

FOREIGN INTELLIGENCE.

At the Academy of Sciences, Paris, on the 7th inst., a communication was read by M. Weil, "On New Processes for Covering Metals with Firmly Adherent and Bright Layers of other Metals." The method consists in dipping the metal to be coated in a saline solution of the metal to be deposited, rendered distinctly alkaline with potash or soda, and mixed with some organic matter, such as tartaric acid or glycerine. At the same time, it is necessary in some cases to set up a weak voltaic current by keeping a piece of zinc or lead in contact with the metal. In this way the author obtains a firm layer of copper or iron and steel, and procures various and beautiful effects according to the thickness of the copper deposited. Silver, nickel, and other metals can be applied in the same way. The process, it will be seen, is susceptible of numerous applications. A curious fact mentioned is that a clean surface of copper may be coated with zinc by placing the two metals in contact in a solution of caustic soda or potash. In the cold the deposit of zinc takes place slowly, but at 100 degrees, it is effected rapidly.

THE GORILLA.—A letter from M. du Chaillu to Sir Roderick Murchison was read, in which he stated that he was about to proceed into the interior of Africa. He purposed pursuing the line of the equator, until he came to some large river flowing northwards, which he intended to follow till it reached the Mediterranean, and he hoped in that manner to come to the mouth of the Nile. He was taking with him one hundred people, forty of whom would be employed in carrying his guns and ammunition, of which he hoped to make great use. He said he had caught three gorillas, which he intended to have sent alive to this country, but two of them had died. The other had been shipped to England, and he hoped it would arrive safely. He had forwarded also some fine skeletons of gorillas, and many other specimens of natural history.

A NEW MATCH.—A lucifer match is now in the market that differs from anything hitherto in existence. Upon the side of each box is a chemically-prepared piece of friction-paper. When struck upon this, the match instantly ignites; when struck upon anything else whatever, it obstinately refuses to flame. You may lay it upon a red-hot stove, and the wood of the match will calcine before the end of it ignites. Friction upon anything else than this prepared pasteboard has no effect upon it. The invention is an English one, and, by special act of Parliament, the use of any other matches than these is not permitted in any public buildings. The discovery is a curious one. There is not a particle of sulphur in the composition of the lucifers in question.

STEEL WIRE ROPE.—Some important experiments were lately made with galvanized steel wire ropes at the Dock Testing Works, Birkenhead. The testing showed the following extraordinary results— $4\frac{1}{2}$ -inch steel wire rope, 57 tons cwt., the Admiralty test for charcoal wire of this size being 24 tons 8 cwt.; $3\frac{1}{2}$ -inch steel wire rope, 24 tons 6 cwt., Admiralty test for charcoal wire of this size, 13 tons 10 cwt.; $2\frac{3}{4}$ -inch steel wire rope, 19 tons 6 cwt., Admiralty test for charcoal wire of this size, 8 tons 11 cwt.

INDESTRUCTIBLE WRITING.—Lucas proposes for this purpose an ink composed of 20 grains of sugar dissolved in 30 grains of water, to which is added a few drops of concentrated sulphuric acid. Upon heating this mixture the sugar becomes carbonized, and when applied to the paper leaves a coating of carbon, which cannot be washed off. This stain is rendered more permanent by the decomposing action of the acid itself upon the paper, and thus made, it resists the action of chemical agents. The paper should, after drying, be passed through a weak alkaline solution to remove excess of acid.

TEMPERATURE OF HOT SPRINGS.—The most celebrated hot springs of Europe, such as the Aix-la-Chapelle, Baden-Baden, Naples, Auvergne and the Pyrenees, have not declined in temperature since the days of the Romans, for many of them still retain as great a heat as is tolerable to the human body, and yet, when employed by the ancients, they do not seem to have required to be first cooled down by artificial means. This uniformity of temperature has been thus maintained for some two thousand years.

MR. VAN WINCKLE, a scientific American engineer, recently attended in the factory department of Woolwich dockyard, by permission of the Lords Commissioners of the Admiralty, and submitted to the inspection and trial of Mr. Trickett and the officers of the department a portable drilling machine, to be used with advantage in punching rivet holes in ships' boilers. The machine was put through a succession of tests by each of the officers present, who admitted its great efficiency and superiority over any other apparatus which had been brought to their notice.

WENT OFF IN A FLASH.—A pyrotechnist who was sick, and knowing that he could not live long, caused his workmen to make a series of candles, which after burning a short way, as usual, would suddenly reach a stratum of pyrotechny and go off in the best style. These candles were given to the priests who at the funeral services were to sing Gregorian chants around the corpse; and while engaged in this solemn act the fireworks went off with full brilliancy, to the great consternation of the ecclesiastics.

GREAT BRIDGE OVER THE SEINE.—The West of France Railway is having constructed for a direct line from Rouen to the Paris and Cherbourg line a great bridge over the Seine. The bridge reposes on five cast-iron piers, the distance between these being 166 feet, so that the total length of the bridge is 933 feet. It is constructed for two lines, and is about 45 feet in width. The contractors are the Creuzot Works.

The Goodyear Patents Again.

