

made it our task chiefly to follow the influence of fortresses upon the course of the campaign. Our judgment may be considered as biased by preconceived opinions, and we shall be grateful for better information; the importance of the subject demands that it should be settled by reported public discussion. In the late campaign there were so many and so diverse occasions of the employment of fortresses that sufficient material (added to what time had already given) certainly now exists to make clear what is to be expected in future of the different varieties of fortifications.

Before considering the various arguments for and against, let us first except from criticism or question marine fortifications and those which defend mountain passes, for their value remains unquestioned. It is maintained by many advocates of fortresses:

1. That frontier fortresses protect a State from the invasion of a foreign army, because they protect a defensive force which can be assembled and organized under their protection. We know that no country possesses so many frontier fortresses as France, and that the deceased Minister of War, Niel, bestowed every euro upon these bulwarks. But how did they serve their intended purpose? Here and there the assertion is heard that it is only small fortresses which have ceased to be of value, and that in their place fewer fortresses and of greater size should be built. But it seems that France had some very respectably large ones upon her frontiers which in spite of their size failed entirely to fulfill their purpose.

2. That great fortresses are points of support for offensive operations. This we can hardly see to be true, considering the size of the armies of to-day. Metz was selected for this purpose, but it might have been foreseen that the present systems of strategy would prevent its efficiency in that way. That the same was the case with the so highly esteemed fortified camps is also apparent.

3. But those advocates of fortresses who do not maintain their value as points of offensive action generally defend them so much the more as supports of the defensive. Tactically considered, this view of them is justified, but present strategy has so completely altered the purpose of fortresses that they have only an occasional importance which does not justify their erection. Metz was tactically a valuable point of support for Bazaine. The security, however, which his left wing received from Metz was precisely the cause of his ruin. Had Metz been only a double *tele de pont*, he would not have relied upon it, but would have used the time he had for retreat. Relying as he did upon the support of the fortress, his left wing having no compelling cause for leaving its position, his right wing was turned, and thus the whole army thrown into Metz. Of this campaign we may record this remarkable fact namely: That while the purpose of fortresses is to support armies in the field, in this case the troops in the field were called to assist fortresses. Neither did they answer their end in a defensive capacity. Instead of supporting, they themselves needed support. So completely has strategy altered the nature of fortresses.

5. It is further urged in their favor that they offer refuge and opportunity for recuperation to defeated armies. Now here we have also an example, but a warning one. Bazaine took refuge in Metz and was so saved from annihilation in the field. But when, recovered from his exhaustion, he had decided to take the offensive, it was no longer possible to leave his place of refuge. What then was gained? And how is it pos-

sible for a defeated army to recruit itself in a fortress? If the enemy had not been superior in numbers, Bazaine need not have sought protection of the fortress; his loss in men and materials had made him still weaker, and these losses the garrison could not supply to him. How could an army be in this way again prepared to successfully oppose the enemy? A besieged army is not like a scattered battalion, which only needs to be reconcentrated.

5. Another point disproved by this war is that fortresses are proper places of protection for fugitive governments, for arsenals, state archives, crown jewels, or useful as places for training recruits. The deposits made in Strasburg and Metz were only more certain booty of the enemy because they were deposited in fortresses. In Paris only the Committee of Defense remained, the government being obliged to leave in order to continue the conduct of the affairs of state. What protection the archives, etc., received in Paris is well known. As to training recruits in fortresses, this was done largely in Paris, but when the recruits were trained, what were they? Imprisoned soldiers. France organized and instructed recruits better in her southern provinces than in Paris; for when organized, even if not perfectly trained, they could at least march to any required point.

