

ACCOUNT OF THE DYEING DRUG, CALLED KASUMBA, A PRODUCTION OF SIAM.

Among the articles of import into Singapore, from China and Siam, is a dyeing drug, called by the Natives, *Kasumba*. It is red in colour and made up in small lumps, rendered very hard, apparently by manipulation. It yields two colours, namely, yellow of a very imperfect description, and reds of various hues, according to the different methods employed by the dyer for imparting the colour to the cloth. For the red colour which it contains, it is held in high estimation by the Natives, and very beautiful pinks are dyed by them from it; but they are fugitive, and will by no means stand the action of soap and water. Highly valued, however, as this *Kasumba* is by the Natives of this part of the world, (Singapore,) it is simply *safflower*, and in Europe, where the dyer is in possession of so many other materials, from which similar colours may be obtained in much higher perfection, it is held in very slight estimation. Here, the price of the best descriptions of it may be reckoned at no less than a hundred Spanish dollars per picul; whilst in England the price put upon it is 7*l.* per cwt. or about forty-one dollars per picul. A small quantity of it was sent home some time ago, by way of experiment, by one of the mercantile establishments of this settlement, to the politeness of the members of which we are indebted for a very elaborate report upon its qualities and value, drawn up by a gentleman of great practical skill and experience, connected with one of the first dyeing establishments in Great Britain. This report is by no means encouraging. The yellow colour yielded by the *Kasumba* is pronounced utterly worthless, and scarcely deserving the name of yellow; and the red colour obtainable from it, is not only infinitely inferior in beauty and durability, which might easily be supposed, but also much *dearer* than the reds which are dyed from cochineal. To dye 1lb. of silk, 4lbs. of *Kasumba* are required, the price of which, at the rate we have mentioned, would be about 5*s.*; whilst to dye the same quantity of silk, four ounces of cochineal are sufficient, the price of which is about 4*s.*, and the colour yielded by it much superior to the other.

The Malays seem to apply the word *Kasumba*, without much distinction, to any pink or red colour; thus, to the dye called *Anatto*, they give the name of *Kasumba Kling*, whilst they call the safflower of which we have been speaking, *Kasumba Jawa*. The tree or shrub which yields *Anatto*, the *Bixa Orellana*, grows well on this island; and as, after a certain age, it will grow without care or cultivation, it might be worth planting. The produce might be sold or the trees let out to Chinese or Natives, by whom the dye is held in con-



siderable estimation. England is supplied with this dye from South America, of a better quality and at a cheaper rate than any that could be produced here. It is not in much estimation with the dyer; but large quantities of it are used for giving a red colour to cheese, for which it is very suitable, being harmless and nearly tasteless.

The following is the report above alluded to:

\* The following experiments were performed, with a view to ascertain the properties of *Kazumba*, as a dyeing drug; and, to determine the value of that substance, compared with other dye-stuffs which impart similar colours to silk and cotton yarns.

\* *Kazumba* contains two colouring matters, of which one gives a yellow and the other a red colour to silk and cotton yarns. Of these two colouring matters, that which yields a yellow dye is soluble in water, while that which yields the red is insoluble in the same liquid; so that, from possessing these opposite properties, they may be easily obtained separately.

\* *Method of abstracting the Yellow Colouring Matter from Kazumba.*

\* Six-hundred and sixty grains of *Kazumba* were put into a glass vessel, along with as much spring water as was sufficient to cover that quantity. The *Kazumba* was steeped in the water for two hours, after which, it was poured into a mortar and pounded, till all the small lumps were broken, and the whole assumed the appearance of a soft pulp. In this state it was put back into the glass vessel, and one quart of spring water poured over it. After being well mixed with the water, it was allowed to steep for one hour longer, and was then thrown on a flannel filter, in order to separate the solution of the yellow colouring matter from the solid part of the drug.

\* The solution of the yellow colouring matter thus obtained very much resembled London porter in colour, and when newly prepared was a little turbid, in consequence of holding in suspension a number of minute particles of *Kazumba*. The turbidity, however, subsided after the liquid had remained undisturbed for a short time.

\* The properties of the red colouring matter, which, along with the *Kazumba*, remained on the filter, will be mentioned in the sequel.—What immediately follows is a detail of the different experiments performed, in order to impart the yellow colouring matter obtained by the method just stated to silk and cotton yarns.

