

back through it, and rally under its protection; the reserve may fight a defensive or offensive battle, and become a skirmishing first line. In the campaign of 1866 the first line had not to fall back. If any part of it was broken through by the Austrians, the advantage was neutralized by the deadly fire of breechloaders on the flank of the Austrian column, and it often happened that the reserves lost more men than the skirmishing line, from their dense columns offering a good mark for the enemy's artillery. The Austrian artillery proved itself more efficient and more enterprising than the Prussian; but a battle is lost or won by infantry, and the tactics of the Austrian infantry were simply suicidal. Their column was shattered and demoralized before they arrived within charging distance of the Prussians—i. e., about fifty paces, and thus, it happened at Sudowa—the decisive battle of the campaign—a column of its defensive earthworks (faithful to its teaching) of 10,000 and, in less than half an hour, lost quite one third of its number.

Without entering into the strategy of either side, and putting aside the cavalry of both armies, which was hardly made use of, also allowing that in artillery the Austrians had some advantage, we are able to conclude that decisive victory remained invariably with the Prussians through their breech loading fire arm and the tactics must needs shock our notions of good order and military discipline, and it seems that the Prussian leaders presumed somewhat on their superiority in weapons. The Prussian leaders can defend themselves, however, without argument, they have only to quote their unqualified success.

The disorder amongst well-trained and disciplined men differed greatly from the disorder of a rabble; it was the result of suddenly removing restraint from bands of intelligent, courageous men confident in their weapons. The column formation at once gave place to an extended irregular line. The deployment was a work of intelligent instinct, in place of book-learned mechanism. There was something risked, but not as much as we might imagine, because every captain was a first rate soldier, and every private believed in his officers, especially in his captain. Had success been doubtful, the companies would have fallen back, and the general officers would soon have found their troops in hand. As it turned out, the companies for the most part won the battle.

Now, one would tremble to see the experiment of this nature tried with our army, for this simple reason—a captain to a British company or troop is something quite different from the officer commanding a German company. The German officer, in person, teaches the men all they know. He looks after their wants in person, holds the power of punishing minor offences, and indirectly, through the commanding officer, rewards merit. It may also be said that the British captain is educated in drill by his men. His authority is too often nominal, and he is too little used to independent action to act vigorously and without hesitation in a position removed from his superior's control. Again, the numerical strength of our company is not sufficient for independent action. No one can fail to understand the advantage possessed by a captain looked up to by his men and believed in as the huntsman is by a pack of hounds. One can also understand that very few orders from the field officer reach the ears of an officer in first line, whose attention is entirely taken up by his own men and the fire of an enemy. Still there are intermediate links between the

lieutenant-colonel and the captain. If the battalion is too large for the command of one officer, diminish its numerical strength; but the vivid picture of a battle in 1866, as painted by the late author of the "Tacktsche Ruckblicke," will find no admirer amongst our stolid infantry commanders. Supposing a battalion to supply its own covering skirmishers, if increased front of fire is requisite, the battalion leader can order it provided he does not overlap the next battalion in brigade line. But this proviso just shows the necessity of ascertaining how numerous the skirmishers of the first line should be, so as to lay down a rule on the subject. This question shall be raised again after investigating the tactics of 1870. At the moment we will confine ourselves to historical facts. After the Battle of Koniggratz, when it took the best part of a day to sort the chaos of men in the fighting line, it is an undoubted fact that commanders of battalions were ashamed of their inability to keep their company columns in hand. That they took effectual precautions to clip captains' wings is proved by the absence of confusion in their next campaign. The Prussian regiments of the line have one uniform with a distinguishing number on the shoulder, and thus facilitates a habit "stray" commanders have of calling together stragglers of any denomination on the battle field and commanding them. Something of this sort happened after the light cavalry charge at Balaclava on a most diminutive scale, but this power might, doubtless, have its advantage where vast numbers are employed.

(To be continued.)

