

MESSAGE

FROM

THE PRESIDENT OF THE UNITED STATES,

COMMUNICATING

(In compliance with a resolution of the Senate)

A copy of the report on national defence, made to the Engineer department, by Lieutenant Halleck, of the corps of engineers.

FEBRUARY 7, 1845.

Read, and ordered to be printed.

To the Senate of the United States :

I transmit herewith the report requested by the resolution of the Senate of the 2d of January last.

JOHN TYLER.

WASHINGTON, *February 7, 1845.*

WAR DEPARTMENT, *February 6, 1845.*

SIR : In answer to a resolution of the Senate of the United States, of the 2d ultimo, requesting the President to communicate to the Senate "a copy of the report made to the Engineer department, on military defences of the country, by Lieutenant Halleck, of the corps of engineers," I respectfully lay before you a letter of the Chief Engineer, with a copy of the report referred to in the resolution.

Very respectfully, your obedient servant,

WILLIAM WILKINS,
Secretary of War.

To the PRESIDENT OF THE UNITED STATES.

ENGINEER DEPARTMENT,

Washington, February 6, 1845.

SIR : I have the honor, in compliance with the call of the Senate of the 2d ultimo, to transmit herewith a copy of the report on national defence, made to this department by Lieutenant H. Wager Halleck, of the corps of engineers.

Very respectfully, your most obedient,

JOSEPH G. TOTTEN,
Colonel and Chief Engineer.

Hon. WILLIAM WILKINS, *Secretary of War.*

NEW YORK HARBOR, *October 20, 1843.*

SIR: Agreeably to your request, I transmit herewith a copy of remarks, submitted by me some months since, to an officer of high rank in another department of the army, on "the means of national defence." These remarks are based upon the following Congressional documents:

I. Letter of the Secretary of War, (Mr. Poinsett,) transmitting a report on national defence, &c., May 12, 1840.—House Document 206, 26th Congress, 2d session.

II. Report on the survey of the coast, from Appalachicola to the mouth of the Mississippi, December 17, 1841.—House Document 220, 27th Congress, 2d session.

Very respectfully, your obedient servant,

H. WAGER HALLECK,

Lieutenant of Engineers.

Colonel J. G. TOTTEN,

Chief Engineer, Washington, D. C.

REPORT ON THE MEANS OF NATIONAL DEFENCE.

General Washington, in his annual address at the opening of Congress in 1796, dwelt on the vast importance of maintaining the country in an attitude of defence, as the most effectual means of averting the calamities of war, adding, "that if we desire to secure peace—one of the most powerful instruments of our rising prosperity—*it must be known that we are AT ALL TIMES ready for war.*" This precept is too valuable to be forgotten; and the fact that since it was uttered, we have once been plunged, without preparation, into a costly and desolating war, and thrice upon the very brink of hostilities with two of the most powerful nations of Europe, ought to awaken us to a sense of its importance. Washington has pointed out the best way to avoid the calamity, and the experience of other nations has most abundantly proved the correctness of his instruction.

Let us, then, "in peace prepare for war;" and even should this state of preparation fail to preserve peace, it will, nevertheless, be vastly influential in bringing the war to an early and successful conclusion. There is a great moral effect produced by the initiation, and by a few brilliant achievements at the outset of a campaign. Had the battles of Chippewa and Bridgewater, and the gallant defence and sortie of Fort Erie, occurred in 1812, this disastrous and almost disgraceful war would never have lingered till 1815.

To postpone the making of military defences till such time as they are actually required in defence, is to waste the public money and endanger the public safety. The closing of an avenue of approach, the security of a single road or river, or even the strategic movement of a small body of troops, often effects in the beginning what afterwards cannot be accomplished by large fortifications and the most formidable armies. Had a small army in 1812, with a well-fortified depot on Lake Champlain, penetrated into Canada, and cut off all reinforcements and supplies by way of Quebec, that country would have fallen into our possession.

In the winter of 1807, Napoleon crossed the Vistula, and advanced even to the walls of Königsberg, with the Austrians in his rear and the whole

power of Russia before him. If Austria had pushed forward 100,000 men from Bohemia, on the Oder, she would, in all probability, says the best of military judges, (Jomini,) have struck a fatal blow to the operations of Napoleon, and his army must have been exceedingly fortunate even to regain the Rhine. But Austria preferred remaining neutral till she could increase her army to 400,000 men. She then took the offensive, and was beaten; whereas, with 100,000 men, brought into action at the favorable moment, she might, most probably, have decided the fate of Europe.

"Defensive war," says Napoleon, "does not preclude attack, any more than offensive war is necessarily exclusive of defence;" for frequently the best way to counteract the enemy's operations, and prevent his conquests, is first to invade and cripple him. But this can never be attempted with raw troops, ill supplied with the munitions of war, and unsupported by fortifications. Such invasions must necessarily fail. Experience in the errors of the French revolution demonstrated this. Even our own short history is not without its proof. In 1812, the conquest of Canada was determined on long before the declaration of war; an undisciplined army, without preparation or apparent plan, was actually put in motion 18 days previous to this declaration, for Detroit and the Canadian peninsula; the disastrous and disgraceful result is but too well known.

Military power may be regarded as absolute or relative—the absolute force of a nation depending on the number of its inhabitants and extent of its revenues; the relative force on its geographical and political position, the character of its people, the nature of its government, its military organization, &c. Its military preparations must evidently be in proportion to its resources. Wealth constitutes both the apprehension and the incentive to invasion. Where two or more States have equal means of war, with incentives very unequal, an equilibrium cannot exist; for danger and temptation are no longer opposed to each other. The preparation of States may therefore be equal without being equivalent, and the smaller of two may be most liable to be drawn into a war without the means of sustaining it.

The geographical position of a country greatly influences the degree and character of its military preparation. It may be bordered on one or more sides by mountains and other obstacles calculated to diminish the probability of invasion, or the whole frontier may be wide open to attack; the interior may be of such a nature as to furnish security to its own army, and yet be fatal to the enemy, should he occupy it; or, it may furnish him advantages far superior to his own country. It may be an island in the sea, and consequently exposed only to maritime descents—events of rare occurrence in modern times.

Again: a nation may be placed between others who are interested in its security, their mutual jealousy preventing the molestation of the weaker neighbor. On the other hand, its political institutions may be such as to compel the others to unite in its destruction, in order to secure themselves. The republics of Switzerland could remain unmolested in the midst of powerful monarchies; but revolutionary France brought upon herself the armies of all Europe.

Climate also has, undoubtedly, some influence upon military character, but it is far less than that of education and discipline. Northern nations are said to be naturally more phlegmatic and sluggish than those of warmer climates; and yet the armies of Gustavus Adolphus, Charles XII, and Suwarrow, have shown themselves sufficiently active and impetuous, while

the Greeks, Romans, and Spaniards, in the times of their glory, were patient, disciplined, and indefatigable, notwithstanding the reputed fickleness of ardent temperaments.

While, therefore, the *permanent* military defences of a nation must be subordinate to its resources, position, and character, they can in no case be dispensed with. No matter how extensive or important the *temporary* means that may be developed as necessity requires, there must be some force kept in a constant state of efficiency, in order to impart life and stability to the system. The one can never properly replace the other; for while the former constitutes the basis, the latter must form the main body of the military edifice, which, by its strength and durability, will offer shelter and protection to the nation; or, if the architecture and materials be defective, crush and destroy in its fall.

The *temporary* means of defence may be classed as follows:

- 1st. An increase of the regular army and regular marine.
- 2d. The employment of irregular or militia forces, and the authorization of privateering, or a resort to "marque and reprisal."
- 3d. An increase of military munitions and "logistique," and the use of temporary fortifications.

I. Much energy and enterprise will always be imparted to an army by the addition of new troops. The strength thus acquired is sometimes in a far greater ratio than the increase of numbers. But these new elements are of themselves far inferior to the old ones in discipline and steady courage and perseverance. No general can rely on the accuracy of their movements in the operations of a campaign, and they are exceedingly apt to fail him at the most critical moment on the field of battle. The same holds true with respect to sailors inexperienced in the discipline and duties of a man-of-war. There is this difference, however: an army obtains its recruits from men totally unacquainted with military life, while a navy, in case of sudden increase, is mainly supplied from the merchant marine with professional sailors, who, though unacquainted with the use of artillery, &c., on shipboard, are familiar with all the other duties of sea life, and not unused to discipline. Moreover, raw seamen and mariners, from being under the immediate eye of their officers in time of action, and without the possibility of escape, fight much better than troops of the same character on land. If years are requisite to make a good sailor, surely an equal length of time is necessary to perfect the soldier; and no less skill, practice, and professional study, are required for the proper direction of armies than for the management of fleets. The relative hardships and dangers encountered by these two arms of defence are thus described by Napoleon, in his own memoirs: "War by land destroys a greater number of men than maritime war, being more perilous. The sailor, in a squadron, fights only once in a campaign; the soldier fights daily. The sailor, whatever may be the fatigues and dangers attached to his element, suffers much less than the soldier; he never endures hunger and thirst; he has always with him his lodging, his kitchen, his hospital, and his medical stores. The naval forces in the service of France and England, where cleanliness is preserved by discipline, and where experience has taught all the measures to be adopted for the preservation of health, are less subject to sickness than land forces. Besides the dangers of battles, the sailor has to encounter those of storms; but art has so materially diminished the latter, that they cannot be compared to those which occur upon land, and the popular in-

surrections, assassinations, and surprises by the enemy's light troops, to which the soldier is always exposed."

Again, in the Council of State, in 1802, to a remark of M. Thurguet, that "much longer time is required to form a sailor than a soldier; the latter may be trained to all his duties in six months"—Napoleon replied: "There never was a greater mistake; nothing can be more dangerous than to propagate such opinions; if acted upon, they would speedily lead to the dissolution of our army. At Jemappe there were 50,000 French against 9,000 Austrians; during the first four years of the war, all the hostile operations were conducted in the most ridiculous manner. It was neither the volunteers nor the recruits who saved the republic; it was the 180,000 old troops of the monarchy, and the discharged veterans whom the revolution impelled to the frontiers. Part of the recruits deserted; part died; a small portion only remained, who, in process of time, formed good soldiers. Why have the Romans done such great things? Because six years' instruction were, with them, required to make a soldier. A legion, composed of 3,000 such men, was worth 30,000 ordinary troops. With 15,000 men, such as the Guards, I would any where beat 40,000."

II. While all confess the value and importance of a militia force as an auxiliary and temporary means of defence, there are some who think it capable of competing with regulars in the open field; and others who, for the purpose of making political capital, loudly proclaim all other means of security to be superfluous, nay, dangerous and unconstitutional!

There are instances where disorganized and frantic mobs, animated by patriotic enthusiasm, have gained the most brilliant victories. Here, however, extraordinary circumstances supplied the place of order, and produced an equilibrium between forces that otherwise would have been very unequal; but, in almost every instance of this kind, the loss of the undisciplined army has been unnecessarily great, human life being substituted for skill and order. But victory, even with such a drawback, cannot often attend the banners of newly raised and disorderly forces. If the captain and crew of a steam ship knew nothing of navigation, and had never been at sea, and the engineer were totally unacquainted with his profession, could we expect the ship to cross the Atlantic in safety, and reach accurately her destined port? Would we trust our lives and the honor of our country to their care? Would we not say to them: First make yourselves acquainted with the principles of your profession; the use of the compass, and the means of determining whether you direct your course upon a ledge of rocks or into a safe harbor? War is not, as some seem to suppose, a mere game of chance. Its principles constitute one of the sublimest of modern sciences; and the general who understands the art of rightly applying its rules, and possesses the means of carrying out its precepts, may be morally certain of success.

History furnishes abundant proofs of the impolicy of relying upon undisciplined forces in the open field. Almost every page of Napier's classic History of the Peninsular War contains striking examples of the useless waste of life and property by the Spanish militia, while with one-quarter as many regulars, at a small fractional part of the actual expense, the French might have been repelled at the outset, or have been driven, at any time afterwards, from the peninsula. At the beginning of the French revolution the regular army was abolished, and the citizen soldiery, who were established throughout the kingdom on the 14th of July, 1789, relied

upon exclusively for the national defence. "But these 3,000,000 of national guards," says Jomini, the great historian of the revolution, "though good supporters of the decrees of the Assembly, were nevertheless useless for reinforcing the army beyond the frontiers, and utterly incapable of defending their own firesides." Yet no one can ever question their individual bravery and patriotism; for, when reorganized, disciplined, and properly directed, they put to flight the best troops in Europe. At the first outbreak of this revolution, the privileged classes of other countries, upholding crumbling institutions and rotten dynasties, rushed forth against the maddened hordes of French democracy. The popular power, springing upward by its own elasticity when the weight of political oppression was removed, soon became too wild and reckless to establish itself on any sure basis, or even to provide for its own protection. If the attacks of the enervated enemies of France were weak, so also feeble were her own efforts to resist these attacks. The republican armies repelled the ill-planned and ill-conducted invasion by the Duke of Brunswick—but it was by the substitution of human life for preparation, system, and skill; enthusiasm supplied the place of discipline; robbery produced military stores; and the dead bodies of her citizens formed epaulements against the enemy. Yet this was but the strength of weakness, the aimless struggle of a broken and disjointed Government; and the new revolutionary power was fast sinking away before the combined opposition of Europe, when the great genius of Napoleon, with a strong arm and iron rule, seizing upon the scattered fragments, and binding them together into one consolidated mass, made France victorious, and seated himself on the throne of empire.

No people in the world ever exhibited a more general and enthusiastic patriotism than the Americans during the war of our own Revolution; and yet our army received, even at that time, little or no support from the militia. The letters and reports of Washington, and his highest officers, are filled with proofs of this. The following brief extracts are from Washington's letters to the President of Congress, December, 1776:

"The saving in the article of stores, provisions, and in a thousand other things, by having nothing to do with the militia, unless in cases of extraordinary exigency, and such as could not be expected in the common course of events, would amply support a large army, which, well-officered, would be daily improving, instead of continuing a destructive, expensive, and disorderly mob." "In my opinion, if any dependence is placed on the militia another year, Congress will be deceived. When danger is a little removed from them, they will not turn out at all. When it comes home to them, the well-affected, instead of flying to arms to defend themselves, are busily employed in removing their families and effects; whilst the disaffected are concerting measures to make their submission, and spread terror and dismay all around, to induce others to follow their example. Daily experience and abundant proofs warrant this information." "Short enlistments, and a mistaken dependence upon the militia, have been the origin of all our misfortunes and the great accumulation of our debt." "The militia come in, you cannot tell how; go, you cannot tell when; and act, you cannot tell where; consume your provisions, exhaust your stores, and leave you at last at a critical moment."

These remarks of Washington will not be found too severe, if we remember the conduct of our militia in many an open field of the revolutionary war and of that of 1812.

But there is another side to this picture. We can point to the defence of Charleston, Mobile, New Orleans, Fort McHenry, Stonington, Niagara, and Plattsburg, in proof of what may be accomplished by militia, in connexion with fortifications. These examples most fully demonstrate the great value of a militia, when properly employed, as a defence against invasion. With fortifications, they constitute a grand military reserve, upon which we must always fall back, in cases of pressing emergency. But we must not forget that, to call this force into the open field—to take the mechanic from his shop, the merchant from his counter, and the farmer from his plough—will necessarily be attended with an immense sacrifice of human life. The lives lost on the battle field are not the only ones; militia, being unaccustomed to exposure, and unable to supply their own wants with certainty and regularity, contract diseases, which occasion, in every campaign, a most frightful mortality.

There is a vast difference in the cost of supporting regulars and a militia, as ours is now organized. The late Secretary of War, in a report to Congress, says that the expenses of the latter “invariably exceed those of the regular forces *at least three hundred per cent.*,” and that 55,000 *militia* were called into service during the Black Hawk and Florida wars, and that “30,000,000 of dollars have been expended in these conflicts!” Facts like these should awaken us to the necessity of reorganizing and disciplining this arm of defence.

Privateers bear to the regular navy somewhat the same relation that the militia do to the regular army. In the war of 1812, they were of considerable advantage in capturing enemy vessels and destroying their commerce.

III. In reference to the influence of field fortifications, railroads, canals, &c., on the operations of a campaign, we will only remark, that the vast changes which have been made since our last war, in the facilities of locomotion, render doubly imperative the duty of military preparation. Surrounded as our country is by disciplined forces, capable of striking at any moment a deadly blow at the prosperity of our large cities, our Government cannot, but with the deepest guilt, neglect the means of averting such a calamity.

We may regard as *permanent* means of defence—

1st. The army.

2d. The navy.

3d. Fortifications.

The first two of these could hardly be called permanent, if we were to regard merely their *personnel* or *materiel*; but, looking upon them as institutions or organizations, they present all the characteristics of durability. They are sometimes subjected to very great and radical changes. By the hot-house nursing of designing ambition or rash legislation, they may become overgrown and dangerous; or the storms of popular delusion may overthrow and apparently sweep them away. But they will immediately spring up again in some form or other, so deeply are they rooted in the organization of political institutions.

I. The importance of maintaining a permanent military force has already been alluded to in speaking of the equilibrium of national power. An army should always be kept within the limits of the nation's wants; but pity for a country which reduces it in numbers or support, so as to degrade its character or endanger its organization. “A Government,” says one of the best historians of the age, “which neglects its army, under

whatsoever pretext, is a Government culpable in the eyes of posterity; for it is preparing humiliations for its flag and its country, instead of laying the foundation for its glory."

On this point, Mr. B. F. Butler, formerly acting Secretary of War, remarks: "Our experience, as an independent State, has clearly shown that a permanent force, large enough to keep in check our savage neighbors, to fulfil towards them our treaty stipulations, and to garrison our more important fortifications, and capable of furnishing a considerable body of instructed officers, qualified to organize, in case of need, an efficient army, is indispensable to the preservation of peace on our borders and with other nations. *The history of our relations with the Indian tribes*, from its beginning to the present hour, is *one continued proof of this remark*; and for a long series of years *the treatment we received from European Powers was a most humiliating illustration of its truth*. Twice we were compelled to maintain, by open war, our quarrel with the principal aggressors; and the last of these conflicts, from the causes which provoked it, as well as from its severity and length, well deserves the appellation sometimes given to it of a second war of independence. After many years of forbearance and negotiation, our claims in other cases were at length amicably settled; but, in one of the most noted of these cases, it was not without much delay and imminent hazard of war that the execution of the treaty was finally enforced. No one acquainted with these portions of our history can hesitate to ascribe much of the wantonness and duration of the wrongs we endured to a knowledge on the part of our assailants of the scantiness and inefficiency of our military and naval force."

In a report on this subject, Mr. Calhoun says: "The organization of the army ought to be such as to enable the Government, at the commencement of hostilities, to obtain a regular force, adequate to the emergencies of the country, properly organized and prepared for actual service. It is thus only that we can be in the condition to meet the first shocks of hostilities with unyielding firmness, and to press on an enemy while our resources are yet unexhausted. But if, on the other hand, disregarding the sound dictates of reason and experience, *we should in peace neglect our military establishment, we must, with a powerful and skilful enemy, be exposed to the most distressing calamities.*"

In another able report to Congress, in 1818, Mr. Calhoun demonstrated that great danger would result from reducing the then existing military establishment, which was in all near 13,000 men. Nevertheless, this reduction took place in 1821, and we were soon made to suffer the consequences. It is stated, on high authority, "that if there had been two regiments in position at Jefferson Barracks, near St. Louis, in 1832, the war with Black Hawk, which cost the country \$3,000,000, would have been easily avoided; and it cannot be doubted that the scenes of devastation and savage warfare, which overspread the Floridas for nearly seven years, would have been avoided, and millions saved, if two regiments had been available."

Congress, though late, became convinced of the impolicy of departing from the organization recommended by Mr. Calhoun, and in the successive acts of 1833, 1836, and 1838, restored the number to about 12,000. But the Congress of 1842-'43 have again reduced the aggregate number to between 7,000 and 8,000.

A singular feature of this reduction was, that, while it discharged, with-

out the power of re-enlisting them, the veteran non-commissioned officers and privates of the last war, the raw recruits had to be retained—thus depriving the army of its very best material.

II. Our remarks on the duty of Government to support an army are equally applicable to the support of the navy. It, too, has important duties, both in peace and in war; and its healthful organization should be attended to with zealous care. But it also has had its vicissitudes within the last few years.

The *personnel* of the navy, however, has escaped much more fortunately than that of the army. Its organization has been somewhat improved, and its numbers and support left untouched.

The pay proper of the navy (including marines) for the fiscal year of 1843 is \$2,917,280 15; that of the army, for the same period, is \$1,313,370. The appropriations made for the support of the navy (including marines) for the fiscal year of 1843, including pay, provisions, arms, fuel, clothing, commutation, hospital stores, transportation, increase, repairs, &c., of ships, repairs and improvement of docks, navy yards, and arsenals, instruments, clerks, printing, and other contingencies, amount in all to \$5,586,757. The whole appropriation for the army, for the same period, including pay, provisions, arms, clothing, fuel, quarters, commutation, transportation of troops and supplies, forage, horses, building and repairs of quarters, parade grounds, camps, armories, arsenals, the manufacture of cannon for the army and fortifications, and arms for the militia, the collection of materials for powder, &c., clerks, instruments, printing, postage, and other contingencies, amount in all to \$3,965,768 60.

III. Permanent fortifications differ in many of their features from either of the two preceding elements of defence. They are *passive* in their nature, yet possess all the conservative properties of an army or navy, and, through these two, contribute largely to the active operations of a campaign. When once constructed, they require but little expenditure for their support. In time of peace, they withdraw no valuable citizens from the useful occupations of life. Of themselves, they can never exert an influence dangerous to public liberty; but as the means of preserving peace, and as obstacles to an invader, their influence and power are immense. While contributing to the economical support of a peace establishment, by furnishing drill grounds, parades, quarters, &c., and to its efficiency still more by affording facilities, both to the regulars and militia, for that species of artillery practice so necessary in the defence of water frontiers, they also serve as safe depots of arms and the immense quantity of materials and military munitions so indispensable in modern warfare. These munitions usually require much time, skill, and expense, in their construction; and it is of vast importance that they be preserved with the utmost care.

Maritime arsenals and depots of naval and military stores on the sea coast are more particularly exposed to capture and destruction. Here an enemy can approach by stealth, striking some sudden and fatal blow before any effectual resistance can be organized. But, in addition to the security afforded, by harbor fortifications, to public property of the highest military value, they also serve to protect the merchant shipping and the vast amount of private wealth which a commercial people always collect at these points. They furnish safe retreats and means of repair for public vessels injured in battle or by storms, and to merchantmen a refuge from the dangers of the sea or the threats of hostile fleets. Moreover, they greatly facilitate

our naval attacks upon the enemy's shipping; and if he attempt a descent, their well-directed fire will repel his squadrons from our harbors, and force his troops to land at some distant and unfavorable position.

The three means of permanent defence which we have mentioned are of course intended to accomplish the same general object; but each has its distinct and proper sphere of action, and neither can be regarded as antagonistical to the others. Any undue increase of one, at the expense of the other two, must necessarily be followed by a corresponding diminution of national strength. It does not follow, however, that all must be maintained upon the same footing. The position of the country and the character of the people must determine this. England, from her insular position, and the extent of her commerce, must maintain a large navy; a large army is also necessary for the defence of her own sea coasts and the protection of her colonial possessions. Her men-of-war secure a safe passage for her merchant vessels, and they transport her troops in safety through all seas, and thus contribute much to the acquisition and security of colonial territory. France has less commerce, and but few colonial possessions. She has a great extent of sea coast, but her fortifications secure it from maritime descents; her only accessible points are on the land frontiers. Her army and fortifications, therefore, constitute her principal means of defence. The United States possess no colonies; but they have a sea coast of 3,000 miles, with numerous bays, estuaries, and navigable rivers, which expose our most populous cities to maritime attacks. The Northern land frontier is 2,000 miles in extent; and, in the West, our territory borders on foreign possessions for some two or three thousand miles more.

The principal attacks we have had to sustain, either as colonies or States, from civilized foes, have come from Canada. As colonies, we were continually encountering difficulties and dangers from the French possessions. In the war of the Revolution, it being one of national emancipation, the military operations were more general throughout the several States; but, in the war of 1812, the attacks were confined to the Northern frontier and a few exposed points along the coast. In these two contests with Great Britain, Boston, New York, Philadelphia, Baltimore, Washington, Charleston, Savannah, Mobile, and New Orleans, being within reach of British naval power, and offering the dazzling attraction of rich booty, have each been subjected to powerful assaults.

Similar attacks will undoubtedly be made in any future war with England. An attempt at permanent lodgement would be based either on Canada, or a servile insurrection in the Southern States. The former project, in a military point of view, offers the greatest advantages, and probably the latter would be resorted to merely for effecting a diversion. But, for inflicting upon us a sudden and severe injury by the destruction of large amounts of public and private property, our seaport towns offer inducements not likely to be disregarded. This mode of warfare, barbarous though it is, will certainly attend a conflict with any maritime Power. How can we best prepare, in time of peace, to repel these attacks?

To furnish an answer to this question, a joint commission, of our most distinguished military and naval officers, was formed soon after the war of 1812. To the labors of this board, whose investigations were continued for several years, we owe our present system of sea-coast defence. The details of this system received some additions and alterations by a board of officers

appointed by President Van Buren in 1839. Their report constitutes one of the documents which form the basis of these remarks

This system has received the approbation of the several Presidents, and, (with one apparent exception,*) of all the Secretaries of War, and the highest military authorities of the land. The fluctuating state of the public finances, however, has much delayed the completion of the project. When the Treasury was full to overflowing, Mr. Benton strongly advocated the appropriation of a sum sufficient for the gradual construction of these works of permanent defence. But Congress preferred turning this stream into the already swollen channels of trade and speculation. We know the consequences. For a part of two years the public works were mostly suspended. Mechanics and laborers on our fortifications were discharged. The works themselves, suspended in the middle of their construction, were much injured by exposure, and the total cost of their construction nearly doubled.

