

days of the Tudors and Stuarts; assegais from South Africa; darts and spears from the South Sea Islands. There is also a most extensive and varied collection of stuffed birds and beasts, sent home by officers from abroad, brought down by their guns in several parts of the world, and sent home to be kept at their former quarters. There are skulls of the elephant, mammoth, and walrus; two very perfect mummies from Egypt; heathen gods from India, China, and Japan; groups of shells, rocks, ores, and other geological specimens, all properly arranged and classified; likewise models of saddles, harness, trappings, &c.; in fact, objects of all kinds which are likely to instruct or interest those for whose benefit the Museum was instituted. Adjoining are a library, a chemical laboratory, and a lecture room, the latter adorned with portraits of distinguished Artillery officers. In the Hall are busts of Dr. Olinthus Gregory, and Dr. G. P. Barton, two of the old professors of mathematics and science.

The East Laboratory, or composition department, forms a series of distinct, and, to a certain extent, isolated buildings, eastward of the parts of the Arsenal which we have visited, and shut off from them by walls and canals. This portion of the works is entirely inaccessible to strangers, unless provided with special authority. In the East Laboratory the small-arm cartridges are made; further afield, in the marsh-land, on the other side of the canal, are the rocket factories and detonating sheds; and further still, down the river bank, is the cannon cartridge factory. In these portions of the Arsenal hundreds of boys, and a few men, are employed, and so perfect is the system on which the works are conducted, that accidents are of very rare occurrence. Machinery has been devised by which risky operations are performed in a tube, through which the force of an accidental explosion is carried harmlessly away, and other precautions are taken by which the chances of the loss of life through accident are reduced to the narrowest limits. "Everybody employed in these works changes his clothes on entering, so as to avoid the possibility of taking in a lucifer match or other dangerous article, and they all put on boots in which there are no nails but copper ones. Large slippers, in which persons entering the enclosure on business encase their feet, are also provided, and any visitor permitted to enter will gain some idea of 'snow-shoe' travelling."

In September, 1883, a terrible explosion occurred in the rocket department of this factory, but fortunately only two lives were lost, though some 200 rockets burst in all directions.

Adjoining the Cartridge Case Factory, a large and handsome building just inside the Marsh Gate, is what is called the Sale Yard, where the old stores are collected and sold by auction at periodical dates. The open space, commencing at the Sale Yard and extending for about a mile down the marshes, has long been known as the "inner practice range"; it is now used only for short ranges—up to 500 yards—as there is a longer range outside the Arsenal. The various kinds of rifles and ammunition are here tested by being fired from a fixed rest at the immense iron targets which stand at the north end of the grounds, and a record is kept of a succession of shots. "If from the same fixed point the rifle registers its shots close together on the target—say twenty hits within the size of a dinner-plate—it is considered to have made a 'good diagram,' and the rifle, or the ammunition, whichever is being tried, is credited accordingly. It is obvious that a rifle or cartridge which does not shoot straight when properly directed is not to be trusted."

The "proof butts," at which the great guns are tested, are high mounds of earth faced with baulks of timber, and "pierced" with lays, or sand-holes, into which the guns are fixed. The very large guns, however, are tested at Shoeburyness, off the Nore, just beyond Southend. Mr. Vincent, in his "Warlike Woolwich," narrates one or two incidents which have taken place in connection with the firing at the butts or the testing of "inventions," which have taken place here. "Accidents," he tells us, "seldom occur at the proof butts; but there was once an occurrence which might have had tragical, but fortunately had only farcical, consequences. Among the thousands of 'inventions' which have here been tested—too often to their failure—was a light gun, proposed to be mounted on a mule's back and fired from thence, much as a ship's stern-chaser delivers her fire at the pursuing foe. A great deal of interest, though little faith, was felt in this new plan of field artillery, and a number of officers assembled to witness the trial. A mule not being readily procurable, a gentle donkey was pressed into the service, and bore the process of lashing on the gun and loading with powder and ball as meekly and as unconcernedly as is his kindred's wont. It was thought advisable for the spectators to retire a few paces in order to observe the effect of the recoil, and, a slow match being lit, the quadruped was left standing alone. Great was the astonishment and alarm of the 'committee' when poor Neddy, overjoyed at his unaccustomed liberty, began to move and caper about, changing