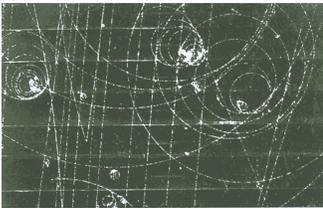
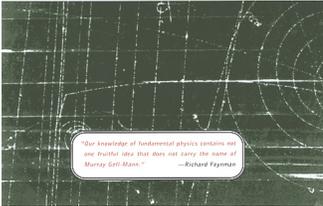


STRANGE BEAUTY: MURRAY GELL-MANN AND THE REVOLUTION IN TWENTIETH-CENTURY PHYSICS

by George Johnson
Alfred A. Knopf, 1999
434 pages



STRANGE BEAUTY
Murray Gell-Mann and the Revolution in Twentieth-Century Physics
GEORGE JOHNSON



by David L. Goodstein, Professor of Physics and Applied Physics, the Gilloon Distinguished Teaching and Service Professor, and Vice Provost

One day when he was four or five years old, Murray Gell-Mann was given some ancient Roman coins by a relative named Israel Walker, who explained they were from the time of the Emperor Tiberius. Murray corrected Israel's pronunciation of Tiberius, nearly earning a punch in the nose, then examined the coins and pronounced that they weren't from Tiberius's reign at all, but rather from that of a later emperor. The story, true or not, has many meanings. Murray was a prodigy, and Murray was insufferable, and Murray was irresistible, and not a thing has changed in the 65 or so years since then.

Strange Beauty is a biography of Murray Gell-Mann, one of the great theoretical physicists of the 20th century, written by George Johnson, a *New York Times* science writer,

who happens to live in Santa Fe, where his subject has lived since retiring from Caltech. In a prologue Johnson tells us of the difficulty of getting into the good graces of his neighbor, made wary not only by his life-long disdain of journalists, but also by his vague thoughts of writing an autobiography of his own. I'm glad Johnson succeeded.

For me, reading this book was like being the child accidentally locked overnight in a toy store. Not only did I know Murray from the many years we were colleagues on the Caltech physics faculty, I know many of the other characters in the book, and many of the stories Johnson has to tell were new to me. Simply put, I had a ball reading this book. But how will it appear to a less privileged reader?

In writing this book, Johnson had a monumental problem to solve. His subject, although in many ways an admirable man, could come off as little more than a petulant, over-bright, overgrown child of little importance, except for the extraordinary contributions he made to our understanding of the ultimate constituents of matter. Thus, there could be no biography of Murray Gell-Mann without telling the story of his physics. Explaining 20th-century physics to the uninitiated is one of those tasks of legendary difficulty, tried by many, accomplished by few. But Johnson must do it incidentally, on the way to an even more daunting purpose: explaining Murray Gell-Mann. What is a normal person to make of renormalization, current algebras, Yang-Mills theories, and the Higgs Boson? Johnson penetrates all this, hardly ever falters in telling the story, and still makes the people, the quirks and not the quarks, the stars of the show. It is

an altogether impressive performance.

Many people who know Murray assume he invented his own last name. After all, his older brother is just plain Ben Gelman, and Murray has a knack for inventing names that capture the imagination (quarks, the eight-fold way, quantum chromodynamics). But Murray was born in Manhattan already hyphenated, on September 15, 1929. It was his father, Arthur, an immigrant from Galicia and Vienna, somewhat pompous and never very successful, who had inserted the hyphen. The Gell-Manns were never well off, and grew poorer with Arthur's failures, but Murray's potential was noticed early on (it was hard to ignore), and he won scholarships, first to Columbia Grammar, then to Yale. When he graduated, somewhat later than necessary at the age of 18, neither Yale nor Harvard made him an offer he couldn't refuse for graduate school, so he wound up in the somewhat grubby halls of MIT. His subsequent career took him to the Institute for Advanced Studies at Princeton (Harvard had snubbed him again), and then to Chicago.

Chicago had, perhaps, the best physics department in the world, but it was a cold place, and it got even colder when, in 1954, the great Enrico Fermi died. Murray wrote, inquiring about job prospects, to a theoretical physics acquaintance, a man of incredible intensity and manic energy named Richard Feynman. Soon Murray and his reluctant bride, Margaret, settled in smoggy Pasadena.

With Feynman and Gell-Mann both in residence, Caltech became the center of the universe for theoretical physics. Gell-Mann repeatedly came up with ideas that were both profound and far-reaching. Feynman, with his

more heuristic style and more eclectic taste in physics problems, continued to amaze and delight. Feynman won a share of the 1965 Nobel Prize. Gell-Mann got one all for himself in 1969. The two collaborated, competed, squabbled, and bantered. When both attended the same seminar, the air was electric and the speaker was in danger of being forgotten.

