Harmonizing These Two Arts: *Edmund Lind's* The Music of Color *and its Antecedents*

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Abstract

Known primarily for his work in Baltimore and elsewhere in the American South, British-born architect Edmund Lind (1829-1909) was responsible for a diverse range of "revival-style" buildings. Lind's most famous design, the library of the Peabody Institute, reflects the eclectic temperament of an architect for whom aesthetic rules and principles were most usefully conceived as expedient tools, applied as required in the interest of successful professional service.

Towards the end of his life, however, another interest received his increasing attention. Twenty-seven intricately-colored plates accompanied an essay titled *The Music of Color,* which explored an analogy between the senses of sight and of sound. Assembled in 1894, Lind's writing and illustrations depicted in visual terms the melodies and harmonies of unusual sources, including the music of foreign cultures and the spoken word. Lind's representational technique anticipated the graphic experiments of a later generation's *avant-garde,* especially among those art movements founded in the wake of increasing challenges to traditional modes of perception.

Nevertheless, Lind and his enthusiasms remained firmly anchored in a view of art and science drawn from 19th-century sources. Two particular works, cited by Lind in his essay, represent alternative cross-currents among the many hypothetical links between music and color. In addition, Lind's own architectural education in London had occurred at the height of the Victorian-era "design reform" movement, which sought to revolutionize the visual character of England's material culture. The reformers' appeal to abstract structure, as embodied in their study of botany and quasi-scientific theories of color, was an implicit source of Lind's later fascination with music's representation through visual means.

Note: formal permission for publication of the illustrations and figures which accompany the following text has yet to be requested.

01 Introduction

At the end of his recent biography about the English-born architect Edmund G. Lind, Charles Belfoure describes an interest of Lind's which seems unconnected to his previous work: "the relationship between music and color."[1] The theme would appear to have little to do with architectural design, its professional practice, or with anything but Lind's own amateur love of both music and the visual arts. Indeed, Belfoure characterizes an unpublished essay, "The Music of Color,"[2] as a typical product of Lind's retirement, for which the architect had returned to Baltimore after almost four decades of professional work in Georgia, Maryland, and elsewhere in the South.

Yet a closer look at "The Music of Color" and its companion piece, "The Number Seven," points beyond the horizon of Lind's own career. References to Lind's essay, more or less unknown among historians of architecture, exist instead in the literature of musicologists, especially those who study the concept of *synæsthesia* – the perception of one physical sense through the experience of another. The proposition that one can represent through visual means what one hears is, of course, the fundamental premise of alphabetic writing or music notation. But Lind's unusual illustrations [Figure 01], which use color to depict graphically both music and the aural character of spoken word, are part of a wider history of similar attempts which exist at the confluence of 19th-century science and art. That period's technological innovations in the chemistry of dyes spurred theoretical interest in the physical basis of color, which in turn depended upon inquiries into the nature of light and of sound. The intellectual prestige accorded such scientific research led to its study and appropriation by artists and art educators, who sought to base their own efforts on an apparently objective foundation.

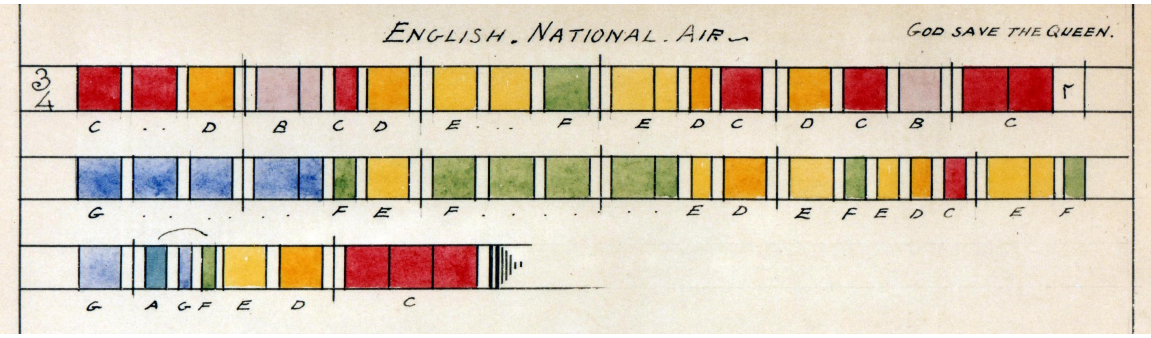

Figure 01 – "English National Air," Plate 7, Fig. 1 from *The Music of Color*

The Music of Color, written in 1894, reflects strongly Lind's own educational roots in Britain's much earlier design reform movement, which had sought to improve the quality of domestic material culture through improved educational standards for British artisans.

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[1] Charles Belfoure, *Edmund G. Lind: Anglo-American Architect of Baltimore and the South* (Baltimore: The Baltimore Architecture Foundation, 2009), p. 162.

[2] Edmund Lind, *The Music of Color* (Baltimore: Peabody Library, 1894), typescript and hand-colored plates.

That doing so depended upon a mélange of scientism, idealism, and moralistic romanticism led subsequently to Victorian Britain's unique effervescence among the decorative arts, painting, and architecture. In fact, Lind's time as a student in London spanned the period of design reform's greatest educational innovations. So although Lind's later professional life in the United States was separated by both geography and sensibility from architectural trends in the United Kingdom, one finds in *The Music of Color* explicit and implicit reference to British writing on related aesthetic matters. And if Lind's architectural work throughout his career was more diligent than innovative, his unusual essay may be, nevertheless, usefully characteristic of its milieu.

02 "Not So Speculative After All": The Appeal to Science

To begin his essay, Lind refers to the "harmony existing between these two arts," that is, music and color. Although scholars today can point to an enormous history of writing on this topic,[3] Lind claims to have believed that his ideas were original. Two earlier publications, which Lind found in Baltimore's libraries, suggested instead that "the sensic [sic] correlations of Music and Color attracted attention as early as 300 years B.C."[4] He consoled himself, so he relates, that his ideas were different from those he encountered in those books.

By his own account, the relationship between music and color had come to his attention as early as 1850, during his days as a student at London's Government School of Design. It was only much later that he attempted further to describe these ideas systematically; and, at a "social gathering" in the year 1884, he first presented his ideas to an audience. That year marked a time of transition for Lind, since he had only two years before relocated his family and architectural practice from Baltimore to the expanding city of Atlanta, Georgia. Writing a decade later, back in Baltimore, Lind suggests that the charts with which he illustrates his essay were originally conceived at that time.[5]

Yet to introduce his topic, Lind appeals first neither to art nor architecture, but to science. He gives the example, without attribution, of an experiment similar to one performed by Alexander Graham Bell:

> [O]nly very recently, it has been discovered that when the colored light from the solar spectrum is cast on colored worsted placed in a vessel convenient to receive the rays, sounds will be emitted louder or fainter according to the color of the rays directed upon them – the green ray upon a red worsted, or the red ray upon a

[3] Consider the extensive treatment of musical analogies throughout the history of art in Ernst Gombrich, *The Sense of Order.* (Ithaca: Cornell University Press, 1979), 285-305. A survey of theoretical treatments about color and sound is presented in John Gage, *Color and Culture.* (Berkeley: University of California Press, 1993), 227-246.

