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THE FORTIFICATION OF OUR DOCKYARDS, ETC.

By Major-General Sir E. F. DU CANE, K.C.B., late R.E.

THE recent death of Sir William Jervois has led to my noting down from recollection and otherwise, for a memoir in the *R.E. Journal*, the circumstances which led half a century ago to the origination and construction of the great fortification works with which he was so much connected, and with which I was associated by working under him. The works and the principles which they embody have of recent years been subject to much criticism, principally founded, as it seems to me, on an entire misconception, and consequent misrepresentation, of those principles; and the writers appeal to a generation who probably do not know, even if they do themselves, how it came about that this great effort was made, or what authorities they were who supported it and brought it to fruition.

It will therefore, I think, serve a useful purpose to recall these events, so that the critics whose motto is "whatever is is wrong," and are bound to see facts and causes to accord with that doctrine, may not have it all their own way.

The condition of our military establishments fifty years ago can probably hardly be realised by those who have only come to observe these things in more recent years.

After the great wars of the French Revolution ended in 1815, all our military establishments were reduced wholesale, all the accessory departments which are necessary to enable the fighting elements to carry on warfare were wiped out, regiments were disbanded, officers placed on half-pay (I remember an officer who had served for one or two years before 1815 drawing half-pay continuously for upwards of forty years after), the Militia were never embodied, there were of course no Volunteers, the stores were used up and not replaced, Dover Citadel was occupied by a flock of sheep. At the time I joined the Service, fifty years ago, all the artillery we had ready to take the field consisted of about two or three mounted field batteries and about five troops of horse artillery—all the rest of this force was organised for service in garrison only. The engineers had been saved from further extinction by taking up the barrack work and making themselves generally useful. Promotion was so slow, except when helped by purchase, that the old R.E. officer, who was professor of surveying at Woolwich, was still a captain, though he had got his commission thirty-two years before.

The infantry were mostly dispersed in the Colonies, where they were out of sight, those who were in the United Kingdom being—except those

in garrison towns such as Portsmouth, Devonport, and Chatham—for the most part scattered about in small barracks. The Army Estimates, 1816, provided, exclusive of the troops in India and the Army of Occupation in France, for only 25,000 troops in Great Britain, the same in Ireland, 50,000 in the Colonies, and 3,000 reserve for Colonial reliefs. Such a measure as the assembling of a force of all arms to manœuvre over a tract of country was unknown. This condition of things continued for more than thirty years. The Duke of Wellington, when in after years Commander-in-Chief, was fully alive to the danger of this state of things, and said he had in vain endeavoured to awaken attention of different administrations to it. On another occasion he said, in the House of Lords:—"You have never had more than enough men to relieve your sentries. . . . Such is the state of your peace establishment now and for the past ten years."

It so happened that in 1816 Sir John Burgoyne became Inspector-General of Fortifications. Sir John Burgoyne was eminent not merely as a military engineer; he had fought through all the Peninsular War, had taken part in several other military expeditions or invasions, had been ready to give his services outside his own special branch in any way in which he could be useful, and was highly considered as a military authority by the Duke of Wellington and other distinguished generals. Nor was he eminent merely as a soldier, for he had been selected by the Government for certain civil duties requiring peculiar qualifications.

In his new position his attention was specially directed to our military condition, and he perceived that while our strength was reduced as above described, the facilities for an invasion had been much increased by the introduction of steam into the Navy. Prince Joinville had, in fact, not long before published a pamphlet on the subject from the French point of view. He therefore submitted a paper on the subject to Sir George Murray, the Master-General of the Ordnance, the former Quartermaster-General of the Peninsular War. This paper came before the Government, and attracted the particular attention of Lord Palmerston, who was especially alive to the considerations involved on account of his position and experience as Foreign Secretary. There was, in fact, at this moment a very strong feeling in all the European monarchies against England as a sympathiser with those who were struggling for liberty, and dangerous combinations were going on against us. Lord Palmerston was the more able to appreciate questions of this order because from 1808, the opening of the Peninsular War, he had filled the office of Secretary at War.

He therefore, with the aid of Sir John Burgoyne, drew up a report, which was laid before the Cabinet. He pointed out that France, though really inferior as a naval Power, might, by her better organised system of naval preparation, or by means of manœuvres, make herself superior in the Channel for a short time, and, having an immensely superior Army, might land such a number of men as would enable her, besides other hostile measures, to destroy our dockyards, and thus paralyse our naval resources for years.

