

## SCIENCE AND ART.

At a recent meeting of the Academy of Sciences at Paris, M. Arago read a long extract from a memoir by M. Boucherie, of Bordeaux, on the preservation of wood from decay, on the keeping of it in a state of greater or less humidity and elasticity, and on the colouring it, by the injection of pyroligneous salts, and other saline or metallic substances. M. Boucherie recommended, as the result of his experience of several years' experimentation, the pyrolignite of iron, as one of the cheapest substances, and one of the most effectual for exsiccating timber, and for changing into insoluble substances the humid and soluble matters that always remain even in the longest dried wood. His method was to place a piece of timber, within forty-eight hours after it had been cut, into a pyroligneous solution, and the capillary action of the tubes of the wood immediately absorbed an immense quantity of the solution. Thus, a poplar-tree, twenty-eight metres in height, and forty centimetres in diameter, the foot of which was plunged in only twenty centimetres of pyrolignite of iron at 8°, was penetrated in every part by this liquid, and in six days had absorbed three hectolitres of it. It was not necessary that the tree should be kept upright for this absorption to take place, nor even that the tree should be cut down. M. Boucherie had found that by boring a hole through the tree, and making some lateral incisions with saws, and then, by forming a kind of trough round it, so as to allow of liquid entering the hole, the absorption went on with the same rapidity. The time for cutting trees to apply this method of injection to them, or for operating on them by means of incision, was the autumn, not the winter, as had been commonly recommended. All sorts of liquids could be introduced into timber by methods of this kind, except vegetable solutions, which many species of wood refused to absorb altogether; and, in general, the neutral liquids were drunk up more abundantly than acid or alkaline solutions. The central parts of all timber being more close in their grain than the outer parts, never absorbed so much liquid as the latter; and among the harder kinds of wood there was a remarkable difference of their powers of penetrability. Some kinds of oak were found to be penetrated to three quarters of their mass, others to only one-tenth. Branches of trees, the moment they were cut, commenced absorbing air, and M. Boucherie, by means of a simple apparatus, had ascertained that a branch would absorb five times its own volume of air. The method of injection was of use for preserving timber in a humid, and therefore elastic state; it was known that certain salts would preserve instead of destroy the soluble substances contained in timber, and the refuse-water from salt-pans had proved to be one of the most effectual substances for this purpose—a result of importance, since this water had always been considered useless. In order to prevent wood from shrinking, it was necessary that full two-thirds of the original moisture of the tree should be preserved in the timber; and by means of a deliquescent chloride, M. Boucherie had succeeded in producing the effect desired. Wood had also been made difficult to burn by the injection of an earthy salt; and two huts having been built, one of wood so prepared, the other of ordinary wood, and then set fire to, the former was only smothering with fire when the latter had been entirely consumed. Wood might be tinted by the injection of two liquids, one after the other, which, by their mutual action after absorption, produced a colouring matter: thus some wood had been dyed a magnificent blue, by allowing it to absorb successively a salt of iron and the prussiate of potash. This property of injection, by preserving wood from all attacks of insects, was stated by M. Arago as likely to be of immense importance in the French dock-yards, where the ravages of insects, especially the termites, were tremendous. At La Rochelle the insects had extended their ravages into the town, and forty houses had been more or less attacked by them; even the public record-office had not escaped from their ravages. In Paris, too, the new galleries of the Garden of Plants were stated to be much attacked in their timber-work by insects.

An ingenious improvement in the paddle-wheel of steam-boats has been invented by a blacksmith, of the name of Brown, resident in Dundee; consisting in having the paddle-boards rendered moveable, so that, by a simple machinery attached to the wheel, the boards enter the water perpendicularly, and remain so until they come out of it again. Three advantages are thus gained:—There can be very little or no back-water; by the oblique manner in which the boards enter the water as the wheel is presently constructed, each board has a considerable resistance to overcome before it arrives at a perpendicular position; whereas, by the present invention, it has no resistance to overcome, because it enters the water perpendicularly. Also, the present wheel can only have one board perpendicularly in the water; by this invention all that are in the water are perpendicular, and all engaged in propelling the vessel without having any retarding power from the wheel itself to overcome,—hence the additional rapidity must be considerable. It will cost very little more to construct a wheel on this plan, and the present wheels can be converted into the new construction at a small cost. The inventor intends applying his improvement to mill-wheels also.—*Port of Tyne Pilot*.