In the meantime, both nurtured and burnished personae designed to set them off from us mere mortals. Feynman hung out in topless bars, where he flirted with and sketched the dancers. Gell-Mann learned a few words of nearly every language on Earth and became a serious birdwatcher, conservationist and collector of art. As his fame grew, his talent for verbal jabs came unleashed: when Feynman struggled with a new theory of what he called partons, Murray mocked them as “put-ons” (they later turned out to be Murray’s quarks, plus gluons, the particles that hold quarks together). My own field he sneered at as “squalid-state physics” (Feynman actually made important contributions to squalid—er—solid state physics). It was clear that, without any doubt, Murray Gell-Mann was the smartest person on Earth, except maybe for the guy in the next office.

A few months after Richard Feynman died in 1988, a memorial was held in his honor. In the way these things are done at Caltech, it was to be a celebration of his life rather than a lament for his death. Murray Gell-Mann was listed as one of the speakers. But Murray didn’t show up. Many of us in the audience, me included, thought that Murray’s feelings about Dick were so conflicted that he couldn’t bring himself to speak.

As it turned out, the reason

was quite different. Murray was more or less under arrest because a raid on his home had revealed precious Indian artifacts that had been smuggled out of Peru, and bought by Murray from a charismatic but shady dealer. The incident was eventually straightened out, and Murray even became something of a national hero in Peru for returning the artifacts voluntarily.

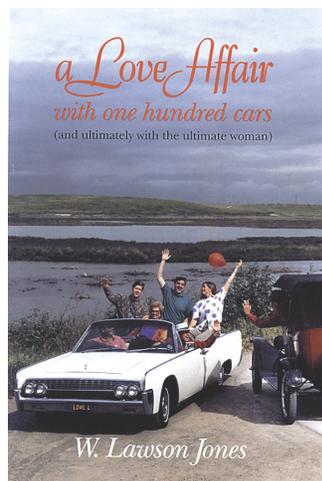
I don’t envy Murray the weird experience of reading so penetrating and perceptive a biography of himself. Murray Gell-Mann is a towering, historic figure who will be remembered down through the ages, but he is also a living and breathing human being with hang-ups and problems just like you and me. What a story!

George Johnson has written a fine biography of this important and complex man. □

A LOVE AFFAIR WITH ONE HUNDRED CARS

by W. Lawson Jones

180 pages



In 1940, Lawson Jones (BS '43) and some pals dismantled a 1923 Model T (purchased for \$8) and re-assembled it, running at full throttle, in the Ricketts room of an unfortunate colleague who was out on his first date. The first legend in *Legends of Caltech*, this was a stunt that set the stage for countless Ditch Day reprises.

This was not Jones’s first car, however. He began his Caltech career with a 1934 Ford V-8, which he rented out for dating, and went through a 1935 Pontiac Silver Streak (a bargain that he found abandoned in a Caltech parking lot) and a 1928 Willys Knight (\$25), before graduating the proud possessor of a sexy 1935 supercharged Auburn four-door convertible—but not for long. He commenced upon a career of ownership that spanned 88 automobiles (a few borrowed ones make up the full 100), new and used, Detroit-born and foreign, most of which were in some way, well . . . funny.

At least Jones makes them amusing to read about. How

many people do you know who actually had the nerve to buy (*new*, no less) such novelties as a Borgward, an Edsel, a Kaiser, and a three-cylinder Daihatsu? And loved them all—especially the 1969 Renault R16, not to mention the Lincoln, the Studebaker, the Rambler, the Graham (the *Graham?*) . . .

Jones clearly learned to write somewhere (could it have been at Caltech?) as well as to restore and dismantle automobiles, and though he once dreamed of a career designing cars in Detroit, went into the advertising business in Silicon Valley instead. Among his clients was Fairchild Semiconductor; he sold the Borgward to Robert Noyce, Fairchild president and later cofounder of Intel, who had been driving a boring 1941 Ford. Jones moved on to a Citroen DS19.

As for the subtitle, when Jones first met his second wife, he was enchanted until he met her nine-year-old Ford Falcon (yes, boring again) in the parking lot. But he gave her a “beautiful baby Buick” Skylark, and they lived happily ever after.

His book has been making the rounds of his fellow alums, several of whom recommended it to *E&S*. To order it, contact the Schobert Publishing Co., 537 Tyndall Street, Los Altos, CA 94022.

Today Jones drives a Saturn. □ —JD