

A Year With No Summer

During scary and transformative times like these, we often look to history to provide insight, answers or comfort. When have similar calamities befallen mankind in the past, and how did we react? Did new innovations result? Was there eventually a silver lining? There is one historic parallel which should be of great interest to the cycling community.

In early April of 1815, on the Indonesian island of Sumbawa — just east of today's popular resort island of Bali — a [volcano named Mount Tambora](#) began to rumble. On the 10th of April, the mountain exploded. Huge columns of fire shot from the mountain; plumes of ash and smoke reached 25 miles into the atmosphere. Superheated pyroclastic flows poured down the side of the mountain at 100 miles per hour, destroying everything in their path. 10,000 people were killed almost instantly. Nearby towns were buried with ash, enough to collapse most buildings. Soldiers 700 miles away on the island of Java, thought they heard cannons and began to prepare for war.

Ash rained down for weeks. Sources of freshwater became contaminated. Crops and forests died, eventually killing an estimated additional 80,000 people on Sumbawa and neighboring islands, largely due to starvation. By the time the Tambora finally subsided, the mountain had lost 5,000 feet of elevation, and had spewed out an estimated one hundred cubic kilometers of molten rock as ash and pumice—enough to cover a square area one hundred miles on each side to a depth of almost twelve feet.

Mount Tambora's eruption was the deadliest in recorded history, and was the tipping point for one of the most wide-ranging subsistence events ever to affect humankind. It capped off a series of earlier eruptions, leading into a “volcanic winter.” The smaller ash particles and heavy sulfuric gases which blasted into the high atmosphere persisted for months, blocking sunlight and cooling the earth by more than five degrees Fahrenheit.

The so-called “Year With No Summer” which followed would have an unprecedented and profound global impact. Rain patterns changed and crops failed, leading to famines in many parts of the world. Food riots destabilized otherwise civilized and calm countries, while outbreaks of cholera and typhus due to abnormal flooding and water-borne diseases devastated other areas. China experienced crop failures and disastrous floods; a disruption in the summer monsoon led to a cholera outbreak which extended all the way from southern India to northern Europe.

Failing crops and rising prices also threatened farmers in the eastern United States. Most U.S. grain prices at least quadrupled, and oat prices increased almost eightfold during the recurrent freezes throughout that summer. The threat of starvation and widespread economic hardship redefined national identities, and across the world, drought, financial panic and lack of food goaded many to desperation. Suicides rates skyrocketed.

But, like in any challenging time, circumstances also led to new creativity and human developments. Perhaps the most famous example: the near-constant rain and storms which battered Europe inspired Mary Shelley to write *Frankenstein*, a horror novel set in an often stormy environment. And in North America, thousands and thousands of families began to leave New England for what they hoped would be a more hospitable climate west of the Ohio River, rapidly pushing into the American heartland.

There were other forms of innovation and ingenuity. As the price of grain increased, it became more expensive for people to feed their horses. Because horses were at that time the main mode of transportation, travel costs also increased. And this may have been one of the factors that pushed Karl Drais, an intrepid German inventor from the town of Karlsruhe, towards a new invention which would change the world.

Unable to afford to feed his horses, he created a device that became known as the “draisienne” – a two-wheeled machine which would allow people to travel great distances under their own power. Similar in form to a child’s balance bike, the draisienne had no pedals but it allowed a person to sit astride two wheels and propel themselves using a walking motion, steering the contraption’s forward motion with a rudimentary steering bar for the front wheel.

History records that [Drais famously made a nine-mile round trip](#) journey in Mannheim on June 12, 1817 in a little more than an hour – about four times faster than the typical travel time. According to the German Culture website, this day can rightfully be seen as “the big bang for horseless transportation.” (The eccentric Drais later invented the typewriter and the meat grinder, but died penniless in 1851.)

Drais’s invention quickly gained widespread attention as versions popped up in France and England and became known as the “velocipede” or “dandy-horse.” However, when it became apparent that most roads were too rutted by horse-drawn carriages to balance on the velocipede, users moved onto the sidewalks and began to endanger pedestrians. (Think rideshare scooters today.) Consequently, many local and national authorities banned the velocipede because of danger to pedestrians. Only in the latter half of the 19th century, with the advancement of a drivetrain, did our favorite form of personal transportation and freedom begin to take its current shape with the first “safety bicycles.”

Today, we are experiencing another global calamity, which will again affect all facets of the human experience. It is still early in this pandemic, and the context may be different, but there will be a similar disruption to our personal, societal, and economic norms. Many will die, and all will be personally and collectively changed. The full impacts of COVID-19 are yet to be measured, and it will be years before there is a clear picture of the damage done.

Yet, it was the adversity of a global catastrophe over 200 years ago that led to the very innovation which brings our community together today. From the perspective of pro cycling – and indeed all sports fans around the world — 2020 may be our year with no summer. But the evolution of sport can not stop; innovation and ingenuity will lead to new ways of participating in and enjoying our pastimes.

The bicycle’s definition as a “freedom machine” is already taking on an expanded meaning. Many people in essential jobs are choosing to ride to work to avoid crowded conditions in public transportation. Depending on where you live, responsible outdoor riding is still possible to combat the “cabin fever” which many are experiencing. And Zwift, which we have profiled previously, has filled a gap by providing a [reliable indoor training platform](#), while stitching together a virtual social fabric connecting riders all over the world.

Perhaps the pandemic can serve as a backdrop for us to reconsider how our sport is structured and played out. After all, adversity is often called the “mother of invention.” The postponements and cancellations across sports will undoubtedly lead to new and different formats when it is safe to reconvene competition. Similarly, cycling should shift into high gear, and consider new reforms and structural improvements as it rebounds from the pandemic – new ways of staging and viewing competitions that are economically feasible and sustainable into the future. Our year without a summer doesn’t have to be just a hardship; instead, it can also be a defining moment that brings together all of the sport’s stakeholders to investigate and embrace lasting changes.

In writing this story, we drew heavily upon sources: [Scientific American](#) and [Smithsonian](#) magazines.

By Joe Harris and Steve Maxwell, March 30th, 2020.