

Sees charts, Photometer, H Charts (large 60<sup>V</sup>)  
Sphere, V. Charts -  
"This is new, - should be very carefully pro-  
tected by patents."  
"Take these demonstrations before the examiner."  
Refers to the work of Wes & Stein -  
Will see Dr. Thurber (Ginn & Co.) and bring  
him if possible.

Sept 26 Mr. Allen telephones that Ginn & Co. cannot  
handle charts or materials - having so voted  
some years ago.

27 Sends up boy with

Consult Mr. Perkins by tel. - who advises find-  
ing a business house willing to push the patent  
and manufacture, - failing this must consider  
doing it myself. Believes the claims are valid  
and can be obtained altho' delayed by inability  
of examiner to recognize their force.

Sept 28 Lunch with A. S. Allen at New Hampshire Club 24.  
with Mr. Dilley. Says he will write Hobson  
of Chicago, and send Dennison of Suffolk Eng.  
Co. to figure on the charts. Also that I need  
an assistant.

Oct 2 Mr. Dennison (Suffolk Eng. Co) at Mr. Allen's  
request. Sees sphere and charts -  
Lighter charts are difficult - Takes one (30<sup>V</sup>)  
to test result - no charge - report in 10 days.  
Plate 6x6" would cost \$54. for the 3 blocks -  
4x5 " " \$35. - minimum  
Recommends Sparrell Print for press work (\$17-  
\$18 per 100)

Mr. Young at Hammetts - Reversible Collar Co.  
(Milk St.) 10 reams of each color - average  
\$3.50 per rm.  
Cam. St. Paper Box Co. (Mr. Spaulding) for packers.  
Paper-maché globes (S.S.Pierce) at .12 .25  
Shall & Co. - 61 Barclay St. N.Y.

Oct 6 Miss Paterson & Mr. Whitehead of Birdcliffe, N.Y.  
Asks for the color records (silhouettes) and  
refers to Helmholtz musical figure (sand on glass).  
Sees sphere, V & H Charts, Photometer - reads  
gray 52- velvet 6<sup>2</sup>.

Oct 14 4:30 Miss Patrick - to introduce my system in  
the twelve grades of the Pope School. I plan  
three talks, to her teachers -  
1. Estimation of colors Nov. 6  
2. Grouping " " " 13 4-5 P.M.  
3. Natural & Conventional " 20  
Coloring

(Page 24a contains several views of  
Photometer.)

24a.

Oct 19 1905 With Mr. Robbins at W.H. & Co. and the  
foreman agrees to make 3 gross of each  
colored ball - ready in three weeks.

25.

20 9-10:30 Dr. Williams-  
Brings his wedge form of pocket photometer.  
Sees my new models and prisms.  
Discusses forms of eye piece.  
Suggests a cemented prism for sharper edge,-  
advises 18" for accomodation, -



Does not think stereoscopic lenses would  
work

Believes I must still sit behind phot.  
and look horizontally. Bending over instru-  
ment tends to eclipse one-half with coat or  
arm. - Would like the septum horizontal -  
(I show the long form.)

Oct 26 Received 1 doz papier maché globes (6 $\frac{1}{4}$ " ) from  
Gair-

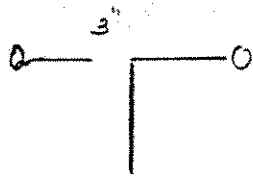
27 Lined them off for 5, 15 & 30 colors Ex. .45  
Mat 1.10

28 Mr. Patterson of Merriam Co. - Comes at  
Prof. Clifford's suggestion to ask if the nota-  
tion and charts could be set forth in the Dict.  
(Webster's Dictionary). Speaks of the Bradley  
& Prang charts - also of the color top method.

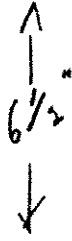
See Mr. Lewis Allen - Faber Prang Co. for name  
of expert lithographer.

Nov 2 Mr. Standerman of Robt. Gair Co. - Brooklyn. 26.  
9-9:45 Discussed making of color spheres -  
Showed 5-15 - 50 color models - 30<sup>v</sup> chart.  
He approved the tin holder and wooden ball -  
in preference to pasteboard. Thought the  
color printing the only problem.  
Wished me to obtain figures on supplying the  
printed papers - he then to furnish templates  
for cutting them so that they could be pasted  
down on the balls - Will make 1000 experiment-  
ally - Left 5 color model with him.

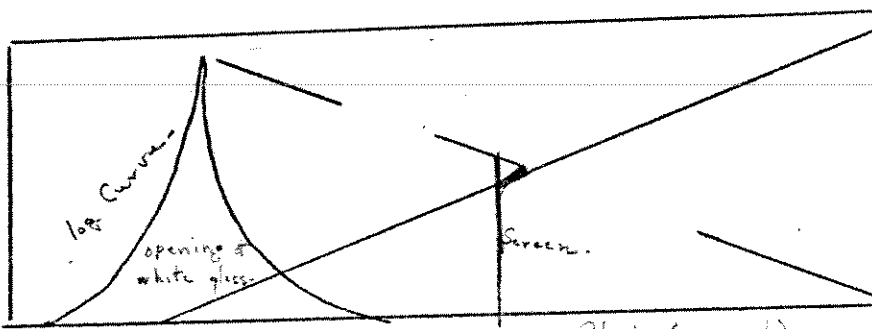
8 11:30-1:30 Mr. Kimber of University Press, Cam.  
Says it is a new problem in color printing -  
Looks over color charts (H & V) - spheres and  
enamels -



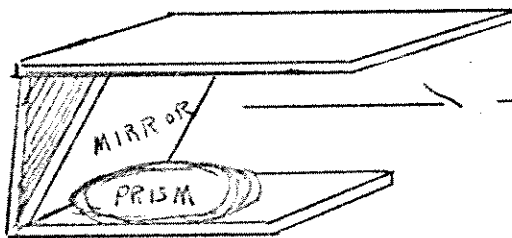
18"



double 10° prism  
in eye piece  
1/2 inch from softum



Box to make film for wedge Phot. (Harvard)



new eye piece Oct. 25-1905  
double 10° - 1/2 inch - mirror.

