LAKE, or LAQUE, a preparation of different substances into a kind of magistery for the use of painters, dyers, &c. One of the finest and first invented of which was that of gum laeca or laque; from which all the rest, as made by the same process, are called by the common name lacques. See LAC or LACEA.
We may observe generally, that all vegetable colours, which are soluble in water, are found to have a certain degree of affinity for some earths and metallic oxides. These combinations are called lakes. Thus, if a solution of alum is added to an infusion of madder, a mutual decomposition takes place, and part of the alumine falls down intimately united with the colouring matter of the madder: the separation is much aided by the alkali. They are chiefly of two colours only, red and yellow: the red owing their colour to madder, Barfil wood, or cochineal; and the yellow to the different yellow infusions used in dyeing. Both are generally used for water colours, and in oil painting as transparent colours. These pigments are almost invariably composed either of alum, or sometimes the solution of tin, and some other watery solution of a colouring matter.

Of the red lakes, that made with cochineal is the most beautiful, and of the greatest value. It is called carmine, from its being applied to imitate the colour of the fleh. For the method of preparing it, see COCHINEAL. See also CARMINE.

On the receipt for making carmine, introduced under the article COCHINEAL, a correspondent has made the following observation.

The carbonate of soda and alum, added in the first instance, would be mutually decomposed, and the alumine, with the colouring matter, would be precipitated with the dregs, which are afterwards separated from the clear liquor; so that when the white of egg came to be added, the earth of the alum and a portion of the colouring matter, laid to be carried down by the alumine, cannot be present. Should the procefs here given have any analogy to that which is practised, it would appear that the solution of cochineal in water has the white of egg added to it, in the first instance, if it is at all necessary, for the purpose of clearing the coloured solution, a property for which that sub stance is remarkable. That after the liquid becomes clear, and is separated from the dregs, the carbonate of soda and alum are added, when a precipitate, confiting of the alumine united with the finer parts of the colouring matter, may be expected. The remaining colouring matter, which is of less beauty, is then used for the red lake.

Instead of using cochineal for making carmine, a much clearer colour may be extracted from the refuse of scarlet cloth. The bits of cloth are boiled in a solution of potash, which extracts the colour, and holds it in solution. If to this a certain portion of alum be added, the colouring matter will be precipitated with the alumine, of a greater or less intensity, proportionate to the quantity of this earthy basis. In Doffie’s Handmaid to the Arts, we are told that the boll of the lakes commonly fold is made from the colour extracted from scarlet rags, and depoted on the cuttle-bone; and that it may be prepared in the following manner: dissolve a pound of the best pearl ashes in two quarts of water, and filter the liquor through paper; add to this solution two more quarts of water, and a pound of clean scarlet firesh, and boil them in a pewter boiler, till the firesh have lost their scarlet colour; take out the firesh and press them, and put the coloured water yielded by them to the other: in the same solution boil another pound of the firesh, proceeding in the same manner; and likewise a third and fourth pound. While this is doing, dissolve a pound and a half of cuttle-fish bone in a pound of strong aqua-fortis, in a glass receiver, adding more of the bone, if it appear to produce any ebullition in the aqua-fortis; and pour this strained solution gradually into the other; but if any ebullition be occasioned, more of the cuttle-fish bone must be dissolved as before, and added, till no ebullition appears in the mixture. The crimson sediment deposited by the liquor thus prepared is the lake: pour off the water, and stir the lake in two gallons of hard spring water, and mix the sediment in two gallons of fresh water; let this method be repeated four or five times. If no hard water can be procured, or the lake appears too purple, half an ounce of alum should be added to each quantity of water before it be used. Having thus sufficiently freed the lake from the fiats, drain off the water through a filter, covered with a worn linen cloth. When it has been drained to a proper dryness, let it be dropped through a proper funnel on clean boards, and the drops will become small cones or pyramids, in form which the lake must be suffered to dry, and the preparation is completed.

Lakes are also made from madder and Barfil wood. The former is much more permanent than the latter, but does not possess the fame beauty of tint. In order to make these lakes, strong infusions of thebse substances are first obtained. The Barfil wood infusion is beat made by boiling the chips in pure water, and filtering the solution. (See Barfil Wood.) The infusion of madder (see Madder) is beat made in cold water, by which the purest part of the colour is only diffused. To each of these solutions are added a clear solution of alum, and then as much of an alkali as will precipitate so much of the alumine as will make the colour of the precipitate of proper intensity. A small quantity of muriate of tin increases the brilliancy of these lakes.