Some persons, from a partial or superficial view of the subject, from self-interest, or from entire ignorance of the principles of the military art, have proclaimed opinions, in public speeches and through the newspapers of the day, decrying all works of defence, as inexpedient and useless. Their objections to the use of permanent works of national defence may be summed up as follows:

I. That fortifications are useless as a defence of the sea coast, inasmuch as our maritime cities and arsenals can be better and more economically secured by a home squadron; land batteries being unable to cope, gun for gun, with a naval force.

II. That, on a land frontier, they are not only useless, but actually injurious, inasmuch as their garrisons must weaken the active army, and fetter its movements. That the fundamental principle of modern military science, as developed by Napoleon, *celerity of movement*, is wholly incompatible with the use of fortifications.

Let us examine each of these objections separately.

I. To prove the absurdity of relying *exclusively* upon naval means for sea-coast defence, it might be sufficient to refer to the written opinions of our highest naval officers themselves; but, as their reports are not within reach of easy reference, we shall proceed to discuss the general principles upon which these opinions were founded.

We have already alluded to the impossibility of substituting one means of defence for another. The efficiency of the bayonet can in no way enable us to dispense with artillery, nor the value of engineer troops in the passage of rivers and the attack and defence of forts, render cavalry the less necessary in other operations of a campaign. To the navy alone must we look for the defence of our shipping upon the high seas; but it cannot replace fortifications in the protection of our harbors, bays, rivers, arsenals, and commercial towns.

Let us take a case in point. For the defence of New York city, it is deemed highly important that the East river should be closed to the approach of a hostile fleet at least fifteen or twenty miles from the city, so that an army landed there would have to cross the Westchester creek, the Bronx, Harlem river, and the defiles of Harlem heights—obstacles of great importance in a judicious defence. Throg's Neck is the position selected for

* The apparent exception to which we allude is the report of 1836, in which the system is approved, but objections made to the extent of its application.

this purpose; cannon placed there not only command the channel, but, from the windings of the river, sweep it for a great distance above and below. No other position, even *in* the channel itself, possesses equal advantages. Hence, if we had only naval means of defence, it would be best, were such a thing possible, to place the floating defences themselves on this point. Leaving entirely out of consideration the question of relative *power*, position alone would give the superior efficiency to the fort. But there are other considerations no less important than that of position. Fort Schuyler can be garrisoned and defended in part by the same militia force which will be employed to prevent the march of the enemy's army on the city. On the other hand, the crews of the floating defences must be seamen; they will consequently be of less value in the subsequent land operations. Moreover, forts, situated as this is, can be so planned as to bring to bear upon any part of the channel a greater number of guns than can be presented by any hostile squadron against the corresponding portion of the fort. This result can be obtained with little difficulty in narrow channels, and an approximation to it is not incompatible with the defence of the broader estuaries.

We will suppose that there are no such points of land in the inlets to our harbor, and that we rely for defence upon a naval force exclusively. Let us leave out of consideration the security of all our other harbors and our commerce on the high seas, and also the importance of having at command the means of attacking the enemy's coast, in the absence of his fleet. We take the single case of the attack being made here where our fleet is assembled. Now, if this fleet be equal in number to the enemy, the chances of success may be regarded as equal; if inferior, the chances are against us—for an attacking force would probably be of picked men, and of the best material. But here the consequences of victory are very unequal: the enemy can lose his squadron only, while we put in peril both our squadron and the objects it is intended to defend. If we suppose our own naval force superior to that of the enemy, the defence of this harbor would, in all respects, be complete, provided this force never left the harbor. "But, then, all the commerce of the country upon the ocean must be left to its fate; and no attempt can be made to react offensively upon the foe, unless we can control the chances of finding the enemy's fleet within his ports, and the still more uncertain chance of keeping him there; the escape of a single vessel being sufficient to cause the loss of our harbor."

These remarks are based upon the supposition that we have but a single harbor; whereas we have many of them, and all must be equally defended, for we know not to which the enemy will direct his assaults. If he come to one in our absence, his object is attained without resistance; or, if his whole force be concentrated upon one but feebly defended, we involve both fleet and harbor in inevitable defeat and ruin. Could our fleet be so arranged as to meet these enterprises? "As it cannot be denied that the enemy can select the point of attack out of the whole extent of coast, where is the prescience that can indicate the spot? And if it cannot be foretold, how is that ubiquity to be imparted that shall always place our fleet in the path of the advancing foe? Suppose we attempt to cover the coast by cruising in front of it, shall we sweep its whole length—a distance scarcely less than that which the enemy must traverse in passing from his coast to ours? Must the gulf of Mexico be swept, as well as the Atlantic; or, shall we give up the gulf to the enemy? Shall we cover the Southern

cities, or give them up also? We must unquestionably do one of two things—either relinquish a great extent of coast, confining our cruisers to a small portion only; or include so much that the chances of intercepting an enemy would seem to be out of the question.”

“On the practicability of covering even a small extent of coast by cruising in front of it—or, in other words, the possibility of anticipating an enemy’s operations, discovering the object of movements of which we get no glimpse and hear no tidings, and seeing the impress of his footsteps on the surface of the ocean—it may be well to consult experience.”

The naval power of Spain under Philip II was almost unlimited. With the treasures of India and America at his command, the fitting out of a fleet of 150 or 200 sail to invade another country was no very gigantic operation. Nevertheless, this naval force was of but little avail as a coast defence. Its efficiency for this purpose was well tested in 1596. England and Holland attacked Cadiz with a combined fleet of 170 ships, which entered the bay of Cadiz without, on its approach to their coast, being once seen by the Spanish navy. This same squadron, on its return to England, passed along a great portion of the Spanish coast, without ever meeting the slightest opposition from the innumerable Spanish floating defences.

In 1744, a French fleet of 20 ships, and a land force of 22,000 men, sailed from Brest to the English coast, without meeting with any opposition from the superior British fleet which had been sent out, under Sir John Norris, on purpose to intercept them. The landing of the troops was prevented by a storm, which drove the fleet back upon the coast of France to seek shelter.

In 1755, a French fleet of 25 sail of the line, and many smaller vessels, sailed from Brest for America. Nine of these soon afterwards returned to France, and the others proceeded to the gulf of St. Lawrence. An English fleet of 17 sail of the line and some frigates had been sent out to intercept them; but the two fleets passed each other in a thick fog, and all the French vessels except two reached Quebec in safety.

In 1759, a French fleet, blockaded in the port of Dunkirk by a British force, under Commodore Bagnall, seizing upon a favorable opportunity, escaped from the enemy, attacked the coast of Scotland, made a descent upon Carrickfergus, and cruised about till February, 1760, without meeting a single British vessel, although 61 ships of the line were then stationed upon the coasts of England and France, and several of these were actually in pursuit.

In 1796, when the French attempted to throw the army of Hoche into Ireland, the most strenuous efforts were made by the British navy to intercept the French fleet in its passage. The Channel fleet, of near 30 sail of the line, under Lord Bridport, was stationed at Spithead; Sir Roger Curtis, with a smaller force, was cruising to the westward; Vice Admiral Colpoys was stationed off Brest, with 13 sail of the line; and Sir Edward Pellew (afterwards Lord Exmouth) watched the harbor, with a small squadron of frigates. Notwithstanding this triple floating bulwark, as it was called—one fleet on the enemy’s coast, a second in the Downs, and a third close on their own shores—the French fleet of 44 vessels, carrying a land force of 25,000 men, reached Bantry bay in safety! This fleet was eight days on the passage, and three more in landing the troops; and most of the vessels might have returned to Brest in safety, had it not been for the disasters by storms—for only *one* of their whole number was inter-

cepted by the vast naval force which England had assembled for that express object. "The result of this expedition," says Alison, in his History of Europe, "was pregnant with important instructions to the rulers of both countries. To the French, as demonstrating the extraordinary risks which attend a maritime expedition, in comparison with a land campaign; the small number of forces which can be embarked on board even a great fleet; and the unforeseen disasters which frequently, on that element, defeat the best concerted enterprises. To the English, as showing that *the empire of the seas does not always afford security against invasion*; that, in the face of superior maritime forces, her possessions were for sixteen days at the mercy of the enemy; and that neither the skill of her sailors, nor the valor of her armies, but the fury of the elements, saved them from danger in the most vulnerable part of their dominions.

"While these considerations are fitted to abate the confidence in invasion, they are calculated, at the same time, to weaken an overweening confidence in naval superiority, and to demonstrate that *the only base on which certain reliance can be placed, even by an insular Power, is a well-disciplined army and the patriotism of its own subjects.*"

Subsequent events still further demonstrated the truth of these remarks. In the following year, a French squadron of two frigates and two sloops passed the British fleets with perfect impunity, destroyed the shipping in the port of Ilpacombe, and safely landed their troops on the coast of Wales. Again: in 1798, the immense British naval force failed to prevent the landing of General Humbert's army in the bay of Killala; and, in the latter part of the same year, a French squadron of nine vessels and 3,000 men escaped Sir J. B. Warren's squadron, and safely reached the coast of Ireland. As a further illustration, we quote from the report of the Board on National Defence, in 1839.

The Toulon fleet, in 1798, consisting of about 20 sail of the line and 20 smaller vessels of war, and numerous transports, making, in all, 300 sail and 40,000 troops, slipped out of port, and sailed to Malta. "It was followed by Nelson, who, thinking correctly that they were bound for Egypt, shaped his course direct for Alexandria. The French, steering towards Candia, took the more circuitous passage; so that Nelson arrived at Alexandria before them, and, not finding them there, returned, by way of Caramania and Candia, to Sicily, missing his adversary in both passages. Sailing again for Alexandria, he found the French fleet at anchor in Aboukir bay, and, attacking them there, achieved the memorable victory of the Nile. When we consider the narrowness of this sea; the numerous vessels in the French fleet; the actual crossing of the two fleets on a certain night; and that Nelson, notwithstanding, could see nothing of the enemy himself, and hear nothing of them from merchant vessels, we may judge of the probability of waylaying our adversary on the broad Atlantic.

"The escape of another Toulon fleet in 1805; the long search for them in the Mediterranean by the same able officer; the pursuit in the West Indies; their evasion of him amongst the islands; the return to Europe; his vain efforts subsequently, along the coast of Portugal, in the bay of Biscay, and off the English channel; and the meeting at last at Trafalgar, brought about only because the combined fleets, trusting to the superiority that the accession of several reinforcements had given, were willing to try the issue of a battle—these are instances, of many that might be cited, to show how small is the probability of encountering upon the ocean an

enemy who desires to avoid a meeting, and how little the most untiring zeal, the most restless activity, the most exalted professional skill and judgment, can do to lessen the adverse chances. For more than a year, Nelson most closely watched his enemy, who seems to have got out of port as soon as he was prepared to do so, and without attracting the notice of any of the blockading squadron. When out, Nelson, perfectly in the dark as to the course Villeneuve had taken, sought for him in vain on the coast of Egypt. Scattered by tempests, the French fleet again took refuge in Toulon; whence it again put to sea, when refitted and ready, joining the Spanish fleet at Cadiz.

"On the courage, skill, vigilance, and judgment, acceded on all hands to belong in a pre-eminent degree to the naval profession in this country, this system of defence relies to accomplish, against a string of chances, objects of importance so great that not a doubt or misgiving as to the result is admissible. It demands of the navy to do perfectly, and without fail, that which, to do at all, seems impossible. The navy is required to know the secret purposes of the enemy, in spite of distance, and the broken intercourse of a state of war, even before these purposes are known to the leader who is to execute them; nay, more, before the purpose itself is formed. On an element where man is but the sport of storms, the navy is required to lie in wait for the foe at the exact spot and moment, in spite of weather and seasons; to see him in spite of fogs and darkness.

"Finally, after all the devices and reliances of the system are satisfactorily accomplished, and all difficulties subdued, it submits to the issue of a single battle, on equal terms, the fate of the war, having no hope or resource beyond.

"The proper duty of our navy is, not coast or river defence; it has a more glorious sphere—that of the *offensive*. In our last war, instead of lying in harbor and contenting themselves with keeping a few more of the enemy's vessels in watch over them than their own number—instead of leaving the enemy's commerce in undisturbed enjoyment of the sea, and our commerce without countenance or aid—they scattered themselves over the wide surface of the ocean, penetrated to the most remote seas, every where acting with the most brilliant success against the enemy's navigation. And we believe, moreover, that in the amount of enemy's property thus destroyed, of American property protected or recovered, and in the number of hostile ships kept in pursuit of our scattered vessels, ships evaded if superior, and beaten if equal—they rendered benefits a thousand-fold greater, to say nothing of the glory they acquired for the nation, and the character they imparted to it, than any that would have resulted from a state of passiveness within the harbors.

"Confident that this is the true policy as regards the employment of the navy proper, we doubt not that it will in the future be acted on, as it has been in the past; and that the results, as regards both honor and advantage, will be expanded commensurately with its own enlargement.

"In order, however, that the navy may always assume and maintain that active and energetic deportment, in offensive operations, which is at the same time so consistent with its functions, and so consonant with its spirit, we have shown that it must not be occupied with mere coast defence."

As there is but little probability that our naval power, no matter how great that power may be, will meet the enemy at sea in sufficient force to destroy any large and well-concerted expedition, we must prepare to

meet him on the shore, and repel his attacks. To determine the best means of accomplishing this, let us consult past experience. We shall quote exclusively from English history, during the wars of the French revolution, inasmuch as the British navy was then the most powerful in the world, and their maritime descents are almost the only ones which have ever been attended with the least shadow of success.

In 1795, a maritime expedition was fitted out against Quiberon, at an expense of \$8,000,000. This part of the coast had then a naval defence of near thirty sail, carrying about 1,600 guns. Lord Bridgeport attacked it with fourteen sail of the line, five frigates, and some smaller vessels, about 1,500 guns in all, captured a portion of the fleet, and forced the remainder to seek shelter under the guns of l'Orient. The naval defence being destroyed, the British entered Quiberon without opposition. This bay is said by Brenton, in his *British Naval History*, to be "the finest on coast of France, or perhaps in the world, for landing an army."

Besides the natural advantages of naval supplies, the inhabitants of the surrounding country were in open insurrection, ready to receive the invaders with open arms. The Chouans and Vendéans offered their co-operation, and a large body of Royalists in the south of France were favorable to the enterprise. A body of 10,000 troops were landed, and arms and clothing furnished to as many more Chouan troops; but they failed in their attack upon St. Barbe; and General Hoche, from his entrenchments, with 7,000 men, held in check a body of 18,000, penned up without defences in the narrow peninsula. Reinforced by a new debarkation, the allies again attempted to advance, but were soon defeated and nearly destroyed.

In 1799, the English and Russians made a descent upon Holland, with a fleet of fourteen ships of the line and ten frigates, carrying about 1,100 guns, and a great number of transports, with an army of 36,000 men. The first division was detained some two weeks off the coast by tempestuous weather, and the whole force landed in detachments at some days' interval. A considerable party of Orangemen favored the landing, and the Prince of Orange himself made a demonstration on the frontiers of Frise. The Dutch naval defences consisted of eight ships of the line, three fifty-four gun ships, eight forty-eight gun ships, and eight smaller frigates, carrying in all about 1,200 guns; but this force contributed little or nothing to the defence, and soon hoisted the hostile flag. The defensive army was at first only 12,000 men, but the Republicans afterwards increased it to 22,000, and finally to 28,000 men. Several undecided battles were fought, but the allies failed to get possession of a single strong place, and, after a loss of 6,000 men, were compelled to capitulate. "Such," says Alison, "was the disastrous issue of the greatest expedition which had yet sailed from the British harbors during the war."

In 1801, Nelson, with three ships of the line, two frigates, and thirty-five smaller vessels and bombs, made a desperate attack upon the harbor of Boulogne, but was repulsed with severe loss.

Passing over some unimportant attacks, we come to the descent upon the Scheldt, or, as it is commonly called, the Walcheren expedition, in 1809. This expedition, though a failure, has often been referred to as proving the expediency of maritime descents, and the ease with which naval forces can sail past fortifications, or reduce them to silence. The following is a brief narrative of the expedition :

Napoleon had planned, for the protection of a maritime force in the Scheldt, the construction of vast fortifications, dock yards, and naval arsenals, at Flushing and Antwerp—the former at the mouth of the Scheldt, and the latter sixty or seventy miles further up the river. The plan was scarcely commenced, when the English attempted to seize upon the defences, and capture or destroy the naval force. Flushing was but ill secured, and Antwerp was at this time entirely defenceless. The rampart was unarmed with cannon, dilapidated, and tottering, and its garrison consisted of only about 200 invalids and recruits. Napoleon's regular army was employed on the Danube and in the Peninsula. The attacking force consisted of 37 ships of the line, 23 frigates, 33 sloops of war, 28 gun, mortar, and bomb vessels, 36 smaller vessels, and 82 gun boats, and innumerable transports, with over 40,000 troops, and an immense artillery train; making in all, says Alison, "an hundred thousand combatants." The land force alone was nearly equal to the army of Wellington at Waterloo. A landing was made upon the island of Walcheren, and siege laid to Flushing, which surrendered eighteen days after the landing, and two days after the opening of the siege batteries. These batteries were armed with fifty-two heavy guns; the attack upon the water front was made by seven or eight ships of the line, and a large flotilla of bomb vessels. The channel at the mouth of the river was too broad to be defended by Flushing, and the main portion of the fleet passed out of reach of the guns, and ascended the Scheldt. Twenty-eight days after the first disembarkation, the headquarters had advanced about half way to Antwerp; but this place was now repaired; the French and Dutch fleets (which, on the arrival of the English, were off the mouth of the river as a home squadron) had been removed above the city for safety, and a land army assembled in large numbers. The English gradually retired, and finally evacuated their entire conquest. The cost of the expedition was immense, both in treasure and in life. It was certainly very poorly managed; but we cannot help here noticing the superior value of fortifications, as a defence against such descents. They did much to retard the operations of the enemy till a defensive army could be raised; the works of Flushing were never intended to close up the channel of the Scheldt, and of course could not intercept the passage of shipping. But they were not reduced by a naval force, as has sometimes been alleged. Colonel Mitchel says, that the fleet "kept up so tremendous a fire upon the batteries, that the French officers, who had been present at Austerlitz and Jena, declared, *que la cannonade* in these battles had been a mere *jeu d'enfans* in comparison. Yet, what was the effect produced on the defences of the place by this fire, so formidable, to judge by the sound alone? The writer can answer the question with some accuracy, for he went along the entire sea line the very day after the capitulation, and found no part of the parapet injured so as to be of the slightest consequence, and only one solitary gun dismounted, evidently by the bursting of a shell, and which could not, of course, have been thrown from the line of battle ships, but must have been thrown from the land batteries."

We have now shown that a naval force cannot be relied on as the sole means of securing a coast from naval attacks; that maritime descents must in general be limited to striking some sudden blow upon an unprotected point; and that fortifications and land forces are the best means of warding off these descents.

Before examining the question of relative cost of forts and ships, we will

pass to the consideration of the question of their relative power, gun for gun, when actually brought into contact.

It must be remembered, that this question does not at all involve the expediency of supporting navies and batteries. *Both* must be supported; for neither can perform the duties of the other, no matter how strong it may be.

Let us suppose a fair trial of this relative strength. The fort is to be properly constructed, and in good repair; its guns in a position to be used with effect; its garrison skilful and efficient; its commander capable and brave. The ship is of the very best character, and in perfect order; the crew disciplined and courageous; its commander skilful and adroit; the wind, tide, and sea, all as could be desired.* The numbers of the garrison and crew are to be no more than requisite, with no unnecessary exposure of human life to swell the list of the slain. The issue of this contest, unless attended with extraordinary and easily distinguishable circumstances, would be a fair test of their relative strength.

What result should we anticipate, from the nature of the contending forces? The ship, under the circumstances we have supposed, can choose her point of attack, selecting the one she may deem the most vulnerable; but she herself is every where vulnerable; her men and guns are much concentrated, and consequently much exposed.

But in the fort, "it is only the gun, a small part of the carriage, and now or then a head or an arm raised above the parapet, that can be hurt; the ratio of the exposed surfaces being not less than *fifteen* or *twenty* to *one*. Next, there is always more or less motion in the water, so that the ship's gun, although it may have been pointed accurately at one moment, at the next will be thrown entirely away from its object, even when the motion of the ship is too small to be otherwise noticed; whereas in the battery the gun will be fired just as it is pointed, and the motion of the ship will merely vary to the extent of a few inches, or at most two or three feet, from the spot in which the shot is to be received. In the ship, there are, besides, many points exposed that may be called vital points. By losing her rudder, or portions of her rigging, or of her spars, she may become unmanageable and unable to use her strength; she may receive shots under water, and be liable to sink; she may receive hot shot, and be set on fire. These damages are in addition to those of having her guns dismounted and her people killed by the shots that pierce her sides, and scatter splinters from her timbers—while the risks of the battery are confined to those mentioned above, namely, the risk that the gun, the carriage, or the men, may be struck."

The opinions of military writers and the facts of history fully accord with these deductions of theory. Some few individuals, mistaking or misstating the facts of a few recent trials, assert that modern improvements in the naval service have so far outstripped the progress in the art of land defence, that a floating force is now abundantly able to cope, upon equal terms, with a land battery. Ignorant and superficial persons, hearing merely that certain forts had recently yielded to a naval force, and taking no trouble to learn the real facts of the case, have paraded them before the public, as proofs positive of a new era in military science. This conclu-

* These conditions for the battery are easily satisfied; but for the ship, are partly dependent on the elements, and seldom to be wholly obtained.

sion, however groundless and absurd, has received credit with us merely from its novelty. The Americans are often attracted by what is new and plausible; old theories and established principles are frequently regarded so much the less for their antiquity, notwithstanding the proofs and arguments which time has thrown around them.

In the *Appalachicola document* are imbodyed many crudities, long since repudiated in the theories and banished from the practice of the old world.

The report consists of three or four pages of a survey of the bays of Appalachicola, St. Joseph's, St. Andrew's, Ship Island, and Tampa, and 30 pages of an attempt to prove the worthlessness of fortifications and the superior efficiency of naval defences. We shall comment only upon the propositions contained in this portion of the document, viz: "That whatever policy we adopt must and ought to be nearly exclusive in its application;" "that our defensive policy should be by naval means;" "that the system of fortifications, recommended by Mr. Poinsett in 1839, and by Mr. Bell and Mr. Spencer in 1841, is intended to lay the foundation of a great military power, to cover the country with castles, 'dangerous to freedom,' but utterly worthless in defence;" "that, fortifications are useless, nay, dangerous, without an army educated to defend them, and of competent numbers;" "that, for the true interests of the country, it had been better that we had never known this system, and that the further prosecution of it should be abandoned;" "that we had better blow into air, and leave in ruins, citadels, which command our cities with their guns, and control our harbors, that might, and probably would, be seized upon by an excited populace for lawless purposes;" "that fortifications do not and cannot successfully resist the attacks of ships;" and that "they must henceforth be constructed beyond the reach of fleets, to be even secure."

This report further says, there is scarcely a port in the old or new world which has not been forcibly entered by hostile fleets, and fallen before their broadsides! In support of these broad assertions, the following successful naval attacks are adduced, viz:

Jamaica, in Cromwell's time; Rio Janeiro; Carthagena, in 1565, [1585?] 1697, 1706, and 1741; Porto Bello, in 1740; Guadaloupe, in 1759 and 1794; Martinique; Havana; the Cape of Good Hope; Malta; Curaçoa; Chagres, in 1841; Senegal and Mocha; Java, Sumatra, and "the rich city of Manilla;" Madras, Calcutta, Pondicherry, and Ceylon; Gibraltar; Copenhagen; Constantinople; Algiers; San Juan d'Ulloa; St. Jean d'Acre; Louisburg; Quebec; Red Hook; Washington and Baltimore; Charleston and Mobile.

Let us now examine these cases, and see if they authorize the inferences drawn from them by the report.

"*Jamaica, by a British fleet, in Cromwell's time.*"—In the reduction of Jamaica, in 1655, no trial of strength was made between the ships and forts; it was effected almost wholly by the army of General Venobles, which amounted to about 5,000 men. The defensive army was forced to capitulate, and the principal place surrendered by treaty. So little assistance was rendered to the army by the fleet, that one of the commissioners openly declared, "he suspected they were betrayed." And this same naval force of 30 ships, under Admiral Penn, also made an attack on Hispaniola, but, after a contest of some two weeks, was repulsed with great loss.

"*Rio Janeiro, taken by Duguay Truin, with a small fleet,*" &c.—Truin

did really sail into the harbor of Rio Janeiro, in 1711, in spite of the little defences at the entrance, but that passage cost him the loss of 300 men out of his small fleet. He did not stop to test the question of strength, but sailed past with all possible speed. His troops were landed, and batteries erected on shore, but neither soldiers nor inhabitants remained to fight ; they had fled to the mountains.

Carthagená.—The taking of this place in 1585 was effected entirely by land troops. The fleet merely acted as transports, and took no part in the contest. The conquest of this place by the French, in 1697, was also effected by land forces, the ships again acting merely as transports. The heavy train of land artillery made a breach in the walls of the town, through which the assault was made. The Carthagená taken in 1706 was the place of that name in old Spain ; but this was an operation purely political, no defence whatever being made. In the words of Dr. Campbell, "information being received that the inhabitants of Carthagená wished only for the presence of the [English] fleet, and an opportunity of declaring for King Charles III, it was determined to steer thither." "The fleet arrived on the 1st of June, and the conditions of surrender were finally settled on the following day."

The attack in 1741 was a total failure, though made with 30 ships of the line and numerous smaller vessels—124 sail in all, carrying 2,682 guns, 16,000 seamen, and 12,000 troops. The defences of Carthagená consisted of 10 forts and batteries, 9 of which (the armament of the 10th not known) carried 222 guns of all calibers ; but a part of this number of guns were too small to reach the ships at any considerable distance. Of these 9 forts, one (of 85 guns) was unfinished, two (together, 71 guns) were blown up before attacked, and only a part of the guns were mounted in one of fascine batteries (of 15 guns.) Carthagená itself was armed with 160 guns, but the only attack made upon it was an experimental one by a floating battery. The several garrisons of these forts amounted to only 4,000 men. The siege continued forty days, when the British re-embarked their troops, and retired with a severe loss. In the single attempt to take fort St. Lazar, this loss amounted to over 600 men.

