East Saginaw Courier.

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BUSINESS DIRECTORY

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GEO. F. LEWIS, Proprietor.

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East Saginaw, Feb. 19, 1862.

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East Saginaw, May 14, 1860. n42-

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NOTICE.

THE PUBLIC are hereby notified that the book of accounts of E. Lieberman, of East Saginaw, are in his hands for settlement and collection; and that Jacob Simons, heretofore employed by me is not authorized to settle or receive any part of the claims or accounts due to me on said books.

E. LIEBERMAN.

East Saginaw, October 14, 1861

MODERN TACTICS.

[CONCLUDED.]

It had long been known that the spherical form is not the one which reduces the resistance of the air to a minimum. But all efforts to use elongated projectiles have failed. Experiment had shown that upon leaving the barrel, these projectiles took a motion of rotation about their centre of gravity, and struck the target sidewise, even at very short distances. After many trials, it was found that there is a certain relation between the inclination of the grooves, the charge of powder, and form of the ball. If the grooves have too much twist and the charge of powder is heavy, the ball will not follow the grooves, but will be forced across them (or will *strip*) without taking any motion of rotation. If the grooves have too little twist, the motion of rotation will be too feeble to overcome the causes of deviation and the projectile will turn over in its flight. In the rifle "*a tige*," the grooves have a twist of one turn in six and a half feet. The balls are about one calibre and a half in length. Numerous experiments have proved the immense superiority of elongated balls over the spherical. In the first place, a much larger portion of their surface being in contact with, and held by the grooves, they are not so likely to strip.—Their pointed form diminishes vastly the resistance of the air, and augments also their depth of penetration into solid bodies. The weight of the elongated being much greater than that of the spherical balls of the same calibre, the former retain their velocity longer.—Therefore, though their *initial* velocity may be smaller, their *absolute* velocity is greater. Their trajectory for the same distance is consequently much flatter.

Experiment has also shown that the cylindro-conical balls should have at their base at least three grooves presenting a sharp surface perpendicular to the axis of the ball and facing towards its point. These grooves act like the feathers of an arrow in keeping the projectiles in the same plane, and in preventing it from turning over.

The rifle "*a tige*," when tried in the schools of practice, and in active service before the enemy, fulfilled the expectations which had been formed of it, both as to range, accuracy and solidity. It was furnished with a breech sight with sliding piece or "hausse" which could be adjusted to all distances up to 1421 yards. At 600 yards, the firing was accurate, and the ball could inflict a deadly wound at 1400 yards, and even beyond. This rifle has been used in the French service since 1842, and was probably used to some extent in the Crimean war. The French also transformed numbers of the ordinary percussion muskets into muskets "*a tige*," by rifling the barrels, screwing a steel stem in the breech and adapting a "hausse."

It would seem that the invention of the weapon and bullet just described, left nothing more to be desired. But although excellent, and infinitely superior to all its predecessors, the rifle "*a tige*" had some drawbacks. It was difficult to clean, and required for this purpose a wash screw which would straddle the pin. It was almost impossible to extract the ball with the ball-screw. The principal objection, however, was the difficulty of ramming the ball uniformly. Some would ram the ball too hard, and it would lose its shape, especially in the grooves of its base, and its accuracy would be diminished. Others, not ramming hard enough, the ball would not fill the grooves of the rifle, and the ball, failing to acquire the motion of rotation would turn over in its course, and fly at random. Capt. Minie having observed these disadvantages, conceived the idea of forcing, or rilling the ball by the action of the powder itself at the moment of explosion; thus dispensing entirely with the steel stem, or "*tige*." The ball which he proposed to use is the same in its external form, but its base hollowed out in the form of a frustrum of a cone; and into the opening is inserted a sheet iron cup, destined to act as a wedge and spread the ball. The ball goes down free and rests upon the powder; it requires no ramming, but merely to be pushed home. When the charge is fired, the action of the gas on the sheet iron cup forces it into the hollow of the ball which resists by its "vis inertiæ." In this way, the ball is expanded and forced into the grooves with immense, and constantly increasing force. The result of numerous trials made at Vincennes in 1849, showed a superiority in favor of the Minie bullet. This superiority increased with the distance, and it is attributed to the fact that the ball is forced evenly by the pressure of the *gas*, which acts uniformly, whether the loading has been performed carefully or not. The cartridges used with this bullet, like those of the rifle "*a tige*," are simple in their construction. The balls are used naked. Their base being dipped in a composition of tallow and beeswax, the barrel is kept lubricated. On one occasion, in an experiment performed at the Springfield armory, one gun was fired 200 times without cleaning, and no difficulty was found at any time in driving the ball home.

