

side of the parish there are some extensive brick-fields, and the excavations of the hills to the south of the town, commonly known as the Ballast Pits, where sand is dug for ship ballast and iron castings, have given to that portion of the locality a somewhat peculiar appearance. Many interesting geological remains, including the fossil tusks and bones of elephants, have been disinterred in these excavations. About half a mile further southward, on the road to Crayford, is another great excavation, called the Erith Brick Pit. This pit, according to Mr. Thorne, in his "Environs of London," is even more interesting in a geological point of view than the pit above mentioned. "It lies," writes Mr. Thorne, "in the ancient bed of the Thames, and exposes a portion of the steep bank. Here the Thanet beds, which are sixty feet thick in the Ballast Pit, are only fifteen feet thick. They overlie the chalk, which here rises to a height of forty-five feet above the Ordnance datum line, both chalk and sand having been sharply cut, and the latter partially denuded, by fluvial action. A good section is here shown of the chalk and sand, the ancient bank of the Thames, with the gravel not merely resting conformably on the top of the sand, but following the denuded surface of the chalk, and filling up the hollows. In this gravel will be noticed many detached masses of unarranged Thanet sand and bull-head flints. The brick-earth beds over the gravel contain bones of fossil elephants, tigers, wolves, oxen, and horses—*Elephas antiquus* and *primigenius*, *Bos longifrons* and *primigenius*, *Equus fossilis*, *Canis lupus*, and *Felis spelæa* (the great cave tiger); but the brick-pit, about a mile farther, on the left of the Crayford road, is far richer in these remains, Mr. Dawkins enumerating no fewer than sixteen species of mammalia found there.\* The Cyrena (*Corbicula flumentalis*) abounds in these pits."

The Erith Marshes stretch away westward from the town to Plumstead, and as they lie below the high-water level, the Thames is only prevented from flooding them by the great river wall, of which we have already had occasion to speak, both in the preceding chapter and in describing other portions of the Thames banks. The marshes form rich grazing-ground for cattle. Some portion of the land, too, has been utilised for factories and other works which have been built here. Of the southern outfall of the Metropolitan Main Drainage at Crossness Point we have already spoken.† At a

short distance from these works are some large powder-magazines. A terrible disaster occurred here on the 1st of October, 1864, when two of these magazines, containing upwards of fifty tons of gunpowder, exploded with terrific force, killing ten persons, wounding many others, and carrying consternation among the inhabitants for miles round. Although the scene of the catastrophe is about fifteen miles from Charing Cross, the explosion\* was heard and felt more or less throughout the whole metropolis. The larger of the two magazines was about fifty feet square, and consisted of two floors; and the other was forty feet by thirty feet, and also consisted of two storeys.

When the explosion occurred it was a most fortunate circumstance that the tide was low; but there were only about four hours wanting to the time of high water. The explosion had forced into the river the greater portion of the materials of the embankment, in the 300 feet of length acted upon, only throwing up on the foreshore a low mound, not capable of affording any protection. In the 300 feet gap which was formed, the space which had been occupied by the foundation or base of the embankment wall was filled with broken and shapeless masses of earth and clay, which had formed part either of the consolidated mass of the wall or of the site of the magazines. All the available force of the neighbourhood was soon brought to work in stopping up the breach; but being found insufficient for the task, detachments of Sappers and Artillery, to the number of about 1,500, were set to work. Within a few hours the work was sufficiently advanced to withstand the force of the rising waters; but as it had been so hurriedly executed, the embankment sank several feet in the course of the following night. During the next day the military and navies were again actively occupied, backing up and ramming the work, with the result that it was soon made as secure as the original wall.

Much damage was done to the houses of Erith and Belvedere by the explosion; indeed, for miles round the houses were sensibly shaken, and the shock, it is stated, was felt at places fifty miles distant.

The hamlet, or village, of Belvedere, with a railway-station on the North Kent line close by, is situated on the southern side of the marsh, and on the slope of the hill almost immediately opposite the powder-magazines. Belvedere is an ecclesiastical district, formed in 1861 from the civil parish of

\* Professor Boyd Dawkins "On the Age of the Lower Brick-Earths of the Thames Valley," *Quarterly Journal of the Geological Society*, Vol. xxi., p. 91.

† See ante, p. 40.

\* For some account of the interior of a gunpowder factory and store and the precautions taken to prevent explosions, the reader may refer to our account of Waltham Abbey, in Vol. I., p. 399.