

## MISCELLANEOUS.

## Steam Carriages for Common Roads.

I noticed in the Scientific American, of last week, some remarks respecting a company that has been organized in New York, named "the American Steam Carriage Company," for the ostensible purpose of employing and running steam carriages on common and plank roads. I believe that steam carriages can never be successful on common or plank roads—not that steam carriages cannot be made to run at the rate of eight or ten miles an hour, for that is nothing new; it was done twenty years ago by Gurney, in England, and done well, too, but neither Gurney's, nor any other steam carriage can be made to compete with horses, economically, on common or plank roads, especially in these United States, where horses and horse feed are so cheap, and where common and plank roads are employed more by farmers, who require their own teams at any rate, than by any other class. The question may be asked why were steam carriages not successful on common roads in England, for that is a country more favorable for them than ours? This is an important question, and one which should be asked by every person before he enters upon such a speculation. No man is wise who does not sometimes look behind. Gurney's Steam Carriages, I have been informed, ran for nearly a year in England, but did not pay, and they were laid aside. The common roads in England are more level than our streets, and smooth as a carpet. Fuel is exceedingly cheap there; steam engines can be built at less cost than with us. Gurney's carriages were not mechanically defective—they were well built; the engines were of exquisite workmanship, and no fault was found with their principles. On the other hand, horses are two-thirds higher in price in England than in the United States, and the cost of keeping them is at least twice as much.—When they were first tried neither the locomotive nor the railroad were near so perfect as they now are; they had everything in their favor, and, it might be said, "all chances to win and none to lose," and yet they failed to compete with horses; the horse stages drove them off the roads at last. If steam carriages for common roads failed in a country where they had so much in their favor, what can they do in our country, where there is so much against them.

On undulatory roads, locomotives have not yet been made to run successfully. I have seen more than one locomotive for ascending and descending inclinations, with safety. Not one of them has been successful, economically, although they were entirely so mechanically. The scheme looks like a speculation, for so far as it relates to improvements, as a new system, it looks like a scintillation of the days gone by. With our splendid railroads, it is toly to speak of steam carriages plowing through the mud, toiling up the hills, and crushing down again. The scheme is neither plausible nor payable. There is not a common road in our country of any length, and I have seen not a few of them, on which a steam carriage could run at all. On our plank roads they could run very well, but all such roads are rural—they are for our farmers, and they never will pay for steam and keep their own teams in their stables. The question is simply one of economy; and although it may be said that great improvements have been made to perfect the new steam carriages; no one will surely pretend to say that the improvements are worth fifty per cent., and yet unless they are seventy-five per cent., they cannot be made to compete with horse power in our country.

It may be said that "all new schemes have met with such opposing views;" but this scheme, as a system, is not a new one, and those interested in static pressure engines, fire annihilators, &c., have used the same arguments about opposition. The proof of the value of any improvement is its practical working economy; and I do say that, on common roads, two horses, valued at \$100 each, will do as much work, day in and day out, in a year, as a steam carriage engine that will cost \$1000, and which, for fuel, will cost ten times more than the feed for the horses. The great benefit of plank roads (and we cannot admire

and estimate them too highly) is the facility they afford to our agricultural population with their teams, not the commercial and travelling community; for the latter class, I say railroads—first, last, and forever, in all cases.

Williamsburg, N. Y.

[We have received an article on this subject from Mr. Fisher, inventor and Secretary of the Co.—it was too late for this No.—Ed.]

## Railroads and their Management.

Please accept the heartfelt thanks of an engineer for your defence of them, contained in your article on railroad accidents, in No. 15 of the present Volume, and the publicity you have given to apparently unrecognized facts, "that engineers have every inducement to avoid accidents, their own personal safety and reputation depending thereon; also, that accidents are more the result of a bad system than carelessness on their part."

But in your address to the Legislature, I would humbly propose the following amendment:—That all railroads, already chartered, be required to have a second track as soon as practicable, and that, until the completion of said second track, the number of trains to be run daily, on said road, be fixed and limited; for if the public convenience requires many trains, the more reason for a second track.—Here lies the great danger—a vast number of trains on a single track.

The Telegraph you propose would be as subject to abuse as the present "Rules and Regulations" are: through the inexperience and carelessness of the operator, mistakes and misunderstandings would occur, which would be as productive of accidents as the present system.

