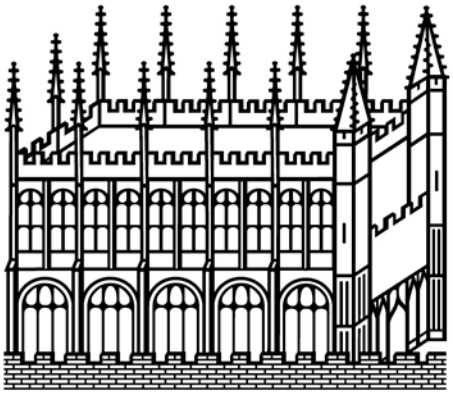


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AN ATTEMPT TO DEFINE
THE PRINCIPLES WHICH SHOULD REGULATE
THE EMPLOYMENT OF COLOUR IN
THE DECORATIVE ARTS,

WITH A FEW WORDS

ON THE PRESENT NECESSITY OF AN ARCHITECTURAL EDUCATION
ON THE PART OF THE PUBLIC.

"WE SHOULD DO OUR UTMOST TO ENCOURAGE THE BEAUTIFUL, FOR THE USEFUL ENCOURAGES ITSELF."—GOETHE.

READ BEFORE THE SOCIETY OF ARTS,
APRIL 28, 1852.

BY

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AN ATTEMPT TO DEFINE,

&c. &c.

It can scarcely too often be repeated, that amongst the many advantages which must result to England from the gathering of the products of the world's industry in the Great Exhibition, no one is so prominent as that we have thereby learned wherein we were deficient; and although we may gather from the Lectures which have already been delivered before this Society a high idea of the power, wealth, and industry of this great country; of the untiring enterprise which gathers from a distance the products of every clime; of the persevering industry which makes them available to the wants of man; and may further witness the constant struggle to utilise every gift of Nature, till truly it may be said, nothing has been made in vain; yet, side by side with success, we have seen much of labour wasted, much knowledge

imperfect, much energy misapplied: and when we leave the field of Science and Industry and turn to Art, we have to learn from the Great Exhibition a fruitful lesson; from leading the van in the march of progress, we must fall into the rear, and suffer to pass before us nations whose efforts we have hitherto but imperfectly appreciated.

In that branch of art, the employment of colour, the more immediate subject of this lecture, we were not only behind some of our European neighbours, but, in common with these, were far outstripped by the nations of the East. Let us endeavour to trace the cause of this, and, if possible, discover the principles which in their case have led to so signal a success.

As architecture is the great parent of all ornamentation, it is from the study of architectural monuments that we shall best obtain a knowledge of the principles which govern the employment of ornament and of colour generally.

In all ages but our own, the same ornaments, the same system of colouring, which prevailed upon their buildings, pervaded all they did, even to their humblest utensils: the ornaments on a mummy-case are analogous with those of the Egyptian temple; the painted vases of the Greeks are but the reflex of the paintings of their temples; the beautiful cushions and slippers of Morocco of the present day are adorned with similar ornaments, having the same colours, as are to be found on the walls of the Alhambra.

It is far different with ourselves. We have no principles, no unity; the architect, the upholsterer, the paper-stainer, the weaver, the calico-printer, and the potter, run each their independent course; each struggles fruitlessly, each produces in art novelty without beauty, or beauty without intelligence.

The architect, the natural head and chief of all who minister to the comforts and adornments of our homes, has abdicated his high office; he has been content to form the skeleton which it should also have been his task to clothe, and has relinquished to inferior and unguided hands the delicate modelling of the tissues and the varied colouring of the surface: who can wonder at the discordance and incongruity of the result?

Until very recently the employment of colour on buildings has had but few advocates in this country; we are still imbued with the prejudices left us by our immediate ancestors and developed in our early education.

Although we now know that many of the monuments of antiquity were entirely covered with colour and ornament, while of others we have evidence that they were partially painted, and are further bound to conclude that they were entirely so, yet this is still disputed, and not long since the Royal Institute of British Architects were unable to vanquish this prejudice amongst their own body; and it remains to this day with them, alas! a disputed question, to what extent the monuments of Greece were coloured.

There are artists more willing to believe that the

Greeks were imperfectly organised for the appreciation of colour, and consequently misapplied it, than that the defect can lie with ourselves, and our imperfect knowledge of what they did and why they did it.

I will ask you to believe that the stupendous monuments of the Egyptians, the Greeks, the Arabs, and other Eastern civilisations, with the nearer to us Gothic buildings of our own forefathers, were not in vain covered with a most elaborate system of ornamentation requiring colour for its developement, but rather, in obedience to a patient observation of nature's works, where we find everywhere colour assisting in the developement of form and adding many charms which but for this were wanting.

In asking you to watch the means by which these additional charms were given, I do not wish you to understand that what the ancients did we should now repeat, but should follow them only so far as we find they acted on principles by them universally recognised and running through all time, and which we may now presume to be discovered truths, and therefore not wisely to be rejected.

As I have elsewhere said:—*

"He who should set about forming a new style for "himself without regard to the past, would be like a "student in astronomy who should reject the discoveries "of Newton and endeavour to work out every process

* "Journal of Design" for June 1851.

" for himself. Yet, on the other hand, where would the " science of astronomy be now, if successive students " had been content to receive the discoveries of Newton " as final truths, instead of employing them as the " basis of fresh researches?"

The successful labours of past ages are our inheritance, and should not be rashly squandered or unprofitably hoarded: we should not be content blindly to follow any in their steps, but rather endeavour to go forward, patiently working out the great principles which the experience and practice of successive ages have evolved.

Regarding our present subject from this point of view, I have put together a series of Rules, which I believe are axioms, but which we will call "Propositions." They will be found, I trust, available and safe guides in the employment of colour in the Decorative Arts.

Some are derived from the observation of the works of Nature; others are the teachings of Science; others, again, gathered from the practice of all those nations who have carried the Decorative Arts to the highest perfection.

They are as follows:—

Proposition 1.

Colour is used to assist in the developement of form, and to distinguish objects or parts of objects one from another.

Proposition 2.

Colour is used to assist light and shade, helping the undulations of form by the proper distribution of the several colours.

Proposition 3.

These objects are best attained by the use of the primary colours on small surfaces and in small quantities, balanced and supported by the secondary and tertiary colours on the larger masses.

Proposition 4.

The primary colours should be used on the upper portions of objects, the secondary and tertiary on the lower.

Proposition 5.

Field's Chromatic equivalents.

The primaries of equal intensities will harmonise or neutralise each other, in the proportions of 3 yellow, 5 red, and 8 blue,—integrally as 16.

The secondaries, in the proportions of 8 orange, 13 purple, 11 green,—integrally as 32.

The tertiaries, citrine (*compound of orange and green*), 19; russet (*orange and purple*), 21; olive (*green and purple*), 24;—integrally as 64.

It follows that,—

Each secondary being a compound of two primaries, is neutralised by the remaining primary in

the same proportions,—thus, 8 of orange by 8 of blue, 11 of green by 5 of red, 13 of purple by 3 of yellow.

EACH TERTIARY being a binary compound of two secondaries, is neutralised by the remaining secondary, —as 24 of olive by 8 of orange, 21 of russet by 11 of green, 19 of citrine by 13 of purple.

PROPOSITION 6.

The above supposes the colours to be used in their prismatic intensities, but each colour has a variety of tones when mixed with white, or of shades when mixed with grey or black.

When a full colour is contrasted with another of a lower tone, the volume of the latter must be proportionally increased.

PROPOSITION 7.

Each colour has a variety of hues, obtained by admixture with other colours, in addition to white, grey, or black: thus we have of yellow,—orange-yellow on the one side, and lemon-yellow on the other; so of red,—scarlet-red, and crimson-red; and of each every variety of tone and shade.

