THE PRACTICE

OF

FRESCO PAINTING.

INSTRUCTIONS

FOR THE

PRACTICE

OF

FRESCO PAINTING,

AS GIVEN IN THE REPORTS OF THE COMMISSIONERS ON THE FINE ARTS,

COMPILED AND ARRANGED

BY

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To the Queen,

AND TO H. R. H. PRINCE ALBERT.

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INTRODUCTION.

In the following pages is attempted a practical arrangement of the precepts laid down for fresco-painting in the two Reports of the Commissioners on the Fine Arts, with the hope that the formulæ thus extracted may be of some service in experiment.

The subject of fresco has been treated at great length in the language of almost every country in Europe, wherein painting is held in estimation; but as the practical rules are few and simple, they are here put together in working order from the above-named documents, in preference to consulting ancient and remote authorities, whereby nothing really serviceable to the present simple purpose could be gained: indeed these instructions are framed from ancient writers as well as from the latest and best sources of information.

Whether fresco be, or be not, applied to the embellishment of the Houses of Parliament, there seems to be a prevalent feeling, that the time is arrived to seek for our national school of art that amelioration which the practice of fresco conduces to promote. It is not, however, to be believed, that our artists will limit their exertions to mere repetitions. On this point, it is observed in the Appendix to the Report,

"And here it may be allowable to express the opinion, that

the great skill of the English artists in water colours might be the means of introducing new technical merits, and a new perfection in the practice of colouring in fresco, which might again directly benefit the school of oil-painters."

The accuracy of this opinion appears to be supported even in the first fresco publicly exhibited under the present impulse—that by Edwin Landseer, Esq., R. A. lately seen at Gwydyr House, which is executed in the manner of a beautiful and spirited water-colour drawing. And it cannot be doubted that this free manner, so peculiarly adapted to minor compositions, will be extensively prevalent, if fresco receive due countenance in this country.

Its difficulties have been immensely overrated. When it was understood that Cornelius was about to embellish Gatton for the late Lord Monson, it was also known that the lime was to be brought from Germany: hence arose vulgar impressions, that British artists knew nothing more of fresco than the name, and that Britain produced no lime fit for fresco. *Both* only require the necessary preparation, and both, it is probable, will turn out equal to the most vaunted of other countries.

It has been a source of embarrassment to find walls adapted for experimental practice; but the difficulty is easily remediable by the construction of moveable frameworks covered with plaster, a method employed by Guido and others of the Italian masters. These may be prepared at a comparatively trifling expense; and to the artist, the advantages in many ways are obvious.

THE CARTOON.

THE METHOD OF MAKING IT—ITS APPLICATION TO THE WALL —THE IMPRACTICABILITY OF ALTERATIONS.

THE Cartoon is, as the term imports, a PAPER surface, whereon the proposed subject is carefully made out, as preparatory to being transferred by tracing, or pouncing, to the plaster.

The nature of fresco-painting is such as to preclude the possibility of retouching to any extent; hence the necessity of daily undertaking only so much of the work as can be perfected within the day; and thus it is shewn that the design must be, as a cartoon, matured to its ultimate nicety—change or correction being impracticable in the subsequent process. In the National Gallery, at the top of the staircase, may be seen cartoons by Agostino Carracci; also a fragment by Raffaelle, for the Murder of the Innocents. In compositions of large size, it is usual, for the convenience of working, to divide the drawing upon two or more cartoons, every care of course being taken that these parts form a perfect whole, as emendations are not to be thought of in transferring to the plaster. The cartoon may be prepared in this manner:—

Stretch a strong cloth on a frame, as if for painting; to this, glue a covering of paper. When the first layer of paper is dry, cover it with a second, and as evenly as possible.

Where the edges of the paper meet and overlap, they may be scraped a little, in order to prevent inequalities in the work. The surface is then prepared for drawing with size and alum. The drawing is made with charcoal; and, when finished, is fixed by wetting the back (the cloth) with cold water, and then steaming the drawing in front. The effect of this last operation is to melt the size a little, thus fixing the charcoal.

A finished drawing of the full size being thus made, an outline tracing is taken from it on paper rendered transparent by means of oil; for this purpose the paper employed should be moderately thin, that a distinct outline be ensured, as this is the "working" drawing which is applied to the wall.

As much of this outline-drawing as can be finished at one painting is now nailed to the wet wall, and again traced with a point, so as to leave an indented outline on the lime surface.

Another method is also in use for transferring the design to the wall:—

The paper to be applied to the wall is placed behind, and in close contact with, the finished cartoon: the outlines of which are pricked through so as to leave a similarly pricked outline on the paper behind. The next process is, to apply the paper to the wall, and pounce the pricked outline with a bag of black or red dust; thus leaving the drawing on the wall in dotted outline. This method is sometimes preferred for small works, as it has the advantage of preserving the surface of the plaster undisturbed. The first mode, however, that of tracing on oiled paper, and thence again on the wall, is generally preferred, for two reasons; that the original cartoon may be preserved uninjured, and because the outline is more decided.

In tracing the outlines on the wet wall, the two methods have been variously adopted. Fra Bartolomeo, Luca Signorelli, Andrea del Sarto, and many others, used the point.

According to the Report of C. H. Wilson, Esq., Director of the Government School of Design, at Somerset House, who was during last year employed by Her Majesty's Commissioners on the Fine Arts to proceed to the Continent to collect information relating to the objects of the Commission—

"Pietro Perugino pounced all his outlines, and so did his great pupil Raffaelle; but his pupils again followed each his own fancy in this respect. The following facts as to the frescos in the Stanze, may be interesting, and when taken in conjunction with other differences in the colour and mode of painting, may not be without value in considering these pictures with reference to the different hands employed in painting them. The stylus, or point, is nowhere used in the Dispute of the Sacrament, nor in the School of Athens, except in the drapery of Hippias, where the artist has made an alteration in the folds. In the Parnassus there is no use of the stylus, save in the robes of Homer and Tasso, probably therefore painted by a pupil who followed his own system of outline. In the Heliodorus, Attila, Mass of Bolsena, and Peter delivered from Prison, the point is not used, except in putting in the moon in the last picture. The Incendio del Borgo has first been pounced, and then outlined with a very sharp point on the wet plaster; the picture of the Oath of Leo III., is outlined in the same way, and so carelessly, that the plaster is broken out in parts: these two pictures are in this respect a striking contrast to the others. Giulio Romano did not use the point in his Battle of Constantine with Maxentius.

"Raffaelle did not use the point in his fine works in the Farnesina, and the advantage is obvious; those beautiful creations would have been injured by its use, for whilst its convenience makes it very proper to use it in works removed to a considerable distance from the spectator, it never should be seen in those which are nearer to the eye, especially if the light comes from the side."

