<table>
<thead>
<tr>
<th></th>
<th>Light</th>
<th>Dark</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>Red</td>
<td>41 42</td>
<td>90</td>
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<tr>
<td>Green</td>
<td>35</td>
<td>99</td>
<td></td>
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<tr>
<td>Yellow</td>
<td>41 41</td>
<td>50</td>
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</tr>
<tr>
<td>Blue</td>
<td>35</td>
<td>51</td>
<td></td>
</tr>
</tbody>
</table>

Samples furnished 11.13 - Jan. 7.
Feb 26, 1904.

Dear Munsell:

Grippe laid me low - hence silence and absence from your color talks -

I enclose my figures on the color blind men - they were all blind in reds and greens.

Sincerely yrs,

(Signed) Allen Cleghorn.

Apr. 27, 1902.

Dear Mr. Munsell,

I read your card re Lumenometer, yesterday - Of course you can have it - I want to talk to you - I have had four "red-green" blinds in it and they read red and green to beat the band - But they all find blue difficult - I will be in the laboratory about 11 on Monday morning.

Thine

(Signed) Allen Cleghorn
"The length of lines represents the number of units of color sensation contained in them.

1. Hue proceeds clockwise from Red
2. Chroma is radial distance from Gray
3. Value is distance on curve toward black and white

Is CHROMA to be measured perpendicularly to WB-? or radially from G?

a. complement of Y
b. " R
c. " G
d. " P

Mr. Briggs' diagram of cross-section of all colors of value = neutral gray

See Church - p.80 - who quotes Rood, p.1146
Questions - Is there an accurate basis for color (as in chemistry)? Will the enamels prove safe and adequate? Will it help artists and designers? Would like to write 1500 word article for the Studio Magazine.

Mar 4
Donald Tucker of Chestnut Hill on train and at studio - asks about Slipper type (boat) -----(description of model of boat)

Area and disposition of color elements conspire to give a "tone" - to pictorial effects.

Mar 7
Mr. Gilman at studio - to see portrait. Wants a color tree as coloristic as possible. (Strongest chromas obtainable)
?Herring - A local color sensation (as strong red) "Draws away from the surrounding parts of retina."

Mar 17
Mr. Pritchard sees new parts of Chap.I-
Discusses (lunch at Parkers'!) A Manual - $1 (cost .23
An Atlas locked in Case - $50 Or .24)

Mar 18
Mr. Jenkins describes make-up of a book.
Signatures (12,16,24 fold, etc) and where color must fall to be on same side of sheet-
End-paper, fly leaves, frontispiece, title,
dedication, half-title, contents, illustration -
Chapt.I. - 16 point type - paper 60 lbs to ream
(500 pages) 80 leaves in book.

Apr 8
Prof. Dolbear calls - sees my portrait - Sees set of charts, and Notation - Discusses terms - wave length, amplitude and complexity, - suggests a picture of the waves.

Energy as square of their height -
2 times as high - 4 times the energy-
One wave retarded one-half can destroy the next.
Show him attachment to photometer for reading candle powers.

Does not think Chevreul's charts of much value. Thinks Rood's book brings in too much for the patience of the ordinary student.

Says I may furnish a track across what is now a desert between practical and scientific color work.
Apr 8  P.M.  Left samples with Miss Chaffee - 1:0 Boylston St.  - to be made in enamel on white metal - and fitted in a circle - $2.00

Apr 13  2:30-4:30 Mr. Pritchard, Mr. Lord, and Mr. Chapin (Scribners). Latter sees system for first time. (Pritchard saw it first in 1900).

1 First asks about the Color Tree (seen in studio corner.)
I describe extremes of light and color

\[
\begin{align*}
\text{white} & \quad \text{visual limits of chroma} \\
\text{black} & \quad \text{sensation}
\end{align*}
\]

Then show 3 small color spheres - one sectioned to show inside colors.

2 Then asks how interior color is displayed -
Exhibit set of small charts
Explain Three Scales: - HUE, VALUE, CHROMA
Show two large charts - 30° and 60°
and masks to group colors.

3 Asks how fading can be avoided.
Show "Tuning Fork" and describe enamels.
Tell Quantitative test of Fading - for Prof. Gill (M.I.T.)
Brilliant Green changes 30°-20 and 2 steps of Hue in three weeks.

4 Asks how Values are determined.
Show Photometer - We all measure grays and black.
Asks if it is on the market -
" " " patented.

