

to those mentioned I might mention the immense gardens of unknown origin, whose size and state of preservation has produced in the minds of observers much astonishment. Their perfect preservation is thought to be due to the thick coats of prairie grass, which is so thick and abundant as to form a compact vegetable coating on the surface of the soil. This enables all their sinuosities to be easily traced, and has prevented their surface being overgrown with forest, as obtains in other ruins. They are square or semi-circular, and are divided in parallel lines so as to form a series of ridges or beds two or three yards in width, and are separated from each other by a number of very narrow paths. Domenech gives a description of one above eight miles in extent. No light has been thrown upon the nature of the produce of these gigantic fields, laid out with so much regularity. The finest and best preserved have been found in Michigan, Indiana, the western provinces, and even Texas. Besides these gardens, artificial meadows, many of which were found situated on the borders of woodland, or in the midst of forests, were also cultivated by the agricultural population which inhabited the new world previous to the tribes actually existing. It is believed that from the nature of the country, the configuration of the soil, as well as the agricultural implements of stone and brass found in these meadows, to be plainly shown, that in remote times these regions were covered with trees, which must have been burnt or torn up to make room for pasturage, etc. in the immediate vicinity of human habitations. There are many traces which point directly to the probability that the ancient inhabitants of the continent worked the salt water springs to procure salt. These traces exist in Illinois, where in a salt mine there existed an excavation 135 yards in circumference, in the middle of which a great pit had been dug at some unknown period. A conduit by which the water is supposed to have drained off also existed. In Ohio, the salt mines appear to have been worked, the ancient remains of vases used in the evaporation of water having been found near the mines. In the saltpetre cave of Missouri, hammers and axes similar to those found in the tumuli have been discovered. And in the Lake Superior region are Copper mines which bear unmistakable traces of ancient mining. The ancients appear to have made use of tools of tempered copper, specimens of which have been found in the mines, as also evidences of the use of fire. The marks of similar tools are traceable on the native copper. Evidences of a still later and more rude form of mining have been observed, where rude boulders had been used wherewith to break off the out-cropping pieces of ore.

Fortifications of a singularly strategical character and of immense proportions have

been found existing in the vicinity of the Ohio and Mississippi rivers. Of these it has been said that "Of all the great works left by the ancient American nations, none are more extraordinary or more worthy of study than those colossal fortifications and vast entrenched camps, protecting and surrounding spaces so very considerable that of necessity they must have been the work of a large population." The precise epoch during which these were constructed is of course quite unknown, but it is evident that they must have been coeval with the most ancient mounds or tumuli, since they are often placed within or in the immediate neighborhood of the fortifications, and in many instances form part of the general plan of defence.

These military constructions are found to consist, sometimes of earth-works thrown up in the form of an immense entrenched camp, or in walls of stone, which have been thrown across peninsulas, formed by the conflux of two rivers and around the declivities of elevated platforms, while in all instances it is observable that a careful choice had been made of the most strategical position, of which every advantage has been taken to construct defensive fortifications on a surprisingly gigantic scale. In the county of Licking (Ohio) between the delta formed by the Raccoon and Newark streams exists an elevated tableland about 35 feet in height upon which are remains of fortifications of great extent. On the west side of the platform existed an octagonal fort enclosing an area of about 40 acres, having stone walls of solid masonry about 9 feet in height, and the same in width at the base, each protected by a tumulus placed in the interior in front of the entrance. Two parallel walls lead to another circular fort at the south west of the first, covering a space of 22 acres; further south is an elevated hillock or observatory which commands a view of the whole position, beneath this a secret passage leads to the opposite side of the river. A third fort exists more to the right, of a circular form enclosing about 62 acres; there was an interior ditch in this out of which earth had been taken to assist in the formation of the wall which ranged from 25 to 30 feet high. Two other parallel walls, run towards the north gradually converging to another fort of quadrangular shape, enclosing superficies of about 20 acres. These four different forts are connected by rather low walls, and in the centre of the enclosed area is a shallow pond covering 150 to 200 acres, supposed to be artificial and to have been required to afford water to the animals and inhabitants of the place; towers of observation placed upon each of the salient points completed the works at this point. At Marietta near the mouth of the Muskingum exist some very extraordinary ruins among which are two square forts the larg-