\* *Experiment 1.*—The colouring solution procured by the method detailed above, was divided into three equal portions; into one of these parts forty grains of bleached cotton, and ten grains of soft tram silk were immersed for half an hour, by which time the cotton had acquired a nankeen yellow, and the silk a yellow inclining to a



teghora hue. These colours were, however, very loosely fixed on both yarns; for, on washing, they became considerably lighter.

*Experiment 2.*—The liquid which had been used in the preceding experiment was put into a flask, and, after being boiled, the same yarns were put into it, and boiled for twenty minutes, after which the vessel and its contents were taken from the fire and allowed to cool; the yarns were then taken out, well washed in clean water, and dried.

The colour of both yarns became considerably darker after having been boiled in the liquid, and when washed they lost proportionably less of their colour than when first washed.

The yarns marked No. 1, were the subject of these experiments.

*Experiment 3.*—Another portion of the colouring solution was put into a flask, and heated; when boiling, about a tea-spoon full of murio-sulphate of tin was added to it—a quantity that is as nearly as possible equal to that used in dyeing yellow from quercitron bark. After having boiled for a few minutes, the liquor was poured into an earthenware basin, and the same quantity of silk and cotton, as had been used in the preceding experiments, was immersed in it, and allowed to steep, till the liquor had become nearly cold: the yarns were then taken out, washed in clean water, and dried.

The silk and cotton which had been used in this experiment, acquired a much darker yellow than the yarns that had been used in the former experiments: the silk, in particular, had acquired a considerably darker colour.

*Experiment 4.*—The liquor used in the foregoing experiment, appeared to contain much colouring matter after the yarns had been dyed in it. It was supposed that, although it would not impart a very deep shade of yellow to the yarns, it might perhaps continue to give the same shade to white silk and cotton. Accordingly, white pieces of silk and cotton, of the same weight with those that had been dyed in the same liquid, were submitted to the same treatment; their colour, however, was not so dark as that of the yarns that had been dyed in the same liquid.

No. 2 and 3, are the shades resulting from the last two experiments.

*Experiment 5.*—Forty grains of bleached cotton were wet in clean water, and being wrung out of that liquid, were put into a mixture, consisting of two measured ounces of distilled water, and the same quantity of acetate of alumina, or Messrs. Turnball and Ramsay's yellow liquid, and allowed to remain forty minutes immersed in it. The cotton was next taken out, and, after being wrung, was introduced into a half of the remaining portion of the yellow colouring liquid. In this portion of the liquid, which had been previously boiled, the yarn was turned for a few minutes, and then allowed to steep till the liquor cooled; it was then well washed and dried.



\* *Experiment 6.*—Ten grains of silk, having been previously steeped in a solution of alum, were put into the remaining quantity of yellow colouring liquid, which had been previously boiled, and in this the silk received the same treatment as the cotton had in the same quantity of yellow colouring liquor; the silk was then washed and dried.

\* The shade of the cotton operated on in this experiment, was rather higher than that of the cotton used in the former; the shade of the silk was nearly the same with that of the silk used in the former experiment, after having undergone the treatment just mentioned; but, having been immersed in a solution of white soap, which has the effect of brightening the yellow dyed from the dye-stuff called wauld, its colour became much brighter.

\* No. 4, are samples of cotton dyed in this experiment.

\* *Comparative estimate of the value of Kasumba as a Yellow Dye-stuff, and the Dye-stuffs at present employed for obtaining that colour.*

\* As a yellow dye, *Kasumba* is much inferior to fustic, wauld, and quercitron bark, which are the substances that are commonly used in dyeing yellow; for the colours of the yarns dyed in the preceding experiments, when compared with those obtained from the dye-stuffs just mentioned, are very much inferior, so much so, indeed, that the former can scarcely be called yellow colours. The yellow obtained from quercitron bark is also much clearer, and resists much better the action of soap, than that obtained from *Kasumba*. The sample of yellow, No. 20, was obtained from quercitron bark. The quantity used was at the rate of two ounces to the pound of cotton, the cost of which would not amount to a farthing, being only one eight-hundred-and-third part of that sum. The decoction of wauld and quercitron bark that have been employed in dyeing strong yellows on silk and cotton, would, after the yarns have been dyed in them, give a much stronger yellow than *Kasumba*; yet such decoctions are thrown away, being considered of no use. The dyer, therefore, will value *Kasumba* very lightly, as a yellow dyeing drug, since he has already in his hands dye-stuff which far surpasses it both in cheapness and in quality.

