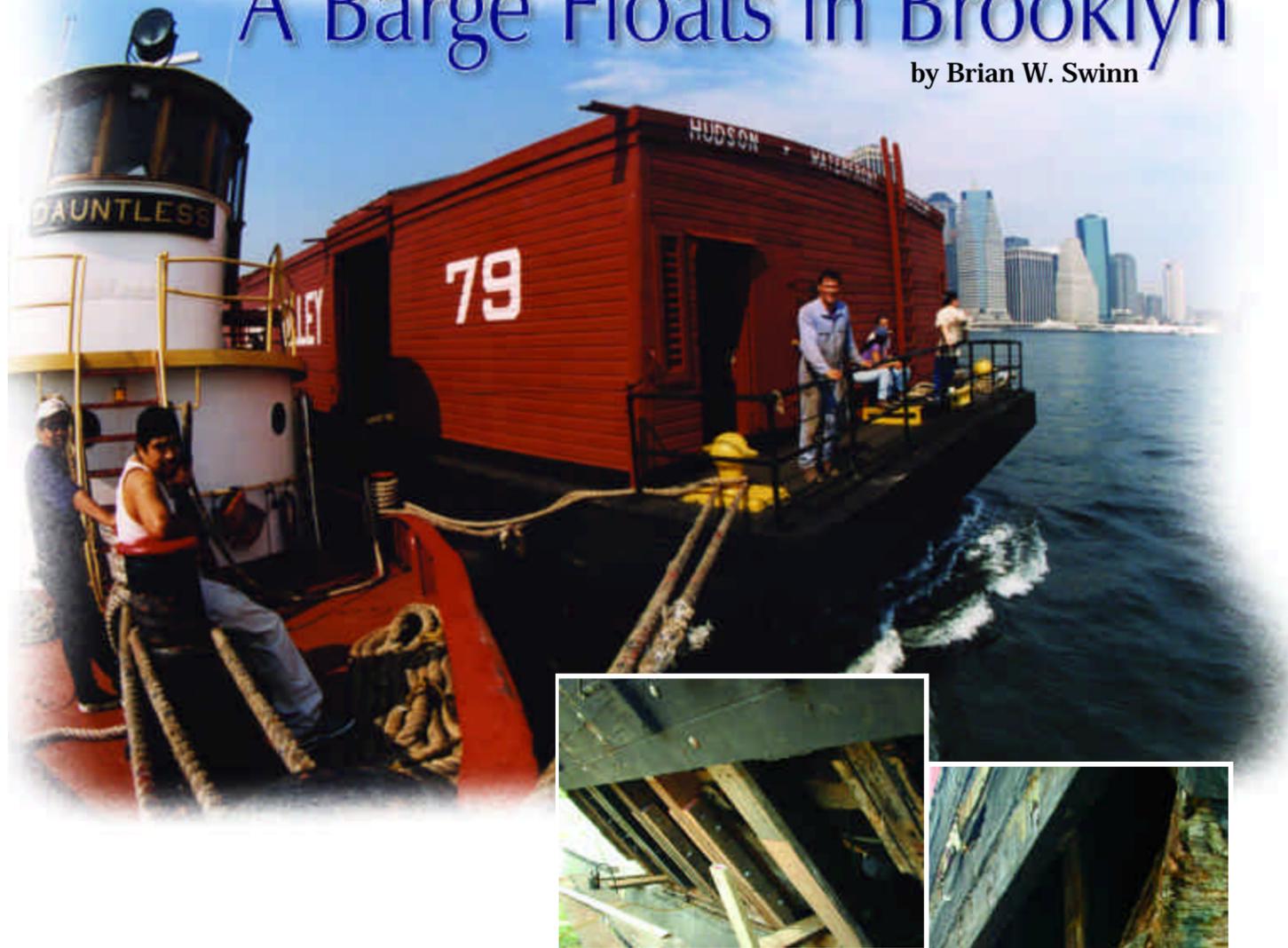


A Barge Floats in Brooklyn

by Brian W. Swinn



This is a story of grand old wooden boats and the worms that eat them.