Carthagená had been bombarded, in 1740, for three days, by a fleet of 9 sail of the line, carrying between five and six hundred guns, and near 4,000 men ; but the forts were unharmed, and the bombardment "had no other effect than that of terrifying the inhabitants, and injuring some churches and convents." The ships, however, were so much injured as to render it necessary for them to return to Porto Bello for repairs.

"*Porto Bello, taken by Admiral Vernon in 1740.*"—Vernon's fleet here consisted of 6 sail of the line, carrying 380 guns, and 2,495 men, and a small land force. The attack was first made upon Fort Iron, which carried 78 guns, and a lower battery of 22 guns ; the garrison amounted to less than 300 men in all. It was begun by the Hampton Court, of 70 guns and 495 men, firing 400 balls in the first 25 minutes. The other ships soon followed ; but, their united efforts being unable to effect a breach in the walls of the fort, a body of sailors and soldiers were directed to attack it on the land-side. These soldiers climbed into the embrasures on each other's shoulders, and reduced the garrison by a fire of musketry ; those who capitulated being only 40 in number, including both officers and privates ; the remainder had fled. Gloria Castle and the other battery in the farther part of the harbor were neither of them attacked ; together, they

carried 120 guns in all, and a garrison of 400 men. Dr. Campbell, in his British Naval History, says : "It must be confessed that the easy conquest of Admiral Vernon and his command is to be in part attributed to the cowardice of the Spaniards in surrendering the first fort, before a breach was made, and the other two before they were attacked. Gloria Castle might have sustained a long siege ; and the batteries in that and St. Jeronimo, if properly served, would have rendered the entrance into the harbor exceedingly dangerous, if not impracticable." Another English writer, of equal authority, says : "The Spaniards deserted their forts, and such was their pusillanimity that they suffered them to be taken without bloodshed. Vernon found more difficulty in demolishing the fortifications of the place than in taking it."

An attempt had previously been made by Admiral Hosier, with a large English squadron, to reduce this place ; but, says Dr. Campbell, "after a siege of six months or more, he weighed anchor, and sailed for Jamaica, after such a loss of men, and in so wretched a condition, that I cannot prevail on myself to enter into the particulars of a disaster which I heartily wish could be blotted out of the annals and of the remembrance of this nation." So much for the naval attacks on Porto Bello.

"*Among the rest, the island of Guadaloupe is remarkably in point,*" &c.—The attacks quoted in the report are those of 1759 and 1794. The first was made by Commodore Moore, with 10 ships of the line, some frigates and gun vessels, carrying about 1,000 guns, and 60 transports, with 800 marines, and a land force of six regiments of the line, a detachment of engineers and artillerymen, and a large number of volunteers from the English islands—in all, about 6,000 men. The defences consisted of a citadel and several open water batteries, carrying, in all, about 100 guns. The several garrisons were composed of "five companies of regular troops, scarce making 100 men in the whole island." The ships and batteries were here actually brought into contact, and the following is the order of the engagement, so far as given by the English writers themselves :

British ships.			No. guns.		Batteries.			No. guns.	
The Leon	-	-	60	engaged with	-	1st battery		9	
Buford	-	-	70	} engaged with	-	3d battery		12	
Panther	-	-	60						
Berwick	-	-	74	engaged with	-	4th battery		7	
Rippon	-	-	60	engaged with	-	5th battery		6	
St. George	-	-	90	} engaged with	-	Citadel		47	
Cambridge	-	-	80						
Norfolk	-	-	74						

How the other ships and batteries were engaged, or whether engaged at all, is not stated. Some of the English writers state the armament of the citadel at 43 guns, and that of the Berwick ship at 66—an unimportant difference ; all agree upon the other points.

Here was a naval force of 7 to 1, (we count both broadsides of the engaged ships, and also all the guns of the engaged forts, both those for the land and water defences;) and what was the result? Some of the batteries were injured ; but the citadel, though attacked by a force of more than 5 to 1, had, according to Beatson, neither its walls *injured* nor its guns *dismounted*. The garrison was driven out by the bravery of the

British forces on land ; the town was taken, and the whole island finally subdued, after a contest of a little over three months. All this is well known ; and it is also well known, to those who have taken the trouble to examine the facts of the case, that there is nothing in it to justify a single inference in favor of the superiority of guns afloat over those on shore.

The reduction of Guadaloupe, in 1794, was almost wholly effected upon land. The force sent out upon this expedition consisted of 18 vessels of war, carrying between 700 and 800 guns, and nearly 7,000 troops. A part of these troops were landed near some small batteries, under the fire of the Winchelsea ; but the principal defences of the place, being almost entirely without garrisons, were carried by the enemy's land forces. The English left a large squadron for the defence of the island ; but, notwithstanding this, the French found the means of evading them, and reorganizing their forts, which, being now properly defended, repelled the combined attacks of Admiral Jervis and General Grey.

Martinique.—The same combined sea and land forces, under Commodore Moore, which attacked Guadaloupe in 1759, also made an attack upon Martinique in the same year. Notwithstanding the great superiority of the attacking force over the land forces of Port Royal, the several attempts of the British to silence the batteries, and effect a lodgement by land, were altogether ineffectual, and the enemy was at last compelled to re-embark his troops, and retire from the contest, with several of his vessels seriously injured, and many of his men killed and wounded. The fleet afterwards sailed to St. Pierre, for the purpose of attempting that part of the island ; but, after a reconnoissance of the place, the commodore decided against it, because, said he, "the ships may be so much injured in the attack as to prevent them from availing themselves of their success, and from undertaking any other expedition during the season."

While the French population of Martinique, in 1793, were distracted by the same political differences which were then deluging the mother country in blood, England attempted to capture the island, through the assistance of the Royalist party. The British attacking force consisted of five ships of the line and three smaller vessels, 496 guns in all, and a land force of 3,000 men, of which 1,100 were regulars ; (some writers estimate this land force at only 2,000 men.) General Rochambeau, it is said, had "only a few hundred troops" for the defence of the batteries ; nevertheless, he most signally repulsed the enemy, and compelled him to abandon the island.

But the English returned again in 1794, with a superior force ; their fleet now consisted of eighteen vessels of war, carrying between 700 and 800 guns, and a number of transports with near 7,000 troops. General Rochambeau's army amounted to only 600 men, of whom 400 were militia. The British naval force, notwithstanding its immense superiority, did not attempt to force its way into the harbor, and attack the forts. On the contrary, the troops were first landed upon other parts of the island, and took possession of Point Solomon, Pigeon Island, Casnavire, and several other batteries ; thus "opening," says an English writer, "a way for the British fleet to advance." The other forts were regularly besieged on the land side ; siege batteries were erected within 200 yards of Fort Louis, and others within 500 yards of Fort Bourbon. When Fort Louis had been fired upon for 48 hours by these siege batteries, and bombarded by the gun boats, the Asia, of 64 guns, and the Zebra, of 16 guns, advanced to

take a part in the attack. The former was twice driven back by the fire of the fort; the latter ran aground near by; her crew landed and assisted in the capture of the fort, Captain de Rouvigné coming up at the same time on the opposite side with a body of infantry and some field pieces. The other forts were taken in the regular operations of a land siege, being reduced mainly by the "heavy British batteries in the second parallel." This siege lasted seven weeks, and the entire loss of the British in killed and wounded was 318—equal to one-half of the defensive army.

The Appalachicola report, apparently forgetting the previous unsuccessful naval attacks upon Martinique, adduces this attack of 1794 as an example of the superiority of guns afloat. "The joint attack upon St. Louis," he says, "was anticipated by Captain Faulkner, of the Zebra, who laid his ship alongside the fort, and carried it at the head of his crew."

This is an error. Captain Faulkner was assisted by a land force, and was himself *anticipated*, even in the attack, by the crews of the boats. It was at first supposed that he preceded these, and it was so stated in Sir John Jervis's despatches; but the error was afterwards corrected. James, in his Naval History, gives the corrected version of the affair, and says: "The boats commanded by Captains Nugent and Riou, containing as many as 1,200 men, pushed across the Carénage *before* the Zebra could get in, and stormed and took possession of Fort Royal." The correction, however, is of little importance to this discussion. The contest was in no way one between ships and batteries. The defences of the island were taken by an overwhelming land force. Rochambeau, although his army was much inferior in numbers, made a defence which was far from being satisfactory to the Republican Government. Being regarded as a traitor to his country, he never ventured to return to France.

Political animosities run so high that the French generals would not act in concert; and, on the retreat, the forces of General Bellegarde were refused admittance into the fort. Dr. Campbell expressly states, that the conquest was attempted "in consequence of the disputes which existed between the Royalists and Republicans."

"*Havana, attacked and taken in 1763 by Admiral Pocock;*" the "*castle on the beach was first silenced by Captain Harvey, in the Dragon,*" &c. The taking of Havana mentioned above was effected almost entirely by land forces, under Lord Albemarle, the ships acting as transports. The following details of this attack are taken from the British reports and histories of the affair: The attacking force consisted of 22 or 23 ships of the line, carrying near 1,600 guns; 20 frigates, carrying about 600 guns; a large number of sloops of war, bomb vessels, artillery ships, and transports—203 sail in all—with a land force of 12,000 efficient men, and a considerable body of negroes. The Havana was defended by 4,610 regulars, and some militia, mulattoes, and negroes—number not known. The naval defences consisted of 12 ships of the line, carrying 784 guns, and 5 smaller vessels, making in all 908 guns. But little or no use was made of this home squadron in the defence, and it was surrendered to the enemy on the capitulation. "So little confidence," says the British account, "had they [the Spaniards] in their shipping, for resisting the efforts of the English armament, that the only use they made of it was to sink three of their largest vessels behind a boom, which they had thrown across the mouth of the harbor." The defences against a water attack consisted of the Governor's battery of 22 guns, the Apostles and Shepherds' batteries of 14 guns,

the Moro of 40 guns, and the Punta, a small work opposite. The works of Havana against a land attack were large, but not strong. The principal defence both by land and water was the Moro, which was a small work, armed with only 40 guns of all descriptions, and garrisoned by 280 regulars, 300 marines, and 94 negroes.

The British troops were landed several miles from the Moro, to which they laid formal siege, and, 44 days after the opening of the trenches, forced it to capitulate. The town of Havana also capitulated after a siege of "2 months and 8 days." The "castle on the beach," said to have been "silenced by Captain Harvey, in the Dragon," was a small unimportant work, some six miles from the Havana, and used merely to harass the English while crossing the Coximar. Little or no defence was made, and the English themselves have never thought of claiming the slightest credit for its capture. No loss is mentioned as having been sustained on either side; but "Captain Harvey, in the Dragon," and two other ships of the line, carrying in all 222 guns, did, during the land siege of the Moro, make an attack upon its water front. "They began," says the official report of Admiral Pocock, "to cannonade about 8 o'clock; and after keeping up a constant fire till 2 P. M., the Cambridge was so much damaged in her hull, masts, yards, sails, and rigging, with the loss of so many men killed and wounded, that it was thought proper to order her off; and soon after, the Dragon, which had likewise suffered a loss of men, and damage in her hull; and it being found that the Marlborough could be of no longer service, she was ordered off likewise. The numbers in killed and wounded are as follows: Dragon—16 killed, 37 wounded; Cambridge—24 killed, 95 wounded; Marlborough—2 killed, 8 wounded." The castle, on the contrary, received no injury worth mentioning from this water attack, which was the last and only important trial of strength between the ships and forts, made during the siege.

"*The Cape of Good Hope. Taken by the British fleet, and the commerce of the States ruined in those seas.*"—The conquest here alluded to was probably that of 1795; but this was effected wholly by troops landed at a distance from any defensive works; and the ships, after effecting this landing, were anchored in Simon's bay, six miles from the encampment of Muysenburg, and at a considerable distance from Cape Town. The British fleet carried about 600 guns, and the only forts that could have been engaged with it were two small batteries—one armed with two guns, and the other with one gun and a mortar.

That the naval forces assisted indirectly in this conquest cannot be denied, for they transported the troops which effected it, and also met at sea and defeated a Dutch squadron of eight men of war, 342 guns, which had been sent out to join in the defence; but it is well known that these forces were never immediately engaged in the attack. This has been so decided by judicial authority; for, when the admiralty put in a claim for a share in the profits of the capture, it was rejected by Sir William Scott, *because no ships of a military character had assisted the army in this valuable capture.*

The expedition of 1806 consisted of nine ships of war, carrying above 270 guns, and 5,000 troops. But here, again, the conquest was effected entirely by land forces. A detachment of sailors and marines served with the troops on shore, under the designation of *marine battalion*; but the fleet itself acted merely in the capacity of protecting transports, and no trial of strength was made between them and land batteries.

“Malta was taken by the French fleet, which sailed into the harbor, and carried the city during the panic.”—This statement of the conquest of Malta in 1798 certainly furnishes no argument for the position in support of which it has been adduced; for, if the island was lost through panic, it could not have been taken merely by the superiority of guns afloat over those on shore. But, in reality, *panic* was not the cause of no defence being made by the Maltese. It has been generally understood, that, preferring the French to the English, the Grand Master and Knight had previously agreed with Napoleon for its surrender. This is positively asserted by the English historians, and not contradicted by the other parties. The Grand Master retired from the island on its capture, for the sum of 1,000,000 livres, and the promise of an annual pension for life of 3,000 more from the French Treasury. Napoleon himself confesses that, although he then commanded 40 vessels of war, and 40,000 troops, he would have found it very difficult to reduce the fortifications of Malta, if the moral strength had been any ways equal to the capability of physical resistance.

Malta was attacked by the Turks in 1565 with 200 sail and above 40,000 troops, mostly Janissaries and Sophis, who were the bravest troops in the Ottoman Empire. The island was defended by 700 knights and 8,500 soldiers. The siege was continued for four months, and scarcely a day elapsed without some attempt to batter down or storm the fortifications; but the Turks were at last compelled to raise the siege, and retire with the loss of a considerable portion of their shipping and more than a quarter of their men—or, in other words, the number of their losses was more than equal to the garrison of the island!

“Curaçoa was stormed and taken by Sir Charles Brisbane with four small ships, boarding the castle at the entrance from his boats.”—The following is the account of this capture, as given by the English historians: Captain Brisbane was directed “to watch the island of Curaçoa, and interrupt the trade of the enemy. While employed on this service, he learnt that the Dutch had a custom of drinking out the old year and drinking in the new one; he therefore conceived the possibility of taking it by a coup-de-main.” Accordingly, about the dawn of day on the 1st January, 1807, with a squadron of four frigates, carrying 176 guns and 1,200 men, he entered the harbor of Amsterdam, and anchored; the Governor and his garrison were at this time in bed, made by the revels of the night utterly unconscious of all danger. The harbor was well secured by fortifications; but the only resistance made by these was the firing of five shot from Fort Republique. All of these shot took effect, killing and wounding 15 men, which was the only loss the British sustained. Captain Brenton, in his Naval History, says that this fort alone might have sunk every one of the enemy’s frigates in half an hour, without any comparative injury. But, instead of defending his fortifications, the drunken Governor, under pretence of fearing a negro insurrection, but in reality not yet being awake from his revels, forbid any resistance to be made to the English, because, he said, they had come merely as friends! The forts were therefore given up, and the squadron of Dutch ships then lying in the harbor, with a number of guns almost equal to the British fleet, also surrendered without opposition, the principal portion of the crews being yet asleep. The English themselves say that scarcely the slightest resistance was made by the drunken crews and garrisons. The argument attempted to be drawn by the Appalachicola report from this attack would be equally conclusive of the

general superiority of guns afloat over each other ; for the Dutch forts and ships were overcome in the same way—a conquest due to Bacchus rather than Mars. No case could possibly be adduced more inconclusive and inapplicable to the argument.

“Chagres taken in [1740?] 1741, by Admiral Vernon.”—The British fleet, at the taking of Chagres, consisted of 3 sixty-gun ships, 3 fifty-gun ships, 3 bomb ketches, 2 fire ships, and 2 tenders, carrying in all 374 guns and 2,500 men ; while the works of defence were armed with only 11 brass cannon and 11 *pateroes*, or small stone mortars—an inequality of 15 or 20 to 1. Of the 11 guns in the fort, only six or eight could be brought to bear on the shipping ; but notwithstanding the small armament of the castle of St. Lorenzo, “it sustained a furious bombardment (from the bomb ketches) and a continued cannonade from three of the largest ships in the fleet” for 36 hours. Is there any thing in this capture to authorize an inference of naval superiority, gun for gun ?

“Senegal, taken from the English by a small French squadron.”—This capture was made in 1799. The French fleet consisted of 2 ships of the line, 2 frigates, and 3 smaller vessels, with a considerable body of troops, under the Duke de Lauzun. The English garrison was too small to sustain an attack. They therefore determined to make no defence, and the fort was surrendered without resistance. In the same year, the English attempted to retake it with a fleet of six ships of the line and one smaller vessel, carrying in all over 400 guns ; but their efforts were of no avail. In the first attack, there was no trial of strength between the ships and fort ; in the second, there was such a trial, and the forts were victorious.

“Mocha, in Arabia—bombarded and taken by Captain Lumly, with one frigate.”—We give the English the benefit of their own account of this affair. The defence consisted of a small work, armed with only twelve guns, and garrisoned by about 300 Arabs. The character of the work may be drawn from the following remark of the British officer : “With a few spades and pickaxes we would have levelled the walls, and effected a breach.” But they had no mining tools, and were obliged to attempt a breach with their guns. The attacking force consisted of a fifty-gun frigate, a brig, two cruisers, and a mortar boat, with a land force of one company of artillery. In the evening, “the ships anchored as close as possible to the fort,” and about 10 o’clock the next day, after a long and “brisk cannonade,” the English landed, and attempted to carry the little work by assault ; but, “to their surprise and mortification, found there was no breach ; the wall had been a little injured by their shot, but remained as firm and inaccessible as ever ;” they were consequently repelled with a loss of thirty men. On the second morning they renewed the assault, but found no one in the fort—the Arabs had deserted. The ships were not once fired upon by the fort, and we suppose there was no means of doing it, for the cold shot thrown over the walls at the storming party were the same the ships had fired into the work. The fort, when taken, was but slightly injured, and the garrison unharmed as long as they remained inside.

“Sumatra, Java, and the rich city of Manilla.”—A battle was fought by the English and Dutch fleets, in the harbor of Java, in 1807, but the land batteries took little or no part in the contest. The English had eight ships of war, carrying four hundred guns ; and the Dutch only nine small

vessels, carrying one hundred and forty guns. The Dutch shipping, including twenty merchant vessels, were destroyed. This place was again attacked in 1811, by an army fitted out at Madras, numbering a little more than twelve thousand men, one-half of whom were Europeans. The naval force consisted of four ships of the line, fourteen frigates, and seven sloops, carrying nine hundred and twenty-two guns; besides eight cruisers, fifty-seven transports, and some gun boats—making in all a fleet of one hundred sail. The defence consisted of the combined French and Dutch forces of Generals Jansens and Daendels, numbering in all between eight and ten thousand men; but the latter were too disaffected with the French to be of any service in the defence, and indeed a portion of them soon deserted to the new invaders. The British troops and a party of seamen and marines landed upon an undefended part of the island, twelve miles from Batavia, attacked General Jansens, and, after an obstinate contest of two months, forced him to surrender. The contest was wholly upon land; the ships were not once brought into action against the forts, and in no way whatever could it be regarded as a naval attack. The capture of Manilla, alluded to in the report, was that, we suppose, of 1762; but this capture was effected entirely by land forces, ships not entering into the contest at all. All that was required of the navy, says Dr. Campbell, was a light frigate, to transport Colonel Draper and his command. This force amounted to two thousand three hundred effective land troops, and a body of seamen and marines, arranged into companies like soldiers. The defences of Manilla were small, incomplete, and garrisoned by only eight hundred Spaniards, and defended by some thirty pieces of brass cannon; they had also *two* pieces of field artillery! The Indians, being undisciplined and *entirely unacquainted with the use of fire arms*, could be of little value in the defence. The English writers say, that the garrison were wholly unprepared for an attack, not even knowing of the declaration of war. The place was besieged in form; its guns being silenced by the land batteries, it was carried by a storming party of three thousand men, issuing from the second parallel.

“*Madras, Calcutta, Pondicherry, Ceylon, were all taken by the British fleets.*”—The bare fact of some town having been reduced by some certain fleet would hardly seem decisive of the general question of comparative strength; yet such is the purpose for which the above is adduced. There is not one single feature in the East India conquests that can be regarded as confirming, in any degree, the positions of the Appalachicola report. These conquests were made from the rude natives of the country, or from Europeans while distracted by political broils. Ceylon, for instance, was summoned to surrender to the Crown of England, to be held in trust for the Stadtholder. Columbo, the seat of Government, obeyed without the least resistance, and ordered the other towns to do the same. The Governor of Trincomallé “merely required the formation of a camp and the firing of a few shot, as a justification of his conduct in surrendering the fort intrusted to his command. The fort of Osnaburg, standing on a hill, and commanding the entrance to the harbor, surrendered without firing a shot.” When Pondicherry was reduced by Colonel Floyd, in 1793, the fleet merely acted as a blockading force, cutting off all supplies and reinforcements from France. The only breaches in the fort were made by the land batteries; these had considerably injured it; “still, however,” says the English historian, “its strength, both by nature and art, was such

that the conquest might have required a considerable length of time, and been attended with no small difficulty and loss, had not disputes between the royalist and republican parties taken place in the garrison, in consequence of which it was compelled to surrender." This place had been previously attacked (in 1748) by 5,000 Europeans and two thousand native troops, and a fleet of five ships, carrying six hundred and sixty-six guns, under Admiral Boscawen. The water defences of Pondicherry could carry only one hundred guns in all; and yet, although the blockade was continued for several months, the attempt at conquest was entirely unsuccessful. Again, in 1760-'61, when garrisoned by only one thousand four hundred and eighty-seven men, including volunteers, it was besieged by an army of near four thousand men, under Colonel Coote, and blockaded by a fleet of nineteen sail, carrying one thousand and fifty-two guns, under Commodore Stevens. There was no engagement whatever between the ships and forts; but all supplies being cut off by the siege and blockade, the provisions became exhausted, and, after a siege of seven or eight months, the inhabitants were forced to surrender, to avoid starvation. The garrison, however, refused to capitulate, although the town had been given up by the starving inhabitants. The fortifications of Calcutta, when attacked by the fleet of Admiral Watson, were not worth mentioning, and the town surrendered as soon as the British had prepared to open their batteries. *Madras* was attacked on the 14th of September, 1746, by a British fleet of nine ships, and an army of one thousand five hundred Europeans, and eight hundred "well armed, well trained and disciplined" sepoys and negroes. This place, says the British chronicler of the siege, was defended by only "one weak battalion of four hundred men. Its fortifications were likewise of the most contemptible order, consisting, for the most part, of a common wall, which might at any moment be escaladed, should the process of breaching be deemed too expensive; indeed, out of the three divisions into which it was parted, only one (called Fort St. George, in which the chief functionaries resided) could boast either of bastion or rampart, far less of cannon or mortars. Against this open and ill-provided place, a heavy fire was opened by both sea and land, and the confusion within the walls soon became fearful. * * * This siege, if such it deserves to be called, lasted five days, and ended in the surrender of the place."

These several conquests were made by the land troops, and there was no trial, except in the unequal contest just mentioned, of strength between the ships and forts. The navy was of vast service in transporting troops and supplies, blockading the enemy's bastions, and cutting him off from all resources; but nothing occurred to justify the inferences drawn in the report above alluded to.

"*Gibraltar*," says the *Appalachicola* reporter, "was only once in its history attacked by a fleet, when it was taken by a squadron under Admiral Rooke."—To any one who has ever read of Gibraltar, this assertion will be received with unmingled surprise. The following are the principal facts of the conquest by Admiral Rooke, in 1704:

The attacking squadron consisted of forty-one ships of the line and many smaller vessels, carrying two thousand nine hundred and thirty-five guns, and near twenty thousand men. The fort was garrisoned by only one hundred and fifty men, and armed with one hundred guns, all included.*

* The French accounts state the strength of the garrison even less than this, but we give the English version of the affair.

The attack was made simultaneously by land and water; 1,800 men being landed for this purpose. The outworks were soon reduced, and the town forced to capitulate, but not till after the English had sustained a loss of 267 men. We know of but one inference that can be drawn from this conquest. It is: that *a fort may be taken by a combined land and naval force more than a hundred times greater than itself!* Surely, no one could object to such an inference.

Aware of the importance of Gibraltar, the Spaniards immediately attempted its recovery, sending out, for this purpose, a fleet of 92 sail, carrying over 4,000 guns and 25,000 men. A battle was fought with the British off Malaga, but without any decided result, the victory being claimed by both sides. In the latter part of this year and the beginning of 1705, the French and Spaniards besieged Gibraltar both by sea and land. 8,000 bombs and 70,000 cannon balls were fired at the work, without materially injuring it, and the besiegers were at last forced to retire with a loss of near 10,000 men, while the loss of the garrison amounted to only 400.

This place was again besieged by the Spaniards in 1720, with a considerable fleet; the garrison at that time "consisted of only three weak battalions;" nevertheless, the naval attack proved abortive. Another attack, in 1726, was mostly by land forces; the loss of the besiegers 3,000, of the garrison 300!

Although the Spaniards had been thrice defeated in their attempts to recover Gibraltar, the siege was renewed at the commencement of the war in 1779. The garrison now numbered 5,382 men. The blockade was begun about the middle of the summer, with a considerable fleet, but it was soon afterwards suspended till the winter of 1780. This blockade was raised in 1781, by the arrival of a large British naval force, but the shipping on both sides was much annoyed by the land batteries which the two parties had erected. So vigorously was the land attack continued, that, on the 4th of May, 1782, not a single day had elapsed without firing from these batteries "for a space of nearly 13 months!"