To consider the cartoon as briefly as possible in all its probable circumstances, it may here be observed, that in the fresco, as the final operation, no changes can be made; any improvement, therefore, that may suggest itself must be effected on the cartoon, or on additional pieces of paper fitted to it. Departures from the original design are chiefly additions. The most interesting example of this is shown in Raffaelle's School of Athens; that is, in the difference between the finished fresco and the original cartoon. In the fresco, the figure of Epictetus, sitting in the foreground on the left, is not found in the cartoon, having been added to fill up a space. Another difference is seen in the head of Aspasia, which is covered with drapery in the fresco, but in the cartoon it appears with flowing tresses, a change which might have been made upon the wall, without reference to the preparatory drawing. This cartoon is preserved in the Ambrosian Library, at Milan, and contains the figures only, without the architecture; and that it is the same that served for the execution of the fresco, is proved by the exact conformity of every part with the painting, except the above-mentioned additions.

As it is equally impossible to effect changes in colour as in form, it will be desirable to prepare a sketch of the intended arrangement of colour.

THE SELECTION OF LIME.

THE ROMAN, GENOESE, FLORENTINE, AND BRITISH LIMES.

THE selection of the lime intended as a ground for fresco-painting is a matter of great importance. The qualities of the limes of this country have been questioned as to their fitness for fresco-painting; but it is satisfactorily shewn, that a material is obtained even superior to any other yet known to have been used in the preparation of grounds. It is not here intended to observe at any length on the qualities of foreign limes, but only to mention them comparatively, and, in such a manner, as at once to show that it is not necessary to seek at a distance from home a material for grounds, and to afford the experimentalist maximum and minimum qualities whence to deduce an average for himself.

A limestone consisting of as few foreign ingredients as possible is *generally* esteemed the fittest; although Carrara marble,* which is pure carbonate of lime, is, when required in quantity, disqualified for use from its peculiar structure, while even a much less pure lime has been employed without any pernicious result.

The limestone used by all the great artists who painted in Rome in the beginning of the 16th century was Travertine, of which St. Peter's, the Colosseum, and other ancient and modern edifices in Rome, are constructed. It is recommended by Vasari, and was probably used for this purpose by the ancients.

* Professor Musseni, of the Academy of Florence, employs, we believe, marble dust, which is said, by peculiar management, to communicate to the fresco the appearance of enamel.

This is almost a pure carbonate of lime, affording in a hundred parts—

Carbonate of lime,	99 . 4
Alumina, with a trace of oxide of iron,	. 6
	100 .

During the best period of Italian art, the lime of Genoa was highly esteemed, and remarkable for its whiteness. Frescos in exterior walls in that city have resisted the effects of sea-air. In analysis this lime yields,

Carbonate of lime,	63
Carbonate of magnesia,	36
Earthy matter, oxide of iron, and bituminous matter,	1
	100

The lime used by the Florentine painters is found to be almost pure carbonate of lime, and of that used at Munich the proportions are,

Carbonate of lime,	80
Carbonate of magnesia	20
	100

Although the purest lime has always been sought and recommended, it is yet shown that impurity to a certain amount is not injurious to the work. A fresco was executed seventeen years ago at Bath, by Mr. Thomas Barker, which remains in

good condition. The lime was procured from the Wick stone: the analysis is—

Carbonate of lime	97
Impurity, chiefly oxide of iron	3
	100

and that used by Mr. David Scott for a fresco painted at Edinburgh, about eight years ago, affords—

Carbonate of lime	94. 5
Silica, alumina, a little oxide of iron, and bituminous matter	5. 5
	100

We have yet, however, limestone preferable to these, and even equal to the Roman material: this is the limestone procurable on Durdham Down, near Bristol: it is composed of

Carbonate of lime	99 . 5
Bituminous matter	0 . 3
Earthy matter	0 . 2
	100.

CAUSTICITY OF THE LIME.

ITS REDUCTION—EFFECTS OF LIME USED TOO FRESH—KEEPING IT.

To reduce the causticity of the lime is a main object in the preparation; this depends, in a great degree, upon the length

of time elapsing from the period of its being slaked to that of its use. It is well known that lime, for a certain time after being slaked, is unfit for use. The effect of its being employed too soon is, that it blisters; a fact mentioned by Italian writers on art, and even exemplified in some frescos painted in this country by Mr. Aglio, at Manchester, and in Moorfields Chapel. In the latter case, the blistering was so universal, that the surface of the painting, soon after it was finished, "looked as if flakes of snow had covered it."

With respect to the length of time necessary to subdue its causticity, authorities vary. Italian writers do not insist upon its being kept for a very long period; and in the modern practice of fresco in Italy and Germany, it is not considered necessary to keep it longer than a few months. It is known that lime is available after having been kept for some years: it is also known that it may be employed after periods of much shorter duration. Hence exists upon this subject a variety of opinion. A desirable and valuable end, however, would be to know, in how short a time it may be employed with entire safety.

The non-caustic state of lime is arrived at when, by exposure to air, or by some other means, it has regained its maximum of carbonic acid; but if buried and kept air-tight, it cannot, in any degree, acquire that which renders it non-caustic. "Time has no effect on pure lime, whether slaked or unslaked, provided it be not exposed to atmospheric air, or some other source of carbonic acid."

It appears, however, that some degree of causticity is indispensible to give adhesive firmness, and to render it fit for

the purposes of the fresco-painter, because, to this certain degree of causticity, is it indebted for the quality of induration which is exerted on exposure to air when in a moist state.

As regards incidental ingredients, the presence of magnesia cannot diminish the whiteness of the lime; and, in other respects, it has not been found to be objectionable. Other matter found in association with carbonate of lime might diminish its causticity, but might be otherwise objectionable: thus iron would operate on the colours: silica and alumina would probably cause the lime to set too fast.

With respect to burying lime, or keeping it by some means air-tight, it is chemically shewn, that instead of rendering it mild, this would preserve it in a caustic state for any length of time. There would be no danger of its becoming dry even if buried in the mere earth; but for the sake of securing it against impurities, the pits had better be lined. Thus preserved in the state of "putty," no chemical change could take place, but a mechanical alteration in the arrangement of the particles might be the result, which might be advantageous, as improving the consistence of the paste.

All artists and writers are agreed that lime, when too new, is unfit for use. Long keeping has been supposed to give value to it as increasing its quality of consistence, besides reducing its causticity. An Italian writer (Leon Battista Alberti) asserts, having seen "some ancient lime, which, there was reason to suppose, had lain neglected for more than five hundred years, and which far surpassed honey or marrow in consistence."

SLAKING AND SEASONING THE LIME.