5 Discusses Imperfect state of 3 color work -
Is attempting to suggest color now, rather than strong effects.
Tells of Maxfield Parrish's schemes.
" " Jay Hambridge's curves.
Thinks G---- (expert lithog) should try one of my charts - May need a separate stone for each line of color.

Apr 18  At Bancroft's studio - 155 West 51st - N.Y.
Describe progress of system, notation, and enamels.

19 Go with Mr. Chapin to studio of Jay Hambridge
137 West 31st - See his Parthenon diagram.
Simple methods of proportion for stone cutter necessary - Ratios alone can measure the Parthenon.
\[\Delta\]
These the basis of architectural proportions. Ratio of AX:KY
Ivos a series of inscribed squares, which make every mass & detail of the P. commensurate.

114
Apr 20
At Scribners, 157 Fifth Ave.
Mr. Chapin introduces me to Mr. Burlingame-
who discusses color effects, - artists' preferences,
etc. - Sees my charts and little sphere -
Lunch with Mr. Chapin and Mr. Lord at Hoffman House.

<table>
<thead>
<tr>
<th>Vanishing distances with white at 9100 feet</th>
<th>Yellow</th>
<th>Green</th>
<th>Red</th>
<th>Blue</th>
</tr>
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<tbody>
<tr>
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<td>.560</td>
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<td></td>
<td>528</td>
<td>350</td>
<td>148</td>
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</tbody>
</table>

M's photometric reading (daylight)

<table>
<thead>
<tr>
<th></th>
<th>Yellow</th>
<th>Green</th>
<th>Red</th>
<th>Blue</th>
</tr>
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<tbody>
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<td>.34</td>
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<td>76</td>
<td>30</td>
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</tbody>
</table>
(Pages 69 through 78 are missing from notebook)

(On page 79 there is a newspaper clipping which speaks of Albert Lavignac's "Music and Musicians". This book is divided into five parts, viz: "A Study of Musical Sound," "The Materials of Sound," "Grammar of Music," "Esthetics," and "History of the Art of Music." It was this that suggested the names "Grammar of Color" "Esthetics" "Materials" "

Page 79b consists of a record of photometric readings.

On Page 79 there appears the following note:

"See 'Nature' for March 1901 - Abstract of lectures on color at Royal Institute."

Page 791 consists of the diagram on the next page.

End of Book II
Same disc in color
reverses gradation

Gray disc -to graduate chroma
built by geometric areas.

- no lighter
only grayer)less chroma

CHROMA
relative grayness
(distance out from neutral axis)

Methods of determination

I. Union with compl. to
form gray, inversely
as areas of discs.

II. Least perceptible addi-
( or subtraction )

III. Radius as a scale of C.

On acct. $1.00

\[
\begin{array}{cccc}
10 & 9 & 8 & 7 \\
\end{array}
\]
BOOK III

May 2 1904
Mrs. J. H. Chapin (Scribner & Co) at studio
and to lunch at Berkely Cafe - meeting Prentz,
Sawyer, Hardy, Coffin and Francis. Asks about
individual bias in photometric and chromatic
readings. Asks about graying of a color -
if lightening is involved. Show him charts again:
to illustrate one flat level of value.
His color printer - Grisard - says he can print
the charts - only is in doubt just how many stones
may be needed.

May 12
With Mr. Pritchard at Homeopathic Hospital.
Show him enamel disc of 5 middle colors -
Discusses a simple teachers' handbook arranged
for Primary and Grammar Schools - "The Munsell
Color System."

Primary 1 Names - examples found all about us - Hue & Value
2 Review and expansion - Chroma
3 " " "
Grammar 4 Scales of Color - Selection by name. To know a color.
5 Matching colors -
6 " "
7 Complements - Enhancing color -
8 " "
9 " "

May 16
Mr. Lyon at studio to help on new charts - 9-5:30
Vertical Sections - 10 - around neutral axis -
1 Establish maxima of light scale) for each
" " chroma " ) p.
2 Grade to neutrality from each maxima.
3 Test by photometer.
4 " chroma top.

May 18 12:30-1:30 At Mr. Pritchard's ward in Homeo. Hospital. 2.
Discuss Color in Primary Schools -
1st year
Names - already learned in kindergarten
Red, Yellow, Green, Blue, Purple.

ten lessons with five colors - one each month
Order of names - by stringing on a wire.
Sensation matched by worsteds & papers
fixed in the mind, through the eye rather than through
the ear.