The following is Dr. Campbell's account of the general attack, in September of the same year: According to his authority, the combined forces consisted of "40,000 land troops, 47 sail of the line, besides floating batteries, frigates, and other vessels of war." A simultaneous attack by land and sea was first planned, in which a loss of 20 ships of war and a proportional number of troops was expected by the besiegers; and "there can be little doubt that the Spanish monarch, in his extreme eagerness to obtain possession of Gibraltar, would not have hesitated to make this enormous sacrifice, *provided there was a reasonable chance of success*; but, to all who knew the strength of the fortress, * * * the scheme was regarded as wild and impracticable. Another was therefore proposed." This was, to besiege the works at the same time by land and sea—the sea attack to be made by ships and a large number of floating batteries, constructed in such a manner as to be bomb proof, and to contain within themselves the means of extinguishing the fires caused by red hot shot. This was supposed to be effected by means of water pipes and tamping with wet sand. The hanging roofs were contrived in such a manner that they could be raised and let down with the greatest facility, at the pleasure of those on board the vessels.

These battering ships were armed with 154 pieces of heavy ordnance

on the attacking side, with 58 in reserve, to be used in case of accident. "The whole number of men on board could not be less than 6,000 or 7,000." As the effect of these vessels would "depend in a great measure on the rapidity and constancy with which they were fired, a kind of match was contrived, by which they were all to go off together, as it had been by a single shot." The roofs and sides of the ships were so thick, that, for a long time, says Drinkwater, the balls could not be made to penetrate them. Another English writer says, "their powers of resistance to projectiles of artillery were certainly greater than that afforded by the [British] squadron at Algiers."

The attack was commenced on the 8th of September, by the troops and the ships then present. For the land siege they employed 1,200 pieces of heavy ordnance, and more than 83,000 barrels of powder! For several days, the besiegers "fired at the rate of 6,500 cannon shot and 1,080 shells, in every 24 hours." On the 9th, the combined fleets of France and Spain in the bay amounted to 48 sail of the line, 10 battering ships, a large number of frigates, gun and mortar boats, bomb ketches, &c. The new battering ships joined in the attack about 8 o'clock on the morning of the 13th, anchoring about 900 yards from the works. They seemed, for a long time, says Campbell, "completely invulnerable to all attempts made by the garrison to destroy them; while they continued through the greatest part of the day to maintain a heavy and destructive cannonade, they resisted the combined powers of fire and artillery to such a degree, that the incessant showers of shells and the red hot shot with which they were assailed made no visible impression upon them. About 2 o'clock, however, there were evident symptoms of their approaching destruction;" and during the night a large portion of them were either burnt or torn in pieces. "It is impossible to ascertain the loss of the Spaniards on this memorable day; that it was enormous is certain, both from the nature and effect of the fire from the garrison, and from the very circumstance that they published only a vague and contradictory account respecting it. Such admirable measures had been taken for the security of the garrison, that their loss was comparatively light. In the course of about nine weeks, the whole number of slain amounted only to 65, and the wounded to 388. How little chance the Spaniards had of succeeding in their attack, even if their battering ships had not taken fire, may be judged from this circumstance—that the works of the fortress were scarcely damaged." "As the enemy now had most melancholy proof that Gibraltar could not be taken by any means that human power could bring against it, the only chance that remained to them was by famine." A blockade and the land siege were therefore kept up for some time, but were unsuccessful.

Drinkwater gives nearly the same account as above. The number of men in the garrison, when attacked, was 7,000. Neither the whole number of guns in the fort, nor in the ships, could be brought into action; but, according to Drinkwater, the number of guns afloat, which were actually brought to bear on the fortifications, was 300, while this fire was returned by only 80 cannon, 7 mortars, and 7 howitzers. The loss of the garrison during this engagement was 16 killed and 67 wounded, while the enemy's loss during the same time was estimated at 2,000.

We add a third account, from the British Naval Chronicle, coinciding with those already given: "47 sail of the line, 10 *invincible* battering ships, carrying 212 guns, numerous frigates, xebecs, bomb ketches, cutters, and

gun and mortar boats, with smaller craft, for the purpose of disembarkation, were assembled in the bay. On the land side were stupendous batteries and works, mounting 200 pieces of ordnance, and protected by an army of 40,000 men, commanded by a victorious and active general, and animated by the presence of two princes of the blood, a number of officers of the first distinction, and the general expectation of the world. To this prodigious force was opposed a garrison of 7,000 effective men, including the marine brigade, with only 80 cannon, 7 mortars, and 9 howitzers." "The loss of the enemy in killed and prisoners was calculated at 2,000, while the garrison, in so furious an attack, had only 1 officer, 2 subalterns, and 13 privates, killed, and 5 officers and 63 privates wounded. The damage sustained by the fortress itself was so small that the whole sea line was put in order before night."

Copenhagen.—The passage of the Cattegat by the British fleet in 1801, and their attack on Copenhagen, have often been alluded to in discussions on the power of ships and batteries; and although the facts and circumstances are all well authenticated, they have sometimes been most singularly perverted, and the most unwarrantable inferences drawn from them. The following are the main features and facts of the case, as drawn from the official returns and authentic records: The British fleet of 52 sail, 18 of them line of battle ships, 4 frigates, &c. sailed from Yarmouth roads on the 12th of March, passed the Sound on the 30th, and attacked and defeated the Danish line on the 2d of April.

The sound between Cronenberg and the Swedish coast is about 2½ miles wide. The batteries of Cronenberg and Elsinore were lined with 100 pieces of cannon and mortars; but the Swedish battery had been much neglected and then mounted only 6 guns. Nevertheless, the British admiral, to avoid the damage his squadron would have to sustain in the passage of this wide channel, defended by a force scarcely superior to a single one of his ships, preferred to attempt the difficult passage of the Belt; but after a few of his light vessels, acting as scouts, had run on the rocks, he returned to the Sound.

He then tried to negotiate a peaceful passage, threatening a declaration of war if his vessels should be fired upon. It must be remembered, that England was at peace with both Denmark and Sweden, and that no just cause of war existed. Hence, the admiral inferred that the commanders of these batteries would be loth to involve their countries in a war with so formidable a Power as England, by commencing hostilities, when only a free passage was asked. The Danish commander replied, that he should not permit a fleet to pass his post, whose object and destination were unknown to him. He fired upon them, as bound to do by long-existing commercial regulations, and not as an act of hostility against the English. The Swedes, on the contrary, remained neutral, and allowed the British vessels to lie near by for several days without firing upon them. Seeing this friendly disposition of the Swedes, the fleet neared their coast, and passed out of the reach of the Danish batteries, which opened a fire of balls and shells; but all of them fell more than 200 yards short of the fleet, which escaped without the loss of a single man.

The Swedes excused their treachery by the plea that it would have been impossible to construct batteries at that season, and, even had it been possible, Denmark would not have consented to their doing so, for fear that Sweden would renew her old claim to one-half of the rich duties levied by

Denmark on all ships passing the strait. There may have been some grounds for the last excuse; but the true reason for their conduct was the fear of getting involved in a war with England. Napoleon says that, even at that season, a few days only would have been sufficient for placing 100 guns in battery; and that Sweden had much more time than was requisite. And with 100 guns on each side of the channel, served with skill and energy, the fleet must necessarily have sustained so much damage as to render it unfit to attack Copenhagen.

On this passage, we remark—1st. The whole number of guns and mortars in the forts of the Sound amounted to only 106, while the fleet carried over 1,700 guns; and yet, with this immense superiority of more than 16 to 1, the British admiral preferred the dangerous passage of the Belt to encountering the fire of these land batteries. 2d. By negotiations and threatening the vengeance of England, he persuaded the small Swedish battery to remain silent, and allow the fleet to pass near that shore, out of reach of the guns of Cronenberg and Elsinore. 3d. It is the opinion of Napoleon and the best English writers, that if the Swedish battery had been put in order, and acted in concert with the Danish works, they might have so damaged the fleet as to render it incapable of any serious attempt on Copenhagen.

This passage of the Cattegat is quoted by the Appalachicola report as a case settling the naked question of relative strength of guns afloat and guns ashore, and as decisive of the perfect inability of our fortifications to stop the transit of a fleet!

We now proceed to consider the circumstances attending the attack and defence of Copenhagen itself. The only side of the town exposed to the attack of heavy shipping is the northern, where there lies a shoal extending out a considerable distance, leaving only a very narrow approach to the heart of the city. On the most advanced part of this shoal are the crown batteries, carrying in all 88 guns.* The entrance into the Baltic, between Copenhagen and Salthorn, is divided into two channels by a bank, called the Middle Ground, which is situated directly opposite Copenhagen. To defend the entrance on the left of the crown batteries, they placed near the mouth of the channel 4 ships of the line, 1 frigate, and 2 sloops, carrying, in all, 358 guns. To secure the port and city from bombardment from the King's channel, (that between the Middle Ground and town,) a line of floating defences were moored near the edge of the shoal, and manned principally by volunteers. This line consisted of old hulls of vessels, block ships, praams, sloops, rafts, &c., carrying, in all, 628 guns—a force strong enough to prevent the approach of bomb vessels and gun boats, (the purpose for which it was intended,) but utterly incapable of contending with first-rate ships of war; but these the Danes thought would be deterred from approaching by the difficulties of navigation. These difficulties were certainly very great; and Nelson said, beforehand, that “the wind which might carry him in would most probably not bring out a crippled ship.” Had the Danes supposed it possible for Nelson to approach with his large vessels, the line of floating defences would have been formed nearer Copenhagen, the right supported by batteries raised on the isle of Amack.

* Some writers say only 68 or 70; but the English writers generally say 88. A few, apparently to increase the brilliancy of the victory, make this number still greater.

"In that case," says Napoleon, "it is probable that Nelson would have failed in his attack; for it would have been impossible for him to pass between the line and shore thus lined with cannon." As it was, the line was too extended for strength, and its right too far advanced to receive assistance from the battery of Amack. A part of the fleet remained as a reserve, under Admiral Parker, while the others, under Nelson, advanced to the King's channel. This attacking force consisted of 8 ships of the line and 36 smaller vessels, carrying, in all, 1,100 guns, without including those in the 6 gun brigs, whose armament is not given. One of the seventy-four's could not be brought into action, and two others grounded; but Lord Nelson says, "although not in the situation assigned them, yet they were so placed as to be of great service." This force was concentrated upon a part of the Danish line of floating defences, the whole of which was not only inferior to it by 382 guns, but so situated as to be beyond the reach of succor, and without a chance of escape. The result was what might have been expected. Every vessel of the right and centre of this outer Danish line was taken or destroyed, except one or two small ones, which cut and run under protection of the fortifications. The left of the line, being supported by the crown battery, remained unbroken. A division of frigates, in hopes of proving an adequate substitute for the ships intended to attack the batteries, ventured to engage them, but "it suffered considerable loss, and, in spite of all its efforts, was obliged to relinquish this enterprise, and sheer off."

The Danish vessels lying in the entrance of the channel to the city were not attacked, and took no material part in the contest. They are to be reckoned in the defence on the same grounds that the British ships of the reserve should be included in the attacking force. Nor was any use made of the guns on shore, for the enemy did not advance far enough to be within their range.

The crown battery was *behind* the Danish line, and mainly masked by it. A part only of its guns could be used in support of the left of this line, and in repelling the direct attack of the frigates, which it did most effectually. But we now come to a new feature in this battle. As the Danish line of floating defences fell into the hands of the English, the range of the crown battery enlarged, and its power was felt. Nelson saw the danger to which his fleet was exposed, and, being at last convinced of the prudence of the admiral's signal for retreat, "made up his mind to weigh anchor and retire from the engagement." To retreat, however, from his present position, was exceedingly difficult and dangerous. He therefore determined to endeavor to effect an armistice, and despatched the following letter to the Prince Regent:

"Lord Nelson has directions to spare Denmark, when no longer resisting; but if the firing is continued on the part of Denmark, Lord Nelson must be obliged to set on fire all the floating batteries he has taken, without the power to save the brave Danes who have defended them."

This produced an armistice, and hostilities had hardly ceased, when three of the English ships, including that in which Nelson himself was, struck upon the bank. "They were in the jaws of destruction, and could never have escaped, if the batteries had continued their fire. They therefore owed their safety to this armistice." A convention was soon signed, by which every thing was left *in statu quo*, and the fleet of Admiral Parker allowed to proceed into the Baltic.

The Rev. Edward Baines, the able English historian of the wars of the

French Revolution, in speaking of Nelson's request for an armistice, says: "This letter, which exhibited a happy union of policy and courage, was written at a moment when Lord Nelson perceived that, in consequence of the unfavorable state of the wind, the admiral was not likely to get up to aid the enterprise; that the *principal batteries* of the enemy, and the ships at the mouth of the harbor, *were yet untouched*; that two of his own division had grounded, and others were likely to share the same fate." Campbell says these batteries and ships "*were still unconquered*. Two of his own (Nelson's) vessels were grounded and exposed to a heavy fire; others, if the battle continued, might be exposed to a similar fate; while he found it would be scarcely practicable to bring off the prizes under the fire of the batteries."

With respect to the fortifications of the town, a chronicler of the times says they were of no service while the action lasted. "They began to fire when the enemy took possession of the abandoned ships, but it was at the same time the parley appeared." The Danish commander, speaking of the general contest between the two lines, says: "The crown battery did not come at all into action." An English writer says, distinctly: "The works (fortifications) of Copenhagen were absolutely untouched at the close of the action." Colonel Mitchell, the English historian, says: "Lord Nelson never fired a shot at the town or fortifications of Copenhagen. He destroyed a line of block ships, praams, and floating batteries, that defended the sea approach to the town; and the Crown Prince, seeing his capital exposed, was willing to finish by armistice a war the object of which was neither very popular nor well understood. What the result of the action between the defences of Copenhagen and the British fleet might ultimately have been, is therefore altogether uncertain. The BOMBARDMENT OF COPENHAGEN BY NELSON, as it is generally styled, is therefore, like most other oracular phrases of the day, a mere combination of words, without the slightest meaning."

The British lost in killed and wounded 943 men; and the loss of the Danes, according to their own account, which is confirmed by the French, was but very little higher. The English, however, say it amounted to 1,600 or 1,800; but, let the loss be what it may, it was almost exclusively confined to the floating defences, and can in no way determine the relative accuracy of aim of the guns ashore and guns afloat.

The facts and testimony we have adduced prove incontestably—

1st. That, of the fleet of 52 sail and 1,700 guns, sent by the English to the attack upon Copenhagen, 2 ships, of 148 guns, were grounded or wrecked; 7 ships of the line and 36 smaller vessels, carrying over 1,000 guns, were actually brought into the action; while the remainder were held as a reserve, to act upon the first favorable opportunity.

2d. That the Danish line of floating defences, consisting mostly of old hulls, sloops, rafts, &c., carried only 628 guns of all descriptions; that the fixed batteries supporting this line did not carry over 80 or 90 guns, at most; and that both these land and floating batteries were mostly manned and the guns served by *volunteers*.

3d. That the fixed batteries in the system of defence were either so completely masked, or so far distant, as to be useless during the contest between the fleet and floating force.

4th. That the few guns of these batteries which were rendered available by the position of the floating defences repelled with little or no loss to

themselves, and some injury to the enemy, a vastly superior force of frigates which had attacked them.

5th. That the line of floating defences was conquered and mostly destroyed, while the fixed batteries were uninjured.

6th. That the fortifications of the city and of Amack island were not attacked, and had no part in the contest.

7th. That, as soon as the batteries were unmasked, and began to act, Nelson prepared to retreat, but, on account of the difficulty of doing so, he opened a parley, threatening, with a cruelty unworthy the most barbarous ages, *that, unless the batteries ceased their fire upon his ships, he would burn all the Danish prisoners in his possession*; and that this armistice was concluded just in time to save his own ships from destruction.

8th. That, consequently, the battle of Copenhagen cannot properly be regarded as a contest between ships and forts, or a triumph of ships over forts; that, so far as the guns on shore were engaged, they showed a vast superiority over those afloat—a superiority known and confessed by the English.

And yet, in the face of all these facts, and in opposition to the accumulated testimony of English, French, and Danish historians, the Appalachiola reporter persists in regarding this as a contest between ships and batteries, in which the latter gained the victory; nay, he goes so far as to rank all the old rotten hulks and rafts of the Danish line as fortifications, for he says: “The British fleet fought only 468 guns afloat against those 986 guns on Amack and crown batteries; yet in four hours they were silenced, and the object gained.” A strange inaccuracy of vision, while looking at well-known and undisputed historical events!

Constantinople.—“*Sir John Duckforth forced the passage of the Dardanelles with 6 ships of the line, and was rebuked because he had not continued on to Constantinople, and with his small force assaulted the city.*”—The channel of the Dardanelles is about 12 leagues long, 3 miles wide at its entrance, and about three-quarters of a mile at its narrowest point. Its principal defences are the outer and inner castles of Europe and Asia, and the castles of Sestos and Abydos. Constantinople stands about 100 miles from its entrance into the sea of Marmora, and at nearly the opposite extremity of this sea. The defences of the channel had been allowed to go to decay; but few guns were mounted, and the forts were but partially garrisoned. In Constantinople, not a gun was mounted, and no preparations for defence were made; indeed, previous to the approach of the fleet, the Turks had not determined whether to side with the English or the French, and even then the French ambassador had the greatest difficulty in persuading them to resist the demands of Duckforth.

The British fleet consisted of 6 sail of the line, 2 frigates, 2 sloops, and several bomb vessels, carrying 818 guns, besides those in the bomb ships. Admiral Duckforth sailed through the Dardanelles on the 19th February, 1807, with little or no opposition. This being a Turkish festival day, the soldiers of the scanty garrison were enjoying the festivities of the occasion, and none were left to serve the few guns of the forts which had been prepared for defence. But while the admiral was waiting in the sea of Marmora for the result of negotiations, or for a favorable wind to make the attack upon Constantinople, the fortifications of this city were put in order, and the Turks actively employed, under French engineers and artillery officers, in repairing the defences of the straits. Campbell, in his Naval

History, says: "Admiral Duckforth now fully perceived the critical situation in which he was placed. He might, indeed, succeed, *should the weather become favorable, in bombarding Constantinople; but, unless the bombardment should prove completely successful in forcing the Turks to pacific terms, the injury he might do to the city would not compensate for the damage which his fleet must necessarily sustain. With this damaged and crippled fleet, he must repossess the Dardanelles, now rendered infinitely stronger than they were when he came through them.*"

Under these circumstances, the admiral determined to retreat; and on the 3d of April escaped through the Dardanelles, steering midway of the channel, with a favorable and strong current. "This escape, however," says Baines, "was only from destruction, but by no means from serious loss and injury. * * * In what instance, in the whole course of our naval warfare, have ships received equal damage in so short a time as in this extraordinary enterprise?" In detailing the extent of this damage, we will take the ships in the order they descended.

The 1st had her wheel carried away, and her hull much damaged, but escaped with the loss of only 3 men. A stone shot penetrated the 2d, between the poop and quarter deck, badly injured the mizzen mast, carried away the wheel, and did other serious damage; killing and wounding 20. Two shot struck the 3d, carrying away her shrouds and injuring her masts; loss in killed and wounded, 30. The 4th had her mainmast destroyed, with a loss of 16. The 5th had a large shot, six feet eight inches in circumference, enter her lower deck; loss, 55. The 6th not injured. The 7th a good deal damaged, with a loss of 17. The 8th had no loss. The 9th was so much injured that, "had there been a necessity for hauling the wind on the opposite tack, she must have gone down;" her loss was 8. The 10th lost 12. The 11th was much injured, with a loss of 8—making a total loss in repassing the Dardanelles of 167, and in the whole expedition 281, exclusive of 250 men who perished in the burning of the Ajax.

Such was the effect produced on the British fleet, sailing with a favorable wind and strong current past the half-manned and half-armed forts of the Dardanelles. Duckforth himself says that, had he remained before Constantinople much longer, till the forts had been completely put in order, no return would have been open to him, and "the unavoidable sacrifice of the squadron must have been the consequence." Scarcely had the fleet cleared the straits, before it (the fleet) was reinforced with 8 sail of the line; but, even with this vast increase of strength, they did not venture to renew the contest. They had effected a most fortunate escape. General Jomini says that, if the defence had been conducted by a more enterprising and experienced people, the expedition would have cost the English their whole squadron.

Great as was the damage done to the fleet, the forts themselves were uninjured. The English say their own fire did no execution, the shot in all probability not even striking their objects—"the rapid change of position, occasioned by a fair wind and current, preventing the certainty of aim." The state of the batteries when the fleet first passed is thus described in James's Naval History: "Some of them were dilapidated, and others but partially mounted and poorly manned." And Alison says: "They had been allowed to fall into disrepair. The castles of Europe and Asia, indeed, stood in frowning majesty, to assert the dominion of the Crescent at

the narrowest part of the passage, but their ramparts were antiquated, their guns in part dismounted, and such as remained, though of enormous caliber, little calculated to answer the rapidity and precision of an English broadside."

With respect to the "rebuke" mentioned in the Appalachicola report, we have been unable to ascertain by whom it was given. We can find no account of it in the several histories of the British navy. The House of Commons rejected a motion to call for the papers; the Board of Admiralty made no charges or complaints; and, in the public estimation, says James, "Sir John rather gained than lost credit for the discomfiture he had experienced." Much has been said because the fortifications of the Dardanelles did not hermetically seal that channel, (an object they were never expected to accomplish, even had they been well armed and well served;) but it is forgotten, or entirely overlooked, that 12 *Turkish line of battle ships*, 2 of them *three-deckers*, with 9 frigates, were, with their sails bent and in apparent readiness, filled with troops, and lying within the line of fortifications; and yet this naval force effected little or nothing against the invaders. It is scarcely ever mentioned, being regarded of little consequence as a means of defence; and yet the number of their guns, and the expense of their construction and support, could hardly have fallen short of the incomplete and half-garrisoned forts, some of which were as ancient as the reign of Amurath.

Algiers.—The attack upon Algiers, in 1816, has been frequently alluded to as a great instance of naval success, and is discussed at considerable length by the board of officers appointed by Mr. Poinsett, on the subject of national defence. But this board confessed themselves uninformed on several important facts; and their report, on this account, is less satisfactory than it otherwise would have been. The Appalachicola reporter has paraded this attack as entirely decisive of the superiority of guns afloat; but we cannot find that his account is sustained by any authority whatever.

The following narrative is drawn from the reports of the English and Dutch admirals, and other official and authentic English papers:

The attack was made by the combined fleets, consisting of 5 sail of the line, 18 or 20 frigates and smaller vessels, besides 5 bomb vessels and several rocket boats, mounting in all about 1,000 guns. The armament of some of the smaller vessels is not given, but the guns of those whose armaments are known amount to over 900. The harbor and defences of Algiers had been previously surveyed by Captain Warde, royal navy, under Lord Exmouth's direction; and the number of the combined fleet was arranged according to the information given in this survey—just so many ships, and no more, being taken, as could be employed to advantage against the city, without being needlessly exposed. Moreover, the men and officers had been selected and exercised with reference to this particular attack.

From the survey of Captain Warde, and the accompanying map, it appears that the armament of all the fortifications of Algiers and the vicinity, counting the water fronts and parts that could flank the shore, was only 284 guns of various sizes and descriptions, including mortars. But not near all of these could act upon the fleet as it lay. Other English accounts state the number of guns actually opposed to the fleet at from 220 to 230. Some of these were in small and distant batteries, whereas nearly all the fleet was concentrated on the mole-head works. Supposing only one broadside of the ships to have been engaged, the ratio of forces, as expres-

sed by the number of guns, must have been about as 5 to 2. This is a favorable supposition for the ships; for we know that several of them, from their position and a change of anchorage, brought both broadsides to bear. The Algerine shipping in the harbor was considerable, including several vessels of war, but no use of them was made in the defence, and nearly all were burnt. The attacking ships commanded some of the batteries, and almost immediately dismounted their guns. The walls of the casemated works were so thin as to be very soon battered down. Most of the Algerine guns were badly mounted, and many of them were useless after the first fire. They had no furnaces for heating shot, and, as "they loaded their guns with loose powder, put in with a ladle," they could not possibly have used hot shot, even had they constructed furnaces. The ships approached the forts, and many of them anchored in their intended positions, without a shot being fired from the batteries. The action commenced at a quarter before three, and did not entirely cease till half past eleven. The ships now took advantage of the land breeze, and, by warping and towing off, were able to get under sail and come to anchor beyond reach of the land batteries. Negotiations were again opened, and the Dey surrendered the Christian slaves, and yielded to the terms of the treaty.

During the contest, the fleet "fired nearly 118 tons of powder and 50,000 shot, (weighing more than 500 tons of iron,) besides 960 thirteen and ten inch shells, (thrown by the bomb vessels,) and the shells and rockets from the flotilla." The vessels were considerably crippled, and their loss in killed and wounded amounted 883. The land batteries were much injured, and a large part of their guns dismounted. Their loss is not known; the English confess they could obtain no account of it, but suppose it to have been very great. This seems more than probable; for, besides those actually employed in the defence, large numbers of people crowded into the forts to witness the contest. So great was this curiosity, that, when the action commenced, the parapets were covered with the multitude, gazing at the manœuvres of the ships. To avoid so unnecessary and indiscriminate a slaughter, Lord Exmouth (showing humanity that does him great credit) motioned with his hand to the ignorant wretches to retire to some place of safety. This loss of life in the batteries, the burning of the buildings within the town and about the mole, the entire destruction of their fleet and merchant vessels anchored within the mole and in the harbor, had a depressing effect upon the inhabitants, and probably did more than the injuries received by the batteries in securing an honorable conclusion to the treaty. We know very well that these batteries, though much injured, *were not silenced* when Lord Exmouth took advantage of the land breeze, and sailed beyond their reach. The ships retired: first, because they had become much injured, and their ammunition nearly exhausted; second, in order to escape from a position so hazardous, in case of a storm; and third, to get beyond the reach of the Algerine batteries. Lord Exmouth himself gives these as his reasons for the retreat, and says: "The land wind saved me many a gallant fellow." And Vice Admiral Von de Capellan, in his report of the battle, gives the same opinion: "*In this retreat,*" says he, "which, from want of wind and the damage suffered in the rigging, was very slow, *the ships had still to suffer much from the new-opened and redoubled fire of the enemy's batteries;* at last, the land breeze springing up," &c.

