

**CHECK QUOTES**

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**MARBLE'S TRANSLUCENCE AND WHAT MID-NINETEENTH-CENTURY  
 ARCHITECTS MADE OF IT**

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*Thank you to Harry Mallgrave and Hermann Hipp (also Semperarchvi curators, 1969, H. Kaufmann, 1979, Christina Reble), Gerhard Wolf, Dario Gamoni*

**I. GOTTFRIED SEMPER**

In an essay published in London and in English in The Museum of Classical Antiquities in 1851, Gottfried Semper argued that the Pentelic marble temples of Attica were entirely covered with an encaustic layer of color – red in particular on the columns and entablatures – achieving a particular brilliance due to this crystalline ground. At the end of his essay under the heading "Colour of the Architectural Masses" he evoked the results:

"The prevailing colour of the temple burned with all the glowing beauty of he setting sun. ... The colour may be defined as of a yellow red, very vapoury, resembling that of the finest terra cotta. In fact, the general appearance of the temple would precisely resemble the appearance of a fine day in an Eastern climate."

Semper, who had been settled in London since September of 1850, came to this striking depiction after almost twenty years of occasional research and writing about the whole

subject of Greek architectural polychromy. In his pamphlet of 1834, Vorläufige Bemerkungen über die bemalte Plastik und Architektur bei den Alten, he argued for this over-all painting of the Pentelic monuments on the grounds that, first of all, such polychromy was traditional and assumed, secondly because it required a ground – a white slip in the case of terra cotta – and there was none better than marble itself, and thirdly because it contributed to what he saw as the essential quality of Greek color-use, namely the optical mixing of small saturate passages in Southern sunlight.

“In einem hellen, zehrenden Südlichte, in strakgefärbter Umgebung brechen sich gut geordnete, aber ganz nebeneinander gestellte Farbentöne schon so mildernd, dass sie das Auge nicht beleidigen, sondern besänftigen. ... *Die Alten kannten in der Dekoration keine, gebrochenen Halbtöne der Farbe. Die Uebergänge und Mischungen geschahen nicht auf der Palette, sondern an der Wand....*”

Later, in his second pamphlet on the subject, Ueber Polychromie or Die vier Elemente der Baukunst of 1851, he focused more intensely on the issue resulting translucence:

“...die Marmortempel nicht weiss oder blassgelb waren, sondern in gesättigter farbiger Fülle prangten, so dass in der Hauptwerkung ungefähr den Ton zeigten, der sie noch jetzt auszeichnet, nur brillianter und zugleich luftiger, wegen des rötlichern glasartigen Ueberzuges, unter dem die Weisse und das Krystall des Steines durchschimmerte, *wegen des damit abwechselnden Blau, das einen leisen Stich ins Grünliche hatte und durch Zuthun von Schwarz gemildert war, und wegen des goldenen Aufluges, der Ganze in finen Fäden umspann....*”

This was published in German in Braunschweig at the moment of his arrival in London – upon his establishment there he adopted the consuming evocation of painted Greek temple with which I began.<sup>1</sup>

### **Develop contrasting colors**

## **II. OWEN JONES**

Moving the *Schwerpunkt* of Semper's conceptualization from the early 1830's to 1851 is important because it shifts it from the moment of archeological investigation to the moment of creative appropriation – from Quatremère de Quincy, J.-I. Hittorff and Franz Kugler to Owen Jones and Henri Labrouste – and what follows is a hypothetical structure of interpretation taking off from this moment's consciousness of problems of translucence which was not so clearly the case two decades before.<sup>2</sup>

Hittorff, famously, had drawn together scattered archeological evidences in the years 1823-1831, culminating in a set of reconstruction drawings shown at the Salon in the latter year with a discursive justification then read and published several times, to presenting a “system” of complete painting, based on his exploration of Sicilian temples

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<sup>1</sup> Harry Mallgrave tells me there is no original MS of the article in the Semperarchiv but there is a letter from a translator who expresses herself prepared to translate this piece but who was not, in the end, asked. Semper was then borrowing space in the office of Edward Falkener who was, in fact, editor of the Museum of Classical Studies. Semper gives particular emphasis to the lines here quoted as if specifically requested to do so Mallgrave speculates that the original text might have been in French and, logically, Falkener would have been the translator.

