

THE ORDEAL OF CANNON-FIRE.

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WHEN THE FIRST European travellers visited the island of Madagascar the form of trial known as the ordeal of poison was practised by all but the most primitive tribes of the aborigines. The supreme tribunal of the Hovas recognised its validity ; it was encouraged by officials corresponding to our justices of the peace, and was a frequent resort of individuals in the settlement of private disputes. It simplified litigation.

“What do you agree to swallow?” a testy islander would ask his opponents, where our Western controversialists would offer to stake a sum of money. They had three or four different poisons : a variety of stramonium, euphorbia-leaves, and the juice of a fruit known as the tangena-cherry, that acted as an emetic, and in large doses was apt to extinguish a feebly-flickering life in a couple of hours. Vigorous patients often survived its effects, which could also be mitigated by various antidotes known only to the initiated.

As the severest test of endurance then known, it gradually superseded the milder ordeals, and appeals to that strange form of arbitration remained frequent enough to support the traffic of the antidote-mongers till the foreigners introduced arsenic and sulphuric acid.

The *défi* of desperate litigants promptly resorted to the more crucial tests, but with an unexpected result : After a few dozen court-rooms had been turned into morgues, ordeals of poison became unpopular, and Hova patriots began to take a lively interest in the European system of trial by jury.

The most conservative rulers preferred the extension of reforms, to the enlargement of cemeteries ; and similar consideration may lead to the abolishment of the ordeal of saltpetre for the settlement of international disputes.

Its first introduction seemed to have made warfare easier. First-class archers were scarce and expensive, and cavaliers, armed cap-a-pie, generally preferred to break lances in quarrels of their own ; but the invention of gunpowder terminated such monopolies ; a boy with a musket could defy the *Constable de Bourbon* in his double coat of Milanese chain-armor ; the choice of recruiting-sergeants was no longer limited to athletes. A year's work of a few active gunsmiths enabled a city to take the field against its despoilers ; a single cannon, *die faule Grethe*—Lazy Peg, as they called her on account of her unwieldiness—is said to have smashed the walls of one hundred and five different robber castles and reduced their proprietors to the alternative of flight or surrender. Battles became more frequent and yet less murderous, as they were fought at long range and under circumstances enabling the vanquished to avoid the massacres following the encounters of ill-matched combatants in the heroic age of hand-to-hand contests.

For a while it seemed as if campaigns were to be decided by manœuvres like the intricate marches and countermarches of Turenne and Montecuculi, at a great saving of human life, if not of time. Then came the inevitable reaction. The success of recklessly aggressive tactics compelled their more and more general adoption and involved a revival of close-range combats, while the mechanism of firearms was improved from year to year. Prince Eugene of Savoy advised his cuirassiers to charge at full speed and avail themselves of the fact that they could generally break infantry formations "between two volleys," i. e., after they galloped in reach of the first bullets and before their enemies had time to load again. But half a century later, and after the improvement of small arms had made sharpshooters decidedly formidable opponents, Frederick the Great issued similar instructions in the form of a peremptory order. "At the word of command," says his proclamation of June 10, 1744, "every squadron shall attack at full gallop and in close order ; and his Majesty feels assured that if these instructions are implicitly followed the enemy will always be routed."

Napoleon, on his first appearance in the headquarters of the Army of Italy, proclaimed the same principle in a still more unequivocal manner. "The time for making war in a theatrical and effeminate manner," he said, "has gone by forever. I do not propose to imitate the commanders who mutually appointed a place of combat and advanced, hat in hand, to request their opponents to fire the first volley. We must cut the enemy in pieces—precipitate

ourselves like a torrent on their battalions and grind them to powder, that is, bring back war to its primitive state, and fight as Alexander and Cæsar did. Experienced generals conduct the troops opposed to us? So much the better! It is not their experience that will avail them against me. Mark my words, they will soon burn their manuals of tactics." (Headley's *Napoleon*, Vol. I., p. 64.)

That plan has since been adopted in every desperate action from the storming of the Malakoff to the battle of Spottsylvania, where Hancock's infantry charged through a storm of bullets that gnawed off an oak stump to the roots, and the three hours' rush against the batteries that bulwarked the hillside of Gravelotte with walls of corpses.