An English officer, who took part in this affair, says: "It was well for

us that the land wind came off, or we should never have got out; and God knows what would have been our fate, had we remained all night."

The motives of the retreat cannot, therefore, be doubted. Had the Arabs set themselves zealously at work during the night to prepare for a new contest, by remounting their guns, and placing others behind the ruins of those batteries which had fallen—in other words, had the works now been placed in hands as skilful and experienced as the English, the contest would have been far from ended. But, in the words of the board of defence, "Lord Exmouth relied on the effects produced on the people by his dreadful cannonade; and the result proves that he was right. His anxiety to clear the vessels from the contest shows that there was a power still unconquered, which he thought it better to leave to be restrained by the suffering population of the city, than to keep in a state of exasperation and activity by his presence. What was this power but an unsubdued energy in the batteries?"

"The true solution of the question is, then, not so much the amount of injury done on the one side or the other—particularly as there was on the one side a city to suffer as well as the batteries—as the relative efficiency of the parties when the battle closed. All political agitation and popular clamor aside, what would have been the result had the fight been continued, or even had Lord Exmouth renewed it next morning? These are questions that can be answered only on conjecture; but the manner the battle ended certainly leaves room for many doubts whether, had the subsequent demands of Lord Exmouth been rejected, he had it in his power to enforce them by his ships; whether, indeed, if he had renewed the fight, he would not have been signally defeated.

"On the whole, we do not think that this battle, although it stands pre-eminent as an example of naval success over batteries, presents an argument to shake the confidence which fortifications, well situated, well planned, and well fought, deserve, as the defences of a seaboard."

We cannot help regarding these conclusions just, when we reflect upon all the circumstances of the case. The high character, skill, and bravery of the attacking force; their immense superiority in number of guns, with no surplus human life to be exposed; the antiquated and ill-managed works of defence, the entire want of skill of the Algerine artillerists, and the neglect of the ordinary means of preparation; the severe execution which these ill-served guns did upon the enemy's ships—an execution far more dreadful than that effected by the French or Dutch fleets in their best-contested naval battles with the ships of the same foe—from these facts, we must think that those who are so ready to draw from this case conclusions unfavorable to the use of land batteries as a means of defence against shipping, know but little of the nature of the contest.

An English historian of some note, in speaking of this attack, says: "It is but little to the purpose, unless to prove what may be accomplished by fleets against towns exactly so circumstanced, placed, and governed. Algiers is situated on an amphitheatre of hills sloping down towards the sea, and presenting therefore the fairest mark to the fire of hostile ships. But where is the capital *exactly* so situated that we are ever likely to attack? And as to the destruction of a few second-rate towns, even when practicable, it is a mean, unworthy species of warfare, by which nothing was ever gained. The severe loss sustained before Algiers must also be taken into account, because it was inflicted by mere Algerine artillery, and was much

inferior to what may be expected from a contest maintained against batteries manned with soldiers instructed by officers of skill and science, not only in working the guns, but in the endless duties of detail necessary for keeping the whole of an artillery material in a proper state of formidable efficiency."

San Juan d'Ulloa, "falling before a small French squadron, after a few hours' cannonading."—The following facts relative to this attack are drawn principally from the report of the French engineer officer, who was one of the expedition. The French fleet consisted of 4 ships, carrying 188 guns, 2 armed steamboats, and 2 bomb ketches with 4 large mortars. The whole number of guns found in the fort was 187; a considerable portion of these, however, were for land defence. When the French vessels were towed into the position selected for the attack, "it was lucky for us," says their reporter, "that the Mexicans did not disturb this operation, which lasted nearly two hours, and that they permitted us to commence the fire." "We were exposed to the fire of one 24-pounder, five 16-pounders, seven 12-pounders, one 8-pounder, and five 18-pounder carronades—in all, nineteen pieces only." If these be converted into equivalent 24-pounders, in proportion to the weight of balls, the whole 19 guns will be *less than twelve 24-pounders!* This estimate is much too great, for it allows three 8-pounders to be equal to one 24-pounder, and each of the 18-pounder carronades to be three-quarters the power of a long 24-pounder; whereas, at the distance at which the parties were engaged, these small pieces were nearly harmless. Two of the powder magazines, not being bomb proof, were blown up during the engagement, by which three of the nineteen guns on the water front of the castle were dismounted; thus reducing the land force to an equivalent of ten 24-pounders. The other 17 guns were still effective when abandoned by the Mexicans.

It appears, from the above-mentioned report, that the number of guns actually brought into action by the floating force amounted to 94, besides 4 heavy sea mortars; that the whole number so employed in the fort was only 19; that these were generally so small and inefficient that their balls would not enter the sides of the ordinary attacking frigates; that the principal injury sustained by the castle was produced by the explosion of powder magazines, which were injudiciously placed and improperly secured; that the castle, though built of poor materials, was but slightly injured by the French fire; that the Mexicans proved themselves ignorant of the ordinary means of defence, and abandoned their works when only a few of their guns had been dismounted; that, notwithstanding all the circumstances in favor of the French, their killed and wounded, in proportion to the guns acting against them, was upwards of *four times* as great as the loss of the English at the battle of Trafalgar!!

"St. Jean d'Acre reduced in a few hours by a British fleet, and taken possession of by the seamen and marines."—Fortunately, the principal facts connected with this attack are now fully authenticated. For the armament of the fleet, we quote from the British official papers, and for that of the fort from the pamphlet of Lieutenant Colonel Matuszewicz.

The fortifications were built of poor materials, antiquated in their plans, and much decayed. Their entire armament amounted to only 200 guns, some of which were merely field pieces. The water fronts were armed with 100 cannon and 16 mortars, those of the smaller caliber included. When approached by the British fleet, the works were undergoing repairs,

and, says Commodore Napier, "were fast getting into a state of preparation against attack."

The British fleet consisted of 8 ships of the line, carrying 646 guns; 6 frigates, carrying 236 guns; 4 steamers, carrying 18 guns; and 2 or 3 other vessels whose force is not given. "Only a few guns," says Napier, "defended the approach from the northward," and most of the ships came in from that direction. The western front was armed with about 40 cannon; but opposed to this were 6 ships and 2 steamers, carrying about 500 guns. Their fire was tremendous during the engagement, *but no breach was made in the walls*. The south front was armed in part by heavy artillery, and in part by field pieces. This front was attacked by 6 ships and 2 steamers, carrying over 200 guns. The eastern front was armed only with light artillery; against this was concentrated the remainder of the fleet, carrying 240 guns. The guns of the works were so poorly mounted that but few could be used at all; and these, on account of the construction of the fort, could not reach the ships, though anchored close by the walls. "Only 5 of their guns," says Napier, "placed in a flanking battery, were well served and never missed; but they were pointed too high, and damaged our spars and rigging only." The stone was of so poor a quality, says the narrative of Colonel Matuszewicz, that the walls fired upon presented on the exterior a shattered appearance, but they were no where seriously injured. In the words of Napier, "*they were not breached, and a determined enemy might have remained secure under the breastworks, or in the numerous casemates, without suffering much loss.*" The explosion of a magazine within the fort, containing 6,000 casks of powder, laid in ruins a space of 60,000 square yards, opened a large breach in the walls of the fortification, partially destroyed the prisons, and killed and wounded 1,000 men of the garrison. This frightful disaster, says the French account, hastened the triumph of the fleet. The prisoners and malefactors, thus released from confinement, rushed upon the garrison at the same time with the mountaineers, who had besieged the place on the land side. The uselessness of the artillery; the breaches in the fort; the attacks of the English—all combined to force the retreat of the garrison, "in the midst of scenes of blood and atrocious murders." We will close this account with the following extract from a speech of the Duke of Wellington, in the House of Lords, February 4, 1841: "He had had," he said, "a little experience in services of this nature; and he thought it his duty to warn their lordships, on this occasion, that they must not always expect that ships, however well commanded, or however gallant their seamen might be, were capable of commonly engaging successfully with stone walls. He had no recollection, in all his experience, except the recent instance on the coast of Syria, of any fort being taken by ships, excepting two or three years ago, when the fort of San Juan d'Ulloa was captured by the French fleet. This was, he thought, the single instance that he recollected, though he believed that something of the sort had occurred at the siege of Havana, in 1763. The present achievement he considered one of the greatest of modern times. This was his opinion, and he gave the highest credit to those who had performed such a service. It was, altogether, a most skilful proceeding. He was greatly surprised at the small number of men that was lost on board the fleet; and, on inquiring how it happened, he discovered that it was because the vessels were moored within one-third of the ordinary distance. The guns of the fortress were intended to strike objects at a greater distance;

and the consequence was, that the shot went over the ships that were anchored at one third the usual distance. By that means, they sustained not more than one-tenth of the loss which they would otherwise have experienced. Not less than 500 pieces of ordnance were directed against the walls, and the precision with which the fire was kept up, the position of the vessels, and, lastly, the blowing up of the large magazine—all aided in achieving this great victory in so short a time. He had thought it right to say thus much, because he wished to warn the public against supposing that such deeds as this could be effected every day. He would repeat, that this was a singular instance, in the achievement of which great skill was undoubtedly manifested, but which was also connected with peculiar circumstances, which they could not hope always to occur. It must not therefore be expected as a matter of course that all such attempts must necessarily succeed."

We have now discussed the several instances, in other countries, of British naval prowess, so highly lauded by the Appalachicola report, except the taking of "*Constantinople by the Venetian fleet*," and the English conquest of "*Canton, but just now*." With respect to the former conquest, it will be sufficient to remark, that it was made *before the invention of gunpowder*. The utter inefficiency of the Chinese to carry on war with modern Europeans, with any thing like equality of forces, is too well known to require comment. Their land batteries were constructed in violation of all rules of the art; and they attempted to frighten away the English by the sound of their gongs, and the turning of somersets by their troops! Ten Englishmen were any where more than equal to one hundred natives!

We now turn to the examples of British naval superiority, said by the report to have been exhibited in their several attacks upon the fortifications of our own country. The only refutation we shall offer is the following brief account of the facts. They are collected from the best English and American authorities.

"*Louisburg was attacked and taken by a naval force*."—So says the Appalachicola report; but we confidently affirm that, although several times attacked, it never was taken by a naval force alone, no matter how superior that force might be. This place was first reduced in 1745. For this attack, the colonies raised about 4,000 men and 100 small vessels and transports, carrying between 160 and 200 guns. They were afterwards joined by 10 other ships, carrying near 500 guns. This attacking force now, according to some of the English writers, consisted of 6,000 provincials, 800 seamen, and a naval force of near 700 guns. The troops landed and laid siege to the town. The garrisons of these works consisted of 600 regulars and 1,000 Breton militia, or, according to some writers, of only 1,200 men in all. The armament of Louisburg was 101 cannon, 76 swivels, and 6 mortars. Auxiliary to the main works, was an island battery of thirty 22-pounders, and a battery on the main land armed with 30 large cannon. Frequent attempts were made to storm the place, but the most persevering efforts were of no avail—many of the New Englanders being killed and wounded, and their boats destroyed, while the garrison remained unharmed. At length, after a siege of 49 days, want of provisions, and the general dissatisfaction of the inhabitants, caused the garrison to surrender. When the New Englanders saw the strength of the works, and the little impression which their efforts had produced, they were not only greatly elated but astonished at their success. It should be noticed that,

in the above attack, the number of guns in the fleet was almost three times as great as that of all the forts combined; and yet the naval part of the attack was unsuccessful. The besieging army was four times as great as all the garrisons combined; and yet the place held out 49 days, and at last was surrendered through the want of provisions and the disaffection of the citizens.

A formidable effort was now made by the French to recover this place. For this purpose, a large fleet was sent from France, consisting of near 40 ships of war, 2 artillery ships, and 56 transports, carrying about 3,500 men and 40,000 stand of small arms for the use of the Canadians; but this formidable armament was scattered by storms, and the project abandoned. The place was afterwards surrendered by treaty.

In 1757, a British fleet of 15 ships of the line, 18 frigates, and many smaller vessels, and a land force of 12,000 effective men, were sent to attempt the reduction of this fortress; but, being now defended by 17 ships of the line and a garrison of 6,000 regulars, its reduction was declared by the British to be impossible. The forces sent against this place in 1758 consisted of 20 ships of the line and 18 frigates, with an army of 14,000 men. The harbor was defended by only 5 ships of the line, 1 fifty-gun ship, and 5 frigates, 3 of which were sunk across the mouth of the basin. The fortifications of the town had been much neglected, and in general had fallen into ruins. The garrison consisted of only 2,500 regulars and 600 militia. Notwithstanding the number of guns of the British fleet exceeded both the armaments of the French ships and all the forts, it did not risk an attack, but merely acted as transports and as a blockading squadron. Even the French ships and the outer works commanding the harbor were reduced by the land batteries erected by Wolfe; and the main work, although besieged by an inequality of forces of nearly 5 to 1, held out for two months, and even then surrendered through the petitions and fears of the non-combatant inhabitants, and not because it had received any material injury from the besiegers. The defence, however, had been continued long enough to prevent, for that campaign, any further operations against Canada.

"Quebec was taken from the French by Admiral Saunders, who, with 21 sail of the line, entered the St. Lawrence in 1759."—This is certainly a remarkable discovery, for we are sure that no one ever before heard of Quebec being taken by Admiral Saunders. This discovery opens a new era in military history; for, hereafter, the fleet which transports an army, though it may not have a gun of its own on board, is entitled to the credit of all the conquests which that army may achieve. The battle of the Pyramids was not fought by Napoleon, but by Admiral Brueix, who conveyed the army to Egypt! The defence of Portugal was not made by Wellington, but by the ships which landed him on the Peninsula!

The several naval attacks on Quebec are matters of interest, and we shall notice them briefly, not, however, for the purpose of refuting the inferences of the above-mentioned report. In 1690, Massachusetts fitted out a fleet of 34 ships, the largest carrying 44 guns and about 200 men. The whole command consisted of about 2,000 men. This force, under the command of Sir William Phipps, ascended the St. Lawrence and laid siege to Quebec, whose defences were then of the slightest character, and armed with only 23 guns. The attack was kept up for some time; but, at length, the fleet, receiving more injuries from the batteries than it inflicted on them,

withdrew from the contest, and hastened home with precipitation. In 1693, a considerable fleet was sent out from England, to attempt the reduction of Quebec; but a portion of the crews being destroyed by the yellow fever, the project was abandoned. In 1709, a combined attack by sea and land was planned against Quebec and Montreal; the army advanced as far as Wood creek, but the fleet never ascended as far as Quebec, and the expedition was abandoned. In 1711, an English fleet of 15 ships of war, carrying over 800 guns, 40 transports, and 6 store ships, with over 5,000 seamen and a large land force, attempted the conquest of this place; they failed, however, to reach their destination, and, after losing in the St. Lawrence a part of the ships and more than 1,000 men, abandoned the project. In the latter part of 1745, the English colonial fleet of some 600 guns, at Louisburg, was directed to attack Quebec; but, not receiving the promised reinforcements from the Duke of Newcastle, they did not venture to ascend the St. Lawrence. The fleets of Admirals Saunders and Holmes consisted of "22 ships of the line, and an equal number of frigates and small armed vessels." The ships of the line alone carried 1,500 guns. Wolfe's army amounted to about 8,000 men. The works of Quebec were armed with 94 guns and 5 mortars, and only a part of these could be brought to bear upon the shipping. The fleet ascended the St. Lawrence without difficulty, and arrived at the Isle of Orleans in the latter part of June, but did not approach the city until after Wolfe had "secured the posts, without the command of which, the fleet could not have lain in safety in the harbor." Admiral Holmes's division first ascended the St. Lawrence above Quebec, but was soon withdrawn, to cover the landing of the troops at the falls of Montmorenci, where an unsuccessful attack was made upon the entrenchments of Montcalm. Several attempts with the combined sea and land forces were made to carry the works, but they proved equally unsuccessful. Although the ships carried 15 or 20 times as many guns as the forts, their inability to reduce these works was acknowledged. The siege had continued for two months, and still the fortifications were uninjured. General Wolfe himself distinctly stated, that in any further attempt to carry the place, the "guns of the shipping could not be of much use;" and the chief engineer of the expedition gave it as his opinion, that "the ships would receive great damage from the shot and bombs of the upper batteries, without making the least impression upon them." Under these circumstances, it was finally determined to endeavor to decoy Montcalm from his works, and make him risk a battle in the open field. In an evil hour, the French consented to forego the advantages of their fortifications, and the contest was finally decided upon the plains of Abraham, with forces nearly equal in number, but greatly dissimilar in character—the English being disciplined and chosen troops, while nearly one-half of their opponents were militia and Indians, who gave but a weak support to the regulars. Both Wolfe and Montcalm fell in this battle, but the former on the field of victory; and five days afterwards the inhabitants, weakened and dispirited by their losses, surrendered the town, although its fortifications were still unharmed.

"*The frigate Roebuck silenced the efficient batteries at Red Hook.*" &c.—The little batteries of Red Hook and Governor's Island, however much ridiculed by the Appalachiecola report, were really of great importance to the security of Washington's army, which was then entrenched in the lines of Brooklyn, with its right resting upon the small field works of a few

guns at Red Hook. This little work, and the corresponding one on Governor's Island, prevented the British shipping from passing into the East river, where they could have assailed the Americans in rear, and cut off their retreat. The former of these batteries was never very seriously engaged; and we cannot find, either in American or English histories, any notice of its being silenced by the Roebuck. We know that it was not abandoned till Washington had effected his retreat across the East river. Beatson says, *the Roebuck exchanged only a few random shots with it.*

The entire English attacking force consisted of 103 ships, carrying over 2,600 guns, and a veteran army of 30,000 men. The fleet lay some days at the Narrows before landing the troops, and 7 days more elapsed previous to Washington's retreat.

Baltimore and Washington.—The attacks upon these two places by the British, in the war of 1812, are referred to in the Appalachicola report; the first as proof of the inefficiency of a "*fortress, well situated, having a good garrison—nay, where all the requisite conditions are fulfilled,*" to withstand the fire of shipping; for it "*was evacuated by the fire of the two hostile frigates;*" and the second as being defended without the use of fortifications, inasmuch as the "*attacking fleet could not approach the works erected for the defence of the city, and therefore neither received nor inflicted much injury.*"

We deny the correctness of these assertions. The fort on the Potomac was *not* a fortress, was *not* well situated, was *not* well garrisoned, *nor* were the requisite conditions of defence fulfilled. It was a small inefficient work, incorrectly planned by an incompetent French engineer, and *has not yet been completed.* The portion constructed was never until very recently properly prepared for receiving its armament, and at the time of attack could not possibly have held out a very long time. But no defence whatever was made. Captain Gordon, with a squadron of eight sail, carrying 173 guns, under orders to "*ascend the river as high as Fort Washington, and try upon it the experiment of a bombardment,*" approached that fort, and, upon firing a single shell, which did no injury to either the fort or the garrison, the latter deserted the works, and rapidly retreated. The commanding officer was immediately dismissed for his cowardice. The fleet ascended the river to Alexandria; but learning, soon afterwards, that batteries were preparing at the White House and Indian Head, to cut off its retreat, it retired in much haste, but not without injury.

The whole fleet sent to the attack of Baltimore consisted of forty sail, the largest of which were ships of the line, carrying an army of over six thousand combatants. The troops were landed at North Point, while sixteen of the bomb vessels and frigates approached within reach of Fort McHenry, and commenced a bombardment which lasted twenty-five hours. During this attack, the enemy "*threw 1,500 shells, four hundred of which exploded within the walls of the fort, but without making any unfavorable impression on either the strength of the work or the spirit of the garrison.*" The forts labored under the disadvantage of being armed with guns of too small a caliber to reach the shipping; but a fleet of barges sent to storm one of the batteries was repulsed with loss, and both fleet and army soon withdrew from the contest. We thought it was a fact too well known to need reassertion at the present day, that the gallant resistance of Colonel Armistead in Fort McHenry, and of General Smith upon the ene-

my's line of approach per North Point, saved that beautiful city from being destroyed by the ruthless foe.

"Charleston was taken, notwithstanding the attack on Fort Moultrie failed."—When this second attack was made on Charleston, Marshall says that Fort Moultrie was out of repair, and Fort Johnson in ruins. There was, however, some time before this attack, a full trial of strength, before Charleston, between the American batteries and British ships. The fort mounted only 26 guns, while the fleet carried 270 guns. In this contest the British were entirely defeated, and lost, in killed and wounded, more than seventy men to every ten guns brought against them, while their whole 270 guns killed and wounded only thirty-two men in the fort. Of this trial of strength, which was certainly a fair one, Cooper, in his naval history, says: "It goes fully to prove the important military position, that ships cannot withstand forts, when the latter are properly armed, constructed, and garrisoned. General Moultrie says, only thirty rounds from the battery were fired, and was of opinion that the want of powder alone prevented the Americans from destroying the men of war."

"Mobile fort fell without resistance, yielding up near five hundred regular troops, officers and men, and a full supply of the necessaries for a vigorous defence."—In 1814, a British fleet of four vessels, carrying 92 guns, attacked Fort Boyer, a small redoubt, located on a point of land commanding the passage from the Gulf into the bay of Mobile. This redoubt was garrisoned by only one hundred and twenty combatants, officers included, and its armament was but twenty small pieces of cannon, some of which were almost entirely useless, and most of them poorly mounted, "in batteries hastily thrown up, and leaving the gunners uncovered from the knee upwards;" while the enemy's land force, acting in concert with the ships, consisted of twenty artillerymen with a battery of one twelve-pounder and a howitzer, one hundred and thirty marines, and six hundred Indians and negroes. His ships carried five hundred and ninety men in all. This immense disparity of numbers and strength did not allow to the British military and naval commanders the slightest apprehension that four British ships, carrying 92 guns, and a land force somewhat exceeding seven hundred combatants, could hardly fail in reducing a small work, mounting only twenty short carronades, and defended by a little more than one hundred men, unprovided alike with furnaces for heating shot or casemates to cover themselves from rockets and shells." Nevertheless, the enemy was completely repulsed; one of his largest ships was entirely destroyed; his entire loss in killed and wounded could have fallen but a little short of one hundred, while ours was only eight or nine. Here was a fair trial of strength, with a result most flattering to the American pride; but the Appalachicola report passes it by in silence, and quotes, as proof of the superiority of British ships over American batteries, the land attack of General Lambert, in February, 1815, in which *not a single ship was in the remotest degree concerned.*

We have now disposed of the several examples adduced in the Appalachicola report to prove the superiority of British naval armaments, gun for gun, over both American and European batteries. There are a few other trials of strength between ships and forts, which are not mentioned in that report—trials too well known to admit of any doubt or difference of opinion respecting their results. Why does the report pass over in silence the attacks upon Stonington, Cagliari, Martello, Santa Croix, Marcou, &c.,

and offer such examples as "Constantinople by a Venetian fleet," "Mocha, in Arabia," "Senegal," "Canton," &c. ? We will in part supply this omission, limiting ourselves, however, to the period of the French Revolution.

On the 21st of January, 1792, a considerable French squadron attacked Cagliari, in Sardinia; but, after a bombardment of three days, (during which they attempted to land,) they were most signally defeated, and obliged to retire.

In 1794, in the bay of Martello, Corsica, a small tower, armed with one gun in barbette, was attacked by two English ships, "the Fortitude of seventy-four, and the Juno frigate of thirty-two guns. After having engaged it for two hours and a half, they were obliged to haul off with considerable damage. The Fortitude lost seven men, and was three or four times set on fire by heated shot—once in the cock pit and state room. There were about thirty men in the tower, though three were sufficient to work the gun." The garrison does not appear to have sustained any loss. Colonel Pasley, an English officer of high standing, says that this attack "proved the superiority which guns on shore must always, in certain positions, possess over shipping, no matter whether the former are mounted on a tower or not."

In July, 1797, Nelson, with a squadron of eight ships of his own choosing, carrying near four hundred guns, entered the bay of Santa Croix, Teneriffe, and attacked the town. The ships fired upon the small land batteries without producing any effect; and a force of one thousand men was several times landed in boats, but as often driven back with great loss; a single ball striking the side of the Fox cutter, instantly sunk her, with near one hundred seamen and marines. After many desperate attempts by the dauntless Nelson to carry the works, the British were compelled to retire with a loss of two hundred and fifty killed and wounded, while the garrison received little or no damage.

In the early wars of the French Revolution, the English took possession of the islands of Marcou, and fortified them, in order to command the coast trade between Cherbourg and Havre. In 1798, the French attempted to retake these little islands, and attacked the English redoubt with fifty-two brigs and gun boats, carrying 80 long 36's and 18-pounders, and six or seven thousand men. The redoubt was armed with two 32-pounders, two 6-pounders, four 4-pounders, and two carronades; its garrison consisted of only 250 seamen and marines. Notwithstanding this great disparity of numbers, the little redoubt sunk seven of the enemy's brigs and boats, captured another, and forced the remainder to retreat, with great loss. The loss of the garrison was only one man killed and three wounded.

In July, 1801, Porto Ferrairo was garrisoned by 300 British, 800 Tuscans, and 400 Corsicans. The French army which besieged this motley garrison first consisted of 1,500 men, but was afterwards increased to 6,000 land forces and three frigates. The siege was continued for five months, during which time the place was several times bombarded and assaulted without success, and was at last surrendered by the treaty of Amiens.

