THE

# DYER'S COMPANION;

*IN TWO PARTS.*

PART 1st CONTAINING

Upwards of one hundred receipts for colouring woollen, cotton or silk cloths, yarn or thread, all kinds of colours and shades, so as to make them lasting and permanent, upon the newest and most improved plan in dying; with directions for dressing cloth, and some observations and directions as to the use of colours and dye-stuff, and the properties and effects thereof—calculated for the use of artists, private families, and the encouragement of manufactories, &c.

THE 2d PART CONTAINING

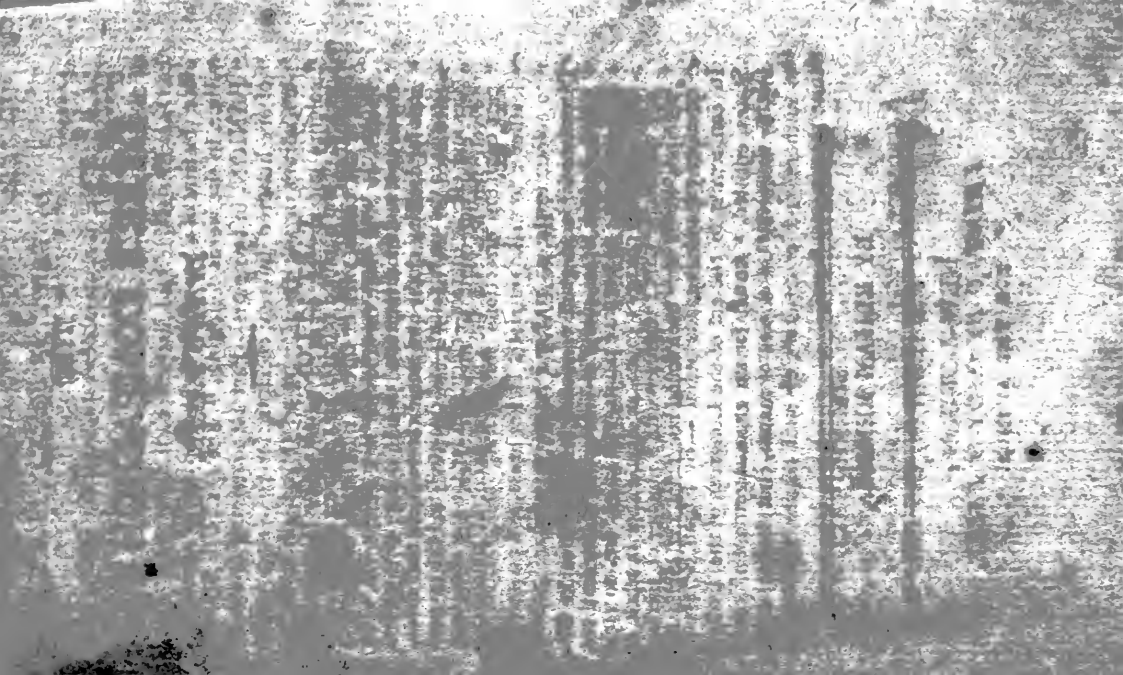
Directions for jacking and varnishing leather; to make Oil-Cloth, Lacker Brass, and Tin-Ware: To colour feathers, fur, and hair; to prepare paints, varnishes, &c. to stain wood different colours; to colour hats, either in whole or any particular part; together with a number of medical receipts, which have been found beneficial, and highly approved by the faculty.

CONTAINING ALSO—

Many discoveries and improvements, not before made public.

BY ELIJAH BEMISS.

NEW-LONDON:
*PRINTED BY CADY & EELLS,*
FOR THE AUTHOR.



*DISTRICT OF CONNECTICUT, ss.*

L.S. BE it remembered, that on the twenty-seventh day of August, in the thirtieth year of the Independence of the United States of America, ELIJAH BEMISS, of said district, hath deposited in this office the title of a book, the right whereof he claims as author, in the words following, "The DYER'S COMPANION, in two parts—Part 1st containing upwards of one hundred different receipts for colouring woollen, cotton, or silk cloths, yarn or thread, all kinds of colours and shades, so as to make them lasting and permanent, upon the newest and most improved plan in dying; with directions for dressing cloth, and some observations and directions as to the use of colours and dye-stuff, and the properties and effects thereof—calculated for the use of artists, private families, and the encouragement of manufactories, &c. Second part contains directions for jacking and varnishing leather; to make oil-cloth, lacker brass, and tin-ware; to colour feathers, fur, and hair; to prepare paints, varnishes, &c. to stain wood different colours; to colour hats, either in whole or any particular part; together with a number of medical receipts, which have been found beneficial, and highly approved by the faculty. Containing also, many improvements and discoveries not before made public.—By Elijah Bemiss." In conformity to the act of the Congress of the United States, entitled, 'An act for the encouragement of learning, by securing the copies of maps, charts and books, to authors and proprietors of such copies, during the time therein mentioned."

SIMEON BALDWIN,
*Clerk of the District of Connecticut.*

A true copy of record examined and sealed by
S. BALDWIN, *Clk. Dist. Con.*

# PREFACE.

THE design of "*The Dyer's Companion,*" is to furnish an easy and uniform system of dying for the use of practitioners, and those who wish to be benefitted by that and other arts introduced in this work. During an employment of several years in the clothier's business, I had to combat with many difficulties for the want of an assistant of this kind; and I am well persuaded the greater part of my fellow-functioners have laboured under the same embarrassments, as there has not been to my knowledge, any book of this nature ever before published in the United States—a work which I humbly conceive will not only be serviceable to the practitioners, but to the country at large.

The author's attempt to improve the useful arts, and to promote manufactures, he hopes will meet the approbation and encouragement of his fellow-citizens; and that the plainness of his plan, will be excused, as he is an unlettered country dyer. His long practise in dying and dressing cloth, &c. has given him great opportunity for making im-

provements therein. Theſe arts admit of ſtill greater improvement, if proper attention is paid to recording and ſecuring our diſcoveries; but otherwiſe it muſt be expected that they will remain with us in a ſtate of infancy.

The art of dying is ſtill far from having arrived at a ſtate of perfection even in Europe, and probably will not in our age. This conſideration ought not to diſcourage us, but to increaſe our ambition; for it muſt be acknowledged that great improvements have been made and are ſtill making in this country.

Thoſe to whom the author is in the ſmalleſt degree indebted for promoting the uſefulneſs of this work, will pleaſe to accept his thanks; their future favors are requeſted, with a hope that we may continue to live in brotherly love. By contributing our mutual aid towards gaining and ſupporting our independence of Great-Britain, and other foreign countries, to whom in arts and manufactures we have too long bowed the knee; we ſhall promote our own intereſts and our country's welfare and glory.

In the *Firſt Part* it is attempted to have the

Receipts for dying woolen, silk, cotton and linen goods, arranged in the best order; which is followed by directions for the management of colouring, &c. The different operations of dye-stuff are then attempted to be shewn, together with directions for dressing cloth; closing with some observations on the present situation of our business.

The *Second Part* contains several useful arts and discoveries, collected from various sources, which will be found to be extremely beneficial to the public in general.

The author having for several years practised in the greater part of the arts inserted in this work, pledges himself for the truth of his assertions. He has endeavored to use the plainest language, and to point out every part of the processes, so that no one should be disappointed who attempts to follow his directions.

Many master mechanicks refuse to give receipts to their apprentices unless they will pay for them, and at a high price. There are many receipts in this book, which, to the personal knowledge of the author, have been sold for twenty and thirty dollars each; and the

purchaſer prohibited from communicating the receipt to any other perſon. By this means, uſeful diſcoveries are ſometimes wholly loſt; and our improvement in arts and manufactures make but ſlow progreſs.

Should this attempt meet with reaſonable encouragement the work will be enlarged and amended, in future editions, as the author may find time and means for the purpoſe.

THE

# DYER'S COMPANION.

## RECEIPTS, &c.

### 1. *To set a blue Vat of twelve Barrels.*

FOR a vat of twelve barrels; fill the vat about half full of water, scalding hot; dissolve eight pounds of potash in eight gallons of warm water; fill the copper with water; add one half of the potash lie, with five pounds of madder, and four quarts of wheat bran; heat this with a moderate fire, nearly to boiling heat, often stirring it—turn this into the vat. Take five pounds of indigo, wet it with one gallon of the potash lie, and grind it well: then fill your copper with water, and add the remainder of your potash lie, when cool, (being careful in pouring it off, as the sediment is injurious to the dye); add this compound of indigo, &c. and four pounds of woad; stir this continually over a moderate fire, until it boils; then turn it into the vat, and stir, rake or plunge well, until well mixed together: cover it close and let it stand two hours;

then add four ounces of borax, rake well, and let it stand twelve hours.

If it does not come to work, then take two quarts of unslacked lime, and six quarts of water, putting them into a vessel proper for the purpose, and stirring well; after standing till well settled, take the lie of the lime, and rake again, cover close, and let it stand two hours. The symptoms of the dye being fit to work, may be known by the rising of a fine copper-colored scum, on top of the dye, and likewise, a fine froth rising; your dye will look green, and your cloth dipt in it, before it comes to the air, will look green also.

## *Form of a Vat and other Utenfils neceffary for Blue Dying.*

1st. The *Vat* ought to be made of pine plank, at least two inches thick: it should be five feet long, and the width sufficient for containing the quantity required; the largest end down, and about three feet in the ground; hooped with large iron hoops as far as it stands in the ground; and all above ground covered with wooden hoops; the top covered tight with a thick cover, so as to exclude the cold air. A small lid should be made to open and shut at pleasure for the purpose of admitting the dye into the vat, stirring, raking, &c. It is absolutely necessary to cover close, so as to confine the heat and steam

from the time you begin to empty your liquor, until your vat is full. The liquor should be conveyed from the copper to the vat by a spout or trunk, and after stirring, be immediately covered close.

2d. The *Rake* is of an oval form, with a handle through the middle, of sufficient length to reach the bottom of the vat with ease.

3d. The *Screen* or *Raddle*, to prevent the goods from sinking upon the sediment. This utensil is placed about ten or twelve inches from the bottom of the vat. It should be as large as the top of the vat will admit, and filled with netting or splinters; it should be hung by three cords, from the top, so as to be easily taken out when necessary, and a weight in the middle sufficient to keep it down.

4th. The *Cross-Bar*, or stick across the vat. This should be about one inch in diameter, and placed about six inches from the top, and across the middle of the vat.

5th. The *Handlers*, *Claws* or *Hooks*, are for managing the cloth in the dye, (for no air must come to the cloth while in the dye). The claws are made with wooden handles; the hooks of iron in an oval form, half round, and notches in the hooks like saw teeth, for the purpose of catching hold of the cloth.

## *To fit Cloths for Dying.*

In the first place scour the grease well out of the cloths. Take about thirty yards of cloth to a fold or draft, having prepared, in your copper, about two barrels of water, with four ounces of pearl-ash therein; in this liquor run and prepare your cloth for the vat about eight or ten minutes; then roll it out and let it drain. Then fold it up smooth on the side of the vat, that it may go in open; toss the end over the cross-bar, and let a person on the other side with his handlers be ready to poke it down, and let it be done quick and lively. When the cloth is all in the vat, take the other end back again, by pulling it hand over hand, very lively, till you arrive at the other. Then shift sides, and manage in this manner till ready for taking out; which will be in ten or twelve minutes, if the dye is ripe and hot. But judgment must be used in this case; when the dye is weak and cool, it is necessary to keep the cloth in an hour or more;

In taking the cloth out of the vat, it is necessary to use dispatch. The utensils for this purpose are two crooked irons passed just above the vat, so that two men may put the cloth thereon, as taken out of the vat; then a windlass for the purpose of wringing the cloth as dry as conveniently can be done. Hang your cloth then in the open air, till

it is perfectly cool. At the same time, if you have more cloth, prepare it as described before in the copper of pearlash water. This process must be observed every time the cloth is dipped in the vat. Two dressings are commonly sufficient for colouring the first time; then air and rince, and this will be a pretty good blue—and full and manage as you do cloths to prepare them for colouring. However, your dye must not be crowded too fast at first.

If you find your dye does not colour fast enough, cover and rake, and let it stand an hour or two; being careful to keep the vat covered, excepting when the cloth is in: work the dye till it is cool, then heat it again. If all your cloths are not coloured for fulling; heat your dye again in the copper or other utensil, nearly to boiling heat, then turn it into the vat and cover it up; add two pounds of pearlash, rake well, and let it stand ten or twelve hours; then rake it, and let it stand two hours, when it will be fit for work. Let the die be worked as long as it will colour well; then manage as before until the dye is reduced. Recruit as before in setting, and manage in the same manner till your cloths are all coloured. Only omit two pounds of potash and one pound of indigo out of the quantity; and the dye must stand to come to work, which will probably

be sooner than at first; caution must be used about working it too soon.

The cloths when fulled and prepared for colouring, must be managed as at first, and run till they suit. After you have done coloring, open your vat, rake well, and give the dye all all the air you can. Let it stand, and it may be kept good for many years, if rightly managed: After it has been recruited several times, it will be necessary to dip off the dye carefully, so as not to disturb the sediment or lees, and throw it away. When the dye has been standing a long time, it is necessary to throw away the lees, for they will have a tendency to injure the dye, and the colour will not be so bright if they remain in the vat. The dye will not come to work so soon as if the sediment had remained in the vat, and it ought not to be disturbed excepting when it is necessary to dispense with some of the lees.

The dyer being careful to manage according to these directions, will have the best mode of dying cloth blue known by me.

To color yarn or wool in this dye, the yarn must be hung loose in the dye, and the wool be put loose into a nett and then immersed.

When the goods are dyed, have them immediately rinced in clear water; when dryed, take twelve

gallons of warm water to one pound of hard soap dissolved, and one pint of beef gall ; wet the cloth with this, and let it run in the mill eight or ten minutes, then rince it with fair water till perfectly clean, and it will prevent the goods from cracking, &c.

## 2d. *ANOTHER METHOD FOR BLUE.*

The best to dye Yarn or Wool.

TO set a tub of 6 gallons, take five gallons of good old sig, to which add 2 gills of spirits, half a pound of good indigo made fine ; put it in a bag, wet it, and rub it out in the dye, then add two ounces of pearlash, and 2 ounces of good madder ; stir and mix it all together, let it stand 24 hours ; then add half a pint of wheat bran, stir it up till well mixed together, let it stand 24 hours longer, and if your dye does not come to work by this time, stir it as often as once in two or three hours, but do not apply your goods before your copper scum and froth rises, and the dye looks greenish when dropping, and your yarn or wool looks greenish when applied to the dye, which are symptoms that your dye is in good order for use ; but you must be cautious not to croud your dye too full, for many blue dyes are destroyed in this way. Be careful also about reducing your dye too low ; always keep indi-

goin the bag, rubbing it out when necessary; and you need not stop your dye to recruit it after it has come to work; but make your additions when you take your goods out, as you find it necessary. Wring out the goods, stir your dye well together, cover it close, and place it where it will keep lukewarm. It will not dye so quick as the other dye, but it will make a superior blue. It is commonly from two to three days in colouring for a deep blue.

N. B. The yarn or wool should be wet in warm sig, before it is put in the dye, and the tub covered close, &c.

### 3d. *ANOTHER METHOD FOR BLUE.*

TAKE half a pail full of good ashes, two quarts of stone lime, and as much sig as to run through three gallons of liquor; add two ounces of good indigo made fine, four ounces of good madder, and half a pint of wheat bran; stir and mix it well together, let it stand two days, then stir it up, and put in half a pint of good emptines. Let it stand 24 hours, and your dye will be fit for work.

## *Directions to be observed in common Colouring.*

EVERY person that understands his business knows what utensils are necessary for the business

in colouring ; however, I will give a brief description of those commonly used.

The first thing necessary is the copper kettle ; I say *copper* kettle, because it is most commonly used in all hot dyes, and all hot dyes may be coloured in the copper, and I shall mention no other in the following receipts. Block tin or brass, are better for red and yellow, than the copper ; and iron the best for black or green ; but this I leave to the discretion of those in practice. The size ought to be from two to four barrels, according as your business requires. In setting the kettle, reference should be had to convenience of heating and working.

The *Reel*, as it is commonly called, which is used for managing the cloth in the dye, is conducted over and over in the dye, being turned by a *wench* ; and the cloth is poked down and spread open by a stick about three feet long. The cloth always should be tended lively when in the dye. (The time the cloth is to be in these dyes, will hereafter be described.)

When the cloth has been a sufficient time in the dye, then real or wind it up ; let it drain a few minutes, then take it out in the open air, and spread it till perfectly cool ; and this must be the management every time the cloth is dipped. Never add

any dye-stuff or water when the cloth is in the dye; but when added, stir and mix the dye well together before the cloth is put in. The cloth should be perfectly cool in order to make the colours bright, have the kettle well cleaned. The most common form I practice, is to rince the dye well off, then take some ashes and a swab, and rub it well and rince it clean, and it will answer for most colours. But if it does not appear bright enough, then take half a gill of Oil of vitriol, and rub in the same manner as before; rince clean, &c.

## *To clean a Copper.*

TAKE four ounces of allum, two quarts of vinegar, and two ounces of oil of vitriol; put them all together, heat them boiling hot, and put them into your kettle; wash it well with a swab, rince it with water clean, and it will be fit for any dyes.

## *A GENERAL RULE.*

I SHALL lay it down as a general rule, to take 20 yds. or 16 lbs. weight for the quantity of cloth, for which to proportion the dye-stuff. However, any quantity of cloth or goods may be coloured by the following receipts; only in the like proportion as before mentioned: and another thing is to be ob-

served, the different states of the dyes, by giving all your goods an equal chance in the dye ; for most of colours the dye is good for nothing for that colour after the colour is done.

## 4th. FOR BLUE.

TO 20 yds of fulled cloth, take four pounds of good logwood chips ; fill your copper with fair water, add the logwood, and boil well till the strength is out ; then add one pound of good madder and one pound of allum ; let it simmer together fifteen minutes, but not boil, (for the madder ought never to boil) run your cloth twenty or thirty minutes, roll out and air it ; let the dye simmer a few minutes, then run it again as before, with the heat of the dye increasing, about thirty minutes : air it, and the cloth will then appear of a purple cast or shade. Then take two ounces of verdigrease pulverised fine ; then take one pint of sig ; put them into a proper vessel, and simmer them together with constant stirring, till well mixed and dissolved ; then add this to your dye, with two gallons of sig, and two ounces of blue vitriol ; boil them moderately together about 15 minutes, then stop your dye from boiling, and stir well together, then run your cloth about thirty minutes : run in this manner till the colour suits, and you will have a fine blue, but it will not be so durable as Indigo blue.

### 5th. *FOR BLUE.*

TO twenty yards of fulled Cloth; fill your copper with fair water, heat it boiling hot, take two pounds of copperas, half a pound of allum, a quarter of a pound of argal, or red tartar—pulverise these together, and put this compound into the boiling water—skim your dye, stop its boiling, run your cloth twenty or thirty minutes, air and run it again, as before, twenty minutes, air and rince it in water; shift your liquor from the copper, rince your copper, fill it with fair water, then add four pound of good logwood chips, boil well twenty minutes, then slacken your fire and add an half pound of good madder; let it simmer fifteen minutes—together with one ounce verdigrease made fine, as described in receipt fourth, with sig, &c. then take one gallon of sig and add with the rest to the dye, stir them well together, till the dye is well mixed; run your cloth again in this dye thirty minutes, air it, and add two ounces of pearl-ashes, and run it again, with the dye well mixed together—handle in this manner, till your colour pleases. This will be a good blue, rather preferable to receipt, no. 4.

### 6th. *PRUSSIAN BLUE.*

COMPOUND, or CHYMICK.—This compound or blucing is made, thus: Take one pound of good flotong indigo pulverised, four pounds of oil of vitriol,

and two ounces of fine salt—put this in a stone pot (or some earthern vessel) that will contain six times the quantity of this compound, or it will be liable to rise and run over.—First put in the vitriol, then the indigo, then the salt; stir this continually, one hour, or till it gets pretty well settled and cool—for it will boil and foment in a terrible manner. Let it stand four days or a week, covered close, stirring it now and then, as is most convenient.

### 7th. *Another Method for Blueing, or Compound.*

TAKE one pound of common good indigo, six pounds of oil of vitriol, half a pound of stone lime—put these together, (as described before) in the pot, and stir it.—This will be fit to use in forty-eight hours. I have mixed it without either lime or salt; but it requires more stirring and longer standing before it is fit for use. This compound is used for dyeing Prussian blue, green, and many other colours.

### 8th. *PRUSSIAN BLUE.*

FILL your copper with fair water, heat it nearly boiling hot, then add of your blue (as is before)

mentioned) a little, and stir it well with the water, run your cloth, roll out, air, and add of your compound by little and little, till your colour pleases.—You may make, in this dye, any shade you wish, of this kind of blue, and very bright.

### 9th. *FOR GREEN.*

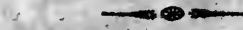
TO twenty yards of cloth, take six pound of fustick chips and boil them well, then add one quarter pound of allum, run your cloth till it is a good yellow, then add of your blueing* about half a gill at a time, stir and mix it well together in the dye, run your cloth with a hot fire, fifteen or twenty minutes, then air and a little of your blueing, and run again in the same manner as before, and add of your blueing, little by little, till your colour suits.

If you have a considerable quantity of cloth to colour, it will be necessary to boil your fustick till your dye is strong; then put it in a tub, for the convenience of dipping it off as it is wanted to mix with the blueing. The quantity of yellow die to be dipped off, must be left to the discretion of the dyer, according to the quantity of cloth in colouring; let the chips remain in the kettle, and fill your copper with water, boil again, and yellow your cloth till a good yellow, by adding allum every dipping—then

* This compound of vitriol and indigo, is known by the blueing *chymick* or *saxon pot*.

take the chips out of the dye, then add of your blueing, run your all cloths, add of your blueing and yellow die, having your die hot and well mixed together—run your cloth, and add of your compound and yellow die, by little and little, well mixed and stirred together; and if the colour does not appear bright enough, frequently add a little allum, keep it in much longer, and this will give lustre to your colour.—This is the best method of dyeing a bright green, I believe, in the world, or the best I ever knew.

Green requires the judgment of the dyer to prevent one colour from overrunning the other, otherwise the colour will appear dull, and never can be made bright. But follow the receipt with care and judgment, and you will have a very fine green.



