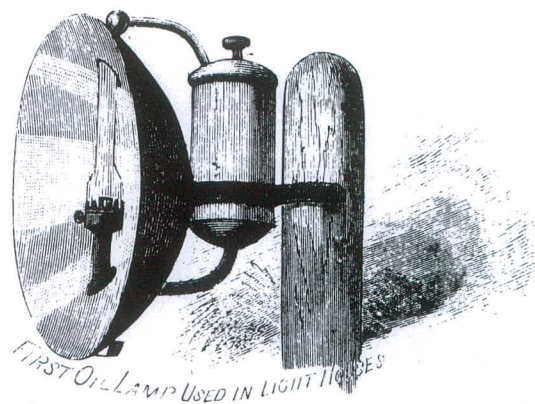


# I.W.P. Lewis

## Father of America's Lighthouse System

by Robert Fraser



He has been called “overly critical” and “jealous of his uncle,” even “liar.” I speak of Isaiah William Penn Lewis whose report on America’s lighthouse service presented to the U.S. Congress on February 24, 1843, was to rock the nation with a major scandal.

I.W.P.’s uncle was Winslow Lewis, who alone (for a considerable period) was responsible for the building, equipping, and supplying of America’s lighthouses. His nephew’s report would blacken his reputation for all time.

The first of the Lewis line was George Lewis who moved with his family from East Greenwich, England to Plymouth, Mass., before 1633, thence to Scituate, Mass., in 1637, and to Barnstable, Cape Cod, in 1640. Skipping to the sixth generation, we come to the first Winslow Lewis (born 1738, died 1801), a sea captain and selectman of Wellfleet, Cape Code. He had six daughters and five sons. The eldest son was Winslow Lewis, the lighthouse builder, the second son was Isaiah Lewis, father of I.W.P.

Winslow, the lighthouse contractor (born 1770, died 1850), married Elizabeth Greenough in 1793 and had three sons and three daughters. The girls all died in infancy and two sons died young. The eldest son, Winslow, survived and became a medical physician. This Winslow married and saw all three of his sons die in infancy of scarlet fever. (His three daughters all lived to marry).

Isaiah Lewis had only two children, Susannah and I.W.P. I.W.P. (born 1808, died 1855, married Ellen Doane in 1840 but they had no issue).

I.W.P.’s “infamous” report was the result of the Secretary of the Treasury, Walter Forward’s, questioning the sudden increase of expenditures of the Lighthouse Service. He hired I.W.P. Lewis, through recommendations, to investigate some “possible costly defect in the system.” I.W.P. was a civil engineer living in Boston, Mass., who, since 1836, had been hired to view certain lighthouse sites in the South. Possibly he got that job through his uncle’s influence. At Forward’s request, I.W.P. spent the summer of 1842 visiting almost all the lighthouses in the then New England District—Maine, New Hampshire, and Massachusetts. His voluminous 302-page report is an eye opener. Little did Secretary Forward realize the Pandora’s Box it would become.

America’s lighthouses in New England at this time were of two types: the usually conical masonry tower (some were of wood) which was built directly on the ground with little or no foundation, and the short wooden tower literally balanced on the roof of a dwelling.

The masonry towers of stone or brick were laid in poor lime mortar. After some time, the lime would leach out leaving only damp sand. In some cases, it appears that damp sand was deliberately used as the bonding agent. Libby Islands Light, Maine, was built in the fall of 1823 and tumbled down the following April. The replacement tower was, according to I.W.P., of “beach stones” (which, should you wonder, are too smooth to hold any type of mortar.) Annisquam

Light, on Cape Ann., Mass., a wooden tower built in 1801, was so rotten that it had been propped up by long poles since the 1820’s. In many cases, the masonry walls bulged out as the mortar disintegrated (seen today at Owls Head Light, Maine, for instance). Iron bands were used to hold the crumbling towers together (as at Boston Light, Mass.), while others were sheathed in wood to strengthen them and protect the disappearing mortar from the weather.

Those with the lanterns on their roofs were not much better. The tower posts rested directly on the attic beams putting a terrific strain on the dwellings. A wall of the dwelling of Billingsgate Light, Cape Cod, one of this type, collapsed due both to the lantern’s weight and the undermining of the building.