"Guesses" at (gray scale 1)  
(8 H. scales 88) 100 printings  
(1 index chart 11)  
" vertical series also "

Mrs. VanDerpoel's color illustrations cost about \$2000.

Whole book costs not less than \$2.50 (117 plates)  
Gave him "color notation" copy and lent Prang's color charts. Would like one V Chart to take on for figures at N.Y. and Phila.

Nov 9 11-12:30 Mr. J.F.Hopkins with proposition for use of my balanced color standards in his outline - looking to a later publishing for various grades.

-----  
Dear Mr. Hopkins:-

I learn that "A Color Notation" has been dropped from the list, while the Prang books have been adopted. Also that if it is now proposed by a member of the text book committee, - say Dr. McDonald, - it will probably be adopted. Can you not see him and get it replaced before the next meeting?

Please also say when you wish the new color material, and in what quantity, and oblige

Yours truly

Pope Building,  
Boston, Oct. 3, 1905

-----  
(On page 26b there appears Mr. Hopkins' card, with notes on the back as explained under date of Nov. 9.)

-----  
High School students on entering N.A.S. say that they have studied

Charcoal  
Pen and Ink  
Scenery !  
Composition  
Pyrography !

Nov 23 At lunch Mr. Allen suggests invitation to a lecture on the system of charts - sent by Boston Mailing Co. (\$1.50 per 1000) to  
Bleach & Dye houses  
Wall Paper Cos.  
Buyers in all large stores  
Color Printers & Makers of Ink  
Overseers in Textile Concerns. etc.

Nov 10

Mrs. Cockayne at studio 2-3  
Sees photometer - sphere and V Charts-  
Wants to bring Prof. Trowbridge to see it.  
Says Rowland (of John Hopkins) would have  
enjoyed it. Doubts how Ives might appropri-  
ate it. Thinks a large collimater in front  
needed - would refine the discriminations of  
the eye - might inversely measure curvature  
of eye.  
Would arrange a slide (photographic) at back -  
to give a direct measure of the exposure based  
on a fixed unit.  
Would dust aluminum di-oxide on a card covered  
with fresh varnish - to make standard white.  
Would have Prof. E. C. Pickering & Mr. Gerrish  
see it.

27.

Nov 20

3d demonstration to Miss Patrick's teachers.  
(Nov 6 Color Estimate  
Studio ( 13 " Groups  
4:30-5:30( 20 Picturesque & Natural  
Coloring

21

3:30-5 J. Fred Hopkins -  
To ask what materials are needed and what is  
ready. Wishes to have order put in by Dr.  
Harkins before new board assumes direction  
(Jan 1). Will show me course of study, and  
see if a foot-note acknowledging use of my  
color-system and reference to the book is  
necessary.  
We discuss Clark & Cochrane (former has called  
lately at H's house to feel his way as to the  
"selling out the Boston schools".  
I tell H. about Andrew's attempts to appropriate  
my experiments and prejudice people.

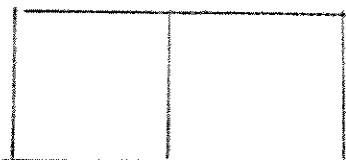
Nov 24

At. L. Hahrstroh's - with Mr. Gibbs & Mr.--  
Show spheres (5-15-50) and enamels and discuss  
colored papers - Then go with Mr. Gibbs to  
Dennison's - meeting Mr. Chas. D. & Mr. Pond.  
They advise paper mfrs. at Holyoke & Lockport,  
N.Y. I tell Mr. Gibbs of Andrews - when  
former mentions a Sunday morning talk by A.  
at the Arch. Club, 3 or 4 years ago.

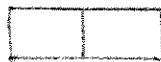
28.

Nov 28

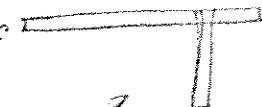
Dr. Williams to see about a cut for his new  
photometer. Brings a double 6" prism  
and experiments as to size of field for  
comparison and distance of prism.



$\left\{ \begin{array}{l} 10 \text{ at } 2\frac{3}{4} \text{''} \\ 10 \text{ at } 6\frac{1}{2} \text{''} \end{array} \right.$

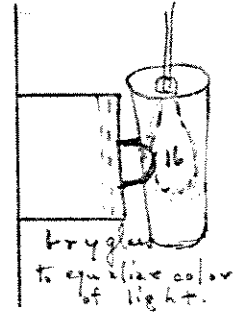


$\left\{ \begin{array}{l} 1.75 \text{''} \\ 10 \text{ at } 2\frac{3}{4} \text{''} \end{array} \right.$  wedge type with  
graduated film to  
extinguish sources  
of light.



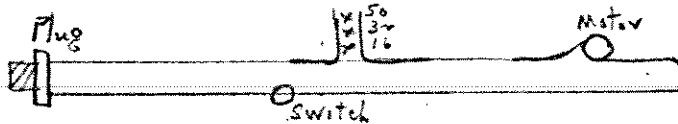
Dec 1 9 a.m.  
 Test of 8<sup>CP</sup> and 16<sup>CP</sup> bulbs against diffused 28a.  
 sunlight.

Against full window	7.5	10.5
	<u>55.25</u>	<u>110.25</u>
half "	11.5	16.3
	<u>132.25</u>	<u>265.79</u>
shade drawn	14.	19.7
	<u>196.</u>	<u>388.09</u>



Dec 2 Mr. H. A. Knowles (Mr. Lee of Chas. D. Brown- 28.  
 156 Congress) 30.00 lbs of each color A \$30. 150  
 200 reams @ 500 sheets (22x28) 100,000

1 4-4:30 Prof. R. R. Lawrence - tests my little  
 G & C motor (Cincinnati) on direct and alternating  
 current - 110 v.



advises 50, 32 & 16 in parallel  
 motor in series.  
 3 Edison bases - 9403  
 single pole-10 amperes snap  
 switch.

(To safeguard law of inverse squares, area of  
 illuminated surface should be small -  $4\text{cm}^2$  to a  
 distance from source of  $1\text{m}$  )

Dec 2 11:30 Mr. Forbes - To look over report on  
 Photometric tests - and arrange for case on  
 Tuesday-5th. Shows me why each reading should  
 be squared and percentage found before making  
 average.