When a primary tinged with another primary is contrasted with a secondary, the secondary must have a hue of the third primary.

PROPOSITION 8.

In using the primary colours on moulded surfaces,

we should place blue, which retires, on the concave surfaces; yellow, which advances, on the convex; and red, the intermediate colour, on the undersides; separating the colours by white on the vertical planes.

When the proportions required by Proposition 5 cannot be obtained, we may procure the balance by a change in the colours themselves: thus, if the surfaces to be coloured should give too much yellow, we should make the red more crimson and the blue more purple,—*i.e.* we should take the yellow out of them; so if the surfaces should give too much blue, we should make the yellow more orange and the red more scarlet.

Proposition 9.

The various colours should be so blended that the objects coloured, when viewed at a distance, should present a neutralised bloom.

Proposition 10.

No composition can be perfect in which any one of the three primary colours is wanting.

Chevreul's Law of the Simultaneous Contrast of Colours.

Proposition 11.

When two tones of the same colour are juxtaposed, the light colour will appear lighter, and the dark colour darker.

Proposition 12.

When two different colours are juxtaposed they receive a double modification,—first, as to their tone

(the light colour appearing lighter and the dark colour appearing darker); secondly, as to their hue, each will become tinged with the complimentary colour of the other.

Chevreul's Law of the Simultaneous Contrast of Colours.

Proposition 13.

Colours on white grounds appear darker; on black grounds, lighter.

Proposition 14.

Black grounds suffer when opposed to colours which give a luminous complimentary.

Proposition 15.

When ornaments in a colour are on a ground of a contrasting colour, the ornament should be separated from the ground by an edging of lighter colour,—as a red flower on a green ground should have an edging of lighter red.

Proposition 16.

When ornaments in a colour are on a gold ground, the ornaments should be separated from the ground by an edging of a darker colour.

Proposition 17.

Gold ornaments on any coloured ground should be outlined with black.

PROPOSITION 18.

Ornaments of any colour may be separated from grounds of any other colour by edgings of white, gold, or black.

PROPOSITION 19.

Ornaments in any colour, or in gold, may be used on white or black grounds, without outline or edging.

PROPOSITION 20.

In "self-tints," tones, or shades of the same colour, a light tint on a dark ground may be used without outline; but a dark ornament on a light ground requires to be outlined with a still darker tint.

PROPOSITION 21.

Imitations, such as the graining of woods, and of the various coloured marbles, allowable only when the employment of the thing imitated would not have been inconsistent.

PROPOSITION 22.

Flowers, or other natural objects, should not be used as ornament, but conventional representations founded upon them, sufficiently suggestive to convey the intended image to the mind, without destroying the unity of the object they are employed to decorate.

Let us now see how far these several propositions may be called axioms.

Proposition I.

COLOUR IS USED TO ASSIST IN THE DEVELOPMENT OF FORM, AND TO DISTINGUISH OBJECTS OR PARTS OF OBJECTS ONE FROM ANOTHER.

The most cursory glance at the works of nature will establish the truth of our first proposition. We see everywhere in nature colour assisting form, in producing distinctness: thus, flowers are separated by colour from their leaves and stalks, and these again from the earth in which they are planted; and, not to fatigue you with examples, it is at once evident how much in nature would be meaningless, but for the many charms of colour spread over the earth so lavishly.

Had nature applied but one colour to all objects, they would have been indistinct; but, by an ever-changing variety, each has its proper tone and hue, from the modest lily of the field to the parent of all colour, the glorious sun in the heavens.

The ancients ever obeyed this law; thus, the capitals of their columns are separated by colour from the shafts, and these, again, by colour from their bases or pedestals.

Proposition II.

COLOUR IS USED TO ASSIST LIGHT AND SHADE, HELPING THE UNDULATIONS OF FORM BY THE PROPER DISTRIBUTION OF THE SEVERAL COLOURS.

But for light and shade we should have been unable to recognise the distinctive forms of objects; without it

a globe would be but a circle, the light on the exposed surface and the shade on the retiring surface alone convince us of its rotundity.

We find, therefore, in nature's works colour assisting light and shade; by its help the modulations of form are rendered more apparent: were it otherwise, it would be to little purpose that the flower should be distinguished by colour from the leaf, if the individual form of the flower and the leaf had been extinguished in the process.

Proposition III.

THESE OBJECTS ARE BEST ATTAINED (*i.e.* objects or parts of objects are distinguished one from another, and the undulations of form are assisted) BY THE USE OF THE PRIMARY COLOURS ON SMALL SURFACES, AND IN SMALL QUANTITIES, BALANCED AND SUPPORTED BY THE SECONDARY AND TERTIARY COLOURS ON THE LARGER MASSES.

This proposition will not so readily be accepted as the two preceding. There are many who will object that the primary colours are the delight only of the savage and the uncultivated, but I answer that the primary colours are never vulgar or discordant when properly applied; the defect will lie, not with the colours, but with the want of skill of the hand that applies them. They must be used as in nature, with a sparing hand, on small surfaces, and in small quantities; the secondaries and tertiaries in larger masses,

and on larger surfaces, atoning for their lesser brilliancy by their greater volume.

We find in the works of the Egyptians, Greeks, Arabs, and Moors, during the best periods of their art, this beautiful law invariably followed: but, on the contrary, when the art of each civilisation declined, the primaries are no longer the ruling harmonies; the secondaries and tertiaries, from being subordinate, became dominant, and muddiness and indistinctness resulted.

In Egypt, during the reigns of her native kings, the primaries mainly prevailed; whilst under her Greek rulers art languished, and being practised rather from imperfect tradition than from poetic inspiration, the secondaries usurped the place of the primaries, and the beautiful harmonies which had before been produced by their combination were lost.

The progress to further decline is again remarkable under the Romans, who taught the Egyptians to build up temples of greater magnitude, with stones more nicely fitted, with the mechanical processes more advanced, but with the poetic fire wanting, and naught but a barren work of skill remaining.

The same decline may be observed with Greek architecture. In the temples of Greece, as far as we are acquainted with them, the primaries were dominant; whilst in Greek towns under Roman rule, the true principles of their noble ancestors were thrown aside, and the caprices of their Roman masters substituted.

When the truly enchanted palaces of the Moors fell into the hands of the Catholic kings, who despised a civilisation they were unable to appreciate, the true principles which the Moors had learned in their worship and observation of nature's works were despised and rejected, because, as now, not understood. Their blues and reds were repainted with green and purple, without law or reason.

Trace the history of our own Gothic buildings, of stained glass, turn over the pages of the Illuminated MSS. of every age, you will find everywhere the same cause at work.

" Each civilisation in the ascendant goes to nature " for its principles, aud enriches its own inventions with " the choicest conceptions of antecedent ages; while for " this admirable union of conscientious erudition and " fertile originality, declining civilisations substitute only " a series of decrepit, disordered, and faithless caprices.

" We possess the inestimable advantage of living in " an age when nothing of the past remains a secret; " each stone of any monument of every clime has told " its tale, which is now brought within the reach of our " own fire-sides; yet, hitherto, how little have we shown " ourselves worthy of this great privilege! The ease with " which our knowledge might be obtained has made us " indifferent of its acquirement, or led us to substitute " an indolent and servile imitation for an intelligent and " imaginative eclecticism." *

* " Journal of Design " for June, 1851.

Proposition IV.

THE PRIMARY COLOURS SHOULD BE USED ON THE UPPER PORTIONS OF OBJECTS, THE SECONDARY AND TERTIARY ON THE LOWER.