In July, 1801, Admiral Saumarez attacked the defences of Algesiras with a fleet of one 80-gun ship, five 74's, one frigate, and a lugger—carrying in all 502 guns. The land defences consisted of Green Island battery of seven 18 and 24-pounders, and St. Jaques battery of five 18-pounders. The floating defences consisted of two 80-gun ships, one of 74, one of 44, and some gun boats—in all 306 guns. The English here chose their time and mode of

attack, had the wind in their favor, and a naval superiority of 196 guns; and yet they were most signally defeated, and compelled to retire, with the entire loss of one ship, and with the others much injured. Can this be attributed to the superior skill and bravery of the French and Spanish ships and crews? Such a supposition would be in contradiction to the whole history of the war; and we must therefore attribute it to the fire of the land batteries. An examination of the details of this battle will prove clearly that these 12 guns ashore more than compensated for the 196 extra guns of the English. The Hannibal, 74 guns, ran aground near the land battery, and thus became exposed to its fire. Her position was such, however, that she continued to return the fire, even after the other ships had retired. An attempt was made by the Audacious, 74 guns, and the Cæsar, 80 guns, to cut out the Hannibal, but the fire of the little battery was so severe, that the admiral says, in his despatches, he was obliged to make sail, and leave her to her fate. The whole loss of the English in killed and wounded was 375. All the ships were much injured. The Cæsar and Pompée were so much shattered as to preclude the hope of their being ready in any seasonable time to proceed to sea; but, by working night and day, the former was got ready for the first battle of Trafalgar, but the latter was reduced almost to a wreck.

Shortly after this battle, the French and Spaniards, encouraged by their success at Algeiras, proceeded to attack the English at sea. The combined fleet now carried 1,012 guns, and the English only 422; the former, nevertheless, were most completely beaten—showing, as did every naval contest during the war, that on the water the English were far superior to their opponents.

In 1803, the English, under Commander Hood, constructed a small battery of some 15* guns upon Diamond rock, about six miles from Port Royal bay. It was garrisoned with about 100 men. This little work was found so much to annoy the French shipping going to and from Martinique, that in 1805 they determined to destroy it. The force sent to accomplish this consisted of two 74-gun ships, one frigate, and a brig, with a detachment of 200 troops. Several ineffectual attempts were made to silence its fire or carry it by storm; and on the fourth day of the siege the little garrison, though still unharmed in their works, capitulated, for want of both ammunition and provisions. There was not a single man killed or wounded in the redoubt, while the French lost 50 men.

In 1808, a French army of 5,000 men laid siege to Fort Trinidad, then garrisoned by less than 100 Spaniards and British marines. An English seventy-four and a bomb vessel attempted to annoy the besiegers, but were soon driven off by a French land battery of 3 guns. During the progress of the siege, an additional force of 50 seamen and 30 marines were thrown into the fort, making in all about 180 men; and this little force not only successfully sustained the siege, but most bravely repulsed a storming party of 1,000 picked men, capturing the storming equipage, and killing the commanding officer, and all who attempted to mount the breach.

In 1806, the British ship Pompée, 80 guns, the Hydra, 38 guns, and another frigate, force not given, "anchored about 800 yards from a battery of 2 guns, situated on the extremity of Cape Licosa, and protected from

* The armament is said to be "that of a sloop of war." Sloops of war then carried from 10 to 15 guns.

assault by a tower, in which were five-and-twenty French soldiers, commanded by a lieutenant. The line-of-battle ship and the frigates fired successive broadsides till their ammunition was nearly expended, the battery continually replying with a slow but destructive effect. The *Pompée*, at which ship alone it directed its fire, had 40 shot in her hull, her mizzen topmast carried away; a lieutenant, midshipman, and 5 men killed, and 30 men wounded. At length, force proving ineffectual, negotiation was resorted to, and, after some hours' parley, the officer capitulated. It then appeared that the carriage of one of the 2 guns had failed on the second shot, and the gun had subsequently been fired lying on the sill of the embrasure; so that in fact the attack of an 80-gun ship and two frigates had been resisted by a single peice of ordnance." In the latter wars of the French Revolution, the British partially fortified the island of Anhault as a depot and point of communication between England and the continent. This place was attacked by the Danes, in 1811, with 12 gun boats, carrying 72 guns and howitzers and 800 men, and several transports with a land force whose number has been variously stated from 1,000 to 3,000. The whole Danish attacking force is estimated by several English writers at 4,000. The only fortification of importance on the island was a small redoubt, called Lighthouse fort, and the garrison consisted of only 381 men. The Danes, under cover of darkness and a thick fog, succeeded in effecting a landing; but, on their approach to the batteries, a well directed and destructive fire of grape and musketry was opened upon them. They were most signally defeated, with a loss of forty killed and five or six hundred wounded and prisoners. The remainder re-embarked in their boats, but were pursued by two small English vessels that had opportunely arrived, and the greater part of them taken or destroyed.

Leghorn, during the absence of the army, in 1813, was attacked by an English squadron of six ships, carrying over 300 guns and 1,000 troops. "This attack failed, owing to the strength of the fortifications," and the troops and seamen were re-embarked during a temporary suspension of hostilities.

When Lord Lynedock advanced against Antwerp, in 1814, says Colonel Mitchell, "Fort Frederick, a small work of only two guns, one at right angles and the other looking diagonally up the stream, was established in a bend of the Polder Dyke, at some distance below Lillo; the armament was a long 18-pounder and a 5½-inch howitzer. From this post the French determined to dislodge us, [the English;] and, on a very fine and calm morning, an 80-gun ship dropped down with the tide and anchored near the Flanders shore, about 600 yards from the British battery; by her position, she was secured from the fire of the 18-pounder, and exposed to that of the howitzer only. As soon as every thing was made tight, her broadside was opened; and if noise and smoke were alone sufficient to insure success in war, as so many of the moderns seem to think, the result of this strange contest would not have been long doubtful, for the thunder of the French artillery actually made the earth to shake again; but though the earth shook, the single British howitzer was neither dismounted nor silenced; and though the artillery men could not, perfectly exposed as they were, stand to their gun whilst the iron hail was striking thick and fast around, yet no sooner did the enemy's fire slacken for a moment, than they sprang to their post, ready to return at least one shot for eighty. This extraordinary combat lasted from seven o'clock in the morning till near twelve at noon,

when the French ship having had 41 men killed and wounded, her commander being in the list of the latter, and having besides sustained serious damage in her hull and rigging, returned to Antwerp without effecting any thing whatever. The howitzer was not dismounted, the fort was not injured—there being in fact nothing to injure—and the British had only one man killed and two wounded.”

But we will not further specify examples; the whole history of the wars of the French Revolution is one continued proof of the superiority of fortifications as a maritime frontier defence. The sea coast of France is almost within a stone's throw* of the principal British naval depots. Here were large towns and harbors, filled with the rich commerce of the world, offering the most dazzling attractions to the brave and enterprising enemy. The French navy was at this time utterly incompetent to their defence, while England supported a maritime force at an annual expense of near *ninety millions of dollars*. Her largest fleets were continually cruising within sight of these seaports, and not unfrequently attempting to cut out their shipping. At this period, says one of her naval historians, “the naval force of Britain, so multiplied, and so expert, from long practice, had acquired an intimate knowledge of their [the French] harbors, their bays and creeks; her officers knew the depth of water, and the resistance likely to be met with in every situation.” On the other hand, these harbors and towns were frequently stripped of their garrisons by the necessities of distant wars, being left with no other defence than their fortifications and militia. And yet, notwithstanding all this, they escaped unharmed during the entire contest. They were frequently attacked, and, in some instances, the most desperate efforts were made to effect a permanent lodgement; but in no case was the success at all commensurate with the expense of life and treasure sacrificed, and no permanent hold was made on either the maritime frontiers of France or her allies. This certainly was owing to no inferiority of skill and bravery on the part of the British navy, as the battles of Aboukir and Trafalgar, and the almost annihilation of the French marine, have but too plainly proven. Why, then, did these places escape? We know of no other reason, than that *they were fortified*; and that the French knew how to defend their fortifications. The British maritime expeditions to Quebec, the Scheldt, Constantinople, Buenos Ayres, &c., sufficiently prove the ill success and the waste of life and treasure with which they must always be attended. But when her naval power was applied to the destruction of the enemy's marine, and in transporting her land forces to solid bases of operations on the soil of her allies in Portugal and Belgium, the fall of Napoleon crowned the glory of their achievements.

We shall close our remarks upon this part of the subject of maritime defence, by quotations from the reports of Mr. Poinsett, Mr. Bell, and Mr. Spencer, and from the military work of Colonel Mitchell, of the British army. The latter, in his remarks on military organization, &c., says: “The numerous and splendid victories achieved by British fleets over forts and batteries have not only tended to make naval attacks popular, but have also led to the very general belief that ships can contend successfully against batteries on shore, wherever the latter are fairly accessible, and as often as there is any thing like a fair proportion as to the numerical force of guns between the contending parties. None of the many theories that have re-

* Only 18½ miles across the British channel at the narrowest place.

sulted from the modern chance games of war can possibly be more erroneous or more dangerous; because the public voice may, at some moment of general excitement, induce the Government to fit out naval armaments for the attainment of objects totally beyond the reach of naval power. Under the mischievous belief that wooden walls can stand battering as long as stone walls, the lives of British seamen, the fame of the navy, and the honor of the country, may be risked in enterprises in which skill and courage can effect nothing, and in which success can be anticipated only from the folly or cowardice of the enemy—always precarious foundations on which to trust for victory.

“To strike even a pretty large object with a ball fired from a piece of artillery, at a moderate range, is no very easy matter; and the difficulty is, of course, much increased when the gun is placed, as on board a ship, on a moving, or at least a very unsteady platform; and where those whose business it is to take aim are, after the first fire, completely enveloped in smoke. And though towns and fortresses are not exactly small, or even moderately small objects, they nevertheless, when situated on a level, present but a very narrow horizontal line to the shipping; and of this line a still narrower part is vulnerable. To unroof the houses of a few harmless citizens, or to throw shells into a second-rate town, is a mode of warfare as unworthy as inefficient, and will never induce a commander of ordinary firmness to relinquish his post or give up the contest. To breach a rampart where there are no troops for debarkation, and when, as in such maritime expeditions generally, there is no intention to storm the works, is, of course, useless; so that the only remaining alternative is to dismount or to silence the artillery. This can be effected only by striking the guns themselves, or by so completely demolishing the parapet as to prevent the men from working them. The first is difficult, for a gun presents but a very small mark; and the second is not easy, because it requires time, and a great many well-directed shots.”

“To batter down even an ordinary rampart with the floating artillery of a fleet seems to us next to an impossibility, when we recollect the long and well-directed fire, constantly striking from a short range on the same spot, that was required to breach even the rickety walls of some of the Spanish fortresses. A ship of war brings, as we have said, a much greater body of fire to bear upon a single point than a land battery can return from an equal front; yet is the loss which a ship is liable to experience from the fire of the small number of battery guns far greater than any that can be inflicted by its own superior artillery. Every shot that strikes a ship occasions some mischief, whereas 100 guns may strike a battery without producing any effect whatever.” “A ship of any force is a large object, easily struck by the fixed artillery of forts. The vulnerable part of a battery is, on the contrary, a small object, which it is difficult to strike with the floating artillery of ships.”

“How, then, it may be asked, are the many victories gained by our fleets over land defences to be accounted for? By circumstances, and by the conduct of our seamen, whose bravery naturally commanded success whenever it was within their reach, and not unfrequently wrung it, by mere excess of daring, from the fears of their astonished and intimidated adversaries. Naval and military operations present but too many occasions where both sailors and soldiers are forced to set the ordinary calmness of probability at defiance, and trust to daring and to fortune for suc-

cess; but for Government to fit out expeditions on such a principle would be the height of reprehensible folly—criminal as an avowed game of hazard played with ‘dice of human bones.’ It would be doubly criminal in the Government of this country, [England,] so amply provided with the power of placing the fair means of success at the disposal of efficient armaments. But naval armaments alone cannot contend successfully against well-constructed and well-defended land batteries; nor is there any thing in naval history to justify the dangerous and erroneous opinion now entertained on the subject.”

Mr. Poinsett says: “After a careful and anxious investigation of a subject involving in so high a degree the safety and honor of the country, I fully concur in the opinions expressed by the board [of officers on national defence] of the superiority of permanent works of defence over all other expedients that have yet been devised, and of their absolute necessity, if we would avoid the danger of defeat and disgrace; a necessity rather increased than diminished by the introduction of steam batteries and the use of hollow shot. It would, in my opinion, prove a most fatal error to dispense with them, and to rely upon our navy alone, aided by the number, strength, and valor of the people, to protect the country against the attacks of an enemy possessing great naval means. To defend a line of coast of three thousand miles in extent, and effectually to guard all the avenues to our great commercial cities and important naval depots, the navy of the United States must be very superior to the means of attack of the most powerful naval Power in the world, which will occasion an annual expense this country is not now able to bear; and this large naval armament, instead of performing its proper function as the sword of the State, in time of war, and sweeping the enemy’s commerce from the seas, must be chained to the coast or kept within the harbors.

“It has been clearly demonstrated that the expense of employing a sufficient body of troops, either regulars or militia, for a period of even six months, for the purpose of defending the coast against attacks and feints that might be made by an enemy’s fleet, would exceed the cost of erecting all the permanent works deemed necessary for the coast. One hundred thousand men, divided into four columns, would not be more than sufficient to guard the vulnerable points of our maritime frontier, if not covered by fortifications. This amount of force, which would be necessary against an expedition of twenty thousand men, if composed of regulars, would cost the nation \$30,000,000 per annum; and if militia, about \$40,000,000; and supposing only one-half the force to be required to defend the coast, with the aid of forts, properly situated and judiciously constructed, the difference of expense for six months would enable the Government to erect all the necessary works. This calculation is independent of the loss the nation would suffer by so large an amount of labor being abstracted from the productive industry of the country, and the fearful waste of life likely to result from such a costly, hazardous, and harassing system of defence.

“It must be recollected, too, that we are not called to try a new system, but to persevere in the execution of one that has been adopted after mature deliberation, and that is still practised in Europe on a much more extensive scale than is deemed necessary here; so much so, that there exist three single fortresses, each of which comprises more extensive and stronger works than is here proposed for the whole line of our maritime fron-

tier. We must bear in mind, also, that the destruction of some of the important points on our frontier would alone cost more to the nation than the expense of fortifying the whole line would amount to; while the temporary occupation of the others would drive us into expenses to recover them, far surpassing those of the projected works of defence.

“The organization of the permanent defences proposed for our frontiers is not based upon military and naval considerations alone, but is calculated to protect the internal navigation of the country. The fortifications proposed, at the same time that they protect our coast from the danger of invasion, and defend the principal avenues and naval establishments, cover the whole line of internal navigation, which, in time of war, will contribute, in an essential manner, to the defence of the country, by furnishing prompt and economical means of transportation; so that, while the main arteries which conduct our produce to the ocean are defended at their outlets, the interior navigation parallel to the coast will be protected, and a free communication kept up between every part of the Union.”

“Although it would appear on a superficial view to be a gigantic and almost impracticable project to fortify such an immense extent of coast as the United States, and difficult, if not impossible, to provide a sufficient force to garrison and defend the works necessary for the purpose, yet the statements contained in the reports of the board remove these objections entirely. The coast of the United States, throughout its vast extent, has but few points which require to be defended against a regular and powerful attack. A considerable portion of it is inaccessible to large vessels, and only exposed to the depredations of parties in boats and small vessels of war; against which, inferior works and the combination of the same means, and a well-organized local militia, will afford sufficient protection. The only portions which require to be defended by permanent works of some strength are the avenues to the great commercial cities and naval and military establishments, the destruction of which would prove a serious loss to the country, and be regarded by an enemy as an equivalent for the expense of a great armament. It is shown, also, that the number of men required on the largest scale, for the defence of these forts, when compared with the movable force that would be necessary without them, is inconsiderable. The local militia, aided by a few regulars, and directed by engineers and artillery officers, may, with previous training, be safely intrusted with their defence in time of war.

“It cannot be too earnestly urged, that a much smaller number of troops will be required to defend a fortified frontier than to cover one that is entirely unprotected; and that such a system will enable us, according to the spirit of our institutions, to employ the militia effectually for the defence of the country. It is no reproach to this description of force, and no imputation on their courage, to state, what the experience of two wars has demonstrated, that they cannot stand the steady charge of regular forces, and are disordered by their manœuvres in the open field; whereas their fire is more deadly from behind ramparts.”

Mr. Bell says: “Since the recent and successful experiments in the navigation of the Atlantic by steam, and the consequent changes anticipated in maritime warfare, it is not an uncommon impression that fortifications, and all other land defences, may be dispensed with altogether; and that the navy, improved and strengthened by war steamers and floating batteries, may be safely and exclusively relied upon for the defence of our ex-

tensive sea coast. Another error, not less to be regretted, has obtained some hold upon the public mind since the extension of steam navigation, already adverted to, and the improvements suggested in the means of defending the seaboard. It is, that the defence of our numerous inlets, harbors, and naval depots, will, by their improvements, be rendered not only more certain, but less expensive than heretofore, and therefore of diminished importance in every point of view. The very reverse of these conclusions, it may be justly apprehended, will be realized in the experience of the future. The increased facilities which the late extension of steam navigation will give to any great maritime Power, holding possession of one or more naval depots on this side of the Atlantic, in concentrating a large naval or military force upon any one of the numerous assailable points upon our extensive sea coast; the celerity of movement, and the greater certainty and precision which will thereby be secured in the execution of all the details of an attack—enabling an enemy to make it, in every instance, a *surprise*—will probably create a necessity for increasing our defences in some form, at an expense far exceeding any thing heretofore deemed important or necessary to reasonable security. But the prospect of successful defence by the navy alone vanishes altogether when we reflect that it is only in infancy, and that for a long time it must be inferior to the naval armaments of several of the Powers of Europe. Whether the United States will be able, at any time, to contend with them upon the ocean, it is obvious, will depend upon the successful development of our naval resources after the commencement of a war; *but how could this development take place in the face of a much more powerful enemy, if our depots and navy yards are suffered to remain without protection by fortifications, and there are no harbors in which our ships of war may take refuge and remain in safety, when pursued by superior squadrons? It would be fatal to the national honor to neglect to fortify sufficiently and amply those passes, by land and water, by which an enemy could approach the depositories of our naval supplies, and also the principal harbors of easy access to our own vessels.*"

"The necessary quality of buoyancy in war steamers and floating batteries requires that they should be constituted mainly of wood; and whether of wood or iron, their destructibility, by the usual missiles employed in war, will be neither greater nor less than that of the war steamers and floating batteries with which an enemy may attack them. It is clear, then, that nothing will be gained by their exclusive employment, in this point of view. It is equally clear that an enemy is able to concentrate a much superior force upon any one of our great harbors and naval depots than is provided for its defence; he must, without some extraordinary casualty, be successful. To guard, therefore, against the capture or destruction of all our opulent cities and great naval depots upon the seaboard, the Government must provide a greater number of war steamers and floating batteries, for the defence of each of them, than any foreign nation will probably be able to assemble upon our own coast, and thus have it in his power, by uniting his whole force in an attack upon one point at a time, to lay under contribution or destroy the whole.

"But suppose each of our great harbors or depots should be thus defended, and that all the channels or passes by water could be so guarded and blocked up by floating batteries, or with the advantages of position, to set at defiance any naval force which could be brought to the attack, with-

out fortifications to guard the passes or avenues over which an enemy could reach his object by land, what would prevent him from disembarking a sufficient land force at some other but not distant point upon the coast, and effecting all his purposes of spoliation and destruction? It is manifest that something more will be wanting than war steamers and floating batteries, to give even a tolerable security to our cities and naval depots. If fortifications are to be dispensed with, it is clear, that to afford them adequate protection and security against the sudden assaults of an enemy approaching by sea, will require not only such a preparation of war steamers and floating batteries as already described, but a stationary land force sufficient in numbers and discipline to resist any number of veteran troops the enemy might have it in his power to employ as an auxiliary force in his enterprises upon our shores.

"Supposing the defences of a harbor, by fortifications, to be complete, and the attacking ships or war steamers of an enemy shall have succeeded in passing the outer channels leading to it, without material damage from the forts designed to guard them; or if they shall have taken advantage of the darkness of the night, and passed them unobserved, they will have gained but little by that success. They will be exposed, at every point within, to the fire of one or more land batteries. They will be able to find no anchorage or resting place where they will not be liable to be disabled, burnt, or blown up, by the shells and hot shot discharged under protection of walls impenetrable to the shot of an enemy, except at the gun ports. Not so, however, when floating defences are exclusively relied upon. They will have no advantage in the fight over the attacking force—they will be equally exposed and combustible; and when overcome, all resistance ceases, and the success of the enemy will be complete."

Mr. Spencer says: "While fortifications are more effectual for defence, in certain positions, than floating forces, they are less expensive in construction, more durable, and requiring an outlay in repairs utterly insignificant, when compared with the expense of maintaining ships and renewing them. They are indispensable for the purposes of covering the military and naval depots, and all other public or private establishments which would incite the enterprise or the cupidity of a foe, and excluding him from strong positions, where his naval superiority might enable him to maintain himself, and from which he might make incursions into the interior, or assail an extensive line of coast."

We have already alluded to the remarks of the Appalachiecola report on the relative cost of ships and forts, and the economy of their support. We do not regard this question of relative cost a matter of any great importance, for it can seldom be decisive in the choice of these two means of defence. No matter what their relative cost may be, the one cannot often be substituted for the other. There are some few cases, however, where this might be taken into consideration, and would be decisive. Let us endeavor to illustrate our meaning. For the defence of New York city, the Narrows and East river must be secured by forts; ships cannot, in this case, be substituted. But let us suppose that the outer harbor of New York furnishes no favorable place for the debarkation of troops, or that the place of debarkation is so far distant, that the troops cannot reach the city before the defensive forces can be prepared to repel them. This harbor would be of great importance to the enemy, as a shelter from storms, and as a place of debarkation or of rendezvous preparatory to a forcible pas-

sage of the Narrows; while to us its possession would not be absolutely essential, though very important. A strong fortification on Sandy Hook might probably be so constructed as to furnish a pretty sure barrier to the entrance of this outer harbor; on the other hand, a naval force stationed within the inner harbor, and acting under the protection of forts at the Narrows, might also furnish a good, though perhaps less certain protection for this outer roadstead. Here, then, we might well consider the question of relative cost and economy of support of the proposed fortification on Sandy Hook, and of a home squadron large enough to effect the same object, and to be kept continually *at home* for that special purpose. If we were to allow it to go to sea for the protection of our commerce, its character and efficiency as a harbor defence would be lost. We can therefore regard it only as a local force—fixed within the limits of the defence of this particular place—and our estimates must be made accordingly.

The average durability of ships of war in the British navy has been variously stated at 7 and 8 years in time of war, and from 10 to 12 and 14 years in time of peace. Mr. Perring, in his "Brief Inquiry," published in 1812, estimates this average durability at about 8 years. His calculations seem based upon authentic information. A distinguished English writer has more recently arrived at the same result from estimates based upon the returns of the Board of Admiralty during the period of the wars of the French Revolution. The data in our own possession are less complete, the appropriations for *building* and *repairing* having been so expended as to render it impossible to draw an accurate line of distinction. But, in the returns now before us, there are generally separate and distinct accounts of the *timbers* used for these two purposes; and consequently, so far as this (the main item of expense) is concerned, we may form pretty accurate comparisons.

According to Edge, (pp. 20, 21,) the average cost of timber, for hulls, masts, and yards, in *building* an English 74-gun ship, is £61,382. Let us now compare this cost of timber for building with that of the same item in *repairs*, for the following 15 ships, between 1800 and 1820. The list would have been still further enlarged, but the returns for other ships during some portion of the above period are imperfect:

Name of ship.	No. of guns.	When built.	Repaired from	Cost.
Vengeance - - - - -	74	-	1800 to 1807	£84,720
Ildefonso - - - - -	74	-	1807 to 1808	85,195
Scipio - - - - -	74	-	1807 to 1809	60,785
Tremendous - - - - -	74	-	1807 to 1810	135,397
Elephant - - - - -	74	-	1808 to 1811	67,007
Spencer - - - - -	74	1800	1809 to 1813	124,186
Romulus - - - - -	74	-	1810 to 1812	73,141
Albion - - - - -	74	1802	1810 to 1813	102,295
Donegal - - - - -	74	-	1812 to 1815	101,367
Implacable - - - - -	74	-	1813 to 1815	59,865
Illustrious - - - - -	74	1803	1814 to 1816	74,184
Northumberland - - - - -	74	-	1814 to 1815	59,795
Kent - - - - -	74	-	1814 to 1818	88,357
Sultan - - - - -	74	1807	1816 to 1818	61,518
Sterling Castle - - - - -	74	-	1816 to 1818	65,280

This table, although incomplete, gives for the above 15 ships, during a period of less than 20 years, the cost of *timber alone*, used in their repair, an average of about \$400,000 each. More timber than this was used, in all probability, upon the same vessels, and paid for out of the funds appropriated "for such ships as may be ordered in the course of the year to be repaired." But the amount specifically appropriated for timber for these 15 ships, would, in every 12 or 15 years, equal the entire *first cost* of the same items. If we were to add to this amount the cost of labor required in the application of the timber to the operations of repair, and take into consideration the expense of other materials and labor, and the decayed condition of many of the ships at the end of this period, we should not be surprised to find the whole sum *expended* under these heads to equal the first cost, even within the minimum estimate of 7 years. The whole cost of timber used for hulls, masts, and yards, in building, between 1800 and 1820, was £18,727,551; in repairs, and "ordinary wear and tear," £17,449,780; making an annual average of \$45,601,589 for building timber, and \$42,733,714 for that used in repairs. A large portion of the vessels *built* were intended to replace others which had been *lost*, or were so decayed as to be broken up.

But it may be well to add here, the actual supplies voted for the sea service, and for the wear and tear, and the extraordinary expenses in building and repairing of ships, from 1800 to 1815.