[4] Lind, op. cit., 1.

[5] Ibid.

> green worsted, giving out the most powerful sounds – thus demonstrating that colored sounds are not so speculative after all.[6]

The experiments which form the background of Lind's account had been published as early as 1881 in scientific journals in both the United States and England. Bell described what he called the "photophone," by which audible signals were produced after transmission by pulses of sunlight. Bell relates further on in his article that worsted, dyed in colors including green and red, responded audibly to the application of light of different frequencies. And although Bell's interests were technological and not overtly theoretical, the inventor's report includes his tentative belief "that sonorousness under such circumstances would be found to be a general property of all matter."[7] The generality of this "scientific" principle dovetails well with Lind's own claims for comprehensive relationships among physical principles and human agency.

Accordingly, Lind's first illustration is titled "Solar Spectrum." [Figure 02]

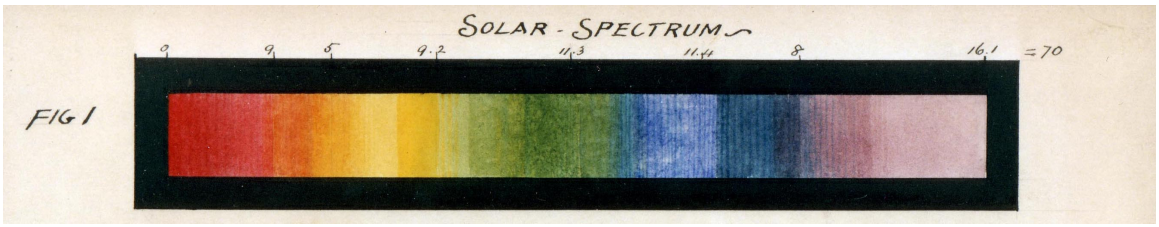

Figure 02 – "Solar Spectrum Divided into 70 Parts," Plate 1, Fig. 1 from *The Music of Color*

Lind does not cite a source for this chart, although similar representations had become commonplace by the date of Lind's essay. The numbers at the top of the figure demarcate segments of the spectrum typically associated with what Lind calls the seven "natural" colors: red, orange, yellow, green, blue, indigo, and violet.[8]

The division into 70 was atypical, however. Throughout both popular and scientific literature of that time, numerical division of the visible spectrum depended upon the geometry of its graphic representation. Some writers chose, following Moses Harris and George Field, to depict a circular "color space" divided into 360 gradations, based on the most common geometrical metric.[9] Others, such as the French theorist Chevreul, divided the color circle into seventy-two – a number easily lending itself also to even division

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[6] Ibid.

[7] Alexander Graham Bell, "Production of Sound by Radiant Energy," in *The American Journal of Science* 126 (1881): 463.

[8] The idea of seven natural colors, which provides Lind with the premise for much of his reasoning concerning the musical analogy for color, historically derives from Isaac Newton's research into the physical nature of color. In fact, Newton's list of seven colors has little to do with physical observation and was probably directly influenced by his own belief in color's relationship to music and its seven-note scale. See Gage, op. cit., 232.

[9] For one popular account, see the analysis of light given in *Wells's Natural Philosophy* (New York: Ivison, Phinney, Blakeman, & Co., 1864), 327.

and, further, to plausible assignments of complementary (that is, opposite) colors.[10] Instead, Lind borrows the linear output of 19th-Century spectroscopes, and his use of 70 segments betrays his peculiar number-mysticism concerning the number seven. He refers to the number's significance explicitly: "The first quality noticeable as harmonizing [color and music] is the numeral one of seven, there being that number of natural colors in the solar spectrum, and the same number of natural sounds in the musical scale… [I]t is quite possible that seven may be a complete and perfect number, in some way governing all natural science."[11]

To be sure, Lind was hardly unique in his impulse to numerology. The significance of number in all the arts, including painting and music, has been claimed by writers since ancient times; and, of course, the number seven has itself figured prominently in the iconology of many cultures throughout the world. Combined with his appeal to natural phenomena, Lind's fascination with number may reflect his layperson's grasp of what has been called Romantic Science, by which basic principles of nature might be represented by (and, therefore, sought in) the spiritually-founded arts of man.[12] Indeed, one characteristic of Romantic Science, widespread during the early part of the 19th Century, was the tacit assumption that the natural world's structural order could be ultimately identified with accepted norms of religion, society, or aesthetics. Although an anachronism among scientists by 1894, the time of Lind's essay, this way of seeing the world had been an important part of the public discussion of science before 1860 – the years of Lind's education, apprenticeship, and maturation. *The Music of Color* attests, in part, to a persistence of this Romantic view of science among an otherwise educated professional class, even in the years leading up to the aesthetic revolutions of the early 20th Century. One may perceive, too, the foreshadowing of these concepts' wider revival in the visual arts both before and after World War I, especially among those movements connected with the trend towards painterly abstraction.[13]

03 **Analogy in Representation**

As presented in *The Music of Color,* Lind's strategy is to map the seven "natural" spectral colors upon the seven notes of the diatonic scale. But the full chromatic scale[14] consists of twelve notes, and so Lind expands his scheme to match more exactly the notation most common in Western music. To do so, he selects the intervals between six of the seven

[10] Michel Eugène Chevreul, *The Principles of Harmony and Contrast of Colours* (London: Longman, Brown, Green, and Longmans, 1855), 54 ff.

[11] Lind, op. cit., 2.

[12] Andrew Cunningham and Nicholas Jardine, eds., *Romanticism and the Sciences* (Cambridge: Cambridge University Press, 1990). In particular, see Elinor Shaffer's treatment of "Schelling and the Unity of Knowledge," in "Romantic Philosophy and the University of Berlin," 38-54.

[13] David Brett, "The Interpretation of Ornament," *Journal of Design History,* 2 (1988): 109.

[14] Lind leaves unmentioned the obvious connection between sound and vision embodied in the very term itself: *chromatic*. The word derives from the Greek word for "complexion": χρῶμα (*khrṓma*).

colors to correspond to the sharps and flats of the chromatic scale: red/orange, orange/yellow, green/blue, blue/indigo, and indigo/violet. Without explanation, Lind omits yellow/green.

His illustrations depict pedantically the correspondence. Bounded by lines, pen-drawn in black ink, each note is rendered in the simple water-color technique which Lind used for architectural renderings throughout his career [Figure 03].[15]

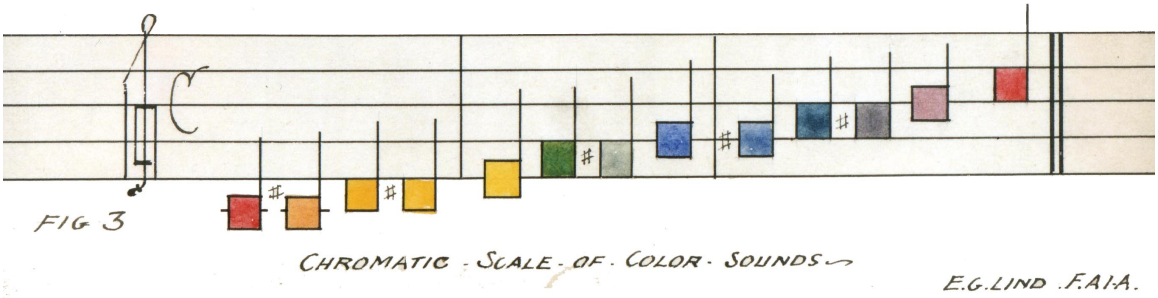

Figure 03 – "Chromatic Scale of Color Sounds," Plate 1, Fig. 3 from *The Music of Color*

A chart on the same plate follows this scheme to depict the visual effect of "harmony," as defined by each key's triad [Figure 04].

