

precipitate it with a pugil (a quantity that may be taken up between the thumb and finger) of salt, then strain it through a paper, and the remainder melt in a crucible for about half an hour, and pour it out, and it will be transparent.

Mercurial Plating.—Quicksilver 4 parts; nitric acid 4 parts; finely powdered cream of tartar 2 parts; finely powdered salt of sorrel 1 part. Dissolve the silver in the acid, then add the rest, and stir until dissolved. This imparts a pleasing silvery appearance to articles formed of copper, by merely applying it with the finger.

Grecian Gilding.—Take sal-ammoniac and bichloride of mercury, equal parts, dissolve in nitric acid, and make a solution of gold with this fluid, lay it on the silver, and expose it to a red heat; it will then be gilded.

To Gild or Silver Writing.—Let there be a little gum and lump-sugar in the ink you write with; when dry, breathe on it and apply the leaf.

To Gild Steel.—Apply an ethereal solution of gold. This is equally adapted to lettering, as wholly covering the object. It may be applied with a pen, or otherwise.

Miscellaneous.

Mummy Wheat.

The *Presse Scientifique des Deux Mondes* contains a description of a series of experiments made in Egypt by Figari-Bey on the wheat found in the ancient sepulchres of that country. A long dispute occurred a few years ago, as to what truth there might be in the popular belief, according to which this ancient wheat will not only germinate after the lapse of three thousand years, but produce ears of extraordinary size and beauty. The question was left undecided; but Figari-Bey's paper, addressed to the Egyptian Institute at Alexandria, contains some facts which appear much in favour of a negative solution. One kind of wheat which Figari-Bey employed for his experiments had been found in Upper Egypt, at the bottom of a tomb at Medinet-Abou, by M. Schnepf, secretary to the Egyptian Institute. There were two varieties of it, both pertaining to those still cultivated in Egypt. The form of the grains had not changed; but their colour, both within and without, had become reddish, as if they had been exposed to smoke. The specific weight was also the same—viz., twenty-five grains to a gramme. On being ground they yield a good deal of flour, but are harder than common wheat, and not very friable; the colour of the flour is somewhat lighter than that of the outer envelope. Its taste is bitter and bituminous; and when thrown into the fire, it emits a slight but pungent smell. On being sown in moist ground, under the usual pressure of the atmosphere, and at a temperature of 25 degrees (Reaumur), the grains became soft, and swelled a little during the first four days; on the seventh day their tumefaction became more apparent, with an appearance of maceration and decomposition; and on the ninth day this decomposition was complete. No trace of germination could be discovered during all this time. Figari-Bey obtained similar negative results from grains of wheat

found in other sepulchres, and also on barley proceedings from the same source; so that there is every reason to believe that the ears hitherto ostensibly obtained from mummy wheat proceed from grain accidentally contained in the mould into which the former was sown.

New Water-pressure Engine—“Steam Super-seeded.”

“At the Water-works office, in Wolverhampton, England, according to the local chronicle, a hydraulic engine is doing the work of a steam-engine in the most complete and satisfactory manner. It is the invention of Mr. Henry James Lewis, a practical engineer. Its mechanism in appearance is much the same as that of the steam-engine, with the exception that it has two globes or air-vessels upon the cylinder. The action is very simple. The water is supplied to the engine from the main by means of an ordinary pipe, and can be turned on or off by means of a common stopcock at pleasure. When the engine is about to be set to work, the water is allowed to pass into a chest or nozzle, within which is a slide-valve, the same as is used in a steam-engine. The water, having filled the nozzle, rushes through the passage that is not covered by the slide-valve into the cylinder, forcing the piston along with it, at the same time compressing the air in one of the globes or air-vessels until the slide-valve shuts the passage; when the air that is now compressed in the one globe, by giving a certain amount of elasticity to the water acting on the piston, enables the crank to continue its motion. After the valve has covered the one passage, preparatory to opening the other passage for the return stroke of the engine, the same process is repeated. The rectilinear motion is converted into a rotary motion by means of a connecting rod and crank, and applied to the purpose for which it is required by ordinary pulley bands.—*The Builder.*”

A Martyr to Science.

It is with real pain that we have to announce to our readers the death of Mr. Lucas Barrett, the distinguished naturalist, who was accidentally drowned whilst investigating the structure of some coral reefs at Port Royal, Jamaica. All who visited the Jamaica Court at the International Exhibition will remember the enthusiasm and painstaking kindness with which this gentleman was ever ready to show and explain the various mineral and geological specimens collected and exhibited by him. Although one of the most active of the Jamaica Commissioners, he still found time to officiate as one of the local secretaries of the British Association, besides keeping a term at Cambridge. Before returning to Jamaica to renew his researches as one of the chief members of the West Indian Geological Survey, he ordered a diving dress and pumping apparatus of the latest and most scientific construction, for the purpose of personally examining the rocks and coral reefs lying in the neighbourhood of most of the West India islands. He first tried this dress at Port Royal, on December 17, in shallow water, and was so well pleased with the result that he determined to give it a trial in deeper water. Two days afterwards he took with him his servants and boat's crew, all of whom were negroes,