proves that the fruiting buds of the pear do not invariably require *three* years for their perfection, since the bud, naturally the most productive on the tree in question, could not have been visible, at farthest, before the middle of last summer. As the pears are now from five and a half to seven and a half inches in circumference, I consider them as past all danger of failure, or rather, that they will only fail through the application of violence. Three are in a line within the space of twelve inches near the centre of the tree, and one is on a branch which I considered, at the time of the operation, to be the most unlikely to succeed, as being in the most exposed situation.

Whether the result of the above detailed experiments be such as to authorize an expectation that artificial assistance in vegetable fecundation will hereafter become of so much importance to gardeners in the instances just alluded to, as in those at present recognised, of the cucumber, the melon, the early bean, and the hautbois strawberry, must be left to futurity to ascertain.

Report on the Prize for the Manufacture of Scented Russian Leather.

By M. MERIMEE.

[From the Bulletin de la Société d'Encouragement.]

GENTLEMEN, considerations, dictated by prudence, determined you to require a year's trial before adjudging the whole prize offered for the manufacture of odorous leather, possessing all the qualities of Russian leather. The time of trial is elapsed, your hopes are realized, new efforts have produced improvements, and France is now in possession of a process which was a desideratum to our industry.

When your committee verified the experiments of Messrs. Grouvelle and Duval-Duval, it was remarked, that particular precautions were necessary in order to be able to impregnate the skins, without staining them, with the empyreumatic oil, which renders them odorous. That oil, as it was then obtained, was fat, and very much coloured. The method of distilling it has since been improved. The oil obtained at present is much thinner, and colours so little, that moroccos of the clearest shade may be strongly impregnated with it without losing any thing of their brightness.

Deceived by experiments which he had not had time to carry far enough, M. Grouvelle had asserted, in the memoir which he drew up, that the aromatic scent of birch-oil does not exclusively proceed from the resin to which M. Chevreul gave the name of *bétuline*. The observations of your committee have induced him to make new experiments, which have led him to find out, that if the epidermis of the birch still affords scented oil after a long digestion in alcohol, it is because the last portion of the resin adheres so to the tissue of the epidermis, and cannot be removed completely. M. Grouvelle,

in a note addressed to your committee, declares, that he is now persuaded that the aromatic odour of birch-oil is produced by betuline, and he has determined the proportions of them approximately.

He has, moreover, at our request, verified an observation which we had made last year, and which explains the difference observed between the leathers newly prepared and those of Russia.

We had thought that we discovered in some Russian leather, bought in England, a mixture of the smell of cedar-wood. In consequence, we distilled some cedar saw-dust, hoping to find, in the product, the same odour that is disengaged when a little of this wood is thrown upon live coals. We were deceived in our expectation; for we obtained only pyrolignous acid and a very thick oil, smelling only of tar. However, a piece of leather impregnated with this oil, lost that disagreeable odour in the air by degrees, and after some months, the aroma of the cedar remained alone, nearly without mixture.

This fact explains why leather prepared recently has not the same smell as Russian leather, which does not reach us till long after it has been manufactured. The birch-oil retains, always, a little pyrolignous acid and tar. Both evaporate in the air, and then the smell of the leather is as pure as it can be.

In Fischerstroem's memoir on the *juchten* or Russian leather, a memoir from which an extract was inserted in the Bulletin for November 1822, it is said that if only the bark of the willow (*saule*) or poplar is employed, instead of oak bark, which has much greater energy, it is because the oak does not grow in high northern latitudes. We have, in many of our forests, oak in abundance; but it grows slowly, and is not found in every part of France. Poplar bark might, therefore, as we have observed, be employed with advantage, and the only effect of such a tannage would be, to give the leather a scent, which would cause it to be preferred: now this quality is not to be disdained, for in Italy the smell of our French leather appears generally insupportable.

With this view, another tree may be mentioned, not very common at present, but which is easily inured to the climate, the tulip-tree. Its bark diffuses a very agreeable spicy odour, and contains a great deal of tannin; therefore there is good ground for believing that leather prepared with the bark of the tulip-tree, would retain a part of the perfume which it exhales.

[TO BE CONTINUED.]

Answer to the inquiry of a Subscriber, in the last number, respecting the best method of raising water from a well fifty feet deep. By
S. V. MERRICK, Hydraulic Engineer.

Philadelphia, March 1, 1829.

MR. EDITOR,—A subscriber, in your last number, requires the best mechanical method of raising water from a well fifty feet deep, for domestic and culinary purposes.