Lord Palmerston proposed the embodiment of the Militia and other measures, and, further, the expenditure of 6 millions (to be raised by loan) in fortifying our dockyards on the sea and land sides, and in providing great harbours and stations for our fleets, and removing our great store of warlike material from a position so assailable as Woolwich.

I must pause here to point out how entirely without foundation is the assertion which has recently been made that in all the measures which ultimately grew out of these proposals the fleet was ignored or minimised, or that the land defences were proposed as a substitute or alternative for a superior fleet. It is difficult to decide which is the more improbable—that the eminent authorities I have referred to should have suggested such a doctrine or that the naval advisers of the Government should have acquiesced in it.

The plain fact is that the fleet and its necessities were seen to long before anything was even proposed for the land forces and defences. Under the name of Harbours of Refuge, great stations for our fleet had been projected years before, and in part set on foot—for instance, at Portland and Alderney.

The great harbour at Dover was proposed in 1844 and begun—though it is only now going to be carried out in full—exactly on the lines recommended by the Royal Commission of that date, with the strong support of the Duke of Wellington. In these matters also Lord Palmerston had taken a leading part.

The large extensions of the dockyards of Portsmouth, Chatham, and Devonport accompanied the construction of the extended line of works intended for their protection. So far as my recollection goes, there never was at that period, on the part of those acquainted with the condition of the Navy, any assertion of such inferiority of our naval power as in any degree corresponded to that which our Army had sunk to, and, in fact, as I have pointed out, Lord Palmerston's memoir actually asserted our naval superiority as a fact.

It was shortly after this, viz., in 1848, that the celebrated letter of the Duke of Wellington to Sir John Burgoyne became public, by the indiscretion of Lady Shelley, to whom it had been shown, and aroused the nation to the danger of the condition we were in, though I remember some people were still sceptical. It possibly might not have had so great an effect the year before, but in 1848 occurred a French Revolution of which nobody knew to what it might not be the prelude.

In this letter the Duke clearly set forth his own view of the possibility of invasion, saying, "We have no defence or hope or chance of defence excepting in our fleet." He set out the measures he considered should be adopted—an increase of the Army, the embodiment of the Militia, replenishing our stores, etc.; and in detailing the possibilities of invasion he said:—"I know no mode of resistance, much less of protection from the danger, excepting by an Army in the field capable of meeting and contending with its formidable enemy, aided by all the means of fortification which experience in war and science may suggest."

The result of the steps taken in consequence of these movements is very instructive. It is quite a commonplace feature, in the declamations which are poured forth whenever defects in our naval or military establishments or organisation become so evident that the public is aroused to them, to complacently throw off the responsibility of such defects on to the shoulders of the officials concerned by saying that the nation will always give money freely if only it is asked for by the responsible authorities. The case here referred to gives an opportunity of testing this doctrine. Lord Palmerston's proposals were adopted by the Government of which Lord Russell was the head, and increased Army Estimates brought in. But they were opposed by Cobden and Bright and the Manchester economists—the dangers were derided as “moonshine.” The Duke of Wellington was sneered at on account of his age, and reproved for stirring up animosity between neighbouring peoples.

The Army was by this school always discredited, as being merely “poor relief for the aristocracy.” The proposals for increasing it or using it were attributed to mean motives of personal advancement, and in the result, instead of an increase to the Army Estimates, they were reduced. A very similar line has been lately taken up by a Radical candidate for Parliament with reference to the present movement for increasing our military force, and it is an incontestable fact that until a boom of some kind has been started, so as to create an overwhelming body of public opinion, Ministers are so certain to be beaten in any proposals they may make for an increase of expenditure in either Army or Navy that they shrink from making the attempt.

The matter went to sleep again for four years; commerce was to make all mankind peaceful and forbearing (quite forgetting that it had been at the bottom of most of our wars), and the reign of universal brotherhood was supposed to be inaugurated with the Exhibition of 1851.

In 1852 occurred in France the *coup d'état* by which Louis Napoleon became Emperor of the French.

It was obvious that a man whose popularity was founded on his being the successor of the Great Emperor, the central idea of whose whole life was to humble and ruin England, and whose final catastrophe was met in a battle with the English, was very likely to nourish that popularity by endeavouring to avenge his defeat, which indeed he had put forward as part of his mission in order to conciliate his judges when years before he was tried for one of his attempts to overthrow the French Government.