<sup>2</sup> I am building here on my doctoral dissertation of 1970, The Architectural Polychromy of the 1830's, informally published in 1975 with a new summary introduction, that text extended in essays of 1982 (The Beaux-Arts and Modern Architecture, editor Robin Middleton) and 1994 (The Parthenon, editor Panayotis Tounikiotis) and more recently as a lecture at Princeton University in 2005. The subject itself has been transformed by Vincenz Brinkmann's careful, scientific study of chromatic evidence summarized in his exhibition and catalogue Gods in Color (2008), synthesized in the exhibition and catalogue The Color of Life (2008). See also Brunilde Ridgway, Prayers in Stone (1999) Mark Bradley, Colour and Meaning in Ancient Rome, 2010.

in rough limestone with stucco coatings (especially of a small temple he excavated at Selinonte and believed dedicated to the god/man Empedocles) which he felt could be extended to the Attican monuments. The result was a stucatto, “Etruscan” rendering working off a yellow ground covering the columns and lintels. He justified his reconstructions with examples taken from before and after in history – Egyptian and Byzantine – picturing Greek architecture as part of a grand continuum at the expense of picturing it as an organic product of one moment in time. Hittorff complicated things for himself by citing Quatremère de Quincy’s argument on the centrality of colored materials in Greek sculpture from his massive Jupiter olympien of 1815, to the latter’s discomfort – expressed by a scholarly vendetta pursued against him by Quatremère’s friend and successor Raoul-Rochette, only ending with Hittorff’s encyclopedic Architecture polychrome chez les grecs of 1851. It was because of Hittorff’s impetus in the 1830’s that contrasting visualization of Greek polychromy had been put forward by Franz Kugler and Semper himself, correcting Kugler’s hesitant projection.

If we so move our point of observation from the 1830’s to 1851, things tilt interestingly. On January 12 and 26 then February 9 in that latter year a most extraordinary discussion of the evidence of Athenian Greek architectural polychromy took place at the fledgling Royal Institute of British Architects, led by Hittorff’s friend Thomas Leverton Donaldson and Francis Crammer Penrose, who had published in that year his Investigation of the Principles of Athenian Architecture documenting the “refinements” of the Acropolis monuments. Both Owen Jones and Semper were present, as well as other interesting worthies including Horace Horeau who had just won the competition for the design of what would be the “Crystal Palace”. Displayed on the walls

were the chromolithographic plates of Hittorff's just completed Architecture polychrôme chez les grecs (Hittorff having visited Donaldson in London in 1837 and remained in relation with him) as well as Semper's reconstruction of the Parthenon and a parallel drawing by Jones, this last now unfortunately lost.

The event was reported in unusual detail in the pages of the Civil Engineer and Architect's Journal. Semper himself, disappointingly, made a minimal contribution presumably because his English was as yet weak, but Jones was decisive. The Pentelic marble of the Athenian monuments, Jones insisted, were neither left white nor tinted, but was stuccoed and entirely painted in brilliant red, blue and gold. The broad surfaces of the Doric columns were gilded, "His own opinion was that the columns were coloured gold. It would seem a very startling supposition that there should be such a mass of gold in the building; but if the fact were established that gold was largely used in the enrichments of the mouldings, he did not see why the remainder of the colouring of the Parthenon could not be carried out by yellow colour; it must have been gilding upon stucco."<sup>3</sup> Yet the effect of this powerful coloring was so carefully blended that it produced a neutral, harmonic "bloom" by optical blending: "Notwithstanding the use of such positive colours, he assumed that they were so well balanced and harmonized as to produce a bloom which would be satisfactory in its effect." Coming from different directions, Jones and Semper had both arrived at the same point.

Jones' arrival in the *Polychromiestreit* was complex, significant and often recounted. Semper had had a companion on his Eastern travels to Turkey and Egypt in 1830-1833, Jules Goury, the thirty-year-old French student of [Percier's devoted student]

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<sup>3</sup> Civil Engineer and Architect's Journal, -- (1851), pp. 5-7, 41-50, especially 49-50.