The Washington correspondent of the *Herald* states, that the question of extending the Goodyear India-rubber patents is already revived, and that the lobby is expected to be in full blast immediately after the holidays. An effort was made last year to steal it through unnoticed. The lobbyists imagined that they had so covered their tracks, that they would not be discovered until the committee reported in favor of it, and the bill providing for its extension was placed upon its final passage, with a sufficient number committed to the measure to carry it through. But in this they were disappointed. This year the advocates of that scheme are confronted at the outset with the opponents of the measure. It may, therefore, be said that the *pros* and *cons* of this scheme are on hand. The latter are exceedingly sanguine that they will be able to defeat the schemes for extending the exclusive privilege of the owners of this patent to add millions of dollars to their large fortunes at the expense of the public generally. There is, however, every indication of an interesting controversy. The owners of the patent are making a desperate effort.

Comparative Strength of Liquors.

Dr. Jones, physician of St. George's Hospital, London, in a recent lecture, stated that the different fermented liquors which he had examined might, in regard to their strength or stimulating power, be thus arranged:—

Cider.....	100	Claret.....	166	Marsala.....	341
Porter.....	109	Burgundy..	191	Port.....	358
Stout.....	133	Hock.....	191	Sherry.....	358
Ale.....	141	Champagne	241	Geneva.....	811
Moselle.....	158	Maderia... 325	Brandy.....	986	
Rum.....	1243				

Thus ten glasses of cider or porter, six glasses of claret, five of Burgundy, four of Champagne, three of sherry, are equivalent to one glass of brandy, or three-quarters of a glass of rum. The reader must always bear in mind, however, that of the large amount of brandy, so-called, sold in liquor shops, but very little is pure brandy.

PETROLEUM STOCK Companies are increasing so rapidly that it has become a troublesome matter to find names for them. We have now the Cosmopolitan, Rennekoff, Huidekoper, Inexhaustible, Maple Shade, Radiant, Revenue, Allegewi, Brilliant, Diamond, Big Tank, Tarr, Tack, Blood, Tarentum, Tidoute, Tionesta, Organic, Van Buren, Buchanan, Webster, Pit Hole, Horse Neck, Oak Ball, Sled Ford, and so on through a vocabulary of probably, by this time, five hundred different organizations.

We suggest to the refined petroleum Oil Stock gentry, that a committee ought to be appointed at once to hunt up new names. The list will soon run out—at the rate things are going.

MR. DODGE ON BREECH LOADERS.

The following private letter was addressed by Mr. Dodge to a friend in this city, and was not designed for publication; but labors so patriotic, so long continued, so wisely directed, and finally crowned with such triumphant success, should have at least the meed of recognition; we therefore take great pleasure in laying the letter before our readers.

FRIEND V—S—: When the present infamous rebellion first broke out, a few earnest men of the nation, seeing and realizing the tremendous advantage to be derived from the use of breech-loading fire arms by our troops, set earnestly to work, to advocate their adoption by the Government, and their introduction into our armies. These efforts were put forth by the different parties, without any concert of action or understanding—each operating in his own locality, and through such mediums as most readily presented. Among those who joined heart and soul in this effort was myself, as the various articles in the *SCIENTIFIC AMERICAN*, signed "RIFLEMAN," and dating back as far as 1861, witness. Not only did I write upon the subject, but I talked it at all times and to all persons, from citizens to senators, until it became a common saying among my friends, that I had "breech-loaders on the brain." So profoundly impressed did I become with the importance of the matter, that in the latter part of 1863 I employed all my leisure time, day and night, in hunting up all the testimony I could find, both at home and abroad, published or unpublished, in favor of breech-loading arms. I visited hospitals and camps, conversing with men and officers, and addressed letters to nearly all the commanding officers in the field. The testimony thus accumulated I embodied in a pamphlet Memorial to the Secretary of War, published at my own expense, and distributed it gratuitously among government officials from President down. By many these efforts were sneered at, as being the work of an enthusiast; and even some officials—mentally small men, made temporarily great—in their own estimation—by being clothed "with a little brief authority," did not hesitate to denounce my efforts as being "in very bad taste," to say the least.

Without arrogating to myself any special credit in the matter, or being vain enough to suppose that my efforts did much toward accomplishing the desired result, in common with those who thought as I did, I now have the satisfaction of knowing that, at last, the idea has prevailed, and breech loaders are triumphant. Not only have a large number of regiments been armed with them, but the Government has recently given a contract for making no less than seventy thousand of the Spencer Magazine breech-loader, and has also contracted for large numbers of single breech-loaders. More than this, a board of officers is ordered to convene at Springfield on the 4th of January next, to determine upon, and recommend for adoption, the best kind of breech-loading gun and carbine, and also the best style of Magazine gun. It is to be presumed, therefore, that the Government has finally concluded to abandon the manufacture of the old fashioned muzzle loaders, and to adopt in its stead, a breech-loader—surely a most important step, and in the right direction. Thus my prediction that the muzzle loader would eventually be superseded by the breech-loader, and the former be found only in the museums and shops of curiosity-mongers, seems likely to be realized much sooner than even I then had reason to hope. What a pity that the Ordnance Department had not sooner been placed under the control of its present progressive head; the nearly half million muzzle loaders now lying idle in our armories and depots, would then have been made breech-loaders instead, and our entire armies have been provided with them. Had that been done we should have had far more such glorious victories as those of Sheridan, Sherman and Thomas, and the nation could have been saved thousands of lives, and millions of treasure.

In the mean time, the papers inform us that the entire French army has been armed with the Prussian rifle—the needle gun—which is also a breech-loader; and that the English Government has advertised for proposals for changing the Enfield rifle to a breech-loader, for their army. Thus it will be seen that we have not moved any too soon in the matter,