But perfection was not yet reached.—The Minie bullet was complicated in its manufacture; each ball requiring a sheet iron cup to be inserted in its base. Moreover, this cup was sometimes driven up so violently as to break the ball. In order to remedy these defects, Mr. Burton, master armorer at Harper's Ferry, hit, after many trials, upon the expedient of increasing the cavity in the base of the ball until its sides are so thin, that the powder is sufficient to expand it at the moment of explosion. This throws the centre of gravity nearer the point, which is an additional advantage. This is the ball, known in our service under the name of the Harper's Ferry ball.

Such is the history of what is called the Minie rifle, although the peculiarity is in the ball rather than the rifle. And we will be so bold as to assert, not only that it is the best fire-arm that has ever been put into the hands of troops, but also, that it has reached the limit of possible improvement in its principal features. And we support this assertion by the following considerations.

First as to its range. At 1500 yards (twice the point-blank range of field artillery), it sends a ball with sufficient force to penetrate through two panels of poplar wood two thirds of an inch thick, and indeed a third; the panels being placed 20 inches from each other. It is said, that at 1200 yards, it may send a ball through a soldier and his knapsack, and kill the man behind him. This may surely be called a very respectable range and force of impulsion. An increase in these particulars would be of no practical advantage in small arms, because it becomes impossible to judge of their effects beyond 1000 yards, and even inside of that. With artillery it is different.—Cannon balls, when they strike the ground, throw up a cloud of dust or earth which is visible at very great distances; thus affording the means of rectifying the aim. Cannon may, in this way, be considered as an instrument for measuring distances; and well trained artillerymen never require more than two or three trial shots in order to get the range, that is to say, the degree of elevation to be given to the piece in order to hit the object. But with small arms, men might fire a whole day at a mark judged by the eye to be distant 1500 yards, but which in reality was 16 or 1700; and their balls would all fall short without their being able to perceive it. Greater range would therefore be useless.

2d. As to accuracy. This is as perfect as the nature of things can allow. The "rebelliousness of matter," as Bacon terms it, must forever prevent man from drawing a *perfectly* straight line and from forming any solid of which the sides shall be *perfect* mathematical surfaces. But, practically speaking, the Minie rifle may be said to be nearer perfection than any other previously invented because the causes of deviation are less. And here, we will endeavor to correct a misconception which has been formed by some persons accustomed to the use of fire-arms of a certain description. A person used to handle rifles or pistols of superior make, with very delicate hair-trigger-locks and fine sights, may, by practice, attain a wonderful skill in the use of these weapons within certain limits. If you place in his hands a service Minie rifle made very differently, and for very different purposes, he will generally be unable to shoot it with any great accuracy, and the results of his firing with it will be far inferior to his ordinary practice with the other weapons. Hence he will very often denounce the Minie rifle, and all such arms as altogether wanting in accuracy. But let us examine into the case. In the first place, those delicately made weapons which seem so superior in accuracy never could withstand the wear and tear of the service; besides which, their cost is too great. But suppose these objections removed. In what does the superiority consist? At fifty yards and under, perhaps up to a hundred yards, a very good marksman, by placing his piece in the more careful manner, generally at a dead rest, aiming as leisurely as he thinks proper, and firing usually not more than once in five minutes, may strike a half-dollar tolerably often. He takes a Minie rifle and finds that he cannot do this, because the sights are coarser, and the lock is not so delicate. But then the object of weapons of war is not to perform such feats. The marks to be hit in active service are never so small, and the circumstances in which men fire are, generally, very different. It will be found that the Minie rifle, at one hundred yards and under, will strike a *man* just as certainly as any other weapon, then go on a little further; that fine rifle which could strike a half-dollar every shot at 50 yards, is hardly able to send its balls 200 yards; at 300 yards it is as efficient as a pop-gun. Its extreme range is not great enough to be fair, practising distance for the Minie.

