

Correspondence.

Mr. J. D. GOODMAN desired to correct a statement made in the *Mr. Goodman.* Paper to the effect that when the English War Department had furnished the Government factory at Enfield with complete machinery for producing arms on the interchangeable system, the Birmingham contractors were slow to follow the example thus set. Enfield made the first preparation to produce arms by machinery in 1854, and made the first guns on this system in 1858. The military-arms traders of Birmingham had formed themselves into an association in 1855, during the Crimean War, and appointed Mr. Goodman their chairman in January of that year. In 1857, the association purchased from America the machinery required for forming the gun-stock. After working this for a time, they found that, to work profitably, they must make the entire gun by machinery. They formed a company in 1861, and, in June of that year, ordered a complete set of machinery from America. In consequence of the war which broke out in the United States, the order was cancelled, and was transferred in October, 1861, to an English manufacturer. In 1862, 26 acres of land were purchased, and the present factory was erected. With the subsequent extensions it contained, in 1892, an available floor-space of 157,000 square feet, and was capable of producing 1,250, and had actually produced 1,000 magazine guns per week, in addition to other munitions of war, such as quick-firing shells, &c. The first guns made in the factory were turned out in June 1865. The Author's statement that the demand for rifles for the United States, during the Civil War, found the Birmingham contractors quite unprepared, and that they utterly failed to meet the demand, must have been made in ignorance of the number of Enfield rifles supplied to the Northern States by Birmingham at that time. The association commenced supplies in May 1861, and continued to make deliveries till the quantity exceeded 10,000 rifles per week. In December 1861, so large were the transactions, that he felt it his duty to report them to the War Office; on the 5th December, 1861, an embargo was laid on the export of arms. The embargo was removed early in 1862, and, immediately afterwards, one steamer took out from Southampton nearly 40,000 rifles to New York. He quoted

Mr. Goodman. the following from a Paper published by him in the journal of the Statistical Society in December 1865:—

“I find, by the return from the Birmingham Proof House, that in one month, the month of October 1863, sixty-thousand three hundred and forty-five rifle-barrels were proved, being very few short of two thousand per day from Birmingham alone, a number altogether unprecedented in the history of the trade. From the Proof House returns for the four years, 1861 to 1863 inclusive, I obtain the following numbers, showing the extent of the supply of arms from this country to America during the war—

Birmingham supplied	733,403
London supplied	344,802
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Making a total number of Enfield rifles sent to America	<u>1,078,205</u>

It had been further stated by the Author, that the loss of the military-rifle trade with foreign countries might be dated from the time of the failure to supply arms to the Americans. As he had shown that no such inability existed, he would only add that, during the few months between 1st September, 1870, and the 21st April, 1871, the association alone supplied 114,700 rifles to France, almost all of them Sniders, in addition to upwards of 180,000 Snider actions, to be made up into rifles in France. That total by no means represented the entire supply from Birmingham as there were several gun-makers, not members of the association, who were busy at the same time, and the Birmingham Small Arms Company was precluded from taking part in the foreign trade, owing to its engagements with the British Government. In addition, since the American War, the company had delivered 110,000 rifles to other foreign governments, and the National Arms Company of Birmingham had delivered 100,000. He gladly acknowledged the statement made by Mr. Rigby, to the effect that every assistance was given to small-arms manufacturers by the officials at Enfield in the execution of their contracts. They were freely admitted to examine the Enfield machinery, and patterns and gauges were supplied to them when needed. At the same time, he might be excused, as one who had been concerned in the military arms trade, in different phases, for thirty years, if he showed jealousy at statements throwing doubt on the ability of Birmingham to meet any emergency that might arise.

Messrs. Weyers-
berg, Kirsch-
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Messrs. WEYERSBERG, KIRSCHBAUM & Co., of Solingen, observed that their long experience had convinced them of the superiority of the system of the machine-forging of blades, introduced by them about twenty years ago, and adopted, not only at Enfield, but

almost universally, over that of hand-forging, which could not be relied upon where large quantities were required. With regard to hardening, their practice was to employ water for that purpose, as they found that when oil was used, the steel had to contain so much carbon as to be very brittle and unsuited for sword-blades. They attributed much of their success to the fact that their Government had not itself undertaken the manufacture of swords and similar weapons, but had hitherto found them work enough to keep their establishment fully employed, and encouraged them to constantly experiment and improve their manufactures. They found that solid-drawn steel scabbards, for both swords and bayonets, possessed considerably greater strength than the ordinary brazed kind. For these, they made an exceedingly thin cold-drawn steel tube by a process that so taxed the strength of the material, that only the finest quality could be employed. The first pattern of the scabbards made was worked up from this straight tube, but the appearance was so clumsy that they had found it necessary to experiment further, and had finally discovered a practical method of tapering the tube without diminishing its strength.

Mr. RIGBY, in reply to Mr. J. D. Goodman, drew attention to the time, seven years, that had elapsed between the production of machine-made arms at Enfield by the Royal Small Arms Factory, and at Small Heath by the Birmingham Small Arms Company. He also referred to his reply to Mr. E. Woods' remarks. As to the manufacture of 210,000 arms for foreign Governments since the American War, he contrasts that with the operations of one American Company, Messrs. Remington, of Ilion, N.Y., who alone supplied about a million of these rifles to European States and to Egypt in the same period.

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berg, Kirsch-
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Mr. Rigby.