2-10)	4:100	.04	loss	96%	(2.25:100	.025
- Ex 1-10)	1:100	.01		99	( av.	975.
				av.	975%	

Dec 2 Advises simplest and most common sense statement 29.  
 possible - avoid chance for ridiculing scientific  
 intricacy -  
 Order of statement

- 1st Floor a. light cut off by trains northbound
- b. " " " " " " south "
- 2nd " same

Dec 6 Prof. Dolbear sits for a portrait sketch. 10-12  
 I call on Prof. Cross - who says he likes the  
 book very much - and will be glad to help in any  
 way when I am ready to get out another edition.  
 He orders a color sphere for the Inst. of Technology,  
 6" with 15 colors, B & W - instead of 90 colors  
 (as in my own model) for lecture demonstration.

Dec 7

Testified at 4th session - Albany Bldg. vs. Elevated R.R. on Photometric tests of effect of passing trains in offices - first on second floor -

name, occupation, use of instrument (date, patent, etc)

Cross-questioned by Chas. Bartlett - were results independent? Yes.

"You measured only the direct rays of light entering that small hole? Ans. "No - all the light falling on the diffuser and explained its necessity and function.

Prof. Cross orders a 15 color (with B & W) sphere for the M.I.T. (to be ready Feb. 1, '06)

3:30 With D. Ostwald (Leipsic) at M.I.T. - show the sphere, and charts - H & V He described his fixative, his paper and expressed belief that pastels could be made by weight to match the 90 steps of color on the sphere. Made appointment to bring his daughter with him Sat. 2.30 p.m. Jarvis Field House, 6 Everett St.

Dec 9  
1905

3-4:30 Dr. Ostwald and his daughter at studio to bring his fixative and pyramid grain paper for pastels. He sees large charts 30-40-60-sphere, color tree, school models - large and small - Photometer and model of Mrs. Franklyn's theory of color----

30.

Thinks the last steps to neutralize sudden - His mixtures follow the Fechner Law of a geometric ratio.

half full color & gray)  
quarter " " " ) etc. 32, 64, 128,  
eighth " " " ) 256, 512  
sixteenth " " " ) and finds them about true for 10 steps

Thinks green sphere too far in the darker levels - my charts 30-40V - Knows that yellow and black mixtures have this tendency because there is blue in yellow pigment.

Finds several patches changed on the sphere - notably the green - and paler purples (perhaps cobalt - )

Uses a Welsbach mantel and color screen for photometry - gas fluctuates much less than electric lamp.

Asks why a cylinder would not take the place of sphere. I say it is not in accordance with the "co-ordinates" of the pigments - which lose chroma - both in darker and lighter values. (Suggests rubber rim (friction) to drive the sphere.)

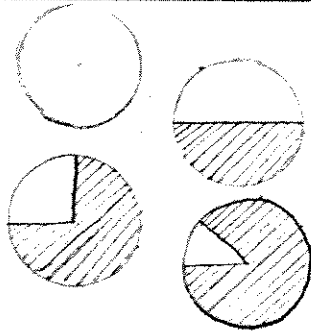
15 Grams Caseine  
 1 Gr. Potassium hydroxyde  
 (Just enough to dissolve the caseine)  
 200 cbcm Alcohol = 1/5 litre  
 make up to 1 litre with water

30a.

Dr. Ostwald's Pastel Fixative  
 Given me at studio  
 Dec. 9, 1905

NOT to be published.

7% borax in place of KOH



whole sensation	reduction by $\frac{1}{2}$ at each step
half "	.5
quarter "	.25
eighth "	.125
sixteenth	.0625
thirty-secondth	.0312
sixty-fourth	.0156
128th	.0078
256th	.0039
512	.00195
1024	.000975
	.0004875
	.00024375

30b.

At the 10th step,  $\frac{1}{1000}$  causes as great a sensation as  $\frac{1}{2}$  does at the start.

25 gross crayons No 1  
 2 (Babb - Boston  
 (Steiger - N.Y.  
 selling agents (Andrew - Chicago  
 (Cunningham, Centre &  
 Welsh-San Francisco

31a.



Show my diagrams of where Helmholtz' triangular flat pyramid and Chevreul's "concertina" fall in my system. He says they begin with the spectrum: you begin with middle gray.

"I think it would be good for me to refer sometimes to your sphere - it would help my work."

"It is very interesting, what you have shown me." Perhaps I can come again and make experiments with the pastels.

- Dec 11 At request of Mr. Noble (R. M. Morse) wrote analysis 31. of the effect of a snow-fall on the illumination of offices in the Albany Bldg. - and delivered it to Mr. Forbes.
- 22 6th and last sitting of Prof. Dolbear's portrait "The Inventor."
- Jan 1-4 Dr. Ostwald lectures on "Scientific basis of the  
8-11 art of Painting. Asks for a color sphere to use  
1906 in 4th lecture.

5 Mr. Porter orders a copy of "Color Notation" for the City of Boston School Committee.

8 Mr. Gunnison 4:30-5:30  
Thinks he must make 25 gross lots of crayons to pay. Suggests a man to paint the balls and color spheres.- \$2.50 a day. clerk to handle business - stenographer \$8.00 week. The more printed matter the better they sell. Joslyn (artificial legs) could mould plaster balls.

Jan 10 Miss Patrick 4-5 To hear of results in Ethical Culture School, N. Y. and see models.



Design for pottery - with orn. band- also design for print goods- Strongest chroma as accent in small points. Weaker chroma as field -vibrating effect.

11 Mr. Cockayne calls to give me Dr. Holmes' address- 32. and his wish to know of my color results. Thinks the Carnegie Inst. would be glad to obtain such matter and push it. (Let them make the request.) Asks if I can measure the value of a printed page, and I tell him of my rotating device in one half of holder - I give him ticket to hear Dr. Ostwald to-night.

8-9 Dr. Wilhelm Ostwald's 4th lecture on "Scienti-

fic basis of Art of Painting. Shows the color sphere (6"-15 colors) and refers to the book.

Jan 16 Colonial Club - Dr. Ostwald's dinner. Meet Pres. Eliot, Profs. Toy, Hall, Morse, Huntington, Mr. Tucker (ed. grad. mgr.) Profs. Cross, Talbot, Goodwin, Mr. Ford and Dr. Ostwald's son.

