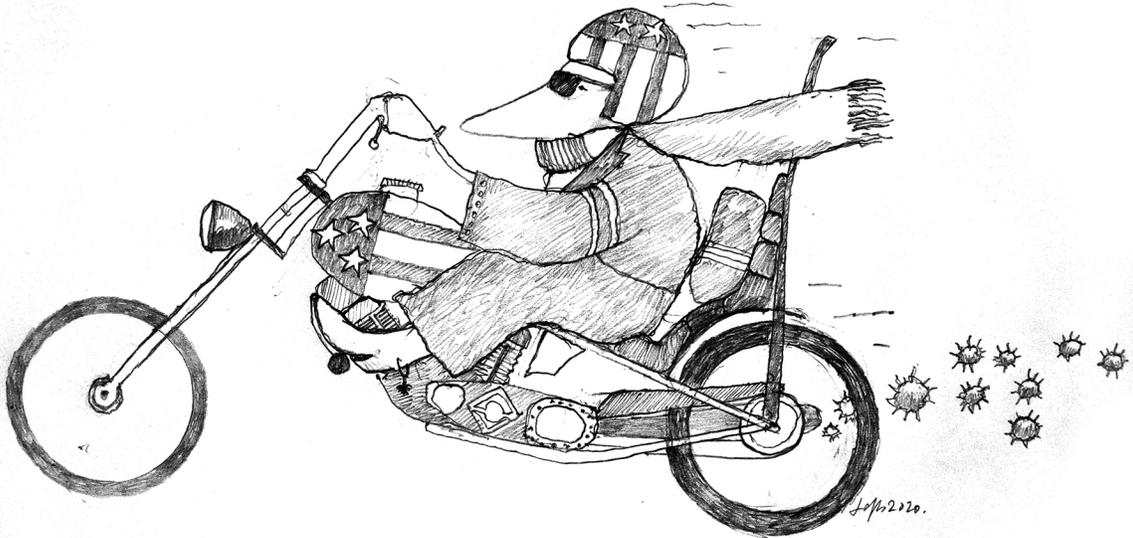


STICKY WICKET

Corona XXIII – innovation

Mole

Original artwork by Pete Jeffs - www.peterjeffsart.com

What a gloomy day. It isn't just the rain, which is happening all day, or the stack of papers, theses, and grants that I have to review (not to mention those I have to write), or the gnawing feeling that I'm forgetting something else I have to do. You see, yesterday I heard on the news that we are likely to be like this for at least another eight months, assuming everything goes well. Which, of course, is unlikely, because, well, it's a gloomy day. I want to go to the movies. I want to go to a bar. I want to be in a crowd, with good friends, listening to music. On the bright side, it isn't snowing. Now I want to go skiing.

What we need, I reckon, is some real innovation. Sure, we'll get a vaccine (I so hope), but that's (a) a long way off, (b) unlikely to give long term protection, and (c) got me worried that it will work the first time, but will be problematic the *next* time we need it (which we will). We need some really out-of-the-box ideas. Which brings me to rubber balls.

In 1987, an archeological site in the Mexican state of Veracruz was discovered, uncovering artifacts of the Olmec people, who flourished in the region from about 2500 BCE to around 400 BCE. Among the many interesting things that were found in the El Manatí site were 12 rubber balls, dating to 1600 BCE. And here's the thing: these thirty-six-hundred-year-old rubber balls still *bounced*.

Okay, I know rubber balls are *supposed* to bounce. But in the culture in which I was raised (I know, American culture is an oxymoron. Ha, ha, ha!) rubber wasn't really a *thing* until Charles Goodyear figured out how to convert latex into useful rubber by vulcanization, in 1839. Before that, rubber was pretty useless, melting in summer, freezing and cracking in winter, and suited only for short-lived toys. He was advised that "rubber is dead," and replied, "I am the man to bring it back." What a guy. What a guy-thing to say. Financing his research himself, he repeatedly went bankrupt, and spent many months in debtor's prison. But he did it.

Except that Thomas Hancock patented it in the UK in 1844, and Goodyear did not make any money (the Goodyear company is still doing very well, but it was only named for him). You might think this would get him down, but it didn't. "Life should not be estimated exclusively by the standard of dollars and cents. I am not disposed to complain that I have planted and others have gathered the fruits. A man has cause for regret only when he sows and no one reaps." Like I said, what a guy.

But more than three thousand years before Goodyear, the Olmec (and subsequently, other pre-Columbian cultures) had mastered vulcanization. They did this by mixing the sap of the rubber tree, *Castilla elastica*, with the juice of the tropical white morning glory, *Ipomoea alba* and heating the mixture. Unlike the Goodyear company, the Olmec and those who followed did not make tires, they made rubber balls. Still, it was an innovation.

But Henry Ford, who founded the Ford Motor Company, made tires. Lots and lots of tires. He needed so much rubber that he made a deal with Brazil to found the 'utopian' town of Fordlandia (clearly Henry was not a modest person) in 1928 to grow rubber trees. His 'utopia' however involved prohibition against alcohol and the serving of only American food, and the workers revolted in the 1930s, mainly against hamburgers. But Fordlandia was doomed anyway, because growing rubber trees as a monoculture in plantations made them especially prone to tree blight and predatory insects. In the wild, these trees grow apart from each other, and other trees and plants serve as a buffer against disease and predation. Not so in Fordlandia, and the expected rubber did not happen. Finally, in 1945, Fordlandia was closed down (it still actually exists, and had a bit of a growth spurt in the 2000s) and Ford never saw a hint of profit from this enterprise.

Yup, there was actually a point (you knew we'd get to one, eventually!). A couple, really. The first one is obvious – when there

is widespread disease, it is good to stay apart. Come *on*, how many times do we need to hear this for it to sink in? A few weeks ago, the tiny town of Sturgis in South Dakota, USA, hosted half a million motorcycle bikers. A convincing analysis of the consequences of that fun time was no less than 250,000 new infections. The expected costs of the increased hospitalization is so high, that it is reasoned that it would have been cheaper to pay each biker twenty thousand dollars to *stay home*.

But the other point is this: *innovation happens*, and it doesn't have to be fueled by the prospect of making money. And the out-of-the-box innovation I am seeing right now revolves around testing. We need a test that is cheap, rapid, can be done at home, and is reasonably sensitive and accurate. That is, it has to be cheap enough that a very large number of us do it routinely, that we do not have to wait for results, and will tell us if we are infected so that we can avoid infecting others. As for accuracy and sensitivity, it has been effectively argued that if we can prevent fifty percent of infected individuals from spreading the virus, we can control it. And people are working on

these. Imagine, buying a box of strip tests that we dip into saliva ('spit' if you prefer) and read out the result in a few minutes. If it is negative, it does *not* mean we are virus-free, but we can participate in socially distanced, mask-on activities. If it is positive, though, we take extra care to isolate. And we test ourselves every day. Of course, if these tests cost a fortune, we're not going to do it, but if the innovators channel their inner Charles Goodyear, and make them *very* cheap, enough of us will participate that maybe we'll get this thing, this Terrible Pandemic, in check. I hope such tests come soon. Maybe we already have them. Oh, I hope so. Really, the technology is not that hard. I bet *you* could invent one that works. I'm counting on it. And maybe we'll name a town after you.

Then we can open theaters, go listen to music with friends, go skiing, and everything else we miss. Hey, it stopped raining, and I can hear someone playing Neil Young in their yard. Come a little bit closer, hear what I have to say, just like children sleeping, we could dream this night away. Yeh, feeling better. I guess that's how the ball bounces.