

PLASTICS, A LOVE STORY

Long before I finished Susan Freinkel's "Plastic: A Toxic Love Story" (2011), I felt like a sea turtle or a dolphin hopelessly tangled in plastic fish net. Everything on or around me -- shoes, sweater, pen, pad, rug, phone, clock -- all included plastic. I felt "contained, cushioned, shrink-wrapped, blister-packed, clamshelled." Such was the book's visceral impact.

But it is a love story, so Freinkel offers the beloved cautious praise.

At first plastics seemed to free us from the constraints of nature -- from rust, decay, the limitations of wood, glass, cotton and stone -- and to make beautiful things available to all.

Today we owe many medical marvels to plastics; they keep our hearts beating and work in our veins, arteries, hips, knees and implants. Even in the notorious Pacific garbage patch, vast areas of suspended plastic bits house microbes, the basis of all ocean life.

Biodegradable plastics work well as containers for food and food waste, and for agricultural weed

block film. Freinkel praises structures like bridges, made from recycled milk jugs and car bumpers, because they're tough and will last forever - maintenance free. She even calls plastic "vital."

Freinkel also details plastic's characteristics, its history, and invasion of the world.

All the many, many plastics are polymers, huge molecules easily manipulated and hence capable of taking many forms. We have loved it precisely because it can assume any shape, size, texture, color or consistency conceivable. Today plastics can contain so many ingredients that even their manufacturers may not know what's in them.

During World War II plastic production exploded, as we sought replacements for aluminum, brass and other strategic materials. By 1979 plastics had become "the skeleton, the connective tissue, and the slippery skin of modern life."

As of 2011 we were nearing 600 billion pounds consumed annually – 300 pounds per capita. It's now the third largest U.S. industry, trailing only steel and cars, and employing a million workers. It's become "both the miracle and the menace of modern life."

Here's some of what the book has to say about the menace.

Plastics manufacturing involves extremely toxic ingredients, including chlorine gas. Plastics once considered safe and hence used in hospitals worldwide, we now know give off chemicals like phthalates, that can cause harm much later in life. We all – even newborns – carry traces of phthalates, fire retardants, stain repellants, solvents and waterproofing agents in our systems. "Our cells are under continual low-level assault."

Yet because U.S. law considers chemicals safe until proven otherwise, they're all poorly tested, so we know little about hundreds, or even thousands, of plastics additives that may contain endocrine disrupting phthalates or other harmful chemicals. We're "subjects of a vast, uncontrolled experiment."

And so is our earth – how much cast-off plastic can it absorb? One half of all plastics now go to single-use applications – read grocery bags, Styrofoam cups, disposable lighters – and end up immortalized in landfills or the oceans, where

plastic debris can kill anything from albatrosses to whales.

The average American throws out 300 pounds of packaging a year – 1/3 of all municipal waste. PET bottles fueled lines of polyester clothes, but only about ¼ of them are recycled; 55 billion annually are dumped or landfilled. We recycle just 7 percent of all plastic.

We're starting to turn to bioplastics made from corn and other vegetable matter, but so far "the total barely registers in a world awash in fossil-fuel-based plastics."

As Freinkel sums it up, plastic's major threats are the plasticization of the oceans, endocrine disrupters affecting our kids, and carbon emissions that increase global warming.

So she concludes, "use less, re-use more, recycle and compost," see the oceans as vast resources, not dumping grounds, and hold manufacturers responsible for the ends, as well as the beginnings, of their products.

Because, like diamonds, plastics are forever.