Achille Leclère. Goury and Semper separated in Athens in 1833 and Goury joined Owen Jones to travel to the exotic West to investigate the Alhambra in Grenada. There the two examined, measured and recorded that elaborately-ornamented structure before in 1834 Goury fell ill with cholera and died – leaving Jones to produce the Plans, Sections, Elevations and Details of the Alhambra under their joint authorship in chromolithograph, fascicles appearing from 1836 to 1845 and usually bound in three folio volumes. The accompanying text explored both the geometry and the chromatic principles of the famous diaperwork, concluding that under later re-paintings it pivoted on the primaries red, blue and gold, in brilliant scattered accents, set off with secondaries – green and violet. Both Jones and Semper gave the departed Goury credit for his knowledge and his grasp of the significance of color in architecture, but absorbed this into their own conceptions rather than specifying his contribution.

## **2 quotes?**

But what is significant is what Jones did with his Alhambra investigations afterwards in the 1850's – a story again often retold. The building committee appointed to the Great Exhibition of the Products of World Industry to erect its shelter after the rejection of Horeau's project – the engineers Robert Stephenson, Isambard Kingdom Brunel and William Cubitt, architects Donaldson, C. R. Cockerell and Charles Barry -- by the spring of 1850 had realized that their conventional brick project could not be built in time for the May 1, 1851, opening. The brilliant James Paxton then proposed his prefabricated iron and glass solution and it was accepted – with the addition of Barry's arched transept [the curved members of which had to be executed in wood]. But Henry Cole, managing the whole project, felt such a structure needed somehow to be

ornamented and asked Jones to make proposals, which he did with two mock-ups for painted decoration in December, 1850, one with the elements painted single colors (the columns red, for example), the other with the metallic web threaded in long, thin stripes of the primaries red, blue and yellow separated by narrow bands of white following Michel Chevreul's recently-published De la loi du contraste simultané des couleurs (1839). This last was chosen and executed so that, when the building was finally inaugurated on May Day, 1851, commentators and the public were presented with what they described as a breath-taking sight: an interior of unprecedented immensity, brilliantly but diffusedly lit (canvas awnings controlled direct sunlight) and animated by a sparkling sparkling textile weave of color which – observers claimed – dissolved visually to a vibrant gray in the distance – the “bloom” Jones had evoked earlier at the RIBA -- articulating still further the hugeness of the space. The Illustrated London News intoned: “...as the eye wanders up the vistas, the three positive colours of Sir D. Brewster, red, yellow and blue, strike the eye by the intensity of their brightness in the foreground; but by blending in the distance, by the effect of parallax and diminished visual angle, the whole as in nature disappears into a neutral gray. ... Looking up the nave, with its endless rows of pillars, the scene vanishes from extreme brightness to the hazy indistinctness which Turner alone can paint....”<sup>4</sup>

I might note that Jones' accomplishment here was presented in the same volume of Falkener's Museum of Classical Antiquities as Semper's evocation of the painted Parthenon which I quoted at the start.

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<sup>4</sup> \_\_\_ (May 17, 1851), pp. 424-425.

In 1856 Jones won a competition to design the pavilion for the Manchester Art Treasures Exhibition with a remarkable variation on the 1851 building, now entirely of Jones' conception – but unfortunately not executed.

### **III. HENRI LABROUSTE**

Later in the 1850's another series of meetings took place in London, this time between Jones and Henri Labrouste, when the latter came to study the British Museum library preparatory to his design of the Paris Bibliothèque Impériale. Labrouste's diary, now in the Académie d'Architecture, shows him leaving Paris on October 24, 1857, visiting the greenhouses at Kew and Sydenham on the 25<sup>th</sup>, and meeting Donaldson, then Jones on the 26<sup>th</sup> followed by Panizzi on the 30<sup>th</sup> – visiting the Thames docks and Oxford in between. On the 31<sup>st</sup> he dines with Jones at home– and the next day returns to Paris. Unfortunately Labrouste's telegraphic dairy does not say what they talked about.

Years before in the late 1820's and early 1830's Labrouste had been very interested in the issue of polychromy on classical architecture, producing several riveting suggestions of its reconstructions and inspiring explorations among his friends – like this reconstruction of the Temple of Hercules at Cora by his brother of 1831-1832.