2nd year 2 Spheres to convey solid notions of color
3 qualities - Hue
10 lessons with
10 colors
Double the number of colors,
White and Black as limits of Value.
Strong color & gray as limits of Chroma.

150
Shut down cir. by diaphragms.

Curve of areas.
3rd year Review - and fixing of solid idea of color
1. Names (10)
2. Order
3. Light
4. Strength
5. Minglings

May 18 Mr. Lyon 2:15 - 5:30
Pd. §2. on account

May 27 At Institute - Room 16 - Mr. Drisco and Mr. Swan. Used spectroscopic in sunlight - extremes of slit-
(wide open - shut) to study change of color dispersion. This results from impurity (over-
lapping of spectra as slit widens) - Used Diffraction (Apfel-Murdock - Chicago)
Query - Ought NOT this to be studied by a variable source, not by a variable slit?
Mr. Swan suggests superposed spectra.

June 1 Miss Fiske calls to ask permission to use the color sphere - in a course of lessons at the Ind. and Educational Union on beth dressmaking
Suggest waiting for book issue.

June 3 Louis G. Monte and Mr. Nelson at studio.
Show small set (glazed) charts - photometer, and vertical set.
Mr. M. questions personal equation in color estimates
   standard of white
   possibility of printing colors
   twice alike
   loss of terms "orange" - and violet.

June 8 Miss Jennie C. Peterson - at studio - to arrange course of color study for Boston Schools.

COLOR SENSATIONS

1st grade HUES of colors. Recognize five principal colors - Red, Yellow, Green, Blue, and Purple.
a. matching of Hues
b. recognition of difference of hue
c. naming hues.
d. order of hues
e. expression of sensations by 5 crayons

(20 minutes per week - circle of five hues, colored sticks, papers and crayons to match -)

154
2nd year VALUES of each hue
   a. Review with intermediate hues named YR-CY-BC-PB-RP
   b. 3 values of a hue- 1, middle; 2, lighter; 3, darker;
c. matching 3 values
d. expression of these sensations of VALUE by crayons and pencil

3rd grade VALUES in different hues.

4th " CHROMA - scale of chroma

5th " SPHERE - uniting HUE, VALUE, and CHROMA.
       all preceding material specially
devised to build up the color solid-
five colors taken from surface of sphere
       made in sticks, papers, crayons-

(Mr. Pritchard advises a simple preliminary state-
ment - addressed to the primary grades - but out-
lining the entire course so that each teacher
sees where her work fits into the scheme.
Pamphlet, 50 p. - linotype - 200 copies - $30. )
"The Camel's Nose."

June 10 Miss Peterson at studio - Mr. Pritchard comes at 12:30.
Discuss course of study and new Prang book - 5th year-
Accept five central enamels as typical -(After re-
jecting present colors)
Mr. P. advises beginning in primary and grammar
grades at once - materials can be had if Masters
want them.
Talk with Mr. Conly - Find some town nearby to
introduce it - (Milton, Quincy, Wa---)
If a normal school takes it, it must be accepted.

June 12 10:15-1 Miss Peterson at studio.
Discussing plan for color in nine grades.
1 Hue       5 principals
2 Hue and Value 5 intermediates - 3 Vs. of each
3 Value       3 values of interm.-and compound in
4 Value and Chroma 3 chromas of 5 principal hues.
5 Chroma       " " " intermediates
6 Balance      " Of Value
7 " & Rythm    " Hue and Value
8 " " " " Value & Chroma
9 " " " " " " " Value

155
June 13

Mr. J. Fred Hopkins and Miss Peterson. Discuss course of study and materials - work to begin in February-

Grade 1) 20 lessons of 20 m. ) to precede
2) 3 12 " " 30 m. ) work in
4) ) design
7) 8 " " 45 m. )

Recognition of Colors.
1. Hue rhythm in 5 steps.
2. " " " 10 "
3. Value " " 3 " of 5 hues.
4. " " " 10 "
5. Chroma " " " 5 "
6. " " " 10 "

Application of colors recognized
6. Balance of Hue
7. " " Value
8. " " Chroma
9. " " Hue, Value and Chroma
(Note of colors)

Principal Hues, made in paper (Forbes Lith. Co. Chelsea) and " crayon(Geo. Reed-Dixon Co. Jersey City)

Course of 20 lessons.

