

Fort McHenry, Baltimore Harbor, Maryland, in charge of Maj. William P. Craighill, Corps of Engineers.—This fort forms part of the inner line of defense for Baltimore and its dependent interests, and commands, with its fire, the interior waters of the harbor and the channel of approach thereto, in which latter a depth of 24 feet exists at mean low water.

Although the old fort (proper) has become almost useless as a defensive work, the site is still an important one, and the water front should be occupied by a battery of modern heavy guns, mounted behind a sand parapet of the most approved model, and provided with bomb-proof cover for ammunition and gunners. Such a battery, the plans of which have been prepared by the Board of Engineers for Fortifications, is in course of construction, although all work upon the same has, for want of funds, been suspended since July 8, 1876.

There being no appropriation for the fiscal year ending June 30, 1879, operations have been confined to the general care and preservation of the work. These operations have consisted mainly in the pointing up of the entire exterior masonry of the large brick storage magazine near the hospital, and the repair of the sea-wall inclosing a large part of the site of the work. This sea-wall, which had been in bad repair for several years, had two breaches, aggregating 400 feet in length, made completely through it from the foundations up by the storms of the winter of 1878-79. These breaches have been entirely rebuilt; and in addition 892 linear feet of wall, extending from artillery stalls to the sutler's store, have been repaired and recoped.

The old guard-rooms and prison-rooms in the gorge of main work have been converted into commodious offices, with new floors, plastering, papering, &c.; new tin roofs have been placed over these, as well as over the sally-port, together with a new and complete system of gutters and spouts. All magazine doors and window frames have been painted and the slate roofs repaired. Repairs were made to the wharf after the storms of the autumn of 1878.

The repairs of the sea-wall should be continued throughout the remainder of its length. The wall has been standing over 40 years. The wharf should be raised two feet and rearranged, if continued in its present condition. It would be better, however, to build a new sea-wall on the port-warden's line, fill in the area thus gained, and thus extend the drill-ground. The filling could be readily and cheaply made by allowing vessels coming to the port to drop their ballast there. The drainage of the site needs rearrangement also.

The portable property pertaining to the work has been stored at Fort Carroll when not in use.

The sum of \$50,000 is asked for the next fiscal year, which amount would nearly complete the parapet and terreplein, including magazines, but not the gun platforms, which, as stated in previous reports, it is not deemed advisable to put down until after the embankment shall have become consolidated, on account of the unstable nature of the subsoil.

A portion of the site having been granted by Congress for building a dry-dock to a company incorporated for that purpose, work has been commenced upon it.

No appropriation was made for the fiscal year ending June 30, 1880.

Appropriation asked for next fiscal year \$50,000 00

Fort Carroll, Baltimore Harbor, Maryland, in charge of Maj. William P. Craighill, Corps of Engineers.—This work is situated upon an exterior line of defense for the harbor of Baltimore.

A plan for the completion of this work has been prepared by the

Board of Engineers for Fortifications, which provides for the reception of the heaviest modern rifle guns; those in casemates to be arranged in a single tier behind iron shields, and those in barbette to be placed singly between traverses, behind earthen parapets. An appropriation for the continuation of the work according to this plan is urgently recommended.

The site is a very important one, and the delay in the construction of the work is due to the lack of appropriations and to the fact that the best method of arranging such defenses with a due regard to economy had not till recently been determined.

Operations during the past year have been confined to the general care and preservation of the work and the public property stored thereat. They have been of small extent, consisting mainly in repairs to the temporary roof over the masonry of the casemates, magazines, &c.; the stone wharf has had new fender-pieces of oak applied; the large stationary crane on gorge face, which had become rotten and dangerous, has been dismantled, and the machinery covered in a pent-house; the old wooden wharf has been torn up and the sound timbers in it saved; lumber has been provided to reroof the southerly half of gorge face, the quarters, and the storehouse casemates.

No appropriation was made for the year ending June 30, 1880.

Appropriation asked for next fiscal year \$100,000 00

Obstructions of the Potomac, in charge of Maj. William P. Craighill, Corps of Engineers.—The material pertaining to these obstructions has continued in store at Fort Foote, in charge of a watchman. The timber portion is very much decayed and is rapidly becoming worthless. The iron portion is in good condition. Some repairs have been necessary and have been made to the storehouses, consisting mainly of underpinning to keep them from falling.

Fort Foote, Potomac River, Maryland, in charge of Maj. William P. Craighill, Corps of Engineers.—This work is on the inner line of defense of the channel of approach by water to Alexandria, Washington, and Georgetown. The site is high, commanding, and unusually favorable.

