

same to this officer, and of physicians to report all births and deaths occurring in their practice. The former Board of Health was very vigilant and useful, guarding with scrupulous care the sanitary interests of the city, warding off cholera and various contagious diseases, and rendering the metropolis so salubrious as to impoverish many physicians. The first year of the new Board has witnessed the ravages of yellow fever on Governor's Island, with a number of deaths.

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#### QUARANTINE DEPARTMENT.

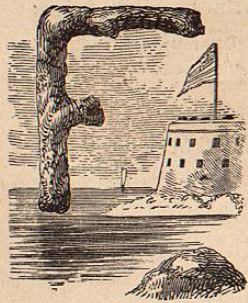
Every large city is compelled to provide a Quarantine, as a matter of self-preservation, especially seaport towns. The first measures for a Quarantine in New York were inaugurated by the passage of an act in 1758, to prevent the spread of infectious diseases. By Act of May 4th, 1794, Governor's Island was made the Quarantine, and in March, 1797, a lazaretto was directed to be built on Bedloe's Island. The ravages of yellow fever led in 1799 to the purchase of thirty acres of land on Staten Island, five of which were ceded to the United States Government for warehouses, and on the remainder permanent quarantine buildings were erected. The first buildings were erected with the material taken from the demolished lazaretto on Bedloe's Island. In 1819, a long brick building was erected; in 1823, a fever hospital; in 1828-29, a small-pox hospital; and such subsequent additions were made as the wants of the Institution required. The great increase of population on Staten Island, and the return of yellow fever in 1856-58, many cases occurring in the vicinity of the quarantine, the long-cherished desire for its removal burst forth in a frenzy, of which the whole populace seemed to partake. On the evening of the 1st of September, 1858, the buildings were entered by the excited multitudes, the sick carried on their mattresses into the yards, and every building save the women's hospital destroyed by fire. This last-named edifice

was destroyed the following evening, making the ruin complete.

Quarantine is now located on the east of Staten Island, several miles below Castle Garden, on artificial islands constructed for that purpose. The sick, until a year or two since, were kept in vessels stationed in the lower bay for that purpose. During 1869, the West Bank Hospital was completed at a cost of over three hundred thousand dollars. This is one of the largest and best-arranged quarantine buildings in the world. The foundation consists of crib-work of heavy timbers fastened together, filled with stone and sand, and sunk. The crib contains 15,000 cubic yards of stone, and 56,000 cubic yards of sand. The Hospital is a one-story edifice, divided into eight wards, each 89 feet long and 24 wide, and can accommodate fifty patients each. The Hospital is supplemented by other buildings, used as baggage house, wash-house, dead-house, and apartments for superintendent, physicians, nurses etc. The buildings are lighted with gas, and connected by telegraph with New York. During 1869, 213 vessels arrived from ports infected with yellow fever; and in 1870 no less than 365 such vessels, with at least 470 yellow fever patients on board. Thirty vessels carrying about 18,000 persons were detained at Quarantine, having small-pox, during 1870, and ten vessels with ship fever, yet so vigilant were the health officers that no panic occurred on shore, and none of these diseases spread in the city. Yellow fever, however, broke out in the autumn of the last year among the troops on Governor's Island, eighty-three of whom were prostrated and thirty-one died. The health and prosperity of the Metropolis are more largely dependent upon quarantine vigilance than many suppose. Another building for the detention of persons exposed to disease, while on passage in an infected vessel, has been commenced at West Bank, and a warehouse for the storage of infected goods will follow, making our Quarantine complete and unrivalled. The annual expense of this branch of our measures for public security, exclusive of permanent im-

provements, amounts to about \$50,000. The Quarantine Commissioners have exclusive control of the Hospital, and are distinct from the Health Department of the city.

#### MARITIME DEFENCES.



FORTIFICATIONS erected under the trained skill of cultivated military engineers have long been the chief means of defence for all civilized cities and countries. It is therefore a little remarkable, that while New York was from the earliest settlement the chief city and heart of the country, no general effort to suitably fortify its approaches was made until the outburst of the war of 1812.