The Government of Lord John Russell therefore announced the determination of Ministers “to improve the defences of the country, so as to render invasion impossible.” The fortification on the land and sea-side of some of our great naval stations was proceeded with, but piecemeal and very slowly, as the provision for such works could be made only on a small scale in the annual Army Estimates.

It was at this period that forts were erected in the Island of Alderney to guard the harbour, which had been begun some years before as an outpost from which our fleet could watch the great military harbour at

Cherbourg. The harbour was, as it turned out, badly designed, and before very long became useless, and the harbour as well as the forts have now been abandoned. The Militia was then again embodied, and a first attempt at "autumn manœuvres" was made by assembling a body of troops of all arms and encamping them at Chobham.

Then followed the war in the Crimea, which showed up all the weakness of our military organisation, and which, astonishing as it may seem in view of what has gone before, the easily misled public laid at the door of the profession and of its heads instead of seeing that the whole of the blame lay with themselves for accepting the leading of ignorant theorists who derided the warnings and opposed the proposals of the most experienced statesmen and warriors. So entirely was the soldier element discredited that I remember being told, when in the recently formed War Office in 1856, that the talk among the civilian element was how they would soon put the organisation and administration right "if once they could get rid of the cocked-hat gentry."

In 1856 Lord Palmerston was Prime Minister. As has already been stated, he was strongly impressed with the necessity for strengthening our offensive and defensive forces and fortifying our dockyards. Not limiting his interest to merely sanctioning the adoption of this policy, he kept himself informed on the most important details of the works proposed, and personally pushed on the various measures which were undertaken.

Prince Albert, too, was extremely interested in these matters, being well aware of their importance. He was the principal promoter of the camp at Chobham and of the subsequent establishment of a permanent camp at Aldershot, where our troops might be taught more than they could possibly learn in the restricted spaces formerly at their disposal.

In 1858 the Government had private information that the French were secretly making preparations for war. The attempt at the assassination of the Emperor by Orsini, which was planned in this country, led to the most violent feelings on the part of the French; some colonels in their Army sent addresses to the Emperor containing the most insolent language towards this country, accompanied by threats and demands to be led against "this den of assassins." These addresses were made of special significance by being published in the *Moniteur*; the French ambassador was instructed to call attention to the dangerous spirit which was being exhibited, which might draw the Emperor, contrary to his own desire, into hostile measures. I remember, by the way, hearing at this time, on excellent authority, that when something to this effect was said in conversation by the French ambassador to Lord Malmesbury, who was our Foreign Secretary, the reply he received was merely "Oh! you be d——d!"

The Government, however, of course thought it necessary to consider the best means of preparing against an invasion, and assembled a Secret Committee to report on the subject. It was estimated by this Committee that if the enemy obtained, even for a short time, a naval superiority in the Channel, we ought to have 100,000 effective troops

ready to meet him in the field, besides 34,600 minimum garrisons for special places in England and the Channel Islands.

What we actually had available immediately was only 37,000 Regular troops. We might collect 87,769 Militia, enrolled pensioners, Yeomanry, etc., and from this force we should have, besides defending the country, to provide the necessary augmentation of foreign garrisons.

The Volunteer movement was started at this time to help in supplying the deficiency in men, and the importance of strengthening our means of resistance "by all the means of fortification which experience in war and science might suggest," as recommended by the Duke of Wellington, became manifest.

In 1859 Lord Palmerston again came into office as Prime Minister. His feelings as to the danger of our situation may be seen by the following extract from a letter which he wrote in 1861 to Mr. Gladstone, who seems to have been quite incapable of understanding military affairs, and publicly advocated increased economy, while relying for our immunity from attack on the commercial interests of other nations in preserving peace with us :—

"Commercial interest snaps under pressure of national passions. . . . At the head of this neighbouring nation, who would like nothing better than a retaliating blow upon England, we see an able, wary, counsel-keeping, but ever-planning sovereign; and we see this sovereign organising an Army which, including the Reserve, is more than six times greater in amount than the whole of our Regular force in the two islands, and at the same time labouring to complete a Navy equal, if not superior, to ours. Give him a cause of quarrel, which any foreign Power can at any time invent or create if so minded; give him the command of the Channel, which permanent or accidental naval superiority might afford him, and then calculate if you can—for it would pass my reckoning power to do so—the disastrous consequences to the British nation which the landing of an army of 100,000 to 200,000 men could bring with it."

