

SHIPBUILDING AND MARINE ENGINEERING ON THE NORTH-EAST COAST.

IN another article of the present series I hope to show how closely dependent the manufacturing industries of the rest of the world have been and are upon the mechanical and engineering enterprise of this country, and especially that of Yorkshire and Lancashire. A part hardly less essential is played by the shipbuilding enterprise of the north-east coast in relation to the maritime intercourse of the different parts of the globe. It is difficult to obtain exact figures as to the amount of shipbuilding done in other countries. It is not inconsiderable, and it is growing. But it would probably be well within the mark to say that last year considerably more than 4-5ths of the tonnage of new shipping turned out was the produce of British shipyards. And of that large proportion a full half was provided by the builders seated on the north-east coast, a district embracing the rivers Tyne, Wear, and Tees, and the port of West Hartlepool. This is not surprising. The presence of great steelworks and an excellent railway system and the proximity of the sea render it easy to bring together all the materials required for modern shipbuilding on the edge of tidal waters. Immense sums and great ingenuity have been expended on making those waters navigable for ships of large burden, and with wonderful success. Close to the great Elswick shipyard above Newcastle the flood tide runs with 24 ft. of water at a point in the Tyne where 30 years ago there was an island. Results hardly less remarkable have been achieved on the Tees; and at all the chief ports in the north-eastern district conservancy and harbour commissioners have pursued a far-seeing and energetic policy in the provision of dock accommodation.

In the district possessing this combination of natural advantages, developed by local enterprise, no fewer than 313 vessels of various kinds were built last year. Its yards build for service of every kind and in every sea—from the first-class battleship and ocean liner down to the steam-trawler. And side by side with its yards, sometimes under distinct but frequently under the same ownership, are great works devoted to the manufacture of marine engines and boilers suited for every variety of vessel. Thus the district presents an industry, or combination of industries, at once vast in scale and remarkably complete in the character of its products. It is not necessary to enter here in any detail into the complicated and highly technical, though very attractive, subject of marine engines. The processes of their manufacture do not differ in any important respect from those in use in engineering works generally, which will be described with some fulness in another article. The engineers of the north-east coast, it is enough to say, have played a very important part in those developments of the mechanical arts by which the economy and the efficiency of the use of steam power at sea have been so largely increased during the last 20 years. Alike in marine engineering and in shipbuilding, the keenness of the rivalry among the numerous captains of those industries on the north-east coast, as well as between them and other great seats of the same industries, has served as a powerful stimulus to improvement in many directions. Individual firms lavish their best thought and incur large outlay in the more or less successful endeavour to solve problems of interest to every one connected with shipping, directly or indirectly, which is almost as much as to say every dweller in every civilized and semi-civilized country. They do it all for their own profit, but their rivals and the world at large must sooner or later be the gainers, whether the experimenters themselves gain or not. No one can visit the north-east coast at the present time without having this truth impressed upon him. Thus, to take an illustration from marine engineering, a well-known firm at West Hartlepool last year fitted a large ship built in their yard with a five-crank engine, the patent of their engineering managing director. The results are said to have been so satisfactory that the firm of shipowners who took the first vessel thus engined have