## 10*th*. *FOR GREEN.*

TO twenty yards of cloth, take five pounds of good fustick chips, boil well, then add two ounces of allum, run your cloth till a good yellow; then add of your blueing half a pound, run your cloth twenty or thirty minutes, then air, and add a little copperas and a little logwood; let it boil a few minutes, run again, and handle till your colour pleases.

## 11*th.* *FOR GREEN.*

TO twenty yards of cloth take four pounds of fustic chips, boil well, then add two ounces of pearl ashes, one ounce of allum, one ounce of aqua fortis —let it boil, stir and mix it well together, then run your cloth till a good yellow ; air, and add of your blueing, well mix it with your dye, run your cloth, and add of your blueing by little and little, till your colour pleases.

## 12*th.* *FOR GREEN.*

TO twenty yards of cloth, take four quarts of wheat bran, wet it with vinegar, let it stand twelve hours ; fill your copper with fair water, put your bran in a bag and let it boil in the water one hour, take it out, let it drain, and squeeze it dry as you can ; then add two ounces of argal,* made fine, and one ounce of allum ; boil well, run your cloth forty minutes, boiling ; then air and rince, shift your liquor from your copper, rince and fill with fair water ; then add four pounds of fustick chips, boil well till the strength is well out, then add a little allum, and run your cloth thirty minutes more ; then add, gradually, as much blueing as is necessary, and sadden with a little copperas.

* This is called by some, *Crude*, or *Red Tartar*.

If the colour is not bright enough, shift your dye from your copper, and fill with fair water ; heat it nearly to boiling heat, add a little blueing, and handle till your colour pleases.

### 13*th*. *FOR GREEN*.

TO twenty yards of cloth, take five pounds of fustick chips, and boil well ; then add two ounces of allum, and six ounces of compound or blueing—half of your blueing at a time ; run your cloth thirty minutes, then add the rest of your blueing together with yellow dye and a little allum ; run again as before ; then add two ounces of blue vitriol, boil well, and handle till your colour pleases.

N. B. These green dyes are worth saving as they are useful in many dyes, especially for bottle green in the first beginning.

### 14*th*. *FOR BOTTLE GREEN*.

TO twenty yards of cloth, take three pounds of fustick chips, boil well, then add two ounces of allum and your blueing ; stir and mix them well together, then run your cloth thirty minutes, air and

run again till you have it a good deep green; then add two pounds of logwood, boil well, take one quarter of a pound of verdigrease, pulverise it, and put in a proper vessel with one pint of vinegar; let it simmer together with constant stirring, till all dissolved; then add it to the dye, stir and mix it well together, run your cloth with your dye hot, thirty or forty minutes; then air and sadden with copperas, till the colour is dark enough.

If your green goes off, shift your dye from your copper, clean it well, rince your cloth well, fill your kettle with fair water, heat it boiling hot, and add blueing by degrees till your colour pleases.

### 15*th*. *FOR BOTTLE GREEN.*

FOR twenty yards of cloth, fill your copper with fair water, heat it boiling hot; take half a pound of blue vitriol, and let it dissolve in the water; run your cloth 30 minutes, air and run again as before; then add three pounds of good logwood chips and two pounds of fustic, and boil well; run your cloth, and handle till your colour pleases; and you will have a fine bottle green, but it is more liable to fade than the other, which will hold equal to a blue.

## 16th. FOR OLIVE GREEN.

TO twenty yards of cloth, take six pounds of fustic, boil well, then add a quarter of a pound of allum, and a quarter of a pound of blueing ; run your cloth one hour, then add half a bushel of butternut bark ; let it boil moderately till the strength is well out ; run your cloth 30 minutes, air, and run again ; then add one quarter of a pound of copperas, and handle till your colour pleases.

When I have any bright green dye, as in receipt No. 9, I use it as a preparation for the olive green.

## 17th. FOR YELLOW.

TO twenty yards of cloth, take a quarter of a pound of aqua fortis, and as much pewter or block tin as the aqua fortis will dissolve ; (first pouring the pewter in a melted state into water ;) fill your copper with fair water, boiling hot ; then add the compound of aqua fortis, &c. with six ounces of argal, and half a pound of allum ; boil well, run your cloth boiling forty minutes ; then air and rince, and shift your liquor from your copper ; fill with fair water, then take four pounds of good fustick, and a quarter of a pound of tarmerick, boil

well, and add half a pound of allum; run your cloth thirty minutes, and handle till your colour pleases,

## 18*th*. *FOR YELLOW.*

TO twenty yards of cloth, take one pound of allum, fill your copper with fair water, heat boiling hot, run your cloth boiling, three quarters of an hour; air, rince and shift your liquor from your copper; rince and fill with fair water; add six pounds of good fustick, boil well, then add a quarter of a pound of allum, and two ounces of aqua fortis killed with pewter as described in receipt No. 17; stir and mix it well together with your dye; run your cloth and handle till your colour suits your fancy.

The dyer must be exceeding careful in these yellow dyes, that his copper utensils and cloth are all clean; for the yellow dyes are very easily spoiled. It also requires great care about handling the cloths, that you do not touch them against any thing that will spot them, for that is not very easily mended.

N. B. The aqua fortis must be put in a sound earthen vessel, to contain much more than the quantity of aqua fortis; for it will boil and fly, and appear to be red hot when you put in the pewter or

block tin ; and it must be fed as long as it will dissolve it. Then let it stand till cold ; then apply it to the dye. This is the way that aqua fortis must be used, except otherwise directed. Remember the pewter or block tin must be melted and thrown into water, and it will dissolve the better, &c.

### 19*th. BUFF YELLOW.*

TO twenty yards of cloth, take four pounds of good fustick, boil well ; then add a quarter of a pound of the best madder and six ounces of allum ; let it simmer together, but not boil, (for the madder must not boil, but be near boiling) run your cloth, and handle till your colour pleases.

N. B. The yellow dye, (after you have done dying your yellow,) may be useful to all colours that have yellow in them ; for green, olive, &c.

### 20*th. TO TAKE THE COLOUR OUT OF CLOTH.*

TO twenty yards of cloth, take two pounds of red tartar, four pounds of allum, three quarters of a pound of cream of tartar, one pound of white argal or tartar ; pulverize and mix them together ; fill

your copper with fair water, heat boiling hot; then add your compound, let it boil, run your cloth one hour, boiling; and this will completely destroy almost any colour, or colours.

21*st*. *FOR YELLOW*,

AFTER you have taken the colour out. The cloth must be well rinced in water. For twenty yards of cloth; fill your copper with fair water, then add two pounds of fustick, (the best kind) half a pound of ground tarmerick, and one ounce of aqua fortis; boil well, run your cloth, and handle till your colour pleases.

22*d*. *TO TAKE THE COLOUR OUT OF CLOTH.*

TO twenty yards of cloth, take half a pound of oil of vitriol, put in about one quart of cold water, stir it till well mixed with the water; put it in your copper already filled, and boiling hot, with fair water; run your cloth thirty minutes, air and rince, and you may make almost any colour you please, on cloth that has had the colour taken out in this way; but you cannot if done in the way of receipt No. 20. It must be observed, that there cannot be

any great quantity of cloth or goods managed in these preparations at once, without shifting the liquor; for the dye-stuff that is extracted from the cloth will overpower the preparation that dissolves the colour. I have destroyed a black of the best kind, and made a good yellow, in this way.

### 23d. *SCARLET RED.*

TO twenty yards of cloth, take one pound of good fustick, a quarter of a pound of tarmerick, six ounces of aqua fortis, and half a pound of argal or red tartar, which boil till the strength is well out, (the copper being clean as possible, and the water fair) then run your cloth two hours with the dye boiling; then air, rince and shift your liquor from your copper, and fill with clean water; heat boiling hot, then take one peck of wheat bran wet with vinegar, and after standing twelve hours, put it in a bag, and boil well one hour; let it drain, and squeeze it as dry as you conveniently can, run your cloth 30 minutes, air, rince and shift your liquor from your copper; clean your copper as clean as possible, fill with fair water, and heat boiling hot; then add five ounces of cochineal made fine, one ounce of red arsenick, two ounces and an half of aqua fortis, two ounces of gum armoniack; boil this together till the strength is well out; then run your cloth

with the dye boiling, run till your colour suits, and you will have a fine scarlet.

### 24*th.* *SCARLET RED.*

TO twenty yards of cloth, take one peck of wheat bran wet with vinegar, let it stand twelve hours; fill your copper with water, heat boiling hot; put the bran pudding into a bag, let it boil one hour, then run your cloth with the dye boiling, forty minutes; then add a quarter of a pound of aqua fortis, three quarters of a pound of argal or red tartar; run forty minutes more with the dye boiling, then air, rince and shift your liquor from your copper and fill with water; add one pound of fustick, and a quarter of a pound of tarmerick, boil this one hour; then run your cloth one hour with the dye boiling, air, rince and shift the liquor from your copper; fill with water, heat boiling hot; then add six ounces of cochineal pulverised, three ounces of aqua fortis, and one ounce of armoniac; let it boil well fifteen minutes; run your cloth one hour with your dye boiling, and you will have a fine scarlet.

### 25*th.* *CRIMSON RED.*

TO twenty yards of cloth, take three quarters of a pound of allum, three quarters of a pound of cream

of tartar, and three quarters of a pound of argal; pulverise these and mix them together; fill your copper with fair water, heat boiling hot, and add this compound; stir and mix it well with the boiling water; then run your cloth one hour boiling; then air, rince and shift your liquor; fill with fair water, heat boiling hot, then take half a pound of cochineal, and half a pound of cream of tartar, mixed and pulverised together; then add one half of the cochineal and tartar; run your cloth three quarters of an hour with the dye boiling; then air and add of this compound by little and little, with your dye boiling, till the colour is well raised on the red; then take half a pound of the spirits of sal armoniac, and run your cloth three quarters of an hour, and this will give it the crimson hue. This is a true crimson, and permanent.

### 26th. *FOR CRIMSON RED.*

TO twenty yards of cloth; take three quarters of a pound of fustick, a quarter of a pound of Tarmerick, five ounces of aqua fortis, fill your copper with water, add this, and boil well, till the strength is well out; run your cloth one and an half hours with your dye boiling; then air, rince, and shift your liquor from your copper, and wash clean: fill with fair water, heat boiling hot, then take four and an

half ounces of cochineal, & four and an half ounces of cream of tartar, pulverised together; add this to the water, with a quarter of a pound of aqua fortis, and three ounces of tarmerick, in which boil and handle your cloth, run one hour, then take half a pound of spirits of sal armoniac, or good old sig, to bloom with; in this handle, with the dye boiling, till your colour pleases.

27*th*. *FOR RED WITH RED-WOOD OR NICARAGUA.*

TO twenty yards of cloth; take ten ponnds of red-wood or Nicaragua chips, and boil moderately in good clean water one hour; then add one pound of allum, run your cloth forty minutes, then air and let the dye steep in the same manner as it did before; and run again, adding a little allum every time you dip; and manage in this form till your colour suits your fancy. Red-wood or Nicaragua may be mixt together or used separately, just as the dyer thinks fit and proper. I commonly use both together.

28*th*. *CRIMSON RED WITH RED-WOOD.*

TO twenty yards of cloth, take eight pounds of red wood, boil well, but not fast, one hour, then add

half a pound of allum, run your cloth three quarters of an hour, air and let the dye simmer in the same manner as before; add a little allum and run your cloth, and manage in this form till the strength is well out of the dye; then add half a pound of pearl-ash, and handle till your colour pleases.

The dyes for red, that are made of red-wood and Nicaragua, must not be hurried and drove, nor crowded too full, because it will destroy the lustre of the red, and the colour will be dull. It is necessary the copper and all the utensils should be clean,

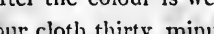
*29th. FOR RED, WITH MADDER.*

TO twenty yards of cloth, take one peck of wheat bran, boil it in a small kettle with eight gallons of water, one hour; then fill your copper with water, boiling hot; then add the liquor of the bran, and three and an half pounds of allum, one pound of red argal, boil and run your cloth, (being well scoured and clean) one and an half hours, boiling; then air and rince your cloth, and shift the liquor from your copper; fill with fair water, then add eight pounds of madder that is good, and heat moderately, with constant stirring, till near scalding hot; run your cloth three quarters of an hour with a moderate fire, then increase your fire, and bring it near a boiling

heat, but not boiling, for the madder must not boil, if you intend to have a good red; then run your cloth in this manner until the strength is well out of the madder, and the colour well raised on the red; then shift your liquor from your copper; fill with water, and add two and an half pounds of the best Brazil, boil well one hour, and add three quarters of a pound of allum and run your cloth till your colour suits, boiling between each dipping; and this will produce a good red.

This colour may be finished in the madder dye without shifting the dye, by adding two gallons of lant or sig. After the colour is well raised in the madder, run your cloth thirty minutes, and it will answer.

The best is with Brazil, but it is more lengthy, and the colour is brighter than with the sig; so I leave it to the discretion of the dyer.



30*th*. *FOR MERROON RED.*

TO twenty yards of cloth, take six quarts of wheat bran, wet with vinegar, let it stand twelve hours, and sour; put it in a bag, fill your copper with water, heat boiling hot, and boil the pudding two hours; then take it out and let it drain; squeeze

as dry as you can conveniently; then add one and an half pounds of allum, and half a pound of red argal made fine, run your cloth one hour boiling, air and let it lie all night and sour; then rince your cloth, shift your liquor from your copper, and fill it with fair water; when warm, add ten pounds of good madder and four quarts of wheat bran, constantly stirring until it is near boiling, but not boiling, for madder must not boil; run your cloth and manage in this manner till the strength is well out of the dye, and the red well raised, then add one gallon of lant or sig, and handle till your colour pleases.

## 31st. FOR POLISHED RED WITH MADDER.

TO twenty yards of cloth, take three and an half pounds of nutgalls pulverised, put them in the copper, and fill the copper about half full of water, put the galls in, let it boil till the strength is well out; then fill the copper with cold water; see that your dye is not hotter than scalding hot; then add five, six, or seven pounds of the best madder, in proportion to the shade required; let it simmer with a small fire one hour, with frequent stirring; then run your cloth thirty minutes, air and run again with the heat increasing; run till the strength is well out of the dye, and the colour well raised on

the red. The dye must steep between each dipping, fifteen or twenty minutes, with the heat increasing, but not boiling, for it will destroy the substance of the madder to let it boil. If your colour is not dark enough, add a little pot-ashes or pearl-ashes, and handle till your colour pleases; and you will have a fine polished red.

### 32*d*. *FOR PORTABLE RED.*

TO twenty yards of cloth, take one pound of fustick, and three quarters of a pound of allum, fill your copper with water, heat boiling hot, run your cloth, after the strength is out of the fustick, run three quarters of an hour; shift your copper, fill with fair water, and then add six pounds of redwood, let it boil moderately one hour, then add three quarters of a pound of allum, run your cloth 40 minutes; then air, and let the dye simmer one and an half hours, and run your cloth as before; then air and take out the chips, and add one and an half ounces of cochineal, and three ounces of aqua fortis; run again with the dye boiling, 40 minutes; to bloom, take six or eight ounces of spirits of sal armoniac, or good old sig; and your cloth will be a good colour by handling in this half an hour.

### 33*d*. *FOR CLARET RED.*

TO twenty yards of cloth, take two pounds of fustick chips, fill your copper with water, boil well, then add one pound of allum, boil, run your cloth one hour boiling, then air, rince, and shift your copper; fill with fair water, add eight pounds of red-wood, boil well, and add half a pound of allum; run your cloth one hour, then air, let the dye steep one hour, and run again, adding a little allum; manage in this manner until the strength is well out of the dye, and the colour well raised on the red; then add two ounces of aqua fortis, killed with pewter or block tin, as described in receipt 18th, run your cloth thirty minutes with the dye boiling; then add two gallons of sig to bloom, handle till your colour pleases, and you will have a fine claret red.

### 34*th*. *FOR CLARET.*

TO twenty yards of cloth, take twelve pounds of barwood, boil well, then add half a pound of allum, run your cloth until the strength is well out of the dye, about thirty minutes to a dipping, boiling between each dipping as much as is necessary to get the strength out of the barwood: when the colour is well raised on the red, then add a quarter of a pound of logwood, and a quarter of a pound of

copperas mixed together, and handle until your colour pleases.

### 35th. *FOR MADDER RED TO BE DYED A CLARET.*

TO twenty yards of cloth, take one pound of logwood, fill with fair water, boil well, run your cloth, and sadden with copperas until your colour pleases.

### 36th. *FOR SCARLET TO BE DYED CLARET OR ANY DARK COLOUR.*

To colour twenty yards of cloth ; fill your copper with water, heat boiling hot, then add one pound of copperas ; run your cloth, air, and run it again ; then shift your liquor from your copper, rince it, and fill with water ; then add one and an half pounds of logwood, boil well twenty minutes, then run your cloth till your colour pleases ; and you will have a fine claret that is durable.

This is the only way that scarlet can be coloured a darker colour. By running it in the copperas water first, you may dye it almost any dark colour you please ; for the copperas will destroy all the acidous

power that the scarlet is made by and depends upon; but until the power of the acid is destroyed, you cannot strike any colour through, so but that it will remain red in the middle of the cloth.

I have coloured scarlet black completely through, and almost all other dark colours, by the help of copperas.

## 37*th*. *FOR CHERRY COLOUR.*

TO twenty yards of cloth. take seven and an half pounds of Barwood, boil well, and add a quarter of a pound of allum: then run your cloth one hour: air and add two pounds of Brazil, and boil till the strength is well out; run your cloth again as before till the colour is well raised on the red, then add two quarts of sig or lant, and handle till your colour pleases.

## 38*th*, *FOR VIOLET COLOURS.*

TO twenty yards of cloth, take four pounds of Brazil, and one and a quarter pounds of log-wood; boil well, and add three quarters of a pound of allum, then run your cloth thirty minutes, air, and

let it steep till the strength is well out; then run again as before, then add three quarts of lant or sig, with the dye hot and well mixed together; run your cloth, and handle till your colour pleases.

Twenty shades of violet colour may be produced, by varying the logwood and brazilletto. The further management of this dye, I have left to the fancy of the dyer, for the colour will be beautiful, almost equal to cochineal and indigo.

You may use peach-wood in part, instead of all brazilletto, if you like. It will be less expensive than all brazilletto; but this I leave to your own choice.

### 39*th*. *FOR PINK COLOUR.*

For twenty yards of cloth, fill your copper with fair water, heat boiling hot, then add two pounds of allum, and one pound of argal; in this boil and run your cloth one hour, then air, rince and shift your copper; fill with water, and add two pounds of madder. Let it heat moderately, with often stirring, till near boiling hot, run your cloth one hour; and you will have a good colour of the kind.

### 40th. *FOR FLESH COLOUR.*

TO twenty yards of cloth, take one and an half bushels of black birch, and half a bushel of hemlock bark, boil well till the strength is well out; then add a quarter of a pound of allum, run your cloth one hour, and handle, and you will have a good colour of the kind.

### 41st. *FOR ORANGE COLOUR.*

TO twenty yards of cloth, take two pounds of fustick chips, 3 ounces of argal, and half a pound of allum, boil till the strength is well out of the fustick, then run your cloth, with the dye boiling, one hour; then air, rince, and shift the liquor from your copper, and fill with fair water; then add two and three quarters pounds of red-wood, two and three quarters pounds of madder, three quarters of a pound of allum, and two ounces of aqua fortis; let it boil moderately, with often stirring, till the strength is well out; then run your cloth one hour; then add one and an half ounces of arsenick, and half an ounce of cochineal, and this will bind the colour. In this run and handle till your colour pleases.

### 42d. *FOR ORANGE.*

TO twenty yards of cloth, take eight pounds of fustick, and four pounds of red-wood, and boil well; then add half a pound of allum, run your cloth thirty or forty minutes, then air, and let the dye steep a while, then run again till the strength is well out of the dye; then add one gallon of sig to bind; and handle till your colour suits.

### 43d. *FOR BROWN.*

TO twenty yards of cloth, take two bushels of butternut bark, fill with water, heat moderately, let it steep, (but not boiling) till the strength is well out of the bark; then run your cloth three quarters of an hour; and air and run again with the dye hot, but not boiling, (for boiling the bark deatroys part of the lustre of the colour which the bark gives) but run in this manner till the strength is well out of the dye, then air and take the bark out of your dye; then add a quarter of a pound of copperas and two quarts of sig, and mix the dye well together; run your cloth with your dye boiling fifteen or twenty minutes, and handle in this manner till your colour pleases.

Various shades may be produced in this dye, by

varying the bark and copperas ; sometimes more of one sort, and sometimes less ; and thus by changing the order of them, different shades will appear. Dry bark and green will make a different shade ; boiling and not boiling will have the same effect. Thus I leave it to the discretion of the dyer, to vary them as he or she pleases, to answer the shade or shades required.

## *FOR LONDON BROWN OR CORBEAU WITH CAMWOOD.*

TO twenty yards of cloth, take five pounds of good ground camwood, fill your copper with fair water, heat boiling hot, let your camwood boil a few minutes, then run your cloth thirty minutes ; air and run again in the same manner as before ; air and add half an ounce of blue vitriol, and a quarter of pound of oil of vitriol,* boil well five or six minutes, then run your cloth twenty or thirty min-

* When oil of vitriol is applied to any hot liquor, you must before you put it in the dye, put seven eighths of cold water to it, and then it will heat near boiling hot with the cold water ; but if you put in otherwise, it will make the hot liquor fly in a shocking manner, and the dyer will be in danger of being scalded.

utes more ; then take one pound of copperas dissolved in vinegar by constant stirring on the fire, (but be sure and not let it boil, for it will spoil the dye) then add the copperas by little and little, the dye boiling, and run as before, and handle till your colour pleases. If it is not dark enough for the corbeau, take two ounces of verdigrease made fine, and dissolved in sig or vinegar on the fire, by often stirring, as described in receipt 4th ; add this with one pound of logwood chips ; boil well, and handle in this manner till your colour suits. Sometimes it is required to be very dark, then these darkening materials must be applied according to the judgment of the dyer, &c.

### *45th. FOR LONDON BROWN OR CORBEAU, WITH NICARAGUA.*

TO twenty yards of cloth, take eight pounds of Nicaragua, and half a pound of fustick ; boil well, and add half a pound of allum, run your cloth till the strength is well out of the dye, and the colour well raised on the red, then add half an ounce of blue vitriol, and half a gill of oil of vitriol, and four quarts of sig, run your cloth 30 minutes ; then add half a pound of logwood, boil well, add one ounce of verdigrease, pulverised and dissolved, as in receipt No. 4, run your cloth twenty minutes ; then add

copperas by little and little to sadden; and handle till your colour pleases.