Projects for the modification of this fort and for an additional battery for the use of the heaviest modern guns have been prepared by the Board of Engineers for Fortifications. They were partially executed when work was suspended by reason of failure of appropriations, the last of which was for the fiscal year 1873-74.

During the past fiscal year no work was done for want of funds. Attention is again urgently called to the fact that the fort in its present unfinished condition is daily becoming much deteriorated. The modification of the work should be completed as soon as possible. An appropriation for this purpose is very important.

No appropriation was made for the fiscal year ending June 30, 1880.

Appropriation asked for next fiscal year \$50,000 00

Fort Washington, Potomac River, Maryland, in charge of Maj. William P. Craighill, Corps of Engineers.—This fort occupies a very important position on the outer line of defense of the cities of Alexandria, Washington, and Georgetown and their dependent interests. The importance of this site has been fully set forth in previous annual reports; but the line requires strengthening by the introduction of guns of the heaviest caliber, for which the old fort is not well adapted.

Work was commenced under a revised project of defense for this site, prepared by the Board of Engineers for Fortifications, but it was only partially executed.

As there has been no specific appropriation for this work since the

appropriation for the fiscal year 1873-'74, operations during the past fiscal year have been confined to the general care and preservation of the public property in store, and to such repairs as were absolutely necessary.

In April, 1879, the lightning-rods on the magazines and quarters in the fort, having been loosened by the storms of the winter, were securely replaced. In June, 1879, the repairs to the wharf, which had been left incomplete from the preceding year for want of funds, were completed, and the structure, which had been in a dangerous condition, became serviceable and safe. Considerable work of repair is required at this work to preserve valuable property stored at it and to arrest a deterioration now rapidly going on, which will involve, sooner or later, large outlays and much troublesome work.

Attention is again earnestly invited to the need of the appropriation asked for this fort. The unfinished portion of the new earthen battery is constantly suffering deterioration on account of its incomplete state.

No appropriation was made for the fiscal year ending June 30, 1880.

Appropriation asked for next fiscal year..... \$50,000 00

Fort Monroe, Old Point Comfort, Virginia, temporarily in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—This extensive work occupies an important position, covering the approach to Hampton Roads, the navy-yard at Portsmouth, and the James River.

The only operations during the past fiscal year have been to repair the boat-house and the foot-bridge leading to it, and other minor repairs to storehouses, quarters, cisterns, &c.

For continuing the modification of the channel-bearing faces of this work to adapt them to the reception of modern guns of heavy caliber, according to plans of the Board of Engineers for Fortifications, an appropriation for next year is recommended.

No appropriation was made for the fiscal year ending June 30, 1880.

Appropriation asked for next fiscal year..... \$75,000 00

Artesian Well at Fort Monroe, Virginia, temporarily in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—No work was done during the last fiscal year, and none is contemplated during the present fiscal year for want of funds. The inadequate and uncertain supply of water at Fort Monroe is an evil which, it is conceded on all sides, may at any time arise to serious magnitude. The present depth of the well is about 900 feet. It is proposed to increase the depth, if practicable, to 1,200 feet, at which point, in the opinion of prominent geologists, there is a fair prospect of obtaining good water.

No appropriation was made for the fiscal year ending June 30, 1880.

Appropriation asked for next fiscal year..... \$10,000 00

Fort Wool, Hampton Roads, Virginia, temporarily in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—This casemated fortification unites with Fort Monroe in closing the passage to Hampton Roads, crossing its fire with the guns of that fort.

The operations during the past fiscal year have been confined to necessary repairs to the wharf and the fort-keeper's quarters.

The Board of Engineers for Fortifications has, during the past year, prepared plans for modification of this important work. The plans contemplate an armament of the heaviest modern rifled guns behind iron shields, and an appropriation for the work is urgently recommended.

No appropriation was made for the fiscal year ending June 30, 1880.

Appropriation asked for next fiscal year..... \$150,000 00

Fort Macon, Beaufort Harbor, North Carolina, in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—This work is situated at the mouth of the harbor, and defends the principal entrance thereto.

During the past fiscal year the wood-work of the bridge across the ditch to the main sally-port has been renewed, a washout in the causeway leading from the wharf to the fort has been bridged, and new wooden covers have been placed over the ventilators of all the casemates. There has been no material change in the position of the shoreline in the vicinity of the fort during the year.

No appropriation was made for the fiscal year ending June 30, 1880.

