## Correspondence.

### A Meteor in Mexico.

*To the Editor of the Scientific American:*

On the 7th instant, at about two o'clock in the afternoon, as I was writing in my office, I heard a rushing noise in the air exactly like that made by a sky-rocket as it ascends in the air. I could see nothing, as I was then inside of the house, but other persons, who heard the noise, informed me that they saw a ball of light, which traversed the sky from east to west. The sky was clouded at the time, and it was drizzling, and a heavy wind was blowing from the north. I suppose this must have been a meteor, and that it fell somewhere near here.

CHARLES WINSLOW, *United States Consul.*

United States Consulate, C. Guerrero, State of Tamaulipas, Mexico, March 10, 1883.

### How to Make an Æolian Harp.

*To the Editor of the Scientific American:*

Apropos of your recent article on the subject, perhaps some of your readers may be interested in knowing how to make an Æolian harp as cheaply as possible.

It consists, when finished, of a thread held taut just above the long narrow opening at the middle of an ordinary window, by two wedges pressed firmly down between the upper and lower sashes.

The thread may be from eighteen to thirty inches in length, and may be fastened by making a knot in the end and drawing it into a longitudinal split in the top of the wedge; and sufficient tension may be obtained by separating the wedges to the proper distance while pressing them down.

Enough air will come up through an opening one-sixteenth inch wide to operate the harp, provided the wind is blowing against that side of the house.

Several threads may be fastened between the same pair of wedges if desired.

Any kind of thread may be used, and, for a louder tone, a fine wire may be substituted for the thread.

To the young physicist and musician this simple monochord will be a help in the study of harmonics.

S. F. P.

East Chatham, N. Y., March 5, 1883.

### The Egyptian Obelisk in Central Park.

*To the Editor of the Scientific American:*

During a recent visit to New York, I took occasion to examine the obelisk in Central Park, and the opinion I formed is so at variance with the general and accepted one in regard to its construction, that after several days' reflection on the subject, I have determined to write you. I have been looking up in the SCIENTIFIC AMERICAN SUPPLEMENT (of which I have a copy of every issue), and I find in February, 1881, you wrote up the whole thing, giving illustrations, etc. In that article you also state that the obelisk was taken from certain granite quarries, thus showing it to be a natural stone. Yet in spite of all this, to me, excellent authority, I cannot believe it to be a natural stone, and I want to give you my reasons for so thinking, and if you find enough in what I have to say to induce you to take any notice of it, whether to substantiate or upset my theory, makes no difference; I only want to get at the facts. My reasons for believing the obelisk to be a mass of concrete are as follows:

I have spent a lifetime in the manufacture of limes and cements, and in the study of mortars, concretes, etc., and after thirty years spent in this line, it seems as though I ought to know concrete when I see it.

I went around on the back side of the obelisk, climbed over the wire fence, mounted the masonry work, took out a strong magnifying glass and a sharp pointed steel, and went at it.

I could see what looked at a distance to be a gray, reddish, uniform tint, was, on close inspection, granite broken into pieces from the size of a walnut down to corn or wheat size, and these broken stones were intimately mixed with some bituminous matter, black and seamy, something of the nature of asphaltum. The black substance and broken stone were thoroughly mixed with hydraulic lime; by the latter I do not mean hydraulic cement, but lime which contained sufficient clay to render it hydraulic, but not enough to prevent it from slaking if kept under water eight or ten days. The hydraulic lime is light in color, with a slight yellowish tinge peculiar to all true hydraulic limes; such limes withstand the action of the weather much better than the best Portland cements. With my steel point I could plow out this hydraulic lime, and with my knife I cut and shaved the black substance, which lay in all conceivable ways, the grain in some bits presenting their flat sides, sometimes their ends, sometimes vertical, sometimes horizontal, showing it to have been mixed up with the lime and broken stone haphazard. The lime showed in such thin streaks that it is evident that the men who had made the obelisk knew how to make concrete. I think, if I had had time enough and no policemen to nose around and bother one, I could have taken out a bit of granite with my steel.