And in the meanwhile both cannons and small arms have been steadily improved. The first blunderbuss muskets had to be served by two men, and could be fired only once in five minutes, but the advance from those clumsy contrivances to the first breech-loaders is not greater than that from a Burnside rifle to the magazine guns which for the last seven years have been manufactured at the rate of nearly a thousand a day. A squad of six men can now keep up a shower of bullets approximating a hundred a minute, i. e., an average of sixteen shots each, for a minute and a half, then after a pause of ten seconds, recommence their fusillade with replenished magazines. And these bullets go five times as far as the musketballs of the Seven Years' War. At a distance of a mile and three-quarters they will penetrate a man's body; at close range they will strike through a four-inch plank of the hardest oak wood. And moreover, their alleged deficiency in "killing qualities" has been remedied by the addition of an alloy of soft, heavy metal that forces its way through the steel cap, and, by spreading like mashed wax, almost rivals the effect of an explosive shell.

Prof. W. A. Carlin describes the results of his experiments with these projectiles as beyond all his expectations, even when his victims were Rocky Mountain grizzlies—next to superstitions about the hardest things to kill. "The bear had not heard us," he says, "owing to the noise of the running stream, but evidently suspected that all was not right, for she stood up, turned slightly, and was just about to look our way when I sent a soft-nose bullet from my 30.40 Winchester into her left shoulder. She gave a bawl and turned a complete somersault, landing upright on her hind feet and rump. She turned her head towards us, and there was no mistaking the ugly expression on her face, when I

fired again, putting the second bullet diagonally through her chest and shoulder. Had I known it, the second shot was hardly needed"—nor the third, which smashed the brute's skull. "The *post mortem* inquest," he continues, "surprised us both. The first shot had smashed both shoulders to atoms, the intervening flesh resembling jelly and being filled with small splinters of bone. We had never seen such a horrible wound. The shock was evidently great, for on skinning her we found the lower part of her body badly congested, although she had not been struck further back than her shoulders. The shot in her head had crushed her skull into such small pieces that we could recover only those shown in the illustration"—with a photograph of two larger and fifteen smaller skull-fragments, while twenty years ago it was considered doubtful if a full-grown grizzly could be killed with less than a dozen bullets.

Imagine the effect of a thousand such projectiles, fired at short range into a close-formed squadron of cavalry! Yet the improvements of siege-guns and field artillery have almost equalled those of small arms. The fortifications of Gibraltar itself are considered no longer proof against dynamite bombs, and the German Government demands an additional appropriation of 175,000,000 marks to reconstruct its artillery in a manner to offset the advantages of Canét's quick-fire cannon. That invention of Col. Fr. Canét, Superintendent of the Mediterranean Coast Defences, seems to justify its description as the field-gun of the future, and to combine the advantages of the mitrailleuse with those of a Maxim gun. It is a breech-loader of a most ingeniously simple construction that can fire five shots per minute and in two minutes can be modified in a manner to adapt it to shrapnell, round balls or caissons of grape and canister. The carriage terminates in a double prong that strikes deep into the ground at the first shot, while the recoil of subsequent discharges is checked by pneumatic tubes, allowing a gradual but still limited compression of the enclosed air. A battery of such machines could almost annihilate a division of infantry attempting its capture against the range of an unobstructed fire and make cavalry charges so risky that few commanders would order them even under cover of darkness.

It is the knowledge of such risks that has preserved the peace of Western Europe for the last twenty five years and put the luxury of a man-hunt beyond the resources of second-class powers. Four hundred years ago such "autocrats of sixty faithful square leagues," as the Dukes of Parma and Modena, Brunswick, and Savoy, were fighting like catamounts upon the smallest provocation, and often,

like Cæsar Borgia, without any provocation whatever, except that of their ill humors, or, like the elder Dandolo, to stimulate a torpid liver.

The number of potentates who can afford the expenses of such tonics has steadily decreased as the number and destructiveness of gunpowder machines increased, and an invention which once threatened to close the gates of mercy on mankind may thus ultimately close the Temple of Janus.