

## THE GATLING GUN.

The recent trials of the naval experimental battery, to which we referred in our last issue, have established beyond all question the endurance and reliability of the Gatling gun, and have proved it to be a perfect arm when supplied with a perfect cartridge. The experiments at Annapolis, made under the auspices of the Ordnance Bureau Navy Department, were more particularly intended to test the recently adopted service cartridges, made by the United States Cartridge Company. The peculiarities of these cartridges consist in the character of the shell—a solid head without reinforcement—in the powder, which experimenter has shown to be, both in granulation and specific gravity, best adapted to the weight of charge and ball, and lastly in the fulminate, which in those tested was in sensitiveness especially suited to the force of blow developed by the Gatling lock. The usual tests for penetration, fouling, accuracy, and initial velocity, showed these cartridges to be fully up to the standard, while in point of reliability and certainty of effective action, the results are thought to be unprecedented. Out 100,000 rounds tested, but forty-six cartridges failed to act effectively. Of these, five were found to possess defects which should have caused their rejection at factory inspection (three were noticed by the gun's crew in handling), leaving but forty-one miss fires, many of which would undoubtedly have been discharged on second trial, as was the case with the only two subjected to it, had it not been deemed advisable to discover, by a careful inspection, the cause of failure.

Examination of a number of cartridges thus reserved pointed to the coarseness of the glass in the fulminate as the source of difficulty, a defect easily guarded against. The resistance of the shells proved to be strikingly good, but eighty-five showing rupture of the metal, the splits occurring in the cylindrical part, and in no case reaching the head, permitting the escape of gas or preventing extraction.

With such cartridges the mechanism of the gun was evidently fairly tested, and its behavior throughout the trials awards it an equal share of the triumph achieved. The piece, supplied with ten drums, each holding 400 rounds, although fired rapidly, was manipulated with only a moderate degree of skill, the gun's crew being new to the work; notwithstanding which, the entire experiment passed off with no delays due to the gun which were not susceptible of correction in an improved model (which has already been made), or of prevention in piece under trial with experience in handling, except two failures of the extractor to clear the shell, and the breaking of an extractor between the 98 and 99 thousandth rounds. When it is remembered the practice was conducted in some instances at the rate of forty-eight seconds to a drum, the average being about one minute twelve seconds, and that 64,000 rounds were fired in less than six hours, without washing out, it will be conceded that no gun will ever be so severely tested in service; yet a careful examination, after the experiment, shows the piece to be in no way injured, except in the lock already mentioned. The precautions taken to prevent heating were simple, efficient, and under almost all circumstances of active service thoroughly practicable. The target made after 64,000 rounds without washing out, was a fair one

for a clean gun, the barrels not being at all loaded. It was found to be a matter of easy accomplishment to reduce leading—which under normal conditions of practice was serious—below the point of injurious effect on accuracy, by either keeping the barrels cool, or by using external lubricant on the cartridges.—*Army and Navy Journal*

A despatch from Havana November 5th, announces that the steamer *Virginus* was captured, with all on board, by the Spanish gunboat *Tornado*, near Jamaica, on October 31. She had 170 passengers and crew, who, with the vessel and cargo, have been carried to Santiago de Cuba. The *Tornado*, which had been searching for the *Virginus* since her attempted landing on the south coast of the island, came in sight of her at half past two p.m., October 31 and immediately gave chase. The *Virginus* put on all steam and made for Jamaica, hoping to find a refuge in British waters. In her flight she threw overboard several horses and used a portion of her cargo for fuel. The *Tornado* caught up with her at ten p.m., near the Jamaica coast, and she surrendered with all on board. Among the prisoners captured are the well known Cuban Chief Bombetta, who was reported killed a few days ago, a brother of Cespedes, a son of Quesada, Senor Jesus del Sol, and other important personages. The prisoners have all been brought before a competent tribunal at Santiago, and are being tried as pirates. There was great rejoicing in Havana over the news. The streets and houses were decorated with the national colours, and subscriptions are being raised for a testimonial to the officers and crew of the *Tornado*. We wish no ill to the *Virginus*; but, if her capture has in no way involved us, we shall be relieved from the perplexing problem of knowing just how to deal with a vessel which was not quite American, and not clearly foreign as to its right to protection.—*Army and Navy Journal*

## INGERSOLL RIFLE ASSOCIATION.

We copy the following from the Toronto Leader of Tuesday:

To the Editor of the Leader.

