

READINGS

[Essay]

THE AGE OF AQUARIUMS

By Ginger Strand, from the February issue of The Believer. Strand is the author, most recently, of Flight, published in May by Simon & Schuster.

The ocean has long been a repository for our ideas of the monstrous and the unknowable. "Canst thou draw out leviathan with a hook?" God demands of Job. The sea's creatures challenge our most basic ideas of creatureliness. Creatures have recognizable parts, but in the sea they can be diaphanous clouds of membrane, without eyes, face, stomach, spine, or brain. Creatures move, but oysters drift, and corals are rooted like plants. Creatures have physical integrity, but a starfish chopped in half will grow into two separate beings. Or consider the Portuguese man-of-war, which acts like an individual but is actually a huge colony of beings moving as one. There are fish that can freeze without dying and other sea creatures living at temperatures above boiling. As for reproduction, even the most ordinary fish can be deliriously perverse. They're hermaphrodites. They switch genders. Males give birth. Some corals and bivalves reproduce by "broadcast spawning," in which males cast off huge nets of sperm that drift capriciously to any available egg, while snails and leeches mate through what scientists call "traumatic insemination," in which the male fires a detachable sperm-filled harpoon at the

unsuspecting body of a female. As the naturalist Loren Eiseley once wrote, "If there is magic on this planet, it is contained in water."

A visit to an aquarium does little to diminish this sublime terror. Even as it strives to inform, with wall copy and touchscreens and neat placards of exhibit-speak, the aquarium mesmerizes visitors, overflowing its own didactic intent. No touchscreen on earth can match the allure of a live reef shark, rippling your way with a sinister, toothy smile. We must love this. Aquariums are currently all the rage. Of the forty-one American aquariums accredited by the American Zoo and Aquarium Association in 2003, more than half opened since 1980, seventeen since 1990 alone. These are not traditional halls of fish tanks but huge, immersive environments with increasingly exotic fish in ever more realistic habitats, with live coral reefs, artificial currents, and living kelp forests. Massive public/private endeavors, the new breed of aquarium has flourished in an era of ambitious urban renewal aimed at reviving derelict inner-city waterfronts. Their prominent role in such schemes caused the *Wall Street Journal* to dub the last two decades "the age of aquariums." We are in love with looking at fish.

The history of animal display begins with the menagerie, a collection of beasts used since ancient times as a sign of princely power and dominance. The Romans introduced the idea to the West, bringing tigers, elephants, snakes, and other exotic fauna back to the capital as symbols of conquest. Other heads of state followed suit. In the thirteenth century, Henry III

kept an exotic menagerie in the Tower of London, and Louis XIV later established his own at Versailles.

Sometime in the mid-nineteenth century, with the rise of an urban working class, animal displays evolved a new purpose, transcending the crass display of dominance and shifting their focus to education. Menageries became "zoological gardens," reconceptualized as sites of learning that forwarded human enlightenment and progress not only through scientific knowledge but also through the edifying contemplation of the Creator's work. Whereas menageries had been private, aristocratic, and designed to intimidate, zoological gardens were public, democratic, and designed to educate.

In *Savages and Beasts: The Birth of the Modern Zoo*, Nigel Rothfels outlines how scholars have attacked this alleged transformation from intimidation to education. In reality, debunkers

say, the display of animals is always underwritten by social, political, and economic imperatives. Modern zoos still operate as signs of dominance, bearing witness now to civic pride rather than princely power. In Paris the first public aquarium was built in 1931 for the Colonial Exposition. It brought together a stunning array of sea creatures—the plundered riches of France's far-flung conquests. The surrealists, grasping the imperialist implications, demonstrated against it.

The current U.S. aquarium boom can be dated from the opening of the New England Aquarium in 1969. Located on an unpromising stretch of Boston's derelict waterfront, the New England Aquarium was the first designed by Peter Chermayeff and his exhibit-design firm, Cambridge Seven. The Central Wharf, where the aquarium was built, was purchased from the city of Boston for one dollar, and the rest of the project was financed with \$6 million in corporate and individual donations. Estimates were that around 600,000 visitors a year would pass through the aquarium's doors. Shortly after the opening, a million had attended. Within walking distance of Faneuil Hall's new complex of shops and eateries, the aquarium provided the missing piece of Boston's urban renaissance. Twenty-five years later, the aquarium site was valued at more than \$50 million.

