



XXII. Report made to the Council of the Mines in Spain respecting a new wood proper for dyeing, called Paraguatan

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No. XIV. *Paper dipped in the acetate of magnesia.*—Paper dipped in this salt did not appear to be in the least changed. It burnt with a weak white flame like common paper, and was converted into a very friable ash-coloured coal.

No. XV. *Paper dipped in acetate of barytes.*—Paper dipped in this salt seemed, like the former, to have undergone no visible change. It burnt with a white flame, as common paper, and was at last changed into a coal of the like kind.

From the above observations it appears, that white salts do not deprive paper of its combustibility like the liquor of flint. Some of them also, instead of defending it from the action of the fire, tend rather to accelerate its destruction, as, for example, the sulphites. The sulphureous acid which they contain loses with the inflammable body its oxygen, is converted into sulphur, and produces a little liver of sulphur, which is destroyed at the same time with the paper by the flames.

[*To be concluded in the next Number.*]

XXII. *Report made to the Council of the Mines in Spain respecting a new Wood proper for Dyeing, called Paraguatan.* By D. DOMINIC GARCIA FERNANDEZ, Inspector of the Mint. From the *Annales de Chimie*.

IN compliance with the orders of the Supreme Council of Commerce and the Mines, I undertook a chemical examination of a wood known in Guiana under the name of Paraguatan. This examination I carried to such a length as I thought necessary for acquiring a knowledge of its nature, and of the advantages that may be derived from it in dyeing. I observed in the first place that the bark, the wood properly so called, and the leaves of the paraguatan produce different colours. The leaves, however, do not merit much attention, as they communicate only a fading and not very agreeable colour. My researches have, therefore, been directed chiefly to the bark, as that part is the most important, and my observations

variations respecting the bark may be applied also to the wood ; for, though the latter produces a different colour, it exhibits almost the same phenomena as the bark.

If the bark be boiled in water, the coloured extract thence resulting, when exposed to the action of the sulphuric, muriatic and nitric acids, resists them much longer than an extract of brazil or logwood. The colour, after being destroyed by a combination of acids, may be revived by the means of alkalis.

Vinegar, lemon-juice, and tartar render this dye more brilliant, and communicate to it a fine rose colour, while these acids, on the other hand, destroy the colour of brazil and logwood altogether.

The feculæ of the bark of the paraguatan attach themselves and adhere to woollen, cotton, and silk. The colour is more brilliant on silk than woollen, and more brilliant on the latter than on cotton.

The same feculæ dried may be afterwards dissolved in alcohol, and communicate to it a tint similar to that obtained from cochineal.

By mixing alum with a highly concentrated decoction of the same substance a species of lake may be produced, but neither so lively nor so pretty as that obtained from cochineal by a like process.

The same decoction mixed with that of gall-nuts furnished me with a precipitated pigment of a weak rose colour. An infusion of brazil or logwood, mixed with an infusion of galls, assumes a darker and browner tint ; mine on the other hand became clearer by it, and assumed a delicate rose colour, or one somewhat similar.

It must indeed be acknowledged, that the dye extracted from the paraguatan has not a strength equal to that of cochineal. It is however superior to those of madder, brazil and logwood, since it resists vinegar, lemon-juice and tartar. Soap even does not destroy it so speedily as it does those of brazil and logwood.

The bark is attended with this advantage, that by employing
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it in certain quantities, and giving a suitable preparation to silk, we by these means may produce the various shades of rose and poppy colour, which can be produced only by the carthamus or safflower with alkaline mixtures, after a difficult process, tedious washings, and other embarrassing manipulations.

By examining the external form of a piece of the paraguatan, it appears to me to be the same tree as that which Francis Correal says he observed in the province of Popayan*, which is not far from Guiana. The same author relates that this tree is different from that of Brazil; that the trunk, which is the size of one's thigh, is thirty or forty feet in height: that its bark is full of longitudinal grooves; that the wood when stripped of its bark is of a beautiful red; and that the Indians employ the wood mixed with a red earth to dye the cotton which they use for dresses.

The colour extracted from paraguatan does not resist the action of light: no colour indeed can stand that test. This colour, however, will stand much longer than that of brazil or logwood; but, on the other hand, these two trees furnish colouring matter in greater abundance.

I consider the paraguatan, therefore, as one of those valuable productions which America furnishes to Spain. It may be employed with advantage in the art of dyeing throughout all Europe. It is to be wished that search may be made for it in Popayan, and that some of the earth mentioned by Correal may be sent over to us. The governor of Guiana ought also to collect every information possible that may relate to the paraguatan, and to transmit it to us, as well as other specimens of the wood, with some of its leaves and flowers, in order that its species may be determined.

A knowledge of this wood begins to be extended, as I lately received a portion of its bark and of a red substance, which were brought from Guiana by an Englishman named Milnes. It is to be presumed that this substance is the same as that mentioned by Correal in his voyages.

* Voyages aux Indes Occidentales, 1722, p. 420.