Correspondence.

Mercury in Louisiana.

To the Editor of the Scientific American:

In No. 20 of the SCIENTIFIC AMERICAN was published a communication from Mr. E. Wilkinson to the *American Journal of Science*, in which he says that native mercury had recently been discovered in a locality where its presence hitherto had been unknown. Cedar Grove plantation, in Jefferson parish, La., on the west bank of the Mississippi, ten miles above New Orleans, was designated as the place where the mercury had appeared in small globules in the alluvial soil. Mr. Wilkinson having examined several specimens of the soil, arrived at the conclusion that the mercury only appeared within a limited area, around a certain center, about 300 feet from the Mississippi River, and for a distance of about 1,200 feet from where the metal disappeared. In none but the upper stratum of that soil did the mercury occur in sufficient quantity to be perceptible to the naked eye. The presence of that mercury, he further says, had been noticed for a number of years, but it had not been officially reported to the scientific world, to his knowledge. He also did not think that the mercury had been wrecked in so large a quantity, or that the results had been effected by the agency of man.

More than ten years ago, I wrote a letter to the Hon. M. Hahn, who at that time was a member of Congress, calling his attention to the mercurial deposits in the valley of the Mississippi. I pointed out to him several facts and localities where I had met with globules of that metal. In three different places of the third district of the city of New Orleans, not far from the river. I had discovered during winter time such metallic globules with the naked eye.

The globules, of a comparatively large size, were dispersed over the surface of the soil. From the existence in the parish of Calcasieu, underneath a big layer of sulphurets, of an apparently inexhaustible mine of sulphur, of a chemical purity unequaled in the whole world, the idea struck me that the mercury I had discovered might have been combined in a former period of our earth's history with another element, and been separated by some reducing process. The wide dispersion of the mercury through the soil from its larger deposits, wherever they may be situated, cannot be wondered at, on account of the metal being a liquid.

Besides my discovery and that of Wilkinson, there is still another one to my knowledge which will prove the existence of larger deposits of that metal. Some time after a conversation I had held with the late Dr. White, then president of the Board of Health, about my discoveries, he brought to me a bulky mass of earth, which he stated had come from Donaldsonville, La. The quantity of mercury apparently contained in it was still larger than I so far had met with. So much seems to be evident, from what has been stated here, that somewhere in our State a large deposit of that valuable metal must exist. It is, then, not improbable that the poorest of the States in regard to mineral riches, a State which but a few years ago could not even contribute a stone to the Washington Monument, may yet become one of the richest; and well worthy, from the diverse indications we so far have received, from its various mineral deposits, that the general Government should order a geological survey of its territory.

M. SCHUPPERT, M.D.

New Orleans, August 1, 1885.

Controlling or Annihilating Tornadoes.

To the Editor of the Scientific American:

More than a year ago I advanced the plan to blow up or annihilate those so fearfully devastating tornadoes or whirlwind storms by explosions of common gunpowder. In your issues of Feb. 2, 1884, etc., short accounts of procedures are given. Some of the details are that a keg or barrel of common powder is to be kept in readiness to the southwest of the house or village to be protected. At the approach of a tornado the powder is wheeled or drawn as near as possible into the probable track of the tornado, by a cool-headed man, who then takes his position to the northwest about one hundred yards distant, fires the powder as artillerists do cannons when the tornado is near or over it.

I did not then state the reason why explosions of powder for such purposes must necessarily be effective, hence many have doubted and none have tried the plan in tornado infested districts. The remedy is for tornadoes or whirlwinds (often surnamed cyclones) of small diameters only, and not at all for proper cyclones, storms of sometimes a hundred or a thousand miles in diameter, moving also generally from west to east. Tornadoes are readily seen in the form of an hourglass or funnel-shaped dust or electrical cloud, advancing at the rate of from 40 or more miles an hour, but rotating on their axis at the rate of probably more than a thousand miles an hour. The width of their track varies greatly, from less than a rod to more than a mile, according to whether the funnel-shaped cloud is high or low. It must be known that all tornadoes have four different movements: 1. Generally from the southwest to northeast. 2. Rotating. 3. Zigzag. 4. Rising and falling. The last movement controlled will insure safety from tornadoes.