## 46th. *LONDON BROWN OR CORBEAU WITH RED-WOOD.*

TO twenty yards of cloth, take two pounds of fustick chips, boil well, and add one pound of allum, run your cloth boiling three quarters of an hour; air and rince, and shift your copper, then fill with water, and add ten pounds of red-wood chips; let it boil moderately one hour; then add half a pound of allum, run your cloth forty minutes, air, and let the dye steep one hour, and run again as before; and handle in this manner till you have a good red; (you must be cautious not to drive the dye too fast, and add a little allum now and then if necessary) and till the strength is well out of the dye: then add one gallon of sig or urine, run your cloth half an hour, then add one and an half pounds of logwood chips, boil well, then add two ounces of verdigrease made fine and dissolved in one pint of vinegar, as described before, and handle till your colour pleases.

### 47th. LONDON BROWN.

TO twenty yards of cloth, take two pounds of fustick and seven pounds of red-wood chips, boil moderately one hour, then add half a pound of allum, run your cloth three quarters of an hour, then slacken the heat of your dye, and add three pounds of madder; let it stand and simmer with often stirring half an hour, run your cloth one hour, and if the strength is not out of the dye, run again. The cloth must be a good red before you sadden; then add copperas to sadden with by little and little, till your colour suits.

### 48th. FOR LONDON BROWN.

TO twenty yards of cloth, take four pounds of fustick chips, boil well, then add half a pound of allum; then run your cloth one hour boiling, then air and rince, and shift your copper, and fill with fair water; then add six pounds of red-wood chips, boil well, add half a pound of allum, run your cloth one hour, then add one and an half pounds of madder, let it simmer half an hour, then run your cloth one hour, then add three quarters of a pound of logwood chips, boil well, then add two gallons of sig; then run your cloth and handle till your colour pleases.

### 49th. FOR REDDISH BROWN.

TO twenty yards of cloth, take one and an half pounds of fustick, boil well, and add a quarter of a pound of allum, in which run your cloth one hour boiling; air and rince your cloth, shift your liquor from your copper, and fill with fair water, then add nine pounds of red-wood; let it boil well, then add half a pound of allum, run your cloth one hour, then add a quarter of a pound of pearl-ashes and a quarter of a pound of allum; run your cloth half an hour, and this will be a good red; then add one ounce of arsenick and a quarter of a pound of argal; run your cloth three quarters of an hour, then add two gallons of good old sig, and handle till your colour pleases, and you will have a fine colour.

### 50th. FOR SPANISH BROWN.

TO twenty yards of cloth, take one bushel of butternut bark, and one bushel of walnut bark, boil well, run your cloth one hour, then take the bark out of the dye, and add half a pound of copperas; run your cloth forty minutes; then air and rince, and shift your liquor from your copper; fill with fair water, and add two pounds of fustick chips; boil well, then add half a pound of allum, run your cloth one hour, and air and rince, and shift your li-

quor from your copper, fill with fair water, and add eight pounds of red-wood; boil well and add half a pound of allum, run your cloth one hour; then add two ounces of oil of vitriol, killed with the flower of brimstone; run your cloth half an hour; then add half a pound of logwood, and boil well, then add two gallons of good old sig; and handle till your colour pleases.

## 51st. *FOR LONDON SMOKE.*

TO twenty yards of cloth, take eight pounds of fustick chips, boil well, then add a quarter of a pound of allum; run your cloth half an hour, then add one and an half bushels of good butternut bark, boil moderately till the strength is well out, then run your cloth one hour with the dye hot; then if the strength is well out of the dye, take the bark and chips out of the dye, and add three pounds of Nicaragua wood, or red-wood, and one and an half pounds of logwood chips, boil well thirty minutes; then run your cloth one hour, then add one gallon of sig, run twenty minutes with the dye boiling, then add one and an half or two pounds of copperas, and run to your liking; and this will be a colour equal to a blue for strength, &c.

## 52d. *CINNAMON BROWN.*

TO twenty yards of cloth, take four pounds of fustick, and three pounds of red-wood chips, or Nicaragua, boil well, then add half a pound of allum; run your cloth one hour, then slack the heat of your dye, and add four pounds of good madder; let it simmer half an hour; then add half a pound of allum, run your cloth one hour; then add two ounces of copperas, and two gallons of sig; and handle with the dye hot, till your colour pleases.

## 53d. *FOR SMOKE BROWN.*

TO twenty yards of cloth, take six pounds of fustick chips, and three pounds of ground camwood, boil well till the strength is well out; then run your cloth one hour, then add three and an half pounds of coarse madder; let it simmer twenty minutes; then run your cloth half an hour; then add half a pound of copperas, and handle till your colour pleases.

## 54th. *FOR LIVER BROWN.*

TO twenty yards of cloth, take eight pounds of fustick chips, and two pounds of red-wood chips, boil

well one hour, and run your cloth forty minutes; then add four pounds of mull, or coarse madder, and two quarts of rotton wood of oak, boil moderately, and run your cloth one hour; then add six or eight ounces of copperas, and handle till your colour pleases.

### 55th. FOR OLIVE BROWN.

TO twenty yards of cloth, take five pounds of fustick chips, boil well, run your cloth one hour, then add one bushel of butternut bark; boil well, but moderately, one hour; then run your cloth one hour, or till the strength is well out of the dye; then take the bark and chips out of the dye, and add six ounces of copperas, and handle till your colour pleases.

### 56th. FOR OLIVE BROWN.

TO twenty yards of cloth, take six pounds of fustic chips, and one pound of logwood, boil well, and run your cloth half an hour; then add one pound of madder, let it simmer half an hour, then run your cloth as before; then add a quarter of a pound of blymick or blueing, stir and mix it well with the

dye, and run your cloth twenty minutes; then add one and an half pounds of logwood, and one gallon of sig; run your cloth as before, add six ounces of copperas, and handle till your colour pleases.

### 57*th*. *FOR OLIVE BROWN.*

To twenty yards of cloth, take seven pounds of fustick chips, three quarters of a pound of logwood, and half a pound of madder; boil well one hour, then run your cloth one hour, then add half a pound of chymick or blueing, and run your cloth twenty minutes; then add two quarts of sig, and run again as before; then add two ounces of copperas, and handle till your colour pleases.

### 58*th*. *FOR A LIGHT SNUFF BROWN.*

TO twenty yards of cloth, take eight pounds of fustick chips, and four pounds of redwood or Nicaragua; boil well an hour and a half, then add a quarter of a pound of allum; run your cloth thirty minutes, then air and run again till the strength is well out of the dye; then add one gallon of sig, run your cloth half an hour, then take one peck of soot scraped from the chimney, put it into a tub, and put

two pails full of your dye to it; stir it well together, and let it stand and settle; then pour off the liquor moderately, and add it to your dye; run your cloth, and handle till your colour suits.

### 59th. FOR SNUFF BROWN.

TO twenty yards of cloth, take four pounds of fustick chips, and boil well; then add a quarter of a pound of allum, and run your cloth half an hour; add five pounds of redwood, boil well, and then add half a pound of allum; run your cloth as before till the strength is well out of your dye, then add a quarter of a pound of argal, and handle till your colour pleases.

### 60th. FOR DARK SNUFF BROWN.

TO twenty yards of cloth, take six pounds of fustick chips, and boil well, then add a quarter of a pound of allum; run your cloth one hour, then add two pounds of ground camwood, and one and an half pounds of madder, and let it simmer half an hour; run your cloth one hour, then add half a pound of copperas, or more, if the colour is not dark enough; and handle till your colour pleases.

### 61st. *FOR SNUFF BROWN.*

TO twenty yards of cloth, take three quarters of a bushel of butternut bark, and three quarters of a bushel of walnut bark, boil well one hour, but moderately; run your cloth one hour, then if the strength is well out of the bark and dye, take the bark out of the dye, and add one pound of copperas to sadden with; run your cloth three quarters of an hour, air and rince your cloth and shift your liquor from your copper, wash clean and fill with fair water; then add four pounds of fustick chips, boil well, and then add half a pound of allum; run your cloth half an hour; then add five pounds of redwood chips, boil one hour, and add a quarter of a pound of allum; run your cloth three quarters of an hour; let it steep, and run, till the strength is well out of the dye. To sadden, take one gallon of sig, and handle, &c.

### 62d. *FOR SNUFF BROWN.*

TO twenty yards of cloth, take one pound of allum, boil, and run your cloth one hour; then shift your liquor from your copper, and fill with fair water; then add five pounds of fustick, boil well till the strength is well out, then run your cloth thirty minutes; then add one bushel of butternut bark,

and five pounds of sumac berries, boil moderately one hour, and then run your cloth forty minutes; then add six ounces of aqua fortis, killed with pewter, as described before in receipt No. 18; run your cloth with the dye boiling one hour, and the colour will be done.

### 63*d*. *FOR SNUFF BROWN.*

To twenty yards of cloth, take eight pounds of fustick chips, boil well, and add a quarter of a pound of allum; run your cloth thirty minutes, then add four pounds of redwood chips or two pounds of ground camwood; boil well, and run your cloth till the strength is well out of the dye; then add one gallon of sig, a quarter of a pound of logwood, and an ounce of verdigrease, prepared as in receipt 4th; boil well, run your cloth twenty minutes, then add two ounces of copperas, and handle till your colour pleases.

### 64*th*. *FOR SNUFF BROWN.*

To twenty yards of cloth, take eight and an half pounds of fustick chips, four pounds of coarse madder, and three quarters of a pound of logwood;

boil well till the strength is well out of the dye-wood, but not fast; or the madder may be omitted till the strength is boiled out of the logwood and fustick, and then let it simmer a short time; then add six ounces of allum, run your cloth one hour, air, and run again, till the strength is well out of the dye; then add half a pound of copperas to sadden, or more if it is not dark enough; and handle till your colour pleases.

## 65th. FOR BAT-WING BROWN.

TO twenty yards of cloth, take one and an half pounds of fustick, and four pounds of good logwood, boil well, and then add one and an half pounds of good madder, and six ounces of allum; let it simmer half an hour, then run your cloth one hour; add eight or ten ounces of copperas, and one quart of lant, then run and handle till your colour pleases.

If you wish to alter the shade of this colour, you may add five or six pounds of logwood, and less fustic, and you may have the colour to suit your fancy.

### 66*th*. *FOR SLATE BROWN.*

TO twenty yards of cloth, take one bushel of butternut bark, boil well and run your cloth one hour; then take out the bark, and add half a pound of copperas; run twenty minutes, air, and run again, and add more copperas if it is not dark enough; for it requires to be very dark. When dark enough, shift your copper, scour clean, and rince your cloth; fill with fair water, heat hot, then add three ounces of compound or blueing; run your cloth twenty minutes, air, and if your colour is not blue enough, add a little more blueing; and if it is not dark enough, and the colour grows lighter, then add four or six ounces of logwood, and one ounce of blue vitriol; and handle till it suits your fancy.

### 67*th*. *FOR DOVE OR LEAD BROWN.*

TO twenty yards of cloth, take half a pound of chesnut or maple bark, and two ounces of logwood, boil well, then add two ounces of copperas, and a little compound or blueing, (say half an ounce) and stir your dye well together; run your cloth twenty minutes; then if you find your colour wants altering, it may be done by varying thus;—If it is not dark enough, add a little more copperas—if not blue enough, add a little more blueing—if not bright

enough, add a little more logwood ; run again, and if it requires nothing, your colour will be finished, Silk may be dyed in this.

### 68*th*. *FOR PEARL OR SILVER GREY.*

TO twenty yards of cloth, take four quarts of wheat bran, put it in a bag, and fill your copper with fair water, and boil the pudding an hour and a half ; then take it out, let it drain, and squeeze it as dry as you can ; then add two ounces of allum, let it boil, and skim off the scum that will rise, then run your cloth one hour ; add four pounds of logwood chips, put them in a bag, and boil well till the strength is well out, then take the bag of logwood out of the dye, if you do not, it will spot the cloth ; run your cloth thirty minutes, then add half an ounce of blue vitriol, and handle till your colour pleases.

It requires care with this colour, as well as all other light colours, that you do not let the cloth touch any thing that will spot it, for there is not much, if any, remedy for a light colour when spotted ; and all light colours should be dried with the backside to the sun ; for the sun is apt to injure the colour.

### 69th. FOR LIGHT BROWN.

TO twenty yards of cloth, take half a peck of hemlock bark, with the sap taken off, and two ounces of logwood chips, boil well, run your cloth twenty minutes, then add two ounces of copperas, and handle till your colour pleases.

### 70th. FOR ASH BROWN.

TO twenty yards of cloth, take three quarts of white ash bark, three ounces of logwood chips, boil well, run your cloth twenty minutes: then add three ounces of copperas, and handle till your colour pleases.

### 71st. FOR DRAB BROWN.

TO twenty yards of cloth, take a half peck of chesnut or maple bark, green or dry, two pounds of fustick chips, and two ounces of logwood chips: boil well, then add one ounce of compound of blueing, run your cloth twenty minutes: then add two ounces of copperas, and handle till your colour pleases.

### 72d. *FOR DRAB.*

TAKE chesnut, black birch, and yellow oak bark, half a peck of each, boil well, run your cloth, then add theee ounces of copperas ; and handle till your colour pleases.

### 73d. *FOR DRAB.*

TAKE one quarter of a pound of nutgalls, made fine, then one quarter of a pound of fustick, boil well, run your cloth ; then add one half an ounce of blue vitriol, two ounces of copperas ; run your cloth fifteen minutes, then add half a jill of oil of vitriol and one ounce of blueing, and stir it well with the dye, run your cloth, and handle till your colour suits.

### 74th. *FOR DRAB.*

TAKE six ounces of nutgalls, pulverised, three ounces of the flour of brimstone, four ounces of allum—put them in fair water, run your cloth one hour ; then sadden with black float, and handle till your colour suits.

### 75*th*. *FOR DRAB.*

TAKE one and an half pounds of fustick, one pound of logwood, one quart of rotten wood of oak, boil well, then add one half pound of madder, and four ounces of allum, boil, run your cloth twenty minutes; then add three ounces of copperas and one quart of sig, and handle till your colour pleases.

### 76*th*. *FOR DRAB.*

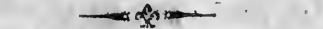
TAKE one and an half pounds of fustick chips, six ounces of logwood, boil well; then add one quarter of a pound of allum, run your cloth thirty minutes; then add three ounces of copperas, and handle till your colour pleases.

### 77*th*. *FOR FOREST CLOTH.*

TAKE two pounds of fustick chips, six ounces of logwood, boil well, then add seven ounces of chymick, run your cloth twenty minutes; then add three ounces of good madder, two ounces of red tartar, made fine—let it simmer fifteen minutes, and run your cloth twenty minutes: then add one gallon of sig, or lant, and thirty ounces of copperas, and handle till your colour pleases.

### 78*th*. *FOR LIVER DRAB.*

TAKE one pound of fustick chips, three pounds of rotten wood of oak, three ounces of barwood, two ounces of logwood chips, one pound of madder, boil well, run your cloth twenty minutes; then add six ounces of filings of iron, boil well, run your cloth fifteen minutes: then add six ounces of logwood, and five ounces of copperas, and handle till your colour pleases.



### 79*th*. *FOR LIGHT LIVER DRAB.*

TAKE two ounces of blue galls, one ounce of logwood, two ounces of allum, one ounce of cream of tartar, and two ounces of madder: run your cloth fifteen minutes, then add one ounce of copperas, and handle till your colour pleases.

### 80*th*. *FOR A MADDER DRAB.*

TAKE three pounds of good madder, one pound of fustick, let it simmer one hour; then add two ounces of allum, run your cloth half an hour; then add one pound six ounces of filings of iron, boil well, run your cloth: then add three ounces of logwood, and handle till your colour pleases.

### 81*st*. *FOR A GREEN DRAB.*

TAKE three quarters of a pound of fustick, one quarter of a pound of logwood chips, boil well, then add half a pound of allum, two ounces of blueing: mix it well with the dye, run your cloth thirty minutes; then add one ounce of copperas, and handle till your colour suits your fancy.



### 82*d*. *FOR A REDDISH DRAB.*

TAKE three ounces of allum, half a pound of fustick, six ounces of logwood chips, two ounces of madder, one and an half pints of rotten wood of oak; boil well half an hour, run your cloth one hour, stir, sadden with three ounces of copperas: and handle, till your colour pleases.



### 83*d*. *FOR REDDISH DRAB.*

TAKE one and an half pounds of fustick, boil well; then add one quarter of a pound of allum, run your cloth, boiling, one hour, then air and riuce and shift the liquor from your copper, fill with fair water; then add three and an half pounds of good madder, two ounces of camwood, let it simmer fifteen minutes; then run your cloth twenty

minutes, then add two ounces of filings of iron, and handle till your colour pleases.

### 84*th*. *FOR LIGHT DRAB.*

TAKE five ounces of fustick chips, two ounces of good madder, two ounces of allum, boil well, run your cloth twenty minutes; then sadden with twenty ounces of copperas, and handle till your colour pleases.

### 85*th*. *FOR YELLOW DRAB.*

TAKE three quarters of a pound of fustick, two ounces of madder, two ounces of logwood, boil well; then add one quarter of a pound of allum, run your cloth one hour; then sadden with two ounces of copperas, and handle till your colour pleases.

### 86*th*. *FOR A YELLOW DRAB, DARK.*

TAKE two pound of fustick chips, five ounces of logwood chips, boil well, then add five ounces of madder and one quarter of a pound of allum, run

your cloth thirty minutes, then add one quarter of a pound of copperas, and handle till your colour pleases.

87*th*. *FOR A FOREST BROWN.*

TAKE six pounds of fustick chips, boil well: then add two ounces of allum, run your cloth fifteen minutes; then add two and an half pounds of logwood, boil well, run your cloth thirty minutes, then sadden till your colour suits, with six ounces of copperas.

88*th*. *FOR A DARK FOREST BROWN.*

TAKE one and an half pounds of logwood, three quarters of a pound of red argal, and three quarters of a pound of allum, boil well, run your cloth one hour, boiling; then add four pounds of good fustick chips, boil well, run your cloth half an hour, and handle till your colour pleases.

89*th*. *FOR PARIS MUD.*

TAKE your cloth, and dye it a bright lively blue, but not deep; then rince your cloth, and fill

your copper with fair water; then add six pounds of stone rag, or the moss of stone, boil well, run your cloth one hour; then add two ounces of copperas, and one quart of sig, and handle till your colour pleases.

## 90th. *FOR A RAVEN COLOUR.*

TO twenty yards of cloth, take two quarts of wheat bran, wet with vinegar; let it stand two days and sour, then fill your copper with fair water, put the bran into a bag, boil well one hour; then take out the bag and let it drain, then add one pound of madder and one pound of allum; run your cloth one and an half hours, boiling: then air and fold it up smooth, and wrap it up close, and let it lie twenty-four hours; then rince, and shift the liquor from your copper, fill with fair water, then add eight pounds of logwood chips, boil well till the strength is well out; then run your cloth one hour; then, if you find it necessary, add more logwood—if not, then add one quarter of a pound of copperas, and one gallon of lant, and handle till your colour pleases.

If your colour is not dark enough, you may use a little ashes, put with sig; and take the lees and put

in the dye, with a little copperas, and run again.—Lye and sig has the same effect, and pot-ash or pearl-ashes.

### 91st. *FOR CROW, WITH COPPERAS.*

TO twenty yards of cloth, take one and an half pounds of copperas, fill your copper with water, heat boiling hot; then run your cloth twenty minutes, air, and run again as before, then air and rince your cloth, shift the liquor from your copper, and rince, fill with fair water, heat, and add four pounds of logwood chips, boil well, run your cloth half an hour, then air and run again as before; then, if your colour is not dark enough, add one ounce of blue vitriol, run again, and handle till your colour pleases.

### 92d. *FOR CROW, WITH BLUEING COMPOUND.*

TO twenty yards of cloth—fill your copper with fair water, heat boiling hot, then add one pound of blueing, (made as in receipt No. 6, for Prussian blue) add this at twice or three times, run your cloth twenty minutes at a time, air and stir the blueing

well with the dye, before the cloth is dipped in the dye; then add two pounds of logwood chips, boil well, then add one quarter of a pound of verdigrease pulverised and dissolved in vinegar, as in receipt no. 4; then run your cloth half an hour, then add half a pound of copperas, run again, air, and if it is not dark enough, add more copperas, and handle till your colour suits your fancy.

### 93*d*. *For Crow, with Blue Vitriol.*

TO twenty yards of cloth—Fill your copper with water, heat scalding hot, take half a pound of blue vitriol, let it dissolve, run your cloth forty minutes, in two parts: then add five pounds of logwood chips, boil well, run your cloth thirty minutes, air and run again, and handle till your colour pleases.



### 94*th*. *FOR BLACK.*

TO twenty yards of cloth—Fill your copper with water, heat, and add two pounds of copperas; heat near boiling, run your cloth twenty minutes, then air and run again, boiling the time as before: air and rince, and shift the liquor from your copper

(rince your copper clean) and fill with water, and add six pounds of logwood chips, boil well, run your cloth thirty or forty minutes, let it boil again fifteen or twenty minutes, then run again as before ; then add one quarter of a pound of blue vitriol, run your cloth, boiling, three quarters of an hour ; then, if it is not black enough, run again, and handle till your colour pleases.

This is the best form to dye a black, I think, in the world ; it is equal to any for brightness, and without the least danger of rotting the cloth ; and the colour is lasting and permanent as a blue or scarlet.

It is necessary to cleanse the colour or dye stuff well out of the cloth, immediately. First rince in fair water, then take a tub of warm water, sufficient to handle, and wet the before-mentioned quantity of cloth ; then add half a pint of the liquor of beef galls, mix it well with the warm water, then handle your cloth in this till it is well wet, then rince in water till it is clean. This is a sure remedy against cracking. The beef gall may be used in all cloths, in this manner, that are liable to crack ; and it will prevent their cracking, without the least danger of injuring the colour.

### 95*th*. *FOR BLACK.*

TO twenty yards of cloth, take three pounds of logwood chips, one and a half pounds of sumac, of one season's growth, cut and dried : boil well, run your cloth half an hour, then add one ounce of blue vitriol, one quarter of a pound of nutgalls, pulverised, boil well, run your cloth fifteen minutes : then add one ounce of verdigrease, pulverised and dissolved in sig or vinegar, as described in receipt No.4 : run your cloth fifteen minutes, then add one pound of copperas, handle, and if it is not black, then add more copperas ; and handle till your colour pleases.