This proposition, founded also on observation of Nature's works, was generally obeyed in the best periods of art, but nowhere so well or so universally as in the buildings of the Moors, who confined the primary colours entirely to the upper portions of their buildings, and the secondary and tertiary to the lower. In Egypt we do see occasionally the secondary (green) used in the upper portions of their temples; but this arises from the fact that ornaments in Egypt were symbolical, and more nearly represented natural objects than in other styles. If a lotus-leaf were used in the upper portions of a building, it would necessarily be coloured green, but the law is true in the main: the general aspect of an Egyptian building gives us the primaries above and the secondaries below.

Even in Pompeii, we find this sometimes; in the interior of their houses there is a gradual gradation of colour downwards from the roof, from light to dark, ending with black: but this is by no means so usual as to convince us that they felt it as a law, for there are many examples of black immediately under the ceiling. This law will be found of great use in the decoration of the interiors of our dwellings. Ceilings and cornices

may be decorated with the primaries of prismatic intensity on the small surfaces of their mouldings; the walls, on the contrary, from presenting larger masses, should be of secondary colour, of low tones and hues. The dados still stronger in colour, and more broken in hue. The carpets should be darkest of all, composed of broken secondaries and tertiaries, so interwoven and neutralised that they retire from the eye, both as furnishing repose for the colouring of the upper portions and as backgrounds to the furniture placed upon them.

The favour with which the colouring of the interior of the Great Exhibition building, after running the gauntlet of much adverse criticism, was ultimately received by the public, emboldens me here to refer to it as a familiar illustration of the practical working out of our four first propositions.

The objects I had proposed to myself were,—

1. In obedience to Proposition I.:

So to bring out the construction of the building that it should appear higher, longer, and more solid.

2. In obedience to Proposition II.:

So to colour each particular part that its light and shade should be assisted, and its peculiar form made most manifest.

3. In obedience to Propositions III. and IV.:

So to balance the primary colours used for this purpose that they should harmonise with the varied contents of the building, of every imaginable hue, and to which I trusted for the completion of the scheme.

I may be permitted to say that these objects were, if not fully attained, yet were so beyond what the most sanguine could have hoped. The effect which I had sought of the colouring of the building forming a neutralised bloom over the whole of the contents was attained to such an extent, that those who only saw it when completed looked in vain for that vulgar and discordant colouring, of which they had heard so much during the progress of the works.

The blending of the three primary colours in the roof of the nave, where the effect could be seen uninterruptedly, was most complete, and produced an artificial atmospheric effect of a most surprising kind. This artistic effect has been lost since the removal of the canvass from the roof; and although there are many who will prefer it, as it is more like their "Crystal Palace," yet it is no longer an art problem resolved. By reason of the glare from the glass the red and yellow have disappeared, and we see simply a repetition of blue girders with sky between. The consequence is, that the effect of aerial perspective which it had has disappeared; the girders at the extremities of the building fall so rapidly one on the other, that they present but a mass of blue. The nave, judged of now from the perspective of the roof, appears two or three hundred feet shorter than it did; because the eye has lost the power of measuring beyond a certain distance, whilst when the canvass was on the roof the eye was able to distinguish girder from girder, down to the very last.

The columns also have lost much by the removal of the background; they were painted light, in order that they might tell out strongly in relief on the articles exhibited these being removed, their lightness is now a defect: they lose in appearance of solidity.

Proposition V.

THE PRIMARIES OF EQUAL INTENSITIES WILL HARMONISE OR NEUTRALISE EACH OTHER IN THE PROPORTIONS OF 3 YELLOW, 5 RED, AND 8 BLUE,—INTEGRALLY AS 16.

THE SECONDARIES, IN THE PROPORTIONS OF 8 ORANGE, 13 PURPLE, 11 GREEN,—INTEGRALLY AS 32.

THE TERTIARIES, CITRINE (composed of orange and green), 19; RUSSET (orange and purple), 21; OLIVE (green and purple), 24;—INTEGRALLY AS 64.

It follows that,

EACH SECONDARY (being a compound of two primaries) IS NEUTRALISED BY THE REMAINING PRIMARY, IN THE SAME PROPORTIONS; THUS, 8 OF ORANGE BY 8 OF BLUE, 11 OF GREEN BY 5 OF RED, 13 OF PURPLE BY 3 OF YELLOW.

EACH TERTIARY (being a binary compound of two secondaries) IS NEUTRALISED BY THE REMAINING SECONDARY; AS 24 OF OLIVE BY 8 OF ORANGE, 21 OF RUSSET BY 11 OF GREEN, 19 OF CITRINE BY 13 OF PURPLE.

We derive these invaluable rules from the works of Field, who was one of the earliest to establish the fact,

now universally received, that the prismatic ray consisted of 3 colours, and not 7. He has shown by direct experiment, that a ray of light consists of yellow, red, and blue, in the proportion of 3 yellow, 5 red, and 8 blue.

It is evident, that the nearer we can approach to this state of neutrality the more harmonious will colouring become. An examination of the best ancient specimens of colouring will show that this law has been well observed; that is to say, broadly, there has been as much blue as of yellow and red put together: thus the light and the shade balancing each other.

Proposition VI.

Each colour has a variety of tones when mixed with white, or of shades when mixed with grey or black.

When a full colour is contrasted with another of a lower tone, the volume of the latter must be proportionally increased.

This follows naturally from Proposition V., for if 5 red is neutralised by 11 green of equal intensities, it is evident we should require a much larger quantity of pale green to effect the same purpose.

Proposition VII.

Each colour has a variety of *hues*, obtained by admixture with other colours, in addition to white, grey, or

black: thus we have orange yellow on the one side, and lemon yellow on the other; so of red, scarlet red, and crimson, and of each every variety of tone and shade.

WHEN A PRIMARY, TINGED WITH ANOTHER PRIMARY, IS CONTRASTED WITH A SECONDARY, THE SECONDARY MUST HAVE A HUE OF THE THIRD PRIMARY.

Thus, orange yellow will require to neutralise it, blue purple; lemon yellow, red purple; scarlet red, blue green; crimson red, yellow green.

The truth of these two last propositions is so self-evident that they would hardly require discussion here, were we not reminded by all we see around us how much they are every day disregarded.

It is evident that, for the proper balancing of such infinite varieties of tones, shades, and hues, no mechanical means can be found of estimating the value of the colours, or the relative areas they should occupy: but we are fortunately endowed with an organ as susceptible of cultivation, in this respect, as the ear for sound; and although many amongst us are more favourably endowed than others, both with ears for sound and eyes for form and colour, it is by study and cultivation alone that any approach to perfection can be reached, and he who can carry in his mind the proportions which science thus teaches us, will be in a far better condition to arrive at success than he who trusts to his unaided instincts and natural gifts.

In the East Indian collection of textile fabrics at the Great Exhibition, the perfection at which their artists have arrived is most marvellous; it was hardly possible to find a discord,—contrasting colours appeared to have just the tone and shade required; the contrivances by which they corrected the power of any one colour in excess most ingenious. It would occupy too much of your time more particularly to refer to them here; but, fortunately, a portion of the collection has been purchased by the Government, and will shortly be exhibited to the public: if examined with attention, they will afford most fruitful lessons, not only to the student, but to every cultivated mind. The additional charms which colour gives to everything which surrounds us, should render none indifferent to the cultivation of the faculties implanted in them to enable them to understand and appreciate it.

As Field wisely says, "He who can regard Nature "with the intelligent eye of the colourist, has a bound-"less source of never-ceasing gratification, arising from "harmonies and accordances, which are lost to the un-"tutored eye."