THE method pursued at Munich is to fill a pit with clean burnt limestones, which, on the application of water, are stirred continually, till the substance is reduced to an impalpable consistence. The surface having settled to a level, clean river sand is spread over it to the depth of a foot or more, so as to exclude the air, and, lastly, the whole is covered with earth. The German painters suffer the lime to remain thus for at least three years before it is used either for the purpose of painting (for lime is the white pigment), or for coating the walls. Cornelius prepared the lime for the Ludwig-Kirche eight years before he painted there. The pits or vats in which the lime is preserved, are not lined with brick, nor protected in any way, being dug in the mere earth. The lime thus kept is found moist, as at first, after many years. Cornelius said, that there might perhaps be no objection to lining the pits, with a view to keep the lime clean; but the usual mode was to slake it, and keep it in the manner described. Professor Hess directs the lime to be put into pits lined with brick.

The method of preparation at Genoa is described by Mr. C. Wilson.

"The lime having been slaked is mixed in a trough about six feet in length, and twenty inches in width: at the bottom it is somewhat narrower. The instrument used in mixing it is similar to that used by our masons. The lime is worked with this, and water is thrown on till the substance is of the consistence of cream. At the end of the trough there is a little sluice, the opening of which, however, comes only to within

an inch and a half of the bottom of the trough. On being drawn up, the sluice allows the lime to escape; but small stones, or impurities, which may have sunk to the bottom, are prevented from passing by the ledge under the opening. The lime is received in a pit dug in the mere earth (not lined) to the depth of several feet, and of any convenient size. The process of mixing in the trough is repeated till the pit is well filled, the trough being washed out with clean water every third or fourth mixing."

"The lime being thus prepared, is left in the pit from eight to twelve months, according to its ascertained strength. The lime for the first rough coat need not be kept more than two months: this is allowed to dry perfectly before the next coats are put on. The proportion of sand to lime is the same as with us, viz., two of sand, and one of lime. No hair is used by the Italian plasterers. The lime of which the *intonaco*, or coat of fine plaster, is formed, is, however, to be subjected to a much more careful preparation than that used for the first coat. After it has been kept the requisite time, it is taken out with a spade, the greatest care being necessary not to come too near the edges, or bottom of the pit, lest any clay or earth should be taken up with the lime."

"It is now thrown again into the troughs, and is again thoroughly mixed with water till it is not thicker than milk: it is then allowed to escape as before through the opened sluice; but this time it passes through a fine hair sieve into an earthenware jar: a number of these jars are required, and each is filled to within a third of the top. The lime is allowed to settle, and when the water, which rises over its surface, is clear, it is

poured off. This is repeated till there is no more water to pour off, and the lime remains in the jar, of the consistence of white paint commonly used, and is quite as smooth. It is now ready to be mixed for the *intonaco*, which consists, as usual, of two parts sand and one of lime. Great pains are taken in Italy to find a suitable sand. It must be perfectly clean, sharp, the grains of equal size, and its colour favourable, as the *intonaco* should not be too dark. The presence of any earthy particles in the plaster would inevitably ruin the fresco: this accounts for the very careful preparation which all the materials used undergo."

WALLS.

BRICK WALLS—THE USE OF LATHS—DAMP, AND ITS REMEDY.

If the wall to be painted be covered with old mortar, the ingredients of which are unknown, this coat should be entirely removed till the solid materials are laid bare; then upon this surface proceed to lay the necessary ground. As the materials of a wall well adapted for fresco, the German professor Hess " recommends bricks well dried, and of equal hardness;" and it is observed in a quotation of some remarks of Mr. Thomas, that all the frescos of Munich are painted on surfaces prepared on the brick wall. The use of laths is sometimes necessary for certain surfaces; but the professors in Munich are agreed that a brick ground is to be preferred wherever it is practicable, not only on account of its solidity, but also because it is better adapted for the execution of the painting. The brick ground absorbs superfluous water, and keeps the plaster longer in a fit

state for painting upon. The painting ground dries much quicker on laths, as two surfaces are presented for evaporation. The walls ought to be thoroughly dry. A wall of a brick, or a brick and a half in thickness, is preferable for painting on.

It is observed by Mr. C. H. Wilson, professor of ornamental design in Edinburgh, from whom the Commission acknowledges much useful information on the subject of fresco, that—

" In Italy the practice of lathing *walls* is unknown, but many of the finest Italian *ceiling* frescos are on lath, and are in perfect condition. Most vaulted ceilings, in what is termed the *piano nobile*, or principal floor of every palace, are constructed of wood. The lathing, in this case, is not attached to single thin pieces of timber, cut to the shape of the ceiling, but to a strong grating; in some cases the ribs and transverse pieces of this grating are four inches thick each way. The lathing in Italy is a very peculiar process. The material is the reed which is cultivated so extensively in that country, and used in so many ways. It grows to the length of about 18 feet, and is rather more than $1\frac{1}{4}$ inch diameter at the base. When these reeds are used for lathing, they are split, and, not being strong enough for the purpose, in this state they are wattled upon the grating. The result of this somewhat complicated contrivance is a framework of great strength."

Mr. Hamilton, a distinguished architect, of Edinburgh, observes, " In the preparation of walls and ceilings for fresco-painting, no expense should be spared; battens and lath are obviously perishable materials, and, therefore, ought to be avoided. The damp from exterior stone walls may be guarded against by lining them with brick; and now that the use of

cast-iron is so well understood, the girders or joisting of houses, where fresco-painting is contemplated, should be of iron, arched with brick between, and thus a perfectly level ceiling may be formed of the most durable kind."

It is also recommended as a security against damp, that the lining of brick should be somewhat detached, leaving a small space between it and the stone wall, to which it might be bound at intervals. This is suggested by Vitruvius, and is the mode in which the stuccoed and painted walls of Pompeii are constructed: the bricks, or rather tiles, are placed edge-wise, and are connected by leaden cramps to the brick or tufo wall, without being in immediate contact with it. If tiles be employed for this purpose, care must be taken that they be of sufficient substance to prevent their being broken by ordinary accidents. To guard against damp from roofs, or even the occasional washing of upper floors, it is also suggested that a coating of asphalte be employed on the upper sides of the arches of the ceiling. In some cases asphalte is advantageously employed in walls. M. Polonceau, a French architect, effectually checked the progress of damp rising from a humid soil, by covering the horizontal surface of the masonry, a few inches above the level of the soil, with a coating of liquid asphalte, applied with a brush; when it was dry it was covered with a layer of coarse dry sand, after which the building proceeded.

In considering, comparatively, the merits of the battened wall, and those of the more solid structure, it must be observed, that the former readily adapts itself to the temperature of the atmosphere, and is, therefore, less likely to be affected by external damp: while, on the contrary, the brick wall causes,

by its coldness, the rapid condensation of moisture in damp weather.

PREPARING THE WALL.