### 96*th*. *FOR BLACK.*

TO twenty yards of cloth, take six pounds of logwood chips, one pound of dry elder bark, one and an half pounds of sumac, of one season's growth, well cured and dried, one quarter of a pound of fustick, boil well one hour, then run your cloth one hour, air and run again as before ; then air, add one gallon of sig, and one and an half pounds of copperas, run your cloth twenty minutes ; then, if it is not black, add more copperas, and if it is attended with a rusty brown, add two pounds of common good

brown ashes, run your cloth, and handle till the strength is well out of the dye.

Then, if it is not black, shift your liquor from your copper, scour clean, rince your cloth, fill your copper with fair water, then add one pound of logwood chips, one quarter of a pound of elder bark and half a pound of argal; then boil well, run your cloth one hour, then sadden with copperas, what is necessary, and handle. But if it continues of a rusty cast, which logwood causes, add one gallon of sig, or more ashes, that which is most convenient, and handle till your colour pleases.

N.B. Silk may be dyed in this dye. It is necessary to take the same method in cleansing as in receipt No. 94, and all other dark colours that are liable to rack, &c.



## 97th. FOR BLACK.

TO twenty yards of cloth, take three quarters of a pound of blue vitriol, add to fair water, boil well, run your cloth three quarters of an hour; then add six pounds of logwood chips, and one pound of fustick chips, boil one hour, run your cloth one hour, then add two ounces of verdigrease, pulverised and

dissolved in vinegar, as before described, and one gallon of sig, run your cloth twenty minutes; then add one pound of copperas, and handle, with the dye boiling, till your colour pleases.

### *7th. FOR BLACK.*

TO twenty yards of cloth, take one bushel of butternut or chesnut bark, or both mixed together: boil till the strength is well out, then run your cloth one hour, then sadden with copperas till it is quite dark; then air and rince, and shift your copper, fill with fair water; then add four pounds of logwood chips, half a pound of fustick chips, boil well till the strength is well out, then run your cloth one hour; air, and if it is not black, or near a black, run again; then add one pound of copperas, and one gallon of sig; boil well, run your cloth boiling, and handle till your colour suits your fancy.

The preceding Receipts are calculated for twenty yards of fulled cloth; but thin cloth may be dyed as well as thick, and all kinds of woollen goods, as yarn, wool, &c. Silks may be dyed in most of the dyes before mentioned; but the dye requires to be

stronger for silk than for woollen. Those dyes that will not answer for silk, I shall mention hereafter.

## Receipts for Cotton and Linen,

*COLD AND HOT.*

98*th*. *BLUE—FOR COTTON, LINEN, YARN, &c.*

TO a tub that will hold thirty-six pails of water, take twelve pounds of stone-lime, slack it, put it in, stir it ten or twelve minutes; then add six pounds of copperas, dissolved with hot water, stir it as before; then add six pounds of indigo, ground fine, stir it incessantly two hours; for three days, stir it three or four times in a day, then let it stand fifteen or twenty hours before the yarn is put in, lay sticks across the tub, to hang the yarn on, that it may not reach the bottom; move the yarn round every fifteen minutes. Six hours is sufficient for the first colouring of the dye; as the dye grows weaker, longer time is required: rince and dry it in the shade.

When the dye is reduced, then recruit in manner and form as in setting, only when there is a great quantity of sediment at the bottom, then the dye must be dipped off, leaving the sediment in the bottom; then throw away the sediment, shift the dye back, and if the tub is not full enough, then add more water, (rain water is required in this dye in setting and recruiting). The dye must not be worked at too soon after recruiting, or sitting, and it must not be crowded too full in colouring, but judgment must be used by the dyer, &c.

*90th. BLUE—FOR COTTON AND LINEN, COLD.*

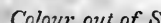
TO set a tub of twelve gallons, take ten gallons of good sig, to which add three gills of spirits, one pound of good indigo, three ounces of pearlashes, a quarter of a pound of good madder, and a pint of wheat bran; put the indigo in a bag, and rub it in the dye till the indigo is dissolved, and stir the dye well together with the ingredients; let it stand twelve hours covered close and kept warm, and manage it in the manner and form as in receipt No. 2, till the dye comes to work. After the dye has come to work, wet the yarn in hot water, with a little pearlash in it; let it cool, then put it in the dye loose; let it lye in the dye twelve hours, then wring

it out and let it air ; and if it is not dark enough, then put it in again. There ought to be something at the bottom to keep the yarn off of the sediment.

There may be a saving in colouring cotton or linen, by first colouring brown or purple, as I shall hereafter mention. Silk may be dyed in this dye, but not in the blue vat.

100*th*. *BLUE—FOR COTTON AND LINEN—HOT.*

HEAT water sufficient for your yarn, say for five pounds of cotton or linen yarn, take five ounces of blue vitriol, run your yarn or let it lye in the dye one hour, then add three pounds of good logwood chips, boil well, and put in the yarn ; let it lye one hour, then air and add two ounces of pearlashes, let it lie thirty minutes ; then, if it is not dark enough, add a little blue vitriol ; put it in again, and you will have a good looking blue, but it will not be so lasting a colour as the two forms before mentioned.



101st. *To take the Colour out of Silk, Cotton, or Linen, when spotted or another colour is wished.—Hot.*

TO one barrel of hot water, take half a gill of

oil of vitriol, put in the goods; run them fifteen minutes, air and rince them in fair water immediately, lest it should endanger the goods.

I have reduced black without injuring it, and made a yellow of it in this form.

102*d*. *For Green on Silk.—Hot.*

TAKE two pounds of fustick, boil well, till the strength is well out, then take out the chips, and add a quarter of a pound of allum, and six ounces of blueing, prepared as in receipt No. 6; stir it with the dye till it is well mixed, then handle your silk fifteen or twenty minutes; stir it lively, and keep it open and loose in the dye; (silk should never be wenched as woollen goods) air, and if not deep enough, add a little more blueing; and if not yellow enough, then a little allum, run again fifteen minutes; then air, and if the colour suits, rince immediately. The dye ought to be so fixed as to colour quick, and there must not be a great quantity coloured at once in a dye; for the dye will get too strong with the vitriol, which will endanger the silk; but with proper care, it may be coloured without any danger.

### 103*d*. *Green on Cotton or Linen.—Cool.*

TO set a dye, take two pounds of logwood, and one pound of fustick chips, boil well, then add a quarter of a pound of allum, and run your goods one hour; then add a quarter of a pound of blue vitriol, run your goods thirty minutes, then add two ounces of pearlash; run again, and handle till your colour pleases.

### 104*th*. *Yellow on Cotton and Linen.—Hot:*

TAKE two pounds of the leaves or peelings of onions that are clean and clear from dirt; put them in fair water, boil well, then add half a pound of allum, run your goods one hour, and you will have a good colour.

### 105*th*. *Orange Colour on Cotton and Linen.*

TAKE two pounds of copperas, dissolve it in hot water, and have the liquor very strong; let it stand till nearly cold, run your goods one hour, then dip it in good lye, handle till perfectly wet; then let it drain, and hang it in the sun fifteen minutes, and the sun will turn the colour; continue to manage

in this manner, dipping it in the dye and hanging it in the sun, till dark enough.

106*th. Flesh-Colour on Cotton and Linen.—Hot.*

TAKE one and an half bushels of black-birch bark, and half a bushel of hemlock bark, boil well; then add a quarter of a pound of allum, and two ounces of pearlash; run your cloth or goods till your colour pleases.

107*th. Red on Cotton or Linen.—Cold.*

TAKE six pounds of Nicaragua chips, boil them till the strength is well out; then add half a pound of allum, and let it stand till cold; run your cloth or yarn in hot water, with a little pearlashes in it; then air, and put it in the dye, frequently handling over till the colour suits.

108*th. Cotton and Linen Redish Brown—Hot.*

TAKE butternut, sassafras, black alder, and hem-

lock bark, a bushel of each ; boil well, run your goods one hour, then add two pailfulls of lye, or a quarter of a pound of pearlash ; run your cloth or goods, and handle till your colour pleases.

109*th. For Plumb-Colour or Purple, on Silks.—Hot.*

TAKE six pounds of logwood chips, and three pounds of redwood chips, boil well till the strength is well out of the chips ; then add one pound of allum, and run your goods one hour ; then add one ounce of verdigrease, made fine and dissolved in sig, described before, and add one gallon of sig ; run your goods thirty or forty minutes, and if your colour is not dark enough, then add a little blue vitriol, and handle till your colour pleases.

110*th. Purple on Cotton or Linen.—Cold.*

TAKE three pounds of logwood chips, boil well, till the strength is well out and the dye very strong, (for all cotton dyes require to be strong ;) then add half a pound of allum, and one ounce of pearlash ; let it stand and get cold, dip your goods into hot water, air, and put them into the dye loose, handle over once in fifteen or twenty minutes ; let them lie

in the dye in this manner till the colour suits. It must be observed in dying cottons and linens in cold dyes, that the air and sun are very necessary to brighten and strike the colour in. Let the goods lie in the air and sun, three or four times in the course of your colouring, fifteen or twenty minutes at a time. This preparation is suitable for blue, as mentioned in receipt 99th.

### 111*th. Brown on Cotton and Linen.—Cold.*

TAKE of maple or white oak bark, one bushel, boil well till the strength is well out, then take the bark out, and have dye sufficient to wet the goods; then add one pound of copperas, let it stand till nearly cold; run your goods in hot water with a little pearlashes first; then put it in the dye, and handle over once in ten or fifteen minutes, and air, as described before in receipt 110th; and handle in this manner till the colour suits; then rince clean. This is the brown mentioned in receipt 99th, for a saving in blue; but I prefer the purple; but when coloured blue, after it is dry, it is necessary to scald it in salt and water, to bind the colour.

### 112*th. Dove or Lead-Colour, on Cotton or Linen.—Cold.*

TAKE one pound of nutgalls pulverised, boil in water one hour, then add two pounds of copperas; let it stand till cold, and have liquor enough to wet the goods; (it requires to be very strong) put your goods in the liquor, and handle once in five or six minutes, wring and air once in half an hour; dip in this manner three hours, then rince. This liquor ought to be put in a tub, and another liquor prepared in another tub, in this manner, viz.—take six pounds of sumac, of one year's growth, cut and well dryed with the leaves all on, in the summer season, and three pounds of logwood chips, boil well till the strength is well out, then shift it in the tub, and let it stand till cold; then run your goods in the same manner as before described, handle in this two hours; if the colour is not then dark enough, run again in the copperas and galls liquor, then rince and run in the logwood again, and handle in this manner till your colour suits.

N. B. Cotton and linen, when dyed in cold dyes, must always be wet and run in hot water half an hour, and then aired; and a little pearlashes is good in the water, to cleanse the goods for colouring, &c.

Cold dyes will remain good always if properly recruited.

113*th. Olive on Cotton and Linen.—Cold.*

TAKE one pound of nutgalls pulverised, put them in water, boil one hour, then put it in a tub, then add two pounds of copperas, have the liquor strong, and enough of it to wet and cover the goods; then dip in the hot water; then stir the galls and copperas together, then put in your goods and handle over once in five minuses, that no part shall be confined, wring and air every half hour; handle in this liquor two hours, then rince, then add three pounds of fustick and one pound of logwood chips, boil well till the strength is well out; then add five ounces of good madder, and two ounces of allum; let it simmer a few minutes, then shift the liquor into a tub, and let it stand till cold; then handle your goods in the first liquor two or three hours till the colour is well raised; and if it is not dark enough, then take two pounds of fustick, and one pound of logwood, boil well; let it cool, and sadden with copperas as much as is necessary, and handle till your colour pleases.

114*th. Olive on Silk, Cotton, or Linen.—Hot.*

TAKE five pounds of fustick, and two pounds of logwood chips, boil well; then add a quarter of a pound of blue vitriol, and a quarter of a pound of allum, run your goods one hour; then add one pound of copperas, and handle till your colour pleases. If the colour is not dark enough, you may add more copperas, &c.

115*th. Light Olive on Cotton and Linen.—Hot.*

TAKE four pounds of fustick chips, and half a pound of logwood chips, boil well, then add two ounces of allum, and one ounce of blue vitriol; then run your goods till the strength is well out of the dye; then sadden with copperas to your liking, and handle till your colour pleases.

116*th. Slate Colour on Cotton and Linen.—Hot.*

TAKE hot water, and dissolve one pound of copperas; run your goods forty minutes, then air and rince, and shift your liquor from your copper; fill with fair water; then add three pounds of logwood,

boil well, run your goods one hour, then add a quarter of a pound of blue vitriol, and haddle till your colour pleases.

117*th. Black on Cotton and Linen.—Hot.*

TAKE four pounds of good logwood, and two pounds of fustick chips, boil well; then add a quarter of a pound of blue vitriol, run your cloth one hour, or till the strength is well out of the dye, then sadden with two pounds of copperas, and one gallon of good old sig; run your cloth, and if it is not black, you must air and rince, and shift your liquor from your copper, and set another dye in manner and form as the first, and handle again, and depend on having an excellent black at last. But if it is attended with a rusty brownness, you may put in one quart of brown ashes, or two ounces of pearl-ash, and handle lively, which is necessary in all hot silk, cotton, and linen dyes.

118*th. Black on Cotton and Linen.—Cold.*

TAKE one pound of nutgalls pulverised, boil in one pail-full of water one hour, then add two pounds of copperas, shift it into a tub, and add water suffi-

cient to cover, and handle your goods very strong; then take fair water and fill your copper, add four pounds of logwood chips, two pounds of sumac well dryed, of one season's growth, and one pound of dry alder bark, boil well till the strength is well out, then dip off the dye into a tub, the chips remaining in the kettle; let it stand till cold.

The dye must be managed in this manner;—first run your goods in hot water, with a little pearl-ashes in it; run in this half an hour, then air and lay your goods into the copperas and galls liquor; handle over every eight or ten minutes, and air every half hour; handle in this two hours, then rince clean and lay it in the logwood liquor; handle as in the other three hours, then if it is not black, put water in the copper upon the chips; before running in the copper, let it steep and cool again, and add one pound of copperas; run in this one hour; but if it has a rusty brown appearance, which is occasioned by the logwood, then add two ounces of pearl-ashes, or brown ashes will answer if you have no pearl-ashes; run in this half an hour, then air and rince clean, and if it is not black then, recruit the liquors and make them stronger, and manage as before in the first preparation; and never fear but you will have a fine black.

After you have rinced clean, to keep it from

cracking, use beef galls, as mentioned in receipt No. 94.

## *GENERAL OBSERVATIONS.*

COTTON and linen dye is the best cold in general; for it is almost impossible with me to colour cotton and linen in hot dyes without spotting; for the cotton, &c. are of a cold deadly nature, and the steam of the dye has a bad effect on goods of this kind. All kinds of cotton and linen cloths, yarn and thread, may be coloured by following the preceding receipts for dying cotton and linen.

In the receipts for dying silk, cotton and linen, I have not specified any particular quantity of yards or weight. There is so much difference in the weight of goods of this kind, that no rule could be given in yards; and no certainty can be affixed to a general rule of weight, because of the difference of the quality of the goods. Silks differ, so do cottons and linens; no regular system can therefore be adopted. The dyer is to proportion his dyes according to the receipts, following his judgment as the goods vary; and if he closely pursues the directions for proportion and management, he will not

find a single receipt that will not answer the purpose designed. I shall hereafter speak particularly of the powers on which the dyes depend.

## *DIRECTIONS FOR DRESSING CLOTH.*

IN dressing cloth, there are various forms in use with almost every workman in the business ; but I shall only point out the way which I conceive to be the best. There are also different kinds of tools and utensils made use of, which I shall leave to the discretion of the practitioner.

### *FOR FULLING CLOTH.*

CLOTH to be fulled, should be wet with soap sufficient to cleanse it of the dirt and grease, then scoured clean and dryed; then burl or pick out all the nap and specks that will injure the cloth in dressing ; then wet with soap so that the cloth will work and turn lively in the mill. Let proper attention be paid to handle the cloths from the mill, so as to keep them smooth ; and be cautious not to let them grow together, for it is very hurtful to the cloth, and det-

rimental in dressing. The fulling-mill must be tended with care. When the cloths are fulled sufficiently, then scour clean from the soap: And if there is any of the first quality to be dressed, then card lightly over, so as to lay and straighten the nap; then shear this nap off; then take clothier's jacks, and raise a nap sufficient to cover the thread; then shear this off and raise another nap with teazles. I prefer teazles to any thing else to raise a nap on cloth; they are much milder and softer to cloth than jacks; but where they cannot be had, jacks may be substituted in their place. After raising the third nap, then colour the cloth; cleanse it well from the dye, and lay the nap straight and smooth out of warm water with jacks that are limber; then dry, keeping the nap smooth: when dry, first shear on the back-side, then shear smooth and even on the face side, and as close as you can. When sheared, burl clean, and lay the nap with a sand-board or brick, or brush, but not with a jack; some erroneously use a jack; a jack is good and necessary to raise a nap, but not to lay it. Lay the nap smooth with the sand-board, and then the cloth is fit for the press. Have smooth papers, put it in the press, let the heat of the plate be just hissing hot; screw it moderately in the press, for the beauty of most thick cloths is destroyed by pressing too hard. The beauty of thick cloth depends on drying, and not on pressing; the coarser the cloth is, the harder it re-

quires to be screwed; all thick cloths are not dressed alike, but according to quality, some requiring once shearing, some twice, and so on, to the number of times mentioned before; six times is sufficient for the first quality, managed as before mentioned. Some fulled cloths do not require shearing, which are dressed with a thick nap, sufficient to cover the thread; this may be raised with common wool and cotton cards; this kind of cloth is called bear-skin or coating. Bearskin should be pressed in the cold press, never in the hot-press. Baize or flannels should be fulled lightly, the grease and dirt scoured out clean; then, if it is to be coloured, dye and raise a nap with a mild easy card or jack, and a stuffed board, and dry smooth, and press in a cold press; but if it is to remain white, raise a nap as before, and dry smooth; then have a stove, or some proper tight place, with conveniences to hang the cloth up loose; then, to 100 yards of flannel, burn one pound of sulphur or brimstone under the cloths, and it will cleanse them from all specks of dirt, and leave them as white as need be; but when you find it necessary, you may have your copper cleaned with fair hot water, with a little compound of bluing in it; run your cloth in this a few minutes, and dry smooth; put in clean papers, press in the cold press, &c. Some, when they stove their cloth with sulphur, wet it in clean soap suds, and hang the cloth or goods up wet; but I prefer the water with a lit-

tle bluing, to whiten the cloth before stoving, for it will wear handsomer, and will not grow yellow so soon.

## *FOR THIN CLOTHS.*

THIN cloths should be well coloured, cleansed well from the dye, dryed smooth, and pressed double; thin cloths require to be much moister than thick cloths; the press papers should be hard, thin and smooth; and the press hotter than for thick cloths. It must be screwed very hard, for the beauty of thin cloth is in the gloss given by pressing. The heat of the press should be kept regular, and the cloth will be smooth, &c.

## *TO DRESS SILK AND COTTON, &c.*

SILK must never be pressed, but cleaned well from the dye-stuff, then dryed; then dissolve gum Arabic in water, wet the silk thoroughly in this, wring and squeeze as dry as you can, so as it shall not drip; then strain it out smooth every way, and dry. This will finish the silk dressing.

Cottons. Some do not require to be pressed, as velvets, corduroys, and similar cloths; they require only to have the nap laid when wet; fustian must have a nap raised dry with teazles, and then pressed. Almost all kinds of cotton and linen cloths, except those before mentioned, such as nankeens, jeans, muslins, &c. require to be pressed quite hard; not as hard as thin woolen cloths, but harder than thick.

N. B. Silk, cotton and linen cloth, must never be put in the fulling-mill to scour at any time, for it will ruin them.

*Observations on the Difference of Colours, and their depending Powers, with directions as to the use of Dye-stuffs, and their Properties and Effects.*

THE five Material Colours are these, Blue, Yellow, Red, Brown and Black ; the three powers are these, the Alkali, the Acid, and Corrosive ; these are the depending powers of all colours ; which I shall endeavour to shew in each colour in course.

FIRST, *The Blue.* The Blue with indigo depends on the power of the alkali, sig or urine ; pearl-ashes and pot-ashes, and the lye of lime are all alkalies : so it evidently appears that indigo, although the best dye drug in the world, (except cochineal) is of no effect without the power of the alkali. There are other materials used with the indigo, but are of no other use than to support and assist the indigo : Woad will dye a blue, properly prepared, without the indigo, and indigo without the woad ; so woad serves only as an assistant to the indigo. Woad is a very useful dye drug in carrying on large manufactories ; but it will not answer any useful purpose in our small business. Madder is a strong drug, serving to brighten and darken the blue, which greatly assists the indigo. Wheat bran serves only to soften the water, and urine or sig prepares the dye to come to work sooner than it other-

wise would. Borax is an alkali which softens all parts, and causes it to rest easy, and come to work well and soon. Blue with indigo is coloured with drugs altogether.

Prussian Blue is of a different nature; it is dependant on the power of the acid, which I shall describe hereafter. Blue with logwood is of a different nature from any other real colour. I think this is possessed of all the powers and mixed powers; with regard to logwood I have imbibed an idea that it was leading and allied to a blue. I have tried one power and another, until I have been brought to this conclusion. Madder to strengthen the logwood; allum is an acid that raises the lustre of the blue, but not sufficient of itself, it being a weak acid; verdigrease is evidently possessed of two powers, I think; it agrees with the acid and corrosive, but is most powerful as a corrosive. Sig is a weak alkali, which shows that the powers are mixed; it rouses and gives lustre to the logwood, and makes a fine blue. Thus we find the three powers may be mixed together in a real colour, although much averse to each other. Blue vitriol is possessed of two powers, acid and corrosive, and powerful in both; it has a speedy effect on logwood; and is very good in the latter part of a dye, to raise, bind, and darken the colour.

