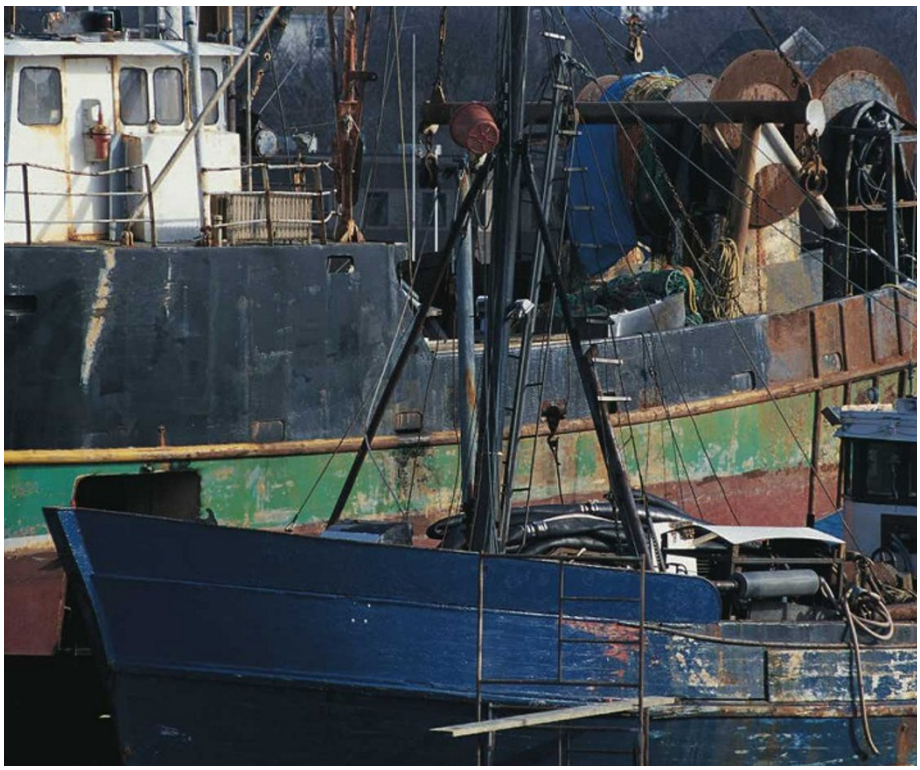
BOOKS & ARTS

The end of the line?

A spotlight on the historic US fishing port of Gloucester fails to capture the complexity of the fisheries collapse caused by overexploitation and regulation, says **Daniel Pauly**.

The Last Fish Tale: The Fate of the Atlantic and Survival in Gloucester, America's Oldest Fishing Port and Most Original Town
by Mark Kurlansky
Random House/Jonathan Cape: 2008.
304 pp. $25.00/£16.99



NEWSCOM

Net profit: efficient trawler technology has led to dwindling stocks of fish such as cod.

In his new book, Mark Kurlansky follows a formula that has served him well in earlier works on cod, salt, the Basques and oysters: pick a seemingly mundane maritime topic, dig deep into the historical archive for savoury anecdotes, add a sprinkling of cooking recipes and serve it up with a *bon-vivant*'s style.

The Last Fish Tale is the story of Gloucester, Massachusetts, the oldest fishing port in the United States. Kurlansky spotlights this New England town to investigate the decline of Atlantic fisheries. He describes Gloucester's fascinating history, a product of its insularity and island geography, its strong egalitarian identity and the large number of fishermen, drawn from a succession of immigrant communities, lost at sea. With rich ingredients and engaging writing, the book should work. Readers might agree that the loss of yet another diverse, insular culture is bad. But Kurlansky listened to too few voices, and his resulting picture is unbalanced.

My confidence was shaken early in the book. Kurlansky tells us that, in 1602, the explorer and privateer Bartholomew Gosnold remarked that "the fish were far bigger [in New England] than those in the north". The author repeats this fact throughout the book, even though Gosnold is apparently its only source. Twentieth-century ichthyologists demonstrated that the opposite is true. By studying the maximum sizes of various fishes, they showed that fish grow larger, all other things being equal, in the colder waters at the poleward ends of their range. This error matters: sources must be checked against others to avoid drawing the wrong conclusions.