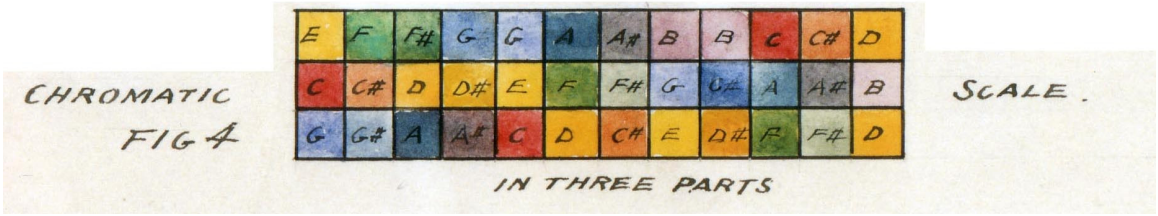

Figure 04 – "Chromatic Scale in Three Parts," Plate 1, Fig. 4 from *The Music of Color*

The multi-colored effect of this illustration anticipates the character of Lind's scores, the first of which simply mimics the graphic forms of stave-and-note notation. Lind's example [Figure 05] transposes the melody of a popular tune, and includes a simple harmony.

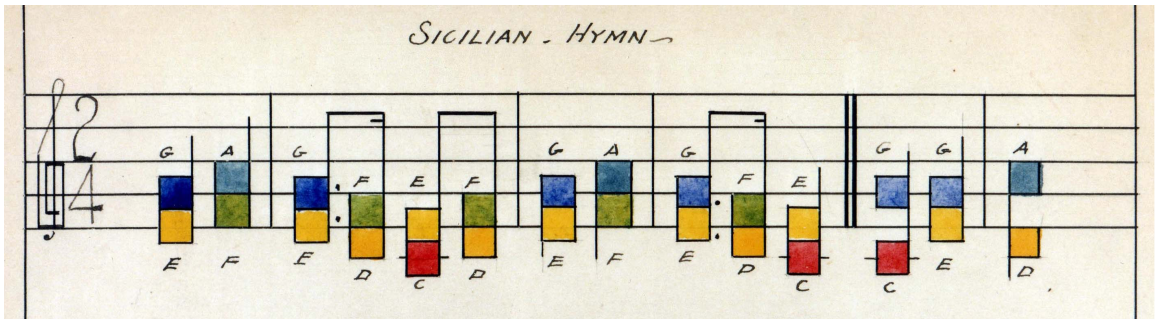

Figure 05 – Excerpt from "Sicilian Hymn," Plate 2, from *The Music of Color*

[15] Belfoure, op. cit., 5.

Lind immediately discards this notation for subsequent plates and instead invents a more graphically "efficient" scheme. As he writes, "the usual five bars are abandoned as no longer necessary, the color of the note indicating its sound, and the size its duration."[16] As shown in the previous example, he had already replaced the usual, elliptical note form with a rectilinear shape; and his revised method's representation of time's passage affords the remaining plates with a fascinating graphic texture [Figure 06]. Doing so imposes on the varying, colored elements a visual rhythm directly derived from the musical one, and the colors' variations therefore attempt to depict time-based transitions otherwise associated with only with hearing.[17]

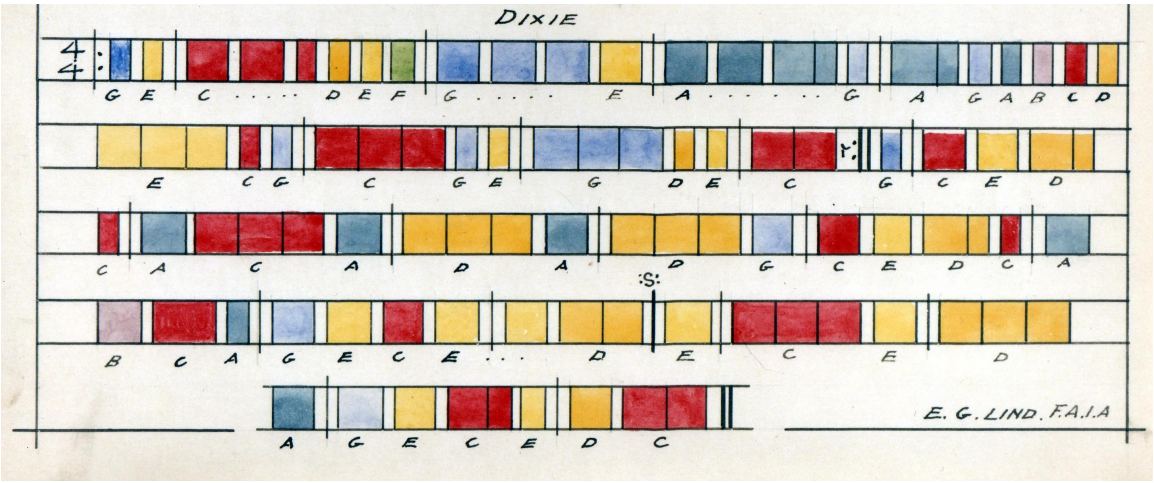

Figure 06 – "Dixie," Figure 2, Plate 3, from *The Music of Color*

Lind's method may be more properly described as impressionistic rather than synæsthetic. It is, for Lind, one sense's *representation* that corresponds to particular qualities in the other. Yet this correspondence should extend to those senses' affect, as well. As he writes,

> The two arts being so far in harmony as we have shown, it might be assumed that what would please the ear in one should please the eye in the other. If, then, a musical instrument could be so constructed as that when performed upon, colored sounds would be produced, we might expect lively tunes to emit bright colors, sad and minor tunes subdued and secondary colors and sympathetic music, colors of a like nature.[18]

[16] Lind, op. cit., 4.

[17] Critics of the music/color analogy often cited the issue of time and simultaneity, that is, the way in which music's changes through time could not be captured in the visual – yet static – structure of painting. Scientists such as Helmholtz pointed out, too, the failure of sight to match hearing's ability to account for multiple sounds at once, as in harmony. See Lynn Gamwell, *Exploring the Invisible,* (Princeton: Princeton University Press, 2002), 152-155.

[18] Lind, op. cit., 4.

The idea of an instrument to produce colored light with music reaches back at least to the 18th Century, when Louis-Bertrand Castel proposed his *Clavecin Oculaire* in 1769, at the suggestion of composer Jean-Philippe Rameau.[19] Closer to the time of Lind's essay, the American Bainbridge Bishop had received in 1877 a patent for a "Color Organ," which projected colored light on a screen set above a small, air-powered organ.[20] But the concept of a mechanical means by which to connect music with color is of concern to Lind only in passing; more importantly, the passage asserts clearly his belief in associations between color, music, and a person's affective states.

