

willingness of the government to carry it into fair execution and give the plan an honest trial." Colonel Maberly was convinced the plan would fail, he was only concerned that the failure should be open and complete. Happily the prophets, however meek they may desire to do so, are not always allowed to fulfil their own prophecies, for the project succeeded in spite of many other difficulties than false prophets and the rooted mistrust of the official workers. Mr. Hill was employed to put his plans into operation, and for three years he became an officer of the Treasury. His superior officers were of Colonel Maberly's opinion, and believed that the collapse was only a question of time, when the old system and the common sense of the English people would return together. In the meantime the brutal logic of facts and figures was all telling in the opposite way. In two years the number of letters had increased from 75,000,000 to 208,000,000, and in the London district from 13,000,000 to 23,000,000. In thirty-eight years, i.e., in 1878, the gross amount of mailable matter reached 1,478,000,000. The plan was a success, but it really seems as if the authorities were highly displeased with the author and promoter of the scheme, for in 1842 Mr. Hill had to leave the Treasury and seek employment elsewhere. In 1843 he was chosen as the Chairman of the London and Brighton Railway, where he continued until 1846.

In 1844 a testimonial to him was begun by subscription, when the sum of £13,000 was raised and presented to him. The public temper was seen and the authorities at length made reparation. In 1846 Mr. Hill received a permanent appointment in the Post-office, and on the retirement of Colonel Maberly the administration of Lord Aberdeen appointed Mr. Hill to succeed him. The irony of history received a new example. "The visionary schemer" became the successful administrator, and in the place of one who, speaking for himself and for the whole of his department, had said "we all know it must fail."

Well, Colonel Maberly, the unfriendly critic and the prophet of evil, retired from the post which Mr. Hill was chosen to fill. He did so with commendable quietness, and probably with a large stock of surprises, for his opinions must have received a tolerably severe shock, and his experiences must have undergone a very violent shaking. He at all events had been guiltless of innovation, and had put forward no pretensions to originality. Mr. Hill on the other hand had successfully revolutionized a system that would be recognized and imitated in every post-office of the civilized world. Well did he deserve the honours he received. His sovereign created him a K.C.B. The parliament voted him £20,000, and he enjoyed, from the period of his retirement to the time of his death, his full salary of £2,000 a year.

What cheap postage has done for the world is a large question, to which all would give favourable, though each might return different answers. It has ameliorated every condition of life, and brought distant places near. It would be difficult to point to any kindred measure that is, or has been more fraught with blessedness, or more full of wisdom. Westminster Abbey has rarely opened her bosom to a truer benefactor, than when, on the fourth of this month, she took to her embrace the mortal remains of the author of the penny postage system, the wise and good Sir Rowland Hill.

Ottawa.

F. T.

THE PALLISER SYSTEM OF CONVERTING SMOOTH BORES INTO TUBE-LINED RIFLED GUNS.

I.

THE GILBERT GUN.

We present to-day a sketch of the successful trial at St. Helen's Island of the converted smooth bores into rifled cannon, according to the Palliser system, by E. E. Gilbert & Son, Engineers, Canada Engine Works, Montreal. The sketch is from a photograph, but owing to the diminutive size of the picture, it was impossible to reproduce the portraits of the gentlemen present, among whom, besides Mr. Gilbert himself, were the Hon. the Minister of Militia, His Worship the Mayor, Messrs. Gantr, Ryan and Desjardins, M.P.s., Lieut.-Col. Strange, R.A., Senator Trudel, Cols. Stevenson and Bacon, Mr. Richard White, of the *Gazette*, and other distinguished citizens. The trial was found in every way satisfactory, thus establishing a new and most important branch of industry in our midst. Messrs. Gilbert deserve the greatest credit for their enterprise. After carefully considering the verbal and written instructions given us by Lieut.-Col. Strange, R.A., Dominion Inspector of Artillery, and Captain Palliser to enable them to work out the details of boring, turning, construction of furnaces for coiling and welding, &c., and which Colonel Strange was good enough to supplement, from time to time, by a personal inspection of the drawings and by directions in details of constructive preparation, which their previous engineering experiences did not cover, they set to work during last winter and spring to construct proper machinery—naturally very costly—and completed the boring to the required enlargement. The iron required for the tubes was ordered from the "Steel Company of Canada," Londonderry, N.B., through Messrs. Gillespie, McElt & Co., the agents in this city, and