After describing the town and its denizens, the author explains how Gloucester ran out of fish, especially Atlantic cod. The decline of this once-abundant species was partly caused by the success of the schooner-based fishery, which, even though it relied on wind power, harvested enough to reduce the stock. Bottom trawlers dealt the *coup de grâce*. Kurlansky recalls the introduction of the murderous trawling gear in Gloucester where, as elsewhere, it was first viewed with suspicion, then adopted because its effectiveness was irresistible. This simple explanation should suffice: the cod declined because of overfishing.

Yet Kurlansky demurs, and hints darkly at other causes. When we accompany him to Newlyn, a fishing town in Cornwall, UK, which he presents as Gloucester's Old World doppelgänger, we meet fisheries regulators who cannot tell a bass from a cod. "Newlyn vessels had been landing more than their quota of cod, hake, and monkfish by labelling them ling, turbot, and bass — fish for which there were no quotas," he states. That it took five years for the regulators to discover this, Kurlansky says, indicates how little they know about fish. Yet it is just as likely that these officials were tolerating an illegal practice, as is common in fisheries worldwide.

Like the Gloucester fishermen, Kurlansky believes that bureaucrats from the US National Marine Fisheries Service cause the problems, not fishing practices. The stocks may have disappeared but the fishermen have not, and everybody is looking for the crumbs of a vanished pie. Although the author tells us at length about the antics of the fishermen at Gloucester harbour festivals, such as competitive scrambles along a greasy pole, he does not tell us how, in that same harbour, two fisheries regulators were hanged in effigy in 1999. These officials wanted only to reduce the pressure on vanishing stocks, prevent further declining resources, and keep the fisheries going.

As Kurlansky's informants did not deliberately mislead him, this case does not mirror that of anthropologist Margaret Mead misreporting on the sexual mores of Samoan youths. Rather, it is a case of shared delusion, similar to that of John Edward Mack, the Harvard University psychiatrist who studied people who believed they had been abducted by aliens. Adopting his subjects' obsessions, he wrote a book arguing that cosmic kidnap was real.

These are strong words, particularly as I liked and learnt from Kurlansky's previous books. But *The Last Fish Tale* fails to explain the dual roles of the fishermen as both victims and ferocious drivers of the overfishing

behind the collapse of the Gloucester and New England fisheries. Until we reveal these dual roles and the ensuing pathologies, there will be no rebuilding, no renewal of the fisheries.

I suspect that this book, ironically, will find popularity among the tourists who flock to a gentrified Gloucester. Under Kurlansky's disapproving gaze, they will gradually displace the fishermen, as in most fishing towns around the north Atlantic. Visitors to Gloucester will love the book and the town's many charming features described in its pages. They will think of the fish and shake their heads at such a loss, still failing to understand. ■

Daniel Pauly is professor of fisheries and director of the Fisheries Centre at the University of British Columbia, 2202 Main Mall, Vancouver, British Columbia V6T 1Z4, Canada.

Making genetic history

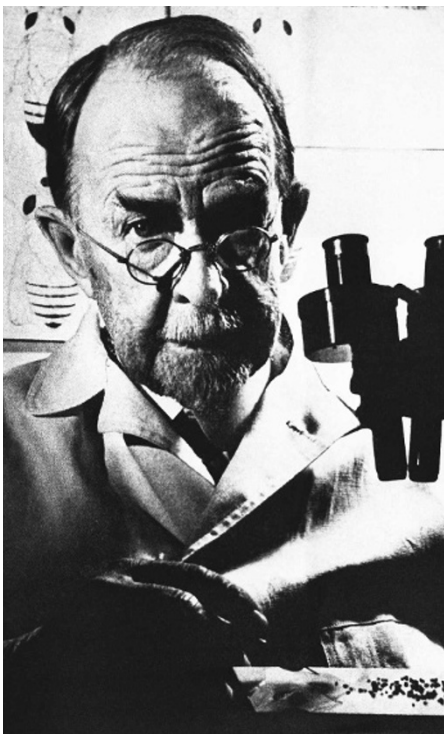
In Pursuit of the Gene: From Darwin to DNA
by James Schwartz
Harvard University Press: 2008. 384 pp.
$29.95, £19.95, €22.50

When I was a student, 'doing genetics' meant crossing two different strains or species. Now it means sequencing DNA, preferably human. Between these two poles lies the history of genetics, a pathway fraught with sharp turns, steep gradients and dead ends — and engagingly recounted in James Schwartz's new book.