THE THREE COATS—THE METHOD OF PROFESSOR HESS—THOSE OF CENNINI AND ALBERTI.

THE first or rough coat is composed of river sand and lime. The proportions of the sand to the lime may vary in different climates; but upon this point the working builder and mason are sufficiently experienced. In Italy it appears that two parts of sand were added to one of lime: the Germans generally use more sand, viz., three parts to one of lime. The thickness of the coat is such as is generally used in preparing the walls of dwelling houses. The surface of this first application should be rough, but not unequally so; and the mason should avoid leaving cavities in it.

The wall thus coated should be suffered to harden perfectly: the longer it remains in this state the safer it will be, especially if the lime used was, in the first instance, fresh.

The ultimate preparation for painting on the dry, hard, well seasoned mortar, is as follows:—

The surface is wetted again and again, with water that has been boiled, or with rain water, till it ceases to absorb. Then a thin coat of plaster is spread over that portion only which is to be painted: the surface of this coat should be but very moderately rough. As soon as it begins to *set* (in ten minutes or so, according to the season,) a second thin coat is laid on somewhat *fatter*, that is, with more lime and less sand, about

equal proportions. Both these layers together are scarcely a quarter of an inch thick. The plaster is laid on, and the surfaces are smoothed with a wooden trowel: this at least is Cornelius's practice. Some painters like the last surface (which is to receive the fresco) to be perfectly smooth. One of the modes of rendering it slightly rough, is to fasten some beaver nap to the trowel; another is to pass over the plaster, in all directions, lightly with a dry brush.

Professor Hess recommends avoiding the intermixture of plaster of Paris in the mortar for the first rough coat, (in the finer coats it is never employed as a preparation for fresco,) and advises a moderate use of small flint pebbles. The rough coat should not be too compactly laid on, as its porousness is essential to the convenience of fresco-painting. In like manner the last finer coats should be lightly floated on, to ensure their power of absorption. He thus describes his method of preparing the ground:—

"The plaster for painting on is composed of lime, not in too caustic a state, and pure quartz sand. With regard to the lime, it should be well and uniformly manipulated, and should be entirely free from any small hard lumps. The sand should be very carefully washed, to cleanse it from clayey or saline particles, and should be afterwards dried in the open air. Sand that is coarse, or unequal in grain, should be sifted; thus the plaster will be uniform in its texture. The proportion of sand to the lime is best learned from experience, and must depend on the nature of the lime. If the plaster contains too much lime, it becomes incrusted too soon, is too smooth in surface, and easily cracks: if it contains too little, it is not easily

floated, the successive patches (as the fresco proceeds) are not to be spread conveniently in difficult situations, and the plaster is not so lasting."

" Before laying on the plaster, the dry rough coat is wetted with a large brush, again and again, till it will absorb no more. Particular circumstances, such as spongy bricks in the wall, humid or very dry weather, &c., dictate the modes in which this operation is to be regulated. The plaster should be laid on lightly and freely with a wooden hand-float: in connecting the successive patches, some portions require, however, to be finished with an iron trowel: in this case care must be taken not to press too strongly, otherwise rust spots might appear in the lime, and even cause portions of the superadded painting to become detached. (A glass float seems to be preferable when a wooden instrument is unfit.) The plaster should be about a quarter of an inch in thickness. The surface of the last coat is then slightly roughened, to render it fitter for painting on. The wall thus prepared is to be left a quarter or half an hour before beginning to paint."

According to Alberti, who follows Vitruvius, " The first rough coat should be composed of pit sand and pounded bricks; the pieces of brick should not be broken too small. In the second coat, river sand is best adapted, and is less apt to crack; this second coat also should be somewhat rough, because nothing that is applied to a smooth surface will adhere to it. The last coat should be as white as marble; in fact, pounded white marble should be used instead of sand. This coat need not be thicker than half a finger's breadth; some make it no thicker than the sole of a shoe."

Cennini, (1437,) who has recorded the ancient Florentine methods, says, " Both the lime and the sand should be well sifted. If the lime is what is called a rich lime, and has been recently slaked, there should be two parts of sand to one of lime. On being slaked, it should be well mixed and stirred, and a quantity should be made, sufficient to last for 15 or 20 days. It should then be suffered to remain *for some days*, in order to render it less caustic; for if too caustic, the *intonaco* will blister."

The mortar, composed as above, serves for the first coat, the surface of which is to be left somewhat rough; the application of the painting-ground is afterwards described, and the lime for this purpose is recommended to be well stirred and manipulated " till it appears like ointment."

Cennini mentions two coats only, and uses the term *intonaco* to both.

Palomino (Madrid, 1715,) gives a very full description of fresco-painting, partially differing in the detail from the common practice.

He says, that lime should be prepared, if possible, *four* or *six months* before it is used. It is then carefully sifted, and mixed with sand, which has been also sifted and cleansed from all particles of clay. If the lime be rather fresh, the proportions should be *equal*: this he recommends from his own experience: but if the plaster be old, the proportions will be three of lime to two of sand. This stucco is to be kept quite moist in a large tub, in which it may be conveniently stirred. If the work to be executed be extensive, it will be well to prepare more than one tub: thus while the first is being used, the additional pro-

vision may become duly tempered. In this state it is to be stirred and beaten daily, taking care to remove the pellicle which covers the surface of the water: thus prepared, it becomes perfectly mild, and of the consistence of lard; it no longer injures the colours, nor, in passing from the wet to the dry state, is it liable to those changes which disappoint the most expert.

" Three things are essential in the rough coat before applying this *intonaco*: first, that it should be perfectly dry, otherwise saltpetre will appear; next, that it should be generally level, though rough, for, if not, the *intonaco* will be unequally thick, and will crack where it is thickest; thirdly, that it should be well wetted before applying the *intonaco*."

With respect to the substance of the *intonaco*, " it should be about the thickness of a dollar. After it is well spread, the assistant is to cover it with a roll of soft wet linen, to get rid of the extreme smoothness, to remove the traces of the trowel, and slightly to stir the sand. The surface is next to be lightly passed over with a handkerchief, to remove the particles of sand which are on the surface, and which, in painting ceilings, might get into the eyes. Care must be taken in tracing the first portion of the composition, to fix the paper precisely in the right place, because the subsequent lines depend on the first: for this purpose the whole drawing had better be first fitted to the space, before it is cut for the convenience of tracing."

A striking remark is made by this writer, of more value in a climate like ours than in a more southern region.

" If, owing to extreme cold, the surface of the *intonaco* should freeze, the effect is worse than rapid drying, for no

absorption takes place, and the colours afterwards crumble off like ashes, as I have myself experienced. If, therefore, the use of *warm water is not sufficient to prevent such effects, it will be better to wait for milder weather.*"

The same writer observes, that the old masters went over the *intonaco* with a general tint of white and *terra rossa* before they began to paint, to render the surface more even: the operation of smoothing and pressing the surface, by means of paper, was, he states, practised by them at the last, when the day's work was quite completed.