proved to be a very superior quality called by the manufacturers "Siemens" iron; it has a guaranteed tensile strength of 65,000 lbs. per square inch, being more than 23 per cent. greater than that of the "Ridsdale" iron used for gun tubes in Britain of a reported tensile strength of 52,500 lbs. per square inch, or the well-known "Ulster" iron used by the United States Government in conversion of ordnance at the West Point Works, of a reported tensile strength of 52,000 lbs. per square inch. Its guaranteed ductility of 30 per cent., although slightly less than that of "Ridsdale," (31) is slightly in excess of "Ulster" (29.) This iron, in working, also showed remarkable properties of welding, remarkable in an iron of such high tensile resistance and that consequently must be supposed to contain so small a percentage of cinder or welding flux. Bar and butt-welding furnaces were then built, and a new coiling machine constructed after the designs of the manufacturers. In this new machine an independent engine, supplied with steam from the main boilers of the works, was used to actuate a train of gears terminating in a heavy spar wheel, firmly keyed on, and imparting the desired rotation to a steel mandrel, around which the bar was coiled. A comparison of the difference in construction between the Gilbert machine and that used in Britain and the United States indicates several points in favour of the former. As a result of their experience in converting the 32-pounder smooth bore Messrs. Gilbert are prepared to undertake the conversion of any portion of the four hundred smooth bore guns now in Canada into tube lined rifled guns on the "Palliser" system, at prices and of qualities which will compare favorably with the productions of Woolwich or Elswick. They are also prepared to undertake the manufacture of new guns up to 9-inch bore entirely of coils, or with cast iron jackets on the "Palliser" system, and to guarantee to turn out as perfect and complete work as the best produced in Britain or the United States.

In view of these important facts, we believe we are only echoing public sentiment in suggesting to the Militia Department the advisability of a small appropriation for the construction of ordnance at Montreal. We have the highest and most direct authority for stating that neither Sir William Palliser, nor any one else of his family or firm, has any pecuniary interest, as Sir William has generously made over to Canada and her manufacturers the use of his invention absolutely free from all payments of any kind.

II.

STEEL TUBES.

As our people have adopted coiled wrought iron barrels, the following extracts from an article of the *London Morning Post* will be read with interest, going to show that we have done the right thing:—"A great deal has been said and written about the trials of Krupp guns at Meppen, where, by a judicious combination of very long guns and very mild powder, great velocities have been obtained. There is, however, nothing so very new in this feature of gunnery. Similar effects have been obtained at Shoeburyness, and even from Canada we hear of a very long gun manufactured in that country having been tried with the same result. We are inclined to take the view of American officers, who hold that it is not in firing a few rounds from a dozen heavy guns that a safe and final decision as to the best description of armament can be arrived at. They maintain that the interior tube is the life of the gun, and that no system of artillery can be trustworthy which admits of tubes sometimes splitting, causing the guns to burst and destroying the unfortunate men serving them. The behaviour of the interior tube of the nine and a half inch gun on board the *Renown* affords another sad instance of the treachery of these appliances. To prolong the life of these uncanny tubes, rings, coils, and casings are applied; in fact, the rest of the gun, whether it be of German or English construction, has to be shrunk over it.

What we would draw attention to is the concealed or hidden disease said to be inherent in steel tubes which prevents any danger being made apparent till about one hundred or one hundred and fifty rounds have been fired. This is the serious aspect of the case, because the guns may be at sea, in India, or in some far colony, and who is there to pry into the vitals of the sickly monster and pronounce it to be unsafe? The sickly stage of these guns may now be fixed at from one hundred to two hundred rounds of battering charges in heavy guns. If a gun completes two hundred rounds and shows no change worth speaking of in the steel tube it may be set down as a good gun; but, until a steel-lined gun has done so, no one can tell if it be good or bad. Hence the United States officers conclude that steel-lined guns are not fit for competitive purposes, and they appeared to think that it was a knowledge of this which led a great German manufacturer to decline to sell them a gun for their competitive trials. His answer was that he would gladly arm all their fleet, and also the forts of the United States, with his guns, but that he would not sell a gun to compete. German steel tubes, however, were procured and used in two guns, an eight-inch rifle and a nine-inch rifle. Here we have an instance of the sickly stage we have just spoken of. Nothing could surpass the appearance and the quality of these