Dr. Simon, of Dover, has just succeeded in reversing the image obtained by the Daguerreian process which is known to re-produce the objects from nature in a contrary sense, viz., the left tower of a castle will be the right, and the right the left, on the drawing, which imperfection, however, can be obviated by parallel glasses, a new improvement in the Daguerrotype, by M. Lerebourg, of Paris. Dr. Simon has contrived a new galvanic trough, which he calls "Simon's Galvanic-Electro-Plastic Battery." It is exceedingly portable, and most effectual, and has by the galvanic electrotyping discovery re-obtained and fixed on a most beautifully polished surface of copper the view of Dover Castle, and re-produced it in its right sense. This new and beautiful discovery will, no doubt, attract the attention of the lovers and admirers of science, and of the fine arts. The science is only in its infancy, and promises the happiest results.—*Dover Chronicle*.

The machinery for working the scenes, drops, wings, and other portions of the scenic contrivances of theatres, designed by Mr. R. Macdonald Stephenson, of which a notice was given by us 18 months ago, when a model was exhibited by the inventor in Thames-street, has been erected in the new theatre of Miss Kelly, in Dean-street, Soho. What we said of the model, we can repeat of the actual machinery in its enlarged state. The machinery consists of teeth-wheels, fastened to the ends of horizontal and vertical bars, or strong rods of iron, which

are put in motion by means of windlasses worked by hand. The details of the machinery are simple, yet elaborate, and are so arranged that the whole works with great precision and truth, with little or no noise, and a vast saving of labour. The whole of the scenery, the traps, and indeed the whole stage itself, is worked at the theatre in Dean-street on this principle. The stage is capable of being sunk many feet below the platform of the foot lights, and elevated to its usual position, with ease and security. For the working of the scenes, four men are sufficient, so that by the introduction of this method, which is very ingenious, the stage can be kept clear for the *dramatis personæ*, and a vast deal of the confusion and noise, which is almost unavoidable behind the scenes of theatres in which the old plan is pursued, is got rid of. The whole arrangement is excellent, and is an immense improvement on the system usually adopted.—*Times*.

Some splendid velvet and tapestry carpets are now on view at the Egyptian Hall, Piccadilly. These exquisite specimens of art have been produced at the Royal manufactory of Aubusson, by Mons. C. Sallandrouze Lamornaix, and exhibit a combination of excellencies in colour, design, and fabric, such as, alas! the manufactories of England are as yet strangers to. Each carpet was wrought in one entire piece, and presents a picture, or rather a profusion of pictures, portrayed with a degree of taste and brilliancy which invite the touch as well as the sight to appreciate the peculiarities of effect—so soft, so delicate in texture, so rich and harmonious in colouring. The composition of the subjects have employed the pencils of Conder, Adam, Meynier, St. Ange, Fontaine, Sarsion, Vandael, and Bouche, and embody some of the most admired designs of the style of Louis XIV. and Louis XV. One elaborate oriental composition, the work of Ben Ifa, deserves especial mention. Another splendid work was (we are assured) designed from an original pattern by the Duchess of Sutherland, enlarged by Langlade. Again, we were pointed out two very beautiful tapestry panels, on manygold grounds, damasked, after a composition of Earl de Grey—one presenting emblems of peace and agriculture, the other love and war. We were also struck by the magnificent effect of the golden tapestry hangings and curtains fitted up in the *renaissance* style. But above all, it is truly admirable to behold the fine execution of natural objects—the shells and marbles, the foliage, fruits, and flowers—all brought out with their own vivid tints, and disposed in groups or garlands with a freedom and elegance highly pleasing and picturesque. There are many of the compositions only fit for palaces. We selected (in idea) a couple of exquisite hortensia borders, rich in wreaths and roses, dahlias, wild poppies, and so forth, developing the deep coquelicot tints for which the dyers of the royal manufactory are so famous, and which we should have liked to convert into bedside carpets. The price was only £60! However, there are all qualities and prices to suit all tastes and purses; and for those who attend to fashion as well as fancy there is a "Royal Album" to be seen, containing an immense variety of patterns, amongst which are all the magnificent designs executed for the crowned heads of Europe and their nobility. The tickets to obtain a sight of these treasures, may be procured upon application to M. Feuillet Dumas, 37, Golden-square.—*Post*.

*Suicide*, says the *Madras Herald*, is increasing to an amazing extent among the native community at Madras. Two cases per day are not uncommon.

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