On April 27 and 29, 1859 Labrouste's draft design for the Bibliothèque Impériale was analyzed by the Conseil des Bâtiments Civils, revised in response to criticisms by his friend Félix Duban about the lighting of the *Salle des Imprimées*, approved on May 7 and immediately put under construction (June 1, 1859), culminating in the opening of that chamber to the public in 1867.

The room is covered by nine identical translucent white porcelain domes

reflecting a diffused illumination from central skylights, supported on extremely slender iron columns and arches, diffusing the skylighting in response to Duban's criticism that a direct vertical light would cast the readers' shadow on their books. These enframe, on the two lateral walls, vistas of blue sky and tree-tops and, on the third, a similar glimpse through broad lunettes out into the *cour d'honneur*, originally also filled with trees. Perceived through a historicist lens, this construction might be identified as Pompeiian with Third Style velaria, attenuated columns and garden vistas – popped into three dimensions. But in this it has more power than any mere historicist reference because Labrouste made the impossibly thin Pompeiian columns plausible by disguising the ceiling they support as one of translucent, weightless-seeming awnings, fictively supported by breezes that would blow across the space between the openings suggested on the sides – like the ladies' white summer dresses in The Great Gatsby. Its coherence thus lies in structural response between the light ironwork and the weightless glowing porcelain, between architecture and painted decoration – which last conventionally would have been allegorical and intruding but here, executed by the Ingres-student Alexandre Desgoffe, paints itself away, just as the domes transform into linen. It has been pointed out that the turning of the leaves of the books by the readers would have conjured up the rustling of the leaves in Desgoffe's murals to once again snap illusion into plausible reality.<sup>5</sup>

The room resembles (on a grand scale) a Pompeiian seat Hittorff contemporaneously built in his garden, spindly supports holding an awning, the seat open

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<sup>5</sup> I owe this observation to Northwestern University graduate student Joel Morris.

to the lawn and flowers around, historically placed with Pompeiian decorative details.<sup>6</sup> This sets off Labrouste's simple words explaining the Salle des Imprimés: "L'architecte a pensé que ces peintures calmes et fraîches convenaient mieux pour décorer une salle destinée à l'étude que des sujets historiques qui auraient peut-être l'inconvénient de distraire les lecteurs venus ici pour étudier." And this not new to Labrouste's thinking: already in a letter to his friend the architect Louis Duc of 1831 he had written of exploring with the students in his atelier a text De l'influence des arts sur la santé, asking them to achieve "une architecture guérissante" in a hospital project using, among other devices, the painting of landscapes on the walls. A few years later Labrouste's friend Emile Gilbert designed his insane asylum at Charenton with therapeutic vistas of the sylvan Marne valley.<sup>7</sup>

And the billowing velaria, Desgoffe's fictive leaves, and the books' actual rustling pages suggest a closer parallel: the ferro-vitreous *jardin d'hiver* so very popular in the Second Empire. This was a reserved place of focused but universal knowledge, Marryline Cettou documents, which gradually drew to itself not only all the flora of the earth, but also fauna and even primitive humankind – especially as the *jardin d'hiver* was recreated in books starting with the real estate magnates Saccard's retreat in Zola's La Curée of 1871. A half century ago Christian Beutler already made a comparison

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<sup>6</sup> With Hittorff's seat in mind, one might compare Labrouste's space to the famous "diaeta" in Pliny the Younger's villa: "On the upper end of the cryptoporticus stands a detached building in the garden which I call my diaeta, a thing I love: I built it. ... [One room] contains a couch and two chairs: as you lie upon the couch, from your feet you have a prospect of the sea, behind you see the neighboring villas, from the head you have a view of the forest: these three views may be seen separately or blended together in one prospect."

<sup>7</sup> Pinon. Construction moderne, 2 and 9 March, 1885, pp. 253-5, 268-9. Is the letter at Getty?

between this and Labrouste's Salle des Imprimées, concluding that the reading room was a huge *jardin d'hiver* where the occupants cultivated knowledge as a gardener might cultivate flowers – a “forcing house” where what “forces” is light. But in terms of what I have just suggested, one might push this one step further: that the concentrated light Labrouste provides with his translucent domical reflectors is like the photographer's flash or parallel nurturing “illumination” focused on the “leaves” of books to provide intellectual revelation. The whole building is a machine (as the Bibliothèque Sainte-Geneviève had also been before it), one for knowledge and most importantly – understanding.