tubes. Portions of the metal were tested in every conceivable manner and long reports printed on the subject. At every round the guns were carefully examined and reported on. All went on in a highly satisfactory manner till round one hundred and seventy-five, when it was discovered that mischief was at work in one of the guns, for no reason that could be given the tube had split; in other words, the gun had reached its sickly stage and had broken down. It would appear that when a steel tube splits the hard sharp knife edges at each side of the rent are driven into the surrounding casing and tend to cut and wedge it open at each round. The gun in America was fired two hundred and eighty-five times after the tube split, when it burst into forty pieces with great violence. We dwell on these failures as we learn with regret that it has been decided to try but one large breech-loading gun for our navy, to be made by a private manufacturer, and this gun will be lined with the usual steel tube. We maintain this is not fair to our officers and men.

"We regret to find that we cannot trace any intention of submitting a tube of Sir Joseph Whitworth's compressed steel to the New Gun Committee for consideration and report. The interest of the service demands that Sir Joseph should not be excluded. He has produced an extraordinary metal, which, being compressed in a fluid state, is said to be free from those blemishes so conducive to the sickly stage in the common steel tubes of the English and German service. With regard to another leading artillery, fresh from his recent victory in the United States gun competition, we can hardly credit the course taken. Sir William Palliser's proposal is to bore out the steel tube of a large Woolwich gun to relieve the strain on the casing, and then to insert a very long loose coiled wrought-iron barrel on his now well-known plan. Notwithstanding the fact that no burst has taken place out of two thousand such guns which are in constant use in the British Empire and United States of America, and that the Director of Ordnance, United States Navy, has proved that his guns can be fired with large charges without affecting their casings, it has been decided, as we are informed, that nothing from Sir William Palliser shall be permitted to appear before the New Gun Committee for their consideration and report. This line of action cannot be allowed to pass without the severest protest being recorded. The Palliser system of gun construction, although completely opposed to that adopted by the Ordnance Department, has proved too successful to be thus set aside, and it is much to be regretted that Woolwich influence at the War-office should have resorted to such a mode of disposing of a dangerous competitor.

LITERARY.

IN Ireland grouse are reported to be very plentiful, and pheasants fairly numerous, in fact there is no need to shoot the landlords as yet, for want of sport.

THE London publishers are attacking Mr. Archibald Forbes to get material from him for a book upon the Afghan and Zulu Wars, through both of which he has passed.

THE second part of William Rossetti's comparison of Chaucer's "Troilus and Cressida" with Boccaccio's "Filostrato" is being printed for the Chaucer Society.

MR. GEORGE A. SALA is about to leave England for Sydney as Special Commissioner to the Australian Exhibition for the *Daily Telegraph*. Mr. W. F. Villiers is already on his way to Australia as representative of the *Graphic*.

M. THIERS'S posthumous work, the manuscript of which is lodged in the safe keeping of the Bank of England, consists of two thousand pages of notes and memoranda for a great philosophical work which he commenced as long ago as 1864.

LORD BEACONSFIELD is reported to be engaged on his autobiography. Perhaps this is occasioned by the fact of his having entrusted some of his personal papers to his private secretary, who will probably discharge the biographer's duties.

SPECULATION is so far set at rest that the name is given to Mr. Tenyson's play, written for Mr. Irving; it is to be called *Thomas à Becket*, and is being carefully studied by Mr. Irving. Speculation has still occupation, viz., as to its success.

"LA VIE DE CÉSAR," by Napoleon III., which attracted so much attention at the time of publication, is now being sold in the Paris Halles as so much waste paper. A complete unbound copy, atlas and all, was bought a few days since for two francs.

COUNT RUSCONI'S translation of Shakespeare, which first appeared at Padua in 1844, has just reached an eleventh edition in Rome. Prior to this undertaking by the eminent economist, Shakespeare was scarcely known to the mass of Count Rusconi's countrymen.

MR. ARCHIBALD FORBES is about to give a series of lectures in various places on the Zulu war, in which he will describe as an eye-witness some of its most momentous scenes, including the battle of Ulundi and the finding of the body of Prince Louis Napoleon.

At the dinner given to Mr. Melton Prior the

other night, the chairman, Mr. Augustus Sala, made this neat remark on the weighty point of permission to smoke:—"I've just heard a whisper from below, or above—I don't know which—which tells me that Queen Elizabeth, conferring with Sir Walter Raleigh, has come to the conclusion that you may smoke."