In the 5th receipt I have placed the two powers

as a preparation for the blue, which are in themselves in direct opposition to each other. The acid being most powerful, it will generally destroy the corrosive. Copperas is a corrosive; allum and tartar are acids, which soften and take off the ill effects of the copperas; thus mixed together, they have a good effect; but place them in two different bodies and apply your goods, and one will destroy the other. The copperas agrees well with logwood, for almost any colour: however, for a blue, it is necessary to rince the copperas well out of your goods, otherwise the colour will be dull. Copperas being placed with the logwood, kills the nature of it, and destroys the lustre of the blue if used after the logwood. The verdigrease, sig and pearl-ashes make the three powers compleat in this dye, only in different form and manner; which evidently shews that blue with logwood cannot be made without these powers; but when the three powers are necessarily fixed or placed in union, they must be in a feeble form; and still, if they are not properly applied, although weak and feeble, perhaps they will breed a war that will cost something before a peace can be made; so be cautious in dealing with too many powers at once, till you become well acquainted with their relative and combined strength.

## *PRUSSIAN BLUE.*

PRUSSIAN Blue depends principally on the indigo, raised by the power of the acid, and softened by the power of alkali. Oil of vitriol is a strong acid, salt and lime are alkalies; salt may be used, and answers the purpose of lime, so it evidently appears that salt is a simple alkali: these three ingredients mixed together, make a compound of bluing for Prussian blue, and green. Green is no colour of itself, but is connected with two, blue and yellow, which are both dependant on the acid. Fustick is an excellent dye-wood, but is useless without the acid to raise and brighten the colour. Allum is commonly used, but tartar and aqua fortis serve to raise the colour of the yellow; so green may be made very easy, the two colours being in perfect union with regard to powers. So lead them together with care till they arrive at their proper state, which is a good green.

In the 10th receipt I have admitted a little logwood and copperas, which serves to darken the green, and rather dull, &c.

In the 11th receipt, I have admitted pearl-ashes, allum and aqua fortis with the fustick. Allum and aqua-fortis are acids; pearl-ash is an alkali; the acid raises the yellow, the alkali softens and takes

off the harsh parts of the acid, fits and springs the wool, to prepare it to receive the blue; the acids are binding, and the alkali the reverse.

In the 12th receipt, I have admitted wheat bran wet with vinegar. Vinegar is the principal, it being an acid, leading to corrosive, or is in greater union than any other acid with the corrosive; but when mixed with wheat bran, it is a mild acid, and has quite a different effect from what it would in the natural state; and cannot be used any other way in these kind of dyes. When mixed with the bran, or otherwise, it is of a cleansing searching nature. I have admitted red tartar, which is cleansing and prepares the cloth or goods to receive a colour. Copperas serves only to darken, as I have said before,

In the 13th receipt I have admitted blue vitriol, which serves to darken and raise the lustre of the yellow.

## *BOTTLE GREEN.*

BOTTLE Green is connected with three different colours; two as green, one as brown; the green is possessed of the quality described before, depending on the acid; the brown is assisted by the log-

wood, and lowered down by the power of the corrosive. The copperas would destroy the power of the acid in this dye, were it not for the verdigrease being possessed of two powers, which renders both mild and friendly.

In the 14th receipt, it is evident that blue vitriol is of two powers; as an acid it raises the yellow of the fustick, as a corrosive it darkens very rapidly with logwood, so the goods are prepared with these two powers to combine the three in one colour.

The 15th receipt is an olive green; this is a simpleness of green, and depends on the power of the acid, as green; but as brown on the corrosive; the acid going under cover of the bark, gives admittance to the corrosive; and thus the lustre of the colour is preserved from danger.

## *YELLOW.*

YELLOW is one of the material colours, and is dependent, always, on the power of the acid, and no other; but has different subjects. Fustick is the principal subject among our dyers, and allum the principal acid. Aqua fortis is very good to cleanse and prepare the colour; and it substantiates the

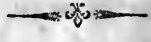
yellow, and makes it much brighter. So the allum and aqua fortis agree in all light colours; but aqua fortis will not answer with a corrosive; for it is so strong an acid that it will not admit any thing of a darkening nature, as you see in taking the colour out of cloth, &c. The composition is made up of acids, and that will destroy the power of the corrosive and alkali, and all the subjects that unite with those powers; so it is evident that the acid is most powerful—for it will destroy what the others create; yet the acid may be overcome, in some of the most feeble parts, when not guarded with care by the alkali and corrosive.

## *SCARLET RED.*

SCARLET is one of the most noble colours ever made by man: cochineal is its grand and principal subject, which is the finest and best dye drug in the world. Scarlet has the most brilliant rays of all colours, which resemble the sun in the firmament and the bow in the clouds. Yet cochineal is the most simple of all dye drugs, were it not for the power of the acid and a proper connection with other subjects. The fustic and tarmeric place a foundation to give lustre to the scarlet; aqua fortis and argal cleanse, and raise the lustre, and make way for

the cochineal to take place ; yet the goods are too hard—they want softening and taking off the harsh part of the acid, which is done by wheat bran, wet with vinegar. The bran is softening, and the vinegar is an acid which is searching and cleansing.—Now the cloth is prepared to give place to the cochineal. Arsenick and armorick, are only assisting subjects ; the aqua fortis to keep up the life and spirits of the subjects. Thus cochineal is supported by one of the most noble and greatest powers, and is guarded by worthy subjects ; and a scarlet is an ornament to kings.

The next is possessed of the same power, only the subjects are a little differently arranged.



## *CRIMSON.*

CRIMSON has the brilliance and lustre of the rain-bow, yet is possessed of two colours ; but most united with the red, with a little tincture of blue. So it is evident crimson is of no colour in itself, but is a mixture with red and blue. As red, it depends on the acid ; and as blue, on the alkali. Cream of tartar, allum, and crude tartar, are all acids. Sal-ammoniack is an alkali, and a very weak one.—Thus we find these two powers united by the help of one subject.

The other, or the next following, has a number of subjects, but dependent on the same powers.—Red, with nicaragua, is dependent on the acid, and all other reds. Dye woods are not so permanent as drugs, nor so brilliant in rays; but answer a good purpose for common use, and make very good colours. All crimsons are dependent on the powers of the acid and alkali.

## *MADDER RED.*

MADDER is a fine drug, and may be cultivated among us, very easy. It is a tender root; and when manufactured fit for use, there are three different sorts proceeding from one root. The dyer ought to be well acquainted with the qualities of this drug. It will not admit of boiling; it kills and destroys the nature of it, (as it does all other dye-stuffs taken out of the ground.) Madder requires the softest water in the world. In order to soften the water, I use the wheat bran. But madder depends partly on two powers—when sig is used, which serves to darken and bind the red; but brazilletto has the same effect, only the colour will be brighter—and this serves as an assistant, and the sig as an alkali, and the allum and argal as acid. Thus the madder red is dependent on the acid.

The Meroon Red has the same principal subjects, and is dependent on the same powers; and differs in nothing only it is a brighter red, and a little different in the management,

## *POLISHED RED.*

THIS colour is the most independent of any colour; not depending on any power or powers.—Nutgalls is a subject with madder, but a little pearlashes may be added in case it wants help; so it appears that the alkali stands as a power, in this; so all reds are dependent on the acids.—The crimsons and clarets are nothing of themselves, and are subject to two powers—the acid and the alkali. The subjects being differently arranged, causes the different complexions.

*The power of the corrosive to destroy the power of acid.*—Copperas, the strongest of all corrosives, properly prepared, will, without assistance, destroy the acid. Take cloth from acidous liquor and put it in copperas water, and it will wholly destroy the acidous power;—and acid will destroy the corrosive, in the same manner. So it requires a mediator, when these two powers come together, to unite them, and

prevent their destroying each other; but in the mixture of colours they will require a frequent and friendly correspondence.

## *ORANGE COLOUR.*

ORANGE colour is fine and brilliant, and has the shades of two colours—yellow, in full; and red, in part. So orange is the union of two colours which agree in powers only.

## *CHERRY COLOUR.*

CHERRY is a dark red, and is subject to the powers of acid and alkali; and the subjects are bar-wood and brazilletto—but bar-wood is the most depending one, though the other is necessary.

## *VIOLET COLOURS.*

VIOLETS are a mixture of red and blue; the red depends on the subject of brazilletto and on the power of the acid—the blue, on the subject of log-wood and on the power of the alkali. Thus, in this dye, the powers and subjects agree, and by varying the powers and subjects, alter the complexions.

## *PINK COLOURS.*

PINKS are of various colours, but this is a simple red, and is dependent on the power of the acid; Its subjects are a number, but I have laid them down as one in the receipt, and that is madder—which is the principal subject to be depended on in this colour.

## *FLESH COLOUR.*

FLESH colour is a simple colour of red, changed from white to a small tincture of red. This has a number of subjects, but is dependent on the power of the acid.

## *BROWN.*

BROWN has many subjects, and of various complexions, principally dependent on the power of the corrosive; but sometimes we admit the weak power of the alkali, like the sig, &c. Brown has the greatest connection with all the colours, of any colour: for most, or the greatest part, of the mixed colours, are connected with the brown, as we shall shortly shew.

## *CORBEAU, WITH CAMWOOD.*

CORBEAU is a mixture of two colours, red and brown; these colours, in this one, dependent on two powers, and but one principal subject. The powers are an acid and corrosive; the subject, camwood and the best of dye-wood. The red depends on the oil of vitriol for an acid; the blue vitriol being possessed of two powers, intercedes for the brown, supports the red and raises the lustre, which is the glory of these colours when united together; the cloth or goods, in a direct view, will be brown, but when glanced by the eye or looked across, it will appear with a fine lustre of red.

The acid is a guard to the red, but that would not give admittance to the brown, were it not for the blue vitriol being of two powers, which interpose for their mutual good. Copperas, the strongest of corrosives, is harsh and fiery, and wants to be softened down notwithstanding the blue vitriol. Were it not for another assistant uniting with the corrosive, you would fail in the union of these two colours; by dissolving the copperas in vinegar, it softens the copperas; the vinegar being an acidous power, uniting with the corrosive, causes the two powers to unite. The logwood assists the camwood in completing the necessary union. Thus when these two colours, which are in opposition to each other, have occasion to unite, it must be by

the mediation or the subject of two powers, as I shall shew more plainly in the next place.

## *CORBEAU WITH NICARAGUA.*

NICARAGUA, not of so spirited a nature, requires the greater assistance of the powers. This has the assistance of three powers, and has assisting subjects; the fustick, as an assisting subject, raises the lustre of the red; and yellow always depends on the acid; the blue vitriol guards the acid against the corrosive, keeps it from danger, and fits it to receive the subject of logwood; the verdigrease supports the acid, raises the lustre of the red, and unites with the corrosive; the copperas being softened by the sig, the weak power of the alkali. So by the union of the three powers, and two mixed powers, and the subjects, (the Nicaragua the chief,) the two colours are brought to an union.

## *CORBEAU WITH REDWOOD.*

REDWOOD has spirit sufficient, but is slow in motion, and is a feeble subject; and yet is a subject of great use: however, it requires assistance, oth-

erwise it would fail. It is supported by the three powers, the acid and corrosive are its main dependencies ; but I have placed them in different forms, as you will see by the receipts for corbeau and London brown with redwood. The powers must support the different subjects according to the different order in which they are admitted. I have left some, deficient of the power of the corrosive, to the assistant subject logwood, and the power of the weak alkali sig ; but in case the colour is not dark enough, then the dyer's judgment will call his attention to look on the receipts before mentioned, and he will see the corrosive will be admitted—the copperas or verdigrease, which is commonly best to guard the red, and powerful in darkening. Thus we find the acid and corrosive are necessary with this mixture of red and brown ; and sometimes softened by the power of the alkali. The dyer will always find these colours must be supported by the power of the acid and corrosive. The acid the power of the red always ; the corrosive the complete power of the brown. The reddish brown and Spanish brown are dependant on the same powers, but not altogether on the same subjects, &c.

## *LONDON SMOAK.*

THE London Smoke is a mixture of yellow and

brown. The yellow is dependant on the acid, and is the substance and life of the colour. Fustick is the principal subject for the yellow, and allum the acid, but the bark is a guard to the yellow, and is a subject in favor of all powers. The smoke is a very dark colour, bearing a little red with the yellow; thus, the butternut bark substantiates every part of these colours; the Nicaragua raises the reddish hue, the logwood assists the copperas in darkening, and the sig supports the colour in every part, and enlivens it to give place to the corrosive. Thus the three powers are united in this mixed colour, with many powerful subjects which stand well to the last.

## *CINNAMON BROWN.*

CINNAMON colour is a mixture of three colours, red and yellow in perfect union, and is dependent on the acid; and the brown, the corrosive and alkali. So the three powers, and three subjects are united in this mixture. The smoke and liver browns are simply the same as London smoke, only differing in their subjects; the camwood and madder corresponding with the fustick, and laying a foundation for the brown. Thus the subjects will unite so perfectly well together, that they are

at peace with all the powers but the corrosive ; and this binds all these subjects and unites the colours.

## *OLIVE BROWN.*

THE Olive differs nothing more from smoke than this—it is not so dark, has no hue of red, and is not depending on the alkali ; but the weak alkali may be admitted, (as sig) but is dependent on the powers of acid and corrosive ; and the subjects of the olives are fustick the principal ; the otters, which are many, serve to alter the complections and give different shades. Butternut, logwood and madder unite as to shades ; the bluing gives a different shade. Thus it is left to the discretion of the dyers to make use of what form they please.

## *SNUFF BROWN.*

SNUFF Colours are formed of three colours ; dependent on the yellow for lustre, and the red and brown for the shades. The snuff colours are dependent principally on the power of the acid and corrosive, and a little on the power of the alkali ; and the many different subjects have correspondence with these powers. Their union in this manner

causes the difference in complections. So as to the powers, properties and effects of these browns, they are simply all as one, but differing in complections; I mean the smoke, the olive and snuff. It is dependent on the fustick and the acid: the red is dependent on the redwood, camwood and madder, and on the power of the alkali; the brown on the barks, the logwood, and sumac; and is dependent on the corrosive. Thus by changing the orders of the subjects and powers, the different shades may be produced in those colours; and this I have left to the discretion of the dyer.

## *BAT-WING, SLATE, DOVE OR LEAD, PEARL OR SILVER GREY, AND DRAB.*

AS to these colours, they are a mixture of all colours, except black, and are depending on all the powers and almost all the subjects. Some shades are very light, merely changed from white; the different subjects corresponding with the powers, causes the complections to differ. So with regard to the powers, I think I have described plainly before; the union of the subject and colours are of so extensive a nature in these different shades, it is in vain to describe them in manner and form as I have the rest, for it would swell a volume. I have

been very particular in the receipts, and given rules sufficient, and an extensive assortment of shades; but in short, they are all browns of different complexions, being of a weak and feeble make, and must be nursed with care, otherwise they will never arrive to a state of maturity.

## *RAVEN.*

THE Raven is a mixture of two colours, blue and black; black direct, and blue by the glance of the eye. Now the blue is dependent on the power of the acid and alkali, and the black on the power of the corrosive. The wheat bran softens the goods; the vinegar as an acid cleanses them and prepares them to meet the subjects, and the madder and allum rouses it up for the logwood; lying and souring gives penetration and admittance to the remaining subjects, and the corrosive power.

## *CROW WITH COPPERAS.*

CROW colour differs not much from the raven. If any, only in form; but I think there is a difference—the crow is attended with a little brownish

hue, and is dependent on the power of the corrosive, and the subject of the logwood, &c.

### *CROW WITH COMPOUND OF BLUING.*

THE blue part is raised with the bluing which has been described before ; the black on the corrosive ; the logwood the principal subject ; the verdigrease intercedes for both, and unites both colours together.

### *CROW WITH BLUE-VITRIOL.*

BLUE Vitriol being connected with two powers, the acid and corrosive, forms an union with these two colours, and prepares them to meet the subject of logwood, and brings them on terms never more to part.

### *BLACK.*

BLACK is a colour of all colours. It has but one shade, and that is the shade of darkness. Black is dependent on the power of the corrosive, and has

many subjects; but logwood is the principal, the others serve as assistants to the logwood. Thus one power and one subject form the substance of this colour. There are different shades of all colours except black.

Some men, and even philosophers, have endeavored to shew that black is not a colour; but I shall endeavour to refute them. Black is made of materials, as any other colour; darkness is caused by materials, by the earth and the material world; by the shadow of these darkness comes; and by the subjects of materials, white is changed to black. So men may as well argue that light is darkness, as to say that black is not a colour. Light is not darkness, nor white black; but were the light to remain with us, we should not perceive the darkness; and if we were not blessed with materials, we should not change white into colours. Light is changed by materials; the light of this world is of a nature to be changed, and white is of the same substance, depending for its changes on materials of dye-stuff; by our faculties we use them, and obtain the desired effect which God in his wisdom has designed. Blue, yellow, red, brown and black are made of materials; they are all colours, and are all of equal rank, formed from white; yet black is most powerful, for that may be made to overshadow all other colours, and cause darkness to reign over them all. So it is evi-

dent that black is a colour of all colours. But black and white mixed together is no colour. If light and darkness were mixed together, we should have neither: the God that made the world separated the light from the darkness; so in like manner he has given us materials, and a faculty to use them, to change white to black." Thus we find that black is a colour.

It is said that orange and violets are colours, but they are not in themselves so, but are compounded of colours. No mixture can be a real colour.

Having endeavoured to give you my ideas of the properties and effects of colours; I request to be read with candor, and hope to be of some benefit. If I have committed errors, I wish they may be corrected for the public advantage.

## *COLOURING SILK.*

SILK is of a nature different from wool, cotton, and linen; it is of a deadly nature: however, the most of preparations for dying woollen will answer for silk, only the dye requires to be stronger. It

has also such an union with cotton and linen, that most of these preparations will answer for either. So it appears that silk is of a substance between wool, cotton and linen, and it unites with them as to colours, &c.

## *DYING COTTON AND LINEN.*

COTTON and Linen are of a cold and deadly nature, and require different preparations and management in colouring. It is the best way in colouring cotton and linen, to have the dye cold; they being of so cold a nature. As to the colours of cotton and linen, I shall say but little: As to the powers, the principal is the corrosive, the next the alkali, and sometimes the acid; which you will see by the receipts. The subjects are many, but the grand subject is nutgalls; the others are so numerous, I shall not mention them now. I have endeavoured to explain them explicitly in the receipts for cotton and linen, and think it needless to mention them again here. As to the powers and the union of the subjects, they have been explained before and the best way is to examine the rules for improvements, and follow the receipts close in proper order, and I presume to say they will have the desired effect, in all colours and shades.

## *Observations on the present Situation of the Dyer's Business.*

*Observation First.*

WE think ourselves masters of our business before we are, and undertake to do that we know nothing of. By this our business is ruined, our customers imposed upon, and our country impoverished; this is the present situation of our business.

*Observation Second.*—Those impostors injure their fellow-functioners as well as the public, by discouraging manufactories. Finding they fail of their intentions, they begin to encourage their customers by promising to do better, and to work very cheap; by these impostors, people are deluded, and their goods not unfrequently ruined. With the customer, who knows nothing of dressing, cheapness is every thing. The workman who is a complete master of his business is often compelled to regulate his prices of work by the charges of those who are ignorant of the trade; consequently the work is slighted, or the mechanic cannot obtain a living; and the employer is a loser in the end, as the goods are badly finished, or perhaps entirely ruined.

Let those who practise in a business make themselves masters of it; then fair and just prices may be obtained for their labor, and the employer will be better satisfied, and real justice be done him.—Thus our manufactories would be increased: The interests of the employer and employed would both be enhanced; they are inseparable: selfishness counteracts its own views; the injustice we do our country, we do to ourselves.

As a nation we can never be really independent, until we become our own manufacturers of articles of the first necessity. To arrive at this desirable point ought to be our constant endeavour; and every real patriot will use his exertions, not only in word but in deed, to hasten the period.

*OBSERVATIONS ON MANUFACTURING CLOTH.*

TO make fine Broadcloth, take your wool and sort it carefully; take the shortest and finest of the wool, leaving no coarse locks with it; then break the wool all together, and card it into rolls by one person or machine, then spin well the filling cross banded; give it a good twist, but not hard so as to be wirey; let it all be twisted alike, and spun by one person, then let it be well wove, with the

threads closed together, but not too hard. Then take the long wool, and have it combed into worsted; have it well spun, twisted well, and wove firm. Thin cloths depend on the twisting and firm weaving; but the other, after it is well manufactured, depends on the fulling to close and make it firm, and on the dressing for beauty. The cloth, if well manufactured, well fulled, and well dyed and dressed, will appear equal to any imported cloths; but if not well manufactured, it will not be handsome.

If you have coarse wool and fine mixed together, it cannot be a fine piece; if it is not broke and carded together, it will not work well; it is liable to be streaked, and pucker or cockle in the mill. If not well spun, or if spun by two hands, it will have the same effect; and if two weave on one piece, one thick and the other thin, it will cause it to pucker or cockle.

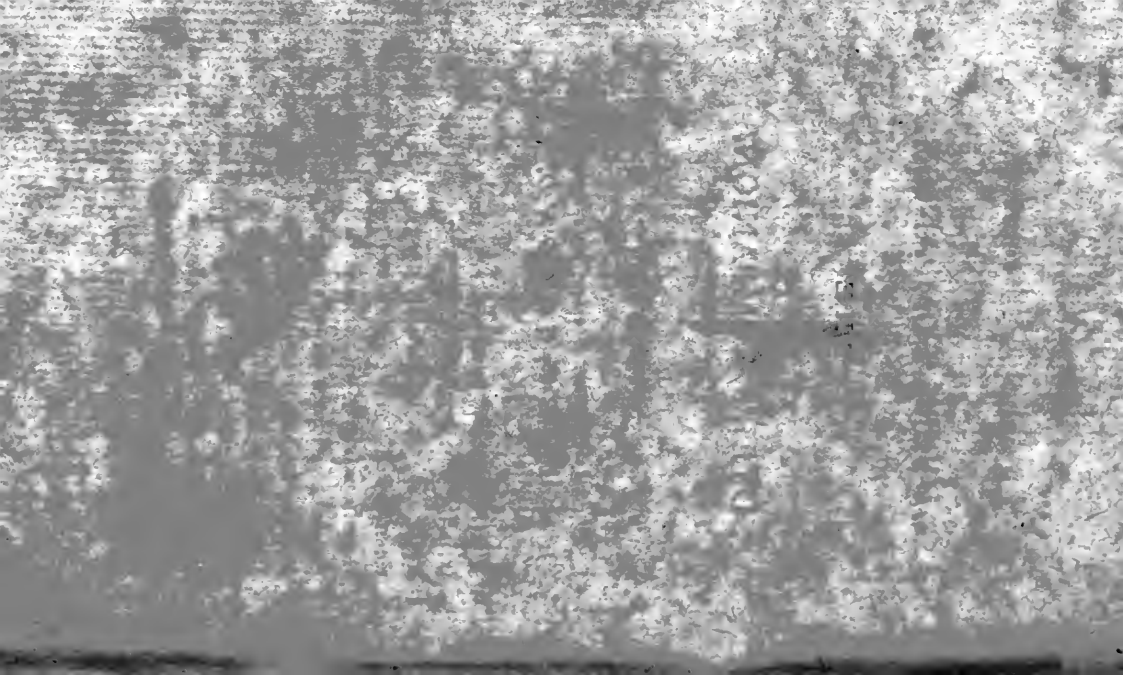
With proper care and attention in the manufacturing and dressing of cloths, we may equal any in workmanship and beauty, and afford them one third cheaper than those imported.