Then it will be said, that at four or five hundred yards, not to speak of 800 or 1000, it is extremely difficult to hit a man even with the Minie. Granted.—But where is the fault? In the human eye itself, to which a man six feet high reduces at such a distance to a mere speck. In the unsteadiness of human nerves and muscles, which makes it impossible to keep the sights of the finest weapon ever made, bearing upon this mere speck for over a fraction of a second. These are faults which no skill can overcome. When we speak of an arm of such a range as the Minie, the accuracy which we must expect is not one of fractions of inches. It is comparable to the accuracy of cannon. The objects to be hit are, not single men, but groups or bodies of men. With the Minie, half a company of men, or the group standing around a field piece, may be struck every fire at 6 or 800 yards. We have now before us the record of an experiment made at the Springfield armory in 1855, in which at 1000 yards, 24 balls out of 25, were placed in a space of about 18 feet square, with a mean vertical deviation of only 17½ inches; and a horizontal deviation of 29 inches.* This is better by far than a twelve pounder gun could do. It will always be easy to have a few rifles in each company more finely sighted than the rest, for the use of the best shots who are to use them *out of ranks;* but for the usual *service the coarser sighted are the best.*

Now, as to the ease and rapidity of loading, this is all that can be desired.—We have already seen that the Minie ball slips down with perfect ease even after 200 shots, and requires no ramming, but merely to be *pushed* home. In the hands of a slow soldier the Minie rifle can be loaded and fired at least three times a minute; in the hands of a quick man, five times. Any thing beyond this, would be a positive disadvantage; for troops fire too much at all times, and what is wanting is, that they should fire more deliberately, and not more rapidly. If by breech loading, or having several chambers, as in Colt's pistols, it was possible to fire ten or twenty times a minute, the result would be a great increase of noise and smoke, with very little more effect. Moreover the whole supply of ammunition destined for an entire campaign, (which is limited by the means of transportation) might easily be consumed in a single action. But there is another reason why to transform the Minie rifle into a breech-loading weapon, would make an egregious blunder.

The gases generated by the inflammation of powder are so subtle and so powerful, that no joint, however closely fitted, can effectually prevent their passage. This we see exemplified in every breech-loading weapon; the powder penetrates the joint, at first slightly, but at every explosion it burns the surfaces a little, and makes the crack larger; so that after a comparatively short time, the weapon begins to *leak fire* to such an extent as to be unmanageable. This is not all. No breech loading weapon can stand the wear and tear of a campaign, and the careless and awkward usage of the soldier. It will necessarily be *weak* at the breech, and easy to break; or its mechanism will be so delicate as to get easily out of order; and if this happens in the field, the weapon is useless, for you cannot mend it or even load it at the muzzle. Every one who has used Hall's carbines, knows that they unite in themselves all these defects. As to Sharp's rifle, the best weapon of this kind yet made, besides being vastly inferior to the Minie in range and accuracy, this is what Col. Huger says of it in his report:—"After being fired four or five rounds, it was found impossible to force the cartridge in without bursting it. The firing was continued by separating the bullet from the cartridge, forcing it into the chamber with a stick, and afterwards pouring in the powder. *The slide frequently became very difficult to move.* When the arm was taken to the shop to be cleaned, after the firing was concluded, *the slide could not be moved at all,* until thoroughly soaked in oil, to soften the dirt around it. The paper of the cartridge is always left behind in the chamber after each shot, and is frequently on fire when the succeeding cartridge is inserted."

If we come to the question of cheapness and durability, the Minie rifle has, greatly, the advantage over any breech-loading weapon. It is necessarily cheaper, for its construction is perfectly simple.—As to its durability, there is no reason why it should not be as great as that fixed for the musket, viz: fifty years, (or 25,000 shots). We do not believe that any breech-loading gun ever made can stand the fifth part of this. Furnished with the sabre-bayonet, the Minie is the more formidable weapon ever placed in the hands of troops. Listen to a witness from the bloody field of Inkermann.—"The Minie, says he, is the king of weapons. Inkermann proved it. The regiments of the 4th division and the marines, armed with the old and much belauded "Brown Bess," (the English regulation rifle) could do nothing against the massive multitude of the Muscovite infantry; but the volleys of the Minie rifle cleft them like the hand of the destroying angel, and they fell like leaves in autumn before them." It has been said that there have been instances of one single Minie ball's killing five men.

In our rapid review of the improvements in ordnance, we pointed out the changes which resulted from them in the tactics of battle. It is not to be supposed that the introduction of such a weapon as the Minie can be without effect upon the formation and evolutions of troops. It is true that the emotions of conflict, and the different temperaments of men will always prevent soldiers from using any fire-arm with the utmost degree of accuracy of which it is susceptible.—Vast numbers of shots must always be wasted, but it is allowed by the least sanguine, that the introduction of the Minie arms will, (at the lowest calculation,) treble the effects of the fire of infantry. What changes will this produce in tactics?

In order to answer this question intelligently, let us examine what is our system of tactics.