17 11 a.m. Mr. Putnam (W.H. & CO. agent) calls to arrange for me to see Babb & Co. about selling materials.

19 4-5 Mr. Hopkins  
 Advises crayons 1st grade 5 middle 5 5¢  
 to be ready 2 " 5 intermediate 5 5¢  
 Mch. - net cost 3 " 5 middle & B. 6 6¢  
 one cent per 4 " 10 circuit & B 11 11¢  
 crayon 5 " 5 m. & B. & G. 7 7¢  
 6 " 10 circle B & G 12 12¢

Suggests a company to push art education by mail (correspondence): to exploit books and materials, - so organized that individual ownership is recognized

divide profits { 1. company dividend ) M.T.P.  
 2. expense of marketing ) J.F.B.  
 3. ownership profit ) A.H.M.

Question of regulations as to employees of the city (teacher's - ) relinquishing all royalty on city orders, - how should color section be then compensated.

Desk business - or handling agents?

-----

My dear Mr. Munsell:-

I am planning a color campaign which 32a.  
 may or may not get by the authorities. Its success or failure will depend upon the amount of money available.

Can you furnish:-

box of five crayons (Principals) 32a.  
 " " " " (Intermediates) 32a.  
 " " " " & black (Principals) 32a.  
 " " ten " " " (Intermediates) 32a.  
 " " five " " " (Prins.) 32a.  
 " " ten " " " & gray (Inters.) 32a.

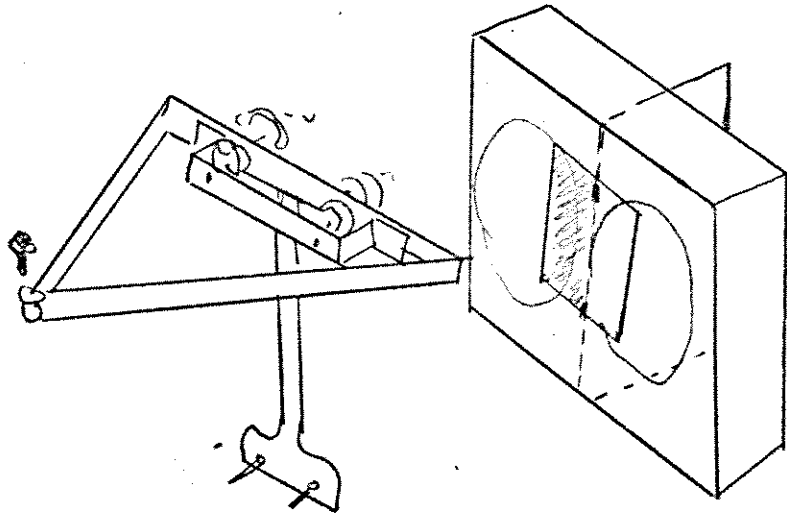
Please give us prices on large quantities, also time necessary to execute the order.

Sincerely,

Jan 10, 1906. (signed) Frederick Hopkins.

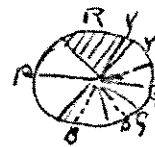
Dr. W.H. Holmes -  
Bureau of Ethnology - Wash.

33a.



Estimation test  
added grey

See page 1 - this vol.



balance  $R = \frac{B+G}{2}$  1

"  $\frac{R+Y}{2} = B$  2

"  $Y = \frac{G+P}{2}$  3

"  $\frac{Y+G}{2} = P$  4

"  $G = \frac{P+P}{2}$  5



3 sense test

I ask P.

Could H. handle the photometer, spheres and charts and push them - would his city position endanger a scandal. If he relinquishes his royalty - how would mine be preserved. Will not his scheme, like others, soon become a back number.

33a.

I say "My system is already on its feet - able to stand alone - may be pushed by business men on the commercial side - a non-assignable license" for such elements as H. needs - and will not interfere with sale of my book. What %?

7 - W & Y W (R)? W(Y)? W-(G)? W-(R)?

5 R Y G B P  
Venetian Red Dutch Pink Zinc green Chinese White, Ch.B.  
W & little Y W-G W & B Blue Alz. red  
" " " " " " " "

3 B (Y)? B(R)? B-(Y) B B (R)?

Jan 27 J.O. Anderson - 24 Linden St. Everett-  
 W.H. & Co. Factory - Green St., Malden.  
 Takes a 15 color sphere (2" mounted) and  
 fresh sphere (2") to make up sample of each  
 color and submit before Feb. 3 - for test.  
 (Mr. Pritchard calls and talks over Hopkins  
 plan for a Co.)

29 Mr. Howe (on train from C.H.)  
 Says "Perhaps your photometer may be useful to us,  
 but the system as a whole would make it harder  
 than ever to make money on colors. We patent a  
 name or a process so that it must be bought from  
 us: - if it could be bought from everybody by  
 a universal name ( $x \frac{0}{2}$ ) our monopoly wouldn't count."

30 4-5 Sanborn brings Vaughan Trowbridge to the  
 studio.

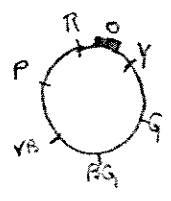
Feb 3 5-6 Mr. Anderson brings samples - 15 cards

	P	B	G	Y	R
7				Too light Too strong	
5	too Blue and Red	too Blue and Green			
3	Too cold Too dark				

When tested (5) I find  
 the B & P have drifted  
 together - the light yellow  
 is too strong - and the  
 dark purple too strong and  
 too cold.  
 Advise as in diagram.

Feb 10 Mr. Howland brings the four (see diagram) corrected  
 colors - also says Dr. Haney wants a set of my  
 crayons.

13 Walter Sargent at N.A.S.  
 I tell him his 3 pairs of colors (School Arts Box)  
 are not complementary. He says he proved them.  
 Show him Helmholtz theory and the place  
 of orange which I advise him to take out  
 of the box - as it destroys the balance  
 of hot and cold color.  
 Also says the chromas of his pairs are un-  
 balanced. Make appointment for 11:30-  
 Feb. 19 at studio.