You say, "to construct roads cheaply is good policy," and then cite the English roads as the most safe; now this seems to me to contain a contradiction; for the English roads are not cheaply constructed; although they may cost less for a term of years, from their freedom from accidents and the frightful destruction of life and property, which mark the "exploitation" of American roads.

The safety of the English roads is owing principally to their solidity of construction, directness of route, and evenness of grade, requiring less power to operate them, and the wear and tear of material is consequently far less; another very important item is, they are enclosed and guarded. The bridges, also, are substantial enough to admit of the same speed over them as on other parts of the road. How is it with us in this last particular? For your better information read the Rules and Regulations of the Harlem Railroad, and, if it suits your convenience, ride out as far as Mott Haven, and judge for yourself, if those rotten dilapidated structures, called bridges, are fit for trains to pass over them at any rate of speed, and yet fifty trains cross them daily.

There is another feature in the European roads not to be overlooked; in their construction the Company are obliged to comply with the statute, and in some cases government engineers inspect the material used, and their signature to the fact, that all the requirements of the law have been complied with, is necessary before the road can be operated.

Is there in the whole United States any law regulating the construction of railroads, so as to render them safe as modes of transit? Or, do not their charters give the companies free license to build just such roads as best suit their interest. On the New York and Erie road three accidents have occurred, caused by broken rails; is there not a disproportion between the strength of those rails and the weight they have to sustain? I am so informed at least.

In conclusion I would ask—Would it not be well for the state to appoint a Commission of able Engineers (above corruption) to examine into the condition of the railroads now in operation, particularly the bridges, which are mostly of wood and notoriously unsafe in many cases, and report thereon to the Legislature, whose right it is to provide for the public safety.

M.

[In respect to our remark about the policy of making cheap roads, we did not intend, by any means, to imply that bad roads should be constructed; the best road is the cheapest in the end. We entertain the same opinions as our correspondent.

## Mineral Wealth of Greenland.

A scientific expedition that set out last year from Copenhagen, in Denmark, for Greenland, with a view to examine into the mineralogical wealth of the great chain of hills which divides that country throughout its entire length, has, it is reported from Denmark, already met with encouragement towards the prosecution of its researches. On the very first breaking ground in the mountains neighboring the Danish colony of Julianehaab, the party came on copper formations, lying close to the surface, branching away in three several directions, and appearing to have great horizontal extent. The engineers placed at the head of this expedition are sanguine, from the great analogy observable between the conformation of the Ural Mountains and that of the hills of Greenland, in their expectation of finding in the latter mines of gold, of platinum, and perhaps of silver.

## Coal Mines of England and America.

The following article from the Galena (Ill.) Observer, is very interesting; the author writes correctly, and is evidently acquainted with the mining operations and laws of England:—

"The depth at which our Illinois coal is dug is but a pin scratch on the globe, compared with the diggings in the English coal mines. One shaft, near Sunderland, is perhaps the deepest in the world. The coal was first found one thousand six hundred feet below the surface, and it is now worked at one thousand seven hundred, and one thousand eight hundred feet! These English mines employ large bodies of workmen. In one there are one hundred and thirty-six men and eighty-five boys below ground, engaged in fourteen different kinds of labor, and one hundred and twelve men and twenty-eight boys above ground, in seventeen occupations, and three hundred and sixty-one workmen in all. The names of the classes of workmen are singular: under-viewers, banksmen, drivers, hewers, putters, headsmen, half-marrows, foals, stoppers, or door-keepers, &c. The hewers are the actual miners of the coal, and receive about twenty shillings a week, working six hours a day, with coal and house rent free. Children under eight years of age are now excluded by law, and the barbarous harnessing of females to the coal carts in the pits is prevented. Our Illinois diggings are comparatively dry. The English mines often pump one thousand gallons a minute, or six thousand tons a day; one near Durham pumped twenty-six thousand seven hundred tons of water per diem! The use of steam power in our coal mining is yet to come. In the north of England, engines of two hundred and fifty horse-power are in common use at the pumps. At Percy Main, near Newcastle, engines of five hundred and sixty-six horse-power are in operation, four hundred and forty horse-power being employed in pumping alone. But little capital is employed in the business here. It is estimated the cost of a first class English colliery, including the shaft, machinery, houses, wagons, &c. &c., is from £40,000 to £150,000. The deepest coal is the best. As our Illinois beds are worked deeper, they will furnish an article as good, and ere long better than the Pennsylvania coal. Adjoining the great unworked colliery, which stretches across our State from central Iowa to northern Kentucky, manufacturing cities will soon arise as busy as Pittsburg, perhaps as smoky. And coal, more and more valuable for manufacturing purposes, for solidity, density, heat-giving, &c., will be brought up as the progress of our north-western manufacturing towns make a demand for it.