It would be very desirable that we should be made acquainted with the manner in which, in the education of the Eastern artists, the management of colour is made so perfect. It is most probable that they work only from tradition and a highly-endowed natural instinct, for which all Eastern nations have ever been remarkable; they have the further advantage of working out the style which grew up with their religion, with which

every thought and action of their daily life is interwoven.

Since the Reformation, which with us separated the tie which should exist between Religion and Art, we have been deprived of this advantage: the want of unity in feeling has caused a want of unity in expression; there is the same disorder in the art, as scepticism in the mind. This acting generation on generation, each descends lower and lower.

Children born in an age of ugliness cannot hope to have their instincts quickened for the beautiful; but, on the contrary, the natural instinct will be extinguished, and will no longer be born with them. I can conceive a paternal and wise government visiting with punishment all those who produce abortions in art, as justly as those who lower the tone of the morals of society; in either case they rob the rising generation of their birthright.

If it be true, as Field says, "that whatever refines "the taste, improves the morals, enhances the powers, "and promotes the happiness of the people," the converse is true also.

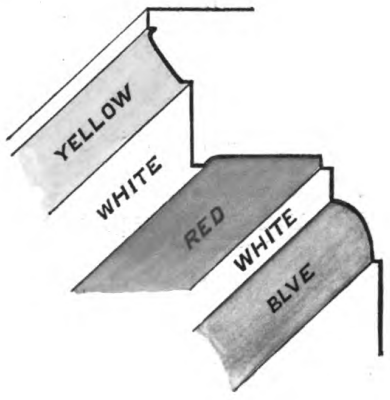
That which corrupts their taste, debases their morals, destroys their powers, and promotes their misery.

Proposition VIII.

In using the primary colours on moulded surfaces we should place blue, which retires, on the concave surfaces; yellow, which advances, on the convex; and red, the intermediate colour, on the undersides: separating the colours by white on the vertical planes.

When the proportions required by Proposition V. cannot be obtained, we may procure the balance by a change in the colours themselves: thus, if the surfaces to be coloured should give too much yellow, we should make the red more crimson and the blue more purple; and we should take the yellow out of them: so, if the surfaces should give too much blue, we should make the yellow more orange and the red more scarlet.

This proposition will be better explained by the following diagram:—

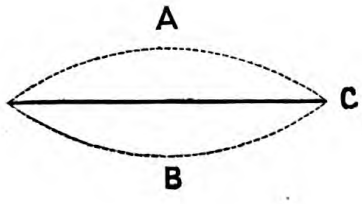


It is evident that, as the object must be to cause A

to appear to advance, it is here we must put the yellow, both from its position and from its form: on the contrary, we place blue at C, as the retiring colour, and also as assisting the concavity of the moulding. Red, the most positive of all colours, looks best in shadow; we, therefore, place it at B; the fillets, or vertical planes at D, we make white, as useful in separating the colours from harsh contrast.

The positions of the colours, yellow and blue, are subject to modifications, according to circumstances; but I always find this law most useful when applied to red. Red never looks well when seen in a strong light; it is too positive, and painful to the eye: on the contrary, in soffites, in hollows or depths of any kind, it looks most brilliant.

In the Great Exhibition, you may remember the alarm which was caused by my painting the undersides of the girders red; but I think you will see by this diagram that they could have been of no other colour.



Had they been painted blue, the girders would have appeared curved in the direction of A; if yellow, in the direction of B: they would appear straight only as red.

Proposition IX.

THE VARIOUS COLOURS SHOULD BE SO BLENDED THAT THE OBJECTS, WHEN VIEWED AT A DISTANCE, SHOULD PRESENT A NEUTRALISED BLOOM.

Colours should not only be used in the proportions laid down by Propositions V., VI., and VII., but they should be so interwoven that no one colour should attract the eye to the exclusion of the others; when viewed at a distance, they should melt into one another.

In the Oriental patterns we find this result invariably attained; they seem ever awake to correct the least tendency of any one colour to overpower the others: for instance, it is very common with them, when they have a massive gold ornament on a coloured ground, to allow the ground colour to reappear on the gold ornament, so that not only the volume of gold, when in excess, is thereby lessened, but the ground colour is carried into it, so that a perfect balance is obtained.

Proposition X.

NO COMPOSITION CAN EVER BE PERFECT IN WHICH EITHER OF THE THREE PRIMARY COLOURS IS WANTING, EITHER IN ITS NATURAL STATE OR IN COMBINATION.

This is evident. Blue and yellow, red and yellow, red and blue, would be discords; so green and yellow, purple and blue, orange and red; yet each of these discords may be resolved by the interpositions of the neutrals

white or black, which contain all colours in the positive and the negative state.

They are also harmonised by the interposition of metallic gold, of which more hereafter. They, of course, may exist on parts of objects if the third colour is so near at hand as to be comprehended in the same glance.

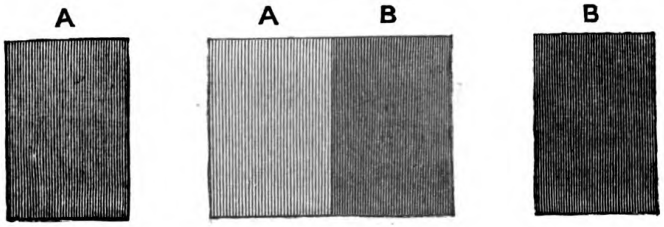
We now come to the discussion of Propositions XI., XII., XIII., XIV., derived from the "law of the si- "multaneous contrast of colours" of Mons. Chevreul, who, by a series of experiments carried on for a number of years, established the fact that colours juxtaposed influence each other in a most remarkable degree. He establishes two kinds of contrast: the one, contrast of tone, or the modification which each colour suffers in intensity; the other, contrast of colour, or the modification which each colour suffers in hue.

He tells us, that all coloured bodies, besides reflecting the coloured rays proper to their particular colour, reflect a certain number of white rays and a certain number of others, which are complimentary to the colour of the particular bodies; for instance, a red body, at the same time that it reflects red rays in a large quantity, reflects also white rays and a certain number of green rays.

Proposition XI.

When two tones of the same colour are juxtaposed, the light colour will appear lighter and the dark colour darker.

We have here the contrast of tone: as the light colour will reflect more white rays than the dark colour, their superior force will extinguish the white rays reflected from the darker colour; hence this will appear darker. This may be readily tested by placing two halves of the same sheet of paper of a light colour, and the two halves of the same sheet of paper of a darker colour, on a white screen, thus,—



Placing the half of the light-coloured sheet A, edge to edge with the dark-coloured sheet B, and placing the other halves A and B at a little distance on either side, it will be seen that A standing by itself will appear darker than A where it joins B, and that B will be lighter than B where it joins A. It will be seen, further, that the effect is strongest at the edges, and goes on diminishing to the extremities.

Proposition XII.

When two different colours are juxtaposed they receive a double modification: first, as to their tone, the light colour appearing lighter and the dark colour darker; secondly, as to their hue, each will become tinged with the complimentary colour of the other.

If we take two half sheets of pale red, and two half sheets of dark blue, and place them as in the former experiment, we should see the pale red become paler, and at the same time be tinged with orange, and the dark blue would become darker and be tinged slightly with green.

Proposition XIII.

Colours on white ground appear darker, on black ground lighter.

The white by its superior force extinguishes the white rays reflected by the colour, and we see the colour purer—as black reflects but few white rays, the white rays reflected by the colour appear more prominent by contrast, and the colour appears lighter.