6. Finally, as to the fortification of capitals. It was asserted that Paris was Franco. It was thought that Paris held out the war must end. The unfortunate reliance of France upon her fortresses, and especially upon her fortified capital, cost her a heavy loss. What advantage was it to the French, especially to the Parisians, that Paris went through that terrible siege? They were sacrificed to an obsolete theory. That Paris is Franco may be maintained from a political, but not from a military point of view. Paris is of as little importance to Franco as St Petersburg or Moscow to Russia, Vienna to Austria, or Berlin to Germany. The strategy of to-day is occupied more directly with armies in the field than with fortifications or capitals. When these (armies) are defeated the power of resistance is gone, and the country is crushed by the enemy's occupation of it. Peace must then be concluded even if the fortified capital should be declared impregnable. In the middle ages, when a prince shut himself up with his whole armed force in his *Residenz* (fortified city), the fall of that city of course decided the fate of a war, but only because the whole or at least the main part of the army as well as the head of the government were enclosed within its walls. It is not so now, when entirely different political conditions exist. Now a country lives and acts not only through and in its capital, but the capital exists now by means of the resources of the country. The strength of the whole country and not that of its capital is now the measure of its power. Had the French marshals, instead of shutting themselves up in fortresses, moved southward, so preserving their freedom of action, they might have been spared the sad fate of surrendering at discretion. It is necessary at this point to remember that the German leaders only engaged in the sieges of Metz and Paris because those cities enclosed large armies, and only after the annihilation of those armies, could the fall of Paris be important, the point of the sieges was consequently got in the reduction of the fortresses on their own account, but for the sake of the enclosed armies. The difficulties which Paris presented to the German army lay, as is known, in the fact that Gambetta's energy raised armies from the ground, after the

siège of Paris was fully under way and no retrograde step was possible. So Paris hung a dead weight upon the feet of the Germans without being of service to the French.

If now the grounds for the erection of fortresses are compared with the experience of these campaigns, it will be seen that in general and in particular they have not stood this last test. Frontier fortresses have not fulfilled their design, strategic fortifications were not respected, the fortified camp at Chalons was not even once attempted. The larger as well as the smaller fortresses were without effect, and Franco relying upon them was bitterly disappointed.

Considering the general influence of fortresses upon the entire campaign, it may be rightfully asserted that they were of no use in France, but rather injurious to her and helpful to the Germans. It is time to see that strategy has materially altered in respect to fortifications, and that other principles than those alluded to must be laid down for them. We have not, of course, overlooked the fact that fortifications were checks upon the free use of the railroads, but we say that they did not materially interfere with the German conduct of the war. Had they, however, no other purpose than that of protecting railroads, there would be no adequate reason for the construction of such colossal works. The war has proved that the protection of railroads also may be nearly equally well effected by blowing up viaducts and tunnels and tearing up rails.

The writer goes on to show that with the present system of strategy, fortifications are chiefly needed for protecting passages of rivers; is inclined to think that the detached forts of Belfort, Metz and Paris once taken, the inner fortifications were of slight value. Certainly, detached forts in the quality of double *teles de pont* on the rivers of the interior, without standing garrisons, would answer the purpose, rivers on the frontiers of course being similarly defended. Aside from the fact that they would be effectual defences, and of less expensive construction, they would prevent, at least partially, attack of cities.

The British papers are very angry, over the grounding of the *Repulse* on a bank near the North Light plainly laid down on the charts. The *Repulse* is a twelve gun iron-clad, drawing twenty-three feet of water, while there is only twenty-two feet of water on the bank. She was pulled off at high tide. The vessel is probably uninjured but the fact of her stranding in a place so well known, and on a bank laid down on every chart, makes the English critics furious. Captain Rolland and Staff Commander Loy, who were on the bridge when the mishap occurred, will doubtless suffer severely.

Mr. Dion of New York, proposes to place on board vessels an apparatus which will give an alarm when the vessel is in the vicinity of icebergs. This apparatus, placed at the bottom of the hold is such that when the keel is in very cold waters, it sounds an alarm; thus a signal is given of the vicinity of icebergs, which cool the water to a great distance round them. This instrument serves also as a thermometer and shows at all times the temperature of the water under the ship.

The famous Prussian State treasure, which has enabled the King of that country to take up a war at an instant's notice, and with full coffers, has been abolished, being replaced by a similar German fund.