The hieroglyphics show, as plain as anything can show, that they were formed by fastening the proper forms on the inside of the box into which the concrete was rammed, and when the concrete had hardened sufficiently, the boxes were taken away, and the patterns of the hieroglyphics were withdrawn, leaving their impression on the face of the concrete, exactly as is done every day by manufacturers of artificial stone. Such work cannot be mistaken for work done by the chisel by any one familiar with that class of work. Every letter is made to "draw," and in no place could I find a spot among all the hieroglyphics where a pattern would not "draw." Such a structure, made in concrete as I have described, could be safely carried up at the rate of from 12 to 15 inches per day, and so positive am I that it is concrete, that I would not hesitate to enter into a contract to erect exact duplicates of it in any city for $15,000 each. I think I can find granite in Connecticut of the same color, the bituminous matter in New York, and the hydraulic lime in Buffalo, and with these make just as good obelisks as were ever turned out in Egypt. As to the durability of the obelisk in Central Park, of which much has been written lately, I think it will stand for ages where it is. Some portions may get loose that were not perfectly cemented, but as a whole the material is of that class that will outlast anything else we have. If it were Portland cement or Roman cement in the place of the hydraulic lime, I should say it would disintegrate in a few years, but not so with the true hydraulic lime, of which that in the obelisk seems to be an excellent type.

U. CUMMINGS.

Buffalo, N. Y., March 8, 1883.

### New Photo Printing Process.

At a recent meeting of the Photographic Society of France, the chairman informed the members that a letter had been received from MM. Ch. Cross and Verger concerning a photographic process which these gentlemen had presented at the last meeting of the Academie des Sciences. The inventors of this process obtain direct positives by the following means: Paper properly starched is floated on a bath composed of—

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| Water | 100 parts. |
| Bichromate of ammonia | 2 " |
| Glucose | 15 " |

When dry it is exposed to light under an image forming a positive. As soon as those parts of the paper unprotected by the *cliché* have changed their color from a yellow hue to a grayish tint, the exposure is deemed to be sufficient. The paper is then floated upon the following solution:

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| Distilled water | 100 parts. |
| Nitrate of silver | 1 part. |
| Acetic acid | 10 parts. |

The image will appear immediately of a blood red color, being composed of silver chromate, which, being insoluble in water, permits the paper to be well washed in order to eliminate all the bichromate unacted upon by light.

On every part of the paper upon which the chemical influence of light has acted the bichromate has become reduced, accelerated by the presence of the glucose; therefore every part or shade of the *cliché* will be faithfully represented. If the paper be dried before a fire and in the dark, the image will be of a blood red color; if dried in the open air, the light will change the color to a dark brown tint; if exposed to the emanations of hydrosulphuric acid, or plunged into a solution of sulphite of copper and potash, the image will turn to a brownish black hue.

### A Monarch of the Forest.

H. Tabor & Sons, Manistee, Mich., write that they recently cut a pine tree, at their camp in Section 21, Township 25, Range 5, on the Big Manistee River, that was 164 feet long, 100 feet from the ground to the first limb, and as round as a dollar. Eight logs were cut from it that measured as follows:

| Length, feet. | Diameter, inches. | Scale, feet. |
|---|---|---|
| 16 | 42 | 1,444 |
| 16 | 41 | 1,369 |
| 16 | 41 | 1,369 |
| 16 | 39 | 1,225 |
| 16 | 37 | 1,089 |
| 16 | 36 | 1,024 |
| 14 | 29 | 547 |
| 16 | 25 | 441 |
| Total, 126 | | 8,508 |

It would seem that 8,508 feet is about enough for the logs of one tree to measure, even if none of them got away; but in this case the returns are imperfect, from the fact that the log, which would have made two more logs, was so badly broken as to render it of no value. Tabor & Sons are of the opinion that this is the largest tree ever cut on the river. —*Northwestern Lumberman.*

### Ethylene in Refrigerating.

Cailletet's experiments show that ethylene is liquefied under the following pressures and temperatures:

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| 60 atmospheres | 10° C. | 50° F. |
| 56 " | 8° C. | 46·4° F. |
| 50 " | 4° C. | 39·2° F. |
| 45 " | 1° C. | 33·8° F. |