No appropriation asked for next fiscal year.

Fort Caswell, mouth of Cape Fear River, North Carolina, in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—The subject of the modification of this work is still under consideration.

Its location is advantageous for the protection of the entrance to Cape Fear River, and therefore one of the approaches to the city of Wilmington.

There is neither armament, nor garrison, nor quarters for a garrison at the place.

No appropriation was made for the fiscal year ending June 30, 1880.

No appropriation asked for next fiscal year.

Fort Moultrie, Charleston Harbor, South Carolina, in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—This work is situated on Sullivan's Island, and defends the principal entrance to the harbor of Charleston.

No work was done during the last fiscal year, except for the general preservation and repair of the work.

Two 15-inch guns are mounted on timber platforms, and eight platforms, one permanent and seven timber, are in readiness for, but not occupied by heavy guns. Two additional timber platforms for 10-inch guns have become unserviceable from decay. The replacing of these with two timber 15-inch gun platforms, now on hand, will complete the preparations for arming this work.

Four mortars are mounted in rear of the fort. Estimated cost of completing the work according to the plans of the Board of Engineers for Fortifications: for bonnets on the traverses, a soldiers' latrine, and draining the parade, \$89,000.

No appropriation was made for the fiscal year ending June 30, 1880.

Appropriation asked for next fiscal year..... \$50,000

Fort Sumter, Charleston Harbor, South Carolina, in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—This work is located on a shoal near the mouth of the harbor, and its guns, crossing their fire with those of Fort Moultrie, command the principal channel of entrance thereto.

During the past fiscal year a covering of marsh-grass was placed over the unfinished roof-surface of the principal magazine to protect it from the weather. No other operations were carried on for want of funds.

The slopes to the terre-pleins of the north and northeast fronts, and the exterior slope of the parapet of the southeast front have been badly washed by storms.

Two 15-inch guns and two 200-pounder Parrott rifles are mounted on 15-inch timber platforms, and one timber and three permanent platforms for heavy guns are ready, but not occupied. The replacing of the two platforms 9 and 10, now occupied by light guns, by heavy timber platforms would make the work ready for its armament.

The eight casemates on northwest front are now ready for their guns, except traverse-circles. The eleven casemates on the northeast front are armed. The estimated cost of completing the work according to the plans of the Board of Engineers for Fortifications is \$82,000.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year \$50,000 00

Fort Johnson, Charleston Harbor, South Carolina, in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—This fort, situated on James Island, is one of the works in the system of defense of Charleston Harbor.

No operations were carried on at this work during the past fiscal year. The approved project for reconstructing this old work contemplates making of it a battery for eight pieces of heavy ordnance, four mortars, and four guns. Its commencement and completion during the next fiscal year is recommended. Four 13-inch mortar platforms are on hand ready to be laid.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year \$10,000 00

Castle Pinckney, Charleston Harbor, South Carolina, in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—This work, situated on an island near the city of Charleston, is one of the interior works in the system of defense of the harbor.

No operations were carried on at this work during the past fiscal year. An appropriation of \$9,500 will be required to adapt it to the reception of 10-inch smooth-bore guns, or corresponding rifles, to be mounted in barbette.

No appropriation was made for the fiscal year ending June 30, 1880.
No appropriation asked for next fiscal year.

Fort Jackson, Savannah River, Georgia, in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—This work, situated about four miles from the city of Savannah, forms the inner line of defense for that city.

No operations were carried on during the past fiscal year. Five guns are in position, but they are not of the calibers contemplated in the approved project, and cannot be efficiently served without a completion of the work. Estimated cost of completing the work, including repairs to wharf, \$10,000.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year \$10,000 00

Fort Pulaski, mouth of Savannah River, Georgia, in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—This is the principal work for the defense of Savannah on the outer line of the system.

No operations were carried on during the past fiscal year except cutting the grass from the slopes. Five timber platforms are now in readiness for, but are not occupied by heavy guns, in the demilune.

The estimated cost of completing the work according to the plans of the Board of Engineers for Fortifications, and for bonnets on the traverses, permanent platforms and soldiers' latrine, is \$256,000.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year \$75,000 00

New Fort on Tybee Island, mouth of Savannah River, Georgia, in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—This work is designed to prevent the occupation of Tybee Roads by an enemy's fleet and to give fire upon vessels which may attempt the passage of Fort Pulaski—Savannah being the objective point.

