

New Science

By W. M. Hughes

There I was, a chubby, self-conscious nerd, standing in front of my ninth grade science class at North Junior High School, about to deliver the dreaded oral report. Public speaking is the bane of existence for millions of insecure adolescents, and on cue, I was nervous as a cat in the dog pound. However, I would soon expound on a newfound topic that filled me with passion for discovery, and I was confident my enthusiasm would be contagious.

Our assignment, the crowning event of the entire semester, was to speak on a suitable scientific topic of our choice for five minutes. I was fired-up and ready to go after weeks at the Everett Public Library and home preparing for my verbal presentation. My hands nervously gripped a thick stack of three-by-five cards, sequentially numbered, and bound in order by a sturdy rubber band. They contained my carefully-written talking points, including names of famous scientists and a vocabulary of scientific terminology.

An elective, and more difficult than many classes, ninth-grade science was a broad, high-level survey of several fields, including anatomy, astronomy, biology, chemistry, geology, and physics. A good grade took more than merely showing up every day and smiling at the teacher. For some, science laid the groundwork for higher-level studies, and for a few it opened the door to future careers. I thought I would like to become a scientist one day.

After all these years, the name of our teacher eludes me, and it is unlikely he still lives. However, I remember him as a large, yet modest man in his late-forties, whose presence and deep voice commanded respect in the classroom. I knew the man standing before us was passionate about his discipline and craft. I studied him carefully, maybe to see what made this man of science and letters tick, hoping some of that magic might rub off on me. In the years since, I have also grown to consider his likely frustration over the cultural, legal, and district policy constraints of his times, and appreciate the risk he took for us that day.

As I had prepared my report it became obvious I faced a serious problem, but I let my enthusiasm for the topic conveniently push it aside. All my hard work had produced a presentation far too long for the brief time allowed. I was about to stuff

forty pounds of report into a five- pound sack, or more correctly, forty minutes into five. All my dry runs proved I needed at least ten minutes instead of the allotted five, and only then if I skipped three-quarters of my report. I knew there was no way in hell this could end well, and despite my hard work, I abandoned all hope for a good grade. I steeled myself for the sharp rebuke I knew was coming in front of the class, for my blatant disregard for the five-minute limit. Still, the risk was worth it in exchange for the breakthrough I would soon make for all humanity.

It was 1964, and we were indoors on a beautiful, sunny, late-spring afternoon. The wood framed, multi-paned windows of our classroom were open wide, and the pull-strings dangling from old-fashioned window blinds danced in the cool breeze. The sounds and smells of the warm day outside gently wafted about the room. In the distance we could hear the low growl of gasoline mowers, as the school district's lawn crew manicured the grounds surrounding our campus. A stray honeybee occasionally flew in, before quickly exiting back outside to the bright light of day. The smell of freshly mowed grass was intoxicating after months of winter spent indoors. We longed for summer vacation.

It had been a tumultuous year for us, if not a traumatic one. Our beloved President John F. Kennedy had been cruelly assassinated by Lee Harvey Oswald only months earlier, for reasons we would never understand. The segregated South seethed with racial tension, hatred, and violence, all foreign to our quiet corner of the nation. The Cold War marched on, with our eventual nuclear annihilation seemingly assured, and the first shots of the Vietnam War had already been fired. The Space Race between the United States and the Soviet Union was in full swing, and both had sent men into space for the first time in human history. The Beatles had suddenly appeared out of nowhere, signaling the start of the British Invasion of American pop music and culture. The world we knew was changing fast, and little did we know, it would never be the same.

Time and space stood still as I grimly awaited my cue to begin. When it came, my short life flashed before my eyes, and there was no turning back. A lost honeybee buzzed about my head, probably wondering if it should sting me on the ear and put me out of my misery.

I began slowly, offering a summary of my topic. I described my accidental discovery of this vast and impressive body of knowledge, obviously overlooked by our textbooks and teachers, which I now intended to share with my classmates. I was stunned that such brilliant work by so many remarkable scientists had seemingly gone unnoticed. I was certain the class's interest in these startling

revelations would equal my own. Together we would spread the word, enlightening the world with our discovery of this grievous oversight.