Historicist references are the small change of nineteenth-century architecture, but there is power in Labrouste's conceit and that power lies in its consistency and in the repeated moments of plausibility like the rustling of the “leaves”. This is a fiction and the challenge of a fiction is making your public enter into it – to suspend their disbelief. Suddenly finding one's self in resuscitated, living Pompeii – it seemed so real when excavated – was a motif in Romantic literature, for example in Théophile Gautier's Aria Marcella (1852) and Gérard de Nerval's Isis (1845), both pivoting on Pompeii coming back to life – the life depicted in its wall paintings. Entry into these fictions is accomplished by the author falling asleep and awaking to find the city around him alive once more. The suspension of disbelief in Labrouste's architecture seems to have accomplished by playing off structural expectations, those that such spindly iron columns cannot support the ceiling, unless it were a translucent awning billowing upward rather

than bearing down<sup>8</sup> -- more vivid in this translucence than any “reality” might be, Elaine Scarry has explained in Seeing by the Book.

We are dealing here less a historical pastiche – Greek, Pompeian, Gothic -- than a tradition of illusionistic evocation. This “architecture” *is not constrained by evident structure or function and instead it* glides over into a broader (and puzzling) attitude toward depiction called by the fifteenth century “grotesque” (having been re-discovered in the grotto-like remains of Nero’s buried Domus Aurea) – which André Chastel has defined as characterized by weightlessness and impossible mixture – to which one might add the lack of shadows -- translucence. These qualities Philip Otto Runge, for example,

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<sup>8</sup> In the vestibule of the Bibliothèque Sainte-Geneviève which Labrouste had completed and decorated in the late 1840’s, a decade before his conception of the Bibliothèque Impériale conceit, one enters to be abruptly confronted by a dark space into which intrude ranges of very solid stone piers without bases and adorned with square, widely-spaced flutes. These are repeated around the walls as pilasters, but here they are interrupted and bound back into the wall by unarticulated leveling courses. The piers and pilasters terminate in a web of light iron trusses supporting the flat plane of the floor above – unsettling to contemporary eyes expecting broad masonry arches, but mollified by the ceiling plane being painted away sky blue, which illusion is carried down the side walls to the first leveling course and deepened with silhouettes of palms, flowers and tree-branches (also painted by Desgoffes) behind busts of great writers on the leveling-course shelf. Here Labrouste explained himself:

“J’aurais bien désiré qu’un vaste espace planté de grands arbres et décoré de statues fût disposé en avant de l’édifice, pour l’éloigner du bruit de la voie publique, et préparer au recueillement les personnes qui le fréquentent. Un beau jardin eût été sans doute une introduction convenable à un monument consacré à l’étude; mais l’exiguïté du terrain ne permettait pas une semblable disposition, il fallait y renoncer. Alors le jardin que j’aurais aimé à traverser pour arriver au monument, je l’ai fait peindre sur les murs du vestibule, seul intermédiaire entre la place publique et la bibliothèque. Mon jardin en peinture ne vaut pas sans doute de belles allées de marronniers et de platanes; mais il a l’avantage de présenter des arbres toujours verts et toujours en fleurs, même au mois de décembre; et puis, sans égard du climat de Paris, je pouvais, dans cette terre fertile de l’imagination, planter des arbres de tous pays, et placer auprès de Saint-Bernard des palmiers d’Orient, auprès de Racine des orangers en fleur, auprès de la Fontaine un chêne et un Roseau, et des myrtes et des lauriers auprès du Poussin.

Le vestibule est un peu sombre; mais les lecteurs, en le traversant croient peut-être un instant que cette obscurité n’est autre chose que l’ombrage des arbres qui frappent les regards, et l’on me pardonnera, je l’espère.”

had developed in his extraordinary (but never completed) monumental decorative project early in the century, the *Tageszeiten*. Karl Sieveking could remark that Schinkel early in his career owed much Runge – “Seine [Schinkel’s] Werke sind bewunderungswürdig reich und erinnern nicht selten an den verstorbenen Runge, der wohl eigentlich auch ein vollendeten Baumeister war.”<sup>9</sup>

If Jones dematerializing the experience of the ferro-vitreous, glowing Crystal Palace using Chevreul’s science of textile vivification, Labrouste carries his translucent *Salle des Imprimées* over into a hallucination.