The designs of the fortifications which were being erected became the subject of lively discussion in the Press, and for this reason, as well as because it was desirable that the matter should be put before Parliament and the country in its entirety and with unquestionable authority, a Royal Commission was appointed to consider what fortifications were necessary to provide for the complete protection of the dockyards and arsenals.

The most outrageous assertions have been made as to the views expressed by the Commission. By selecting passages from their report it has been attempted to show that the fortifications they recommended were intended as a substitute for the superior fleet, which is, of course, a vital necessity for us.

With a full recollection of the ideas which were held at that time among those who were concerned in these matters, I can say that any such view was absolutely contrary to what they held. Our supremacy at sea was always treated as a condition which nobody dreamt of dispensing

with, though it was seen to be unquestionably possible that it might be locally and temporarily suspended or interrupted.

The Royal Commission consisted of seven members, of whom two were naval men of considerable repute and one a civilian. The Government had access, as usual, to the opinions of its official naval advisers, and it is to brand all of them with incredible wrong-headedness to suppose that they assumed the collapse of our naval power as a contingency to be calmly accepted, and that any fortification on land could possibly prevent the catastrophe which must follow such a disaster.

Their report was presented to Parliament in 1860. Matters were still in a very strained condition between us and France. The Emperor and his emissaries professed that they desired to restrain the feelings which prevailed in France against this country. Count Flahault, discussing the question with Palmerston, said that his great object was to prevent war, and that what he feared was an invasion by France, for which steam afforded such facilities. The certainty that ideas such as these were floating in the minds of our neighbours, or that they should venture to use such a mode of exercising pressure, was not likely to lead to our efforts being relaxed.

The Commission recommended an expenditure of between eleven and twelve millions. Government proposed to limit the expenditure to about seven and a half millions, which included the cost of certain works already in hand.

Considerable opposition was offered to the proposals, and all the arguments which have of late years appeared in the form of criticism were, of course, brought forward and disposed of. Eminent persons, who did not take the trouble to study the actual proposals, argued as if the works were intended merely to prevent a landing, and sagely said the enemy "would of course land a little to the right of them, or a little to the left of them."

Mr. Cobden did not shrink from exhibiting his ignorance of military matters by saying derisively:—"Why, the labourers on the farms in Sussex could throw up in a week fortifications enough to stop a French army." Others used an argument I have lately seen repeated by a writer in the *Times*, that fortifications were to be avoided because they lock up troops.

This argument always seems to me to assume a quite incredible amount of wrong-headedness on the part of those who are responsible for constructing such works and those who dispose of the troops. Fortifications cannot be built merely to satisfy the whim of some zealous engineer. The highest military and civil authorities of the Army and War Office must approve of any proposals before they can be carried out. Forts are, of course, put only where there is something which *must* be defended, and their object is to enable that defence to be carried out with troops inferior in number or quality to those which can be brought against them. If there is no probability of an attack on such a place the troops can be withdrawn just as well as if there were no fortifications, and, in

point of fact, fortifications do not lock up troops, but rather set troops free.

More specious was the argument, often repeated now, that our naval superiority was a necessity for us, on account of our commerce and our food supply, and that that would protect us from invasion, so that no land defences could be necessary.

It was shown, however, that if our naval bases had nothing to guard them but the fleet itself, the fleet would be unduly fettered in its operations, and that a naval reverse or local and temporary inferiority might lead to the total and irrecoverable destruction of the bases on which our Navy itself must depend. In an article published in the *Nineteenth Century Magazine*, in January of this year, I have discussed fully the question whether our Navy could be considered alone a complete guarantee against invasion, and need, therefore, say no more on this head. It was during this period that Lord Palmerston wrote the letter, already quoted, to Mr. Gladstone, who opposed strongly the necessary expenditure. All the objections were, after ample discussion, considered to be disposed of, and the Government were prepared to proceed to carry out most of the recommendations of the Commission in the usual way, by annual votes. On this, Mr. Horsman carried a motion that the expenditure should be met by a loan and not by annual votes, in order to ensure the works being carried out with rapidity.

A special committee was appointed to examine all designs of works to be carried out, consisting of naval and military members and a civil engineer, and they also had to pass the permanent Defence Committee.