When tornadoes rise and fall by themselves, sometimes skipping over one town in their track, and entirely destroying the next, it must be evident that a lift given them by explosions of powder must necessarily make them rise sooner and higher, skipping over longer intervals. The explosions timely repeated must keep them on high, spending their force to no disadvantage to mankind below. Large charges of powder are liable to destroy or annihilate tornadoes altogether. When in districts favorable to the formation of tornadoes, powder is generally kept in large quantities for defense against them; explosions of the same at a distance of a mile or more from them are liable to check or influence the different air currents meeting and forming tornadoes or whirlwinds.

In every village or town of the country there are probably readers of your paper, who are, of course, the most progressive in their places. It becomes them to acquaint their townsmen with this tornado remedy, so promising and easily executed. It may perhaps at no distant day save their all from destruction. Every village or town should have its powder house to the southwest of it, for storage of all its surplus commercial powder. The whole powder house may, when required, be exploded from a dugout near by, artillery fashion, by means of a long cord and priming tube, or by electricity from the highest house in the town, to make the tornado at least jump over the town, if not to annihilate it completely.

JOHN F. SCHULTZ.

New York, July 14, 1885.

Spontaneous Combustion of Lampblack.

To the Editor of the Scientific American:

We have recently had so close a call of having our factory destroyed by one of those mysterious fires, that we deem it worthy of mention, as the circumstances occurred under our personal observation, and seem to us somewhat remarkable. On Wednesday, the 15th inst., at about 4 o'clock P.M., one of our painters used a small quantity of black, shook or poured out of a pound paper of Marten's Germantown lampblack. It was clean and dry, and not to exceed 2 or 3 ounces left in the paper; it was set in its usual place on the paint bench, and in the course of twenty to thirty minutes the men working near the bench detected a smell of burning soot or paint. A search resulted in discovering a slight vapor or smoke arising from the lampblack paper; the foreman brought it directly to the office; it was then but slightly warmer than the hand. We placed it on a board close at hand, and in the course of half to three-quarters of an hour the black was red hot, and soon after six o'clock it burst into a bright flame, which if it had not been noticed would certainly have burned the place, surrounded as it was with mixed paints, oil, turpentine, and varnish.

Yours,

JNO. CRETORS & SON,
Buckeye Carriage Works.

Leavenworth, Kan., July 29, 1885.

[It is well known that divided charcoal or carbon when exposed to air of the right temperature and dryness will absorb oxygen so rapidly as to cause spontaneous combustion.—ED.]

The Effect of Scientific Invention on War.

The *Week* (Toronto) of a recent date has the following: There are indeed enthusiasts who fancy that there is a way of putting an end to war at once and forever. Their talisman is the discovery of an all-destroying projectile. An invention of wholesale slaughter thus becomes the dream of the philanthropists, and the infernal powers themselves are to be made ministers of peace. It would be a curious, and for mankind at large might prove an awkward, part of the discovery that it would invest its first possessor with omnipotence, and enable him to compel all nations, on pain of annihilation, to receive him as universal emperor. The London *Spectator*, in a paper discussing this vision at great length, pointed out that the improvement of weapons has so far resulted in a change of drill and tactics, without banishing or even diminishing war. It is certainly curious that the rate of slaughter, instead of keeping pace with the increased range and precision of firearms and artillery, should have remained stationary, as it appears to have done, or rather has diminished. The rifled breechloader does nothing like the execution which was done by the bow. At Crecy the French dead were counted by heralds on the field, and their number exceeded thirty thousand. This was mainly the work of, according to Froissart, five thousand two hundred archers. At Batoche, we are told, nineteen thousand rounds were fired, by good marksmen, besides Gatling ammunition and shells; and the number of killed and wounded on the side of the half-breeds was about thirty. Batoche was not a normal case, it is true, because the enemy were in rifle pits; but still the contrast is striking. The archer was not confused by smoke and noise, nor could he discharge his arrow without drawing the bow to his ear and taking some sort of aim, while many soldiers in a modern battle are said not to bring the rifle to the shoulder or take any aim at all. But we must wait for a great sea fight before we make up our minds what effect scientific invention is likely to produce on war. From naval war at all events all the romance, all the pride, pomp, and circumstance, which largely stimulated the martial spirit, must now have fled. We shall see whether the souls of men are to be fired by the prospect of what Farragut called going to—the nether world—in a tea kettle.