*If Labrouste’s hermetic light box with its mechanized book stacks is some sort of built grotesque, then some further questions must be explored. Is this a “rational” iron architecture, or an “irrational” illusive decoration? – and how so? Labrouste, as I argued at the start, may have created a consistent illusion of breeze, rustle and up billowing to take off from the impossibility of his slim iron columns, but its fact as a metaphorical illusion remains conscious: the strange, diffused top-lighting (in the face of the lunettes implication that they are the light-source), the unlikeliness of such a quiet garden pavilion in the densest part of Haussmann’s Paris, all make the expression of the space that of being deep under water, interior, hallucinatory. It may, in the end, fold back on the experience of the transformation of Paris. Labrouste is recorded offering a more lengthy but contingent explanation for his treatment of the *Salle des Imprimés*: “Lorsque j’ai été au lycée [Sainte-Barbe near the Luxembourg Garden] après et avant les classes, j’allais étudier au jardin du Luxembourg, et surtout dans la pépinière. Là, je n’étais distrait par rien, et mon regard ainsi que mon esprit reposent avec bonheur sur la*

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<sup>9</sup> Görres to Sieveking: Karl Sieveking, 1787-1847, I, p. 122.

*belle et luxuriante verdure qui m’entourait. J’ai pensé que dans un lieu d’étude la representation de ce qui avait eu pour moi tant de charme serai à la Bibliothèque une decoration sans prétention d’abord et aussi comme une occasion de repos pour l’esprit des lecteurs occupant la sale....”*

*Such a reference to the Luxembourg Orangerie in 1867 was not innocent but a reference to the diminishment of traditional garden space for denser, Haussmannian development – and remember Labrouste lived all his life on the rue de Vaugirard. But it is also a false explanation: the specific Luxembourg project only became an issue long after the Salle des Imprimés had been conceived in 1860. If Labrouste’s remarks have force, it must lie on a more general plane – that perhaps of Calonne’s criticism: a general reference to the new Paris city-scape, here transformed because of the demands of space into an underwater fantasy of a garden pavilion, not any real one at all (as the Orangerie would have been). The strange ornamental flora with which Labrouste has inhabited it is drawn from the unlikely exotic flora of Alphand, Barillet and André introduced in the Haussmannian squares, paralleling the inventions in Ruprich-Robert’s course and his Flore ornementale (1865-1876). Like Labrouste’s explanation of his intentions, the whole room is a play on Haussmannization.<sup>10</sup>*

*What about the stacks? – visible beyond the glass wall in the hemicycle facing the counter-vista of the forecourt through the north lunettes. Taken quickly, it is the opposite of the Salle des Imprimés: compressed, gridded, organized for most efficient storage and retrieval of its encyclopedic contents, not for people but for books. But, as I have just argued, the Salle des Imprimées is not so very humane itself implying that it might share*

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<sup>10</sup> Alphonse de Calonne started his 186\_ review of the remaking of Paris parks noting this reduction rather than any expansion.

*with the stacks the compressed artificiality of the new Haussmannian housing texture, raised here to a symbolic power*

#### **IV. SPACE OF STUDY**

So we have come full circle from Jones' sparkling chromatic transformation of the experience of the Crystal Palace to Labrouste's subaqueous translucence. The fact that Chevreul was a friend of Nicéphore Niépce and a witness to the "invention" of photography is as unsurprising as it is indefinite in its implications – but I would emphasize one circumstance about which there is no need to be intricate: that photography in its first decade or so needed long sittings and as much light as possible – best just a fiery chemical blast – something that took architectural form in 1840's Paris (Anne McCauley has documented) in a surprising growth of glass photographers' studios on rooftops and in gardens – a growth apparently dissipated by faster photographic technology, erasing this from memory. That is to say, Chevreul's vivification of color paralleled a vivification of interior architectural space setting an extraordinary, extreme term back from which Jones and Labrouste might be imagined working.