There is little to be learnt from old Italian plastering: that of the Venetians is coarse and clumsy to the last degree, insomuch as to excite astonishment that it should have in anywise satisfied the artists: the plastering on which are executed the works of Pordenone exhibits the rudest workmanship, the surface being very uneven, and the joinings, which distinguish the different days' work, are very carelessly effected: this is also the case in the frescos of Titian.

COLOURS.

EARTHS—THE PREPARATION OF THE LIME WHITE—VERMILION—BLUES.

THE colours are chiefly simple earths: no vegetable, and few mineral, preparations can be used with safety: there is, however, a method of rendering vermilion durable. They are mixed with, or ground in, water, and kept in small pots when used.

The colours enumerated by Professor Hess are—White—

that is lime, which has either been long kept, or rendered less caustic by repeated manipulations and drying. Yellow: all kinds of ochres; terra di Siena. Red: all kinds of burnt ochres, burnt terra di Siena (according to Cornelius the brightest particles selected at different stages of the burning, furnish very brilliant reds,) oxides of iron, and lake-coloured burnt vitriol.

Brown: Umber, raw and burnt, and burnt terra vert.

Black: Burnt Cologne earth, which, when thus freed from its vegetable ingredients, affords a pure black.

Purple: Burnt vitriol, cobalt blue, and lake-coloured burnt vitriol.

Green: Verona Green (terra vert), cobalt green, and chrome green (oxide of chromium.)

Blue: Ultramarine, cobalt, and the imitative ultramarine: the last is most safely used for flat tints, but does not always mix well with other colours. These colours have been well tested, and, for the most part, admit of being mixed in any way.

Other more brilliant colours, such as chrome yellow, vermilion, &c., have been tried in various ways, but have not yet, in every case, been found to stand. Colours prepared from animal and vegetable substances cannot be used at all, as the lime destroys them.

In preparing the tints on the palette, great attention is necessary, for if they are mixed as the work proceeds, the painting, when dry, will appear streaky.

Cennini's method of preparing the lime as a white is as follows, being precisely the same as that practised by modern fresco-painters.

Take very white slaked lime, reduced to a fine powder; place it in a large tub, and mix well with water, pouring off the water as the lime settles, and adding fresh for eight days. The lime, divided into small cakes, is then placed to dry in the sun or the house top, and the longer these cakes are left the whiter they become. To shorten the process, the cakes may be moistened again with water and well ground, and then dried. This operation, once or twice repeated, renders the lime perfectly white. The same writer observes, that without this finely ground white, flesh tints, and other mixed tones that may be required, cannot be executed in fresco.

Armenini (Ravenna, 1587,) describes the process of fresco-painting; and his prescriptions are the more esteemed, as being the result of accurate observation. He describes thus his method of preparing the lime white.

" Take the whitest lime: this is to be well washed before it is used. Painters prepare it in various ways; some, in order to render it less caustic, boil a certain quantity well on the fire, always skimming the froth: it is then suffered to settle and cool in the open air: the water is poured off, and the lime is put on new sun-baked bricks (which absorb the moisture); and the lighter the lime, the purer it is. Others bury the lime in the earth, after having thus washed it, and keep it in this state many years before they use it: others expose it, while undergoing the same preparation, on the roofs of houses. Some mix it in equal proportions with marble dust. But it has been found that if it be exposed to the air in a large vessel, and water that has been boiled is poured upon it, the whole being stirred, and the next day spread in the sun, it will be

sufficiently purified, and may be used for painting the following day; but not for flesh tints, for these might undergo some change at the edges of the successive patches of plaster."

Cornelius, in reply to questions on the subject of the preparation of lime, says, " All lime used for the first and second coats on the wall should be old, having been preserved in pits. That lime only is boiled which is used as a pigment."

Cennini and Armenini say that vermilion will not stand in fresco, but Andrea Pozzo says, that although lime and vermilion are antipathetic, and especially when exposed to the outward air, he has used it for draperies in works executed in interiors. His manner of preparing it is this :—Take pure vermilion, and having placed it in an earthenware vase, pour on it the water that boils up when lime is slaked in it; the water, which should be as pure as it can be, is then poured off, and the operation is often repeated. By this means the vermilion is penetrated with the quality of the lime, and always retains it.

It was the practice of the early masters, " in laying in the preparatory tints in fresco, to make some of these totally different from the colour to be used in finishing in distemper: thus a dark red colour was almost invariably laid in as a preparation for blue; and this practice was generally adhered to, with a very few exceptions, till after the time of Raffaelle."

In the fresco called the Dispute of the Sacrament, Raffaelle has pursued this method in painting the blues in distemper over red, and these have stood perfectly. In another, the School of Athens, the blues he has painted in fresco, and they have nearly perished, as in most instances in every part of Italy where blue has been thus used, as well in those of early as of

later times. In the great works, however, in the Stanze, he returned to the old practice of painting the blues above red, using a blue which seems to have been of a vegetable nature, having changed, in many instances, into a brilliant green. The same blue seems to have been used by the Carracci, as also by Guido, the blues in whose works are frequently wanting in harmony with the other colours.

IMPLEMENTS.

The brushes are of the usual materials, but they should be somewhat longer in the hair than those used for oil-painting. The palette is of tin or zinc, with a rim round it, to prevent the colours, which are thinned with water, from running off. In addition to hog's hair tools, small pencils of otter-hair, in quills, are used. No other hair resists the lime, but becomes either burnt or curled. If the palette be of tin, it is covered with varnish, to protect it from rust.

Rain water boiled, or distilled water, should be used in all operations of fresco, and care should be taken that it has not passed through an iron tube.

THE PROCESS OF PAINTING.

THE STATE OF THE GROUND—DIVIDING THE WORK—THE MUNICH METHOD OF PRESERVING THE SURFACE MOIST —DEFECTS, AND THEIR REMEDY—THE METHOD OF PROFESSOR HESS—THE DETAILED PRACTICE OF A GENOESE ARTIST.

A convenient portion of the outline is now to be traced with

a sharp point on the plaster; and the painter begins to work, after having assured himself of the fit state of the plaster, which should be of such a consistency, as just to receive the impression of the finger, and not be liable to be disturbed by the action of the brush, as the contrary state, besides other inconveniences, would clog the brush with sand. Should the rough coat have been previously well wetted, the plaster will not dry too rapidly, but if, during the course of a dry summer's day, the surface should become too hard, and no longer takes the colour well, the painter, from time to time, takes a mouthful of water, and sprinkles it over the surface, in the same manner as sculptors sometimes wet their clay models. Much evidently depends on the thorough wetting of the dry mortar, before the last preparatory coats are applied.