Lind also seeks to establish these associations with another, more spurious source. He writes, "The peculiar characteristics of different countries may be felt in their songs, and why not seen in their colors?"[21] (The emphasis in is the original.) The next twenty plates illustrate scores chosen to represent the music of different nationalities and ethnicities, among them England, Scotland, Ireland, and Wales; Russian, France, Austria, and Spain; Norway, Finland, Denmark, and Sweden; "four Negro plantation songs"; and "Eskimo" lands as well as China. Lind's commentary tends towards what one might expect of his class and times, which saw the construction of *de jure* segregation in Maryland and elsewhere in the South, yet which maintained a curiosity about exotic cultures. Lind writes, for example, that two plates "are devoted to the colored music of the colored race as particularly worthy of notice, being entirely unlike any other colored sounds in the whole collection."[22] [Figure 07]

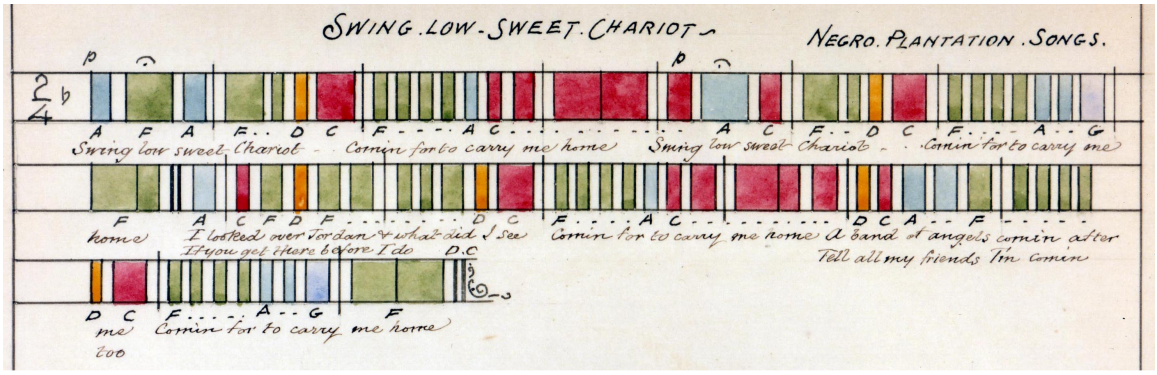

Figure 07 – "Swing Low, Sweet Chariot," Figure 1, Plate 23, from *The Music of Color*

Other examples explore unusual dimensions in the representation of sound. A score titled "Indian War Whoop" intersperses the color green with white spaces (pauses, in Lind's

[19] Wilton Mason, "Father Castel and His Color Clavicin," in *The Journal of Aesthetics and Art Criticism*, 1 (1958): 103-116

[20] Kenneth Peacock "Instruments to Perform Color-Music: Two Centuries of Technological Experimentation," in *Leonardo* 4 (1988): 401.

[21] Lind, op. cit., 4.

[22] Ibid., 5.

scheme) to portray what hardly conformed at the time to conventional ideas about music. Lind goes further still in his last two scores: "A Child's Wail," and "Brilliant End of Lawyer Spoke Stith's Address to the Jury" [Figure 08]. For the latter, to capture the effect of a speaker's slurred words, Lind combined the primaries red, yellow, and blue marks, resulting in a black tone. The use of highly-contrasting fields to evoke human speech's staccato-like rhythm affords these graphics with a unique color-character, evocative of a man "whose fiery eloquence has more than once entranced, if not horrified" Lind himself.[23]

Figure 08 – "A Child's Wail" and "Brilliant End of Lawyer Spoke Stith's Address to the Jury," Figures 2 & 3, Plate 24, from *The Music of Color*

To render Stith's speech, Lind expands the visual vocabulary of his scores. For pauses, Lind includes a blank field, although he includes too the traditional "rest" mark denoting an eighth of a measure. The rhythm of the ensemble is simpler than in the previous, musical examples; each "note" has been drawn in equal length, to denote a single, repetitive cadence. On the other hand, Lind introduces shading and gradation within some of the color fields, as though to represent the constantly-changing timbre of the speaker's voice. That multiple sounds might represent a single syllable appears here not as harmony but as a manner of speaking, like the accent of a local dialect. Two examples of red-fading-to-white suggest the decrease of sound's volume, a circumstance which had been previously omitted in Lind's treatment.

In the history of synæsthesia, few such examples exist which correlate color with spoken word. One writer has suggested a connection between Lind and Francis Galton's work concerning human development and "color-hearing" and later mentions Rimbaud's sonnet *Voyelles* (Vowels), dating to 1871, as an earlier point of reference.[24]
Both Galton and Rimbaud believed that it was sound that evoked color; Lind's aim in transcribing spoken speech is, conversely, to evoke the sensations of sound with his

[23] Lind, op. cit., 6.

[24] John Gage, *Color and Meaning,* (Berkeley: University of California Press, 1999), 263-265.

colorful, sight-based technique. He writes later that, "if, by means of seeing these colored sounds, a deaf mute can be made to understand something of the nature of music… a great good will have been accomplished."[25] The effect of transcribing speech also anticipates the efforts of those early Modernist artists influenced by Theosophy,[26] a pseudo-religious philosophy much in fashion at the end of the 19th Century and later. Painters like Kandinsky, Theo van Doesburg, and Piet Mondrian [Figure 09] all later sought to effect musical (and non-musical) synæsthetic experiences through their visual creations.[27]

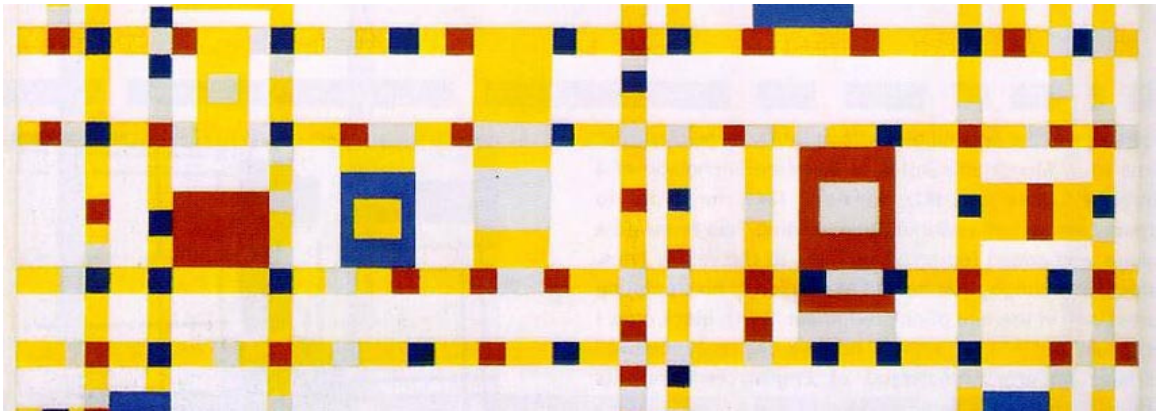

Figure 09 – Excerpt from Piet Mondrian, *Broadway Boogie Woogie,* 1942-1943.