The system in use in this country is a translation and adaptation of the French system; it was arranged by Gen. Scott, and bears his name. It is nothing more nor less than a reproduction of the regulation for the evolutions of the French infantry, which has been in use in the French armies (with the exception of some unimportant modifications), for the last seventy or eighty years Where did the French get the system? From Prussia. Who gave it to Prussia? The Prince of Dessau, one of the generals of that monarch who had such a fondness for tall grenadiers, and who used to cane his courtiers, and his wife and children whenever it suited his royal fancy. This general re-invented the cadenced and equal step, for he was too ignorant to know that the Greeks and Romans had used it; and he introduced the principle of equal subdivisions occupying, whether by flank or in column, spaces always equal to their front in the line of battle. This was precisely what Marshal de Saxe had advocated in his "*Reveries*" in his ludicrously pathetic style. The Prussian army was instructed upon this principle, and became a fit instrument for the genius of Frederick the Great, who improved upon the evolutions which he found in use. The French adopted the system and improved upon it also, during the long wars of Napoleon; and now we have it in its utmost perfection. What is one of the great principles upon which it rests? To substitute the action of masses in the place of the action of the individual soldier; and we will show that this principle has been carried to a disastrous extent.

We have already seen how arduous was the education of the soldier in ancient times, and in the middle ages.—Long, long indeed must have been the training required to fit the man of war for all the duties of his profession. But all this has been changed. In one month you can make a soldier of a very awkward clod-hopper. Let us see, however, what he can do. He can face to the right and left. He can keep time and dress in marching; he can perform the manual of the musket, which is no doubt very pretty when executed simultaneously by a battalion of a thousand men. If he is attacked, he can stand still with his musket and bayonet straight before him. If it is he that attacks, he can march forward with his weapon in the same position. And above all, *he can fire!* (God save the mark!) he can fire with the certainty of hitting the enemy (taking the highest average), once in a thousand shots!! Remember, he can do all this in the ranks. But suppose that the ranks are broken and he is isolated, what can he do then? Alas, tactics does not say, for it does not consider an isolated soldier worth a paragraph. It considers masses only. It has never taught him the art of offence or defence. He may fire his shot, which will most probably miss, and then what? The manual of the musket will not save him, and a very moderate swordsman will push aside his bayonet and cut him down in a twinkling. There is but one thing left for him. He may, according to the instruction which he has received from the drill-sergeant, "face to right about" by "turning on his left heel," and then "stepping off with his left foot," march off "in double quick time," "which *may* be increased to a run."

The great fault of this Prussian system is to have made of the soldier a mere machine. It has taught him to march, to pull trigger and to hold inertly his bayonet in front of his body, all at the word of command, supplying this deficiency of the means of attack and defence, by the numbers and the regularity of the ranks. As long as it was employed against an enemy that used it also, its defects were less perceptible.—But when from various circumstances, a different mode of attack was used, how useless became the discipline of the "regulars." Look at our own history.—What advantage did the system give to the troops of the unfortunate Braddock when the concealed Indians opened their fire upon him? What could they do?—Their firing was a mere waste of powder. Could they break ranks and attack hand to hand? There was not one of those British regulars that would have been able, out of ranks, to contend, with his musket and bayonet, against the tomahawk and scalping knife. Had it not been for Washington's Virginia riflemen, who had weapons in which they could trust, and no tactics to encumber them, perhaps not one man would have escaped from that field of blood. It was the same thing at St. Clair's defeat; and we have seen it repeated twenty times on a smaller scale in our Indian wars. When Major Pitcairn's grenadiers, marching back from Lexington and Concord, found the country rising upon them, and a galling fire was poured into them from every hedge, what were they to do?—The Skirmishers were not then used in the British service. They were in column of march upon the road. If they had seen an enemy drawn up in battle array, the case would have been clear. But here was a foe who retreated when pressed, only to return a moment after. This foe was sheltered by various obstacles, and moreover, scattered in such open order that while it seemed to be every where in his power to inflict injury, he was no where in particular when it was necessary to attack him; and the bewildered grenadiers knew not what to fire at.—How many thousand shots were fired by the 800 grenadiers who went to Lexington, and the 900 who joined them at Concord on their return, in order to kill and wound eighty-four Americans? Suppose that instead of being in one day's march of their garrison, they had been three, how many of them would probably have reached it? And who drove them back, brave as they were undoubtedly, who drove them back with shame and grievous loss! A handful of ploughmen, mechanics, citizens who had no arms but a few rusty fowling pieces who had never learned to face or to file to the right or left, and who would have cut a most miserable figure if they had attempted to form a "line of battle" or to perform the "manual of arms." If tactics lead to no better results, it were better to be without any.