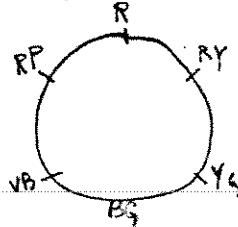


Feb 16 4-5:30 Mr. Gunnison - Wishes me to write  
 Hopkins that Mr. Howland has seen me, and will  
 furnish the crayons, etc. (.75 per 100 to city)  
 Advises \$1.00 for the spheres -  
 I to furnish the balls mounted (cost 5 or 6¢)-  
 have Anderson paint them (cost 11-15 cents) -  
 sell for \$1.00.  
 W & H to make up in quantity - figure cost and  
 pay me a royalty from time to time.

Says Sargent has been written about complaints as to the School Arts Box. Needs a new booklet. Hopkins says he is to see me within 48 hours. I offer to write the circular for the crayons - which he will send to 5000 supts. (all cities of 1000 or over)-  
 Will figure on new set of enamels on card board-  
 $3\frac{1}{2} \times 5\frac{1}{2}$ ". (I write Hopkins warning against infringement.)

Feb 17

Mr. Hopkins - 3:30-5:30  
 Discuss crayons - Disclaims any attempt to reproduce my balanced colors: - only might have to accept the nearest approximations already to be found in Forbes (Prang's) "broken colors". Enamels - he thinks very beautiful - asks if the 15 could be sold for 25¢.



Prefers RY to YR)  
 YG GY)  
 GB BG) as easiest  
 BP PB) to children.  
 PR RP)

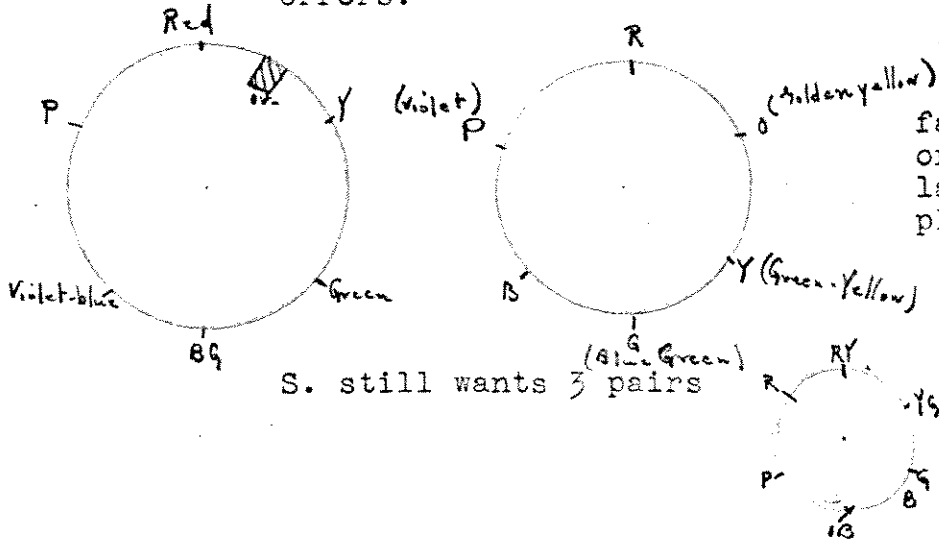
Has not tried the value scale in half-tone - cost another reason -. Says if W. H. can make their golden glow crayons for 57 per 100, mine should not cost any more. Wants the crayons in five weeks - contract in 10 days.

Feb 19

11:30-1 Walter Sargent brings his complementary 35. Red and Green, - with their intermediate gray: we test both by his original oils, and by the School Arts Box - and prove a great excess of yellow in every case.  
 I then show him the true complement of Red: his oil red is nearly right in hue - but measures  $34^V$ , while his green is  $46^V$ - (unbalanced in every way, H. V. C)!  
 He recognizes the need of scientific tests, - but still asks if it is not better for the child to have the strongest and most unrelated colors? Also asks if the gray obtained in water color (but he has to add blue to his red and green) is not what we need, even if it does not stand scientific test? He wishes to retain 3 pairs - So I show him that in such a division - there can be only two typical colors - red and blue- all others being intermediates and unfit as basic ideas for a child. His imitation of the spectrum is a failure as far as imitation goes, and presents totally unrelated degrees of H. V. & C. at every step, so that all his claims in the School Arts Color pamphlets are destroyed.

Advise S. to rewrite his "School Arts Colors" in toto, as it can only hurt him in its present errors.

35a.



false complements - orange is twice too large and out of place.

Then only two simple colors - R & P - all others displaced.

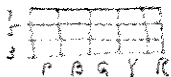
Suggest that his box be called stron colors. mine " " balanced) " middle )

But that he abandon idea of saying that they are "all of same intensity ) arranged in equal steps of ) all shows value and hue ) ignorance Forming 3 pairs of complementaries) of color. Red & Green Orange & Blue Yellow & Violet

Feb 21 At W & H- 84 Wash. St. 12:30-1:30 35. Showed above demonstrations to Mr. H., Mr. G., and Mr. P. They ask which must be changed - the book or the box? I say if they will decide to make my colors in water, I will write the book - but cannot advise as to Sargent's dilemma.

At studio - 4 p.m. Mr. Putnam comes from Mr. Hopkins, who wants the crayons in boxes - (12) - 50,000 and I give him "Color Notation" after showing the error of S. colors. Mr. Schmidt is present - and in answer to question about the colorbox - says, "You must be careful how you play with sharp tools."

Feb 27 Rec. 2 sets of 15 colors in tubes for test. 36. Placed sample of each on glass. Mr. Gunnison says agreement will



be made with me as soon as they can figure out the basis of cost of each material, - crayons, enamels, balls and spheres.

Mar 5  
1906

Dr. H. W. Morse and Mr. ---  
Brings MSS of Dr. Ostwald's "Malerbriefe" asking me to read for corrections of technical terms. Says he can measure any color and determine its "saturation" by an absorption spectrum. - I quote Rood's "with all the desire in the world"- etc.