Photography initially was deeply involved with light as the rhetoric of the science's first years insisted: "light pictures". But, as has been increasingly pointed out (by Stephan Bann, Armstrong, and Paul Jay among others), photography began as a recording mechanism initially intended to multiply things -- in the case of Chevreul color patterns vivifying each other, in light -- very different from those it later frightened the world by forcing its attention on.

Light was a thing the second third of the nineteenth-century sought and absorbed voraciously, whether the natural light of the *jardin d'hiver* or the sudden, brilliant

efflorescence of the photographer's "flash", extended into gas lighting -- first used generally in the Manchester cotton mills, or theatre lighting as in the intense, focused "lime light" invented in the 1820's, or finally arc-lamp lighting used before an amazed public in the early 1850's to enable night-time construction at the Pereire brothers' Grand Hotel du Louvre on the Rue de Rivoli in Paris. *Semper's London office-mate and sometime editor, Edward Falkener, devoted his career to the study of lighting and acoustics in ancient architecture – the latter the ultimate esthetic sciences because palpably mathematical.*

The perfection of theatre lighting accompanied the refinement of acoustics, addressing that other non-tactile sense, and Owen Jones again saw that also as a part of his challenge when in 1855-1858 he erected Saint-James's Hall in central London near Piccadilly Circus. Here gas light fixtures were suspended as a cloud of stars below a continuous, curving ceiling plane of Alhambresque geometric patterning painted in bright red, blue and gold in Chevreul's harmonic proportions, the whole shaped to vivify, blend and project the orchestral sounds produced on the stage. Contemporaneously Jones built a millinery store, the Crystal Palace Bazaar, and Osler's glassware shop with Chevreulian colored glass ceilings so that, he claimed, purchasers would examine the color and refraction of the goods in a perfect white light. Peter Galison's and Lorraine Daston's recent book Objectivity explores the 19<sup>th</sup>-century's efforts to use mechanical recording devices to discover an absolute, scientific reality in our world and Jones' and Labrouste's architectural devices seem also to have been to achieve precise, broad knowledge – but as Galison and Daston document (and Labrouste seems to have always understood) that reality still fled before these multiform efforts.

If the interwoven meanings I suggest for Labrouste's space are valid, then he is paralleling the many-sided scientific explorations of his acquaintance Owen Jones, but symbolically, through layers of metaphor, made possible by the gift of new materials – iron, ceramic tile, glass – and brought to life with the manipulation of sound and illumination. While to Jones modern architecture was a laboratory experiment, to Labrouste it may have been a moral exploration of the circumstances of its production – an architecture not so much “guérissante” as “pensante” or “critique”.

## V SEMPER AGAIN

One thing is fascinating in this short account is how the same names recur and the same problems are addressed in every case except the one with which we began – Gottfried Semper. His interests – and they were intense – moved sideways to architecture's geneology of the material carapace in black and white time rather than into Labrouste's vivid immediacy – a movement furthermore merely literary, not seeming to shape his extraordinarily competent but academic architecture at all. There he was at the London meeting of 1851: why did he stand back? Semper is the one who got the point first, in the early 1830's: that color in Athens might take fire from its Pentelic ground.

An answer might be that he had already been there: that the grotesquerie of Labrouste and the color theories of Jones was something he had grown up with in Hamburg and Altona in the shadow of Philip Otto Runge and his admirers, Runge's brother Daniel who published his Hinterlassenen Schriften in 1840-1841, the Speckters including the painter Erwin (who executed an early portrait of Semper), the publisher Perthes, and most importantly Karl Sieveking who saw Runge as an architect. *Semper's first work completed immediately upon his return from the Mediterranean was a*

*sculpture and garden pavilion on the Elbechausée at Altona for the merchant Donner, his only building actually executed in painter polychromy – except, of course, his first work in Dresden – the Pompeiian interiors of the Japonische Palais.* By 1849, writing from Paris starting, Semper was reserved about Labrouste’s Bibliothèque Sainte-Geneviève, hostile to Horeau’s Jardin d’Hiver and Duban’s Louvre interiors (for different reasons), and eventually be almost apoplectic about Duc’s Palais de Justice. The walls of Pompeii brought to life did not impress him: he knew about that already.

