

VII.

THE MANUFACTURE OF WARLIKE EQUIPMENT

SUBJECT to vicissitudes caused by changes in the methods of production, such as the displacement of iron by steel, the prosperity of the great majority of the engineering works of the North of England varies with the general state of the world's trade. But there is an important minority of these establishments, including some of the largest in the country, where the returns to capital and the amount of employment given depend in large measure upon quite other conditions. I refer to the works which are extensively devoted to the production of warships, of armour-plate, of artillery, and of ammunition. They are situated principally at Newcastle, Sheffield, Manchester, and Barrow. In this connexion, though occasionally orders for warships are received by other shipbuilding firms, Newcastle means principally the shipyards and the complete ordnance factory of the colossal establishment of Sir W. G. Armstrong and Co. at Elswick, and Messrs. Palmers', at Jarrow, engines for the warships being very largely made by Messrs. R. and W. Hawthorn, Leslie and Co., Messrs. Humphrys, Tennant and Co., and Messrs. John Penn and Sons; Sheffield means the great houses of Messrs. John Brown and Co., Messrs. Charles Cammell and Co., and Messrs. Vickers and Co. as the chief makers of armour-plate in England, those three houses and Messrs. Firth and Son as manufacturers either of guns in their entirety or of their constituent parts, and those four houses and Messrs. Hadfield as makers of projectiles; Manchester has meant Sir J. Whitworth and Co., as makers of heavy guns and projectiles, which firm has lately amalgamated with that of Elswick; and Barrow means the Naval Construction and Armaments Company, whose undertaking is being acquired by Messrs. Vickers. Leeds also must be mentioned as furnishing, through Messrs. Greenwood and Batley, besides a considerable supply of cartridges, a large amount of the special machinery employed at Government arsenals in the manufacture of small arms, while several other houses in the same city permit machine-tools and locomotives for use in those national establishments. It must be understood that none of the firms thus mentioned by any means confine themselves to the production of offensive and defensive armament. Most of them have a large, and some of them an immense, business in other directions, such as the building of merchant vessels, the construction of bridges, the production of large forgings and castings for land and marine engines, the rolling of steel rails, the manufacture of machine-tools, files, springs, and of steel of various qualities for all kinds of purposes. If therefore, a graphic representation of the variation in their prosperity over, say, a decade were desired, it would have to be compounded of curves connected on the one hand with the general state of commerce, and on the other hand with the development of defensive or aggressive policy among the nations of the earth. These developments, it need scarcely be said, take place quite irrespectively of whether trade is good or bad. A war scare may happen in the worst, as in the best, of times, and if it happens it will be certain to bring orders to the war departments of some or all of the houses of which I am now speaking. And if there be, as, on the whole, there appears to be, along with a widely-increased dread of war, a general advance in the standard of equipment for war, esteemed necessary by the civilized and semi-civilized nations, not only of Europe, but of America and the Far East, there is assured to the houses in question, so long as they are efficiently conducted, a steady inflow of business and a corresponding power of giving large employment at good wages.