Worms, time and saltwater took a toll on the 87 year old barge. With restoration nearly complete, it has found new life as a waterfront museum, classroom, art exhibition center and reception hall. Photos © 2002 Frank Zimmerman and Doug Pierson

Docked in the Red Hook harbor section of Brooklyn is an ancient cabin-covered wooden barge. Lehigh Valley Railroad barge number 79 (LV79), built in 1914, may be the last of its kind; a survivor of an era when such vessels were vital strands in the transportation web that bound New York City to the rest of the world.

Barging Through History

From the mid-nineteenth through the mid-twentieth century, tugs and barges moved much cargo between outlying rail lines and the New York City waterfront, thereby avoiding some tricky geography and growing urban congestion. This strategy was particularly worthwhile before all of today's bridges and tunnels were completed. In its heyday, LV79 carried up to 450 tons of cargo per trip, typically including grains, spices and coffee. In the 1960s, the barge was abandoned in the mudflats off Edgewater, New Jersey; a victim of better ways to move cargo. There it sat until David Sharps, owner and captain of the vessel and president of the organization that now operates the barge, bought the sorry-looking, yet still-sturdy craft for \$500 in 1985.

"The first time I saw the LV79, I knew it was going to be a huge project with immense potential. Still, I underestimated just how much was required and what impact its preservation would bring," says Sharps, who drew on his background in the cruise ship industry. "I have always envisioned a floating classroom and museum by day and a showboat by night."

Restored to its former glory, LV79 has found new life as waterfront museum, classroom, art exhibition center and reception hall. The barge has received many honors, including an entry on the National Register of Historic Places and



Rails of Steel, Ships of Iron and Wood

Odd as it seems, trains and wooden barges do not strange bedfellows make.

At one time, railroads were among the largest and most powerful corporations in America. As such, they also operated shipping lines engaged in interstate commerce, as well as local ferry-type boats like LV79.

The Lehigh Valley Railroad operated a Great Lakes shipping line from the 1880s until 1917. The Rutland Railroad, headquartered in Vermont, for a time owned a subsidiary that ran boats between Ogdensburg and Chicago. In the Midwest, the Pere Marquette Railroad was famous for its fleet of steamers that carried not just freight, but entire loaded freight cars, across Lake Michigan. Not so long ago, tugboats owned by many railroads plied the waters of New York harbor.

During the era of monopoly-busting, the federal Panama Canal Act of 1915 amended the Interstate Commerce Act to prohibit railroad ownership of interstate water carriers that compete with their land routes. Divestiture soon followed. In some places, however, the wooden ferry-type barges lived on, at least until trucks and containerized cargo made them obsolete.

The Lehigh Valley Railroad was incorporated in 1846, given this name in 1853 and completed its first trackage between two cities in 1855. In the late 1920s, the railroad operated more than 1,300 miles of track for passenger and freight service in western and central New York, eastern Pennsylvania and into New Jersey near New York City. As was common during the twentieth century, the Lehigh Valley was party to many leases, stock acquisitions and mergers involving other railroads until what remained was taken over by the Consolidated Rail Corporation (Conrail) in 1976.



Moving day. Barge LV. 79 on its way to a new home in the Redhook, section of Brooklyn.

recognition by the United Nations for opening up waterfronts to the general public.

The voyage has not been completely smooth, however. Upon removing the barge from its resting place, Sharps noticed a small amount of hull damage that seemed characteristic of marine boring creatures. Damage control measures notwithstanding, the situation got noticeably worse over the next five years. Apparently, these creatures found New York harbor a good place in which to live.

The barge now assumed a new function as an enlightening example of the inescapable relationships that bind Man and Nature.

Worms Crawl In

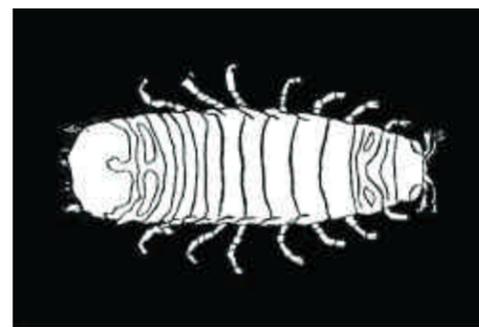
Soon after men first took boats to water, they undoubtedly found that their vessels became both domicile and mobile feast for creatures that entered the wood and made themselves quite at home. Two of the main organisms that damage submerged wood in the New York area are shipworms, or *teredo*, and gribble worms.