Plans for the defensive works to be constructed on the north point of Tybee Island, and to consist of batteries of heavy guns, have been pre-

pared by the Board of Engineers for Fortifications, and it is proposed to commence their construction whenever funds are available.

No appropriation for their construction has yet been made.
Appropriation asked for next fiscal year \$50,000 00

Fort Clinch, Amelia Island, Florida, in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—This work defends the entrance into Cumberland Sound, and is in an unfinished condition.

Plans for the modification of this work, necessary for the reception of its proposed armament of modern guns, and for a new exterior battery, have been completed by the Board of Engineers for Fortifications during the last year.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year \$50,000.00.

Fort Marion, Saint Augustine, Florida, in charge of Lieut. Col. Q. A. Gillmore, Corps of Engineers.—This work defends the harbor and city of Saint Augustine.

Fort Marion was built by the Spaniards, and was called by them Fort Saint Mark. It was essentially completed in the year 1756, its process of construction having extended through a period of more than one hundred years. It is built of coquina—a natural shell-concrete found in the vicinity. No money has been expended by the United States for the maintenance of the work or in arresting the progress of ordinary deterioration and decay, for the reason, doubtless, that the water-battery constructed in 1842-'43 will, if suitably armed, furnish a sufficient defense for the locality.

Should it be desired to restore old Fort Saint Mark, both main work and demilune, to the condition, substantially, in which it was left by the Spaniards, it can be done, so far as it is possible to attain this object, and omitting all preparations for an armament, for from \$10,000 to \$12,000.

No appropriation was made for the fiscal year ending June 30, 1880.
No appropriation asked for next fiscal year.

Fort Taylor and batteries, Key West, Florida, in charge of Capt. W. H. Heuer, Corps of Engineers.—These works are for the defense of the important harbor of Key West.

The exterior batteries for heavy guns projected by the Board of Engineers for Fortifications were left incomplete at the close of the last fiscal year for which an appropriation for this work was made, (1875-'76). The bridge—nearly 800 feet long—connecting the fort with the island of Key West has become so much decayed that it is unsafe and is liable to fall at any time.

During the past fiscal year operations were restricted to caring for the public property and buildings.

For certain necessary repairs to the main work and buildings, for reconstructing bridge connecting the fort with the island of Key West, and for continuing the construction of the exterior batteries for modern guns of large caliber an appropriation is recommended.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year \$75,000 00

Fort Jefferson, Garden Key, Tortugas, Florida, in charge of Capt. W. H. Heuer, Corps of Engineers.—The guns of this work perfectly command the admirable harbor lying in the heart of this group of keys.

The modifications of this work prepared by the Board of Engineers for Fortifications are yet incomplete, and for continuing the construction of the same, including the erection of six stone platforms for 15-inch

guns and for necessary repairs to the work, an appropriation is recommended.

During the past fiscal year operations were restricted to caring for the public property and buildings.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year..... \$28,000 00

Fort Pickens, Pensacola Harbor, Florida, in charge of Capt. A. N. Damrell, Corps of Engineers.—This work, with Fort Barrancas and the proposed new batteries near the site of Fort McRee, constitute the defenses to the town and harbor of Pensacola, and to the navy-yard at Warrington.

Plans for the modification of this important work, which provide for the reception of heavy modern guns and mortars, and for exterior batteries of heavy guns, have been prepared by the Board of Engineers for Fortifications.

Operations during the year consisted in repairing and whitewashing out-buildings, and care and preservation of public property. The condition of this fort is the same as at the date of the last annual report.

Operations during the present fiscal year will be confined to ordinary repairs and the care and preservation of public property.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year..... \$75,000 00

Fort Barrancas and redoubt, Pensacola Harbor, Florida, in charge of Capt. A. N. Damrell, Corps of Engineers.—These works are situated on the north side of the entrance of Pensacola Harbor, commanding the main ship-channel.

Plans for the construction of an exterior battery for heavy guns have been prepared by the Board of Engineers for Fortifications.

No work was done during the past fiscal year.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year..... \$50,000 00

Fort McRee, Pensacola Harbor, Florida, in charge of Capt. A. N. Damrell, Corps of Engineers, is situated on the west side of the main ship-channel to Pensacola Harbor. This fort has been a ruin since the late war, and the greater portion of it has been washed away by the encroachment of the sea upon its site.

Plans for the construction of batteries of the heaviest modern guns and mortars near the site of old Fort McRee, to co-operate with Fort Pickens and the works at Barrancas in the defense of this important harbor, have been prepared by the Board of Engineers for Fortifications.