*END OF THE FIRST PART.*

# THE

# DYER'S COMPANION.

## *PART SECOND.*



# THE DYER'S COMPANION.

## *PART SECOND.*

## RECEIPTS, &c.

### 1. *To Jack or harden Leather for Horseman's Caps, Holsters, &c.*

I HAVE found by experience, that saddle leather is the best for caps and holsters. In this case, let the cap, &c. be perfectly dry ; and on the block when jacked ; take melted rozin, as hot as is convenient, rub it on with a small swab, then pass the cap back and forth through a light blaze, and hold it to the fire till it strikes in ; repeat it a second time. It is a repellant to water, and keeps the work in its place. For leather that has not been oiled, add to three ounces of rozin, one ounce of bees-wax, and half an ounce of tallow.

*2d. To make Varnish for Leather.*

TAKE three ounces of gum shellack made fine, and one ounce and a half of Venice turpentine, put them into one pint of double rectified spirits of wine, place the bottle in hot sand or water for six hours, shake it often, and apply it with a soft brush or the fingers when blood warm. Repeat it three or four times in the course of twelve hours,

*3d. To prepare Feathers, Fur and Hair, to receive Red, Yellow or Green.*

THIS preparation is necessary as the oil must be extracted previous to colouring. For one ounce of feathers, take one quart of water, add to it one gill of sour wheat bran water, one ounce of cream of tartar, and half an ounce of allum ; simmer this together ; then after the feathers are washed and rinced, put them in, let it stand twelve hours, keeping the liquor hot.

N. B. White only will receive the above colours.

*4th. To Colour Feathers, Fur, &c. Red.*

TAKE half an ounce of cochineal made fine, mix

it with an ounce and an half of cream of tartar to one quart of water; when simmering hot, add a tea-spoon-full, let it stand ten minutes, then put it in the feathers, and so on each ten minutes, until exhausted. In all colouring, the dye must not be crowded, and soft water must be used. After the whole of the colouring is in, let it stand fifteen minutes, then rince them in clear water; whilst in the dye. five or six drops of aqua fortis may not be amiss, as it sets the colour more on the scarlet.

*5th. To Colour Feathers, Fur, Hair, and Woollen or Silk, Blue, of any shade.*

NO preparation is necessary except washing and rincing. To eight ounces of oil of vitriol, add one ounce of indigo made fine, a tea-spoonfull of each six or eight minutes, shake it often; it must stand two or three days before it is fit for use; indeed the longer it stands the better: one tea-spoonful of this to one quart of water, when hot as is convenient for flesh to bear, make an azure blue; by adding or diminishing, any shade is produced. It is not recommended for woollen, except for women's light wear, stockings, &c. as the colour is not very durable on the wool. Those light articles being easily re-coloured, it will be found the most convenient

and expeditious method of colouring, as ten or fifteen minutes is sufficient for any of the above articles to colour. It is also very useful to revive old dye that has decayed ; also, a few drops put into rincing water for silk, stockings, &c. gives the primitive clearness. I am sure, if the use of this was known, that scarce a family would be found without a phial of it in their house.

*6th. To Colour Feathers, &c. Yellow and Green.*

TAKE two pounds of fustick, chip it fine, boil it in two gallons of water four hours, keeping the quantity of water ; then take out the chips, and add one ounce of curkemy root, and an ounce of allum ; boil the two gallons to two quarts, let the feathers lie in the dye one hour to make them green ; add two tea-spoonfuls of the oil of vitriol and indigo. They require to be only rinced after colouring.

*7th. To Colour Feathers, &c. Black.*

THIS is the most difficult colour to set. The feathers must lay in a preparatory liquor twelve hours ; as follows—To each quart of water, add one tea-spoonful of aqua fortis, it must be kept hot

the whole of the time : then, for three ounces of feathers, take two pounds of logwood chipped fine, and one pound of common sumac, put these into three gallons of water in an iron kettle, boil it four or five hours, take out the chips, and add two ounces of English nutgalls pounded fine ; boil the three gallons to three quarts, then put in the feathers, let them be twelve hours ; then take three ounces of copperas, and one ounce of verdigrease made fine, put them into half a pint of urine, and stir it on a moderate fire ten or twelve minutes ; put this to the dye, it will set the colour ; let them be in twelve hours more, then they must be washed or rinced perfectly clean. It is possible that hatters and others who deal in black, may find something in this to their advantage.

*8th. To Lacker Brass and Tin-Ware.*

TAKE gum gamboge one ounce, make it fine, put it into four ounces spirits of wine, let it be kept warm four hours : the method of using it for small ware, such as buckles for harness, &c. put them on a piece of sheet iron, heat them hissing hot, then dip them in the lacker one at a time, as fast as you please. For large work, let the ware be heated, ap-

ply the lacker with a fine brush; it gives a most beautiful yellow.

### 9th. *To make Oil-Cloth for Hats, Umbrellas, &c.*

TAKE one pint of linseed oil, add one ounce spirits of wine, one ounce of litharge of gold, and one ounce of sugar of lead, simmer them together half an hour; take persian or sarsnet, tack it within a frame, a common case knife is used in laying on the oil; twice going over is sufficient.

### 10th. *To make Oil-Cloth for Carpets.*

TO one gill of dissolved glue, add one gill of honey, and one pint of water, simmer these together, stir in it five or six ounces of Spanish white; the cloth being tacked as above, rub this on till the pores are filled. If the paint be properly prepared, it will neither break nor peal off.

### 11th. *To boil Oil for Painting.*

TO one gallon of oil, add one ounce of white vit-

riol, and an ounce of sugar of lead, a quarter at a time ; boil one hour.

12*th*. *To make Stone Colour.*

TO fourteen pounds of white lead, add five pounds of yellow ochre, and one ounce of ivory black.

13*th*. *To make Pearl Colour.*

TO twelve pounds of white lead, add one pound of stone yellow, half an ounce of Prussian blue, and two ounces of white vitriol to dry the paint. Vitriol is used in all paints for drying.

14*th*. *To make deep Blue.*

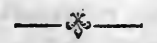
TO three pounds of white lead, add one ounce of Prussian blue.

### 15*th. To make Sea Green.*

To two pounds of stone yellow, add one ounce of Prussian blue.

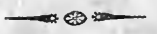
### 16*th. Verdigrease Green.*

TO one pound of verdigrease, add two ounces of white lead.



### 17*th. Orange Colour for Carpets.*

TO four pounds of stone yellow, add two pounds of red lead.



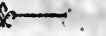
### 18*th. To Slack Verdigrease.*

TAKE a kettle of hot wet sand, wrap four or five ounces of verdigrease in a cabbage leaf, put as many of those parcels in the sand as is convenient, leaving two or three inches between; let them be in four hours, keeping the sand hot. The verdigrease being thus slacked, a man may grind three times the quantity in a day as of unslacked.

### 19*th*. *To make Vermillion.*

TAKE of quick-silver eighteen pounds, of flowers of sulphur six pounds; melt the sulphur in an earthen pot, and pour in the quick-silver gradually, being also gently warmed, and stir them well together with the small end of a tobacco pipe. But if from the effervescence, on adding the latter quantity of quick-silver, they take fire, extinguish it by throwing a wet cloth (which should be had ready) over the vessel. When the mass is cold, powder it, so that the several parts may be well mixed together. But it is not necessary to reduce it, by nicer levigation, to an impalpable state. Having then prepared an oblong glass body, or sublimer, by coating it well with fire, lute over the whole surface of the glass, and working a proper rim of the same around it, by which it may be hung in a furnace, in such a manner that one half of it may be exposed to the fire, fix it in a proper furnace, and let the powdered mass be put into it, so as to nearly fill the part that is within the furnace, a piece of broken tile being laid over the mouth of the glass. Sublime, then, the contents, with as strong a heat as may be used without blowing the fumes of the vermillion out of the mouth of the sublimer. When the sublimation is over, which may be perceived by the abatement of the heat towards the top of the body, discontinue the fire; and, after the body is cold,

take it out of the furnace, and break it; then collect together all the parts of the sublimed cake, separating carefully from them any dross that may have been left at the bottom of the body, as also any lighter substance that may have been formed in the neck, and appears to be dissimilar to the rest. Levigate the more perfect part; and, when reduced to a fine powder, it will be vermillion proper for use; but on the perfectness of the levigation depends, in a great degree, the brightness and goodness of the vermillion. In order, therefore, to perform this, it is necessaay that two or three mills, of different closeness should be employed, and the last should be of steel, and set as finely as possible.



*20th. Of Rose Lake, commonly called Rose Pink.*

TAKE Brazil wood six pounds, or three pounds of Brazil and three pounds of peachy wood. Boil them an hour with three gallons of water, in which a quarter of a pound of allum is dissolved. Purify then the fluid by straining through flannel, and put back the wood into the boiler with the same quantity of allum, and proceed as before; repeating this a third time. Mix then the three quantities of tincture together, and evaporate them till only two quarts of fluid remain. Prepare in the mean time, eight pounds of chalk, by washing over; a pound

of allum being put into the water used for that purpose, which, after the chalk is washed, must be poured off, and supplied by a fresh quantity, till the chalk be freed from the salt formed by the allum; after which, it must be dried to the consistence of stiff clay. The chalk and tincture, as above prepared, must be then well mixed together by grinding, and afterwards laid out to dry, where neither the sun nor cold air can reach it; though if it can be conveniently done, a gentle heat may be used.

The goodness of rose pink lies chiefly in the brightness of the colour and fineness of the substance; which last quality depends on the washing well the chalk. The more the hue of rose pink verges on the true crimson, that is to say, the less purple it is, the greater its value.

## 21. *FOR PRUSSIAN BLUE.*

TAKE of blood any quantity, and evaporate it to perfect dryness. Of this dry blood powdered take six pounds, of the best pearl-ashes two pounds; mix them well together in a glass or stone mortar, and then put the mixed matter into large crucibles or earthen pots, and calcine it in a furnace, the top of the crucible or pot being covered with a tile, or

other such convenient thing, but not luted. The calcination should be continued so long as any flame appears to issue from the matter, or rather till the flame becomes very slender and blue; for if the fire be very strong, a small flame would arise for a very long time, and a great part of the tinging matter would be dissipated and lost. When the matter has been sufficiently calcined, take the vessels which contain it out of the fire, and as quickly as possible throw it into two or three gallons of water; and as it soaks there, break it with a wooden spatula, that no lumps may remain; put it then in a proper tin vessel, and boil it for the space of three quarters of an hour or more. Filter it while hot through paper, and pass some water through the filter when it is run dry, to wash out the remainder of the lixivium of the blood and pearl-ashes: the earth remaining in the filter may be then thrown away. In the mean time, dissolve of clean allum four pounds, and of green vitriol or copperas two pounds, in three gallons of water: add this solution gradually to the filtered lixivium, so long as any effervescence appears to arise on the mixture; but when no ebullition or ferment follows the admixture, cease to put in more. Let the mixture then stand at rest, and a green powder will be precipitated; from which, when it has thoroughly subsided, the clear part of the fluid must be poured off, and fresh water put in its place, and stirred well about with the green powder; and

after a proper time of settling, this water must be poured off like the first. Take then of spirits of salt, double the weight of the green vitriol, which was contained in the quantity of solution of vitriol and allum added to the lixivium, which will soon turn the green matter to a blue colour; and after some time, add a proper quantity of water, and wash the colour in the same manner as has been directed for lake, &c. and when properly washed, procced in the same manner to dry it in lumps of convenient size.

IT is necessary, in all painting, that all paints, when mixed together with the oil, to grind it till it is a perfect salve, so as when you rub it between your fingers you cannot feel any roughness with it, but feel perfectly smooth as oil; then it is ground fit for use—then add oil, and stir it together what is necessary, or according to your liking. Oil must be boiled in all painting.

## 22. *FOR MAKING BLACK INK.*

TAKE one quart of rain water, or water with ripe walnut shooks soaked in it, or the water soaked with oak saw dust; strain it off clean, then add one quarter of a pound of the best blue galls, two ounces of good copperas, and two ounces of gum ara-

bic ; put it in a bottle, stop tight, then shake it well every day till the ink is fit for use—but the older the better. The above articles must all be pulverised, before they are applied to the water.

To keep ink from freezing, apply a little spirits of any kind. To keep ink from moulding, apply a little salt therein.

### 23. *FOR RED INK.*

TAKE three pints of sour beer (rather than vinegar) and four ounces of ground brazil-wood ; simmer them together for an hour ; then strain off and bottle, well stopped, for use.

Or you may dissolve half an ounce of gum senegal, or arabic, in half a pint of water ; then put in a penny worth of vermillion ; put into a small earthen vessel and pour the gum water to it, and stir it well till it is well mixed together, and it will be fit for use in twenty-four hours—but requires stirring before using, in the same manner and form. You may make it from any other coloured ink, as blue, green, yellow, purple, &c.

## 24. *MEMOIR*

*On a method of Painting with Milk—by A. A. Cadet de Vaux: Member of the Academical Society of Sciences.—From the "Decade Philosophique."*

I PUBLISHED in the "Feuille de Cultivateur," but at a time when the thoughts of every one were absorbed by the public misfortunes, a singular economical process for painting, which the want of materials induced me to substitute instead of painting in distemper.

Take skimmed milk, two quarts.

Fresh slacked lime, six ounces.

Oil of carraway, or linseed, or nut, four ounces,

Spanish white, five ounces.

Put the lime into a vessel of stone ware, and pour upon it a sufficient quantity of milk to make a smooth mixture; then add the oil by degrees, stirring the mixture with a small wooden spatula; then add the remainder of the milk, and finally the Spanish white. Skimmed milk, in summer, is often curdled; but this is of no consequence to our purpose, as its fluidity is soon restored by its contact with lime. It is, however, absolutely necessary that it should not be sour; for in that case it would form with the lime a kind of calcareous acetite, susceptible of attracting moisture.

The lime is slacked by plunging it into water, drawing it out, and leaving it to fall to pieces in the

air. It is indifferent which of the three oils above-mentioned we use ; however, for painting white, the oil of carraway is to be preferred, as it is colourless. For painting the ochres, the commonest lamp oil may be used. The oil, when mixed with the milk and lime, disappears ; being entirely dissolved by the lime, with which it forms a calcareous soap. The Spanish white must be crumbled, and gently spread upon the surface of the liquid, which it gradually imbibes, and at last sinks ; it must then be stired with a stick. This paint is coloured like distemper, with charcoal levigated in water, yellow ochre, &c. It is used in the same manner as distemper. The quantity above mentioned is sufficient for painting the first layer of six toises, or fathoms.

One of the properties of my paint, which we may term milk distemper paint, is, that it will keep for whole months, and require neither lime nor fire, nor even manipulation ; in ten minutes we may prepare enough of it to paint a whole house. One may sleep in a chamber the night after it has been painted. A single coating is sufficient for places that have already been painted. It is not necessary to lay on two, unless where grease spots repel the first coating ; these should be removed by washing them with strong lime water or a ley of soap, or scraped off.

New wood requires two coatings. One coating is sufficient for a stair-case, passage, or cieling. I

have since given a far greater degree of solidity to this method of painting: for it has been my aim, not only to substitute it in the place of painting in distemper, but also of oil paint.

### 23. *Resinous Milk Paint.*

FOR work out of doors I add to the proportions of the milk distemper painting, two ounces of slacked lime, two ounces of oil, and two ounces of white Burgundy pitch. The pitch is to be melted in oil by a gentle heat, and added to the smooth mixture of milk and oil. In cold weather the milk ought to be warmed to prevent its cooling the pitch two suddenly, and to facilitate its union with the milk of lime. This painting has some analogy with that known by the name of encaustic.

I have employed the resinous milk paint for outside window shutters, that had been previously been painted with oil. The cheapness of the articles for this paint, makes it an important object for those people that have large wooden houses and fences.—An experiment has been made with this paint in this country, and it at present appears to answer perfectly the discription of the inventor.

### 26. *An easy and cheap Method to stain Cherry a Mahogany Colour.*

TAKE common whitewash of lime and water, white wash the wood, let it stand perhaps twenty-four hours, then rub it off, after polishing the wood apply linseed oil. By using a small piece of wood you may find when the colour suits.

### 27. *To Stain any kind of White-Wood a Dark Red.*

TAKE two ounces of drugs called dragon's blood, make it fine; put it into a pint of double-rectified spirits of wine; let it stand six or seven days, shake it often, brush it on the wood till the shade suits.

### 28. *To make Green, or any kind of White Wood.*

TAKE a yellow liquor as described in receipt 6th, add the vitriol and indigo, less or more, to make what shade is wanted. In all shades, it is necessary to repeat colouring three or four times, leaving time for the wood to dry betwixt each colouring; the colour grows darker by standing.—The wood will not do to varnish short of six or seven days after staining.

29. *To make a Cherry Red, on White Wood of any kind.*

TAKE of the brightest of logwood two pounds, boil out the strength, take out the chips, add a table spoonful of the raspings of gallant gill root, boil this one hour, stain the dye and boil it down to one quarter of the quantity ; brush it on the wood when hot, repeat it till the colour suits.

30. *To stain White Wood the colour of Mahogany, or Black Walnut.*

TAKE logwood liquor, as described in No. 7, before the dye is set, then add to one gallon of water eight ounces of madder, let it stand twelve hours, keeping it warm, strain it off, then mix it with an equal quantity of the logwood liquor ; it is applied as other stains.

31. *The best Red Stain for Wood.*

THIS is made by boiling two pounds of redwood in two gallons of water, in the same manner as logwood, &c. is boiled ; it is necessary to boil this in brass ; when boiled down to a proper quantity, add

one ounce of cochineal, and two ounces of cream of tartar made fine ; boil this half an hour, or till there is but one quart of the liquor ; apply it warm, and add a tea-spoonful of aqua fortis.

### 32. *To stain Wood Black.*

TAKE logwood liquor to give the ground work, then take two ounces of English nutgalls made fine, put this in one quart of water, let it stand four days, shake it often, then brush it on, three or four times ; when almost dry, rub it over two or three times with strong copperas water ; like other stains it grows darker by standing.

### 33. *To colour Hats Green on the under side.*

TAKE two pounds of fustick, chip it fine, put it into two gallons of soft water, boil it four hours in brass, keeping nearly the quantity of water ; take out the chips, add two ounces of curkemy root, and one ounce of allum ; boil this to three pints, brush this on the hats twice over, then add to one quart of this yellow liquor, three tea-spoonfuls of the indigo and vitriol, (as mentioned in a former receipt)

this will make it green, brush this on the hat two or three times, leaving time between for the hat to be nearly dry.

34. *Varnish for Wood either Stained or Painted.*

THIS is made the same as in receipt 2d, except, instead of three ounces of gum shellack, take of it one ounce and a half, and one ounce and a half of gum sandrick; it must be laid with a soft brush, and several times repeated; after it has stood three or four days, take rotten stone made fine and sifted, mix it with water, then with a sponge or soft linen, rub it on till sufficiently polished.

35. *Varnish.*

AN excellent varnish has recently been discovered, made of one part of sandarac not pulverised, and two parts of spirits of wine, made cold and the solution promoted by frequent shaking.

AS the method of preparing Copal Varnish, is generally kept secret by those who are acquainted with it, and as a tradesman who is desirous of

knowing it, is obliged to give some times an hundred dollars to another, to let him into the secret, and that upon condition of not imparting it to any body else—the following to some may not be unacceptable.

### 36. *To make Amber or Copal Varnish:*

TAKE of white rosin four drachms, melt it over a fire in a glazed vessel, after which put in two ounces of the whitest amber you can get, finely powdered: this last is to be put in gradually, stirring it all the while with a small stick over a gentle fire, till it dissolves; pouring in now and then a little oil of turpentine, as you find it growing stiff, and continue this till your amber is melted. When the varnish has been thus made, pour it into a coarse linen bag, and press it between two hot boards of oak, or flat plates of iron. Great care must be taken in making the varnish, to not set the house on fire; for the vapour of the oil of turpentine will even take fire by heat.—If it should happen so to do, immediately cover the pot with a board or any thing that will suffocate it; by which means it will be put out.

37. *A Composition for giving a beautiful Polish to Mahogany Furniture.*

DISSOLVE bees-wax (equal parts) in oil of turpentine, until the mixture attain the consistency of paste,—After the wood intended to be polished is well cleansed, let it be thinly covered with the above composition, and well rubbed with a piece of oil carpet, until no dirt will adhere to its surface.

38. *To soften Steel—for engraving, &c.*

MAKE a very strong lye, of unslacked lime and white oak ashes, of each an equal quantity ; put in the steel, let it lay fourteen days—it will be so soft as easily to be cut with a knife.

39. *The Chinese method for rendering Cloth water proof.*

TAKE one ounce of white wax, (melted) add one quart of spirits of turpentine ; when thoroughly mixed and cold, then dip the cloth into the liquid and hang it up to dry till it is thoroughly dry.

By the above cheap and easy method, muslin, as well as the strongest cloths, will be rendered quite

impenetrable to the hardest rains ; and that without the ingredients used either filling up the pores of the cloth or injuring, in the least, its texture, or damaging, at all, the most brilliant colours.

40. *A Receipt to make an excellent American Wine ; communicated to the Burlington Society for promoting Agriculture and Domestic Manufactories ; by Joseph Cooper, esq. of Gloucester county, New-Jersey.*

I PUT a quantity of the comb, from which the honey had been drained, into a tub ; to which I added a barrel of cider immediately from the press ; This mixture was well stirred, and left to soak for one night. It was then strained, before a fermentation had taken place ; and honey was added until the strength of the liquor was sufficient to bear an egg. It was then put into a barrel ; and after the fermentation commenced, the cask was filled every day, for three or four days, that the filth might work out of the bung hole. When the fermentation moderated, I put the bung in loosely, lest stopping it tight might cause the cask to burst. At the end of five or six weeks the liquor was drawn off into a tub, and the white of eight eggs, well beat up, with a pint of clean sand, were put into it.—I then added a gallon of cider spirit ; and after mixing the whole

together, I returned it into the cask, which was well cleansed, bunged it tight, and placed it in a proper situation for racking off when fine. In the month of April following, I drew it off into kegs, for use; and found it equal, in my opinion, to almost any foreign wine. In the opinion of many judges, it was superiour.