My eyes darted between my notes and the watch on my left wrist, as I continued. I saw my time was up, yet I had barely begun. The teacher signaled his approval to continue, and a wave of reassurance washed over me.

My confidence grew, and the presentation more energetic. I described the emergence of primitive life from the primordial ooze of a young planet Earth, evolving from one single-celled species into a myriad of complex plants and animals over three billion years. I waxed eloquently about earth's Proterozoic Era, and the following Phanerozoic Eon, with its three major geological eras: the Paleozoic, Mesozoic, and Cenozoic, producing a profusion of life. I discussed the science of paleontology, and the study of fossils, which today represent but a small fraction of the countless and diverse life-forms that have lived on earth.

After talking for twenty-minutes, I was only halfway through my notes. I feared the teacher was furious, but the look on his face said otherwise. Still, there was a deep sense of relief when he signaled me to continue. I felt unstoppable.

I droned on, marveling at the age of dinosaurs, their extinction, and the rise of birds and small mammals. I launched headlong into the travels and observations of Charles Darwin, whose discoveries in the Galapagos Islands and elsewhere led him to write *On the Origin of Species*, postulating the theory of evolution through natural selection, or survival-of-the-fittest. I described how environmental causes like radiation, chemicals, hybridization, and parasites, also affected rapid mutations, sometimes in unexpected or unpleasant ways.

Thirty minutes had now passed, and I was still gaining momentum. I expected the teacher to declare an abrupt end to my report at any moment, but it never came. Instead, he again uttered his quiet approval. My classmates sat before me in silence, and I was certain they enjoyed the drama of my impending doom. I hoped the class at least found my topic interesting, but suspected they were all bored witless—daydreaming about summer vacation, and waiting for their own misery to end. I will never know.

I launched headlong into the grand finale of my report. It was the part I found most thrilling, not only for the sheer weight of its discovery, but for the dense shroud of scientific mystery I sensed surrounding the topic. This science was clearly powerful, yet obviously so new it had not found its way into our textbooks

and classrooms. Again, the teacher told me to go on, and the class quietly leaned forward in anticipation. This was heady stuff, indeed.

My dissertation had turned at last to the origins of man, and human evolution. I described the probable ascendance of man from a single ancestor, commonly known as the missing link, and once thought to bridge the gap between primates and humans. I painted a mental image of four-legged creatures evolving to walk on two legs, and descending from the trees to run across the plains. I revealed the discovery of *Homo erectus*, and how humanoid remains suggested the roots of human life sprouted many branches before yielding Neanderthal, Cro-Magnon, and finally, modern man.

The bell rang, and class abruptly ended. To my relief, there had been no admonishment for my forty-five minute epistle on this incredible new topic. No tongue-lashing, ridicule, or humiliation. To the contrary, the teacher directed everyone to stay put for a moment longer, allowing me to make a few closing remarks. It was over, and we never discussed evolution in class again. As if by some miracle, I also received an A-plus on my report card.

In 1925, Tennessee Governor Austin Peay signed the Butler Act into law, making it illegal to teach the theory of evolution in that state's public schools. The act was intended to win over rural voters like its namesake, John Butler, a farmer who admittedly knew nothing about evolution but who considered it dangerous blasphemy. Soon afterward, a 24-year-old high schoolteacher named John Thomas Scopes was charged with violating the new law. In *The State of Tennessee v John Thomas Scopes*, the Criminal Court of Tennessee found him guilty, declaring the word of God, as written in the Bible, overruled all human knowledge on the subject of man's origins. The stunning result of that decision, often called the Scopes Monkey Trial, was a ban on teaching evolution in all American public schools until the U.S. Supreme Court overturned it in 1968.

Nearly ninety years has passed since Scopes, and over forty years since the Supreme Court overturned that ruling. Despite the overwhelming preponderance of scientific evidence, this issue remains inexplicably controversial. Conservative religious forces continue fighting to restore the ban on teaching evolution in American public schools, and to further prohibit other subjects they consider inconsistent with the Bible.

Unknown to me on that warm spring day in 1964, my science teacher was prohibited from lecturing on evolution, under penalty of law. However, I'm confident he was keenly aware there was no such rule preventing me from sharing my new found knowledge on the controversial subject. I had unwittingly delivered the lecture he could not, and I think he was delighted.