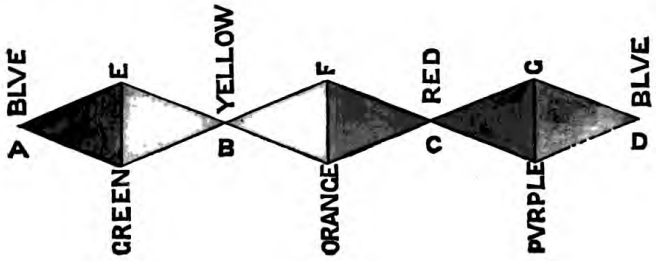
Proposition XIV.

Black grounds suffer when opposed to colours which would give a luminous complimentary.

As light colours have dark complimentaries, the dark added to the black increase its brilliancy; those, on the contrary, which have light complimentaries, must diminish its intensity.

Thus, orange on a black ground would add blue to the black, and make it more intense; but blue on a black ground would add orange to the black, and destroy its brilliancy.

It will be evident how valuable a perception of this law of contrast must be to any one engaged in any way with the employment of colour, as any colour can be subdued or heightened in effect by juxtaposition. In fact, colours are mere relative terms; they change at every instant: that which appears deep red when compared with an orange red, becomes orange red when compared with a still deeper red. Blue, red, yellow, and all other colours, can exist only in the mind, as you will see by this diagram.



We have at the points A, B, C, D, blue, yellow, red, blue; on the lines E, F, G, green, orange, purple.

It is evident, that at the least departure from the point C on the left, red would be tinged with orange, and at the least departure on the right would become tinged with purple. So, at the least departure from the line F on the left, the orange would have an excess of yellow, and on the least departure on the right an excess of red, so that we can no more see red or orange than we can see a point or a line; and even if we could see them it could only be for an instant, as the complimentary rays reflected from them would gradually lower their tone: so of all the other colours. Chevreul mentions a case in point: he says that a shopkeeper exhibiting to a customer a number of pieces of red silk, one after the other, of the same colour, those last shown would invariably appear more feeble in colour than the first. A shopkeeper, wise in his generation, should, after showing one or two pieces of red silk, interpose a silk of another colour—green, for instance—to restore the judgment of the eye.

We now come to a series of Propositions which we derive chiefly from the study of Oriental works, and which may be seen in great perfection on the textile fabrics of the Indian collection purchased by the Government.

Proposition XV.

When ornaments in a colour are on a ground of a contrasting colour, the ornaments should be separated from the ground by an edging of a lighter colour; as, a red flower on a green ground should have an edging of lighter red.

The reason of this we gather from the law of contrast, that when the eye dwells upon a spot of colour on a contrasting colour, each has a tendency, by reason of the strong contrast, to furnish the complimentary colour of the other; and this effect is strongest towards the edges, so that the colours have a tendency to fuse one into the other, and indistinctness results. To confine the eye, therefore, within the ornament, it is necessary to define the form, and this is well effected by the outline of the lighter colour.

Proposition XVI.

When ornaments of any colour are on a gold ground, the ornament should be separated from the gold ground by an edging of darker colour.

The reason of this is that the gold ground, from its greater power, has a tendency to invade or overflow on to the coloured ornament, and this is at once arrested by the darker edging.

Proposition XVII.

Gold ornaments on any colour should be outlined with black.

The cause here is the same, viz. the tendency of the gold to overrun the ground, which is arrested by the black line; and as gold must be regarded as a neutral, it is best effected by the neutral black.

Proposition XVIII.

Ornaments of any colour may be separated from grounds of any other colour by edgings of white, gold, or black.

White, black, and gold are neutrals, and therefore by their interposition prevent the simultaneous contrasts from being sensibly felt, and preserve the integrity of the colours.

Proposition XIX.

Ornaments in any colour may be used on white or black ground without outline or edging.

The white ground reflecting all the rays, destroys by its superior intensity the white rays reflected by the coloured body, and its form becomes perfectly defined. The black ground absorbs all the rays, or reflects but very feebly white rays, so as scarcely to modify the colour juxtaposed.

Proposition XX.

In self-tints, tones or shades of the same colour, or of the same hue, a light tint on a dark ground may be used without outline; but a dark ornament on a light ground requires to be outlined with a still darker tint.

The reason of this is, that the light tint being the most advancing is able to detach itself from the ground, but the dark tint has a tendency to pierce through the ground if not arrested by a darker outline. Ornaments in relief, do not appear to require the interposition of white or any other colour; the light edge on the one side, and the shadow on the other, is sufficient to prevent harshness of contrast. This may help to explain how it is that ornaments in metallic gold may be placed on grounds of any other colour without discordance. Green and gold are well known as most harmonious, yet green and yellow are equally well known to be discordant: one cause is, that gold, more in the nature of a secondary, is slightly orange; and, moreover, from its granular surface, a series of hills and valleys, and furnishes both light and shade.

Our two last propositions belong only incidentally to the subject; but I offer them for discussion here, as I think it most desirable that attention should be directed to the subject, for the prevention of practices which have increased, and are increasing daily, and are fraught with

most disorganising influence on the taste of the present generation.

Proposition XXI.

IMITATIONS, SUCH AS THE GRAINING OF WOODS AND OF THE VARIOUS COLOURED MARBLES, ALLOWABLE ONLY WHEN THE EMPLOYMENT OF THE THING IMITATED WOULD NOT HAVE BEEN INCONSISTENT.

There has often been much discussion upon the propriety of imitations in Decorative Art, such as imitations of the graining of woods and various coloured marbles; there is no doubt that, of late years, the skill obtained by our artisans in producing these imitations, has caused the practice to be very much abused, but it need not for that be entirely discouraged.

The principle which should regulate the employment of imitations has never yet been defined: it appears to me, that *imitations are allowable whenever the employment of the thing imitated would not have been inconsistent.*

For instance, there can be no objection to grain a deal door in imitation of oak, because the mind would be perfectly satisfied if the door were oak; but it would be an absurdity and abuse of means to paint it in imitation of marble.

Again, the practice of covering the walls of halls and staircases with paper, in imitation of costly marbles, is very objectionable, because the employment of marble to such an extent would be inconsistent with the cha-

racter of most houses, and, consequently, the sham is much too glaring: on the contrary, were the pilasters and columns of a hall only painted, the objection would cease, seeing that the mind would be satisfied with the reality. A violent instance of the abuse of graining existed formerly in the Elgin Room at the British Museum, where beams on the ceiling, thirty feet long, were splashed in imitation of granite. Here was a manifold absurdity, as no granite beam could have supported itself in any such situation. The door-jambs of an opening, on the contrary, might be imitation granite without inconsistency, as in such a situation granite would be useful as indicating strength.

In the outcry against the mode of colouring I proposed for the interior of the Great Exhibition, my opponents fell into an error of this kind; led away by the desire of having the metallic character of the building expressed, the majority were in favour of colouring the whole of that vast edifice in imitation of bronze, entirely forgetting that the employment of so costly a material for such a structure would have been impossible, and would have had the further disadvantage of being too weak to stand: therefore its imitation would have been an absurdity, quite independent of the artistic objections to such a mode of colouring, which were many.

The mode I adopted treated the whole as a painted surface, and the eye was left at liberty, and was quite able to distinguish the material painted, by its form and

scantling; no one, as was so often prophesied, mistook the columns for wooden posts, because no wooden posts could have existed in such a form under such circumstances.

Proposition XXII.

FLOWERS OR OTHER NATURAL OBJECTS SHOULD NOT BE USED AS ORNAMENT, BUT CONVENTIONAL REPRESENTATIONS FOUNDED UPON THEM, SUFFICIENTLY SUGGESTIVE TO CONVEY THE INTENDED IMAGE TO THE MIND WITHOUT DESTROYING THE UNITY OF THE OBJECT THEY ARE EMPLOYED TO DECORATE.