8 3-4 At Mr. Gunnison's desk - Says he will now make up samples of

4"x6"	Munsell Color Crayons	5	middle colors G & B 7	
	"	"	"	" with lighter & darker V
1 1/3"x1 1/2"	"	"	"	"
	"	"	Balls	"
	"	"	Spheres	2" 15 4" 15 6" 15 to order

figure cost - make retail and jobbing price and percentage to be given me.

Mr. Howland agrees to accept Mr. G.'s estimates and royalty. I meet Mr. Robbins & Mr. Esbjorn. Price list and Sample Card.

Mar 12

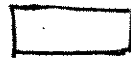
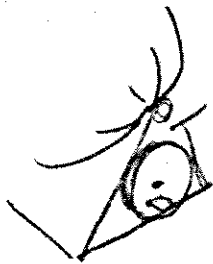
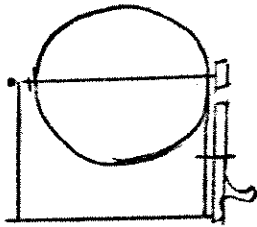
10-12 Mr. H. W. Morse of Harvard To hear my criticisms on translation of "Malerbriefe". Confused ideas given by "shades" "Tints" "intensities". Suggests foot-note on Hue, Value and Chroma.-  
-"body water-color".  
Will try to rig up spectroscope to measure amount of white light in a pigment.

(Page 36a. contains several sketches for cover of book or pamphlet.) 36a.

Mar 12

4:30-5:30 Mr. Gunnison - Brings samples of new boxes for labels which I have made in sketch form. Suggests a 12" sphere for their store window, operated by electricity - to speed up and gradually run down - showing gray balance, and flashing colors. (Useful next summer at San Francisco Nat. Teachers' Ass'n)- Make sketch of pulleys to be driven by band of rubber. Wants design for rubber stamp to put on all colors (on back) - Makes prices on spheres - 2" (1.00) 4" (2.00), larger sizes on application. I give him text for circular to go in boxes of sphere. 37.

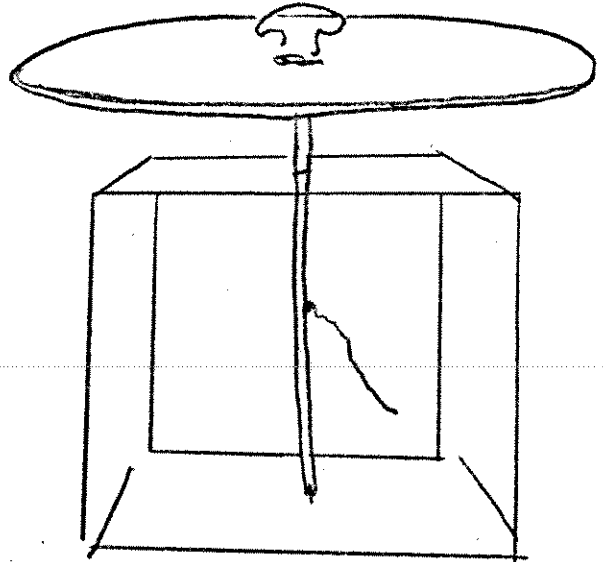
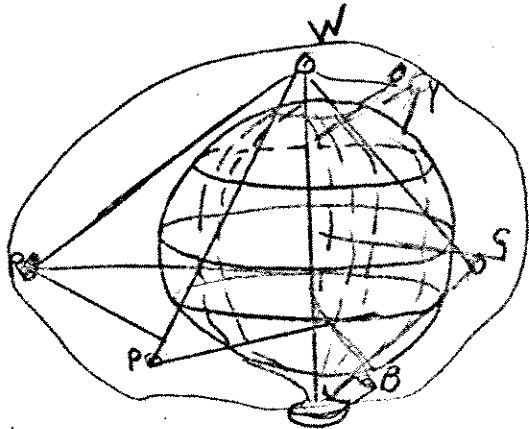
(for above sketches mentioned see next page)



MUNSELL COLOR SYSTEM  
COPYRIGHT-1924

Munsell System  
Copyright 1924

57a.



color Top. ?

Heavy circle on spindle with set nut,  
to pull with string  
(see entry - March 21 - 1906)


Mar 16

3:30-4:30 At Prof. Cross' desk - M.I.T.  
He spins the color sphere which I loan until  
the one he ordered for the Institute is  
perfected. Thinks a wire model showing  
color tree and sphere combined in wire would  
help the imagination - 5 meridians - 5 parallel  
and branches carrying 5 maxims. Reads cir-  
cular describing the color spheres. Asks  
chemical basis of my red (thinking of vermilion)  
and I say natural red oxide (venetian red of  
commerce). Speak of the loose translation "Shade"  
so frequent in Dr. Oswald's "Malerbriefe" and  
advantage of Hue, Value and Chroma. He says he  
has adopted H.V. & C. in his lectures.

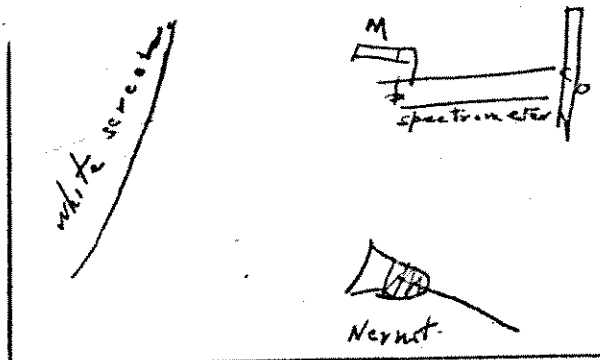
Mar 20

Tel. from J.F.H. Appropriation has passed the  
board - is up to the Mayor - Only question of  
competition (Eagle Co. and other Yellow cogs")  
Munsell crayons were asked for in first order.