In painting it will be found that the tints, first applied, sink in and look faint, and it is necessary to go over the surface repeatedly, before the full effect appears. But after some time, especially if the surface be not occasionally moistened, the superadded colour will not unite with what is underneath. The change in some of the colours, from the wet to the dry state, can be best learned by experience; but it is usual to try the tints at first on a brick or tile that absorbs moisture.

After having completed the portion allotted to the day, any plaster which extends beyond the finished part is to be removed, and, in cutting it away, care must be taken never to make a division in the middle of a mass of flesh, or of an unbroken light, but always where drapery, or some object or its outline, forms a boundary; for if this be not attended to, it will be almost impossible, in continuing the work the next day,

to match the tints, so that the junction shall be imperceptible; but by making these junctions correspond with the outlines of the composition, the patchwork, which is unavoidable, is successfully concealed.

In the next day's operation, the surface of the old mortar is to be wetted as before, and care must be taken to wet the angles round the edge of the portion previously painted. This must be done delicately with a brush, in order to secure the sufficient moistening of every minutest corner, and also to avoid wetting or soiling the surface of the finished portion. On this last account it is better to begin from the upper part of the wall; for if the lower part is first finished, the water constantly runs over the fresh painting.

When the Munich artists are unable to finish the entire portion allotted for the day, or are obliged to leave the work for a length of time, they have a method of preventing the drying of the work. A board is padded on one side, the cushion being covered with waxed cloth; a piece of fine linen is then spread over the fresh plaster and painting, and pressed to the surface of the wall by the cushioned side of the board, while the other side is buttressed firmly by a pole from the ground.

When any defect in the first operation is irretrievable, the spoiled portion is carefully cut out, and the process above described is renewed for that particular part. The same remedy is possible in reviewing the finished work; but here again care should be taken that the portion cut out be bounded by definite lines, for the reason before given. This attention to the nice adjustment of the successive portions of the work, so as to make one whole in the mere execution, is of great importance in fresco-painting.

The Germans carefully teach the propriety of making all cuttings and joinings in the plaster at outlines, where it is possible to do so: to this rule some of the old masters paid little attention. In works of Andrea del Sarto joinings are seen at some distance from the outline of a figure, made indeed without reference to any outline. The object of this was to enable him to paint in a little of the background at the same time with the figure. There are, in the works of this and other artists, instances of joinings carried across limbs and other parts of the pictures in a very awkward way: this is the result of carelessness, and is productive of very bad effect. With such exceptions, however, the rule of cutting at the outlines is observed by all schools.

In the finished fresco, the depth of shadows is often increased; parts are rounded, subdued, and softened, by hatching in lines of the colour required, with a brush not too wet; the medium then used being vinegar and white of egg. Shade is more easily added in this way than light, but painters use crayons, made of pounded egg-shells, to heighten the lights. It is to be observed that such re-touchings are useless in frescos painted in the open air, because the rain washes them away, whilst it does not affect those finished without re-touching.

According to Professor Hess:—After the painter has laid in his general colour, he should wait half an hour, or an hour, accordingly as the colour sets, before he proceeds to more delicate modelling. In these first operations he should avoid warm or powerful tints, as these can be added with better effect as the work advances. After the second painting, and another shorter pause, the work is finished with thin glazings and

washings. In this mode the requisite degree of completion can be attained, provided the daylight and the absorbent power of the plaster last; but if the touches of the pencil remain wet on the surface, and are no longer sucked in instantaneously, the painter must cease to work, for henceforth the colour no longer unites with the plaster, but, when dry, will exhibit chalky spots. As this moment of time approaches, the absorbing power increases, the wet brush is sucked dry by mere contact with the wall, and the operation of painting becomes more difficult. It is, therefore, advisable to cease as soon as these indications appear.

If the wall begins to show these symptoms too soon, for example, in the second painting, some time may be gained by moistening the surface with a large brush, and trying to remove the crust or setting that has already begun to take place; but this remedy affords but a short respite. In the additions to the painting on successive days, it is desirable to add the new plaster to that part of the work which is not quite dry, for if added to dry portions, the edges sometimes exhibit spots. Various other effects sometimes take place from causes that cannot be foreseen, and the remedies must be provided by the ingenuity of the artist, as the case may require.

In a letter from Mr. Andrew Wilson, the method pursued by an artist of Genoa is thus described; but it is of course understood that, in minor particulars, the practice of each painter is more or less peculiar to himself.

" He mixed each tint as he wanted it, adding to each from a pot of pale flesh tint, or of white. Near him lay a lump of umber, and, on taking up a brushful of colour, he touched this

with it: the earth instantly absorbed the water, and he was thus enabled to judge of the appearance which the tint would present when dry. The painter used a resting-stick with cotton on the top, to prevent injury to the *intonaco*. The *intonaco* being prepared, the moment it would bear touching he set to work. The head was that of the Virgin: he began with a pale tint of yellow round the head, for the glory; (the colour of the ground, owing to the mixture of the sand with the lime, it is to be remembered is of a cool middle tint;) he then laid in the head and neck with a pale flesh colour, and the masses of drapery round the head and shoulders with a middle tint, and with brown and black in the shadows. He next, with terra verte and white, threw in the cool tints of the face; then with a pale tint of umber and white modelled in the features, covered with the same tint where the hair was to be seen, and with it also indicated the folds of the white veil. All this time he used the colours as thin as we do in water-colours; he touched the *intonaco* with great tenderness, and allowed ten minutes to elapse before touching the same place a second time. He now brought his coloured study, which stood on an easel, near him, and began to model the features, and to throw in the shades with greater accuracy. He put colour in the cheeks, and put in the mouth slightly, then shaded the hair and drapery, deepening always with the same colours, which become darker and darker every time they are applied, as would be the case on paper, for instance. Having worked for half an hour, he made a halt for ten minutes, during which time he occupied himself in mixing darker tints, and then began finishing, loading the lights and using the colours much stiffer, and putting down

his touches with precision and firmness: he softened with a brush with a little water in it. Another rest of ten minutes: but by this time he had nearly finished the head and shoulders of his figure, which, being uniformly wet, looked exactly like a picture in oil, and the colours seemed blended with equal facility. Referring again to his oil study, be put in some few light touches in the hair, again heightened generally in the lights, touched too into the darks, threw a little white into the yellow round the head, and this portion of his composition was finished all in about an hour and a half. This was rapid work; but you will observe, that the artist rested *four times*, so as to allow the wet to be sufficiently absorbed into the wall to allow him to repass over his work."

"The artist now required an addition to the *intonaco;* the tracing was again lifted up to the ceiling, and the space to be covered being marked by the painter, the process was repeated, and the body and arms of the Madonna were finished before I left him at one o'clock."

