On the same day, a native of Schauffhausen, in Switzerland, named Andrew Schalch (who, from a common law of his canton which made it necessary for every person born there to travel for improvement in his profession during three years, had visited different foundries on the continent, and at length reached England), was attracted to Moorfields Foundry at an early hour, and was suffered minutely to inspect the work then going on. Colonel Armstrong was himself present, when Schalch, being alarmed at some latent dampness which he had observed in the mould, addressed him in French, and after explaining his reason for believing that an explosion would accompany the casting of the metal, warned him to retire from the impending danger. The colonel, who at once comprehended the importance of Schalch's remarks, interrogated him with respect to his knowledge of the art, and found him perfectly conversant with all its principles. He therefore resolved to follow his advice, and quitted the foundry with his own friends, and as many of the company as could be prevailed on to believe that danger really existed. Scarcely had they got to a sufficient distance, when the furnaces were opened, and the metal rushed into the moulds, the moisture of which, as Schalch had intimated, immediately occasioned a dreadful explosion; the water was converted into steam, and this, by its expansive force, caused the burning metal to dart out in every direction, so that part of the roof of the building was blown off, and the galleries fell. Almost all the workmen were dreadfully burnt, some lives lost, and many persons had their limbs broken.

A few days afterwards an advertisement appeared in the public prints, stating in substance that "if the young foreigner, who in conversation with Colonel Armstrong, on the day of the accident at the foundry in Moorfields, had suggested the probability of an explosion from the state of the moulds, would call on the colonel at the Tower, the interview might conduce to his advantage." Schalch was informed of this intimation by an acquaintance, and he directly waited on Colonel Armstrong, who told him that the Board of Ordnance had in contemplation

to erect a new foundry at a distance from the metropolis, and that he was authorised, through the representation which he made of his (Schalch's) ability, to offer him a commission to make choice of any spot within twelve miles of London for the erection of such a building (having proper reference to the extensive nature of the works, and carriage of the heavy material), and also to engage him as superintendent of the whole concern.

This advantageous proposal was readily accepted by Schalch, who, having inspected various localities, at length fixed upon the Warren (previously a rabbit warren), at Woolwich, as the most eligible situation. Here the new foundry was erected; and the first specimens of ordnance cast by Schalch was so highly approved, that he was fixed in the office of master founder, and continued to hold that post for about sixty years, when he retired to Charlton. He died in 1776, when about the age of ninety, and lies buried in Woolwich churchyard. Some of the largest mortars in the arsenal were cast under his direction, and bear his name. His attention and scientific knowledge were so successfully applied, that not a single accident happened during all the hazardous processes in which he was engaged during his long service. Such was the concatenation of circumstances that gave origin to the Royal Arsenal.

The extension of Woolwich Arsenal in our time has been on a stupendous scale; and in no department of the public service are the vast mechanical resources of the age employed with greater efficiency. Yet, amidst its gigantic works, it is impossible to forget—notwithstanding the recent re-organisation of the gun factories, to bring out 1,000 colossal guns in a year—the services of the young Schauffhausen engineer, who, a century and a half ago, by the seasonable combination of talent and opportunity, laid the foundation of the chief war establishment of the most powerful nation in the world.

But we should wrong gunpowder and gunpowder invention if we represented its only use as that of the destruction of human life. Far from this, it aids the engineer in all his excavations, enables him to carry his

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