The lantern decks were pie-shaped segments of soapstone and rainwater seeped through the joints making the tower’s insides perpetually damp. The staircases were slippery all year around, from ice in winter and a green slime in summer. Rot was rampant. A keeper assisting I.W.P. with his inspection, broke through a wooden step near the top of the tower and scraped his shin. Many keepers warned I.W.P. of the shaky staircases in their respective beacons.

I.W.P. found only two decent structures in New England: Saddleback Light, Maine, which had been built in 1839 of hammered stone set in high grade hydraulic cement (Portland cement had not yet been invented), and Portsmouth Light, New Hampshire, a wooden tower built in 1804 which I.W.P. called “an excellent piece of carpentry” and apparent-

ly free of rot. But the Saddleback Lighthouse came up short as the builder used iron pintles instead of bronze for the storm shutters.

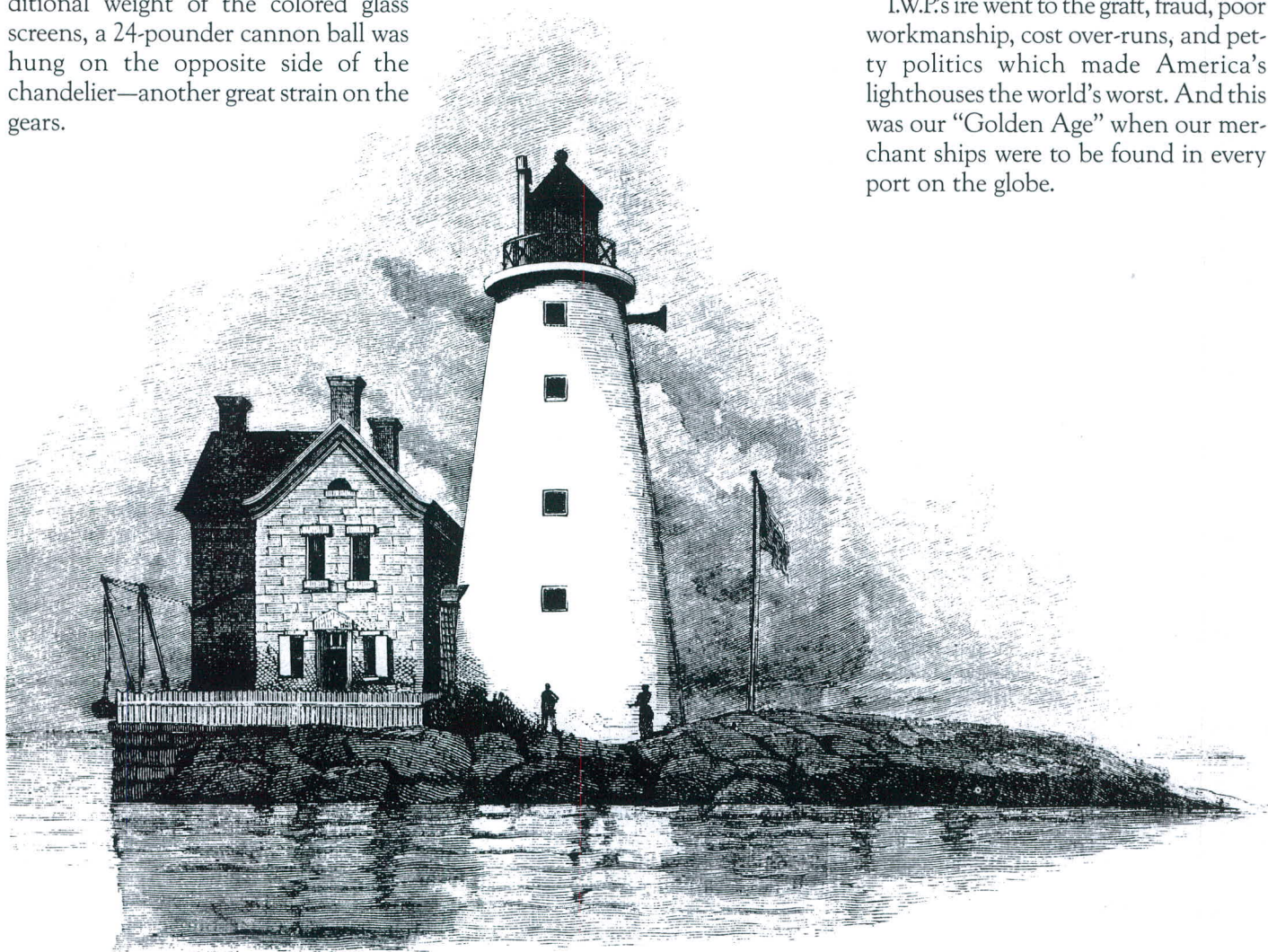
The illuminants came under special criticism. They consisted of an Argand type lamp backed by a metal reflector. The reflectors were not even of the effective parabolic shape, but rather resembled "barber's bowls." The silvered interior reflective surface was often scoured away by the harsh abrasives used in cleaning. The lamps and reflectors were poorly attached to the chandelier and they were often knocked out of focus. Most of the lights shone a steady beam from a fixed chandelier but a few revolved to show a flash. The brass gears of the clockwork were too weak for the job and not encased for protection. Between the heavy chandelier and the dust and grit filtering into the works, the gears often jammed. The weight to move the clockwork was in most cases a nail key full of rocks. Some lights shone alternate white and red flashes. To offset the additional weight of the colored glass screens, a 24-pounder cannon ball was hung on the opposite side of the chandelier—another great strain on the gears.