Year.	For the wear and tear of ships.	Extraordinary expenses in building, repairing, &c.	For entire sea service.
1800	£4,350,000	£772,140	£13,619,079
1801	5,850,000	933,900	16,577,037
1802	3,684,000	773,500	11,833,571
1803	3,120,000	901,140	10,211,378
1804	3,900,000	948,520	12,350,606
1805	4,680,000	1,553,690	15,035,630
1806	4,680,000	1,980,830	18,864,341
1807	5,070,000	2,134,903	17,400,337
1808	5,070,000	2,351,188	18,087,544
1809	3,295,500	2,296,030	19,578,467
1810	3,295,500	1,841,107	18,975,120
1811	3,675,750	2,046,200	19,822,000
1812	3,675,750	1,696,621	19,305,759
1813	3,549,000	2,822,031	20,096,709
1814	3,268,000	2,086,274	19,312,070
1815	2,386,500	2,116,710	19,032,700

It appears, from this table, that the appropriations for the sea service, during the first 15 years of the present century, amounted to a little less than *ninety millions of dollars per annum*, and for the wear and tear of ships, and "the extraordinary expenses in building and repairing of ships, &c.," the annual appropriations amounted to near *thirty millions of dollars*.

Our own naval returns are also so imperfect that it is impossible to form any very accurate estimate of the relative cost of construction and repairs of our men-of-war. The following table, compiled from a report of the Secretary of the Navy, in 1841, (Senate Document No. 223, 26th Congress,) will afford data for an approximate calculation :

Name of ship.	Number of guns.	Total cost of building, exclusive of armament, stores, &c.	When completed.	Cost of repairs, exclusive of ordnance, &c.	Repaired between
Delaware - - -	74	\$543,368 00	1820	\$354,132 56	1827 and 1838
North Carolina - - -	74	431,852 00	1825	317,628 92	1824 and 1836
Constitution - - -	44	302,718 84	1797	266,878 34	1833 and 1839
United States - - -	44	299,336 56	1797	571,972 77	1821 and 1841
Brandywine - - -	44	*299,218 12	1825	*377,665 95	1826 and 1838
Potomac - - -	44	*231,013 02	1822	*82,597 03	1829 and 1835
Concord - - -	20	115,325 80	1828	72,796 22	1832 and 1840
Falmouth - - -	20	94,093 27	1827	130,015 43	1828 and 1837
John Adams - - -	20	110,670 69	1829	119,641 93	1834 and 1837
Boston - - -	20	91,973 19	1825	189,264 37	1826 and 1840
St. Louis - - -	20	102,461 95	1828	135,458 75	1834 and 1839
Vincennes - - -	20	111,512 79	1826	178,094 81	1830 and 1838
Vandalia - - -	20	90,977 88	1828	59,181 34	1832 and 1834
Lexington - - -	20 ?	114,622 35	1826	83,386 52	1827 and 1837
Warren - - -	20 ?	99,410 01	1826	152,596 03	1830 and 1838
Fairfield - - -	20	100,490 35	1826	65,918 26	1831 and 1837
Natchez† - - -	20 ?	106,232 19	1827	129,969 80	1829 and 1836
Boxer - - -	10	30,697 88	1831	28,780 48	1834 and 1840
Enterprise - - -	10	27,938 63	1831	20,716 59	1834 and 1840
Grampus - - -	10	23,627 42	1821	96,086 36	1825 and 1840
Dolphin - - -	10	38,522 62	1836	15,013 35	1839 and 1840
Shark - - -	10	23,627 42	1821	93,395 84	1824 and 1839

It appears, from the above table, that the cost of constructing ships of the line is about \$6,600 per gun; of frigates, \$6,500 per gun; of smaller vessels of war, a little less than \$5,000 per gun. The cost of our war steamers (the *Fulton*, 4 guns, built in 1838-'39, cost \$333,770 77; the *Mississippi* and *Missouri*, 10 guns each, built in 1841, cost about \$600,000 apiece†) is over \$60,000 per gun!

It is obvious, from the nature of the materials of which forts are constructed, that the cost of their support must be inconsiderable. It is true that for some years past a large item in annual expenditures for fortifications has been under the head of "repairs." Much of this sum is for alterations and enlargements of temporary and inefficient works, erected anterior to and during the war of 1812. Some of it, however, has been for actual repairs of decayed or injured portions of the forts; these injuries resulting from the nature of the climate, the foundations, the use of poor materials and poor workmanship, and from neglect and abandonment. But if we include the risk of abandonment at times, it is estimated, upon data drawn from past experience, that *one-third of one per cent. per annum* of the first cost will keep in perfect repair any of our forts that have been constructed since the last war; whereas the cost of repairs for our men-of-war is more than *seven per cent. per annum* on the first cost of the

* Returns incomplete.

† Broken up in 1840.

‡ By the returns in the Navy Department, up to December 31, 1841, \$553,850 32 had been expended on the *Mississippi*, and \$519,032 57 on the *Missouri*; but all the returns had not then come in. The entire cost of construction and modification of these steamers, to fit them for service, differs but little from their estimated cost of \$600,000 apiece.

ships. The cost of repairs of steam ships will be still more ; but we have not yet had sufficient experience to determine the exact amount. But the cost of running them is so great, that the Secretary of the Navy, in his last annual report, says : " Their engines consume so much fuel as to add enormously to their expenses ; and the necessity that they should return to port, after short intervals of time, for fresh supplies, renders it impossible to send them on any distant service. They cannot be relied on as cruisers, and are altogether too expensive for service in time of peace. I have therefore determined to take them out of commission, and substitute for them other and less expensive vessels."

On this question of relative cost, we add the following extract from the report of Mr. Bell in 1841 :

" The relative expense of guns in forts and on board ships of war or floating batteries is strikingly disproportionate. The most favorable estimate will show that guns afloat will cost, upon an average, a third more than the cost of guns in forts. Well-constructed forts, bearing any number of guns, may be erected at less than half the amount required to build good steam batteries bearing the same number of guns. The steam ships now on the stocks at New York and Philadelphia, 1,700 tons burden, and designed to carry only eight guns each, it is estimated, will cost \$600,000 each. A floating battery of the largest class contemplated by a distinguished advocate for that mode of harbor defence, carrying two hundred guns, with its tow boats, it is estimated, cannot cost less than \$1,400,000 ; and the smallest, carrying one hundred and twenty guns, not less than \$700,000. A ship of the line carrying eighty guns, it is estimated, will cost, without her armament, \$500,000. Fort Adams is constructed for four hundred and fifty-eight guns ; when finished, will have cost \$1,400,000. Forts are built of solid, and, for the most part, of imperishable materials. By proper care, and a small annual expenditure for repairs, they will last and be available for centuries ; while the cost of the repairs that ships of war and floating batteries will require, in every twelve or fifteen years, will equal the cost of original construction. In other words, in respect to the expense, vessels of war and floating batteries will require to be reconstructed every twelve or fifteen years. The injury done to fortifications in the most serious engagements can usually be repaired in a few days, or at most in a few weeks, while the damages to ships of war and floating batteries, in a similar engagement, would require extensive repairs in every instance, and often render them unworthy of repair.

" Upon this data, a satisfactory estimate may be made of the relative expense of the two modes of defending our principal harbors and naval depots. In presenting these views, I would not be understood by any means as disparaging the value and efficiency of war steamers and floating batteries, when employed as an auxiliary force in any system of coast or harbor defence that may be adopted. Nor is any idea entertained that they ought, or can, be altogether dispensed with."

It should be noticed that, in the above report, Mr. Bell not only attributes to our navy the entire defence of our shipping at sea, but also attaches importance to war steamers and floating batteries as an auxiliary force in any system of coast or harbor defence that may be adopted. We regret that the friendly feelings shown towards the naval service in the reports of Messrs. Poinsett, Bell, and Spencer, and of the board of officers on national defence, have not been reciprocated by the author of the Appa-

lachicola report. That report is filled with sneers at the intelligence of the distinguished military officers of the board, and at the defensive system of the honorable Secretaries of War. It not only asserts that *our defensive policy should be nearly exclusively by naval means*, but it charges upon one branch of our military service the secret design of foisting upon the country a large standing army, and laying the foundation upon which a great military policy will be erected; it endeavors to prejudice this service in the public estimation, by calling upon the country to be on its guard against these covert designs. It moreover charges that fortifications, in furnishing garrisons to the army, have, by their "corrupting influences," so enervated that army, and enfeebled its physical strength, that it has perished, "*and melted away before the hardships of the first campaign within the boundaries of our own country.*"

This is not the place to enter upon the defence of the Florida army, if such defence be now necessary; but we affirm that no body of men ever exhibited more universal bravery, courage, and constancy, than was shown by our soldiers during the tedious and harassing operations of that war. Wherever the foe could be found, he was met and conquered, no matter what his superiority in position or numbers. They showed no signs of being "enervated in spirit or enfeebled in physical strength," but they fought, and bled, and conquered, officers and men, side by side.

II. The Appalachicola report, after denouncing fortifications as utterly worthless as water defences, remarks that the sphere in which they can be of any use is in retarding the enemy's operations upon an inland frontier. "*But even here,*" it says, "*they have been assailed by the contempt of experienced soldiers;*" "*this system of fortifications is not the true defence of the country, and the further prosecution of it should be abandoned;*" "*our country should be relieved from the intolerable burden of defences by fortifications,*" &c. It moreover endorses the opinion, that we should "confine our preparations (for defence) to the maritime frontier, as the inland border needs none, and the lake shores, under all circumstances, would be under the dominion of the strongest fleet."

From the middle ages down to the period of the French Revolution, wars were carried on mainly by the system of positions—one party confining their operations to the security of certain important places, while the other directed their attention to their siege and capture. But Carnot and Napoleon changed this system, at the same time with the system of tactics, or rather returned to the old and true principle of strategic operations. Some men, looking merely at the fact that a change was made, but without examining the character of that change, have rushed headlong to the conclusion, that fortified places are now utterly useless in warfare, military success depending entirely upon a good system of marches. On this subject, Jomini remarks, that "we should depend entirely upon neither organized masses nor upon material obstacles, whether natural or artificial. To follow exclusively either of these systems would be equally absurd. The true science of war consists in choosing a just medium between the two extremes. The wars of Napoleon demonstrated the great truth, that distance can protect no country from invasion; but that a State, to be secure, must have a good system of fortresses, and a good system of military reserves and military institutions." "Fortifications fulfil two objects of capital importance: first, the protection of frontiers; and, second, assisting the operations of the army in the field;" "every part of the frontiers of a

State should be secured by one or two great places of refuge, secondary places, and even small posts for facilitating the active operations of the armies. Cities girt with walls and slight ditches may often be of great utility in the interior of a country as places of deposite, where stores, magazines, hospitals, &c., may be sheltered from the incursions of the enemy's light troops. These works are more especially valuable where such stores, in order not to weaken the regular army by detachments, are intrusted to the care of raw and militia forces."

"Fortifications," says Napoleon; "are useful both in offensive and defensive wars; for although they cannot alone arrest the progress of an army, yet they are an excellent means of retarding, fettering, enfeebling, and disquieting a conquering foe." (Maxim 40.) In all military operations, *time* is of vast importance. If the advance of a single division of the army be retarded for a few hours only, it not unfrequently decides the fate of a campaign. Had the approach of Blucher been delayed for a few hours, Napoleon must have been victorious at the battle of Waterloo. An equilibrium can seldom be sustained for more than six or seven hours between forces on the field of battle; but in this instance the state of the ground rendered the movements so slow as to prolong the battle for more than thirteen hours—thus enabling the allies to effect a concentration in time to save Wellington. Many of Napoleon's brilliant victories resulted from merely bringing troops to bear suddenly upon some decisive point. This concentration of forces, even with a regular army, cannot be calculated on by the general with any degree of certainty, unless his communications are perfectly secure. But this difficulty is much increased where the troops are new and undisciplined. When a country like ours is invaded, a large number of such troops must suddenly be called into the field. Not knowing the designs of the invaders, much time will be lost in marches and countermarches; and if there be no safe places of resort, the operations must be indecisive and insecure. To a defensive army, fortifications are valuable as points of repose upon which troops, if beaten, may fall back and shelter their sick and wounded, collect their scattered forces, repair their *matériel*, and draw together a new supply of stores and provisions; and as rallying points where new troops may be assembled with safety, and the army in a few days be prepared to again meet the enemy in the open field. Without these defences, undisciplined and inexperienced armies, when once routed, can seldom be rallied again without great losses. But when supported by forts they can select their opportunity for fighting, and offer or refuse battle, according to the probability of success; and, having a safe place of retreat, they are far less influenced by fear in the actual conflict. It is not supposed that any system of fortifications can hermetically close a frontier. "But," says Jomini, "although they of themselves can rarely present an absolute obstacle to the advance of the hostile army, yet it is indisputable that they straiten its movements, change the direction of its marches, and force it into detachments; while, on the contrary, they afford all the opposite advantages to the defensive army; they protect its marches, favor its debouches, cover its magazines, its flanks, and its movements; and, finally, furnish it with a place of refuge in time of need." "If the enemy should venture to pass the line of these places without attacking them, he could not dispense with besieging, or, at least, *observing* them; and if they be numerous, an entire corps with its chief must be detached, to invest or observe them, as circumstances might require." His

army would thus be separated from its magazines, its strength and efficiency diminished by detachments, and his whole force exposed to the horrors of partisan warfare. It has therefore been estimated, by the best French military writers, that an army supported by a judicious system of fortifications can repel a land force *six* times as large as itself.

On the use of fortifications as inland defences, we quote from the writings of the Archduke Charles, who as a general knew no rival but Napoleon, and whose military writings are equalled by none, save the works of General Jomini. "The possession of strategic points," says the Archduke, "is decisive in military operations. The most efficacious means should therefore be employed to defend points whose preservation is the country's safeguard. This object is accomplished by fortifications; for fortified places resist for a given time, with a small number of troops, every effort of a much larger force; fortifications should therefore be regarded as the basis of a good system of defence." "I advise the construction of permanent works, as the most efficacious method of securing strategic points." "It should be a maxim of State policy in every country to fortify in time of peace all such points, and to arrange them with great care, so that they can be defended by a small number of troops; for the enemy, knowing the difficulty of getting possession of these works, will look twice before he involves himself in war." "Establishments which can secure strategic advantages are not the works of a moment; they require time and labor. He who has the direction of the military forces of a State should in time of peace prepare for war; whatever he does should have reference to the rules of strategy; the military organization of the State, the construction of fortifications, the direction of roads and canals, the positions of depots and magazines—all should be attended to. The proper application or neglect of these principles will decide the safety or the ruin of the State. Fortifications arrest the enemy in the pursuit of his object, and direct his movements upon less important points; he must either force these fortified lines, or else hazard enterprises upon lines which offer only disadvantages. In fine, a country secured by a system of defence truly strategic has no cause to fear either the invasion or the yoke of the enemy, for he can advance to the interior of the country only through great trouble and by ruinous efforts. Of course, lines of fortifications thus arranged cannot shelter a State against all reverses; but these reverses will not, in this case, be attended by total ruin, for they cannot take from the State the means nor the time of collecting new forces, nor can they ever reduce it to the cruel alternative of submission or destruction."

We know of no better illustration of these remarks of the Archduke and General Jomini, (both of whom, it should be borne in mind, are warm admirers of Napoleon's system of strategic warfare, and both of whom have written since the period at which modern military quacks date the downfall of fortifications as defences,) than the military histories of Germany and France.

For a long period previous to the thirty years' war, its strong castles and fortified cities secured the German empire from attacks from abroad, except on its extensive frontier, which was frequently attacked; but no enemy could penetrate to the interior till a want of union among its own princes opened its strongholds to the Swedish conqueror; nor then did the cautious Gustavus Adolphus venture far into its territories, till he had obtained possession of all the military works that might endanger his retreat.

Again : in the seven years' war, when the French neglected to secure their foothold in Germany, by placing in a state of defence the fortifications that fell into their power, the first defeat rendered their ground untenable, and threw them from the Elbe back upon the Rhine and Mayne. They afterwards took the precaution to fortify their positions and to secure their magazines under shelter of strong places, and consequently were enabled to maintain themselves in the hostile country till the end of the war, notwithstanding the inefficiency of their generals, the great reverses they sustained in the field, the skill and perseverance of the enemy they were contending with, and the weak and vacillating character of the cabinet that directed them.

But this system of defence was not so carefully maintained in the latter part of the eighteenth century ; for at the beginning of the wars of the French Revolution, says Jomini, "Germany had too few fortifications ; they were generally of a poor character, and improperly located." France, on the contrary, was well fortified ; "and although without armies, and torn to pieces by factions," (we here use the language of the Archduke,) "she sustained herself against all Europe ; and this was because her Government, since the reign of Louis XIII, had continually labored to put her frontiers into a defensive condition, agreeably to the principles of *strategie*. Starting from such a system for a basis, she subdued every country on the continent that was not thus fortified ; and this reason alone will explain how her generals sometimes succeeded in destroying an army, and even an entire State, merely by a strategic success."

But we will endeavor to illustrate this by particular campaigns. In 1792, when the Duke of Brunswick invaded France, she had no armies competent to her defence. Their numbers upon paper were somewhat formidable, it is true, but the license of the Revolution had so loosened the bands of discipline as to effect an almost complete disorganization. "It seemed at this' period," says the historian, "as if the operations of the French generals were dependent upon the absence of their enemies ; the moment they appeared, they were precipitately abandoned." But France had on her eastern frontier a triple line of good fortresses, although her miserable soldiery were incapable of defending them. The several works of the first and second line fell one after another before the slow operations of a Prussian siege, and the Duke of Brunswick was already advancing upon the third, when Dumourier, with only 25,000 men, threw himself into it, and by a well-conducted war of positions, placing his raw and unsteady forces behind inassailable intrenchments, succeeded in repelling a disciplined army nearly four times as numerous as his own. Had no other obstacle than the French troops been interposed between Paris and the Prussians, all agree that France must have fallen.

In the campaign of 1793, the French army of Flanders were beaten in almost every engagement, and their forces reduced to less than one-half the number of the allies. The French general turned traitor to his country, and the national guards deserted their colors and returned to France. The only hope of the Republicans at this crisis was Vauban's line of Flemish fortresses. These alone saved France. The strongholds of Lille, Conde, Valenciennes, Quesnoy, Landrecies, &c., held the Austrians in check till the French could raise new forces, and reorganize their army. "The important breathing time which the sieges of these fortresses," says the English historian, "afforded to the French, and the immense advantage which

they derived from the new levies which they received, and fresh organization which they acquired during that important period, is a signal proof of the vital importance of fortresses in contributing to national defence. Napoleon had not hesitated to ascribe to the three months thus gained the salvation of France. It is to be constantly recollected, that the Republican armies were then totally unable to keep the field; that behind the frontier fortresses there was neither a defensive position, nor a corps to reinforce them; and that, if driven from their vicinity, the capital was taken and the war concluded. The fortifications on the Rhine played a similar part in the campaign on that frontier, and there also her fortresses checked the advance of the enemy till France could raise and discipline armies capable of meeting him in the open field.

In the following year, (1794,) when the Republic had completed her vast armaments, and, in her turn, had become the invading power, the enemy had no fortified towns to check the progress of the French armies. Based on strong works of defence, these in a few weeks overran Flanders, and drove the allies beyond the Rhine.

Napoleon's remarks on the influence of the fortifications on the Flemish frontier are most striking and conclusive: "Vauban's system of frontier fortresses," said he, "is intended to protect an inferior against a superior army; to afford to the former a more favorable field of operations for maintaining itself, and for preventing the hostile army from advancing, and advantageous opportunities of attacking it—in short, means of gaining time to allow its succors to come up. At the time of the reverses of Louis XIV, this system of fortresses saved the capital. Prince Eugene, of Savoy, lost a campaign in taking Lille; the siege of Landrecies gave Villars an opportunity of changing the fortune of the war. A hundred years afterwards, at the time of Dumourier's treachery, the fortresses of Flanders once more saved Paris; the combined forces lost a campaign in taking Conde, Valenciennes, Quesnoy, and Landrecies. This line of fortresses was equally useful in 1814. The allies, having violated the territory of Switzerland, engaged themselves in the defiles of Jura, to avoid the fortresses; and even while turning them in this manner, they were obliged to weaken their force by detaching a considerable number of men, superior to the total of the garrisons. When Napoleon passed the Marne, and manœuvred in the rear of the enemy's army, if treason had not opened the gates of Paris, the fortresses of the frontier would have played an important part; Swaitzenberg's army would have been obliged to throw itself amongst them, which would have produced great events. In 1815 they would likewise have been of great value. The Anglo-Prussian army would not have dared to pass the Somme before the arrival of the Austro-Russian armies on the Marne, had it not been for the political events of that capital; and it is certain that those fortresses which remained faithful influenced the allies and the conduct of the allied kings in 1814 and 1815."

The German campaign of 1796 is another admirable illustration of the value of fortifications in military operations, and as such is particularly noticed by both Jomini and the Archduke. Previous to this campaign, Austria had shamefully neglected the defences of the Rhine, leaving, says the Archduke, the principal communications open to the very heart of the country. "The French," says an English historian, "were in possession of the fortresses of Luxemburg, Thionnelle, Mentz, and Saare-Louis, which rendered the centre of their position almost unassailable; their right

was covered by Hunningen, New Brisack, and the fortresses of Alsace, and their left by Maestricht, Juliers, and the iron barrier of the Netherlands, while the Austrians had no fortified point whatever to support either of their wings. This want, in a war of invasion, is of incalculable importance; and the fortresses of the Rhine are as valuable as a base for offensive as a barrier to support defensive operations." Moreau, taking the powerful fortress of Strasburg for his point of departure, and surprising the negligently guarded fortress of Kehl on the opposite bank, effected a safe passage of the Rhine, and thus forced the Austrians to fall back upon the distant and ill-secured line of the Danube. The French, passing the line of their own frontier, "were enabled to leave their fortresses defenceless, and swell by their garrisons the invading force, which soon proved so perilous to the Austrian monarchy." Afterwards, when the Archduke, by his admirable strategic operations, forced the French to retreat, he derived considerable advantage from the Austrian garrisons of Phillipsburg, Mannheim, and Mayence. But the French line of defence, on the opposite side of the Rhine, arrested his pursuit, and obliged him to resort to the tedious operations of sieges, and the reduction of their advanced posts alone. Kehl and Hunningen, poorly as they were defended, employed all the resources of his army and the skill of his engineers from early in October till late in February. Kehl was at first assaulted by a force four times as large as the garrison; if they had succeeded, they would have cut off Moreau's retreat, and destroyed his army. Fortunately, the place was strong enough to resist all assaults.

In the Italian campaign of the same year, the general was directed "to seize the forts of Savona; compel the Senate to furnish him with pecuniary supplies; and surrender the keys of Gavi, a fortress perched on a rocky height commanding the pass of the Bouhetta." While Napoleon was advancing to execute this plan, the Austrians endeavored to cut off his army at Montenotte, and would have succeeded, had not the brave Rampon, with only 1,200 men, in the redoubt of Monte Legino, repeatedly repulsed the furious assaults of 10,000 Austrians. If this fort had been carried, says the historian, "the fate of the campaign and of the world might have changed." After this unsuccessful attack, the Austrians found it necessary to support themselves by a defensive line of fortifications, and insisted upon the fortresses of Tortona, Alexandria, &c., being put into their possession by the Sardinian Government. But jealousy of Austria would not permit this; and Sardinia preferred surrendering them to the French, who were at this time in very critical circumstances, having neither heavy cannon nor a siege equipage to reduce Turin, Alexandria, or the other numerous fortresses of Piedmont, without the possession of which it would have been extremely hazardous to have penetrated further into the country. "The King of Sardinia," says Napoleon, "had still a great number of fortresses left, and, in spite of the victories which had been gained, the slightest check, one caprice of fortune, would have undone every thing." So fully persuaded was he of the importance of the works which Sardinia had yielded to him in order to save them from the Austrians, that he said he would not relinquish them, even if directed so to do by his own Government. "Coni, Cerna, and Alexandria," he wrote to the Directory, "are now in the hands of our army; and even if you do not ratify the convention, *I will still keep these fortresses.*" "The King of Sardinia is placed at the mercy of the Republic, having no other fortified points than

Turin and Fort Bard." To the remark that these defences were unnecessary to the French, he replied : " That the first duty of the army was to secure a firm base for future operations ; that it was impossible to advance without being secured in the rear, and that *the Sardinian fortresses at once put the Republicans in possession of the keys of the Peninsula.*" " From the solid basis of the Piedmontese fortresses he was enabled to turn his undivided attention to the destruction of the Austrians, and thus commence, with some security, that great career of conquest which he already meditated in the imperial dominions." Indeed, these conquests were but the legitimate results of his present strategic position.

Afterwards, when the Austrians had nearly wrested Italy from the weak hold of Napoleon's successors, the French saved their army in the fortress of Genoa, and behind the line of the Var, which had been fortified with care in 1794 and 1795. Numerous attempts were made to force the line, the advanced posts of Fort Montauban being several times assaulted by numerous forces. But the Austrian columns recoiled from its murderous fire of grape and musketry, which swept off great numbers at every discharge. Again the assault was renewed with a vast superiority of numbers, and again "the brave men who headed the columns almost all perished at the foot of the intrenchments; and, after sustaining a heavy loss, they were compelled to abandon their enterprise."

While the forces on the Var thus stayed the waves of Austrian success, Massena, in the fortifications of Genoa, sustained a blockade of 60 and a siege of 40 days against an army five times as large as his own; and, when forced to yield to the stern demands of famine, he almost dictated to the enemy the terms of a treaty. These two defences held in check the elite of the Austrian army, while the French reserve crossed the Alps, and siezed upon the important points of the country.