No work was done during the past fiscal year.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year..... \$50,000 00

Fort Morgan, eastern entrance to Mobile Bay, Alabama, in charge of Capt. A. N. Damrell, Corps of Engineers.—This work, with Fort Gaines on the western side of the entrance, forms the outer line of defense to the harbor and city of Mobile, and commands the lower fleet-anchorage. Extensive modifications of this old work are required to adapt it for the use of modern ordnance, and plans for such modifications have been prepared by the Board of Engineers for Fortifications.

During the year operations at this fort were confined to repairs of fence and wharf, the cleaning of slopes and ditches, and preservation of sea-wall.

No appropriation having been made for this fort for present fiscal

year, operations will be confined to ordinary repairs and the care and preservation of public property.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year..... \$75,000 00

Fort Gaines, Dauphin Island, Alabama, in charge of Capt. A. N. Damrell, Corps of Engineers.—This work, which, with Fort Morgan on the opposite side of the main entrance to Mobile Harbor, is designed to command that entrance and the lower fleet-anchorage, needs complete modification to adapt it to the use of modern heavy guns, and plans therefor have been prepared by the Board of Engineers for Fortifications.

Operations during the year were confined to care and preservation of public property, the cleaning of main ditch and drains, and repairs to officers' quarters and jetties.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year..... \$50,000 00

Fort on Ship Island, coast of Mississippi, in charge of Capt. A. N. Damrell, Corps of Engineers.—This is an important work, designed for a fortified maritime depot of coal, provisions, &c., and for the defense of the inland navigation along the coast of the State of Mississippi and of the approaches to New Orleans from the eastward.

Operations during the year have been confined to care and preservation of public property, repairs to store-room, quarters, and guard-room, and whitewashing of same, and repairs and painting of embrasure shutters.

No appropriation was made for the fiscal year ending June 30, 1880.
No appropriation asked for next fiscal year.

Fort Pike, Rigolets Pass, Louisiana, in charge of Capt. C. W. Howell, Corps of Engineers.—This work commands the passage by vessels drawing 7 feet or less, through the Rigolets into Lake Ponchartrain and to the wharves on the lake front of New Orleans. It is one of the system of works designed to command the approaches to New Orleans from Mississippi Sound.

A project for the modification of this work, to adapt it for the reception of modern ordnance, was prepared by the Board of Engineers for Fortifications in 1870, but no appropriation has been made therefor.

No work was done during the past fiscal year beyond that necessary for care and preservation of the work.

No appropriation was made for the fiscal year ending June 30, 1880.
No appropriation asked for next fiscal year.

Fort Macomb, Chef Menteur Pass, Louisiana, in charge of Capt. C. W. Howell, Corps of Engineers.—This work commands the passage by vessels drawing 4½ feet or less, through the Bayou Chef Menteur into lake Ponchartrain and the road along Gentilly Ridge to the city of New Orleans. It is one of the system of works designed to command the approaches to New Orleans from Mississippi Sound.

During the past fiscal year operations were confined to care and preservation of the work.

A project for the modification of this work to adapt it for the reception of modern ordnance was prepared by the Board of Engineers for Fortifications in 1870, but no appropriation has been made therefor.

No appropriation was made for the fiscal year ending June 30, 1880.
No appropriation asked for next fiscal year.

Tower Dupré, Lake Borgne, Louisiana, in charge of Capt. C. W. Howell, Corps of Engineers.—This old work is situated at the entrance of Bayou

Dupré into Lake Borgne. It is one of the system of works designed to command the approaches to New Orleans from Mississippi Sound.

No work was done during the past fiscal year.

No appropriation was made for the fiscal year ending June 30, 1880.
No appropriation asked for next fiscal year.

Battery Bienvenue, Lake Borgne, Louisiana, in charge of Capt. C. W. Howell, Corps of Engineers.—This battery is situated at the junction of two branches of the Bayou Bienvenue, about three miles from its mouth. It is one of the system of works designed to command the approaches to New Orleans from Mississippi Sound.

No work was done during the year.

No appropriation was made for the fiscal year ending June 30, 1880.
No appropriation asked for next fiscal year.

Tower at Proctorsville, Lake Borgne, Louisiana, in charge of Capt. C. W. Howell, Corps of Engineers.—This work is one of the system of works designed to command the approaches to New Orleans from Mississippi Sound.

No work was done during the past fiscal year.

No appropriation was made for the fiscal year ending June 30, 1880.
No appropriation asked for next fiscal year.

