
XIX. *Extract of a Memoir on the Cultivation of the Indigo-Plant, and the Preparation of Indigo.*

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Read at a public Meeting of the LYCEUM OF ARTS.

INDIGO is known to be a precipitated fecula, dried and reduced into a solid mass, light, brittle, and of a very deep azure colour. This substance is of great utility in the arts. A great consumption is made of it in dyeing, painting, bleaching, and other processes of different manufactures.

The vegetable which produces this colouring fecula is termed the indigo-plant, *indigo-fera*. It is of the genus of the polypetal plants, of the family of the leguminous, and has much resemblance with the *Galega*.

There are twenty-seven species of indigo-plants. To enumerate their differences and describe their botanical characters would be superfluous. It will be sufficient to direct our attention to the most interesting species, namely that which yields the

the best indigo. It is termed *indigo-franc*, *indigo-fera anil*. It is indigenous in America; and is cultivated with success in the Southern parts of this country, and in the Antilles. In these islands is found a variety of the best species of indigo, which grows to twice the height of the indigo-franc. It is termed the wild indigo-plant or maron.

It is to be remarked, that in the French colonies in the Antilles, where fine indigo is prepared, the seed of the indigo-franc is purposely mixed with that of the indigo-maron, in order to obtain a more considerable and better product. The purposes for which this mixture is made, as well as all the operations belonging to the cultivation of the indigo-plant, are related in a detailed memoir that has been laid before the Lyceum of Arts. For the present we shall confine ourselves to giving an account of an essential improvement in the preparation of indigo.

It will undoubtedly be heard with astonishment, that though indigo has been manufactured during the space of nearly a century, its preparation still consists in such imperfect approximations, that, even with the best manufacturer, generally ten, fifteen, and even to the number of twenty-five tubs fail, out of a hundred which he undertakes. Sometimes even, either owing to want of experience or the contrarieties of temperature, a much larger number of tubs fail, and ruin the proprietor, who reckons upon large profits; hence in part arises the high price of indigo.

But should the proprietor of indigo-plants be secured, by means of a certain process, against the danger of losing the fruits of his expence and labour, he would then be able to sell his indigo
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at a cheaper rate. This would be a great advantage to the arts and manufactures, and consequently to the commerce of France.

This great advantage France will at some future period be able to enjoy, and she will owe it to the labours and intelligence of one of the colonial proprietors of St. Domingo, who is at present in France, and one of the free associates of the Lyceum of Arts, I mean citizen Nazon. Judicious observations and a long course of experience have convinced him that it is possible to ensure the success of all the tubs of indigo.

In order to obtain this colouring substance, the indigo-plant is cut when it has arrived at its maturity. The whole is put to macerate in a basin of brick-work, which is termed the tub (*cuvve*). Its dimensions are generally twelve feet.

To bring the maceration to its ultimate point, requires from fifteen to thirty and even thirty-six hours, more or less, according to the temperature of the atmosphere at the time when the operation is performed; it is also necessary to take into consideration the quality of the indigo-plant, the nature of the soil that has produced it, and that of the water in which it is immersed.

The first indication from which it is judged that the maceration begins to approach its ultimate point, is the sinking of the scum, which elevates itself in the space of about half a foot, which has been left empty in the tub, including the plants. When this scum has become a kind of crust of a copper-blue colour, the moment is concluded to be near at hand, at which the plants will be sufficiently macerated. However this indication is insufficient and often even fallacious. There is another upon which greater reliance is placed :

placed : it consists in drawing off a small quantity of the water by means of a cock placed at the lower part of the tub. It is received into a silver cup, and it is observed whether the fecula tends to precipitate itself to the bottom of the cup : when this is the case, it is concluded that the plants have attained that degree of maceration which is requisite for obtaining the indigo from them.

Such was the process most generally practised ; but it too often gave rise to error. To avoid this we have a sure means, which consists in accurately observing the water contained in the cup : five or six minutes after it has been poured into it, it forms round the sides of the cup a ring or edge of fecula, which at first is of a green colour and afterwards becomes blue. As long as the maceration has not yet been carried to the proper pitch, this ring detaches itself with difficulty from the sides of the cup. But at last it is seen to precipitate and concentrate itself at the bottom of the vessel, always towards the centre, under the water, which has become limpid, though with a yellowish tinge.

When these appearances are observed, they infallibly indicate the success of this first operation. The water is then drawn off into a second basin or tub, placed beneath the first. This second tub is termed *batterie*, as its use is for beating the water still charged with the fecula. In order that it may separate quickly, it is agitated. This operation is performed either by the labour of the hands, or by means of a mill. It is of essential consequence not to agitate it for too great a length of time : excessive agitation mixes anew the fecula with the water, from which it does not separate
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any more, and the tub fails. Instead of indigo, we obtain nothing but muddy water.

This latter inconvenience may easily be obviated by a little attention. When we have discovered that the fecula is sufficiently united, we draw off the water from the *batterie* into a third and smaller basin, which is termed the *diablotin*. We then find the bottom of the *batterie* covered with a very liquid blue paste; this is received into bags of coarse linen cloth, of the form of inverted cones, which suffer the watery part to run off. These bags are afterwards emptied of their contents upon tables in the drying rooms, where this blue paste is kneaded, and after it has acquired a denser consistence, it is spread out and cut into small squares, in order that it may dry the sooner. The manufacture of the indigo is now completed, and it is soon after sufficiently dry to be introduced into commerce.

I omit the details contained in a longer memoir, of which I confine myself to giving an extract. What was of importance to be made known, is that there exists a certain process, by following which one may be secure against failure in the manufacture of indigo.

Experience has shewn that this process has never failed of complete success; of this, more than fifteen-hundred tubs of indigo manufactured in different parts of St. Domingo, have furnished the proofs.