Rude fortifications were then placed upon some of the small islands, in the upper bay, and Fort Lafayette was commenced on Hendricks Reef, 200 yards from the shore, in what is known as the Narrows, the water doorway to the Metropolis. This fort, when completed, had cost about \$350,000, and mounted seventy-three heavy guns. Its chief fame during the half-century has arisen from the fact of its having been made the house of detention for political prisoners during the late civil war, and some who read this notice will require no fuller description of it. The elements were unfriendly to this fortress, however, and on the first of December, 1868, it was destroyed by fire, leaving only the naked walls. The government is about to rebuild it on a greatly improved scale.

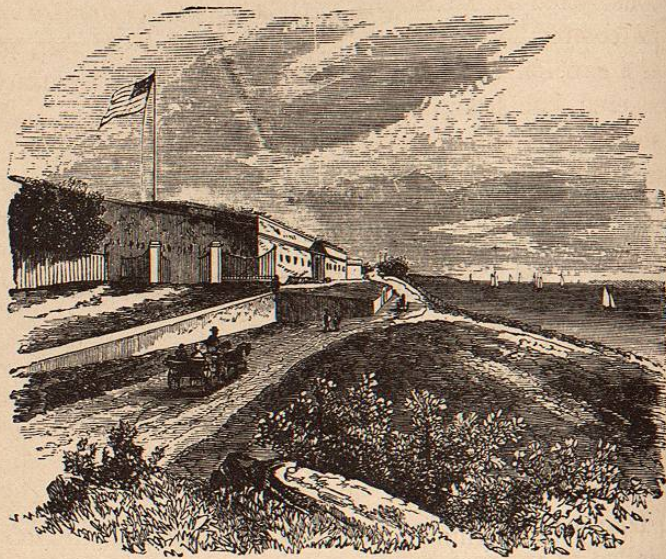
In 1824, Fort Hamilton was commenced, immediately opposite the former, standing on an eminence on the Long Island shore. It was completed in 1832, at an expense of \$550,000, and mounted sixty heavy guns. It has recently been supplemented with a strong battery, and now numbers in its armament some of the celebrated Rodman guns, that discharge a



FORT LAFAYETTE, NEW YORK HARBOR.

spherical ball weighing a thousand pounds. Several of the other guns throw balls weighing four hundred and fifty pounds. Directly opposite these works, on the Staten Island shore, stand Forts Richmond and Tompkins, both new and improved works, constructed of gray stone, mounting many guns of huge calibre. Fort Tompkins is a water battery of formidable appearance, while Fort Richmond occupies the bluff in its rear, spreading out with its accompanying batteries at great length, and is so arranged as to shoot over Fort Tompkins, and sweep the channel for miles. Batteries Hudson, Morton, North Cliff, and South Cliff have been completed, and another is now being constructed. The channel at this point is but little more than a mile wide, and these fortifications are so arranged that with suitable projectiles and management, such a shower of balls and shells may be rained as to prevent the entrance of a fleet of iron-clads.

The upper bay is favored with several islands, admirably arranged for fortifications. Ellis Island, two thousand and fifty yards southwest from Castle Garden, is occupied by Fort Gibson, built in 1841-44, mounting fifteen or twenty guns, and requiring a garrison of one hundred men. Bed-



FORT HAMILTON, NEW YORK HARBOR.  
(Long Island side of Narrows.)

loe's Island, situated 2,950 yards southwest of Castle Garden, is occupied by Fort Wood, erected in 1841, at a cost of \$213,000, on the site of a fort built at the beginning of the century. It has space for eighty guns, and a garrison of three hundred and fifty men. A strong battery is now being added to this fort.