Its critical point is about 13° (55·4° F.), while that of carbonic acid is about 31° (87·8° F). These properties induced him to see whether liquefied ethylene would not give a more intense cold than that which corresponds to the ebullition of protoxide of nitrogen. By slightly modifying the apparatus which he used for liquefying oxygen, he succeeded in producing a more intense cold than had been previously realized. Ethylene, moreover, possesses the property of remaining liquid and transparent under temperatures at which nitrogen protoxide and carbonic acid become solid and opaque. He hopes to obtain still greater degrees of cold by condensing gases which are more difficult to liquefy than ethylene. —*Comptes Rendus.*

### Green Bearded Oysters.

For some time past it has been reported that the oysters taken from the Shrewsbury River beds were diseased and afflicted with what is known as "green gill." Mr. Eugene Blackford, one of the New York Fish Commissioners, has had specimens of these oysters examined under the microscope by Prof. H. J. Rice, of this city, with the following result:

He found that the digestive organs of the oyster were filled with minute fragments of marine plants, or algæ. The presence of this substance gave the mouth or beard of the oyster a greenish hue. The body of the bivalve was of a natural color. It had been feared that this peculiar appearance was due to the contact of the oyster with copper in some form, but the experiment showed that this could not be the case. In Europe green oysters are very common, and careful experiments have been made there by Professor Sullivan to discover the cause. He analyzed the mud from which they were taken, but did not find any indications of the presence of a metallic substance. He then placed some oysters in a solution of copper and found that they readily assimilated it. Its presence was detected by the body assuming a bluish-green appearance, while the beard remained of its natural color. When the oysters were fed on algæ, the beards gradually turned green without the rest of the body being affected.

On being provided with their natural food, which principally consists of microscopical organisms known as diatoms, the mantle returned to its ordinary color.

Mr. Blackford states that he had noticed the same thing in oysters coming from Virginia, and also that some taken from the vicinity of Staten Island were likewise affected, but that it was principally confined to the Shrewsburies.

The greenish tint has caused much prejudice against such oysters, but there does not seem to exist the slightest grounds for it. The green gill is not, according to the expert's report, the symptom of any disease; in fact, oysters seem to thrive that feed on algæ, which produces the objectionable color.

Mr. Blackford has made arrangements with Prof. Rice to examine daily the fish received at the Fulton Market, in this city, for the period of one year from the first of next June, and we look forward to some important discoveries as the outcome of these investigations. In the examinations the viscera of the fish will be removed and carefully dissected; the size, weight, time, and place of capture will also be noted. The mint and roe will be removed as well as the contents of the stomach, all of which will be subjected to the most careful microscopic examination.

Owing to much conflicting testimony as to the habits of the bluefish, striped bass, and other salt water fishes, satisfactory laws have not been passed for their protection, but Mr. Blackford expects that his investigations will result in establishing many facts in regard to the habits of our sea fishes which heretofore have not been known.

### Mortality of Paris.

According to the recent census, Paris has a population of 2,239,928. The total number of deaths for the week ending January 4, 1883, was 1,099, of which 306 were under five years of age. There is an erroneous popular opinion that very few births take place in Paris, but for the same week the number of births exceeded the number of deaths by 56, whereas in New York city the number of deaths generally exceeds the number of births. The number of legitimate births exceeded that of the illegitimate in the proportion of 852 of the former to 303 of the latter. In Heidelberg the average number of illegitimate births is about *one-third* of the whole number of births.

For the week ending November 23, the proportion of births to that of deaths was as 1,242 to 1,071, an excess of 171 births, while for the week ending December 14, the number of births showed an excess of 137.

The number of marriages is, however, small, ranging from 381 to 403 per week at the periods above referred to.

In all cases the death list shows a decided preponderance of males, the largest number being due to consumption, which is followed by cerebro-spinal meningitis.

### Concentrated Writing Ink.

A new article of manufacture in the shape of an ink paste has been recently introduced to the stationery trade. The ink is put up in packages of sheets of the composition, divided into squares, each of which squares, when immersed in about two thimblefuls of water, produces, it is said, a brilliant fluid flowing ink. About ten years ago a patent was obtained by a gentleman in this city for making an ink paste, of every variety of color, and this newly introduced article is probably the result of the ten year-old patent, which until now has remained comparatively dormant. There is almost always a time in the life of a patent when somebody will want it, if the demand for it comes slow at first.