I think now that it must be clear, and cannot be gainsaid, that the great works of fortification which date from this period were erected at the instigation and under the auspices of our greatest masters in the art of war, and were promoted by statesmen of all parties fully competent to understand the subject, that they were subjected to ample criticism, professional and unprofessional, and it is open to anybody to compare the qualifications of the authorities who are thus responsible for them with those of their recent critics and opponents.

I may add a few words as to the technical details of the works as actually executed.

It so happened, unfortunately, that at the particular period when this movement had arrived at the stage above described, science having for some little time been directed to the improvement of warlike weapons, the most vital changes began to be made in matters which fundamentally affect the design of defensive works. The power, range, and accuracy of artillery began to be enormously increased; 3,000 yards used to be considered the limit outside which bombardment was not practicable; we began to hear of artillery having a range of 9,000 yards. Armour-plating was then being discussed, and very soon began the long warfare between the active force of guns and the passive power of armour. Torpedoes and submarine mines were very soon to appear. High explosives for shells and mines were still in the distant future. The Secession War in America brought some of these questions to the front,

and in 1862 led to some naval members being added to the Royal Commission to consider how the original recommendations as to forts at Spithead to oppose ships were affected. The Fortification Committee had already determined that iron should be substituted for stone in those works, and the enlarged committee could suggest no further modification.

It is worthy of note that it appears from their report that at this time the old 68-pounder and the rifled 110-pounder were the heaviest guns known. Sir W. Armstrong had a 12-ton gun intended to carry when rifled a 300-lb. shot, and was designing another to carry 600-lbs. The "Warrior," the new ironclad with $4\frac{1}{2}$ inches of armour, was the strongest ironclad afloat, and no gun then existing could pierce its sides. When I have seen lamentations by those who hold that the money spent on fortifications would have been better applied in increasing the Navy I cannot help asking whether they have considered what value the expenditure would now have if it had been laid out in additional "Warriors."

It was in the same year, 1862, and also in consequence of the use made of torpedoes and submarine mines in the war in America, that the matter was taken up in this country, since which it has been very much developed.

The defence of our commercial harbours and of our naval stations and coaling ports abroad was carried on simultaneously with the works set on foot at home. The proposals for creating a central arsenal in a less accessible place than Woolwich have gone no further.

The works during and after execution did not, of course, escape criticism and attack in the Press and in Parliament, and special independent committees were appointed to enquire into these criticisms from time to time, to report for the information of Parliament. In particular, one comprising highly competent members was appointed, in 1868, by Sir John Pakington, to examine into all the works of fortification which had been built under the loan, and to report whether they had been well and skilfully constructed, whether the foundations were secure, and whether the estimates would suffice. This committee visited and examined every work, and had access to all plans and accounts of expenditure. Their report testified their entire approval both of their design and execution, saying that great skill had been shown in adapting the original designs to altered circumstances and the great advance in the power of rifled artillery. This opinion accords with that expressed by many eminent foreign officers who have been allowed to visit these works. The development of high explosives for shells has undoubtedly introduced a new element into the attack of works, and modifications will of course be necessary in our works, as well as in those erected in other countries, to meet the new conditions.

There is, I am aware, a new school which tells us that permanent works in prepared artillery positions—with deep ditches, escarps, and counterscarps, and flank defences of ditches—are no longer of any use; that all the money spent in these elements has been thrown away, and that what is to be aimed at is concealment of your positions, while cheap

obstacles, such as steel railings and barbed wire entanglements, covered by direct fire, will suffice to prevent an assault.

There is of course for some minds a fascination in cheapness, and such doctrines are no doubt very acceptable to those who have to provide the money for defensive works, but there is much truth in the observation made to me by an eminent foreign authority on this subject :—
“ Les fortifications à bon marché sont aussi peu recommandables que les culottes à bon marché—on y fait trop facilement des trous.”

Barbed-wire entanglements and steel railings are no doubt effective obstacles against a sudden rush, and, like many other older devices of which they are the modern examples, they would form excellent additions to permanent works, but to make them the sole obstacles seems to me too much like treating a fort as if it was a suburban villa to be protected against burglars, and dispensing with flanking defences to be going back into the ideas of the dark ages.

I therefore believe that the country is to be congratulated on the possession of the works erected in pursuance of the recommendations of the Royal Commission of 1859-60, and I have no doubt that any foreign nations which are likely to contemplate an attack on us will form a truer estimate of the difficulties they present than the critics who find a pleasure in depreciating them.