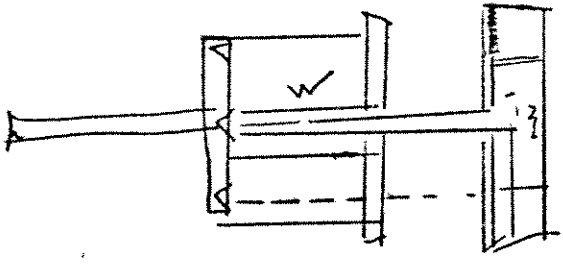


- Teacher can order book - but it will not be sent for lack of funds.
- Mar 21 4-5 Miss M.L. Patrick - Brings work with my system from Pope School - Somerville. "The teachers are delighted: say they'll show great advance next year - Wish they had color top to show balance.
- 22 4-5 Mr. Gunnison's desk. Shows stamp
- |                  |     |            |     |
|------------------|-----|------------|-----|
| Munsell          | 10% | Photometer | 50- |
| Color System     | 25% | Book       | .75 |
| Patent Copyright |     |            |     |
- 22 M.N.A.S. 10:30-12. Public School Class & My class B students 38.
- 23 Color Estimates -
- 24 Color Groups
- 24 Elementary color in public school grades.
- 
- Mar 26 10-12 Jefferson Laboratory - Harvard - with Dr. H. W. Morse. Set up direct-vision spectrometer, to determine amount of white light in a pigment. - Arc & Nernst glower. Dr. M. also shows fluorescence of various rocks - and Prof. Sabine's color measure -
- 26 Loaned Color tree to Prof. C.E. Cross M.I.T.
- Apr 11 Closed old acct. at W.H. & Co. (17.04) and learned that city had ordered 86,200 crayons - (my royalty \$215.50).
- 16 Send copy of book to Capt. Abney with note.
- 17 Abney's Colour Vision - use of tone and intensity.
- (Here phrases and whole paragraph's are quoted.)
- pp. 33 -41 - 64- 78 - 98 - 198 - 196. 
- 21 Mr. Joseph H. Hawes at studio. Sees color charts, tree, skeleton sphere and school materials. Asks if experiment (page 39a) would suggest that light through a narrow slit is deflected from either side - as water around a post? 39.
- 26 4:45-5 Mr. Perkins at studio. Sees school materials - printed circulars and work by children in the Pope School- Somerville.

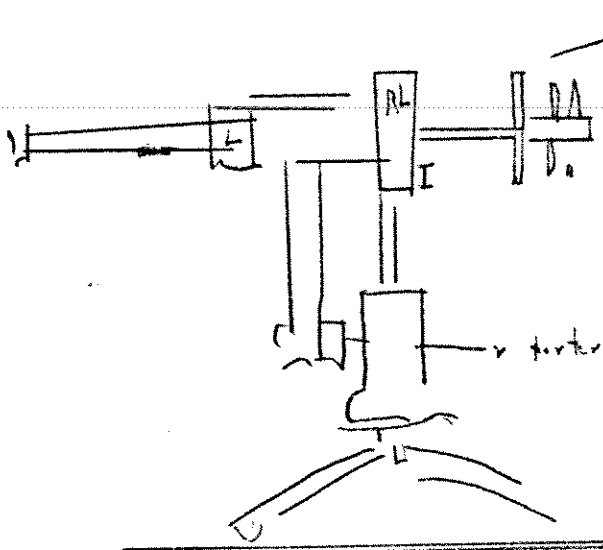
Needs a wedge photometer in front of Mirror M.



39a



W - wheels for adjusting disc areas.



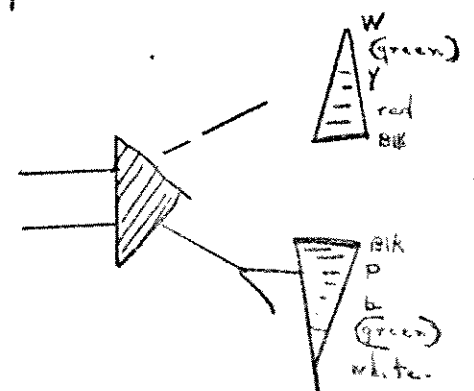
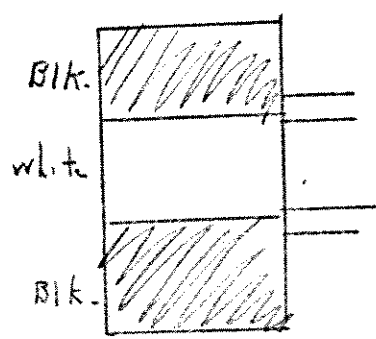
adjustable Maxwell discs.

RL - Revolving lens - } To mix  
driven by motors. } disc colors.

L - lens case

I - Iris diaphragm (photometers)

Contrast effect through a prism -



39a

spectrum ends more below & above in prism (green wanting)

(Page 39a and extra sheet p. 39a. contain charts of the colors received May 7, 1906. Some of the colors were slightly off.)

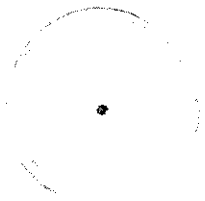
Apr 26 Accepts the utility as well as the novelty of the scheme - the 50V charts and 5 middle colors. Says if anyone mingled these five colors in a larger set, - so that they could be substituted for my protected material, - there would be ample ground for infringement proceedings.  
Will draw claim to protect each chart separated as well as the system of charts.

May 4 Mr. Gunnison passes me sample boxes (2) of 11 colors-12 colors - Boston school set for F.J.Hopkins -  
box of 7 9.00 gross )  
11 12.96 " ) prices quoted by  
12 14.40 " ) gross

I find yellow too red & too dark ) This is questioned  
purple too red ) at first but May 7  
gray " yellow ) Mr.G.acknowledges  
yellow has changed.

May 7 Says the waxiness decreases and the colors darken some. He makes his test in sunlight on glass. Was trying to find a yellow pigment of greater body- so as to avoid double coat which has been necessary. Will send samples to be O.K'd by me. 22

Templates to illustrate law of sensation (Value ↑ 40.  
100 as base (Chroma - )  
successive subtraction of 1/4 is quicker  
" " " at first  
" " " 1/5 is a trifle  
slower.  
?Should we use logarithmic curve or curve of squares?