The Theosophy-influenced composer, Alexander Scriabin, worked to bring together sound with colored light (projected by a mechanism similar to that already mentioned by Lind) in his Prometheus Symphony.[28] Besides providing a spiritual basis for belief in connections among the human mind, its products, and the wider universe, Theosophy provided a cosmology based significantly on number – particularly, yet perhaps only coincidentally, the number seven.

But the essential theme throughout *The Music of Color* is the teleology of Lind's latter-day Romanticism. His interest in the characteristics of different cultures leads to a study of the colors with which he might associate individual historical periods. "As a people advances in Civilization, so does it advance in artistic taste. No longer satisfied with the crude tones and colors of a ruder age, it seeks a higher plane, more complex, refined, and intellectual. The primary colors and sounds are supplemented by others more complicated and aesthetic."[29] Lind assigns each "higher" civilization a larger proportion of blue, indigo, and violet coloring. A chart displays this historical progress, and Lind's final

[25] Lind, op. cit., 7.

[26] Gage, *Color and Meaning,* op. cit., 267.

[27] See Judith Zilczer, " 'Color Music': Synaesthesia and Nineteenth-Century Sources for Abstract Art," *Artibus et Historiae,* 16 (1987): 101-126; see also Jerome Ashmore, "Kandinsky's Painting," *The Journal of Aesthetics and Art Criticism,* 3 (1977), 329-336;

[28] Vanechkina and Galeyev, " 'Prometheus': Scriabin + Kandinsky," *Leonardo*, 3 (1998): 183-184.

[29] Lind, op. cit., 5-6.

illustration evokes a kind of cartoon-like spirituality through the use of those "refined" colors [Figure 10].

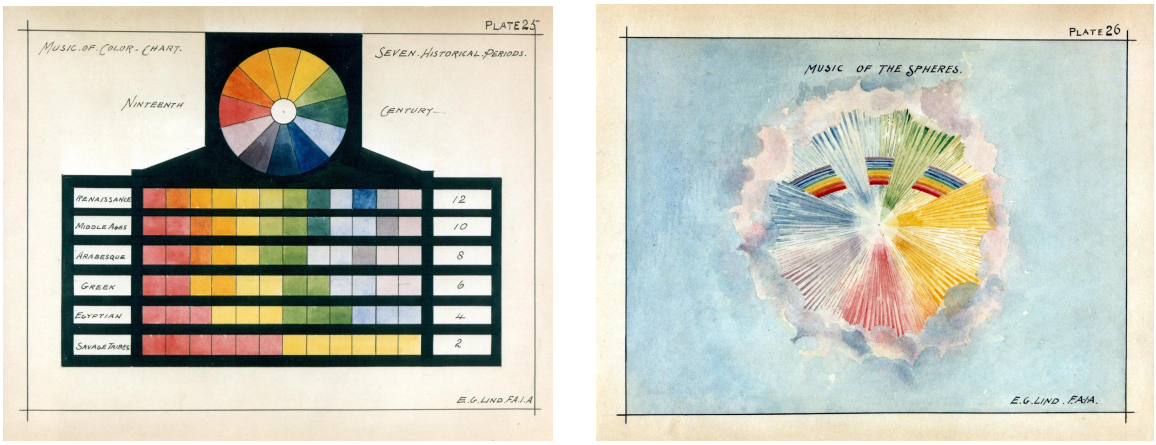

Figure 10 – "Seven Historical Periods," Plate 25 [Left] and "Music of the Spheres," Plate 26 [Right] from *The Music of Color*

With these final words and images, Lind connects color and music with architecture – "which as 'frozen Music' is fairly entitled to a place by the side of her two lovely sisters"[30] – in their lofty purpose as the "great civilizers of the world."

04 Published Precedents Cited in *The Music of Color*

Lind's essay shares little of the intellectual apparatus of academic writing. He includes no bibliography, and his description of others' work is mostly inexact. So Lind's explicit citation of two particular publications assumes, therefore, special significance. Surprisingly, these works approach both music and color from entirely opposite directions. The first, *Colour Music,* by D. D. Jameson, was published in 1844 and came to his title's topic with a rhetorical pedantry lacking in Lind's later essay. Jameson included a graphic treatment which anticipated Lind's representational method, and so Jameson's illustration of musical scores must be considered a direct precedent for Lind's. The second book, Lady Archibald Campbell's *Rainbow-Musick,* was published in 1886 and addressed the theme of its sub-title: "The Philosophy of Harmony in Colour-Grouping."[31] In fact, Lady Campbell's pamphlet is a critique of London's contemporary decorative fashions and promotes James McNeill Whistler's "Peacock Room" as the model of harmonious interior design. But as one of only two sources mentioned by Lind, *Rainbow-Musick* is mostly of interest as an instance of music's potential to depict color-compositions, and not *vice versa.*

[30] Lind, op. cit., 6.

[31] Lady Archibald Campbell, née Janey Sevilla Callander, *Rainbow Musick.* (London: Bernard Quaritch, 1886).

Of Jameson and his book's background, little is known.[32] The author states simply his purpose in writing *Colour Music*: he sought to make easier the playing of "sound-music" through his introduction of "colour-music" and "by substituting distinct and definite sensations, which, being the language of nature, are at once understood, for the arbitrary mnemonics in use."[33] The root of Jameson's argument was that the color-based analogy to music was intrinsically more immediate than graphic notation, which required an intellectual, and not "sensic," comprehension. By imposing his color scheme on the playing of instruments and by providing a light-based experience along with the resulting sounds, musical practice and appreciation would be more efficiently facilitated.

Jameson proposed that colored paper be applied to a piano's keyboard [Figure 11]:

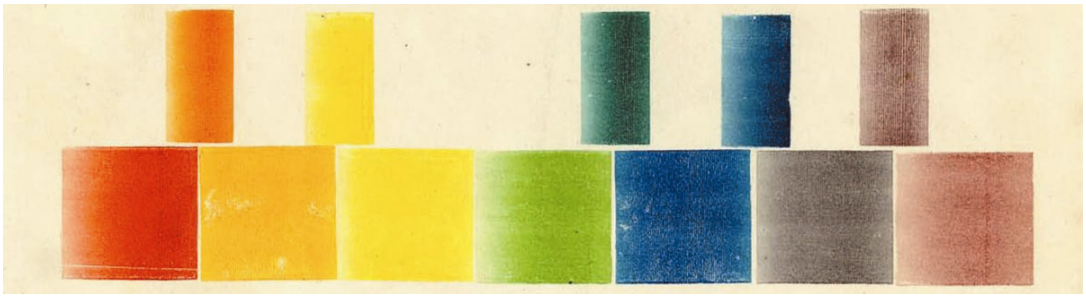

Figure 11 – D. D. Jameson: "Preparation of Instruments [keys of the common piano-forte]," title page from *Colour-Music.*

Jameson's rubric is, note-for-note (or, rather, note-for-color), the same as Lind's. And, like Lind, Jameson believed that the visual transcription of melodies and harmonies could describe the correspondences. In his view, the relationship between these colors and the notes of the scale was a "natural" analogy, such a transcription so would be easier to grasp for novices than would the "artificial mnemonics" posed by traditional music notation.[34] Rectangular bars of color represented notes, and these bars' length would correspond to time value. Harmony would be represented by the vertical stacking of the color bars, with notes of higher octaves arranged above similar notes in a lower register. [See Figures 12 & 13].