The following is an extract from a second letter.

"Yesterday I went again to see Pasciano, (the same artist,) and I found that he had cut away from his tracing or cartoon those parts which he had finished upon the ceiling; in fact, I now found it cut into several portions, but always carefully divided by the outline of the figures, clouds, or other objects. These pieces were, in some instances, a good deal detached from each other, and were nailed to the plaster so as to fold inwards or outwards for pouncing the outlines. The *intonaco* had just been laid for the upper half of an angel supporting the feet of the Madonna; this was one of a group, much larger than those

surrounding the glory, and, therefore, requiring more colour and finish; more than half the figure, too, was in shadow, with a strong ray of light on the face, and on one of the arms; this was a good opportunity of observing the painter's management of shadow. Having gone over the outline carefully with a steel point, he waited till the *intonaco* became a little harder; and, in the mean time, mixed up a few tints; he then commenced with a large brush, and went over the whole of the flesh; he next worked with a tint which served for the general mass of the shadows, for the hair, and a slight marking out of the features. He now put a little colour into the cheeks, mouth, nose, and hands, and all this time he touched as lightly as he possibly could, not to wash up the *intonaco*. He then halted for ten minutes, looking at his oil study, and watching the absorption of the moisture; and he called my attention to his outline: none of it was effaced by this washing."

"The *intonaco* would now bear the gentle pressure of the finger, and with the same large brush, but with water only, he began to soften and unite the colours already laid on. Observe, he had not as yet used any tint thicker than a wash of water-colour, and he continued to darken in the shadows without increasing the force or depth of the colour. This I before noted to you, that you can strengthen by the simple repetition of tint; but if the day be very dry, after an hour or two, this process of repeating with the same tint produces an opposite effect, and instead of drying darker, it actually dries lighter. I now observed that the painter had increased the number of his tints, and that they were of a much thicker consistence, and he now began to paint in the lights with a

greater body of colour, softening them into the shades with a dry brush, or with one a little wet, as he required. In drying, the water comes to the surface, and actually falls off in drops; but this does no harm to the work, although it sometimes looks alarming."

QUALITIES OF EXECUTION.

Every quality procurable in oil painting is also attainable in fresco. Transparency is found in the works of the Roman and Florentine masters; among the latter, especially in those of Andrea del Sarto. Among the Lombards it is admirably maintained; and its excess is seen in those of the Venetians. The prevalence of hatching, as practised by many of the old masters, arose, perhaps, from the difficulty of obtaining flat tints; with others, of later times, it seems to have been mere manner. There is no hatching in the works of Raffaelle, nor in those of Correggio.

Solid painting is easy of execution: it will be best understood by observing, that while the plasterer lays on a preparatory *intonaco* of lime and sand with the trowel, the artist lays on a finishing one of lime and colour with the brush, and he may employ it as thickly as he pleases.

Of glazing there are frequent examples in the fresco works of the old masters, but it is most effectively shewn in the works of Razzi, at Siena. Pordenone invented or adopted some method which resembled that common in oil painting: his works have evidently been glazed after the lime had been allowed to dry. Caravaggio seems to have employed some similar method; and these are, perhaps, the two only masters who have adopted a practice so foreign to fresco-painting.

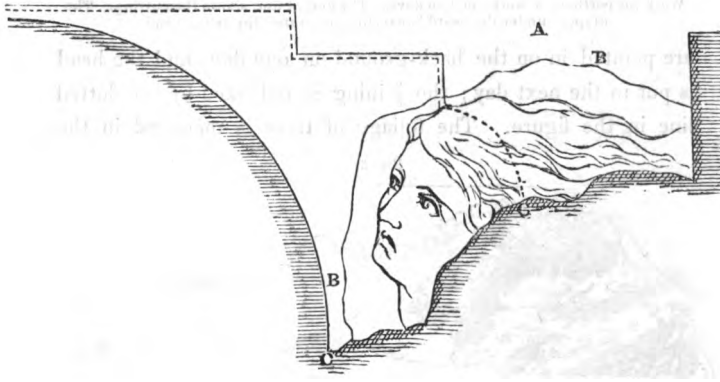
RETOUCHING.

THE GERMAN METHOD.

On the subject of retouching and cutting, the following useful observations occur in the second Report.

There are portions in Raffaelle's pictures which present the appearance just described; in the School of Athens there are a few distemper touches evidently by the master's own hand, which have darkened: for instance, in one head he has had recourse to distemper to represent the external locks of hair. This seems to indicate a difficulty in fresco which at first sight appears formidable. In a picture by Gaudenzio Ferrari, at Milan, a female head with long flowing locks is represented,

Fig. 1.

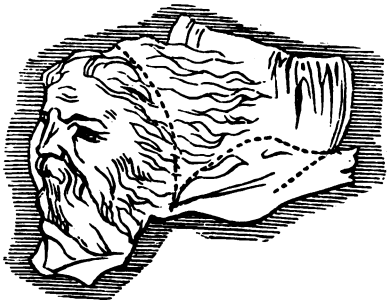


A The entire space above the dotted line is painted in one day, and the flowing hair included; the cut being made at the dotted line C. The line B B represents the joining that less careful Artists would have made. C C C Boundary of another day's work.

and the joining is made next the locks, and has a very bad effect; the difficulty is successfully overcome by the German

artists without having recourse to distemper, and without placing the joining so as to injure the appearance of the picture. This may best be exemplified by a sketch: the flying tresses

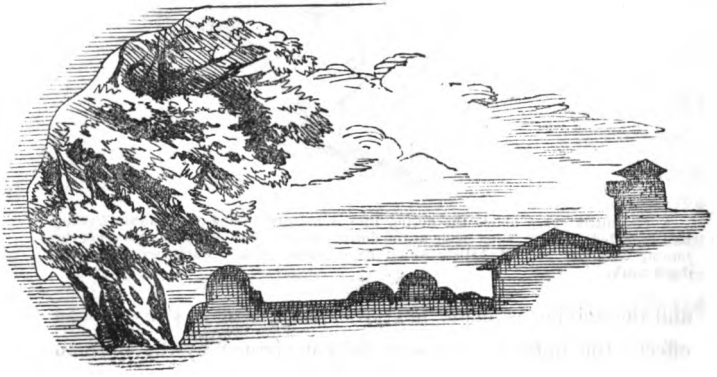
Fig. 2.



Work (or portions of work) of two days. The dotted line shows the cutting. The drapery under the beard is executed the same day as the head.

are painted in on the back-ground on one day, and the head is put in the next day; the joining is indicated by the dotted line in the figure. The foliage of trees is managed in the

Fig. 3.



same way. It would be vain to think of cutting round the outline of foliage; the outer leaves and thin projecting branches are executed on the same day with the back-ground, and the cutting is kept quite within these. (See fig. 3.)