We find this law universally obeyed in all the best periods of art, and equally violated when art declines; those who conventionalised the most were the Mahometan races, who, forbidden by their creed to represent living forms, carried the conventionality of ornament to the highest perfection.

The Egyptians, with whom every ornament was a symbol, yet took care so to use them as never to violate a sense of propriety. The Greeks equally conventionalised in their ornament, and although the law will not appear to hold good in their application of sculpture to architecture, yet we see here they adopted a conventional treatment both of pose and relief, and very different to that of their isolated works.

In the later Gothic buildings the floral ornaments have a much nearer approach to nature, and are less

conventional in arrangement than those in the earlier buildings. In the early illuminated MSS. the ornaments were conventional, and their illuminations were in flat tints with little shade and no shadow, whilst in those of a later period highly-finished representations of natural flowers were used as ornament, casting their shadows upon the page, the illuminations also were highly-finished pictures, evidently unfit for the pages of a book where the affected relief was in danger of crushing.

The Chinese, whose works, however wanting refinement and art-knowledge, yet steer clear of this; and all their figures, buildings, flowers, are so conventional in treatment, that they never shock the eye or destroy the unity of the object which they decorate.

If our proposition, then, be sound in theory, and be fortified by the practice of past ages, it applies with great force to the mural decorator, the paper-stainer, the calico-printer, the weaver, and the potter; and, in fact, to all engaged in the decorative arts.

First, Mural Decorators.

It is very evident that the treatment of a picture in fresco should be very different to that of a painting in oil; in the painting in oil, all the resources of art are invoked to make, as far as possible, the picture appear a reality; within his frame the painter has to himself a world; but it should be far different with a fresco; the flatness of the wall should never be disturbed; all chiaro-scuro should be avoided, and the

figures should be on one plain: in fact, a true fresco should be little more than a painted bas-relief. Such were the early frescos, or, more early still, the mosaic paintings.

The Paper-Stainer.

The art of the paper-stainer has been very much neglected in this country, and is, indeed, but little better in France, although they have brought to bear upon the subject a great deal of mechanical skill in printing, and much good drawing and designing, yet it is drawing and designing mostly on false principles. It is evident, that one of the first principles to be attended to in the adornment of the walls of an apartment is, that nothing should disturb their flatness; yet it is very difficult to find a paper that does not in some way violate this rule: they are either large masses of conventional foliage, generally a variation of the eternal acanthus-leaf surrounding patches of unbroken colour, or representations of fruits or flowers twisted into the most unwarrantable of positions. Here are specimens of English papers, than which nothing can be more absurd,—a wall covered with repetitions of the same subject, men and horses standing on each other's heads, or steamers floating on each other's masts. You will say, they are cheap papers, below criticism; but here we have a French paper which has had a great run in this country: you see it is a wall of strawberries.

Now, in what are the English papers more absurd than this? Beautiful as this strawberry pattern is, well drawn, well printed, the colours nicely distributed over the surface, it is yet offensive, because it violates the first of all rules — propriety.

We say, therefore, that all direct representations of natural objects in paper-hangings should be avoided: first, because it places these objects in unseemly positions; secondly, because it is customary in almost every apartment to suspend on the walls pictures, engravings, or other ornamental works, and therefore the paper should serve as a background, and nothing on it should be obtrusive or advancing to the eye. Diaper-patterns in self-tints are safest for this purpose, but when varieties of colours are used, the Oriental rule of so interweaving the form and colour as that they may present a neutralised bloom when viewed at a distance should never be departed from.

The prevailing colours of the walls of rooms hung with printed paper should, of course, vary with the character of the room and the aspect. Halls and staircases look well hung with green, because the eye on entering a house is generally fatigued with the strong glare of daylight, and the green is the most refreshing. Studies and dining-rooms look well with dull reds in diapers or flocks, which may be enriched with gold; these form good backgrounds for engravings or pictures, but the reds or greens must never be positive colours, but low-toned and broken, so as not to disagreeably impinge

upon the eye. In drawing-rooms, where the paper has to do more towards furnishing and beautifying a room, they may be more gay: almost any tone and shade of colour heightened with gold may be used, provided always that the colours are so arranged and the forms so interwoven that a perfect balance be obtained and the eye never attracted to any one portion.

THE CALICO-PRINTER and the WEAVER violate our proposition at every step. We have ladies' dresses, ribbons, furniture-prints, carpets, which are the more and more admired from the more perfect knowledge of botany they display, violating the sense of propriety at every step: we walk on flowers and tropical plants crushing beneath our feet; we have chintzes covered with roses in violent contortions over the sinuosities of our furniture, or broken in twain by the folds of curtains; ladies robed in rose, shamrock, and thistle (a high achievement); the fast man, with race-horses and ballet-girls printed on his shirt, and pointers woven on his neckerchief.

The Potter keeps pace with his fellows; without his flowers he believes his art would cease to be: with him consistency is disregarded,—he serves us flowers with every dish, magnified and microscopic.

So runs the fashion of the present day; would that its sun were set, that we might awake to a more healthy dawn!

I will beg to say, in conclusion, a few words on THE

NECESSITY OF AN ARCHITECTURAL EDUCATION ON THE PART OF THE PUBLIC.

I have endeavoured to establish in the foregoing, that in all times but our own all ornamentation resulted from architecture; that in the present age we have no guiding principle in its design or unity in its application; that the architect had abandoned to inferior hands that which was his especial province. I have described much of the disorder which has resulted from this, and have still more to add on the same subject. I will further endeavour to establish two points,—first, that the education of our architects must undergo some change before we can hope that architecture and its attendant arts shall faithfully represent the wants, feelings, and faculties of our time; and, secondly, that this result can never be effectually obtained till a much higher amount of art-knowledge exists in us as a nation.

How is any change for the better to be brought about? It is certain that the production of a national style must be, as it ever has been, a work of slow developement; yet, if never attempted, the problem never can be solved.

It seems to me,—now that we have so many schools devoted to the improvement of design as applied to manufactures, and that a movement in this direction, aided by this Society, is receiving a fresh impulse,—that if the Government were to undertake to gather together all the records of the past, and would disseminate that knowledge with correct principles for making use of it,

a vast stride would be made in the right direction.

The system of architectural education followed in France is very superior to that pursued in this country. Here the young architect is apprenticed to an architect in practice as to a trade, and is engaged for five or seven years on the works of his master: he gains thereby a good knowledge of construction and of the business of an architect, but has but little opportunity of studying architecture as a fine art. In France, on the contrary, there are, besides the drawing-schools which exist in every town, where the young may obtain much elementary knowledge, there are in Paris many studios where professors devote their time to the instruction of a large number of pupils, making them thoroughly acquainted with the works of every period, and giving them a thorough knowledge both of architecture as a fine art and of construction in theory.

The pupils of these various studios are mostly attendants at the Architectural Academy, where they once a-month produce designs in competition for a given subject, and they are assisted in the formation of these by their professor. One consequence resulting from this system is, that we see in France at any given period a much greater unity in the character of their works; and there is not that disorder and waste of forces which we see in this country, where each architect is pulling in a different direction.

Works executed in France have a family resem-

France not to be found in those of this country; the influence of the professor is much more felt, and schools of architecture are thereby formed, much as were the ancient schools of painting.