Jameson believed, too, that one could perceive the *quality* of music through the visual quality of a score depicted by his technique. He was realistic, however, about the experiential limits of notation itself: "It should not however be supposed, that the mere notation can produce, except in a very low degree, the sensations resulting from the performance [footnote: "Sensic Effect"] of colour-music."[35] The performance itself would require a color projector, a mechanism of some complexity:

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[32] Jameson published another pamphlet (in 1844, the same year as *Colour Music*), titled *Practical Measures,* a wide-ranging screed about English domestic policies, including taxation, emigration, and education.

[33] D. D. Jameson, *Colour Music* (London: Smith, Elder, & Co.,1844), 2.

[34] Jameson, op. cit., 13.

[35] Jameson, op. cit., 15.

> Apparatus for colorific exhibition. – A dark chamber, lined with bright tin plates; 12 round apertures in the wall, holding glass globes, [footnote: "The bottles seen in the windows of druggists' shops can be used for this purpose."] containing translucent liquids of the prismatic colours, and their semitonic intermediates; lamps on the outsides of the bottles, mobile opaque covers on the insides. A piano-forte, with its keys connected to these covers; with power to elevate them, on percussion of the keys, to heights proportionate to the vibrative extent of their respective octaves.[36]

It is unlikely that Jameson ever constructed his apparatus. Like Castel's earlier *Clavecin Oculaire,* such an instrument's rising and falling baffles would probably have required a mechanical precision beyond Jameson's means; furthermore, sources of illumination would likely have proved insufficient before the advent of electric lighting.

For illustration, Jameson – again, like Lind – provided a number of musical scores for consideration [Figure 12]. Rather than the art-music of composers like contemporaries Liszt or Chopin., songs in *Colour-Music* included "See the Conquering Hero Comes," "Highland Laddie," and "Gentle Zitella," each a song popular in London throughout the years leading up to Jameson's essay. The bizarre choice of T. D. Rice's proto-minstrel song "Jim Crow," as popular in Europe as in the United States throughout the 1840's, anticipated Lind's belief in a unique color palette for the music derived from Africa or from other places [Figure 13].

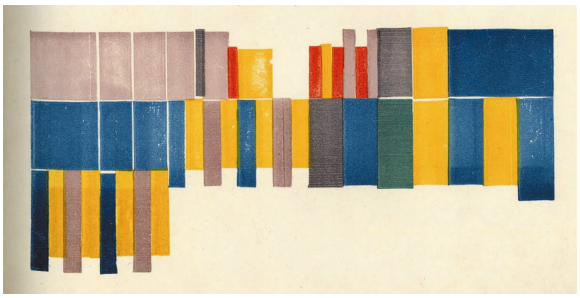

Figure 12 – D. D. Jameson: "Di Tanti Palpiti," second illustration from *Colour-Music.*

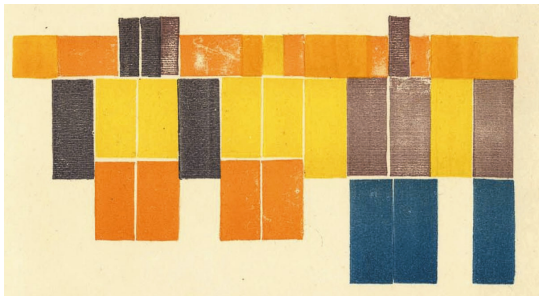

Figure 13 – D. D. Jameson: "Jim Crow," third illustration from *Colour-Music.*

Lind's second acknowledged source, Lady Archibald Campbell's *Rainbow-Musick,* stemmed from an entirely different sensibility. Written more than four decades after Jameson's book, *Rainbow-Musick* evoked self-consciously the culture of refinement sought by educated patrons of the fine and applied arts. Lady Campbell was both client and subject of several artists, of whom Whistler remains the best known today. And it was Whistler whose ideas affected Lady Campbell most directly. Whistler's celebrated use of musical references in the titles (if not the conception) of his paintings was based on idiosyncratic views concerning "tonal harmony," derived in principle from his encounter

[36] Jameson, op. cit., 11.

with the ideas of French writers such as Baudelaire and Théophile Gautier.[37] Their notion was that – following Diderot's original art criticism – one's experience of a medium might be usefully transposed to another through the application of both critical and creative methods.[38] And although Whistler's first application of the term "nocturne," for instance, had been suggested by Frederick Leyland only as late as 1872, the artist's enthusiastic adoption of such references became a matter of artistic principle: "As music is the poetry of sound, so is painting the poetry of sight, and the subject-matter has nothing to do with harmony of sound or of colour."[39]

The extension of Whistler's painterly temperament from canvas to the walls of galleries and domestic interiors was the immediate inspiration for Lady Campbell's book. To begin her essay, she decried the lack of coherence among so many of the architectural environments of her time. Touching upon a key Romantic theme, she believed that "Unity" was the expressive ideal of any work of art. Yet, "[h]ow few results are there in room-decoration that can be described as possessing either Unity or Harmony. Indeed, to sit in certain… rooms… 'is like sitting in a kaleidoscope.'"[40] Whistler's Peacock Room was, for Lady Campbell, a reproach to such visual chaos:

> The artist has here translated his subject in scientific method by counterchange of these two colours, that of the device and that of the field – *gold on blue, blue on gold* [emphasis in the original]… It is, in other words, contrapuntal painting, for under infinite changes, the air, or theme, pervades the whole composition. In the grand result we see enforced under the crown of Unity the laws of permutation, combination, variation. The artist himself describes it as a harmony in Blue and Gold.

Lady Campbell's next step was to describe extensively, in writing, a different interior color scheme for what she calls the "Iris Parlour." Her motifs were the iris ("in every tint of amethyst, pearl-grey, blue, pink, and white…") and the sea shell ("golden pink… amethyst, fading to pearl-grey, sea-green…").[41] Using language cribbed directly from Jameson, whom she cites approvingly, Lady Campbell then ascribed to here chosen colors their musical equivalents. She subsequently anticipates her readers' question, " 'In what key are you playing?' According to the Castel scale, clearly in the key of B minor."[42] So, just as Lind would represent music by a visual score of rhythmic color,

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[37] Horace Gregory, *The World of James McNeill Whistler* (New York: Thomas Nelson & Sons, 1959), 60ff.

[38] Alexandra K. Wettlaufer, *In the Mind's Eye: The Visual Impulse in Diderot, Baudelaire and Ruskin* (Editions Rodopi, 2003).

[39] James McNeill Whistler, *The Gentle Art of Making Enemies* (New York: Dover, 1967), 127.

[40] Lady Campbell, op. cit., 5. The reference to a kaleidoscope is itself not without significance in the history of the analogy between sight and sound. The instrument's inventor, Sir David Brewster, proposed an art-form based on the movement of color, the kinetic character of which would match music's dynamic range. See Gombrich, op. cit., 149 and 305.

[41] Ibid., 17.

[42] Lady Campbell, op. cit., 30.

