

mines produced no less than 105,586,000 lbs. of refined copper. These mines are very ancient, and, judging from their extent, must have been worked for centuries. Who the workers were, no one can tell. They seem to have known nothing of the smelting of copper, for there are no traces of molten copper. What they sought were pieces that could be fashioned by cold hammering into useful articles and ornaments. They understood the use of fire in softening the rocks to enable them to break away the rock from the masses of copper. They could not drill, but used the stone hammer freely. More than ten cart-loads of stone hammers were found in the neighbourhood of the Minnesota mine. In one place the excavation was about fifty feet deep, and at the bottom were found timbers forming a scaffolding, and a large sheet of copper was discovered there. In another place, in one of the old pits, was found a mass of copper ore weighing forty-six tons.—*The School Newspaper.*

ROADS.—It is a historic fact with geographic significance, that the Teutish or Teutonic family of the Aryan race are not road-makers. Saxon, Dane, Jute and Angle were all equally indifferent to the quality of roads, and there was never anything better than a mud trail in Britain, until Roman legions built the first English roads. Of all nations and peoples the Romans were the best road-builders. In this work they had no peers in the wide world, and the military roads with which they gridironed all western and southern Europe are, after 2,000 years of service, the best roads in existence. We recall many a delightful ten and twenty mile jaunt in and about the Appenines over these old Roman highways. Magnificent roads they are, too. Their heavy rock foundations are laid on graded ways,

scarcely steeper than an American transmontane railway. The filling and grouting of their beds was even more carefully done than is done to-day in our best municipal streets, and in some of them the sides were guarded by copings of cut stone. Were they not enormously expensive, does some reader ask? Certainly they were. But it is doubtful if, in the course of twenty centuries, they represent such an outlay of money, as do our country roads in a period of a hundred years. And more than once were those same roads the salvation of the empire, when the legions went flying over them to repel an invading enemy. Indeed, it is safe to say that Rome would never have held her northern boundary almost unbroken for 1,000 years had not these roads been built; it is doubtful if she would have held any territory north of the Alps.—*Goldthwaite's Geographical Magazine.*

THE ENGINEERING FEAT AT NIAGARA.—Among the greatest enterprises in modern times is the attempt to harness the water power of Niagara to the wheels of industry. Few people are aware of the stupendous and difficult nature of this undertaking, or of the issues involved in its proposed accomplishment. The horse-power developed at the falls is said to be equal to all the steam power at present used in the world, and a practical appropriation of but a marginal fraction of this power will distribute its motor power over immense areas and to remote distances. The project, as so far satisfactorily carried out, includes the digging of a canal 1,500 feet long, at right angles to the river, at something more than a mile above the falls. A vertical shaft 140 feet deep is being sunk, and from the lower level a tunnel, 28 feet high, 18 feet wide, and 6,700 feet long, has been carried at a slope of 7 feet per