Despite its subtitle, *In Pursuit of the Gene* is not a comprehensive history of genetics, but focuses solely on classical genetics. Schwartz, a science writer, begins with Charles Darwin's ill-fated 'pangenesis' theory of the inheritance of acquired characteristics, and runs through the rediscovery of Gregor Mendel's work on inherited traits. The story continues with the consolidation of Mendelism and chromosomal inheritance by Thomas Hunt Morgan and his students in the 'Fly Room' lab at New York's Columbia University, where modern genetics began, and concludes in 1946 with Hermann Joseph Muller's Nobel Prize in Medicine for inducing mutations with X-rays. Later history, from the discovery by Oswald Avery and colleagues that DNA was the 'transforming principle', to the Human Genome Project, is squeezed into a 12-page epilogue. Those seeking a history of molecular genetics should read Horace Freeland Judson's magisterial *The Eighth Day of Creation* (Simon & Schuster, 1979).

Many histories of genetics cover the same ground. What distinguishes Schwartz's account is his impeccable scholarship, based on many primary sources, and his ability to keep the narrative moving, interweaving discoveries with the strong and eccentric personalities who made them. He does not slight the science, describing experiments in detail so dense that the reader is advised to keep a pencil and paper handy. The effort required to understand the book may, sadly, remove it from the ambit of popular science.

The book's apogee is its tale of the "Mendel Wars" around the beginning of the twentieth century, the struggle to bring together Mendel's ideas on heredity and Darwin's theory of evolution. On one side were the Mendelians, including Francis Galton, William Bateson and Charles Hurst, who accepted Mendelism but considered natural selection as ineffective, seeing evolution as occurring by 'macromutations', or single genetic changes of very large effect. On the other side stood the biometricians, most notably Karl Pearson and Raphael Weldon, who accepted the ubiquity of Darwinian selection but rejected Mendelian genetics. Given the strong egos involved and the fundamental nature of the science at stake, the battles Schwartz recounts were fierce. Friendships were destroyed, careers threatened. After a particularly contentious meeting about the genetics of horse coat colour at the Royal Society in London, Pearson hissed at Hurst, "You shall never be Fellow here as long as I live".



BETTMANN/CORBIS

Fruitful collaborations were formed in Thomas Hunt Morgan's fly genetics lab.

Other high spots in the book include the early and now largely forgotten work on cytological genetics by Walter Sutton and Edmund B. Wilson, involving years of eye-strain from squinting at confusing chromosomal preparations of sea urchins, aphids and grasshoppers. These studies established that different chromosomes carry different hereditary factors, yet occur in pairs that become separated during the formation of gametes in meiosis, giving essential physical support for Mendel's laws.

The book's longest section details the immense contributions of research on the fruitfly *Drosophila melanogaster* to our understanding of heredity. Schwartz explains how, from 1912 to around 1930, Morgan and his 'boys', Alfred Sturtevant and Calvin Bridges, along with Muller, were "responsible for the integration of Mendelism and the chromosome theory that is the basis of genetics". Within a few years, this conjunction of remarkable intellects in a tiny laboratory led to methods for mapping chromosomes both genetically and cytologically, and to the discovery of sex linkage, chromosome inversions, nondisjunction and many other phenomena that now form the dogma of transmission genetics.

Alas, here we find a major flaw. Schwartz notes that he was inspired to write his history by reading Elof Carlson's worshipful biography of Muller, *Genes, Radiation, and Society* (Cornell University Press, 1981). But this only generates further hagiography: the discussion of Muller's work occupies a quarter of *In Pursuit of the Gene*, a disproportionate chunk. Schwartz gives the impression that Muller, or ideas purloined from him by others, was behind nearly every advance in fly genetics. Sturtevant's contributions are given short shrift, Morgan is portrayed as a conniver who acquired his Nobel status on the backs of his students, and Bridges — perhaps the finest pair of eyes ever to peer at a magnified fly — is dismissed as being "famous for stealing other men's wives as well as their ideas". Schwartz does not mention the work of Lewis Stadler, who independently discovered X-ray induction of mutations in barley at the same time as Muller's work on *Drosophila*. Like many plant geneticists, Stadler was marginalized as a glorified crop breeder.

It is easy to sympathize with Muller, who had a tumultuous life and was the perennial underdog: Jewish, short, bald and with a high voice.