

dred feet deep, perpendicular, than can be found by boring the same depth one hundred and sixty rods, or three hundred rods, back from the hill on the plain? For such is the fact; salt licks on the surface are found all through this western country, and generally at the edge of rising ground. Some of the largest of the licks are at the foot of the lowest hills; salt wells were sunk at these places to a great depth, and some in valleys, where strong licks were found, two hundred rods from the hills, which were not high, but without success. The wells were abandoned.

The citizens of this country have laid it down as an axiom, founded on experience of some ten or twelve years in the boring of the earth for salt water, to sink their wells at the brow of the highest hills, commencing on a rock, at the surface, if possible. No matter whether there is any appearance of licks, or of brackish water, within miles of the place. At the depth of from one hundred and seventy to eight hundred feet they obtain strong salt water, which gushes forth spontaneously, from some wells, six and ten feet above the surface, without being exhausted. In all cases the wells of the greatest depth, and at the brow of the highest hills, have discharged water with the greatest force. The hills are from sixty to two hundred feet high. When we take into consideration the depth of the wells, upon what principle of hydraulics shall we solve this problem?

There are now a great many salt wells, thirty or forty miles from this place, on the Muskingum River, near to Zanesville; and on Leading Creek, in the county of Meigs, several wells have been in operation for years, and make very beautiful salt, which sells at fifty cents per bushel.

I am, respectfully, your obedient humble servant,

NAHUM WARD.

[*Silliman's Journal.*]

On making Artificial Pearls.

[From the *Dictionnaire Technologique.*]

THESE are small globules, or pear shaped bulbs, blown in thin glass, and each pierced with two opposite holes, by which it may be strung. These are afterwards prepared in such a manner as to greatly imitate the rounded and brilliant concretions, reflecting the iridescent colours, which are found in certain bivalve shells, such as the pearl muscle, &c., and which bear the name of oriental pearls.

We can perfectly imitate the brilliancy and reflection of these natural pearls, by means of a liquid, termed essence of pearl, and which is prepared by throwing into liquid ammonia the brilliant particles which are separated by friction and washing from the scales of a small river fish, named the bleak.

These pearly particles, thus suspended in the ammonia, can be applied to the whole interior of these glass bulbs, by blowing it into them; after which, the ammonia is volatilized by gently heating them.

It is said that some manufacturers do not employ the ammonia; but instead thereof, suspend the pearly particles in a solution of isinglass, well clarified, and which they drop into the bulbs, and then turn them in all directions, in order to spread it equally over their interior surfaces. There can be no doubt, that in this mode of applying the pearly mixture, the same success will be obtained as in the before mentioned process, and that it will afford a layer of the same thinness and brilliancy.

It is important, to succeed in the perfect imitation of pearls, that the glass bulbs or pears employed should be of a slight bluish tint, opalized, and be also very thin, and likewise that the glass should contain but little potash, or oxide of lead. In each manufactory of these artificial pearls, there are workmen exclusively employed in the blowing of these glass bulbs, and which indeed requires a great skill and dexterity to succeed well therein; a dexterity, indeed, which can only be acquired by long practice.

The French manufacturers of these artificial pearls have at length attained a degree of perfection before unknown. We must add, that the bulbs are finally filled up with white wax. L**** R.

Alloy for the construction of Pumps and Cocks.

THIS alloy consists of 4 parts of tin, 4 of zinc, and 1 of antimony; these metals, when fused and well mixed together, have been found well suited to make good pumps. Cock metal is usually an alloy of lead, zinc, and antimony, to which more or less tin is added. The alloy described as good for pumps, is fit for cocks, but one to be mentioned is still better; of the two parts of a cock, viz. the box and plug, the latter should be harder than the former, and therefore contains more antimony. An alloy of 80 parts of tin, with 20 of antimony, is well suited for the plug, and one consisting of 86 parts of tin and 14 of antimony, for the boxes of cocks.

[*Industriel de Bruxelles.*

Query respecting Mexican Plumbago.

TO THE EDITOR OF THE JOURNAL OF THE FRANKLIN INSTITUTE.

At page 128, vol. vi. of your Journal, I find in an interesting article on the manufacture of melting pots, &c. the following observation: "the plumbago is Mexican." I should like to know from what part of Mexico it proceeds. Inquiries made from various persons, induce me to believe that plumbago is not an article of exportation from Mexico, and that no mines of it have yet been worked in that country. If any of your readers can set me right, I hope they will do it.

Yours, respectfully,

X.