Fort Jackson, Mississippi River, Louisiana, in charge of Capt. C. W. Howell, Corps of Engineers.—This work and Fort Saint Philip, nearly opposite, are situated on the Mississippi River, about 65 miles below New Orleans, and are the most important of the works guarding the approaches to that city.

Operations during the past year were confined to necessary repairs to buildings, fences, and revetment near the wharf, damaged by a storm in May, 1878, and general care and preservation of the work.

For needful repairs to the work, and for continuing preparations for mounting an armament of heaviest caliber, the modifications of this work designed by the Board of Engineers for Fortifications to adapt it for the use of modern heavy ordnance being incomplete, an appropriation is asked.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year..... \$25,000 00

Fort Saint Philip, Mississippi River, Louisiana, in charge of Capt. C. W. Howell, Corps of Engineers.—This work and Fort Jackson, nearly opposite, are situated on the Mississippi River about 65 miles below New Orleans, and are the most important of the works guarding the approaches to that city.

Operations during the past fiscal year were confined to the necessary care and preservation of the work.

For needful repairs to the main work, and for continuing the construction of the exterior batteries of heavy guns which have been designed by the Board of Engineers for Fortifications and are yet incomplete, an appropriation is recommended.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year..... \$25,000 00

Fort Livingston, Barataria Bay, Louisiana, in charge of Capt. C. W. Howell, Corps of Engineers.—This barbette work is situated on the west end of Grand Terre Island, at the entrance to Barataria Bay. It guards the only approach to New Orleans by vessels drawing 7 feet or less, available on the west side of the Mississippi River. It also secures a safe anchorage and harbor of refuge for our light-draught coasters in time of war.

A project for the modification of this work to adapt it for the reception of modern ordnance was prepared by the Board of Engineers for Fortifications in 1870, but no appropriation has been made therefor.

No work was done during the year beyond that necessary for the care and preservation of the work.

No appropriation was made for the fiscal year ending June 30, 1880.
No appropriation asked for next fiscal year.

Batteries at entrance to the harbor of Galveston, Texas.—The object of these batteries of heavy guns, recently designed by the Board of Engineers for Fortifications to be placed on Pelican Spit, Galveston Island, and Bolivar Point, is for the defense of the entrance to the harbor of Galveston, a harbor rapidly increasing in commercial importance.

No appropriation for the construction of these works has yet been made.
Appropriation asked for next fiscal year..... \$50,000 00

Fort at Fort Point, entrance to San Francisco Harbor, California, in charge of Lieut. Col. C. S. Stewart, Corps of Engineers.—This work and its exterior barbette batteries form the defense of the south side of the Golden Gate, the entrance to San Francisco Harbor.

The work has been in care of watchmen. Only necessary repairs have been made to the works and the wharf.

To prepare the exterior barbette batteries of this very important position for receiving their armament of the heaviest modern guns and mortars, under existing plans designed by the Board of Engineers for the Pacific Coast, and to make good the damages since the cessation of work in 1876, will require, it is estimated, \$115,000. This sum could be applied to the completion of thirty platforms for heavy guns, together with the traverses, service-magazine, terreplein, and communications corresponding thereto.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year..... \$100,000 00

Fort at Lime Point, San Francisco Harbor, California, in charge of Maj. George H. Mendell, Corps of Engineers.—This fort and its detached earthen barbette works at Point Cavallo, Lime Point Ridge, and Gravelly Beach constitute the defenses of the entrance to the harbor of San Francisco on the northern shore of the Golden Gate. The works and public property have been under the care of keepers throughout the year. No changes have taken place either in number of platforms or in armament. The batteries, including parapets, magazines, and platforms, remain in good condition and have been well cared for.

For completing the works for the reception of modern guns and mortars of heaviest calibers, as projected by the Board of Engineers for the Pacific Coast; for rebuilding the wharf and wooden reservoir tank; and for repairs of steamer, the sum of \$100,000 will be required.

No appropriation was made for the fiscal year ending June 30, 1880.
Appropriation asked for next fiscal year..... \$80,000 00

Fort on Alcatraz Island, San Francisco Harbor, California, in charge of Maj. George H. Mendell, Corps of Engineers.—This work occupies a valuable position for the defense of the entrance to and the inner waters of the harbor of San Francisco, covering the whole of a rocky island, the shores of which rise abruptly from the water to a height sufficient to secure it from surprise.

The work was under the care of a keeper during the past year, and its condition remains good.

During the year repairs were made to the wharf; the buildings were lime-washed; the crane, embrasure-irons, and boat were painted.