Most of the lighthouses;—whether a first class seacoast light, a second class bay light, or a third class harbor light—all had ten lamps. Some bay and harbor lights had more lamps, some offshore major lights had less. In all the lighthouses, several lamps proved worthless, shining over the land. And at least one lamp was aimed directly at the metal door of the lantern. The illuminant in each of the two Nantucket Cliff Range Lights was only a tin box with four wicks—no chimney, no reflector. I.W.P. remarked that they were "a very excellent invention for manufacturing lampblack at the expense of one hundred and fifty gallons of oil per annum."

There were only four fog signals in the district—all bells and all in Maine. Not one could be heard above the roar of the nearby surf if a sea was running.

I.W.P. Lewis did not blame the keepers. Of them, he said: "The proofs of the moral effect produced upon keepers under the opposite conditions stated were strikingly visible in numerous conditions. Those who had a decent roof to cover their heads appeared industrious and happy, their houses neat and comfortable, and their lanterns in perfect order; while those whose homes were in a state of partial ruin, who have rickety lanterns and apparatus to attend, a leaky roof over their beds at night, and who are compelled to seek their daily supply of fresh water among the hollows and clefts of the rocks, had a look of squalid wretchedness about them, their houses and lanterns were filthy and unclean, and their families ragged and dirty." The average pay was \$350 a year which Lewis considered too low for such an important job. Many keepers were forced to a second job to make ends meet, leaving their families to tend the beacon. I.W.P. added that the keepers had no written instructions as to the care of their lights.

I.W.P.'s ire went to the graft, fraud, poor workmanship, cost over-runs, and petty politics which made America's lighthouses the world's worst. And this was our "Golden Age" when our merchant ships were to be found in every port on the globe.



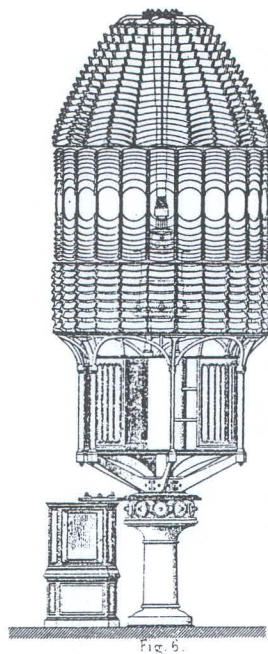
His special target was his uncle, Winslow. I.W.P. pointed out Winslow's sloppy workmanship, proved by keepers, and his idea to save on materials by filling between the tower walls with trash. Collin Howes, keeper of Chatham Lighthouse, Cape Cod, remarked of the new twin lights just built (1841) by Winslow Lewis: "I expected to have a lighthouse, and everything else in first-rate order, when these new buildings were put up; but I was mistaken." and went on to detail the many mistakes he found. I.W.P. proved that his uncle's patented "magnifying and reflecting lantern" of an Argand lamp with a reflector behind and a third glass lens in front, and for which the U.S. paid Winslow \$20,000 in 1812 for the patent, was a copy of the optic installed in the South Stack Light, England, in 1809.