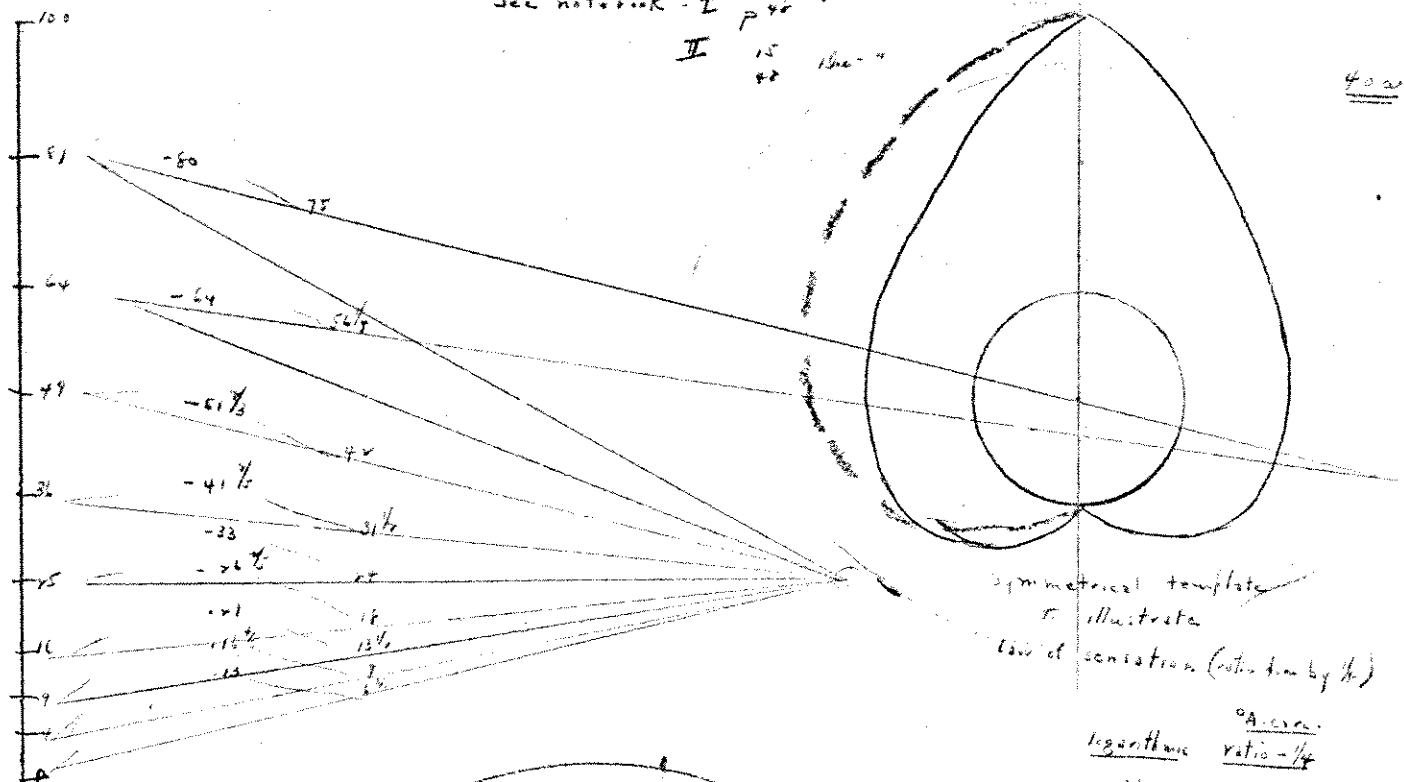
Should the ratio be made on the radius (cir.in = div) or on the circumference (radius in = div.)

Chroma would seem to diminish arithmetically and value geometrically!!

When BG has a chroma 1/2 that of R - shall the 5 steps of BG to N. be the lower 5 in the scale of sensation or the upper 5?

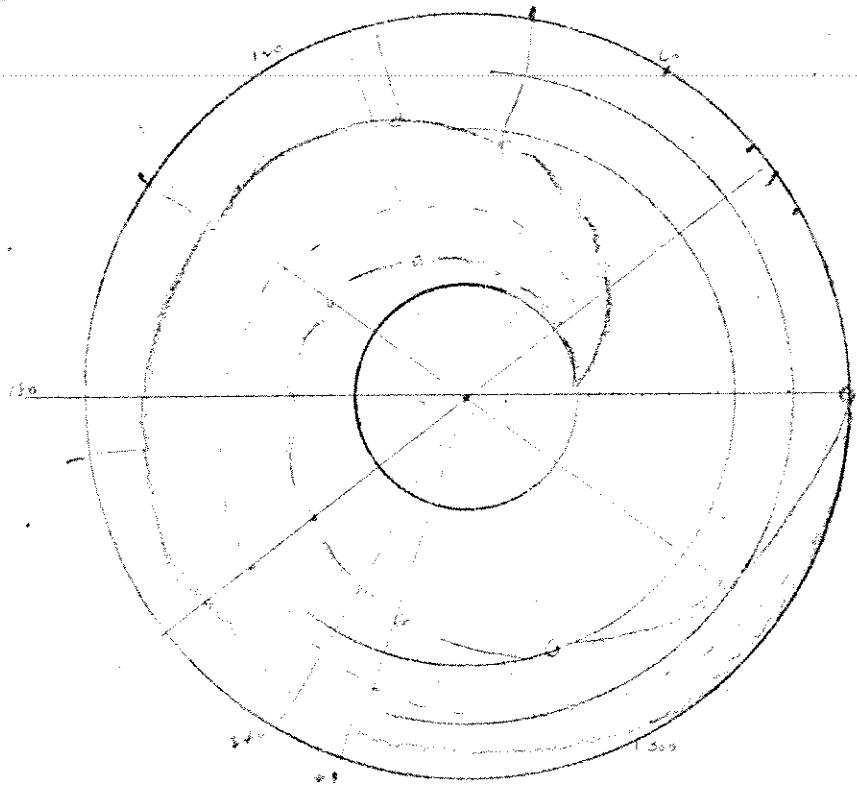
Sec notebook - I 39 June 1901  
 II 15 the "

400



symmetrical template  
 r. illustrate  
 (axis of sensation (ratio dim by %))

logarithmic	ratio - 1/4
360	360
277	250
212	188
160	141
119	107
86	78
60	57
39	44
23	33
11	25



Red curve - 1 step in one of ratios (circumference & by and sensation) } values  
 Blue curve - 1 step in one of ratios (circumference & by and sensation) } values  
 both curves - 1 step in one of ratios (circumference & by and sensation) } values