This success has induced me to repeat the experiment for three years; and I am persuaded, that by using the clean honey, instead of the comb, as above described, such an improvement might be made, as would enable the citizens of the U. States to supply themselves with a truly federal and wholsome wine, which would not cost one quarter of a dollar per gallon, were all the ingredients procured at the market price; and would have this peculiar advantage over every other wine hitherto attempted in this country, that it contains no foreign mixture, but is made from ingredients produced on our own farms.

By order of the Society,

WM. COXE, jun. Secretary.

41. *Wonderful Cure of the Dropsy, by Dwarf Elder. From the Massachusetts Magazine.*

SOME years ago, when the invalids from Chelsea were ordered to garrison at Portsmouth, there

was among them a man grievously afflicted with the dropsy. He had already become so unwieldy as to be rendered incapable of doing any thing whatsoever, and was at last so corpulent that he could procure no clothes to fit him.

In this critical situation, an herb doctor chanced to come by, and seeing the man in that situation, said, 'Well, friend, what will you give me if I cure you?' The poor object, (who had already spent nearly the sum of forty pounds on the medical gentlemen, without relief) eyeing the doctor with a look of contempt, scarce vouchsafed to return him for answer, that his cure was impossible—and was preparing to leave him, when the doctor, stopping him, offered to cure him for a glass of rum. So extraordinary a proposal did not fail to awaken the attention of the man, who considered the extreme reasonableness of the demand, followed the doctor, without speaking a word, into his laboratory, who taking out a bottle containing a black liquid, presented it to his patient, telling him to drink it off that day, and when gone, to fetch his bottle for more.

Upon a curious examination of the contents of the bottle, finding it not unpleasant to the taste, the dropsical man wisely concluded there could be no harm in it, if there was no good; and accordingly, taking the bottle, he at night (though despairing of success) ventured to drink, before he went to bed,

about one half of the liquor, and immediately composed himself to rest. But he had scarcely been a quarter of an hour in bed, before the physic operated so strongly that he was obliged to get up and search for the necessary utensil. This was presently filled—upon which he groped about for the one belonging to his comrade, which, having found, he also filled—and (strange to tell) a tub which was in the next room, was nearly filled.—So strong an evacuation of urine produced, as we may well suppose, a very material alteration; for the next morning he was able to buckle his shoes, which he had not done for a long time.

He did not fail to call on the doctor for a fresh supply, which having obtained, he continued drinking at meals, &c. with such good effects, that he was completely cured in less than a week.

A matter of such importance could not fail to attract the attention of the whole regiment, among whom I chanced to be an eye witness of it; and asked him what the liquid was—he informed me that it was a decoction made of the leaves of dwarf elder. Yours, &c.

## 42. *CURE FOR THE DROPSY.*

TAKE a six quart jug of old hard cider, put

therein a pint of mustard-seed, one double-hand full of lignum vitæ shavings, one double-handfull of horse radish roots ; let them simmer together, over a slow fire, forty-eight hours, when it will be fit for use. Take a tea-cup full of this liquid, three times a day ; and it will work off the disorder by urine, without any trouble to the patient.

A most surprising instance of the efficacy of this simple medicine, has lately taken place in the case of Mr. Wm. Wray, of Lunenburg, who, from the worst state of the dropsy, has by it been restored to perfect health.

FROM A PHILADELPHIA PAPER.

*The Editor having received from a friend the following Recipte for the Cure of a Cancer, is induced from the veracity of the writer, and the importance of such a remedy to many afflicted individuals, to lay it before the public.*

43. *A SAFE AND EFFICACIOUS REMEDY FOR THE CANCER.*

TAKE the narrow leafed dock-root, and boil it in water till it be quite soft, then bathe the part affected in the decoction as hot as can be borne three or four times a day ; the root must then be marshed and applied as a poultice.

This root has proved an effectual cure in many instances. It was first introduced by an Indian woman, who came to the house of a person in the country, who was much afflicted with a cancer in her mouth ; the Indian perceiving something was the matter, inquired what it was, and on being informed, said she would cure her. The woman consented to a trial, though with little hopes of success, having previously used many things without receiving any benefit. The Indian went out and soon returned with a root, which she boiled and applied as above, and in a short time a cure was effected. The Indian was very careful to conceal what these roots were, and refused giving any information respecting them ; but happening one day to lay some of them down, and stepping out, the woman concealed one of the roots, which she planted, and soon discovered what it was. Not long after, a person in that neighbourhood being afflicted with the same complaint in her face, she informed her of the remedy, and in two weeks she was cured. Some time after, a man was cured of a confirmed cancer upon the back of his hand ; after suffering much, and being unable to get any rest, being told of this root, it was procured and prepared for him: he dipped his hand in the water as hot as he could bear it for some time ; the root was then applied as a poultice, and that night he slept comfortably, and in two weeks his hand was entirely cured.

Daniel Brown's father, having had a cancer in his head, had it cut out, and apparently healed ; but some of the roots remaining, it again broke out : his doctor then informed him that nothing more could be done, except burning it out with hot irons ; this being too harsh a remedy to submit to, he was much discouraged. The dock root was soon after recommended, and it cured him in a short time,

In the beginning of the winter of 1798, a hard lump appeared in the middle of my under lip, and in a short time became sore : it continued in that situation till spring, when it increased and became painful : I then shewed it to a person of skill, and soon found he apprehended it to be cancerous ; after two or three different applications, the complaint increased and spread rapidly. Lot Trip, having heard of my complaint, mentioned this root—I called on him to know the particulars of it ; he gave me the necessary information : the root was procured, and used in the manner above mentioned, taking a mouthful of water in which the roots were boiled, and let it drop over my lips as hot as I could bear it ; this I did three or four times a day, and then kept the root to it a day and a night ; and in two days the pain entirely left me, and in two weeks it was cured.

### 44. *Remedy for Cancers.*

BURN half a bushel or three pecks of green old field red oak bark to ashes ; boil these ashes in three gallons of water until reduced to one ; strain that one gallon off, and boil it away to a substance similar to butter-milk or cream ; apply a small quantity on a piece of silk or lint to the cancer, but no larger than the place or part affected. I have known two plaisters to effect a cure, where the cancer lay in a proper position for the medicine immediately to penetrate to the roots of it ; otherwise, it may take several plaisters, as the medicine must be repeated every two hours until the roots of the cancer are killed ; then apply healing salve, with a little mercurial ointment mixed thereon, and dress it twice a day until cured, which will certainly be the case in twenty or thirty days at farthest. I have known several persons entirely relieved by the above prescription : and one in particular, after two attempts by a skilful physician to remove the cancerous parts by exusion.

After being greatly alarmed myself from a cancer about three years ago, and having followed some time the directions of an experienced physician, I, contrary to his orders, and notwithstanding the fears of my family, happily applied two plaisters of the

above medicine, and no symptoms of it have appeared since.

### 45. *Recipe for the Cure of the Hydrophobia, or the Bite of a Mad Dog.*

[By a Physician of respectability in New-York.]

PLACE a blister on the wound immediately, the sooner the better; and even if this has been neglected till the wound has healed, it is necessary to apply it; also, apply blisters to the inside of the ancles, wrists, and between the shoulders of the patient, keeping two running at a time. Keep the patient in the free use of vinegar, either in food or drink; and if he has not got a tight room, make it so by hanging up blankets; then boil a quart or two of vinegar, place it in the room of the patient on a chafing-dish or kettle of coals, and let the patient continue in the room fifteen minutes at a time morning and evening, and often wet his ancles, feet and wrists with it.

Give him three or four doses of the following medicine in the course of three weeks, that is, as often as one in five or six days:—Calomel eight grains, native cinnabar and salt of amber each four ounces, to each dose, to be taken in the morning in

molasses ; also, give him a decoction of tea, made of sarsapharilla root and guiacum chips, (commonly called lignum vitæ dust). If the patient is actually labouring under the symptoms of the hydrophobia, give the several remedies more frequently ; if soon after the bite, as above. If the patient actually has the disorder, when first attended to, repeat the remedies until he recovers ; if immediately after the bite, it will be necessary to attend him for three weeks, which generally clears him from infection. His diet must be light and easy of digestion generally, though he may make a moderate use of animal food ; but he must strictly avoid the use of spirituous liquors. The above is the general plan I follow.

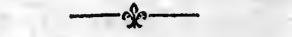
LOT TRIP.

### 46. *Cure for the Bite of a Mad Dog.*

THE roots of elecampane, (the plant star-wort) pounded soft, boiled in new milk, and given plentifully to any thing that is bitten, during forty-eight hours, (keeping the subject from all other food) have been found an effectual remedy for this dreadful and frequently fatal malady.—*N. Y. Paper.*

### 47. *Cure for the Bite of a Mad Dog.*

THE following remedy for the bite of a mad dog is recommended in the French papers :—A new laid egg is to be beaten up and put into a frying-pan, with oil of olives, cold drawn, and dressed, but not too dry. Into this is to be put a great quantity of powder of calcined oyster shells, which is to be sprinkled in such quantities as the mixture will absorb. This is to be given as a dose which is to be repeated for nine days fasting; and the wound is at the same time to be washed with salt water. The author of it professes to have tried it with repeated success, on man, dogs, and other animals.



FROM A CHARLESTON PAPER.

### 48. *The Infallible Cure for the Dysentery.*

I HAVE been acquainted with it nearly forty years, and never knew it to fail. I have cured all that ever had it on my plantation, and myself several times. Not forty days past, I was afflicted with the dysentery, and cured myself with the receipt under written. About thirty years ago, I cured two persons in Charleston, who had been under the care of three physicians, and it had baffled their art and

skill; yet this receipt cured them in a few days. The public may rely on the efficacy and infallibility of the receipt, viz.—As soon as you find the flux is bad, if possible before it comes to the dysentery, drink three or four tea-cupfuls of melted suet daily, say a cup full every three or four hours; let the food be the flour of well parched Indian corn made into a pap with new milk, and sweetened with loaf sugar; and let the drink be nothing else but a strong tea made with chipped logwood, or red oak bark, and sweetened with loaf sugar, though it will do without sweetening. When you find it is checked, make the tea weaker; should it stop too sudden, take a little salts. With the above simples, I can cure thousands without the loss of one. The cure will be effected in five, six or seven days.

49. *Cure for the Dysentery.*

TAKE of the roots of the low-running blackberry vine, one large handful; make a strong tea of them in the same manner as you would make other tea, only let it stand on the coals a little longer.—Give two tea-cups full to an adult, and one to a child. After it has operated, give the patient a plenty of low balm tea, or cold water if preferred. Be careful when the appetite returns, to give them

but a little to eat at a time, and that as often as the appetite calls, and no oftener. This blackberry root tea operates as a thorough but gentle purge in this complaint, and as soon as it operates, it changes the nature of the stools ; that is, instead of blood, &c. the stools will be of a greenish froth, and so will continue to be until they become natural.

50. *Cure for the Dysentery.*

TAKE new churned butter without salt, and just skimming off the curdy part, when melted over a clear fire, give two spoonfuls of the clarified remainder, twice or thrice within a day, to the person so affected. This has never failed to make almost an instant cure.

51. *For the Dysentery & Colera, or Vomiting.*

TAKE oil of pennyroyal, two drops to a tablespoonful of molasses, syrup or honey ; after being well stirred up, let one tea-spoonful be administered every hour until it has the desired effect, which from experience, I can safely assure the public, will be found in every case of the above disorder, to

be a speedy and certain cure. For a grown person, the dose may be doubled, and given in the same manner, *From an Old Lady.*

52. *An Infallible Cure for the St. Anthony's Fire.*

I AM neither physician, surgeon, apothecary nor nostrum-monger, (says a correspondent) but totally ignorant of the materia medica, except that I have swallowed large draughts of it, to cure me of painful returns of St. Anthony's Fire at spring and fall. In vain, alas ! did I swallow ; for the saint was constant in his visit at the accustomed time, notwithstanding the repeated prophecies of my doctor and apothecaries to the contrary. Fortunately for me, ten years since, I was favoured with a visit from a good lady, during the spring confinement, who told me, if I would at the time, take the elder tree blossoms and in the spring of the year, at each season, for a month, drink every morning fasting, half a pint of elder flower tea, and the same in the afternoon, that it would drown the saint. The next season of the elder tree blossoming, I followed her advice, as also the spring following, and have done so these nine years ; since which time, the saint has not tormented me in the least. I have recommended this tea, from my experience of its efficacy, to

ten of my fellow-sufferers since my own case, every one of whom has found it a specific remedy.

When the elder tree is in blossom, a sufficient quantity of the flowers should be gathered, in a dry day, and dried with great care for the spring use. The tea is made, by pouring a quart of boiling water on two handfuls of elder flowers, when green; a less quantity will do when dry. It may be drank hot or cold, as best suits the stomach. Each single blossom is not to be picked off, but the heads from the main stalks.

53. *For St. Anthony's Fire.*

TAKE a purge; and anoint with the marrow of mutton.

54. *An admirable Recipe for a Consumption.*

TAKE of Madeira, (or good generous mountain) wine, two quarts; balsam of Gilead, two ounces; albanum in tears, (grossly powdered) two ounces, flowers of Benjamin half an ounce, let the mixture stand three or four days near the fire, frequently shaking; then add thereto, of Narbonne honey

four ounces, extract of Canadian maiden hair eight ounces, shake the bottle well, and strain off the liquor. The dose two tea-spoonfuls, to be taken once in four hours, in Colt-foot tea or water, sweetened with capillaire.

N. B. The Canadian maiden-hair, which we now import from thence in great plenty is infinitely superior to that which grows in England. A strong infusion made of this herb, sweetened with honey or sugar candy, is the best ptizan which can possibly be drank by consumptive people, and will of itself cure any recent cough.

55. *Cure for the Heart-Burn.*

EAT two or three meats of peach-stones, of any kind of peach, and it will effect a cure immediately. Those which are dry are preferable.

FROM A VIRGINIA PAPER.

56. *Infallible and Effectual Cure for the Stone.*

THROUGH the channel of your paper I request a publication of the following cure for the stone by

dissolution. The gentleman by whose consent and desire, and upon whose authority the subsequent facts are offered to the public, is a Mr. Richard Major, of Loudon county, in this state, minister of the baptist society ; a man of integrity, and much respected. Being in company with him a few days ago, I had the following relation from his own mouth :—

That having for a number of years been afflicted with that painful disease, he was at length informed that a certain physician, his name unknown, labouring under the same disease, being at Berkley spring, a negro man there profferred to cure him : This he at first disregarded, but expecting a speedy dissolution unless some aid could be obtained, afterwards sent for the negro, who agreed to cure him for three pounds. He accordingly undertook, and in a short time effectually eradicated the disorder. The physician then gave him his choice of freedom by purchase in lieu of the contract betwixt them, on condition he would disclose the means of the cure ; to which the slave agreed. The receipt is the expressed juice of horse-mint and red onions ; one gill of each to be taken morning and evening till the complaint be removed. That he, Mr. Major, being urged to a trial of the above-mentioned remedy, submitted to it, though with some reluctance, as he conceived his

term of life to be but short at most. Not having it in his power to procure green mint, so as to get the juice, he used instead thereof, a strong decoction of the dried herb: in other respects strictly adhering to the prescription, which had the desired effect. He began the experiment in August, and within a week he had occular demonstration of dissolution by the slightest touch of a particle that had passed from him, which continued so to do without pain or the least obstruction, until the stone was entirely dissolved, and the cure compleatly effected before the ensuing spring. That from the time the disorder began to yield as aforesaid, he daily recovered his health, strength and flesh, and was in as good plight as ever, age excepted, being at the time seventy two years of age, with an appearance corresponding with his own account; and as he farther said, without the slightest attack of the disorder from the time he began to use the above means of cure. This, at his request, is communicated to the public by

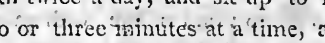
DANIEL ROBERDIEU.

57. *Indian Method of Curing Shitting of Blood.*

[Communicated in a letter to the late Doctor Mead.]

THE following case is a very extraordinary one;

but I know the gentleman to be a man of veracity, and had this account from his own mouth. He was of a thin, hectic constitution, and laboured under a troublesome pulmonary cough for some years; at last he was taken with an hæmoptœ, for which he had the best advice he could get in Maryland, but grew rather worse under the care of two physicians who attended him for several months; and at last he was prevailed upon to put himself under the care of a negro fellow, who is the Ward of Maryland: for he has the reputation of performing some extraordinary cures, though nature has the chief claim to them: but indeed this was not the case here.—In short, he advised the gentleman to go into a warm bath twice a day, and sit up to his chin in it, for two or three minutes at a time, and to wear flannel next to his skin. This method soon relieved the gentleman; and when I left Maryland, which was about seven or eight years after the cure, he remained free from his hæmoptœ, eased very much of his cough, and went through a good deal of exercise.



58. *A Receipt for Bitters to prevent the Fever and Ague, and all other Fall Fevers.*

TAKE of common meadow calamus cut into small pieces, of rue, wormwood and camomile,

or centaury, or hoar-hound, of each two ounces, add to them a quart of spring water, and take a wine glass full of it every morning fasting. This cheap and excellent infusion is far more effectual than raw spirits, in preventing fevers, and never subjects the person who uses it, to an offensive breath, or to the danger of contracting a love for spirituous liquors.

59. *A certain Cure for Corns.*

TAKE two ivy leaves and put them into vinegar for twenty-four hours; apply one of them to the corn, and when you find its virtue extracted, apply the other, and it will effectually and speedily remove the corn without the least pain.

60. *To make the most cheep and simple Electric Machine.*

TAKE a piece of plank eighteen or twenty inches square, place two small posts at a distance that will take the length of a bottle that will hold perhaps a quart; the bottle must be round, and of flint glass, (they may be had at the apothecaries for 3s. or 3s. 6d.) put in a hard wooden stopple, at the other end stick on a piece of hard wood with any glu-

tinous matter, such as shoemaker's wax or the like ; make a small hole in the center of this wood, and the stopple, to receive two points which come thro' the posts ; thus the bottle being hung in a rolling position, let a band go round the neck, and be conveyed to a wheel, eight or nine inches over, which turns with a crank. Then take an eight ounce vial, coat it inside and out with tin foil ; this may be stuck on with stiff glue or candied oil ; the vial must have a large nose, or it will be difficult to coat the inside ; cork it tight, having a wire run through the middle of the cork with a common leaden bullet on the top ; bind the wire so that the ball may come within half an inch of the cylinder or large bottle ; place it in the center of the cylinder, then having a piece of deer-skin leather sewed up and stuffed in form of a pincushion, having amalgam rubbed on one side, hold it to the cylinder opposite to the ball ; put the machine in motion, and the fire will collect and fill the small vial. To take a shock, hold the vial where it is coated with one hand, touch the ball with the other. If a number of persons wish to take a shock at once, the person at one end of the circle holds the vial, whilst that on the other touches the ball ; the vial must not be coated within one inch of the top.

To make amalgam, take half an ounce of speltar, melt it, mix with it half an ounce of quick-silver ;

whilst warm, grind it to a powder. This machine is very useful where a stagnation of blood, or any kind of numbness has taken place; for sudden pain, &c. The writer has reason to speak well of this machine, as it was one time the means of saving his life. It is sincerely wished that a physician or some other person would keep one in each town; the expence is no more than seven or eight shillings.

61. *To Cure Children in the worst stage of Intoxication.*

THE writer has twice known the instance of children, insensible of the effect of spirituous liquor, drinking to that degree that life was despaired of. On their being placed in a tub of warm water over their hips, and a tea-kettle of cold water being poured on their head, they immediately recovered, and are now in perfect health. If this receipt may be the means of saving the life of but one child in the course of time, the writer will think himself richly paid for his trouble.

62. *Cure for the Ague.*

DRINK the decoction, (that is the boiling of any

herb) of camomile, and sweeten it with treacle; which drink when warm in bed, and sweat two hours. Or, to the wrists apply a mixture of rue, mustard, and chimney soot, by way of plaister.

63. *Cure for Almonds of the Ears fallen down.*

TAKE a little bole armniac in powder, and with it mix some Venice turpentine, and spread it on sheep's leather, as broad as a stay, and apply it under the throat from ear to ear.

64. *A Cure for Frost Bitten Feet.*

TAKE the fat of a dung-hill fowl, and rub the place or places affected with it, morning and evening, over a warm fire; at the same time wrapping a piece of woollen cloth, well greased with the said fat, round the frost bitten parts. In two or three days they will feel no pain, and in five or six days will be quite cured.

*Note.*—If the inner bark of elder, or the leaves of plantain, are first simmered in said fat, it will be the better.

65. *To Cure the Asthma, or Shortness of Breath.*

TAKE a quart of aqua vitæ, one ounce of anniseed bruised, one ounce of liquorice sliced, and half a pound of stoned raisins; let them steep ten days in the abovementioned, then pour it off into a bottle, with two spoonfuls of fine sugar, and stop it very close.

66. *Method of making Apple Brandy.*

THE following receipt for making Apple Brandy, was communicated by Joseph Cooper, esq. of Gloucester county, New-Jersey, accompanied with a specimen of the liquor, made in the manner he represented. The liquor is mild, mellow and pleasant; and greatly superiour to apple spirits procured by the common process.

Put the cider, previous to distilling, into vessels free from must or smell, and keep it till in the state which is commonly called good, sound cider; but not till sour, as that lessens the quantity and injures the quality of the spirit. In the distillation, let it run perfectly cool from the worm, and in the first time of distilling, not longer than it will flash when cast on the still head and a lighted candle applied.

under it. In the second distillation, shift the vessel as soon as the spirit runs below proof, or has a disagreeable smell or taste, and put what runs after with the low wines. By this method, the spirit, if distilled from good cider, will take nearly or quite one third of its quantity to bring it to proof; for which purpose, take the last running from a cheese of good water cider, direct from the press, unfermented, and in forty-eight hours the spirit will be milder and better flavoured than in several years standing if manufactured in the common way. When the spirit is drawn off, which may be done in five or six days, there will be a jelly at the bottom, which may be distilled again, or put into the best cider, or used for making cider royal, it being better for the purpose than the clear spirit, as it will greatly facilitate in refining the liquor.