A beautiful lake, it is said (ubi infra), may be prepared from Barfil wood, by boiling three pounds of it, for an hour, in a solution of three pounds of common salt, in three gallons of water; and filtering the hot fluid through paper, add to this a solution of five pounds of alum in three gallons of water. Dissolve three pounds of the best pearl ashes in a gallon and a half of water, and purify it by filtering; put this gradually to the other, till the whole of the colour appear to be precipitated, and the fluid be left clear and colourless. But if any appearance of purple be seen, add a fresh quantity of the solution of alum by degrees, till a scarlet hue be produced. Then pursue the directions given in the first precepts with regard to the sediment. If half a pound of seed-lac be added to the solution of pearl ashes, and diffused in it before its purification by the mime, and two pounds of the wood, and a proportional quantity of the common salt and water be used in the coloured solution, lake will be produced that will stand well in oil or water, but it is not so transparent as without the seed-lac. The lake with Barfil wood may be also made by adding half an ounce of anotto to each pound of the wood; but the anotto must be diffused in the solution of pearl ashes. There is a kind of beautiful lake brought from China; but as it does not mix well with either water or oil, though it diffuses entirely in spirit of wine, it is not of any use in our kind of painting. This has been erroneously called safflower. Handmaid to the Arts, vol. i. p. 61, &c.

In making yellow lakes, the coloured infusions must be such as to make the most permanent dyes. (See Dyeing.) The precipitation of the colour is performed precisely in the same way, and by the same substances, as the red lakes. A very excellent yellow lake may be made from the infusion of turmeric bar. That from turmeric is very beautiful, but is not permanent. The process of the making of this is as follows: take a pound of turmeric-root in fine powder, three pints of water, and an ounce of salt of tartar; put all into an earthen glazed vessel, and let them boil together over a clear, gentle fire, till the water appears highly impregnated with the root, and will stain a paper to a beautiful yellow. Filter this liquor, and gradually add to it a strong solution of rosh-alum in water, till the yellow matter is all curled together, and precipitated; after this pour the whole into a...
L A K

\[ \text{Lak} \]

\[ \text{of paper, and the water will run off and leave the yellow matter behind. It is to be washed many times with fresh water, till the water comes off insipid, and then is obtained the beautiful yellow, called laque of turmeric, and used in painting.} \]

In this manner may a laque be made of any of the tinging substances that are of a somewhat strong texture, as madder, logwood, &c.; but it will not succeed in the more tender species, as the flowers of roses, violets, &c. as it destroys the nice arrangement of parts in those subjects, on which the colour depends.

A yellow lake for painting is to be made from broom-flower in the following manner: make a ley of pot-ashes and lime reasonably strong; in this boil, at a gentle fire, fresh broom-flowers till they are white, the ley having extracted all their colour; then take out the flowers, and put the ley to boil in earthen vellies over the fire; add as much alum as the liquor will dissolve; then empty this ley into a velfe of clear water, and it will give a yellow colour at the bottom. Let all settle, and decant off the clear liquor. Wash this powder, which is found at the bottom, with more water, till all the salts of the ley are washed off; then separate the yellow matter, and dry it in the shade. It proves a very valuable yellow.

All the lake colours are changed by acids and alkalies. An acid renders the red lake more scarlet, and the yellow paler; while an alkali gives a purple tint to the red, and an orange or brown tint to the yellow. Artists sometimes take advantage of this property to change their colours. The acid used for this purpose should be the muriatic diluted, and the alkali aqua ammonia.

\[ \text{Lake, Orange, is the tinging part of anotto precipitated together with the earth of alum. This pigment, which is of a bright orange colour, and fix for varnish painting, where there is no fear of flying, and also for putting under crystal to imitate the vinegar garnet, may be prepared by boiling four ounces of the best anotto and one pound of pearl-ashes half an hour in a gallon of water; and straining the solution through paper. Mix gradually with this a solution of a pound and a half of alum in another gallon of water; defiling, when no ebullition attends theCommixture. Treat the sediment in the manner already directed for other kinds of lake, and dry it in square bits or round lozenges. Handmaid to the Arts, vol. i. p. 110.} \]