There are several species of teredo in the genus *Xylotrya*. Despite the fact that their adult stage resembles a worm, they are actually molluscs. More common in the tropics, where they can grow to five feet long,

they also live in temperate waters, where they seldom exceed several inches in length.

The teredo larva attaches itself to wood and bores straight in. It uses two sharp, delicately curved shells attached to its head to cut up to an inch a week. The mollusc tunnels to accommodate its growing length, all the while lining its elongated burrow with a smooth, shell-like substance. Burrows are usually about one-quarter inch in diameter, but have been known to exceed one-and-one-eighth inches. Once established in its lined burrow, the teredo stays put.

The teredo's back end remains exposed, but just under the wood's surface. Two siphons extend outward to collect water that bears oxygen and food particles, and expel waste, wood particles and used water. If disturbed, the creature can retract its siphons and cover itself with two small hinged *pallet* shells.



Gribble worms, genus *Limnoria*, about the size of a grain of rice. Hordes of gribbles can reduce a piece of timber by as much as an inch a year.

Gribble worms, genus *Limnoria*, are isopod crustaceans about the size of a grain of rice that resemble common sow bugs. The grey body comprises 14 segments, and the seven segments immediately behind the head each bear a pair of legs with tiny lobster-like claws. Gribbles are quite mobile and can move forward, backward, curl up, jump and even swim.

Gribbles express themselves most distinctively. They enter wood, which provides both food and shelter, and munch out tunnels parallel to but just under the surface, sometimes exiting and entering again. Destruction is swift when hordes of these creatures undermine the surface, which eventually breaks away. The gribbles are not deterred, however. They go right back to work, using their sharp jaws to chew new pathways beneath the freshly exposed surface. Hordes of gribbles can reduce a piece of timber by as much as an inch a year.

In concert, these two types of mis-named worms can Swiss-cheese virtually any type of submerged wood. Although the surface may look relatively intact, wood subjected to such repeated assaults eventually loses its strength.

It's the very possibility Dave Sharps faced during the restoration of LV79.

Worms Crawl Out

Armed with the well-wishes and contributions of many who had heard of, or enjoyed programs presented on LV79, Sharps had it towed up the Hudson River to Waterford, near Albany, for dry dock repairs in the summer of 2002.

Once raised and drained, it became apparent that the worms had exploited their chosen ecological niche well. Although the boat had managed to retain its structural integrity, roughly half the mass of wood below the waterline had been eaten away. This, the result of decades when countless worms were born, lived, reproduced and died all within the confines of this 30- by 90-foot vessel.

Work in dry dock proceeded apace. Pressure-washing blasted out the remaining worms. Imperiled wood was ripped out by the yard and new planking installed across the entire bottom and up to 18 inches above the waterline. The wood was treated with asphalt primer and roofing cement. Twelve-inch-wide wood strips were placed on all seams, then treated again.

The area was sheathed with one-eighth inch thermoplastic. All this just to keep a bunch of worms at bay.

Docked in the Red Hook harbor section of Brooklyn is an ancient cabin-covered wooden barge, now armored against the worst.

And so it goes. Man, his works, and Nature inextricably linked in an endless cycle across time.

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If You Go:

The Waterfront Museum is open for school visits for students of all ages. With the recent award of a 1999 National Park Service "National Maritime Education Initiative" grant, barge staff lead educational programs throughout the year. With a permanent exhibit of artifacts and a plethora of hands-on experiences available—including knot-tying, demonstrations of why boats float, and the opportunity to feel the decks move beneath your feet—the barge serves as a "floating classroom" for educational visits. For many visitors, a visit to the barge is their first time aboard a boat, and a first chance to view this community's once bustling waterfront. To find out more, call (718) 624-4719, or visit www.waterfrontmuseum.org

