato. Introduced by Monsanto in 1995, it contained a gene from a soil bacterium that had been inserted into the potato’s DNA, a gene that helped to kill the dreaded potato beetle. But after rising public concern, the New Leaf was taken off the market.

Are there viable choices — other than spraying with pesticides or genetically modifying plants — for farmers who need to resist pests? Yes, argues Pollan. “If you are willing to abandon monoculture, there are other ways to do it.” Organic farmers, growing a wide assortment of potato varieties, are doing just that, finding consumers willing to forgo uniformity to gain variety, flavor and the appeal of a plant raised without pesticides or chemicals.

THE BOTANY OF DESIRE will be available from PBS Home Video: ShopPBS.org; 800-531-4727, 24 hours a day, 7 days a week.

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