

Endangered Foods: Apple Pips & Potato Berries

So what is an heirloom? Part Two.

STORY BY *Pria Graves*

IN MARCH, I DISCUSSED HEIRLOOM SEEDS, old varieties that have been selected until they “come true,” producing a nearly identical crop each year. But what about things that cannot be propagated this way because their seeds show extreme genetic variability? For instance, if you plant the seeds from a single apple, the resulting trees (and their fruit) will bear little resemblance to each other or to the parent tree. Apples simply won’t “come true” from seed. Another alternative is needed.

Around 4,000 years ago, the Chinese discovered that if you notched a slip of wood from a desirable tree into the trunk of another tree, the graft would produce fruit just like the donor. Today practically all fruit trees are propagated this way. If you look closely at the trunk, you will typically see a knobby bulge near the ground. This is where the named variety was grafted onto a rootstock chosen for characteristics it will give to the tree: dwarfing, disease resistance, etc. But regardless of the rootstock, the fruiting part remains genetically identical.

So where did all the varieties of apples come from? Most originated as chance seedlings, growing wherever the seed fell. The majority of seedlings are worthless but occasionally a great new variety is discovered and named. Since the seed of a fleshy fruit is called a pip, many such apples are named pippins: Fall Pippin, Green Pippin, and one of my personal favorites, the Hauer Pippin (found in Aptos, California, around 1890). Others, like Granny Smith, are named for their discoverers or like Roxbury Russet and Esopus Spitzenburg, for the place where they were found, or characteristics of the fruit.

Apples can also be intentionally bred. In the 1930’s, in remote rural Northern California, Albert Etter created thousands of crosses derived from obscure, primitive and even wild parent stock! Many of his most beautiful varieties are pink-fleshed including Pink Pearmain and the lovely Pink Pearl. Seedling trees take many years to mature and bear, so Etter expedited his process by grafting twigs from his seedlings onto mature trees. This fooled the young cutting into producing fruit earlier and allowed him to eliminate the undesirables more quickly.

Thankfully heirloom apples are making a comeback and an increasing number of farmers are growing these wonderful diverse old survivors, protecting them for the future and allowing us to enjoy them today.

Potatoes are another cloned crop, but the method is entirely different. Starting the new generation is easy: take a healthy potato, cut it in pieces and plant. Soon you’ll have a crop of genetically identical potatoes. It’s easy to be positive what you’re growing but, unfortunately, this also means that it cannot adapt to changing conditions. And many of the common varieties are now becoming increasingly susceptible to disease.

Most varieties of potatoes grown today are sterile but some will produce berries, small fruits that look rather like green cherry tomatoes. In an effort to ensure sufficient genetic diversity and the future of the potato, a few farmers are growing potatoes from seed. This is a daunting task: until you see, cook, and taste the tubers from the new plant, you have no idea whether



it’s going to be a hit or go in the compost. Occasionally, with luck, growers may have a wonderful new variety, a great future heirloom.

Vegetative propagation (“cloning”) makes the question of whether it’s an heirloom is much simpler: if a named variety has been passed down through the years, it’s certain to be the “real thing.” The question of how old is “old enough” remains—50 years? 100 years? Pre-1900? There’s no real consensus. But at least there’s no need to worry about whether a stray pollinator has altered the variety. 🍏

LEFT. *Malus pumila* ‘Amber’, 6.25 x 6.5 in, watercolor. **ABOVE.** *Malus pumila* ‘Pink Pearmain’, 3.25 x 6.25 in, watercolor and colored pencil. Both images ©Peggy Irvine