\* The following is a detail of the experiments on the red colouring matter of *Kasumba*, and of the method employed in imparting that substance to silk and cotton yarns.

\* *Method of extracting the Red Colouring Matter of Kasumba.*

\* The red colouring matter, which, along with the *Kasumba*, remained on the filter, was introduced into a woollen bag, the mouth of which being secured, the whole was thrown into a quantity of spring water. In this the bag, with its contents, was alternately



steeped, and taken out and pressed between the hands, till the water came off quite colourless. The object of this manipulation was to remove any of the yellow colouring matter that it might have retained.

\* The alkalis have the property of combining with the red colouring matter of *Kasumba*, and of making it soluble in water. The following method was, therefore, adopted to obtain a solution of the red colouring matter.

\* *Experiment 8.*—Eighty grains of soda of commerce were dissolved in as small a quantity of warm water as was necessary to dissolve that quantity. The alkaline solution was poured into one pound of distilled water; the *Kasumba* was then put into the mixture, and the whole was allowed to remain for twelve hours. At the end of this period, the mixture of *Kasumba*, soda, and water, was put into the woollen bag, in order to separate the solution of the red colouring matter from the *Kasumba*. After the *Kasumba* had been separated from the solution of colouring matter, by squeezing it well while in the bag, it was again put into a solution of soda, consisting of half a pound of water and twenty grains of that alkali. At the end of two hours, the whole was put into the bag, and the solution of colouring matter separated as formerly from the *Kasumba*, which was, by these means, entirely deprived of its colouring matter, and of course was of no more use.

\* *Method of imparting the Red Colouring Matter to Cotton.*

\* *Experiment 9.*—In order to effect the object of this experiment, it was necessary to separate the colouring matter from the soda; this end was attained by introducing an acid into the solution. The acid combines with the alkali, and leaves the colouring matter free, which, having affinity for cotton, precipitates on that substance, when it is introduced into the liquid.

\* Six-hundred-and-sixty grains of bleached cotton were introduced into the alkaline combination of the colouring matter, and, after having remained an hour, were taken out. Twenty-eight grains of sulphuric acid, diluted with five times its weight of water, were then added to the liquid. The cotton was again introduced and turned for half-an-hour, and then allowed to steep for two hours; at the end of which period it was taken out a second time, and as much more sulphuric acid added as gave a distinct acid taste to the liquid. The cotton was again introduced, turned in the liquid for a few minutes, and then allowed to steep for two hours more; after which it was washed in a quantity of spring water, and put into a solution of tartar, consisting of forty-five grains of that substance and one quart of spring water. Having been turned in that liquid for a few minutes, it was taken out and dried in the open air. By this



treatment the cotton acquired a fine pink colour, of which No. 21 is a specimen.

\* *Experiment 10.*—In order to ascertain the value of *Kasumba* compared with safflower, which holds a similar red colour, the same quantity of the latter substance as what had been used of the former, in the preceding experiments, was submitted to exactly the same treatment, in order to extract its colouring matter. In the solution a similar quantity of cotton was introduced as what was used in the same experiments, and also submitted to, as nearly as possible, the same treatment. The cotton No. 22, shows the colour resulting from this experiment.

\* From its properties, *Kasumba* appears to be the same substance with that known in commerce by the name of safflower: the only perceptible difference between them is, that the former is finer in its fibre than the latter, and is made up into balls, while the latter is made into circular discs.

\* The price of the safflower, used in the preceding experiments, was 7*l.* 10*s.* per cwt.; and, since the colour produced from it and the *Kasumba* are almost similar in quality, we must consider the value of the two drugs nearly the same. There are a few practical difficulties attending the use of *Kasumba*, from which safflower is free. A quantity of the *Kasumba* would, in consequence of the minuteness of its fibres, be lost in washing; and it would, from the same cause, be very difficult to press out the colouring matter, after it had been liberated by the alkali. There is also a great difficulty in breaking the small balls.—The best way to effect this would be to steep them for twelve hours in as much water as would cover them, and afterwards to tramp them till they were all broken.