Sir,—Will you kindly allow me space in your valuable paper to express my great satisfaction, as well as that of the other competitors from Toronto who were present at the annual matches of the Ingersoll Rifle Association, held on the 15th and 16th inst., at the manner in which the whole affair was carried out. The courteous manner in which we were treated by the officers and members of the Association, and the feeling of friendliness which was exhibited on all sides, tended to make the match the most pleasant and enjoyable we ever attended. The weather on both days was delightful and the arrangements made gave general satisfaction on all sides. Will you also allow me to express our thanks to the proprietor of the Atlantic Hotel, at Ingersoll, who, at no small trouble, furnished his guests with their dinners on the range, served in regular picnic style. From the successful manner in which everything passed off I am sure that the annual matches of the I. R. A. will take a prominent position in the rifle matches of the Dominion.

I am, sir, your obedient servant.

C. SHEPPARD.

Toronto, Oct. 20th, 1873.

## PHYSICAL CHARACTERISTICS OF ASHANTEE.

As from the country we learn from McCulloch and others that it is generally mountainous, save some small tracts to the east and west through the mountains are neither abrupt nor precipitous. It is well watered among the rivers being the Assinee, which is looked upon as the boundary between the Ivory and Gold Coast, and is, for some distance the western boundary of the empire, and the Volta or Oueda, the principal river, which runs a course of over 400 miles before reaching the sea. Both the heat and insubriety of the climate are believed to be exaggerated, though the former from October to March—the hot season—is very great. During the rest of the year it is so very moderate that fires and warm clothing are not requisite. The nights, indeed, always cold, and in the forests fires are as necessary against the cold dews as against the wild beasts. The climate along the coast is certainly unhealthy, especially to Europeans, owing partly to the chilly nights following scorching hot days but mostly to a kind of miasma which rises from the valleys and neighborhood of rivers. The interior, indeed, is healthy, and Laet has even recommended the erection in it of hospitals for the benefit of invalids from the forts on the coast. Usually the air is pretty calm, although there are sometimes tornadoes and the harmattan, as the wind from the desert is called. The latter is felt between the end of December and the beginning of February, and it is very destructive—blowing sometimes for two or three days only, but occasionally for a fortnight together, and it is so dry that it absorbs the moisture of everything it comes in contact with. There are two rainy seasons and one dry in Ashantee. The first rains occur about the end of May or beginning of June, and are followed by fogs and bazy weather, very dangerous and very powerful in July and August. The second rain comes on in October, after which till August is the hot season. For about half its length, more or less that is from about 7½ deg. N. latitude to the coast, and for the whole length between the Assinee and Volta rivers the country is a mass of forest the trees of which are all on an immense scale varying, however, on the coast and inland. Thus near the coast are to be found the baobab, the cactus, the mangrove, various specimens of palms, the cotton and other large trees, all mixed with a wild entanglement of thorny bush, itself growing to an inconceivable size. When the summit of the first mountain is reached about fifteen miles inland, the baobab disappears, and is placed by another tree of equal magnitude. So, too, does the mangrove; the palms become scarce, but other trees are found in their stead, including a new kind of aloe and citron. In the north there are trees and shrubs only in patches, and the country is covered with jungle and guinea grass of an enormous height and thickness, and which is fired and used to manure the plantations. The sugar-cane grows wild, and there is also tobacco, maize, houfra, millet, yams, rice, potatoes, and every other tropical plant in abundance, of gums, and aromatic plants of dye and hard wood. The animals are numerous and various. There are elephants, rhinoceroses, giraffes, buffaloes, deers, antelopes, civet cats, monkeys, porcupines, and goats, as well as lions, tigers, leopards, jackals, wolves, wild boars and wild cats. The rivers swarm with hippopotamus, and alligators; but the animals seemingly peculiar to Ashantee are