I.W.P.'s report included the sole lightship in the district, *Cross Rip*, Nantucket Sound. He considered the beacon useless because of her short range light and that she often broke free and was gone from her station. Buoys and beacons were also included, of which I.W.P. pointed out that over 50% were to be found "safely hidden" in harbors and rivers while offshore dangers went unmarked.

**T**o back up his statements, I.W.P. included hundreds of signed affidavits from the keepers, ship captains and owners, marine insurance companies, marine contractors, and even government officials. He even got statements from lighthouse officials in England and France, and reports from the neighboring New York District showing the same state of affairs. In every case, it proved that America's lighthouses were indeed very poor.

I.W.P. even asked Secretary Forward how Fifth Auditor Stephen Pleasonton came to head up America's lighthouse system. Forward's answer showed that the lighthouse system was an "orphan," bounced between the Treasury Department and the Revenue Marine from 1789 to 1820. The office of Fifth Auditor was created on March 3, 1817, and he was to "receive all accounts accruing in and relating to the Depart-

ment of State, and those arising out of Indian affairs." Forward quoted a recent letter which he had received from Pleasonton in which the Fifth Auditor said: "In place of the accounts of Indian trade which ceased and were transferred, a much more important and responsible duty was assigned me on the 1st of January, 1820, by the Secretary of the Treasury, under the law for the abolishing the office of Commissioner of Revenue. This was the care and superintendence of the lighthouse establishment." One gathers from I.W.P.'s report that Pleasonton was only a glorified bookkeeper and government figurehead while Winslow Lewis was the real boss.



There was a bright spot in the otherwise dark picture. Edmund and George Washington Blunt, brother authors of the *American Coast Pilot*, the bible of American coastwise navigators, petitioned the U.S. Senate in 1837 to try one of Fresnel's new lenses. Two were authorized and both were installed in the Navesink Twin Lights, New Jersey, in 1841. The beams from the lenses shone out with amazing brilliance, proving to one and all the inadequate quality of our lighthouses. In his genealogical account, Mr. Sheppard honors I.W.P. with "the present mode of illumination in our American lighthouses." and adds that I.W.P. went to France and spent two years

with Fresnel, "and despite opposition and discouragement, succeeded in introducing it in this country about 1844." However, Fitz-Henry Smith, Jr., in his *Story of Boston Light* (1911) includes this story of Sheppard's, then points out that I.W.P. Lewis was just 18 when Fresnel died in December of 1825, and Smith doubted that the two had even known each other.

I.W.P. did not stop merely with the tearing down of America's aids to navigation. Rather, he proposed hundreds of corrections and improvements, most of which would be adopted in his lifetime.

Winslow was furious with his nephew's report and he rushed to defend himself with a published report of his own. But the dice had been cast and Winslow was the loser.

**B**ecause of I.W.P.'s report, a whole new lighthouse organization, the Light-House Board, was formed in 1852. He had proposed a new administration which included civil scientists and engineers, and the new board was fashioned along those lines. Another of I.W.P.'s adopted ideas was the cooperation between the world's lighthouse organizations to study each others methods to improve all the aids to navigation throughout the world. The English iron screwpile lighthouse and the Fresnel lens were quickly adopted by the U.S. at I.W.P.'s urging, and before the Civil War broke out almost every American lighthouse was equipped with the new lens. Keepers' living quarters were greatly improved. A vastly superior lightship was planned and built. And earlier, in 1850, a uniform buoyage system had been adopted by the U.S.

Winslow Lewis died in 1850, bitter at his nephew. I.W.P. Lewis followed five years later, a happy man. I.W.P. is buried in the Fashionable Mt. Auburn Cemetary at Cambridge, Mass.

It would be wrong to credit I.W.P. solely for our modern aids to navigation system. Many others had voiced the same complaints. But, all in all, it was I.W.P.'s report that got things moving.