Lady Campbell proceeded to set her color-based creation to a score of instrumental music. She wrote that words from Tennyson's *Becket* were especially fitting, and so her score bears the poet's verse as lyric to her melody: "Rainbow, stay! Gleam upon gloom, Bright as my dream – Rainbow, stay!"[43]

Although critics found her language (and her musical composition) an easy target for lampoon,[44] Lady Campbell's purpose in creating a musical transcription for her colorful interior design was more didactic than aesthetic. She had sought to make use of music's mathematics-like structure to demonstrate her palette's aesthetic purpose – to clarify, to use her own words, its *dénouement* as a consequence of structure, grammar, and law. What Lind took from her essay may have derived more from the mere example of a music/color analogy than from the substance of her scheme. But, *pace* Jameson, the willingness of both Lind and Lady Campbell to widen the significance of color's analogy to music suggests similarly wide-reaching roots. In Lind's case, those roots extend clearly through the trajectory of his education, set among very public discussions about the role of representation and analogy in Art.

05 Color and Music among Educators at the Government School of Design

Lind came to the United States only at the end of 1855, at the age of twenty-six. By the time of his immigration, he had successfully apprenticed for the English architect John Blore and had worked for others in London and in Sheffield. Even before his pupilage, Lind had enrolled at the Government School of Design (GSD), also known as "Somerset House" for the complex of government buildings occupied in part by GSD activities. Lind took courses in drawing, rendering, and in theoretical topics related to the visual arts during the years 1847 to 1854, by which time he had left London for Sheffield.

The GSD had been founded only a decade earlier, in 1837, to promote the quality of England's domestic manufactured goods. Now known as the Royal College of Art, its mission at that time remains expressed in its recent charter "to advance learning, knowledge and professional competence … in the principles and practice of art and design in their relation to industrial and commercial processes and social developments …"[45] The charge to educate a new class of artisans – working at the intersection between the traditional "fine" arts and newly-mechanized material methods – drew the attention of Lind's contemporaries, including artists and critics alike. Within only a few years of its founding, GSD's educational methods attracted calls to reform not only the institution's pedagogy but also its implicit theoretical basis.

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[43] Ibid.

[44] One example, culled from the musical press, is "Rainbow Musick by Lady Archibald Campbell ," in *The Musical Times and Singing Class Circular,* 524 (October 1, 1886): 610.

[45] Royal College of Art, "College Mission," http://www.rca.ac.uk/Default.aspx?ContentID=160462, (accessed Feburary 26, 2010).

At the time of Lind's enrollment, the Government School of Design had hired many of the leading reformers. Among the most prominent was Richard Redgrave, who began his tenure at the GSD in 1847, the year Lind began his studies there. [46] Others included the designer Owen Jones and the painter John Calcott Horsley, remembered today as the illustrator of the first Christmas card. Besides their practical concern to demonstrate appropriate techniques in a variety of media, the gist of the reformers' proposals had to do with the ethos of representation, by which decorative art's proper subject was to be sought beyond the mere imitation of Nature's appearances. To do so would be achieved, in part, by what was later termed "conventionalization," an aesthetic process by which the abstract structure of natural forms would be emphasized graphically, in favor of their direct, literal forms.[47]

In addition to an idealized approach to form and ornament, the reformers identified a similar "ideal" for their students' understanding of color: musical harmony. Redgrave and Horsley taught explicitly the analogy between color and music, derived primarily from the work of George Field and his theories about "harmonic genera" [Figure 14].

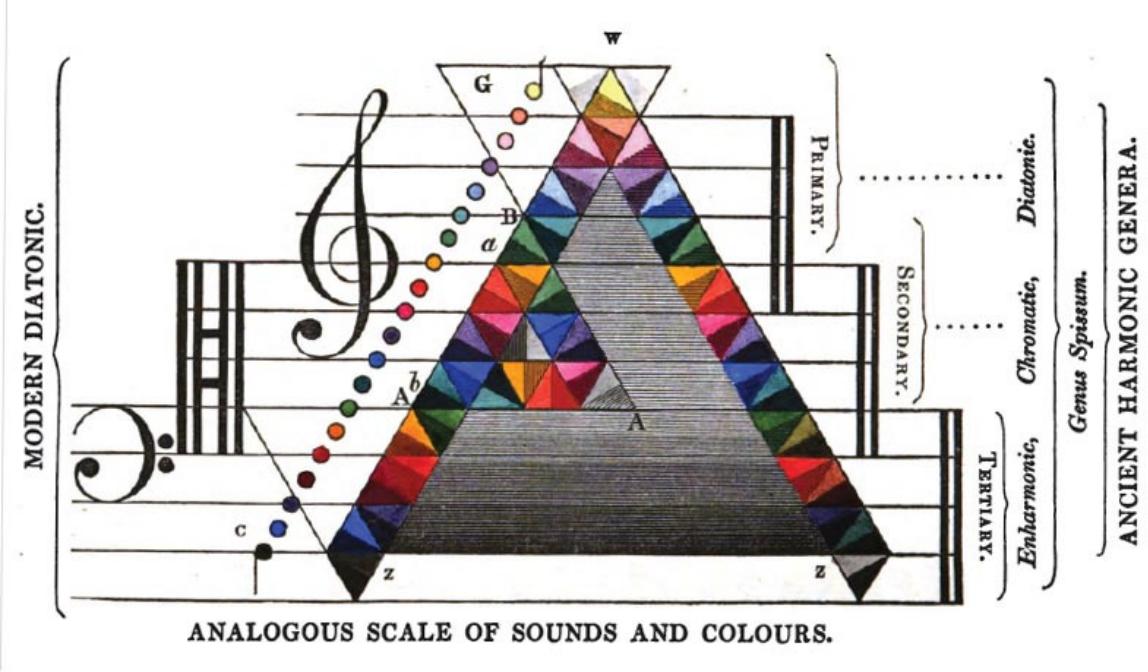

Figure 14 – George Field: Example XXIII, from *Chromatics; or, An Essay on the Analogy and Harmony of Colours*, p. 79.

Field, whose interest in color theory emerged from the manufacture of pigments, is remembered today for his extensive writing about color and for his influence upon the generation of English artists following his work throughout the first decades of the

[46] Anthony Burton, "Richard Redgrave as Art Educator, Museum Official and Design Theorist," in Suscan Casteras and Ronald Parkinson, eds. *Richard Redgrave 1804-1888* (New Haven: Yale University Press, 1988), 49.