Still, why didn’t Semper somehow color his buildings? He didn’t have marble, but at least at the end of his career with the limestone of the Vienna Hofburg – and this is a very individual, golden limestone – he made his exterior surfaces “sing” with the most symphonic adjustment of surface, texture and deep shadow. (I regret to admit that I have never visited Dresden.) Walter Pater in one of his shortest essays – that on Luca della Robbia – observes that Greek sculpture could only escape literal reproduction through “color” so that the Renaissance sculptor’s challenge was to find an equivalent, in Michelangelo’s sudden switches from rough to smooth, from finished to unfinished, or in Quattrocento linear suggestion. All Semper’s thinking and writing on the history of ornament seems to pivot on a consciousness of that same loss: architecture originated in the textile enclosure but color is now denied to modernity (as Semper scholar have inevitably concluded) and some equivalent must be found – one in the surface itself, its complexity of working kept under control by a desperate consciousness of history [*that complexity all the fiercer for the thickness of that historicist justification.*] In these surfaces in Vienna – on a bright day – Semper seems to achieve something close to translucence at least in his shadows

But perhaps things were not as simple as this earlier, around 1840 when Semper designed his first great effort, the Dresden Opera (itself irretrievable burned in 1869). Old photographs make it appear as a conventional Renaissance design in the local tan limestone – except for one strange detail: the dark arabesques on the third-story paneling. [Preliminary drawings have more such.] And here consciousness of light might change things: that story steps back from the façade and is the structural continuation of the auditorium wall, as is evident in photographs after the fire: its more gorgeous, interior treatment might be justified by its being a different, interior entity – one invisible to early photographic technique, but in the evening when the Opera would be performed, would show through the outer, extraordinarily open, veil-like arcaded façade appearing, in daylight, as the building’s front. The text of Semper’s 184\_ publication of the Opera insists that it has been completely thought through in terms of acoustics and sight-lines, building off how people come together to watch a spectacle to begin with – that is, Semper like Jones presents his building as a transparent place of experience. The building’s expression isn’t in the veil-like front or in the French Renaissance detailing of the auditorium but in that curving, decorated wall which Semper describes as like the sounding board of a musical instrument. That is to say, the first Dresden Opera might have been a building within a building, a latent polychrome fantasy carrying on the exquisite decoration of Semper’s Parisian collaborators visible when “switched on” for its social use which was in the evening. Photography could not yet catch this. We might get some sense of it in the cut-outs sold by nineteenth-century hawkers – for example this one of the Campidoglio illuminated for a festival evening. This argument, however, is much broader than the Dresden Opera: one would have to

consider parallel examples from Jules Hardouin Mansart's *Galerie des Glaces* at Versailles to Charles Garnier's Paris *Opéra* and consider the impact of gas lighting. Which is not to say it is irrelevant, but rather to say it is another sort of question. But whatever this might be, it isn't the translucent places of study of Labrouste and Jones.

## VI

Let me end here, with the negative hypothesis that the disconnect in Semper's work lay in a rejection of futurism pivoting on the space of study (perhaps because of his direct experience with Runge) – but let me also note at least two other tracks of explanation which might be followed. The first, from Semper's 1851 comparison of the painted Pentelic Parthenon to the impression of a “fine day in an Eastern climate” to the idea of Greek polychromy as proof that the temple was conceived as a part of its natural site and climate which had emerged during the 1840's among the students at the French Academy at Athens, manifest in the polychrome reconstructions of Paccard and Garnier and explained in texts by Burneuf, Leveque and most notably – but also last, in 1852 – by Ernest Beulé. But also, second and more complex, the whole tumultuous evolution of decorative art in Paris and London in the decades of the 1830's, 40's and '50's – from Aimé Chenevard to Owen Jones and Christopher Dresser – remembering that after his flight from Dresden Semper went and lived in Paris with his old collaborators on the Dresden Opera interior, Séchan, Despléchain and Diéterle while starting work on his seemingly anomalous Der Stil. Perhaps this is the reflection of something bigger and more complex, the begging of the competing explanations of ornament as either cultural (concluding in Alois Riegl) or natural (Dresser, Ruprich-Robert, René Binet). As in the parallel case of Viollet-le-Duc, the very precision and voluminousness of Semper's

production seems to make any simple interpretation impossible. Jones and Labrouste spent their careers worrying one idea; Viollet-le-Duc and Semper being worried by many.