

Harvest- Big with Rich Increase

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Excerpt from Chapter 8: The Harvest, page 142.

Abundance.

The season freely gives unencumbered gifts—

“teeming autumn, big with rich increase” (Shakespeare, in Sonnet 97).

When a hard frost threatens and we're hurrying to harvest all but the heartiest vegetables, autumn's big increase never fails to astound. So much sheer, indubitable *mass*, none of which existed just a few months ago, except in the prospect of a handful of seeds. We heap bushel baskets with summer squash, cucumbers, tomatoes; stuff bags with lettuce and chard; cut whole heads of sunflowers big as a calf's, and haul it all indoors, where it commandeers the kitchen. But beyond the impressive bulk, there is the unexpected *weight* of it all-- almost as if we are shouldering not only baskets of produce, but fall's very gravity itself, the same ripe force that bows the sunflower heads and bends low the boughs of the apple trees that ring my garden. Apples especially seem vested with the season's extravagant gravity. Pliny said that apples were the heaviest of all things, according to Thoreau, and that oxen start to sweat at the mere sight of a cartload of them.

I didn't fully appreciate the magnitude until I discovered a 30 pound Sibley squash hidden under the foliage in my garden. Where did this thing, this great quantity of squash flesh, come from? The Earth, we say, but not really; there is no less Earth here now than there was when I planted it; none has been used up in its making. By all rights creating something this fat should require so great an expanse of matter that you'd expect to find simply squashes perched on the lips of fresh craters. That they are not, it seems to me, should be counted something of a miracle.

The first person to verify that indeed this is a miracle was a 17th century Flemish scientist by the name of Van Helmont. He planted a willow sapling in a container that held 200 pounds of soil and, for five years, gave it nothing but water. At the end of that time, the tree was found to weigh 169 pounds, and the soil 199 pounds, 14 ounces -- from just 2 ounces of soil had come 169 pounds of tree. Rich increase indeed.

Before I harvested my Sibley and stopped to consider its provenance (and read about Van Helmont's experiment), I had always thought of gardening as a zero-sum enterprise-- that it was necessary to add as much to the garden (in the form of nutrients) as the produce I harvested removed from it. I assumed that I have to replace whatever my giant squash took from the soil or eventually nothing would grow in it. And though it is true that a monster squash like mine does deplete the soil of certain elements, their quantity is negligible; a small handful of compost could easily cover the deficit. But that deficit is much smaller than the sum total of matter my squash represents. Were I to leave it to rot on the vine, there would actually be a surplus in the garden's accounts; the soil would be both richer in nutrients and greater in total mass than it was before I planted it. Much of the increase is water, of course. But the remarkable fact is, my Sibley, considered from the vantage point of the entire planet's economy of matter, represents a net gain. It is, in other words, a gift.

This is not exactly news, I know; Van Helmont could have told you as much 300 years ago, Shakespeare evidently sensed it, and so did all those Renaissance painters of cornucopia. But it is something we seem to have forgotten in recent years, as our concerns about the depletion of the Earth's resources have mounted. We take it as an article of faith today that the Earth is running down, that we are using up its finite supplies of energy, fertility, and resources of all kinds. We've come to think of the Earth as a closed system; one of the age's presiding metaphors is "Spaceship Earth". Conceived as such, it's easy to imagine the ship's provisions gradually being exhausted; as more and more matter is converted into energy, we must eventually run out.

Entropy is the great faith of our time. Those who are most awed by it preach “limits to growth” -- that we should consume are fixed, unreplenishable stores as slowly as possible. On a spaceship, this makes good sense. But the second law of thermodynamics, under which entropy increases as matter converts to energy, applies only to closed systems, and, as the environmentalist very common air points out, the global ecosystem is not a closed system. The Earth, in fact, is nothing like a spaceship, because new energy is continually pouring down on it, in the form of sunlight -- free, boundless, virtually infinite sunlight. And sunlight come down to Earth is used by the process of photosynthesis to create new plant matter. Plants, in other words, are energy returned to matter -- entropy undone, at least here on Earth.

The lesson in this is not that we should feel free to waste our resources; it's that our environmental problems may have more to do with our technologies and habits and economic arrangements than with the planet's inherent limits or the burden of our numbers. All we could ever possibly need is given. In terms of the global ecosystem, there is a free lunch and its name is photosynthesis. In a sense, the ancients were entirely correct to regard the harvest's abundance as a gift from the heavens; and I would not be too far off regarding my squash's lunar silhouettes as a reminder of its extraterrestrial origins.