Chermayeff and his associates went on to recreate this magic formula—aquarium + shopping mall = urban renewal—in Baltimore, installing the National Aquarium on the dilapidated Inner Harbor. After a 1990 report concluded that the National Aquarium had generated \$128 million for the local economy, blighted city centers began lining up for their fish. In the decade following, New Orleans, Corpus Christi, Columbus, Dallas, Tampa, Pittsburgh, and Charleston all became proud owners of new aquariums. And a number of new aquariums are in the works: Atlanta, New Bedford, Los Angeles. One project currently in the proposal stage is the Great Waters Aquarium for Cleveland. It's planned for the riverfront of the Cuyahoga—a body of water so polluted that it holds the dubious distinction of being the only moving river ever to have caught fire.

What is the link between aquariums and urban renewal? True, an aquarium is likely to generate more popular interest than, say, an art museum. But there are deeper connections, too. In an attempt to secure funds for Hamburg's zoological gardens in 1911, Dr. J. Vosseler argued that "Intimacy with the living world makes people indigenous, and awakens and sustains the sense of home and the love of Nature and her creatures as the best counterbalance to the social

[Impersonation]

MONKEY DO

From the newsletter of the Jerusalem Biblical Zoo. Translated from the Hebrew by Nomi Friedman.

A known and ugly phenomenon in zoos all over the world is visitors who willfully throw things at the animals on display, especially at chimpanzees. In the best case, food is thrown, and in the worst, to our regret, we have seen rocks thrown. We are seeing a significant improvement in the public's conduct, but the crowds that throw stones at chimps are not our concern here. In Jerusalem the talk is of rock-throwing chimps.

When a large crowd gathers opposite Niki and Galine, the young chimpanzees leave their other chimp activities, race about looking for stones, and start throwing them at the crowd. Why do they do this? Since this is Jerusalem, it might be a way of blowing off steam, or maybe it's an expression of rebellion and independence.

A separation fence was decided upon. In the past few weeks, the wall was built—green, light, elastic, and high. It fulfills its requirements, and is simple and elegant. It has proven effective in stopping the stones.

Sea Deep-s-Collecting Data, Doomed Explorers III, a drawing by Ethan Murrow, was on display last month at Reeves Contemporary, in New York City.

disadvantages of modern life." The "social disadvantages of modern life" assuaged by the zoo are represented more explicitly by a 1904 visitor to the New York Zoological Park: "It matters little whether Michael Flynn knows the difference between the caribou and the red deer. It does matter a lot, however, that he has not sat around the flat disconsolate, or in the back room of the saloon, but has taken the little Flynn and Madam Flynn out into the fresh air and sunshine for one mighty good day in which they have forgotten themselves and their perhaps stuffy city rooms."

In this way, animal displays became more important for the "lower orders" than they were for the upper classes, providing not only relief from "stuffy city rooms" but an alternative to the degraded amusements they would otherwise seek. In 1869, as concerned citizens raised money to establish a zoological garden in Central Park, the *New York Times* published an editorial titled "The Necessity of Amusements for the Poor." The editors argued that "the class of amusements supplied now to the poor is nasty and odious.... If there be no amusements of even a pretence of decency, the young

man and young girl seek their enjoyment in such places as the Water-street dance-cellars, or the innumerable liquor saloons." Zoos provided the working class with training in middle-class behavior, banning alcohol, polka music, littering, the shooting of songbirds, and even, in some cases, restaurants, for fear of creating a "low" atmosphere.

Furthermore, the zoological garden's focus on taxonomies propounds a view of the world—including the human part of it—as hierarchical. Another *New York Times* editorial opines: "An investigation into the laws, by virtue of which animals pass from the savage into the domestic state, attempts at acclimatization, the improvement of the conquered races and the education of those that remain to conquer—such, in our view, is the field of practical studies, to which Zoological Gardens ought to limit their instructions." Assimilation is in the best interest, then, of cows as well as people. In a nation doubling in population, as the United States did between 1860 and 1900, in large part due to immigration, that message could hardly have fallen on deaf ears.

Today's Michael Flynn's ~ontinue to be offer-

ed moral betterment through education in the nonnative, which is defined now as conservation. But it's a particularly personal form of conservation that aquariums advocate. Visitors are urged to take individual action: stop littering; use public transportation; avoid banned products

[Palimpsest]

SILENT SPRING

From editorial revisions and marginal notations made to government reports on global warming by Philip A. Cooney, then chief of staff for the White House's Council on Environmental Quality. Cooney's previous employer had been the American Petroleum Institute, the largest trade and lobbying group of the petroleum industry. Soon after the documents were released by the Government Accountability Project in June, Cooney left the administration to take a public-relations job with ExxonMobil ..

Many scientific observations point to the eon ellistefl indicate that the Earth is may be undergoing a period of relatively rapid change.

Humans have become agents of environmental change, at least on timescales of decades to centuries, even as the quality of living standards for billions of people has improved monumentally in the past century and a half.