## Revolving Fire-Arms.—Claims of Another Inventor.

MESSRS. EDITORS—Will you allow me the pleasure of informing the readers of the Scientific American that my brother, William Avery, invented a revolving pistol in the winter of 1837-8. He demonstrated a number of plans for revolving the barrel, but considered the one which (by compressing the handle which was, as it were, double), rolled the barrel, and cocked and fired the pistol, the one that would ultimately come into use. When he was urged to apply for a patent, he refused, saying the invention was not called for, and its application would be worse than use-

less. My brother, Cyrus Avery, of Tunkanock, Pa., Mr. Hiram Scovill, of Chicago, Ill., George Whiting, of Camillus, and many others, are knowing to these facts.

SAMUEL AVERY, M. D.

Syracuse, December 30, 1851.

## Origin of the Turf Bogs in Ireland.

Formerly, Ireland was a vast forest. So powerful was the vegetation there, that it was called "the Island of Wood." It is now almost destitute of trees; and when on a fine day in spring, it appears, though bare, full of sap and youth, it seems like a young and lovely girl deprived of her hair. It is not exactly known at what time and by what process this destruction was effected. We may, however, be assured that it was before the Christian era, and probably at a much more ancient date. Some attribute it to an extraordinary inundation, which uprooted the trees, levelled forests, and buried them in the bosom of the earth. Others, whose opinion is better supported by scientific study, believe that the ruin of the forests was the result of violent storms. When the lofty forests that covered the country were compact and entire, they afforded each other mutual support against the violence of the tempests; but, in proportion as man requiring an open space for his house and field, effected clearances here and there, the trees near those that have been cut down were without support against the fury of the hurricane, and fell before blasts that were previously powerless; every ruin occasioned by a tempest produced a thousand others, rendered more easy as they were multiplied. The work of destruction went on, and all the fallen trunks, descending by the natural declivities to lakes and the marshy parts of the soil, were stopped on this liquid base, where, heaped one on top the other, year after year, they were mingled together, some preserving their natural form, others decomposing into vegetable matter until they formed that spongy, combustible substance, sometimes red and sometimes black, of which the vast turf bogs of Ireland are composed.

[This is the account, from an exchange, of the formation of peat bogs in Ireland. There are some peat bogs in New Hampshire, Maine, and New York. England and Scotland, especially the latter country, was just about as famous for bogs or mosses at one period as Ireland now is. Large black oak trees are found at a great depth in some of these bogs, and the above seems reasonable enough, but tradition attributes the great change in Ireland and Scotland to floods, and in all likelihood many of those bogs are the result of geological upheavals and depressions.

## Passages of the Atlantic Steamers from Liverpool.

We are unable to publish our regular quarterly list of the passages made by the American and British Steamships, running from Liverpool to this city; the reason of this is, that we neglected to record two passages—the Europa's last and that of the Baltic. We shall keep a correct list for this year, and by the end of it we shall see the result. During the past year the American steamships, especially during the last quarter, have made passages averaging two days faster than the Cunard line. This is a great deal—a vast difference in point of speed. It has been stated that the two new steamships intended to be put on the Cunard line, which are very large, will be very fast. There can be no doubt but the larger the vessel—all things else being equal—the faster the passages. We shall see what they will do in the course of the year.

## The Fulton Steamship.

This old steam frigate has been all remodelled, and has had new engines put into her by Messrs. Dunham, of this city. On a trial made last week, it is stated she ran twenty miles in one hour and nine minutes, and that she beat the San Jacinto nearly ten miles in that short period. This is a pretty highly colored story, we should think.

## Steam to Ireland.

By the late news from Europe, it is stated that a new company is forming in London, and has applied for an act of incorporation, for establishing steam communication between Ireland and the United States.