The success of the undisciplined American riflemen was not forgotten, and to it may be traced the employment of skirmishers or sharp-shooters in modern armies, for what had previously been called light-troops differed very little in their duties, arms, and equipments from the troops of the line. The next great war that took place after the American Revolution, was that of the French Revolution. France, with her army disorganized, was attacked on all sides by the best disciplined troops in Europe.—To defend herself she sent forth a million of undrilled "*conscrits*" who, supplying the want of knowledge by their ardor, "threw themselves," says a British writer, "in swarms on the flanks of the Austrian columns. These, unaccustomed to this novel species of attack *when they looked for a regular battle*, fell into confusion and retreated before an undisciplined rabble." The French, after their raw recruits had become steady veterans, had the good sense to remember the advantage which they had gained from their "tirailleurs," and in all the actions, clouds of skirmishers advancing almost independently of each other, and relying only upon good sense and bravery, would venture even inside of the enemy's lines, and throw disorder and confusion into his ranks by their concealed and destructive fire; thus preparing the way for their massive columns of attack. It was long before other European armies, controlled by men attached to routine and precedents, adopted this valuable arm of the service. A curious episode of the Peninsular war illustrates very forcibly the blindness which prejudice creates, and which, according to Col. Mitchell, afflicts peculiarly British Military Boards.

The officers in command of the English army in the Peninsula having observed the great advantage which the French derived from their corps of skirmishers, requested the formation of a similar corps. The request was granted, but in spite of the remonstrances of a few men of sense, it was decided at the Horse Guards, that no uniform would do but the genuine British scarlet with white trimmings, the most unconcealable colors in the world! What was the result? The French '*tirailleurs*,' clothed in dark green, were effectually hid by every bush, and completely invisible when scattered out in the extensive vineyards and cornfields of Spain. The unfortunate British riflemen, on the contrary, could find concealment no where, for there would always peep out a confounded little patch of the unlucky scarlet to serve as a target for a French bullet. This corps was almost entirely destroyed before the blunder was rectified.

The skirmishers employed in the French service were generally armed with a light musket; those who used the rifle, owing to the objections previously mentioned, did not derive any benefit from that weapon. But as the troops to which they were opposed were no better in this respect, the inefficiency of these arms was not much felt. The conquest of Algeria was destined to lead the way for a complete revolution, both in the tactics and the equipment of light troops.

The French armies in Africa found themselves opposed to an enemy whose power had been much miscalculated. The different tribes of the Regency could bring into the field one hundred thousand horsemen. It is true that they were divided in interests and seldom acted in concert; but upon many a battle-field the French were vastly out-numbered by the Arabs. Nor were the latter foes to be despised, as experience soon taught. They were as brave as the lion of their native desert. They were more than half civilized, and had their manufactories of small arms, cannon, and powder; they were splendid horsemen, used to riding from infancy, and mounted upon the finest and fleetest horses in the world.—They were a warlike race, accustomed to go armed at all times, and to encounter continually the dangers of the chase and the battle-field. More than all, they were enflamed by religious enthusiasm, and considered the French but as Christian dogs, inferior in every respect to the sons of "El Islam."

The French soldiers drilled by the Prussian system, improved upon, it is true, re-enacted, notwithstanding the aid of their skirmishers, the part of the British regulars at Lexington and Concord. The fierce Bedouins of the desert concealed behind every obstacle, poured a converging fire into the serried columns of the French; and however bad marksmen they might be, they could not fail to hit some one when they had such large masses to shoot at. The French were unable to return the fire with any effect, for either the Arabs kept themselves concealed, or else they were scattered in such open order, that so uncertain a weapon as the musket stood little chance of doing any execution. Had the Arabs been on foot, skirmishers might have been thrown out to dislodge them from their positions, and to pursue them. This was tried; but the instruction of skirmishers was imperfect at that time, and as soon as they were deployed, the Moorish cavalry, on their fleet barbs, would dash upon them like a whirlwind, with furious onset, and with gleaming yataghan and scimetar, sweep them like chaff before the gale. Of course the fire of the skirmishers, aimed with muskets had no effect upon these rapidly moving horsemen, charging in perfectly open order. If the French columns advanced to the support of their sharp shooters, the Arabs would turn to the right about, firing as they fled, and returning in a moment fiercer than ever. The troops, encumbered with heavy accoutrements and *shakos*, under an African sun, were decimated without the power of striking

*In one of these experiments, a ball from a rifle-musket, (the musket transformed into a Minie rifle) struck the frame of the target, a piece of white pine three inches thick, and went clear through it at 1000 yards.