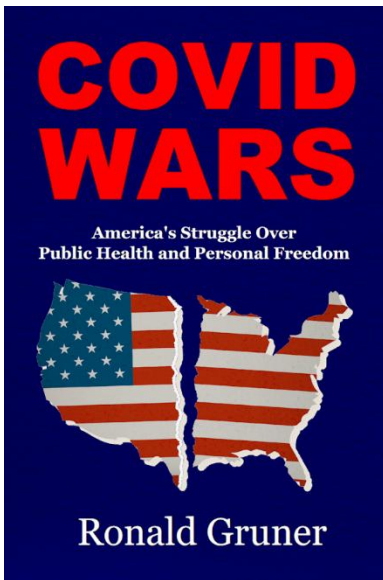


Excerpted from

COVID WARS

*America's Struggle Over
Public Health and Personal Freedom*

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Early Coronaviruses

The precursor of the virus responsible for the COVID-19 pandemic was discovered in 1965, isolated from the nasal swabbing of a child with a common cold. Unlike earlier, virologists could now use powerful, new electron microscopes to study the tiny pathogens.

What they saw was remarkable. The new virus was roughly spherical with numerous club-like protrusions extending outward from its surface. Some saw the protrusions as similar to solar corona, the hot gases ejected from the surface of the sun. Others likened the protrusions to the spikes adorning the top of crowns. A more accurate analogy, though, would be a medieval battering ram. But rather than attacking castles, the

virus's spikes were used to weaken the walls of healthy cells, allowing the virus to invade the cell and replicate itself.

The new strain of viruses were named coronaviruses. Seven coronaviruses have, to date, been discovered. For nearly forty years coronaviruses were thought primarily to infect animals. That changed in November 2002 when a deadly coronavirus, SARS CoV-1 (Severe Acute Respiratory Syndrome CoronaVirus 1), emerged in the Guangdong Province of China.

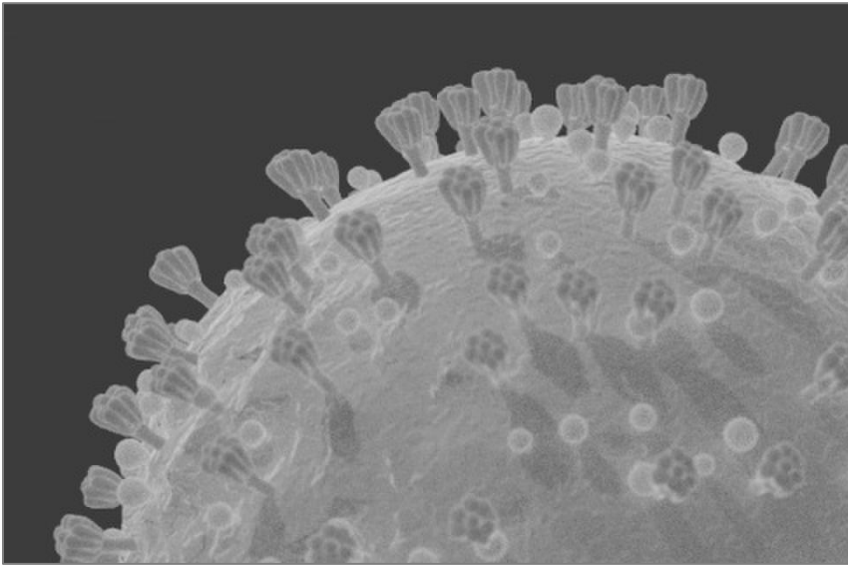


FIGURE 1-3: A computer-generated representation of a COVID virus under an electron microscope. The protrusions extending from the surface attach to the walls of healthy cells allowing the virus to penetrate the cell and replicate itself. UCLA | FELIPE ESQUIVEL REED

Travelers soon spread the virus. One super-spreader from Guangdong infected sixteen fellow travelers staying at Hong Kong's Metropole Hotel. The travelers then spread the virus

to Canada, Singapore, Taiwan, and Vietnam. SARS was not especially contagious, spreading mostly through close contact in hospitals, restaurants, and hotels. Unlike the COVID-19 outbreak twenty years later, SARS was most contagious when the carrier was symptomatic and typically isolated.

Over the next eight months, the World Health Organization estimated that 8,096 people contracted the disease, 774 of whom died representing an overall death rate of 9.6 percent. Few aged twenty-four years and younger died, less than 1.0 percent. But for those over sixty-five, contracting SARS was nearly a death sentence: 55 percent died once infected.

It would be fifteen years before scientists located the source of the virus that triggered the SARS outbreak. In 2017, researchers from the Wuhan Institute of Virology found a remote cave in Yunnan province that was home to horseshoe bats. The bats carried a coronavirus strain nearly identical to that which triggered the SARS outbreak. Rather than passing the virus directly to humans, the bats passed the virus on to wild animals, notably civet cats, a small nocturnal animal related to the mongoose. The animals, caught in the wild, were then sold in “wet markets,” which specialized in exotic, fresh meat.

The consumption of wild animals is common in China and Southeast Asia. It’s been estimated the Chinese market for wild animals is larger than the American beef industry.

Snakes, civet cats, and pangolins are particularly popular. (A civet cat is a small, mostly nocturnal mammal dwelling in tropical forests. Pangolins, often called scaled anteaters, are solitary mammals that live in hollow trees and burrows.) According to the British medical journal, *The Lancet*:

The civet cat has long been considered a delicacy, valued for its “nutritious” meat, particularly in the winter months in southern China and Vietnam, with some tourists travelling to those regions specifically to eat civets and other exotic animals. . . . A survey done in Hong Kong in the late nineteen-nineties found that over 50 percent of respondents had eaten wild animals with the most common animal consumed being snakes, followed by civet cats (30 percent) and pangolins.

The next coronavirus outbreak occurred a world away from the humid jungles of Southeast Asia. In June 2012, the first case of MERS-CoV (Middle East Respiratory Syndrome CoronaVirus) was discovered in Jeddah, Saudi Arabia.

The virus was spread primarily by dromedary camels rather than human contact. The Saudi Ministry of Agriculture issued an advisory to stay away from camels or wear a face mask when around them. Many refused to comply. No animal is more beloved by Arabs than the camel. With their long eyelashes, smiling mouth, and graceful stride, camels are known as the “swan of the desert.” Rather than shun the animals, many fondly kissed their camels on social media in

defiance of the ministry's order. It is not known how camels acquired the virus, although bats, immune to the virus they're harboring, are suspected to have been the original carrier.

Unlike the SARS outbreak which lasted less than a year, MERS has been persistent, and much more lethal. Although human-to-human transmission is rare, it often occurs in health care settings where the MERS virus can spread to vulnerable individuals. From 2012 through 2022, the World Health Organization reported only 2,600 laboratory-confirmed cases of MERS with 84 percent of the cases confined to Saudi Arabia. During that period, 935 died of the disease, a staggering death rate of 36 percent.

The SARS and MERS outbreaks together killed several thousand people. A tragedy at the time, but viruses were constantly evolving as they had for millennia. By 2019, an airborne virus had evolved (or perhaps been created) that spread asymptotically, silently infecting its unsuspecting victims. Over the next five years, the new virus, the most lethal since the 1918 Spanish Flu, would claim more than seven million lives.
