

Delicious pawpaws and their swallowtails

by Michael Pollock

Along Northeast Creek the big leaves of pawpaws hanging over the sluggish summer waters add to the tropical atmosphere, and pawpaws (*Asimina triloba*) are the northernmost representative of the custard apple family, which includes exotic fruits like custard-apples, alligator apples, ylang-ylang, sweetsops and soursops. Pawpaws are usually pole-like small trees with relatively smooth dark gray bark and a few long straight twigs and curving branches. Narrow leaves up to a foot long alternate near the branch tips. They have smooth margins and are widest towards the ends. They are supposed to have an unpleasant smell when damaged and young twigs often have fine reddish fuzz. Pawpaws can grow up to about 40' tall and 15" wide, and I have seen some large specimens in Durham, though not that large. Around here, pawpaws are usually up to about 10-20' tall. Pawpaws are best known for their large and sweet fruit, eaten fresh and used in cooking. Their common name comes from the papaya (which comes from Arawakan), but I think pawpaws beat papayas and bananas. Pawpaws have had many names, including papaw, paw-paw, pawpaw-apple, Quaker delight, hillbilly mango, Kentucky banana, asiminier de Virginie, banana du pauvre homme, etc. *Asimina* might come from the Miami-Illinois language. Pawpaws grow from the very southern tip of Canada to East Texas and the Spanish first encountered them in 1541 in the lower Mississippi Valley. Pawpaws are common near waterways and flower abundantly, but their fruit is not easy to find in the wild or at markets and is probably mostly unknown today, though it may be enjoying a resurgence in popularity.

Pawpaws can form dense groves on the sandy banks of larger creeks and in swampy bottomlands, probably spreading more by root than by seed. They seem to like moist soil and tolerate flooding, but not long periods. They grow downstream from pinxter flowers and umbrella magnolias, but aren't as flood tolerant as red maples. Short pawpaws found near streams and low on moist hillsides, are probably dwarf or

smallflower pawpaws, *A. parviflora*. Pawpaws around 3' tall, the only pawpaws in my neighborhood, grow at the base of a massive white ash, near an intermittent headwater stream. Dwarf pawpaws have smaller leaves and fruit, and their seeds are rounder than those of common or tall pawpaws, though I'm not sure if I have ever seen a dwarf pawpaw produce fruit. These are understory trees, but pawpaws seem to produce few fruit until a canopy tree falls. There is a large pawpaw behind the NC Botanical Garden's Totten Center and they grow in the Morgan Creek basin, though not abundantly. I found a seed at Jordan Lak's Seaforth area, but it must have washed in or been brought in.

Pawpaws flower before leafing, around early April, joining many other woodland flowers. They have distinctive flattened terminal leaf buds and round, black, and fuzzy flower buds. These enlarge and turn bright green and then reddish-brown and hang downward. There are three green sepals and six triangular, backcurving, and deeply veined petals, the outer three larger. They are supposed to have a faint scent, and attract various flies and possibly carrion beetles, presumably looking for meat (though some might eat the pollen), so they provide poor pollination services. The flowers contain many male and female parts but probably can't self-pollinate, another reason the trees are more common than their fruit. Sometimes people carry out pollination themselves.

The flowers give way to clusters of hanging round to oblong light green fruit, first pointed and then blunt-ended, with a lengthwise black line. Pawpaws are classified as berries, but grow up to 6" long, the largest edible wild fruit north of Mexico. Pawpaws ripen around late August to early September. Some might remain into October. I look for fallen fruit and shake trees. Pawpaws ripen after picking, producing a strong -- possibly overpowering -- sweet fragrance, but other times they just turn into 'charcoal.' Ripe pawpaws are yellow or brown. There are a few very large, round to oblong shiny brown seeds centered in yellowish flesh that taste sort of like banana. Susceptible people can get dermatitis from the fruit and leaves and an upset stomach from the fruit (and the leaves contain toxins). Occasionally I have gotten gastrointestinal upset, but

the fruit might have been unripe. Some say pawpaws are ripe when their skin darkens and the leaves fall, but as with persimmons this must apply to more northern latitudes. Around late September the big leaves start turning pale yellow and crinkly brown.

The fruit don't last long, though I'm surprised that they don't vanish the moment they ripen. Opossums, raccoons, foxes, squirrels, skunks, bears, birds, and box turtles relish the fruit. Ice age megafauna probably spread the seeds long ago and later Indians grew them. One problem with waiting for fruit to fall is that fruit flies also like it, waiting until after it falls to oviposit in the stem scar and any holes. I accidentally found out last summer that pawpaws in a sealed container produce enough gas to asphyxiate worms.

Due to toxic acetogenins, few herbivores bother pawpaws and the leaves are usually pristine. Zebra swallowtail caterpillars, pale green (sometimes melanistic) with light and dark stripes, feed on pawpaws and related plants. Adults are relatively common in bottomlands, puddling and drinking nectar from flowers like buttonbush (a superlative butterfly plant). They sometimes venture into built up areas. Males wait for females around pawpaw groves. I have yet to see the caterpillars, which can put out 'horns' (osmeteria) that give off a smell, like other swallowtails. Possibly these caterpillars are hard to find because they hide from predators by dropping off of plants, while larger caterpillars rest in the leaf litter. Adults resemble tiger swallowtails but are smaller and are starkly black striped against white (or pale green) and have brilliant red and some blue on their hindwings, and red antennae. They have swallowtail 'tails,' but zebras are in the kite swallowtail tribe, and have very long, pointed tails. Their appearance varies by season, so those in the spring brood have tails half as long, lighter colors, and are smaller. It has been called the pawpaw butterfly, kite swallowtail, and ajax. They lay single eggs on the underside of young leaves and the caterpillars are cannibalistic. The chrysalis is 'squared-off,' and they survive winter in this form. According to the *Butterflies of North Carolina* website, there are up to three broods here and adults can be seen in November, but are uncommon by late August. The early

summer brood is supposed to be most often seen, but the spring brood is actually most abundant usually. They are supposed to be less common going west, though pawpaw is a place name most often in western NC, possibly indicating that pawpaws are more culturally important west. Pawpaws also reach higher elevations than the swallowtails.

Pawpaws are also one larval food plant of pawpaw sphinx moths. Adults visit buttonbush, petunias, milkweed, and phlox. Regrowth following *Asimina* webworms could be a source of new leaves for zebra caterpillars. Speckled talponia moth caterpillars are supposed to eat flowers, but might not live in NC. Sapsuckers drink the sap in winter. Pawpawsaurus, a dinosaur, is named for a rock formation, not because it is known to have munched pawpaws.

Clothes, rope, and nets were woven from the inner bark while the soft wood is rarely used. Ripe pawpaws produce yellow dye, and can be fermented. Seeds were kept for luck or ground into powder for delicing. They are supposed to cause vomiting and drowsiness. Acetogenins might be useful as insecticides and in fighting cancer, but caused temporary visual problems. The fruit is laxative while the leaves are diuretic and used for injuries like abscesses.

There is an annual pawpaw festival at Hendersonville's Bullington Gardens August 17th (bullingtongardens.org).

Michael Pollock is a freelance writer living in southern Durham and founded Northeast Creek Stream Watch (www.northeastcreek.org). He studied biology and anthropology at UNC.