All these architectural students do not become architects; those who do so, when they have finished their studies, become clerks of the works under government architects, where they learn the practice of their profession, and ultimately practise on their own account. Many of those who have not been sufficiently advanced, or who want government influence to be so placed, turn to other professions connected with architecture, —become decorators and designers for manufacturers. It is this cause which gives to the designs of France the superiority they have. Mostly all their designers have had an architectural education. I do not mean to say that the French have made much more progress towards the formation of a national style than we have; what they have done is, that, at any one period, they have carried out the reproduction of any extinct style with much more unity. The fashion, as long as it lasted, has been general; and we do not see in France, as we see here every day, the building of one style of architecture, the decorations of another, and the furniture of a third, with every variety of age and period. However, it is the kind of education as pursued in France which I think it would be useful if our Government could be prevailed upon to foster. The Schools of Design have not hitherto produced any marked im-

provement in the designs of our manufacturers, and have been conducted as if it were the intention only to make painters. The study of the human figure has been carried to excess, and much labour wasted upon it; useful as it is for refining the taste and teaching accurate observation, yet it is a roundabout way of learning to draw for the designer for manufactures. I may here remind you, that the Eastern nations, who appear to excel all others in their works of ornamentation, are forbidden by their creed to make any representation of the human figure; and it is, probably, to this cause that we may attribute their excellence in ornament.

I cannot but feel, that if the education of the Government Schools were made more architectural much real benefit would result to this country; besides that the study of architectural forms must be the best preparation for the designer of ornament, they would do more good in helping to make architects than painters, to whom individuality is less of an evil. Architects should be educated in masses, because it is their duty to give expression to common wants and common feelings. The opposite system has been in use in this country, and has most assuredly failed. The knowledge we have acquired of the works of past ages has been procured by individual efforts, but, unfortunately, with but small results. Each has been tempted to exaggerate the importance of the style of his predilection, and which he undertook to illustrate.

That a little knowledge is a dangerous thing has proved most true in architecture and its attendant arts.

As each new architectural publication appears, it immediately generates a mania for that particular style. When Stuart and Revett returned from Athens, and published their work on Greece, it generated a mania for Greek architecture, from which we are barely yet recovered. Taylor and Cresy did as much for the architecture of Rome. The travels of Belzoni and his successors produced the Egyptian Hall, and even Egyptian-faced railway tunnels. The celebrated French work on the architecture of Tuscany, and "Letarouilly's Modern Rome," have more recently inspired us with a desire for Italian palaces.

The works of the elder Pugin and Britton, with a host of followers, have flooded the country with Gothic buildings; with which, notwithstanding the learning and research they exhibit, I must frankly avow I have but little sympathy. I admire and appreciate the Gothic buildings, which were the expression of the feelings of the age in which they were created, but I mourn over the loss which this age has suffered, and still continues to suffer, by so many fine minds devoting all their talents to the reproduction of a galvanised corpse.

Instead of exhausting themselves in the vain attempt, who will dare say that had these same men of genius, as they certainly are, directed their steps forward instead of backward, architecture would not have made some pro-

gress towards becoming, as it is its office, the true expression of the wants, the faculties, and the sentiments of the age in which we live?

Could the new wants to be supplied, the new materials at command, the new sentiments to be expressed, find no echo to their admonitions? Alas! iron has been forged in vain,—the teachings of science disregarded,—the voice of the poet has fallen upon ears like those of the deaf adder, which move not, charm the musician never so wisely.

More than this, instead of new materials and processes suggesting to the artist new forms, more in harmony with them, he has moulded them to his own will, and made them, so to speak, accomplices of his crime. The tracery of Gothic windows, generated by the mason's art, have been reproduced in cast iron; the Doric columns of Greek temples, which owe their peculiar form and bulk to the necessities of stone, have been a hollow iron sham.

We have gone on from bad to worse: from the Gothic mania we fell into the Elizabethan,—a malady, fortunately, of shorter duration; for we then even worshipped not only a dead body, but a corrupt one.

We have had an Italian mania without an Italian sky; and we are even now threatened with the importation of a Renaissance mania from France. It would be most unfortunate if the attention which has been directed to the peculiar beauties of the East Indian collection of the Great Exhibition should result in an

Indian mania; but if this disease, like measles, must come, the sooner it comes and goes the better. What we want to be convinced of is, that there is good mixed with evil in all these styles; and I trust, when each has strutted its brief hour on the stage, recording for posterity the prevailing affectation of the day, we shall. We want to be convinced that all these styles do but express the same eternal truth, but in a different language: let us retain the ideas, but discard the language in which they are expressed, and endeavour to employ our own for the same purpose. We have no more business to clothe ourselves in mediæval garments, than to shut ourselves in cloisters and talk Latin; to wrap ourselves in Indian robes than to sit all day on divans, leading a life of voluptuous contemplation.

After the expression of so much heresy, I must beg to say that the fault does not at all lie with the architectural profession, to which I esteem it an honour to belong. The fault lies with the public; the public must educate themselves on this question. Architects, unfortunately, can but obey their clients: this one will have an Elizabethan mansion; this clergyman can admit no other than a mediæval church; this club of gentlemen must be accommodated in an Italian palace; this mechanics' institute committee must be located in a Greek temple, for there alone wisdom can be found or philosophy taught; this railway director has a fancy for Moorish tunnels or Doric termini; this company, again, an Egyptian suspension-bridge — the happy union of

the alpha and the omega of science; the retired merchant must spend his surplus in Chinese follies and pagodas. And, to wind up the list of these melancholy reproductions, I will cite the worst I ever saw, though, fortunately, not an English one. We have here a client, who, requiring a steam-engine for the purposes of irrigation for his garden, caused his architect to build an engine-house in facsimile of one of the beautiful mosque tombs of the caliphs of Cairo. The minaret was the chimney-shaft. Nothing was omitted: even the beautiful galleries, which you all know were used for the purpose of calling the Moslem to his prayers, here surrounded a chimney without a means of access.

I again repeat, the fault lies with the public; an ignorant public will make complaisant and indolent architects. Manufacturers, again, will always tell you, in answer to a reproach for the bad designs they produce, that they are only what the public require, and will have: let us trust that this excuse will no longer avail them. The Great Exhibition has opened the eyes of the British public to our deficiencies in art; although they were unable to suggest better things, they were found quite able to appreciate them when put before them. There must be on the part of manufacturers, architects, artists, and all who in any way minister to the wants and luxuries of life, a long pull and a strong pull, and a pull all together; they have one and all, like dramatic authors, written down to the taste of the audience, instead of trying to elevate it. The public, on the

other hand, must do their part, and exercise a little pressure from without.

I know that I shall be told that the production of a new style of architecture is not so easy a matter; that it has never been the work of any one man, or set of men, but rather something in the like of a revelation, for which, probably, we may be told to wait. Much of what I have said here this evening will be set down as the ravings of folly. Some will say, Architecture is a thing of five orders, discovered and perfected once for all, beyond which we cannot go, and all that is left us is an adaptation of it to our own wants; others will tell you that a Christian people should have no other than Christian architecture, and will tell us to go back to the thirteenth century in search of architecture, and beyond this there is no salvation: but I answer, that this architecture is dead and gone; it has passed through its several periods of faith, prosperity, and decay; and had it not been so, the Reformation, which separated the tie which ever existed between Religion and Art, gave to Christian architecture its death-blow.

To show how new styles are really formed, I will here give you an instance of the progression of an architectural idea.

Here is the ornament known as the egg-and-tongue moulding, so common in Roman architecture, which we produce over and over again to such an extent that there is hardly a building or house erected where it is not used externally and internally. Let us see what

the Arabs did with it; let us see if they were content to consider it as perfection, and to set themselves down before it with folded arms to worship it.