1 (Assigning like colors - are they alike? can you find any other like it - let us make 5 piles of colors. (paper included)

3
4 (Finding individual color - Bring me all the things and naming them like this in color.
5
6
7
8- Find for me the red, yellow, green, blue & purple.
9
10
11 (Can you make this color with a crayon, - red, etc.
12
13
14 (Recognition of likeness in the differences - Expresses this with crayon (which color is most like red, - which is least?)
15

June 15 Miss Peterson - 8:30-10:30 Discussed rainbow, prism, iridescence - Showed my color-top.
Rewrote lessons for 1st and 2nd grades.
Went to see Jap. prints at Kobashi's.
Miss P. says I ought to have a good profit on the materials
as the book would not pay. How to control this, and yet
not go into the business? Mr. Doherty could suggest ways
and means.

June 15 Mr. Gilman sees new vertical charts - and model
of equal color steps.
"A new purpose - ideal instead of real."
His theory of ease - "the continuation of a habit
already formed. This is a special case of visual
ease.

Equal color steps (equal hue steps)
" value " (equal degrees
" chroma " ) of color difference

This new departure - is a change from the indicative
to the imperative. (is to shall be)

June 20 Miss Peterson - later Mr. Swan and Joe Decamp -
Review plan of 20 lessons - debate "middle value"
white light------darkness
white paint black paint
Mr. Swan (Tech) sees H & V sets of charts and sphere
(also Decamp) Discusses "purity" of color -
Suggests variable arm to carry source of light
back and forth instead of a variable source (because
latter would change color with degree of intensity.)

Decamp quotes Rood and the Impressionists.

Sept 19 Called with Mr. Pritchard on Miss Peterson,
112 Newbury - and left MaS for her to read.
(Tel. 2167 & Back Bay)

22 Mr. C. C. Birchard - shows me the new Prang books
and wishes to take lessons in color - Suggests that
together we might get out some text books.
I ask if Prang has not pre-empted the field? Says
the appetite is always ready for fresh books; would
defy any publisher to prevent success of a really
good publication. I find traces of abnormal
perception in the YG - P field. Show him the
color tree and color sphere. He discusses color
as contrasted with musical sound - acknowledges he
has no adequate names for fixing his color sensation.

23 Miss Peterson thinks color is not to be treated
as a solid; its qualities are to be described
first - and a solid for classification given later.
Orange seems to excite other ideas not kindred with
color. We call on Mr. Pritchard - who suggests
that she write a course of lessons (10 pages) to precede my handbook.

Sept 23  Mr. Louis G. Monte - Just back from Berne congress - Met Dr. Callahan (oculist - Yonkers - speaks of Zeis) on steamer - interested in photometer.

24  Mr. Pritchard and Miss Peterson at studio.
Pass on plan of color study and course of lessons for 1st and 2nd grades - 50 lessons each -
Discuss materials - enamels, papers, crayons, sphere -6" -
Mr. P. returns to studio after lunch -
Sketches a book of 50 pp. (250 words each) 4"x5" -
paper cover - 500 copies -
Asks "how does this marry itself to the present work of 6.7.8 grades and answers "It puts science back of their art."

Sept 27  Prof. C. R. Cross at studio  3:15-4:15
Sees Color-Sphere-Color Tree and Color Notation - also vertical and H. charts of the system.
Discusses HUE, VALUE, and CHROMA and accepts latter questions "different lights" as meaning two or more kinds rather "an degrees of the same kinds-questions "croosing" of ether waves - and suggests grays or chromas are white light with slight excess of one hue element.
Considers what audience would care for this subject - Whether one talk would draw them for another.
Offers use of his lecture room with apparatus, and will speak to Exec. Com. of Soc. of Arts - for some evening (avoid near Xmas)
Is cordial when I ask permission to attend his course on Prismatic color -
Suggests a talk on "Color Nomenclature" showing the sphere, photometer, tree, and charts, with Notation - 45 m.

Sept 28  4:30-5:45  Mr. Pritchard and Miss Peterson at studio.  See "Dummy book" - discuss definitions of chroma.
Review 1st grade no crayons until end of year, borrowed from 2nd grade - colored papers in middle
Mr. P. suggests alteration to fix order of R Y G B P
2nd " find colors in objects first - crayons to imitate later
Mat. - ten papers, five crayons & sphere.
3d " Questions: 15 papers for 50 pupils (3 values of five hues) better to find them on a sphere.