\* All these circumstances taken into consideration, *Kasumba* may be valued at 7*l.* per cwt.

\* Mr. — stated, that *Kasumba* is supposed to be capable of imparting a crimson colour to silk; but, from experiments made in order to determine the same object with respect to safflower, I have found that a much better colour may be got from cochineal, and that, too, at a much less expense: and, since it would appear that *Kasumba* is the same substance as safflower, we may also conclude that it is similarly circumstanced. The following experiments were undertaken to determine whether *Kasumba* would dye a crimson colour to any better advantage than safflower.

\* *Experiment 11.*—Eight hundred grains of *Kasumba* were washed and prepared in the same manner as were the quantities used in the former experiments.

\* It is found that safflower imparts the best colour to silk, when it has been dyed on cotton, and then taken off that substance. Accordingly, the red colouring solution obtained from eight-hundred grains



of *Kasumba*, was dyed on five-hundred grains of bleached cotton yarn. The cotton was afterwards deprived of its colour by introducing it into a solution of soda, consisting of one quart of distilled water and thirty grains of soda, and in this it was allowed to remain for twenty minutes. The red colouring matter, being again liberated, was imparted to a small quantity of silk (No. 35) that had previously been dyed peach-blossom.

The peach-blossom colour was imparted to the silk, by putting it into a hot liquor, consisting of a solution of soap and red archil. After remaining in the solution of red colouring matter for a short time, the silk was taken out and washed in clean water; and into that solution it was again introduced, after as much tartaric acid had been added as was sufficient to neutralise the soda that the solution contained. After having been in the solution of the red colouring matter for an hour, during which period it had been several times dipped up and down, the silk was put into a quantity of milk-warm water, containing as much tartaric acid as gave it a sour taste. After remaining for a few minutes in this liquid, it was taken out and dried.

To dye as dark a colour as the silk received in this process, four pounds of *Kasumba* would require to be used to one pound of silk; the price of which quantity would be 5*s.*, supposing that *Kasumba* might be obtained for what we have considered to be its value. A colour such as the pattern No. 50, can be dyed with four ounces of cochineal, which quantity would cost, according to the present state of the market, 4*s.* On comparing the two patterns, it will be found that the crimson derived from the *Kasumba* is much inferior to that obtained from the cochineal; so that the former substance is much inferior, as a crimson dye, to the latter; while the quantity of *Kasumba* necessary to impart to silk a colour even of inferior quality to that imparted from cochineal is so great, that a colour can be dyed much cheaper with the second substance than with the first.

No. 100 is a pattern of a crimson dyed on cotton. The quantity of *Kasumba* necessary to produce a colour equal to it, would be two pounds, of the dye-stuff to one pound of cotton.—*Singapore Chronicle.*

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## STANZAS FOR MUSIC.

*By Robert Montgomery—Just Published.*

Oh! Beauty is the master-charm,  
 The Syren of the soul;  
 Whose magic zone encompasseth  
 Creation with control!  
 The love and light of human kind,  
 The foster-flame of every mind,  
 'Twas Beauty hung the blue-robed heavens!  
 She glitters in each star!  
 Or trippeth on the twilight breeze,  
 In melody afar!  
 She danceeth on the dimpled stream,  
 And gambols in the ripple's gleam!  
 She couches on the coral wave,  
 And garlandeth the sea;  
 And weaves a music in the wind  
 That murmurs from the lea;  
 She paints the clouds, and points the ray,  
 And basketh in the blush of day!  
 She sits among the spangled trees,  
 And streaks the bud and flower;  
 She dims the air, and drops the dew  
 Upon the glade and bower!  
 'Tis she unwreathes the wings of night,  
 And cradles Nature in delight.  
 And woman!—Beauty was the power  
 That, with angelic grace,  
 Breath'd love around her glowing form,  
 And magic in her face!  
 She crisp'd the silky-flashing hair,  
 And framed her throne, her forehead fair!  
 She arm'd her liquid-rolling eye  
 With fairy darts of fire;  
 She wreathed the lip of luscious hue,  
 And bade its breath inspire!  
 She shaped her for her queenly shrine,  
 And made her like herself—divine!  
 Oh! Beauty is the master-charm,  
 The Syren of the soul;  
 Whose magic zone encompasseth  
 Creation with control!  
 The love and light of human kind,  
 The foster-flame of every mind.