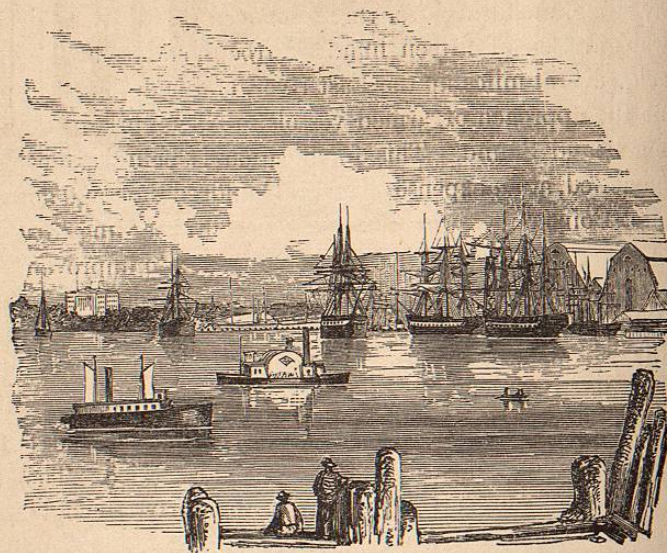
Governor's Island containing seventy-two acres, and situated ten hundred and sixty-six yards from Castle Garden, is also wholly devoted to maritime defence. Its largest work is Fort Columbus, a star-shaped fortification with five points, standing on the summit of the island, with quarters for many troops. Castle William is a three-story round tower, situated on the west shore of the island, six hundred feet in circumference, and sixty feet high, mounting over one hundred guns. South Battery fronts on Buttermilk channel, separating the island from Brooklyn (which channel was once forded by cattle, but now affords anchorage for heavy ships), and mounts fifteen heavy guns. An immense barbette battery is now be-

ing constructed on this island, which will require several years for its completion. Governor's Island, in time of war, requires a garrison of a thousand men. Acres of its surface are covered with heavy cannon, and with pyramids of balls and shells, thoroughly painted to resist the action of the elements. Here recruits are drilled for the service, and deserters detained as prisoners. There are also very extensive works at Sandy Hook, New Jersey, calculated to prevent the occupation of the lower bay, as a place of anchorage to an enemy's fleet.

Fort Schuyler, a large strong fortification, constructed of gray stone, mounting over three hundred guns, and requiring a war garrison of fifteen hundred troops, stands at Throggs Neck, several miles up the East river, and is designed to prevent the approach of armed vessels to New York by way of Long Island Sound. This fortification is being extensively remodelled, at an expense of several hundred thousand dollars. Willet Point unites with Fort Schuyler in guarding this eastern channel of approach, which, with the late improvements at Hurl Gate, requires to be more carefully defended than formerly. Willet Point is the principal engineer depot of the Department of the East. Here the surplus stores which accumulated during the war were largely deposited. Here bridge-trains, and equipage, intrenching, mining, and other tools, are preserved for use, in future field service. The depot is guarded and cared for, and the property issued by engineer troops. This place is also, at present, the Torpedo School of the United States army, and extensive experiments in that line are now being made. Many millions have been consumed on these fortifications and their armament, which cover all the strong points about the harbors, and vast sums are still being expended; yet, with all this, it is doubtless true that New York is *not* defended as its importance demands. The old walls, guns, and round shot of the fathers are of little use in these days of improved projectiles and floating batteries. And while we would not encourage a useless expendi-

ture in the arts of war, too much pains can scarcely be taken by the government to prevent the capture of the Metropolis, in the event of a sudden conflict with a maritime power. It should also be remembered that while the nations are beating their ploughshares into swords, and their pruning hooks into cannon and shells, to thoroughly prepare for war is the surer promise of peace.

THE UNITED STATES NAVY YARD.



THE BROOKLYN NAVY YARD.  
(Marine Hospital in the distance.)

Having looked in vain for the appropriate niche where a brief account of the United States Navy Yard might be introduced, we insert it here. In 1801, the government purchased fifty-five acres of ground located on Wallabout Bay, now lying between the Eastern and Western Districts of the city of Brooklyn. Subsequent purchases have increased the amount to about two hundred acres, which cost originally



ENTRANCE TO NAVY YARD, BROOKLYN.

\$40,000, and is now valued at twenty millions. The Navy Yard proper covers about fifty acres, is laid out with paved streets and walks, which are kept very clean. The Dry Dock, begun in 1841, is a vast structure, capable of taking in a ship 300 feet long, and cost between two and three million dollars. It is emptied by steam pumps. The yard contains large buildings to cover ships of war while in process of building, extensive lumber warehouses, great numbers of cannon, pyramids of shot and shell, shops, foundries, etc., etc. A Naval Museum, filled with curiosities sent home by officers, a Marine Hospital, with barracks for troops, cottages for officers, and other necessary appendages, are spread around the premises. It is a place of curiosity, and is visited by many thousands annually, but as it occupies nearly the heart of the city, the enterprising property-owners would gladly see it removed. Congress has begun to debate the matter of its removal, and it will probably be accomplished before many more years elapse.