But while the French were deriving so much assistance from their own works, they were also made to feel the importance of fortifications in the enemy's hands. In the passage of the Alps, the little fortress of Bard, with its two-and-twenty cannon, arrested for some time the entire army of Napoleon, and had well nigh proved fatal to the campaign. The most desperate efforts were made to carry the place, but all were of no avail. " In this extremity, the genius of the French engineers surmounted the difficulty. The infantry and cavalry of Lannes's division traversed, one by one, the path on the Monte Albaredo, and re-formed lower down the valley, while the artillerymen succeeded in drawing their cannon, in the dark, through the town, close under the guns of the fort, by spreading straw and dung upon the streets, and wrapping the wheels up, so as to prevent the slightest sound being heard. In this manner, forty-eight pieces and a hundred caissons were drawn through during the night, while the Austrians, in unconscious security, slumbered above, beside their loaded cannon, directed straight into the street where the passage was going forward. During the succeeding night, the same hazardous operation was repeated with equal successes; and while the Austrian commander was writing to Melas, that he had seen thirty-five thousand men and four thousand horse cross the path of the Albaredo, but that not one piece of artillery or cassion should pass beneath the guns of his fortress, the whole cannon and ammunition of the army were safely proceeding on the road to Ivrea." The fort of Bard itself held out till the 5th of June; and we have the authority of Napoleon for the assertion, that if the passage of the artillery had been

delayed till its fall, (in other words, if the guards of the fort had not neglected their duty,) *all hope of success in the campaign was at an end.* Napoleon says, moreover, that "this fort was a more considerable obstacle to his army than the Great St. Bernard itself," and that the enemy's being left in possession of it in his rear fettered his operations and modified his plans; and we know that his dispositions for the battle of Marengo were not made till he heard that its reduction had opened to him a secure line of retreat in case of disaster. When this battle had shattered the main force of the Austrians, these, again yielding to sectional prejudices, instead of taking advantage of the works in their rear to impede the advance of the French, declared it was better to save the lives of their men by armistice "than to preserve towns for the King of Sardinia." Accordingly, the fortresses of Piedmont again fell into the hands of Napoleon without opposition, and he was not slow to understand their utility. He directed his chief engineer, Chasseloup de Laubat, whose admirable arrangement of defensive works had already been of vast assistance to the army of Italy, (and for which he was promoted from colonel of engineers to brigadier general, then general of division, and afterwards Count of the French Empire, with an ample hereditary endowment,) to revise this system of fortifications, with particular reference to Austrian aggression. By demolishing a part of the old works, and repairing those of Genoa, Roco d'Anfo, Vienna, Legnago, Mantua, Alexandria, and the defences of the Adda, Chasseloup formed two good lines of fortifications, which were of great service to the French in 1805, enabling Massena with only 50,000 men to hold in check the Archduke Charles with more than 90,000 men, while Napoleon's grand army traversed Germany, and approached the capital of Austria.

In the German campaign of 1800, Moreau derived the same advantages from his fortified base on the Rhine as in the preceding years, while the Austrians were soon driven back with great loss upon the Danube, where, without defences, their whole army would have been exposed to destruction. But retiring into the fortifications of Ulm, "the Austrian general not only preserved entire his own communications and line of retreat by Donawert and Ratisbon, but threatened those of his adversary, who, if he attempted to pass either on the north or south, exposed himself to the attack of a powerful army in flank. Securely posted in this central point, the Imperialists daily received accessions of strength from Bohemia and the hereditary States; while the French, weakened by detachments necessary to preserve their communications and observe the Prince of Reuss in the Tyrol, soon began to lose that superiority which, by the skilful concentration of their force, they had hitherto enjoyed in the campaign. The Austrians soon reaped the benefits of this admirably chosen stronghold; the soldiers, lodged in excellent quarters, rapidly recovered their strength; while the *morale* of the army, which had been extremely weakened by the rapid disasters of the campaign, as quickly rose when they perceived that a stop was at length put to the progress of the enemy." Moreau, on the contrary, "found himself extremely embarrassed, and six weeks were employed in the vain attempt to dislodge a defeated army from their stronghold; a striking proof of the prophetic wisdom of the Archduke Charles in its formation, and the importance of central fortifications in arresting the progress of an invading enemy."

When the great victories of Napoleon, in the campaign of 1806, had over-

thrown the Prussian armies in the open field, there was still a dormant power in the fortresses sufficient to hold in check the French till the new organized forces, acting in concert with the Russian army, could have re-established the Prussian monarchy in its ancient greatness. The works on the three great lines of the Oder, the Elbe, and the Weser, were fully capable of doing this, had they been properly repaired, garrisoned, and defended. But it seemed, say the historians of that period, that fate or treason had utterly blinded the intellect and paralyzed the energy of the entire Prussian army. Stettin, Custrin, Glogau, Magdebourg, Spandau, Hameln, Nienbourg, &c., were, to the joy and astonishment of Napoleon and his generals, surrendered without waiting, in most cases, even the form of a siege. "Spandau," said he, in the 19th bulletin, "is an inestimable acquisition. In our hands, it could sustain two months of operations. But such was the general confusion, that the Prussians had not armed the batteries." The possession of these fortifications was of immense value to the French in their ensuing operations against the Russians. All the historians of the war notice their influence on the campaigns of Friedland and Tilsit. We quote the words of Alison, as peculiarly appropriate: "The Polish winter campaign demonstrates, in the most striking manner, the ruinous effects to the common cause, and in a special manner the interests of their own monarchy, which resulted from the disgraceful capitulation of the Prussian fortresses in the preceding autumn. When the balance quivered at Eylau, the arrival of Lestok would have given the Russians a decisive victory, had it not been for the great successes of Davoust on the left, and the tardy appearance of Ney on the right; yet, if the governors of the Prussian fortresses on the Elbe and Oder had done their duty, these corps would have been engaged far in the rear—Ney around the walls of Magdebourg, Davoust before Stettin, Custrin, and Glogau. Saragossa, with no defence but an old wall and the heroism of its inhabitants, held out fifty days of open trenches. Tarragona fell after as many. If the French marshals had, in like manner, been detained two months, or even six weeks, before each of the great fortresses of Prussia, time would have been gained to organize the resources of the eastern provinces of the monarchy, and Russia would have gained a decisive victory at Eylau, or driven Napoleon to a disastrous retreat from the Vistula."

At the treaty of Tilsit, Napoleon, notwithstanding the protests and entreaties of the King and Queen, insisted upon retaining possession of the Prussian fortresses, as a pledge of peace. "The campaign of 1809," said he, afterwards, "proved the prudence of my policy." They then effectually prevented Prussia from joining Austria in kindling again the flames of war. But these were not the only fortresses from which Napoleon derived assistance in this war. His garrisons on the now vastly extended frontiers of the empire served as so many safe rallying points around which the several contingents were collected, before converging to the general rendezvous at the fortresses of Ingolstadt or of Donawerth. Davoust was to concentrate his immense corps at Bamberg and Wurtzburg; Massena at Strasburg and Ulm; Oudinot at Ausburg; Bernadotte at Dresden; the Poles upon Galicia; and the troops of the Rhenish confederacy were to concentrate upon the strongholds of the Danube. "Thus from all quarters of Europe, from the mountains of Austria to the plains of Poland, armed men were converging in all directions to the valley of the Danube, where a hundred and fifty thousand soldiers would ere long be collected; while the

provident care of the Emperor was not less actively exerted in collecting magazines upon the projected line of operations for the stupendous multitude, *and providing, in the arming and replenishing of the fortresses, both as a base for offensive operations, and a refuge in the probable events of disaster.*" This concentration of his vast army, secured by his fortifications, soon produced the retreat of the Austrian army, and Napoleon's advance to Vienna.

Again, in 1813, the French garrisons of Stettin, Custrin, Glogau, Hamburg, Wettenberg, and Magdebourg, would have had a fatal influence upon the Prussians, had not the political perfidy of Austria, and the treason of his own generals, prevented Napoleon from profiting by the advantages of his own position. If, after the disasters of this campaign, the fortresses of France failed to save the nation, the cause must be sought for in the peculiar features of the invasion itself, rather than in any lack of military influence in the French defences. A million of disciplined men, under consummate leaders, were here assailing a single State, impoverished by the fatal war in Russia, torn in pieces by political factions, deserted by its sworn allies, its fortresses basely betrayed into the enemy's hands, and its military power paralyzed by the treason of generals, with their entire armies. Its only hope was in the fortresses which had remained faithful; and Napoleon said at St. Helena, that if he had collected together the garrisons of these fortresses, and retired to the Rhine, he could have crushed the allies, even after their entrance into Paris. But political considerations prevented the operation.

Again: in 1815, Napoleon, even after his defeat at Waterloo, possessed lines of defence sufficiently strong to resist all attempts at invasion. But, again, the want of co-operation on the part of the Government at Paris, and the treason of his own generals, forced his second abdication. If he had retained the command of the army, and the nation had seconded his efforts, the allies could never have reached Paris. But the new Government presented the disgraceful spectacle of opening the way for the enemies of their country. "France," said Napoleon, at St. Helena, "will eternally reproach the ministry with having forced her whole people to pass under the caudine-forks, by ordering the disbanding of an army that had for twenty-five years been its country's glory, and by giving up to our astonished enemies our still invincible fortresses."

History fully supports Napoleon's opinion of the great danger of penetrating far into a hostile country to attack the capital, even though that capital may be unfortified. The fatal effects of such an advance, without properly securing the means of retreat, is exemplified by his own campaign in Russia in 1812. If after the fall of Smolensky he had fortified that place and Vitepsk, which by their position closed the narrow passage comprised between the Dnieper and the Dwina, he might in all probability, on the following spring, have been able to seize upon Moscow and St. Petersburg. But leaving the hostile army of Tschkakoff cantoned in his rear, he pushed on to Moscow; and when the conflagration of that city cut off his hopes of winter quarters there, and the premature rigor of the season destroyed the horses of his artillery and provision trains, retreat became impossible, and the awful fate of his immense army was closed by scenes of horror to which scarcely a parallel can be found in history. We might further illustrate this point by the Russian campaign of Charles XII, in 1708-'9, the advance of the French army on Lisbon in the Peninsular war, and others of the same nature.

Even single works sometimes effect the object of lines of fortifications, and frustrate the operations of an entire army. Thus Lille suspended for a whole year the operations of Prince Eugene and Marlborough, Metz arrested the entire power of Charles V, and Strasbourg was often the bulwark of the French. Napoleon said to O'Meara, that, if Vienna had been fortified in 1805, the battle of Ulm would not have decided the event of the war. General Kutusoff's army could there have awaited the return of the other Russian corps and of the army of Prince Charles, then approaching from Italy. Again: in 1809, Prince Charles, defeated at Eckmuhl, and forced to retreat by the left bank of the Danube, would have had time to reach Vienna, and form a junction with the forces of General Heller and Archduke John. If Berlin had been fortified in 1806, the army routed at Jena would have rallied there, and been joined by the Russians. If Madrid had been strongly fortified in 1805, the French army, after the victories of Espinosa, Tudella, Burgos, and Sammosiera, would not have marched towards that capital, leaving in rear of Salamanca and Valladolid both the English army of General Moore and the Spanish army of Romana. These two would, under the fortifications of Madrid, have united with the armies of Arragon and Valencia. If Moscow had been fortified in 1812, its conflagration would have been avoided; for, with strong works, and the army of Kutusoff encamped on its ramparts, its investment would have been impossible. Had not Constantinople been well fortified, the empire of Constantine must have terminated in 700, whereas the standard of the Prophet was not planted there until 1440. This capital was therefore indebted to its walls for 800 years of existence. During this period, it was besieged 53 times, but only one of these sieges was successful. The French and Venetians took it, but not without a very severe contest. Paris often owed its safety to its walls. In 885, the Normans besieged it two years without effect. In 1358, the Dauphin besieged it in vain. In 1359, Edward, King of England, encamped at Montrouge, devastated the country to its walls, but recoiled from before its works, and retired to Chattrés. In 1429, it repulsed the attack of Charles VII. In 1464, the Count of Charolois surrounded the city, but was unsuccessful in his attacks. In 1472, it repulsed the army of the Duke of Bourgone, who had already ravaged its precincts. In 1536, when attacked by Charles V, it again owed its safety to its walls. In 1589, it repulsed the armies of Henry III and Henry IV. In 1636, the inhabitants of Paris for several years owed their safety to its walls. If this capital had been strongly fortified in 1814 or 1815, the allied armies would not have dared to attempt its investment.

We had intended to enter into an analysis of the Peninsular war, and point out the influence of fortifications upon military operations in Spain and Portugal; but further illustrations would seem unnecessary; for the usefulness of fortifications in the defence of inland frontiers is too evident in itself, and, as we have already shown, is too well supported by historical facts, and the recorded opinions of the best military men of modern ages, to be overthrown by a mere assertion of their worthlessness, no matter by whom such assertion is made.

While there exists this great unanimity among military men upon the vast importance of fortifications as land defences, there is an equal diversity of opinion respecting the best manner of arranging them. We shall mention three general systems of arranging forts for the defence of an open

country, each of which has been advocated at different times, and afterwards received various modifications and additions. These three systems are the most important, and, in fact, comprise the main features of all others worthy of much consideration. They are—

1st. Montalembert's system of continuous lines.

2d. A system of three lines of detached works, strongly recommended by D'Arcon.

3d. A system proposed by Vauban, and advocated by Rogniat, consisting of lines of very strong works placed at considerable distances from each other, and covering large *intrenched camps*.

The first was proposed in 1790, and for a time attracted considerable notice in France, but has long since been exploded, as utterly incompatible with the principles of military art. A writer, however, of some pretension, in this country, recommends its adoption for the defence of Baltimore and the Chesapeake. The same author would dispense entirely with our present system of fortifications on the sea coast, and substitute in their place wooden martello towers!

In the second system, the works of the first line are to be about one day's march apart, those of the second line opposite the intervals of the first and at the same distance, and those of the third line having the same relation to the second. Works of different sizes are recommended by some writers for each of these three lines.

In the system first recommended by Vauban, and more recently by Rogniat, the works of the advanced line are to be thirty leagues apart, and the other lines at the same distance from each other, with their works opposite the intervals in front. Under the guns of each is established a large intrenched camp.

These systems were designed for an open country, and either of them would be greatly modified in its application; for, in practice, the frontier to be defended will always be of a broken character. The proper application of forts in the defence of such frontiers is a question of no easy solution. The principle laid down by Jomini, "that fortifications should always be constructed on important strategic points," is undoubtedly the correct one; but how to determine these points, involves questions which often perplex the patience and try the skill of the engineer; yet determine them he must, or his fortifications will be worse than useless. A fort improperly placed, like a cannon with its fire reversed upon its own artillerists, will be sure to effect the destruction of the very forces it was designed to protect.

The system of fortifications adopted by the board of 1840, for the defence of our Northern frontier—a system whose extravagance is so much spoken of in the Appalachicola report—consists of a single line of forts placed at different points along the extreme frontier, and one large military station and depot opposite about the middle of this line, and some two hundred miles back in the interior of the country. This great central station it is proposed to locate at Albany or in that vicinity; and the line of forts to be as follows: First, a fort at the falls of St. Mary; second, at Michilimackinac; third, at the foot of Lake Huron; fourth, at Detroit; fifth, at Buffalo; sixth, at the mouth of Niagara river; 7th, at Oswego; eighth, at Sackett's Harbor; ninth, at the Narrows of the St. Lawrence, below Ogdensburg; tenth, at Rouse's point; eleventh, arrangements for depots at Plattsburg, and at the head waters of the Kennebeck and Penobscot; and, twelfth, a fort at Calais, on the St. Croix river.

This system has been considerably commented on by military men, and various opinions have been advanced respecting its merits. Some are of opinion that more and larger works should have been planned for the western extremity of the line, while others regard the eastern portion as far the most important. This difference results from a diversity of opinion respecting the most feasible line of operations against Canada. According to the views of the one party, we should concentrate our forces at the single point of Augusta, and advance from thence against Quebec, a distance of some two hundred and fifty miles along the isolated carriage road through the valley of the Chaudiere; while the other party would draw their military munitions from Pittsburg, and their troops from the States bordering on the Ohio river, and then ascend the Detroit and St. Clair rivers, and Lake Huron; get in the rear of the enemy by way of the Georgian bay and Lake Simcoe, or still further north, by Lake Nipissing and the Ottawa river—thus leaving him between us and our true base. This subject is worthy of examination.

The selection of positions for fortifications on this frontier must have reference to three distinct classes of objects, viz: The security, *first*, of the larger frontier towns, where much public or private property is exposed to sudden dashing expeditions of the foe, made either on land or by water; *second*, of lake harbors, important as places of refuge and security to our own ships, or as shelters to the enemy's fleet while engaged in landing troops or furnishing supplies to an invading army; *third*, of all the strategic points on the probable lines of offensive or defensive operations. These objects are distinct in their nature, and would seem to require separate and distinct means for their accomplishment; nevertheless, it will generally be found that positions selected with reference to one of these objects equally fulfil the others, so intimately are they all connected. To determine the strategic points of a probable line of military operations is therefore the main thing to be attended to in locating the fortifications. That such points of maximum importance are actually marked out by the peaceful or hostile intercourse of nations cannot be doubted.

The *relative* importance of cities and towns is less varied by the fluctuations of commerce on a land frontier than on the sea coast. The ever-changing system of "internal improvements," by furnishing new highways and thoroughfares for the transportation of products of manufactures and agriculture, either continually varies the relative standing of the seaports already opened, or else opens new ones for the exportation of their products and importation of foreign articles received in exchange. But these "internal improvements" are seldom carried so far as to connect together two separate and distinct countries; and consequently the principal places on the dividing line usually retain their relative importance, no matter how often they may have declined during times of hostility, or again flourished with the increased commercial intercourse which results from peace. The principal European places of traffic near the frontiers have remained the same for ages, and in all probability ages hence the great frontier marts will be nearly the same as at present. This stability of rank among the border towns is not confined to commercial influence; the same holds true with respect to that established by intercourse of a hostile character. Military history teaches us that lines of hostile operations, and the fields upon which the principal battles between any two countries have been fought, are nearly the same, no matter how remote the periods of compari-

son. These points and lines, so important in commerce as well as in war, result from the natural features of the ground, and we ought therefore to expect that they would be as little liable to sudden changes as the character of the earth itself. From these remarks, it will readily be perceived that there are three distinct methods of determining the strategic points between this country and Canada : 1st, by an examination of the topography of the two countries ; 2d, by tracing out the main channels of commercial intercourse ; 3d, by reviewing the lines of their military operations. The last method is the least liable to error, and perhaps is the most easily understood, inasmuch as it is sometimes difficult to point the precise degree of connexion between prospective military lines and the channels of commerce, or to show why these two have a fixed relation to the physical features of the country. In the present instance, moreover, this method furnishes us ample data for the formation of our decision, inasmuch as the campaigns between this country and Canada have been neither few in number, nor unimportant in their character and results.

By tracing out the history of the earlier of these campaigns, it will be seen that the English were vastly superior in strength and numbers, yet the result of the several campaigns was decidedly in favor of the French, who not only retained their possessions in the north, but extended their jurisdiction to the mouth of the Mississippi, and laid claim to the whole country west of the Allegany mountains. This success must be attributed not to any superiority of the Canadians in bravery, but to the higher military character of their governors, *and more especially to their fortifications*, which were constructed in situations most judiciously selected to influence the Indians and facilitate incursions into the English colonies. The disparity of numbers was always very great. At the middle of the eighteenth century, the white population of the colonies amounted to upwards of one million of souls, while that of both Canada and Louisiana did not exceed fifty-two thousand. But the French possessions, though situated at the extremities of a continent, and separated by an almost boundless wilderness, were nevertheless connected by a line of military posts strong enough to resist the small arms that could there be brought against them. This fort-building propensity of the French became a matter of serious alarm to the colonies, and, in 1710, the Legislature of New York especially protested against it in an address to the Crown. While the military art was stationary in England, France had produced her four great engineers—Errard, Pagan, Vauban, and Cormontaigne ; and nowhere has the influence of their system of military defence been more strikingly exhibited than in the security it afforded to the Canadian colony when assailed by such vastly superior forces. Still further accessions were now made to these forces, by large reinforcements from the mother country, while the Canadians received little or no assistance from France ; nevertheless, they prolonged the war till 1760, forcing the English to adopt the slow and expensive process of reducing all their fortifications.

The history of the Northern wars of the Revolution and of 1812 still further proves the importance of fortifications in defence. From this history it will also be seen that positions for defence selected by the board are really important ones ; and, moreover, that, while the proposed Eastern and Western routes have been used as auxiliary to the main attack, the line of Lake Champlain has been the field of strife and blood for fifteen campaigns. Nature has marked this out as one line of intercourse

with Canada ; for, besides being the shortest and easiest line of communication, it possesses many other advantages. Military stores, &c., can easily be transported by water, while the roads on each side of this line offer good routes to the troops. These roads generally converge to the northern extremity of the lake, thus enabling us to concentrate forces at that point, while the enemy's invading forces would be obliged to pursue diverging routes. The line of the Kennebec, on the contrary, is only a single road, but little travelled, and penetrating a wide and almost uninhabited wilderness. General Jomini says, emphatically, that a line of operations should always offer *two or three roads* for the movement of an army in the sphere of its enterprises—an insuperable objection to the Kennebec, except as a diversion to the main attack. But there are still stronger objections to this route than its want of feasibility for the transportation of the main army ; for, even if that army should succeed in reaching Quebec in safety, the expedition would be entirely without military results, unless that fortress could be immediately reduced. It would be precipitating our entire force upon the strongest position of the enemy, and making both the success and safety of our army entirely dependent upon the reduction of that fortress—a contingency which would be extremely doubtful, under the most favorable circumstances ; and, should we be ever so fortunate in our operations, its siege would occupy a considerable length of time. What principle of military science would justify such a disposition of our force ? We are fully aware of the great advantages which we should derive from the reduction of Quebec ; but we are also aware of the great difficulties to be encountered in any attempt to accomplish that object. We believe it can and will be made to surrender to our arms ; but at the same time we conceive it to be utter folly to base our military operations on the contingency of a short and successful siege. By advancing upon Montreal by the Champlain route, we could cut off the Canadian forces in the west from all reinforcements ; and then, as circumstances might direct, could besiege Quebec or attack the enemy in the field ; or, perhaps, manœuvring as the French did at the siege of Mantua, accomplish both objects at the same time.

If the Champlain line is, as we believe, the most important line in the North, its security by fortifications is a matter of great interest. The works recommended by the board for this purpose deserve the earliest attention of Congress. But, are these works alone sufficient to accomplish the object ? They consist of a single fort, costing \$600,000, on Lake Champlain, near the extreme frontier, and depots at Plattsburg and Albany. But what is to retard the advance of a hostile army, if it should pass this extreme frontier barrier ?—or what defensive works are to protect the débouché of the Northern canal, or even to save the great central depot ? We know of no foreign engineer who has recommended less than *three* lines of fortifications for the security of a land frontier ; and Napoleon, the Archduke Charles, and General Jomini, agree in recommending at least this number of lines. There may be circumstances that render it unnecessary to resort to a three-fold defence throughout the whole extent of the Northern frontier ; but upon our main line of communication with Canada, a line of maximum importance both to us and the enemy, we know of no reason for violating the positive rules of the art—rules which have been established for ages, and sanctioned by the best engineers and greatest generals of modern times.

Ticonderoga has more than once stayed the waves of Northern invasion; and we know of no change in the art of war, or the condition of the country, that renders less important than formerly the advantages of an intermediate point of support between Albany and the Canadian lines. Indeed, we should think that the connexion of the Hudson with the lake, by the Northern canal, had even increased the value of such a point. Moreover, we should think that the great value of a central depot near Albany would warrant a resort to the best means of security which can be afforded by defensive works. Here we already have one of our largest arsenals of construction; here are to be located magazines for the collection and deposite, in time of peace, of gunpowder; and here, in war, is to be formed the grand military depot for our whole Northern armies. Such a place should never be left exposed to the coup-de-main of an enemy. The chance operations of a defensive army are never sufficient for the security of so important a position. We do not pretend to say what its defences should be. Perhaps strong bridge-heads on the Mohawk and Hudson rivers, and detached forts on the several lines of communication, may accomplish the desired object; perhaps more central and compact works may be found necessary. We only wish to insist on the importance of securing the position by some efficient means. The remarks of Napoleon (quoted before) on the advantages to be derived from fortifying such a central place, where the military wealth of the State can be secured, are strikingly applicable to this case. The views of Alison on this subject, though of little authority when compared with those of Napoleon already given, are very eloquently and forcibly expressed. We add, in conclusion, the following extract:

“From the important consequences which followed the occupation of Vienna,” says he, “and the seizure of its immense military resources by the French, may be derived one conclusion of lasting value to every independent State. This is the incalculable importance of every metropolis either being adequately fortified, or possessing in its immediate vicinity a citadel of approved strength, capable of containing twenty or thirty thousand soldiers, and of serving as a place of secure deposite for the national archives, stores, wealth, and government, till the national strength can be fairly roused for their rescue. Had Austria prepared such a fortress, in or near adjoining to Vienna, the invasions of 1805 and 1809 would have terminated in the invaders’ ruin. Had the heights of Belleville and Montmartre been strongly fortified, the invasions of 1814 and 1815 would have been attended with nothing but disaster to the allied armies. Had Berlin been of as great strength as Dantzic, the French armies, after the disaster of Jena, would have been detained round its walls till the Russian hosts advanced, and six years of bondage saved to the Prussian monarchy. Had the Kremlin been a citadel capable of holding out six weeks, the terrible sacrifice of Moscow would not have been required. Had Vienna not been impregnable to the Mussulman arms, the monarchy would have sunk in the dust before the standard of Sobieski gleamed on the Bisemberg. Had the lines of Torres Vedras not formed an impassable barrier to Massena, the germ of patriotic resistance in the Peninsula would have been extinguished in the bud. Had the walls of Rome not deterred the Carthaginian hero from a siege, the fortunes of the republic would have sunk after the disaster of Cannae. It is by no means necessary for these important ends that the whole metropolis should be confined by fortifications; it is enough that a citadel of great strength is at hand, to contain all the warlike and

civil resources of the kingdom. Let no nation imagine that the magnitude of its resources relieves it from this necessity, or that the effulgence of its glory will secure it from ultimate danger. It was *after* the battle of Austerlitz that Napoleon first felt the necessity of fortifying Paris; and it was in five short years afterwards that the bitter consequences of national vanity, which prevented his design from being carried into effect, were experienced by the Parisians."

H. WAGER HALLECK,
Lieutenant of Engineers.