Some Profitable Work for Inventors.

Among the present wants of American railroads is some cheap and effective means of killing weeds and grass that cover the tracks and roadbed on all roads that are not ballasted with rock. Grass is a serious hinderance to ordinary track repairs, and greatly impedes trains by being crushed on the rails and destroying adhesion. This renders it necessary to remove weeds and grass with shovels or implements made for the purpose, either by cutting or digging over the surface of the roadbed. Trackmen are frequently compelled to devote considerable time to removing grass before they can attend to needed repairs, and it is an expensive operation.

It is well known that steam will kill vegetation, and it would not be a difficult matter to arrange a boiler so as to saturate the track or roadbed between, and a proper distance outside the rails, to keep a clean track. Locomotives hauling trains have no steam to spare for the purpose of killing grass, and one that has been retired from regular service might be fitted up to keep a clear track by steaming the roadbed. Something of the kind has been attempted, but the field is open, and is an inviting one for inventors.

What is required is boiler attachments so arranged that the steam may be used effectually and economically, the details of which attachments may be readily worked out by any practical mechanic or engineer.

Other ground that has been partially worked over, and still offers tempting inducements to inventors, is to provide some reliable means of preventing rear collisions of trains. The causes of this class of collisions are various, and the results are usually serious, and to prevent them requires the exercise of a considerable amount of ingenuity, but effective means of preventing this class of accidents are within the reach of American inventors. Darkness, foggy weather, and blinding snow storms render it unsafe to rely on other than audible signals. Disabled trains that are closely followed by others usually fail to signal following trains in time to prevent disaster. Sending back signal men on stormy nights is usually a failure, and mechanical appliances must be resorted to for reliable means of signaling. Explosives in the shape of torpedoes are the most reliable signals, and it is here suggested that a small wire cable may be stretched the entire length of the line, connected at proper intervals with torpedoes, and so arranged that a slight movement of the wire will place an explosive on the rail. Of course the cable must be made in sections, and so arranged that in case of a stalled or otherwise disabled train, or from any cause it is desired to signal a coming train, a man may place the signal in either direction without consuming valuable time in going to a safe distance to place it. This can be accomplished by being provided with a small lever and grip arrangement that will grasp the cable and grip the rail for a fulcrum. By this means a signal may be operated from almost any point with little or no travel and loss of time when even seconds are precious. These sections of cable will need springs or counterweights to return the mechanism back to place when the signal has performed its service. Track men can see that torpedoes are kept ready attached for use in any emergency. Such an appliance can be made to work automatically at railway crossings, switches, and drawbridges. Some expensive signal apparatus is in use at draws, etc., but frequent accidents show them to be unreliable, and inventors will do well to produce simpler, cheaper, and more reliable signal apparatus than is now in use. Accidents at highway crossings continue to be frequent, notwithstanding the various devices that have been put on trial as danger signals. Some of these are considered reliable, but are regarded as too expensive for general adoption. A cheap, simple, and reliable crossing signal is in demand. And there is a rapidly increasing demand for cheap and reliable power brakes specially adapted to freight trains; and those now in use on passenger trains may be greatly simplified and reduced in cost, and other objectionable features removed. Many of the safety railway appliances that have been recently brought out, while they have more or less merit, are objectionable on account of cost, complication, and liability to derangement, expensive repairs, and general inconvenience in every day practice, and several serious accidents within the past two years resulting from failures of the best brakes in use is evidence that more reliable brakes are needed. The present demands of railway traffic call for heavier trains and higher velocities, and a fresh field is opened to inventors, both for producing new safety appliances and improving those now in use.