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December 7<sup>th</sup>, 2020

Their fluids are sweet.

The ancients relied on the senses of ants to identify those wasted creatures destined for an early grave, their thirst unquenchable as water drained from their bodies in excess. Sugar lingered on the tongues of the water tasters.

The kidneys were at fault.

Sushruta named it *madhumeha*. In China, it was *xiāo kě*. The Greeks—whether Apollonius of Memphis or Demetrius of Apamea or Araetus of Cappadocia—named it *diabetes*.

*Diabetes*, the unstoppable siphoning of life. *Mellitus*, the honey that drew the ants, a whimsical addition by medieval physician Thomas Willis, centuries after the Greeks were gone. A sweet death sentence that began in the blood.

Claude Bernard of the *Empire français* knew the lungs were to blame—no, the liver. It was the liver that hoarded glycogen, transforming it into glucose to release into the bloodstream. Or, perhaps, the brain was the culprit? *Piqûre diabétique*. Yes, the brain.

But Bernard could not test on human patients.

Dogs are terribly useful beasts. Unwavering obedience and loyalty to their masters, rewarded with death by vivisection. They eagerly ate the carbohydrate-rich diet, unaware that it would be their last meal. Like cane, they were struck down in pursuit of sugar.

They were robbed of their pancreases, forcing the development of diabetes in their unaware bodies. Reprieve was found only in the injection of pancreatic tissue under their skin, but that reprieve was short-lived. That tissue, too, was stolen from them, leaving only death.

It was 1889, and Oskar Minkowski and Joseph von Mering now knew the pancreas was at fault. But that deadly sweetness could still not be stopped.

Starvation! That was the key. Canned asparagus, cabbage, cooked onions, raw celery, spinach—paired with regular exercise (if one even had the energy, of course), Frederick M. Allen and Elliott P. Joslin insisted that life could be extended for those unfortunate diabetics. Indeed, the reduction in glucose levels was beneficial. As for the cases of inanition, well...

Was there not enough misery in the midst of the Great War?

Frederick Banting and Charles Best knew the pancreas had to hold the secret to treating diabetes. And in 1921, dogs remained plentiful.

Ligate the pancreatic ducts to atrophy the exocrine region, remove the withered pancreas after ten weeks, crush the glands in a cool mortar, and freeze in salt water. Grind it down, mix with physiological salt. Inject the dog with this transmogrified organ and wait two hours.

*Success.* The sugar decreased.

But the islet cells of a dog were not enough to extend life beyond seventy days. A better source was needed. A younger source.

The embryos of cows, discarded upon the slaughter of their mothers, were abundant in islet cells. But this crude concoction needed refining before it could be tried on humans. James Collip and his skill in chemistry was needed to perfect the extraction and purification of the isletin.

Isletin? No, *insulin*, declared John Macleod. Although not his discovery, it was his laboratory, and thus insulin the elixir was named.

And now the true test. Who would undergo the first trial? Unlike dogs, which could undergo experimentation without public outcry, humans required more delicacy. Luckily, desperation fosters a willingness to submit to almost any treatment. Fourteen-year-old Leonard

Thompson was already wasting away from his diabetes and strict diet, so what was a simple injection?

But the injection only worsened his condition, leaving abscesses in its wake. What worked on the dogs did not work on the boy.

Collip hastened to further refine the insulin, a race against Leonard's ever shortening lifespan. The second injection, nearly two weeks later, was a success. The boy could live on.

After centuries of mystery and suffering, that persistent sweetness finally had a worthy opponent.

Animal death continued to allow human life as insulin reached the market. Rather than a single chemist, it was now the role of manufacturers to alter insulin to best suit patients. First slower acting, then synthetic, biosynthetic, ultra rapid, ultra long acting, inhalable, implantable. A range of insulins to suit any need and lifestyle.

No longer is that sickly sweetness a sign of imminent death. Now, there is hope—a promise of life.

And someday, hopefully, a cure.