MOVEABLE FRESCOS.

The advantages of executing frescos upon a moveable framework are numerous, insomuch as to render it almost necessary to succeed in the formation of a basis at once permanent and suitable for works that might be executed at ease in the studio, and transferred thence to their destination. This is known to have been practised by the great masters in fresco, but by no means so extensively as might have been desirable.

Mr. C. Wilson observes, that the Aurora of Guido in the Rospigliosi Palace in Rome, was painted on a copper trellis,* and afterwards fixed in the ceiling, where it is still to be seen. This work, it is further said, was offered for sale about sixteen years ago, its safe removal being guaranteed. It is also stated by Mr. C. Thomas, that some small landscape frescos by Professor Rottman, in the Hofgarten, in Munich, were painted on an iron frame and wire-work, and removed afterwards to their destination.

It would be highly judicious to paint upon moveable framework all frescos destined for situations wherein there may exist any present, or arise any future, probability of injury: flues,

* From examinations that have since taken place, this is said to be erroneous.

for instance, behind frescos are generally a source of mischief. Mr. Aglio, who painted some frescos at Manchester some years ago, attributes the great alteration in the colours partly to this cause, and partly to the employment of lime which was too fresh.

Cavaliere Agricola, on examining the frescos of the Vatican, found that the Heliodorus had suffered considerably from a flue behind it. The plaster had been detached from the wall, and projected in some places nearly four inches: it had been secured with nails, and the cracks had been filled with some composition by Carlo Maratti in 1702. "The Defeat of the Saracens at Ostia" had been injured in like manner by a chimney behind it.

Thus in Italy a fresco that would be only injured by the proximity of a chimney, would, in England, in an incomparably short time be entirely destroyed. The situation of works in fresco ought to be a matter of the nicest consideration; and even when they are most favourably placed, it is at least satisfactory to know that, if necessary, they can be removed.

Modern artists are better prepared to speak of the durability of fresco than even the most experienced of the early professors; and it cannot be denied, that the former will derive, from the advanced state of science, numerous mechanical aids, unknown to the practice of the latter.

The rough ground of the wall, as has been already stated, requires a length of time to dry and consolidate: this end is answered more speedily in the moveable frame-work, because two sides are exposed, and artificial means may be employed so

as to reduce the time necessary for the induration of the wall itself to one tenth, in the case of the moveable surface.

THE REMOVAL OF FRESCOS.

In connexion with the subject of moveable frescos, it may be observed, that the operation of detaching the mere painting from the wall, almost independently of the plaster, has been often practised with success; and it is desirable to make this practice known, as in repairing churches and other buildings in England, many ancient paintings on plaster have been destroyed, from ignorance as to the means of removing them.

Mr. Ludwig Gruner gives the following account of the mode in which he detached some frescos at Brescia in 1829. The convent of St. Euphemia in that city was then undergoing repair, and the excellent frescos it contained, painted by Lattanzio Gambara, in the 16th century, would have been destroyed, had not Mr. Gruner succeeded, with the assistance of some expert Italians, in removing them from the walls.

The mode they adopted was, first to clean the wall perfectly, then to pass a strong glue over the surface, and by this means to fasten a sheet of fine calico on it. The calico, after having been rivetted to the irregularities of the wall, was afterwards covered with glue in like manner, and on it was fastened common strong linen. In this state heat was applied, which caused the glue even on the fresco to sweat through the cloths, and to incorporate the whole. After this, a third layer of cloth was applied on a new coat of glue. The whole was left in this state two or three days (the time required may vary, according

to the heat of the weather.) The superfluous cloth extending beyond the painting was now cut off, so as to leave a sharp edge. The operation of stripping, or rolling off the cloth, began at the corners above and below, till at last the mere weight of the cloth, and what adhered to it, assisted to detach the whole; and the wall behind appeared white, while every particle of colour remained attached to the cloth.

This result shows that the colours in fresco do not penetrate very deeply: the layer of pigment and lime, which was detached in this instance, was extremely thin; the outlines, and even the colours of masses, were visible at the back of the cloth.

It is the opinion of some of the Munich professors, that frescos thinly painted are least liable to change: the circumstance just stated, exemplifying, as it does, the practice of a skilful Italian fresco-painter, seems to confirm this; but in many instances the surface of frescos, even by the older masters, is solidly painted.

To transfer the painting again to cloth, in completing the operation above described, a stronger glue is used, which resists moisture; as it is necessary to detach the cloths first used by tepid water, after the back of the painting is fastened to its new bed.

The frescos by Paul Veronese, in the Morosini Villa, near Castel Franco, were removed by Count Balbi, of Venice, a few years since. He fastened cloth to the wall with a paste composed of beer and flour, and rivetted it to the irregularities of the surface with the assistance of a hammer composed of bristles.

Several of these works retransferred to canvas were sold in England in 1838. The operation of removing frescos has lately been performed with success in Florence and elsewhere.

ON CLEANING FRESCO.

CORNELIUS ON THIS SUBJECT—PROFESSOR HESS—MR. BARKER'S FRESCO.

No new modes of cleaning fresco have been devised in Germany. To a question on this point addressed to Cornelius by letter, he replied:—

"The London smoke may, undoubtedly, have a disadvantageous effect on frescos; but, with a due warmth, for example, by the introduction of warm air, or warm water in tubes, I am of opinion that, in the situation where the new buildings are, (the Houses of Parliament,) no particular evil effects are to be apprehended. If, however, after fifty or a hundred years it should be found that the dirt had accumulated to a great extent, the surface could be cleaned with bread. The mouldy appearance which sometimes shows itself is to be removed with a wet sponge. This mouldy efflorescence, which appears in some cases, may be owing to saltpetre in the walls: for this there is no remedy; but, on the other hand, it never appears when the walls are built with well seasoned and dry materials. In the Munich frescos no saltpetre has shewn itself."

Professor Hess, on being consulted on this subject, remarked, that "if frescos were painted in the open air in London, the rain would be the best picture cleaner." The observation is so far important, that it assumes the possibility of washing

frescos freely without injury to the colours. Mr. Thomas Barker, of Bath, who painted a fresco of considerable extent in that city, writes:—

" To clean fresco from smoke, I know of no mode so simple and efficacious, as to wash the surface with pure water, using a soft sponge in the operation."

Mr. Barker elsewhere observes: " It is now seventeen years since the completion of that work" (the fresco he painted); " if any change has taken place, it is in the colouring having become much more effective than when first completed."

Mr. Andrew Wilson writes from Genoa, that frescos there are cleaned with vinegar, so as to look as fresh as when first painted. Carlo Maratti used wine in washing the frescos of the Vatican, and succeeded in restoring the principal paintings, notwithstanding the injuries and neglect of nearly two centuries.

THE END.