

THE MIRACLE FLUSH

The humble toilet has saved millions of lives

In 1851, millions of Europeans flocked to London to see a showcase of the world's greatest inventions and treasures. Visitors to "The Great Exhibition of 1851" were treated to such sights as the world's largest diamond and enormous stuffed zebras from the wilds of Africa. But it was a modest-looking device that stole the show: the flush toilet. People waited in line for hours to try out this amazing contraption. For the first time in history, human waste could be effortlessly flushed away.

It's easy to understand why people were awestruck. Of all the challenges humans have faced throughout history, the problem of waste disposal—particularly the disposal of solid, smelly human waste—has been one of the most vexing. In fact, if you ever have a chance to travel back in time to 19th-century London, be sure to pack your gas mask. Better yet, plan not to breathe at all. Life before the flush toilet was extremely, horrifyingly, stomach-turningly *stinky*.

In this etching from 1866, a skeleton carries a bag of cholera through the street. RIGHT: An early flush toilet



It was dangerous too.

Human feces (aka poop) is foul stuff. It is filled with pathogens, tiny organisms that can make you seriously sick. There are about 50 diseases you can contract through contact with human waste. Three of them—cholera, dysentery, and typhoid—have killed millions of people over the centuries. Just a few years before the debut of the flush toilet, 50,000 people around Britain died quickly and painfully in a cholera epidemic.

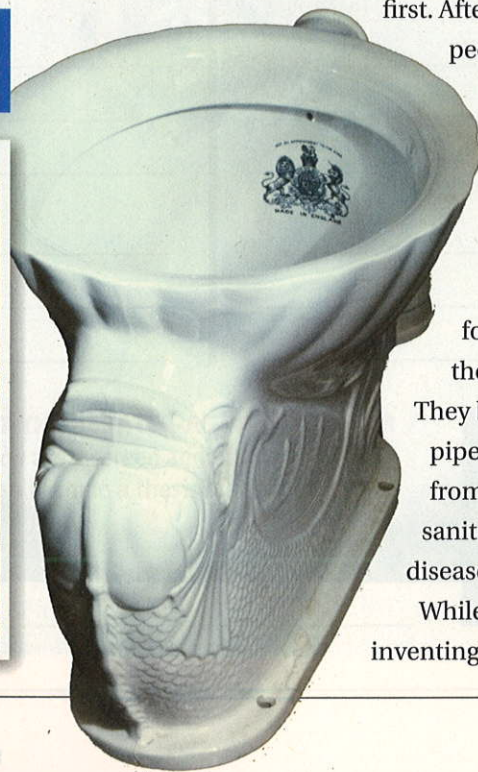
At the time, nobody understood the connection between feces and disease. People dumped waste wherever they could—into streets, rivers, and "cesspits," ditches filled with sewage, that overflowed when it rained. Wells were routinely contaminated. A glass of seemingly clean water was often a poisonous brew that could kill a person in days.

The flush toilet only made things worse—at least at first. After the exhibition, some 200,000

people installed flush toilets in their homes. All that flushed water overwhelmed cesspits and soon flooded the streets. In 1854, cholera swept through England again, killing tens of thousands.

It took more than a decade for city leaders to finally tackle the problem of waste disposal. They built sewers, huge networks of pipes that carried wastewater away from drinking water supplies. As sanitation improved, outbreaks of disease declined.

While no one person gets credit for inventing the toilet, there is a man whose



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A TOILET FOR THE DEVELOPING WORLD

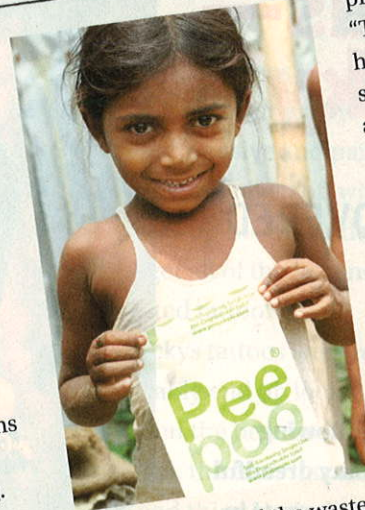
It looks like a plastic bag, but in fact the Peepoo is a single-use biodegradable toilet for the developing world. After it is used, the bag is knotted and buried or sold back to the manufacturer. Urea crystals in the bag transform waste into fertilizer that can be used for crops.

By one United Nations estimate, 40 percent of the world's population—2.6 billion people—does not have access to a toilet. Open defecation leads to contaminated water, which causes diarrhea. About 1.5 million children die of

diarrhea every year.

The Peepoo's creator is Anders Wilhelmson, a Swedish architect and professor. While taking his students on study trips in Asia and Africa, he decided that urban slum populations needed toilets even more than they needed housing.

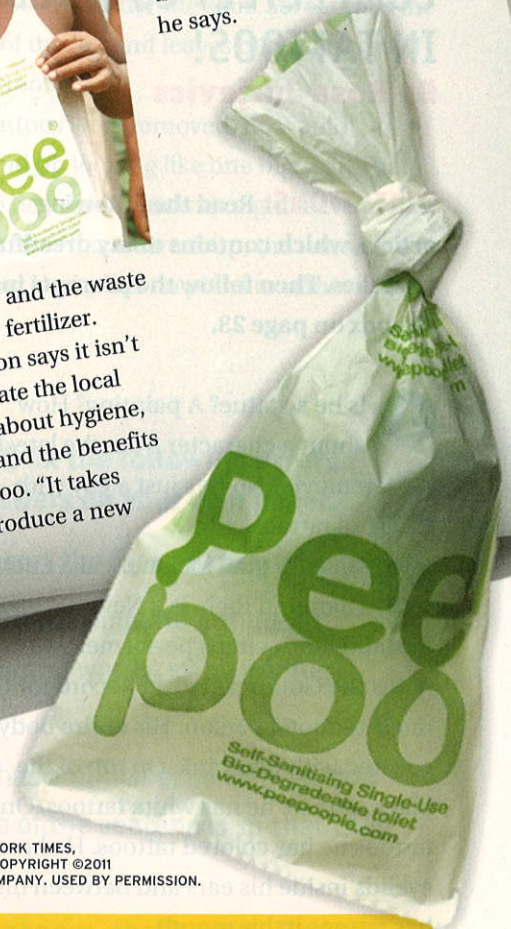
Currently, some 6,000 Peepoo bags are produced every day and distributed in slums in Nairobi, Kenya. After some training, local women sell the bags in their communities. Wilhelmson's company buys back the used bags for a third of the



product," Wilhelmson says. "That's why we're trying to have block parties and road shows, and we're doing advertising on the radio." Still, he is hopeful. The need for toilets is a basic one that will never cease to exist, he says.

original price, and the waste is turned into fertilizer.

Wilhelmson says it isn't easy to educate the local population about hygiene, sanitation, and the benefits of the Peepoo. "It takes time to introduce a new



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name has gone down in toilet history. He was a British plumber who perfected the self-filling bowl and also made toilets more affordable. When he died, in 1910, he wasn't rich or famous. But he is often mentioned in books about toilets.

His name? Thomas Crapper. ●

WRITE ABOUT TOILETS

Why is the way we dispose of human waste so important? What successes and failures have there been? Write a paragraph explaining your answers. Use details from BOTH the article and the essay to support your ideas.

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