JOSEPH COOPER.

67. *A most excellent Method of making Butter, as now practised in England, which effectally prevents its changing and becoming rank.*

THE day before churning, scald the cream in a clean iron kettle, over a clear fire, taking care that it does not boil over. As soon as it begins to boil, or is sufficiently scalded, strain it, when the parti-

cles of milk which tend to sour and change the butter are separated and left behind. Put the vessel in which it was strained in a tub of water, in a cellar, till next morning, when it will be ready for churning, and become butter in less than a quarter of the time required by the common method. It will also be hard, with a peculiar additional sweetness, and will not change. The labor in this way is less than the other, as the butter comes so much sooner, and saves so much labor in working out the buttermilk. By this method, good butter may be made in the hottest weather.

### 68. *Good Cider as easily made as bad.*

TO make cider of early or late fruit, that will keep a length of time, without the trouble of frequent drawing off—Take the largest cask you have on your farm, from a barrel upwards; put a few sticks in the bottom, in the manner that house-wives set a lye cask, so as to raise a vacancy of two or three inches from the bottom of the cask; then lay over these sticks either a clean old blanket, or if that be not at hand, a quantity of swindling flax, so as to make a coat of about a quarter of an inch thick, then put in so much cleaned washed sand, from a beach or road, as will cover about six or eight inches

in depth of your vessel; pass all your cider from the press through a table cloth, suspended by the corners, which will take out the pummice; and pour the liquor gently upon the sand, through which it must be suffered to filter gradually, and as it runs off by a tap inserted in your vessel, in the vacancy made by the sticks at the bottom, it will be found by this easy method, as clear as cider can be expected by the most laborious process of refining; and all the mucilaginous matter, which causes the fermentation and souring of cider, will be separated so as to prevent that disagreeable consequence.

N. B. Other methods may be easily invented for passing the cider through the sand, which is the only essential part of the above process.

69. *A Method of making Currant Wine, which has been practised by many and found to be genuine.*

[Extracted from the Transactions of the Philosophical Society of Philadelphia.]

GATHER your currants when full ripe; break them well in a tub or vat; press and measure your juice; add two thirds water, and to each gallon of mixture, (juice and water) put three pounds of

muscovado sugar, the cleaner and drier the better; very coarse sugar, first clarified, will do equally as well: stir it well, till the sugar is well dissolved, and then bung it up. Your juice should not stand over night if you can possibly help it, as it should not ferment before mixture. Observe that your cask be sweet and clean. Do not be prevailed on to add more than one third of juice, as above prescribed, for that would render it infallibly hard and unpleasant: nor yet a greater proportion of sugar, as it will certainly deprive it of its pure vinous taste.

## OF MAKING SUNDRY SORTS OF BRITISH WINES.

### 70. *Currant Wine.*

PICK the currants (when they are full ripe) clean from the stalks, then put them into an earthen vessel, and pour on them fair and clean hot water, that is, a quart of water to a gallon of currants; then bruise or marsh them together, and let them stand and ferment; then cover them for twelve hours, strain them through fine linen into a large earthen crock, (as they say in Sussex) and then put the liquor into a cask, and thereto put a little ale-yeast;

and when worked and settled, bottle it off. This is exceeding pleasant, and very wholesome for cooling the blood. In a week's time it will be fit for bottling.

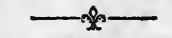
### 71. *Artificial Claret.*

TAKE six gallons of water, two gallons of the best cider, and thereto put eight pounds of the best Malaga raisins bruised; let them stand close covered in a warm place for two weeks, stirring them every two days well together; then press out the liquor into a vessel again, and add to it a quart of the juice of barberries, (which perhaps is best) to which put a pint of the juice of black cherries: work it up with mustard seed covered with bread paste for three or four days, by the fire side; after which, let it stand a week; then bottle it off, and it will become near as good, if not so as to exceed, common claret.

### 72. *Gooseberry Wine.*

THE best way is to take for every three pounds of fruit one pound of sugar, and a quart of fair water; boil the water very well, but you must put in the aforesaid quantity of

sugar when it is boiled; bruise the fruit, and steep it twenty-four hours in the water; stir it some time, then strain it off, and put the sugar to it, and let it stand in a runlet close stopped for a fortnight; then draw it off, and set it up in a cellar, and, in two months, it will be fit to drink.



### 73. *Raspberry Wine.*

TAKE the raspberries clear from the stalks; to a gallon of which put a bottle of white-wine, and let them infuse in an earthen vessel two or three days close covered; then bruise the berries in the wine, and strain them through fine linen gently; then let it simmer over a moderate fire; skim off the froth, and then strain it again, and, with a quarter of a pound of loaf sugar to a gallon, let it settle; then, in half a pint of white wine, boil an ounce of well scented cinnamon, and a little mace, and put the wine, strained from the spice, into it, and bottle it up.

### 74. *Damson Wine.*

DRY the damsons in an oven after you have taken out your bread, then to every quart of damsons

put three quarts of fair water, but first boil it very well; then put the water and damsons into a runlet with sugar; and having stood a time sufficient, bottle it off.

### 75. *Wine of Grapes.*

WHEN they are fully ripe, in a dry day, pick off those grapes that are ripest; and squeeze them in a vat or press made for that purpose, in which must be a fine canvas bag to contain the grapes, and when in the press do not squeeze them so hard as to break the seeds if you can help it; because the bruised seeds will give the wine a disagreeable taste: then strain it well, and let it settle on the lees in such a cask or vessel as you may draw it off without raising the bottom; then season a cask well with some scalding water, and dry it or scent it with a linen rag dipped in brimstone, by fixing it at the bouge, by the bung or cork; then put the wine into it, and stop it close for forty-eight hours; then give it vent at the bouge, with a hole made with a gimlet; in which put a peg or fawcet, that may be easily moved with the fingers; then, in about two days time, it will be fit for drinking, and prove almost as good as French wine.

### 76. *Wine of Strawberries or Raspberries.*

MASH the berries, and put them into a linen bag, as aforesaid said for the grapes, and squeeze them into a cask, and then let it work as in the aforesaid grape receipt, &c. In this manner may cherry wine be made ; but then you must break the seeds, contrary to what was said before concerning the grapes.

### 77. *A short way for Cherry Wine.*

SQUEEZE the juice of cherries into a cask, and thereto put a small quantity of sugar, corresponding to the quantity of juice ; and when stood a month, it will be a pleasant liquor.

### 78. *Black Cherry Wine.*

IN the same manner, take a gallon or more of the juice of black cherries, and keep it in a vessel close stopped till it works ; and after it is fine, add an ounce of sugar to each quart, and a pint of white wine,

### 79. *Mead.*

TAKE six gallons of water, and thereto put six quarts of honey, stirring it till the honey be thoroughly mixed; then set it over the fire, and when ready to boil, scum it very well: then put to it a quarter of an ounce of mace, and as much ginger, and half an ounce of nutmegs, some sweet marjoram, thyme, and sweet briar, together a handful: then boil them in the liquid, then let it stand by till cold, and then barrel it up for use.

### 80. *To make Beer, without Malt.*

TAKE thirteen gallons of water, boil and scum it, put two pounds of brown sugar and two pounds of treacle to it; boil them together half an hour, strain the liquor thro' a sieve, and put to it a penny worth or two of baum, when cold; work it a day and a night, then turn it: let it stand in the barrel a day and a night, then bottle it, and put into each bottle a tea-spoon full of brown sugar.

### 81. *For preserving Apples thro' the winter.*

THE secret of preserving apples through the

winter, in a sound state, is of no small importance. Some say that shutting them up in a tight cask is an effectual method, and it seems probable ; for they soon rot in open air. But an easier method, and what has recommended itself to me by the experience of several years, is as follows :—

I gather them about noon, at the full of the moon, in the latter part of September or beginning of October. Then spread them in a chamber or garret, where they lie till about the last of November.—Then remove them into casks or boxes, in the cellar, out of the way of the frost ; but I prefer a cool part of the cellar. With this management I find I can keep them till the last of May, so well that not one in fifty will rot.

### 82. *To pickle Cucumbers, green.*

WASH them, and dry them in a cloth ; then take water, vinegar, salt, fennel tops, some dill-tops, and a little mace ; make it sharp enough for taste ; then boil it awhile, then take it off and let it stand till cold ; then put it in the cucumbers and stop the vessel close, and within a week they will be fit for use.

83. *To pickle French Beans.*

TAKE them while young, and cut off the stalks, then take good vinegar and boil it with pepper and salt; season it to your palate, and let it stand till cold; then take the beans and put them into a stone jar, placing dill between the layers, and then put in the pickle, and cover them close for three weeks; then take the pickle and boil it again, and put it into the beans boiling hot; cover them close, and when cold they will be fit to eat.

Or, French beans may be pickled thus: Take your beans and string them, boil them tender, then take them off and let them stand till cold; then put them into pickle of vinegar, pepper, salt, cloves, mace, and a little ginger.

84. *To pickle Walnuts, to eat like mangoes.*

TAKE green walnuts, before the shell has grown to any hardness in them; pick them from the stalks and put them into cold water, and set them on a gentle fire, till the outward skins begin to peel off; then, with coarse cloth, wipe it off; then put them into a jar, and put water and salt therein, shifting it once a day for ten days, till the bitterness a

discolouring of the water be gone ; then take a good quantity of mustard seed, which beat up with vinegar, till it becomes coarse mustard ; then take some clove of garlic, some ginger, and a little cloves and mace ; make a hole in each nut, and put in a little of this ; then take white-wine vinegar, and boil them together, which put to the nuts boiling hot, with some pepper, ginger, cloves and mace, as also, some of the mustard seed and garlick, which keep close stopped for use.

85. *To Pickle Mushrooms.*

FIRST blanch them over the crowns, and barb them beneath ; then put them into a kettle of boiling water, then take them forth and let them drain ; when they are cold, put them into your jar or glass, and put to them cloves, mace, ginger, nutmeg and whole-pepper ; then take white-wine, a little vinegar, and salt ; then pour the liquor into the mushrooms, and stop them close for use.

86. *To Pickle Lemon and Orange Peel.*

BOIL them in vinegar and sugar, and put them into the same pickle : observe to cut them into

small long thongs, the length of half the peel of your lemon ; it ought to be boiled in water, before it is boiled in vinegar and sugar.



87. *To Preserve Fruit green.*

TAKE pippins, apricots, pears, plumbs, or peaches, when they are green ; scald them in hot water, and peel them ; then put them into another water, not so hot as the first ; then boil them very tender, and take the weight of them in sugar, and put to them as much water as will make a syrup to cover them ; then boil the syrup till it be somewhat thick, and when cold, put them together.



88. *To Preserve Raspberries.*

TAKE good raspberries that are not too ripe, but very whole ; take away the stalks, and put them into a flat bottomed earthen pan ; boil sugar, and pour it over your raspberries, then let them stand to be cool ; and when they are cold, pour them softly into your preserving kettle and let them boil till your syrup be boiled pretty thick : scum them very well in the boiling ; this done, put them in pots, and when cold, cover them up close for use.

### 89. *To Preserve Barberries.*

TAKE one pound of barberries picked from the stalks, put them in a pottle-pot, and set it in a brass pot full of hot water, and when they are stewed, strain them, and put to the barberries one and an half pounds of sugar, and to them put a pint of rose-water, and boil them a little; then take half a pound of the fairest clusters of barberries you can get, and dip them in the syrup while it is boiling; then take the barberries out, and boil the syrup till it is thick, and when cold, put them in glasses with the syrup.

### 90. *To Preserve Currants.*

LAY a layer of currants, and then a layer of sugar, and then boil them together as before prescribed for raspberries; scum them in boiling till the syrup is pretty thick; then take them off, and when they are pretty cold, put them in gallypots or glasses closely stopped.

### 91. *To Preserve Walnuts green.*

BOIL the walnuts till the water tastes bitter, then take them off, and put them in cold water;

peel off the bark, and weigh as much sugar as they weigh, and a little more water will then wet the sugar: set them on the fire, and when they boil up, take them off; let them stand two days, and then boil again.

92. *To Preserve Cherries.*

FIRST take some of the worst cherries, and boil them in fair water, and when the liquor is well coloured, strain it; then take some of the best cherries, with their weight in beaten sugar; then lay one layer of sugar, and another of cherries, till all is laid in the preserving kettle; then pour a little liquor of the worst of cherries into it, and boil the cherries till they are well coloured: then take them up and boil the syrup till they will button on the side of a plate; and when they are cold, put them up in a glass close covered for use.

93. *To Candy Cherries.*

TAKE cherries before they be full ripe, and take out the stones: then take clarified sugar boiled to a height, and pour it on them.

94. *To Candy Pears, Plumbs, Apricots, &c.*

TAKE them, and give every one a cut half through; then cast sugar on them, and bake them in an oven, as hot as for manchet, close stopped; let them stand half an hour, then lay them one by one upon glass plates to dry, and they will appear very fine and clear: in this manner you may candy any other fruit.

95. *Of Jellies.*

LET them be of apples, currants, raspberries, &c. Take out the clear liquor when squeezed, and boil it with sugar till it is as thick as a jelly. Then put into glasses, and cover it close.

96. *A method of Preserving Eggs.*

EGGS keep very well when you can exclude air; which is best done by placing a grate in any running water, and putting eggs, as the hens lay them, on the upper side of the grate, and there let them lie, covered with water, till you are going to use

them, when you will find them as good as if they had been lain that day. This way answers much better than greasing; as sometimes one place is missed which spoils the whole egg: even those that are fresh never eat so well. In places where people are afraid their eggs will be stolen, they should make a chest with a number of slits in it, that the water may get in freely; the top of which being above the water, may be locked down. Mill-dams are the most proper for these chests or grates.

N. B. The water must continually cover the eggs, or they will spoil.

97. *To Cure Hams, as is practised in Virginia.*

TAKE 6 pounds of fine salt,
3 pounds of brown sugar, or
3 pints of molasses,
1 pound of salt-petre powdered;

Mix all these together, to serve for twenty-four hams: rub each ham well all over with this mixture, and pack them down in a cask or tub, and let them so remain for five or six days; then turn them, and sprinkle some salt lightly over them, and so let them remain five or six days more, then add brine or pickle strong enough to bear an egg, and let them remain covered with it for a month, when they will be fit to smoak.

98. *Another Mode, equally as good and simple.*

TO four gallons of soft river water, add one pound of brown sugar, four ounces of salt-petre, and eight pounds of coarse salt. Boil all these together, and carefully take off the scum as it rises; when clear, let it remain till cold, then pour it over the meat till covered, and the quantity of pickle must be increased according to the quantity of meat; the meat must not be pressed, but put lightly into a cask, and remain in for six or seven weeks, when it will be fit to smoke.

99. *For a water to Destroy Bugs, Flies, Ants, and other insects, on tender plants.*

[Invented by C. Tatin, Seedsman and Florist at Paris.]

THE receipt for this valuable composition, and which obtained for the ingenious author a reward from the Bureau de Consultam, who desired it might be made as public as possible, is thus given in the celebrated Annales de Chimie :—

Take of black soap four ounces,
Flour of sulphur four ounces,
Mushrooms of any kind four ounces,

Water wherein dung has been soaked, two gallons: and thus in proportion.

Divide the water into equal parts; pour one part into a barrel, vat or any vessel of convenient size; which should be used only for this purpose; let the black soap be stirred in it till it is dissolved, and then add to it the mushrooms after they have been slightly bruised. Let the remaining half of the water be made to boil in a kettle: put the whole quantity of sulphur into a coarse linen cloth, tie it up with a thread in form of a parcel, and fasten it to a stone or other weight, to make it sink to the bottom. During twenty minutes, being the time that the boiling should continue, stir it well with a stick, and let the packet of sulphur be squeezed so as to make it yield to the water all its power and colour. The effect of the water is not rendered more powerful by increasing the quantity of ingredients. The water, when taken off the fire, is to be poured into the vessel, with the remaining water, where it is to be stirred a short time with a stick; this stirring must be repeated every day, till the mixture becomes fœtid, (or putrid) in the highest degree. Experience shews, that the older and more fœtid the composition is, the more quick is its action. It is necessary to take care to stop the vessel well every time the mixture is stirred. When we wish to make use of this water, we need only

sprinkle it on the plants, or plunge their branches into it: but the best manner of using it, is to eject it on them with a syringe, or squirt gun.

100. *To Kill Lice on Cattle.*

TAKE a broad woollen list, as broad as your hand, that will go round about his neck; then wet the list well in train oil, and sew it about the beasts neck, and the lice will come to it, and it will kill them if there were ever so many; daub some about the breast in several places, and they will come to it, and it will kill them. No flies in summer will come near any wound or sore, where this is applied, for it will kill them.

101. *To Destroy Bugs, and rid Houses of them.*

TO remove these noisome and troublesome vermin, take oil of turpentine, wash over the walls and bedsteads with it, or particularly where there are any crevices, cracks or crannies, and they will die away, and the room, after some time using it, no more be pestered with them.

The juice of wormwood and rue is very good to

wash the bedsteads, crevices, or any place where you suppose they are, and if you would lie safe among thousands in a room, rince your sheets in water, wherein sassafras has been well steeped, and they will not enter upon them; or you may lay that wood in slices among your linen, and it will have the same effect. Keep your rooms airy and clean always.

## AGRICULTURAL.

### *To Farmers.*

102. *An easy method to preserve Wheat and Rye from the Weavil.*

AS you stack wheat, on every two or three layers of sheaves, spread some elder leaves and branches. This was communicated to me by a farmer, who tried the experiment with success last year. The same informant adds, that he has read in history, that the same remedy has been applied in Europe, when they have occasion to lay up a seven year's store, &c. As the remedy is easy, it is to be hoped that farmers will avail themselves of the advantage. Exporters of flour from the states have nothing so much to fear. Inspectors of flour ought

to be guarded against this evil; no such flour ought to be suffered to leave the states. The credit of our flour abroad depends on the inspectors.

N. B. Lime, applied as above, will produce the same effect.

103. *To preserve Indian Corn from Birds, &c.*

TO prevent your Indian corn when planted, from being taken up by birds or destroyed by worms or insects, take about one pint of tar to a bushel of seed corn, and in the like proportion for a greater quantity, and stir it well together till every grain receives a part of the tar. This will effectually answer the purpose required.

104. *For Inoculating Fruit Trees.*

AUGUST and September are the proper months to innoculate or bud most kinds of fruit trees; an operation that every landholder should have some knowledge of. When a tree has finished its growth for the year, a bud is formed at the very tip or end of the twig; which denotes that it is in a proper state to bud or inoculate. Some trees are indeed

an exception, as they continue growing almost the whole season, and may be budded through all July and August.

With a sharp knife, slit the bark of any twig not more than half an inch thick, and not less than a quarter of an inch. Carefully cut through the bark, but not to wound the wood under it. Let the slit be rather more than an inch long. In like manner cut half an inch long across this slit, at the bottom, so that the two cuts through the bark will resemble a ⊥ bottom upwards. Then take a bud of the fruit you wish to propagate, with its bark near an inch long, taking care to loosen it from the woody part of the stem, so as to put it off from your thumb and finger, separating the bark and the eye under the bud from the wood. If the eye is left on the wood, you must throw by the bud and take another. Then insert the bud under the ⊥, before described, and bind it down with woollen strings, or well soaked strips of bark of bass wood, leaving the eye of the bud to the air. In two or three weeks, the bud will unite with the stalks, when the string must be loosened. The stocks may be cut away the next spring. This method is on many accounts better than grafting. It gives the farmer another chance, provided his grafts fail in the spring. Stone fruits succeed only or best with inoculation. Small twigs, too small for common grafting, answer well—and above

all, in this way, very little injury is done to the stock. In a fruit country, this method ought to be well understood. A correspondent says, that cow-dung, with the addition of a very little salt, is a good plaister for the wounds of fruit trees. When large limbs are cut off, the stumps should be covered to keep out the air. Too much salt will spoil the tree.

### 105. *To take Film off a Horse's Eye,*

BLACK Pepper, finely ground, and sifted thro' a piece of gauze; add thereto fine ground salt, of each as much as will lay on the point of a case knife, mixing them well together; then take as much dough as will thinly cover an ounce ball, make it flat, place the pepper and salt thereon, and roll them up, making the same about the size of an ounce ball; then put it as low down as possible in the off ear, fastening the ear so as to prevent its falling out. The above takes off the worst of films, and no way injures the horse. This receipt has been used many years in this place with the greatest success.

### 106. *A Cure for Sheep-Biting.*

AN intelligent farmer in New-Jersey seized a dog which often worried and bit his sheep. He tied the leg of the dog by a tether to the leg of a strong active ram, and placed them on the top of a hill. The ram immediately began to kick and butt the dog, who after a little snapping, attempted to fly. The tether held him, so that the ram easily overtook, kicked and butted him. After a short time, the ram, excited to exertion, raced down the hill, and forced the dog after him. When the dog was so punished as not to forget it, he was let loose, and would never touch a sheep afterwards.

### 107. *An easy and sure Method to find due North and South.*

TAKE a smooth piece of board, draw on it four, five or six circles, fasten it on the top of a post, stick a pin in the center which the circles are drawn on within each other; observe in the forenoon on which circle the shadow of the head of the pin

strikes, and make a mark; then in the afternoon observe when it strikes on the other side of the same circle; then find the center on the circle, then strike a line from one to the other, which cannot fail of being north and south.

FINIS.

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## *ERRATA.*

PAGE 13, line 5, for dressings read *dipp'ings.* Page 15, line 5, for cracking read *smutting.* In 9th receipt, 7th line, read air and *add.* Receipt 67th first line, for pound, read *peck.* Receipt 69, for sap read *ross.* Receipt 77, for thirty read *three.* Receipt 82, after madder, add *two ounces of Camwood;* and for stir read *air.* Receipt 84, for twenty ounces read *two ounces.* Receipt 94, for cracking and crack, read *smutting* and *smut.* Receipt 96, for elder read *alder,* for rack, *smut.* Receipt 103, for cool read *hot.* Receipt 118, for cracking read *smutting.* Page 88, for nap read *knots.* Page 89, for drying read *dressing.* Page 100, for weak read *mild.* Page 109, for otters read *others.*

### *SECOND PART.*

PAGE 44, line 16, after the word *time,* insert *and as soon as he came out to dash cold water several times on his breast.*