These models are useful for performing if-then scenario experiments that make it possible to begin to explore the potential implications of different technological and institutional conditions for future emissions, and climate, and sustained and expanded wealth and living standards.

Longer growing seasons are likely to be reflected in changes in plant life cycles and associated insects and disease, and possibly in the migratory patterns of associated wildlife. [Balance? How about more food and forest products for humanity? Lower prices for consumers of food and forest products throughout the U.S. economy and world.]

Briefings, forums, workshops, and other forms of engagement between researchers and stakeholders increase the likelihood that research will contribute to improved decision-making. At the same time, we should always be vigilant in ensuring the independence of research and resist its being influenced or biased by the policy agendas of decision-makers.

like coral, snakeskin, and sea horses. And they are exhorted to *care*. The local, urban population, particularly urban youth, is the primary focus of this message. The implication is that individual action is what counts-and that city kids, with less exposure to nature, are a bigger threat to conservation than, say, the executive board at ExxonMobil or the sycophants at George W. Bush's new, pollution-friendly EPA.

In *The Empty Ocean*, the biologist Richard Ellis outlines the various ecological disasters now making the oceans what he calls "the next environmental battleground." Among them is the disappearance of fish. A seemingly inexhaustible resource has been depleted, in many Cases beyond recovery. Among the missing: miles-long swarms of cod off the Grand Banks, gray whales that once roamed the Atlantic, the giant Patagonian toothfish of South America, nearly extinguished in the two short decades since its debut under the stage name Chilean sea bass. The world's leading sardine canneries, on Cannery Row in Monterey, California, closed in the sixties when sardine stocks became too depleted to support an industry.

Increasingly, endangered animal populations are kept alive only by conservation parks. Without zoo and aquarium captive-breeding programs, many recovering animal species might still be languishing on the endangered list or entirely extinct. No longer viewed as unfortunate captives or pale imitations of their wild counterparts, zoo and aquarium animals are now considered a fortunate, treasured few.

The Senegalese conservationist Baba Dioum once said, "In the end, we will conserve only what we love." The quotation is often cited as a rationale for spending large sums on animal displays. Aquariums, their promoters claim, help us to love fish. Only by looking a harbor seal or a leafy sea dragon in the eye will we really see that there is something there to be valued.

Do aquariums achieve this end? And if they do, does it matter? Will our oceans be saved by a sea turtle's wise face, or the luminous, ethereal beauty of a tank full of jellies? A more fundamental question underlies that one: What does education have to do with love? Is instilling a sense of wonder truly a higher educational goal, the root of real understanding? Or is it simply the easiest effect to induce in the overstimulated MTV generation? David Powell, former director of live-exhibit development at the esteemed Monterey Bay Aquarium, would argue for wonder. "I've come to realize," he writes in his memoir, *A Fascination for Fish*, "that perhaps our true goal in the aquarium world is to inspire awe, to create a sense of wonder and appreciation that will grow.

A detail from an untitled drawing by George Boorujy. His work is on display this month at DFN Gallery, in New York City.

into caring." It's a compelling idea, but it fails to account for the ways in which aquariums are making an argument, even as they seem to offer simply the visual spectacle of nature in all its glory.

The new aquariums propose a reconciliation of environmentalism and corporate culture. Sometimes this can be quite explicit: in Baltimore, for example, each exhibit has a corporate sponsor. Placards over tanks inform you that, for instance, the electric eels are brought to you by Tristate Electricity Suppliers. That connection may elicit a chuckle, but, for the most part, the signs are subtle. It takes some looking to realize that every inch of the so-called National Aquarium is underwritten by American business. The picture is clearer on the website, which lists 216 corporate sponsors, including General Motors, IBM, Proctor & Gamble, Lockheed Martin Naval Electronics, and defense contractor Northrop Grumman. Clearly, corporate P.R. departments have seen the advantage of associating themselves with something as crowd-pleasing and uncontroversial as an aquarium.

And aquariums are returning the favor, by telling a pro-corporate story. They posit a world in which the chief danger to nature is individual

apathy. Baltimore's National Aquarium, for instance, offers cautious tips for how individuals can promote conservation: Recycle! Install water-saving showerheads! Conserve electricity! As for cars, they suggest Americans drive fuel-efficient vehicles—which they define as thirty-two miles to the gallon, knocking about ten miles off what environmentalists typically advocate. When it comes to driving less, they are more guarded. "Sharing a ride just once or twice a month," they point out, "can have a tremendous impact."