MR. CARLYLE, it is stated, has benefited so much by his latest visit to his native county of Dumfries that he has again in contemplation the preparation of a reliable record of his life, and his coadjutor will be Mr. Froude. Mr. Carlyle is known to be very much dissatisfied with most of the biographies of him that have appeared.

IN the new Life of the late Mrs. Tait, wife of the Archbishop of Canterbury, there is a good story of Dean Milman. On one occasion he was staying with Dr. Tait, when a tame emu was turned loose into a paddock among some cattle. The latter resented the intrusion, and ran after the bird, whereupon Dean Milman cried:—"Look! there goes Colenso, and the British bishops at his heels!"

MR. LONGFELLOW having received a letter from an Italian gentleman, why he should have employed in the title of "Excelsior" the masculine adjective in preference to the adverbial neuter form, has written to his correspondent, saying that: "The device on the banner is not to be interpreted 'ascende superius,' but 'scopus meus excelsior est.' This will make evident why I say 'Excelsior' and not 'Excelsius.'"

MR. GEORGE A. SALA'S candidature of Lambeth is said to be at an end. His journey to Sydney as special commissioner for the paper with which he is identified makes his appearance as a candidate during the coming election quite improbable, says our informant. The constituency of Lambeth might, however, do themselves the honour of electing him in his absence, but, as there will be no election till the spring of 1881, surely Mr. Sala will be back in time.

THE O'Connell Memorial, now in the hands of Mr. Brock, the sculptor, will, it is expected, be completed and erected within two years. A portion of it has been already cast in bronze. One of the sitting figures at the base of the monument is nearly finished, and another is in hand. The principal figure is fairly well advanced. The stonework for the pedestal will be of Irish limestone. It is probable that the statue will be erected at the foot of Sackville-street, and facing Carlisle Bridge.

DR. W. RUSSELL has met with an accident which has confined him to his room in the hotel at Pietermaritzburg. He has in consequence been detained from following up Sir Garnet Wolseley. The correspondent of the *Cape Argus* states that the veteran journalist has not severed his connection with the *Times*, but is merely taking his farewell of journalism as the war correspondent of the *Daily Telegraph*. Mr. Archibald Forbes, by the way, seems to have aroused extremely bitter feelings in the colony by the manner in which the Natal colonists are spoken of in one of his letters.

IN 1739 the Royal Library of Paris contained 500,000 volumes and objects of every description. In 1859 the number averaged 1,200,000. During the last twenty years the increase has been more sensible, and the actual number is estimated at 2,000,000. The mean annual increase from legal deposits alone is 20,000. Out of these 2,000,000 about 450,000 are devoted to French history, 200,000 to theology, 90,000 to science and philosophy, 60,000 to natural history, and 20,000 to English history. The greater part of French and English historical and medical works are arranged in printed systematic catalogues placed in the hands of the public. In less than ten years the whole of the catalogues will be printed.

CANON FARRAR deserves the credit of having discovered a new art in religious writing—the art of making it as popular as even a story of daily life. His *St. Paul*—which has just been issued—will probably not have the success of the *Life of Christ*, for the subject is not equally interesting; but there can be no doubt that it will sell largely. Already Mudie has subscribed for 1,000 copies. The success of the *Life of Christ* was far beyond the wildest expectations of the Canon or his publishers, and his original scale of remuneration was accordingly small. Messrs. Cassell, Petter & Galpin, however, with a generosity not often found among publishers, presented the writer with £2,000 beyond what they had agreed upon.

MR. CARLYLE was able to attend the marriage of his niece and amanuensis, Miss Mary Carlyle Aitken, which took place on the 21st ult., at the house of her parents, in Dumfries. The bridegroom was one of her Canadian cousins, Mr. Alexander Carlyle, B.A., of the Bield, Brentfield, Ontario. The marriage was solemnized by the Rev. James A. Campbell, parish minister of Troquair, and after the ceremony, Mr. Carlyle entered into lively conversation with Mr. Campbell, expressing gratitude to Almighty God for having spared him so many years, and speaking much about the work of John Knox. It is understood that the newly-married pair are to reside at Chelsea, under the same roof with their venerable relative, to whom Miss Aitken has acted as housekeeper since shortly after the death of Mrs. Carlyle in 1866.