[47] Christopher Dresser, *The Art of Decorative Design* (New York: Garland Publishing, Inc., 1977), 37-38. [Reprint of 1862 Edition]

nineteenth century.[48] Field's fabrication of superb pigments was acclaimed, and so his direct experience with color media afforded his theories with considerable authority among painters and other artists. But his writing about color was, nevertheless, permeated with an essentially religious belief in the importance of triads in Nature, visible (for example) in the tripartite hierarchy of primary colors. Field's published works provided extensive illustration of these "harmonic" relationships, in which color's analogy to music was explicit. The genres of painting, for example, were to have derived their particular color palettes from musical phrases of the appropriate mood.[49]

In the diary that Lind kept throughout the years of his education at Somerset House, he describes his initial encounter – through Horsley – with Field's ideas:

> Attended lecture at school by Mr. Horsley on Color. He said color was of three kinds, Primary, Secondary and Tertiary. They were arranged similar to Music in a chromatic scale. Blue, red and yellow, being considered the common chord. These colors being mixed form other colors, till the scale is complete.[50]

These and similar concepts permeated discussions of color and ornament promoted by the reform-minded teachers at the Government School of Design. In 1853, Redgrave published a book titled *An Elementary Manual of Colour,* to which the author himself referred as a "catechism." The book reprised Field's theories and promoted "the assumption that modern science had sanctioned an art of pure color..."[51] Owen Jones, too, in his 1852 address titled *True and the False in the Decorative Arts,* made extensive reference to Field and included the musical property of "harmony" in his unifying proposition that "Architecture, and all works of the Decorative Arts, should possess fitness, proportion, harmony; the result of which is repose."[52] One consequence of such an all-embracing principle was the extension of the musical analogy, conceived originally for color, to graphic and three-dimensional forms. Ralph Wornum, whose lectures on ornamental style Lind attended as early as January 1850, wrote in his *Analysis of Ornament* that "the analogy between music and ornament [is] perfect: one is to the eye what the other is to the ear…"[53] Even the process of "conventionalizing" natural forms was seen to be potentially expressive of musical laws as well. The designer Christopher

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[48] Gage, *Color and Culture,* op. cit., 215-216.

[49] George Field, *Chromatics; or, An Essay on the Analogy and Harmony of Colours*, 69ff. Of particular relevance to Lind's *Music of Color* is Field's assertion that traditional modes of music (drawn from among different nationalities) corresponded to a color scheme held in common – in contrast to Lind's observation more than fifty years later. See Field, 82.

[50] Edmund Lind, *Diary of Edmund George Lind,* (Private collection), entry for Friday 21 January 1848.

[51] Barbara Whitney Keyser, "Science and sensibility: Chemistry and the Aesthetics of Color in the Early Nineteenth Century," *Color Research & Application,* 3 (1996): 177.

[52] Owen Jones, *On the Truth and the False in the Decorative Arts* (London: Strangeways and Walden, 1863), 16.

[53] Ralph Wornum, *Analysis of Ornament* (London: Chapman & Hall, Limited, 1884), 26.

Dresser, a graduate of London's GSD and an exact contemporary there of Lind's, included an appeal for the theoretical Unity among the arts in his own published essay, *The Art of Decorative Design.* Between chapters about "grades of decorative art" and "analysis of ornamental form, Dresser adapted his method of conventional drawing – intended originally for botanical forms! – to the illustration of musical scores [Figure 15].

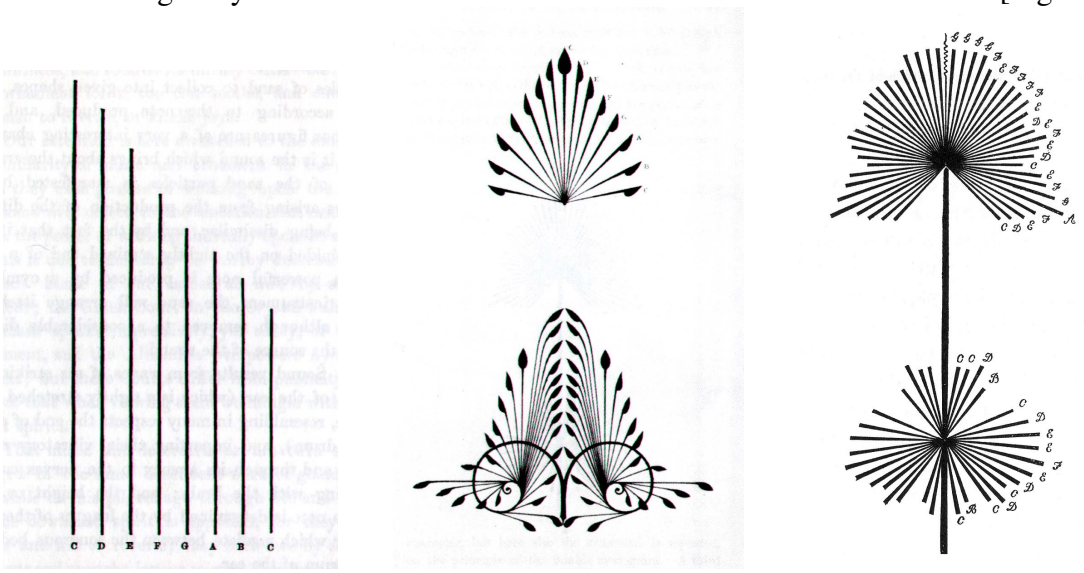

Figure 15 – Christopher Dresser: Figure 7; Plate IV; and Figure 8, pages 46- 47; from *The Art of Decorative Design.*
The right-most diagram is meant to represent "God Save the Queen"; compare with Lind's score for the same melody [Figure 01].

At the core of Dresser's message was the reform-minded educator's conviction that the arts of all media derived from essential principles, observable in Nature. In the hands of an appropriately-trained artist, the application of these principles would spur innovation and prosperity, both for the artist and for the society at large.

06 Conclusion: The Representation of "Conventional" Synæsthesia

Writing fifty years after his education at the Government School of Design, Edmund Lind makes no direct reference to the influence of Redgrave, Horsley, or even of Field. Lind's *The Music of Color* acknowledges that "there is nothing new under the sun"[54] but takes little care to consider those sources most obviously present in its author's biography. Lind does pause to ask, ultimately, " 'Cui bone?' What good will it do? Of what use is all this"[55] And one may sense something of his life in the narrow scope of his answer, which speaks with sympathy of allowing the deaf to hear and the blind to see through their experience of either color or music.

Yet the bathos of Lind's own response is realistic and points, nevertheless, towards a tentative reassessment of trends quite removed from the life of a retired, Baltimore-based

[54] Lind, *The Music of Color,* op. cit., 1.

[55] Ibid., 7.

architect in the 1890's. Lind's personal milieu at the end of his life, living with his married daughter in Virginia and Delaware, appears parochial; but the original context of his ideas was not. Many writers have suggested that the movement towards painterly abstraction at the turn of the 20th Century had its origin, in some part, in the debate over conventionalized (and increasingly abstract) form half-a-century before.[56] Others have suggested alternative influences, including developments in purely musical theories or else the synæsthesia implied in Whistler's debates about painting. Lines of influences, of course, extend through many other cultures of Continental Europe, Asia, and Africa. But what Lind's example suggests is that what has been identified as *synæsthetic* may be, instead, something else: the transformative experience of the representational act. For Lind, the "music of color" was not the strongly affective experience of one sense in the other; rather, Lind sought to explore the similarities in otherwise different affective states. Whereas synæsthesia is intensely subjective and depends entirely on the unique circumstances of an individual's experience, representation is extroverted, and founded in the possibility of communication – and communion. Such an implicit, *ethical* basis for work among the otherwise *visual* arts is echoed by the final words in Lind's essay, which describe his hope that "a great good will have been accomplished and a new pleasure added."[57]

07 Acknowledgements

The author would like to thank Charles Belfoure, Architect, for his making available his copy of the transcript of Lind's diaries, and Scott Laird, Lind's great-grandson, for information about those diaries provenance.

[56] Barbara Whitney Keyser, "Ornament as Idea: Indirect Imitation of Nature in the Design Reform Movement," in *Journal of Design History*, 2 (1998): 140.

[57] Lind, *The Music of Color,* op. cit., 7.

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