Corporate behavior, on the other hand, is never questioned. In fact, it is nature's friend. Example: the star exhibit at the New Orleans aquarium, a 400,000-gallon Gulf of Mexico tank boasting a replica of an abandoned oil rig. Behind thirteen inches of acrylic, sharks, rays, groupers, gars, and turtles meander around shellfish-encrusted pilings. Abandoned oil rigs, the wall copy explains, are valuable ecosystems, improvements on nature, not eyesores. Another placard displays the logos of companies that sponsor the Gulf of Mexico tank: Amoco, Shell, ExxonMobil, Chevron, and the oil-field couplings manufacturer Wheeling Machine Products.

The one aquarium that has tried to avoid leaping into the sponsorship fray is the pioneering New England Aquarium in Boston. Its freedom from corporate donors is evident in its display copy: global warming, overfishing, overuse of fossil fuels—no punches are pulled in its conservation message. Sadly, this freedom can't last. The New England Aquarium's dire financial situation caused the AZA to revoke its accreditation in March 2003. It is now looking for corporate sponsors.

By yoking technology and nature as if there were no conflicts between them, aquariums sit astride what MIT professor Leo Marx called "the contradiction at the heart of culture that would defy the Nature it is engaged in plundering." Aquariums have become a sort of consolation prize for communities whose drinking water has been despoiled, whose fish have been poisoned, whose runoff has turned toxic, and whose waterfronts have been left to die.

The Tennessee Aquarium, for instance, focuses on the Tennessee River ecosystem, despite the fact that the Tennessee River is no longer a river but a series of reservoirs linked by some thirty-five dams. In re-creating the "original" Tennessee River, the aquarium is creating a monument to a body of water that no longer exists. This is not unusual: more and more, it's part of what aquariums do. In fact, it wouldn't be unreasonable, every time you saw a fancy new aquarium, to ask: *What body of water has been destroyed here?* You might then want to look at the corporate donors and ask a further question: *How might they be implicated?*

Examples abound: Nitrogen-fertilizer maker Cargill funds an aquarium on nitrogen-choked Tampa Bay; U.S. Steel sponsors the Great Lakes Aquarium on Duluth Harbor, downriver from its own Superfund site; and the Alaska Sea Life Center on Prince William Sound was built with Exxon funds paid out in reparations after the *Exxon Valdez* dumped 11 million gallons of heavy crude oil into some of the world's most pristine waters.

John Bierlein, exhibit manager at the Seattle Zoo, writes, "In a world full of simulations and clever illusions, zoos and aquariums increasingly become the authenticators of what is real and still alive." But it isn't just fish we want to imagine alive; it's the sea itself. Few big aquarium projects are landlocked, because aquariums feed nostalgia not only for vanishing sea creatures but for our lost connection to the waterfront. Inland water travel is a distant memory; sea travel is a hobby for retirees; even our fishing and canning industries are dying. The vibrant maritime metropolis celebrated in Alfred Stieglitz's early twentieth-century photos of docks, ships, disembarking crowds, and

commercial water traffic has vanished. Thus bereft of purpose, urban waterfronts became derelict and dangerous, ripe for commercial redevelopment. They have been reborn as retail-driven fantasy ports like Baltimore's Inner Harbor, now trumpeted as "one of America's oldest seaports and one of the world's newest travel destinations."

Such waterfront complexes, in addition to aquariums, feature Disney-like re-creations of waterfront life: scenic boat tours, shopping malls with seaside themes, maritime museums, and plenty of chain-operated seafood restaurants serving the last of the vanishing cod, once so thick off the Grand Banks that fishermen drew them up by the basketful.

We want to see the ocean as rich and teeming with life when all over the world it is dying: fisheries collapsed, tidal basins clogged by development, coral reefs bleached to lifelessness. We want to see the waterfront as a vital source of economic growth but magically free of the ugly trappings of hazardous cargos, grimy industry, and unions. Even as the sea becomes more obviously a barometer of our ability to kill, we cling to the notion of the sea as the cradle of life. And we are nostalgically reconstructing the seaside—an improved, sanitized version—before we have even finished eradicating it. The aquarium is an epitaph for our lost connection to water.

[Re-education]

SCARED STRAIGHT

From the rules for clients of Refuge, a Memphis-based rehabilitation program run by Love in Action, a "Christ-centered ministry." The Refuge program caters to adolescents "struggling with broken and addictive behaviors," including sexual promiscuity and homosexuality. Clients live at home or in a hotel with a parent or guardian and usually participate in Refuge for two weeks, with the option of a six-week extension.

All new Refuge clients will be placed into Safekeeping for the initial two to three days of their program. A client in Safekeeping may not communicate verbally, or by using hand gestures or eye contact, with any other clients, staff members, or his/her parents or guardians. In case of a practical need, Safekeeping clients may write down their question or request. Writing may only be used when absolutely necessary. Safekeeping clients are permitted to say "hello" and