

## **“GARDEN OF EDEN ON YOUR DINNER PLATE?”**

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Those of us who nurture an evolutionary spirituality delight in knowing that all creatures are kin and that our ancestry reaches far into the heavens – that previous generations of stars forged the very atoms of carbon and calcium, of phosphorus and nitrogen, that have become us. We have given up a literal translation of the Genesis Story, yes?

Actually, no. Our relationship to food is, in many ways, still caught in the old mythology. We maintain a Garden of Eden view of the plant realm, and this can be unhealthy. How so?

Fundamentally, we assume that plants are, in a sense, here for us – that plants are here to be eaten and, preferably, in the raw. So deep is this assumption that we are not even aware of it. Evolutionary science, in contrast, informs us that plants are here for themselves; as with all forms of life, they have intrinsic value. The myriad species of plants each evolved and persisted by co-evolving with many other forms of life, including our primate ancestors.

Co-evolution moves in two distinct directions: to repel or to entice. Leaves, stems, and seeds of plants tended to co-evolve repellent relationships with our kind, but fruits co-evolved attraction.

### **Out of the Garden**

First, how do plants repel would-be consumers? With the exception of the grasses (for whom grazing is helpful in eliminating shade-producing competitors and whose small seeds tend to pass unharmed through the intestines of a cow or horse), plants are not idly waiting to become somebody's snack or salad – be it a vertebrate or an insect. Many plant leaves are armed with toxins: oxalates (in spinach) that deprive animals of calcium, tannins (in tea leaves) that “tan” and thus destroy the proteins lining our intestines. And many seeds are packed with even stronger poisons, to protect their rich concentrations of proteins and fats from hungry animals.

Fortunately, our forebears evolved large and sophisticated livers to render many of these toxins harmless. They also evolved habits of eating that avoided over-consumption of any single toxin – including ingestion of toxins in small doses as medicinals. They mixed and matched foods, too, with one plant toxin sometimes counteracting another. And they regularly consumed clay (especially when pregnant), which renders many toxins harmless.

When hominids domesticated fire and began cooking foods, dry heat or wet heat sufficed to de-nature some of these toxins. And when we learned to add salt to water, or to manufacture pressure cookers, the boiling point was raised to levels that could de-nature even more toxins.

### **Making Peace with Legumes and Other Poisonous Plants**

Every culture that has made the seeds of a legume (bean family) an important part of their diet has developed elaborate methods for maximizing nutrition and minimizing the toxins inherent in this protein-rich food. Because legumes uniquely are able to “fix” nitrogen, they can efficiently produce nitrogen-rich chemicals that are especially noxious. Traditional cuisines for preparing the vast diversity of legumes — as in soaking and changing the water, boiling with salt, sprouting, or fermenting — are thus not merely for taste.

For example, high and extended doses of many kinds of improperly processed legumes strip the body of essential B vitamins. This is why soybeans traditionally are cooked at very high temperatures or fermented. And this is why the German people suffered malnutrition following World War II, despite the bushels of soybeans provided by the U.S. government. Those people received the beans but not adequate instruction in how to cook them.

Ditto for the Middle Eastern staple of lentils. Dahl is a cooked form of lentil in which the floating seed coats, the most poisonous part of the legume seed, have been skimmed away. Meanwhile, East Asian cultures became masters at sprouting beans to the point that the embryo in each seed fully consumed the toxins and reformed these into benign plant tissues.

In South America, the indigenous peoples learned to roast the highly toxic seed of cashews and of chocolate in order to drive away the most terrible poisons, rendering these foods not only fit to eat, but fit for the gods to eat — in moderation.

And, of course, there is breeding. Common breeds of potatoes have only a fifth of the glycoalkaloids that were present in native Peruvian stock, which the peoples of the mountains used primarily as a famine food: de-skinned, boiled, and always dipped in clay. But a fifth of a toxin load is still to be reckoned with.

With the exception of the grasses (rice, wheat, oats, corn) and seeds that are aiming to be planted by squirrels (walnuts, acorns, chestnuts), virtually every other kind of seed has to find a way to deter potential consumers. If you have whole avocados in your kitchen, know that you have enough strychnine (in the seed) to kill a colony of rats. If you have a bag of whole apricots on the shelf, know that you possess enough cyanogens (if the seeds are crushed and swallowed) to cause yourself serious or lethal damage. But then, evolution has trained our senses to crave the pulp and to reject the

bitter or pungent seed. We are pulp thieves extraordinaire of avocado and apricot, but for raspberry, strawberry, blueberry, perhaps grape: ah! we are evolutionarily wedded partners.

### **Back to the Garden — with a Fruit in Hand**

When our hominid ancestors came down out of the trees and began walking the African savanna, we became God's gift to many species of plants. For now, we could carry seeds in our intestines far away from forested groves, deposit them in fertile mounds, and thus give new forests an opportunity to grow well beyond the confines of primate-friendly canopy.

We thus became highly desirable harvesters of fruit. The plants were happy to feed us sweet and nutritious pulp in exchange for our ambulatory services. Of, course, many birds and mammals had been fulfilling this function long before we became distance carriers of seeds. But now we eagerly joined this ecological guild.

But the seeds had to be small. Persimmon seeds encased in slippery orange flesh are swallowed and passed by bears, not us. Mango seeds that cling so tenaciously to their delectable packaging are looking for nothing less than a rhino or elephant. The avocado seed, native to South America, co-evolved with toxodons, giant ground sloths, and other giant creatures now extinct. As horticulturalists with a taste for green flesh, we humans have simply (and crucially) taken their place.

### **Toward and Evolutionary Spirituality**

Once we get over the initial shock of learning that plants are not here FOR us, but WITH us, we can open to the prospect of cultivating a truly evolutionary spirituality.

- We can remember with gratitude our primate ancestors whose marvelous livers we inherited.
- We can remember with gratitude our hominid ancestors who tamed fire.
- We can remember with gratitude the ingenuity of our ethnic ancestors who invented pottery (independently in many parts of the world), and who generation by generation honed experience and experimentation in all the world's bioregions to forge prosperous new relationships with sometimes reluctant plants.
- We can pay renewed attention to world cuisine, and resume preparing plants with the attention to proper processing that we and they deserve.

- We can teach our young to look at a mango and appreciate the Asian elephant, and to dip into a bowl of guacamole and conjure up the image of a giant ground sloth.
- And we can feel gratitude for the worldwide collaboration of botanists, anthropologists, and other scientists, who have not only taught us new stories but shown us how important it is to value the wisdom of the old.

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