*Les Nouvelles* has an article, by Mr. Zdziwki of Paris, on the explosive compounds, as follows:—"1. The explosive properties of inflammable matters are not dependent on the normal temperature of the atmosphere, but upon its hygrometric state. Thus explosions will take place in winter as well as in summer, if the phenomena to which I refer are not attended to and as a proof, I have only to mention the repeated "accidents" at the factory of Mr. Fontaine, and those that took place during the war of Sablonville and Grenelle. In short gunpowders, during a drought, acquire spontaneous explosive qualities, even without any elevation of temperature, and they are also more ready to act upon and communicate the smallest spark. Manufacturers ought to watch carefully the hygrometric condition of the atmosphere. 2. The least quantity of oxalic acid, by a catalytic effect that precedes the abandonment of the basic particle of water of this substance, is sufficient to prevent spontaneous action of explosive matters, and the remainder of the acid, which can, as is well known, be divided into oxide of carbonic acid, has no power to modify the halistic properties of the powders. In order to prove, experimentally, the principal fact of which I am speaking, it will be sufficient to heat a pulverulent mixture of sulphur and chlorate of potash, or any other combustible substance, ready to furnish detonating compounds; and to add to it, previously, a certain quantity of oxalic acid, about one-third and then, even when the temperature is raised to the fusion of solid bodies, there is no explosion. Consequently, the cause, is a simple one, and the preservative means are elementary and practical; and permit, besides, with some modifications in the quantities, the transformation of powders called "brisantes" into gunpowder proper.

A British officer who has visited Sedan, gives the following account of the place: "I was very glad I took advice and had a car-

riage from Mézières; you can get by that means on to the battle field in an hour and a half. It is a question whether you should go by the right bank of the Meuse over the hills along the Belgian frontier, as we did. You see the country better; but there is a much easier road up the bank to the passage used by the Crown Prince's army at Donchery, close by which one stops to see the cottage where Napoleon and Bismark had their world famous interview on the 2nd September. Yet if one goes by the other road you have the advantage of perceiving how easily MacMahon might have escaped the day before the battle had he fully known his danger; but then you must drive out to Donchery to make the visit complete. I had no idea that Sedan is so thoroughly low and entirely commanded. What a blunder to have made such a little mouse trap the rallying point for an army of 100,000 men! The Prussians have very sensibly kept the works of the citadel open to travellers, contrary to the rules of their other fortresses. So on arriving at Sedan (where there is a capital hotel), you ascend at once to the summit, and have a really magnificent panorama of the whole battle-field. With Captain Fitzgeorge's little book and plan, the whole of the great drama can be followed out by the eye from this point. I was sorry to find that the trade in relics is being actively driven; of course the true ones will all soon be sold off, and the Louvain workshops called on to keep up the supply. "That excellent charitable Belgian company (I forgot the name) which undertook the inhumation has now finished its work by dragging the Meuse thoroughly, and interring the results, which were masses of bones of horses and equipments. Few human remains are in any of their last mounds. I left by the rail to Luxemburg through Thionville, which is in tolerable order. No custom-house!"

The *Russian World* has received a first warning for having in three leading articles "pertinaciously represented the Russian army as having degenerated in discipline and morality, with the evident intention of awakening mistrust in regard to the reforms carried out during the last few years." The articles here referred to were based on statistics published by the Military District. From these it appeared that in 1860, when the effective strength of the army consisted of 904,963 men, the number of offences committed by soldiers against the Government was 105 and that in 1868 when the effective strength was 727,600, the number of such offences was 216, or proportionately about three times as many as in 1860. The number of offences against discipline in 1850 was 3,097; in 1868 it was 12,350. That of offences against property rose from 2,381 in the former year to 7,695 in the latter, and of offences against morality from 372 in 1860, to 2,543 in 1868. "Between the years 1860 '62, when," says the *World*, "the combative elements prevailed over the bureaucratic, the average number of offences committed in the army every year was 8,321, from 1863 to 1865, while the army administration was being reorganized, it was 15,285 and from 1866 to 1868, when the organization was complete, it was 23,291."

Two ships belonging to the Swedish navy, the gunboat *Ingegard* and the brig *Orlandam* arrived at Plymouth from Greenland a couple of weeks back, having on board three aerolites, the largest weighing nearly thirty tons, which are to be conveyed to Sweden and made the subject of close investigation.