When the Mahometan religion and civilisation rose with such astonishing rapidity in the East, the Arabs, in their early mosques, made use of the materials which they found ready to their hands in the ruins of old Roman buildings, or buildings which they purposely destroyed; they took columns with their Corinthian capitals, &c., and adapted them to the arrangement required for their own temples. In their subsequent works they did not, as we should have done, continue to copy and reproduce the models which were at first so convenient to them; but, applying to them their own peculiar feelings, they gradually departed from the original model, to such an extent at last, that but for the intermediate steps we should be unable to discover the least analogy between them. Yet by this process the capitals of their columns can be traced back to the Corinthian order which they, in the first instance, found so abundantly for their use.

In the instance before us, who, at first sight, could see any connexion between the egg-and-tongue moulding and the ceiling of the Hall of the Two Sisters of the Alhambra? Yet, by placing side by side the intermediate stages, we may be as certain of the process by which they arrived at it as if we saw them at work before our eyes. Here is a cornice very common on the earlier buildings of the Arabs. You will see that it

resembles in all respects the egg-and-tongue moulding, save that what is here round in the Arabian cornice is straight. Some fresh mind at work upon it saw an opportunity for fresh beauty in doubling it, as you see here another in tripling it; and then there must have burst upon some other that this multiplication of a simple element was a mine of wealth to them. We now see this principle developing itself in the formation of pendentives, the filling up of niche-heads and doorways.

It was reserved for the Moors to carry this principle to its utmost limit; and we see in the Alhambra capitals of columns, arches over large openings, and ultimately the ceilings of their halls were covered with the stalactite roofs, which are not more remarkable for their elegance and beauty than for their scientific construction.

This model before you is a portion of the ceiling of the Hall of the Two Sisters; it is composed of 5000 pieces, being combinations of the same seven, based upon three primary forms, — a right-angled triangle being the half of a square; a parallelogram, having one of its sides equal to the hypothenuse, and the other to one of the sides of the angle; and an isosceles triangle, also with sides, equal to the sides of the right angle; so that as all these seven pieces occupy the same space on plan, but are different in elevation and section, they may be used indifferently one against the other, and the most astounding varieties can be produced: in fact, they are infinite, like the combinations of the seven notes of the musical scale.

Similar progression may be seen in every architecture. Many of the types of Greek architecture may be seen in Egypt. The flutes on the Doric column were first simply corners cut off in the piers of the rock-cut temples of Egypt. They then became eight-sided, and so on, till some one must have suggested making the sides curve inwards; and lo! we have the flutes. A rude type of the honeysuckle ornament, so prevalent in Greek architecture, is seen on the Assyrian monuments discovered by Dr. Layard and M. Botta; in fact, any one so disposed, will find numberless instances of these progressions: but I have said enough to show that architecture, till now, has ever been progressive. What has been done in past ages may be done in this, if our minds are only so directed.

We have all the works of the past, as I said before, for our inheritance. We may use the principles and knowledge derivable from them, but may not parody the results of these principles. From the works of Egypt we may learn how to symbolise; from those of Greece we may learn purity of form and grace of outline; from the Arabs and Indians, perfection of form, harmony of colouring, and more especially the conventionality of natural forms; from the Moors, in addition, the great powers of geometrical combinations, and the immense value of the repetition of the most simple elements, as producing grandeur and richness; and when fully impressed with this knowledge, have we not before us the whole range of Nature's works, furnishing us suggestions

of endless variety? See what the Egyptians did with the lotus, the Greeks with the honeysuckle, the Romans with the acanthus, the mediæval artists with the trefoil, the maple, the vine, ivy, and oak. Have the plants and flowers of every clime been gathered together in vain for the architect? can they furnish him no hint for the developement of new conventional forms?

There is but little hope that any but a slight modification can take place in the art of the present generation, but it is the bounden duty of all to help in the elevation of the future. We have movements going on around us to promote the knowledge, improve the morals, and preserve the health of our race. Philosophers measure the innermost recesses of the vault of heaven, or descend into the bowels of the earth for knowledge, which they disseminate by cheap literature to the homes of the humblest. Free-trade supplies food and raiment to all. The railway movement quadruples the power of locomotion. The sanitary movement seeks not only to prolong life, but to render that life a blessing rather than a curse. The movement in favour of the drainage and irrigation of the soil now dawning, promises to so far increase the productiveness of the country, by pouring on it the waste of towns, that what are now the luxuries only of the few will, hereafter, be daily supplied to the many. Shall we, then, be content to supply only the material and intellectual wants of man, neglecting that far happier portion of his nature, the sentiments? Shall there be no movement in favour of bringing art-knowledge

within the reach of all? I would strongly urge, that there could be no more noble result springing out of the Great Exhibition than this; no more noble task for this Society, which brought about the Great Exhibition, to set itself than this.

Every town should have its art-museum, every village its drawing-school; every parent should educate himself in art, as far as he can, and cause his children to be educated still further: it is as necessary for the refinement and the happiness of mankind to develope the innate poetry of his nature by the cultivation of the eye, as to develope his intellect by giving him the power of reading and writing. Do not say this is visionary or impossible; every movement now successful was once so regarded, was once but the philanthropic yearnings of the few.

The Government may, and ought, to assist in developing this movement; it should help with no niggard hand: a few thousands spent in forming art-museums, accessible to all, would save many thousands more from being spent in building gaols.

Although the evil passions lurking in the breast of man can never be eradicated, yet they may be subdued and charmed to slumber by the cultivation of his higher mental and sentient powers. Give a people healthy pleasures, and the tendency to crime must be diminished.

As a first step in the developement of this movement, the Crystal Palace I would preserve.

When I reflect that at the very moment when the

Ruler of France decrees—that seeing the city of Paris has no permanent building worthy of public exhibitions and national fêtes, therefore let there be one on the plan of the Crystal Palace of London; when I reflect that we who have it are about to destroy it, I am perfectly astounded at the apathy of the British public which allows it.

It is to me a melancholy sign of the little feeling which exists for art in this country, that there are so many educated people found to ask, What would be the use of keeping it where it is? Why, Sirs, I assert, that were the building simply to remain as it is, a vast covered area, where the people of every class might daily intermingle, it would have a civilising influence over the present generation, which would be worth the paltry sum required to purchase it many times over.

There is no country in the world where the manners of the peer and peasant so nearly approach as in Spain, and we find there every town and almost every village has its *paseo* or promenade, its *alameda,* or elm-grove, where daily, just before sunset, all classes freely mingle together enjoying the refreshing evening breeze, their hearts dilated by the contemplating of nature's noblest works. Their churches, again, are their art museums; on their marble pavements the duchess and the grisette kneel side by side. Who can doubt the influence of these facts in forming those refined artistic instincts

so universal in a people, very deficient in acquired knowledge?

There is no doubt whatever that the free mixing of the several classes which took place last year in the Great Exhibition has produced a feeling of higher appreciation of each other, both with the great and the humble; the great have a higher respect for the humble, the humble look with much less of envy on the great.

Were the opportunity for this continued, the impression would become permanent instead of being transitory, or worse.

This civilising influence, I say, would result from the empty building; but when we imagine, in addition, its vast nave, adorned with a complete history of civilisation recorded in sculpture from the earliest times to the present, with casts of the statues of our great men which now adorn our squares and public places, invisible from London smoke;—when we imagine the plants of every region, however distant, climbing each column, and spanning each girder;—the sides of the building set apart for the formation of collections, recording man's conquests over nature, where hundreds daily may be taught to see with the mind as well as the eye, an education as necessary to the governors as to the governed; were such a scheme carried out nobly and lovingly, the success of the Great Exhibition would be, in comparison, failure itself.

To effect this, and in further developing the move-

ment in favour of bringing art knowledge within the reach of all, the Government may do much, but the public must do more; it must depend for success on the co-operation of all.

It is a movement that may not be delayed; we must be up and stirring if we would not that England, in the midst of her material greatness, became a byword and a reproach amongst nations.

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