

Mental Processes and Enquiry on Visualising

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EXERCISE BOOK.

SCHOOL.

NAME.



If the eye of a person ~~highly~~ ^{perfectly} gifted with the visualizing
 faculty ^{where} ~~where~~ ^{was} placed his eye where the camera stands
~~in the position~~ ^{where} of the object-glass of the photographic camera
~~usually stands~~ when composites are being taken, would the generic
 image stamped on his brain be identical with
 the photographic composite? Supposing that
~~one out of~~ many pictures ~~one~~ were each exposed
 for the same short interval period and that one
 picture was exposed fifty times over, or fifty times
 as long, would its impression be fifty times as
 strong as any of the others? or would it be the same?
 or what? In the composite the impression would
 be fifty fold as strong; in numerical statistics
 it would count for fifty times as much, but in
 mental imagery ^{certainly} it ~~would not~~. Here is a ~~fundamental~~

different source of error in mental imagery.
 which prevents of some being
~~It is not a true~~ statistical rendering of fact.

I have made some experiments which are not
 as yet sufficiently ^{advanced} satisfactory to be worth quoting
 but whose results are not incompatible so far
 as they go, with the ^{very reasonable} supposition that other
 influences being the same the depth of the
 impression is the length of time
 the relation between the ^{stimulus} period of exposure &
 the depth of the impression ^{may be explained by} ^{correcting}
 that ^{comprehending} ^{mentally} ^{may} ^{in the same way} ^{with the} ^{concept of}
 Weber's law which connects ^{varying amount of} stimulus of sensation
 & is known which in its approximate form was
 first enunciated by Weber it was then improved by
 Fechner & has more lately been nearly perfected by
 Helmholtz

such as the varying number of candles with the sense of
 illumination

What I want is this. I will use it
 at least in its approximate form
 & I need not go into minutiae which are of no sensible
 effect except in extreme cases. In order that
 the impression should increase in strength

(It will be sufficient to state approximately) f.3

According to this law, if it takes twice as long a ten fold ^{exposure} to make a doubly deep impression ^{on the mind} it will require a hundred fold exposure to make it ten fold deep, a thousand fold to make it quadruply deep & so on. The

one series going in arithmetic the other in geometric proportion. Whatever the true

law ^{may be} that connects the depths of the impression with the number of times that the object has been seen, or the length of time during which it has been seen, it is certainly something of this form. ~~because mere glances~~ ^{have often enough influence in} ~~often leave~~

(abiding impressions) & it is singular that the ~~other hand~~ ^{the fact of seeing} most of us are of the pictures that hang on our walls, and of the household furniture that stands before our eyes (every day of our lives) does not always ^{succeed in} making us distinctly remember their subjects & positions

It admits the probability of short exposures leaving a trace, ~~comparable~~ ^{that is} not very much weaker than that left by exposures of very great duration & frequency. Then mere glances &

This law is founded on the fact that
 the more highly our senses are stimulated
 the more is their power of discrimination
 blunted. ~~Just as a double quantity of~~
~~candles does not increase the double the~~
~~sense of illumination. It only gives the sense~~
~~certain ^{a certain} sense of increased light which is~~
 the same whether ~~the number of candles are~~
~~few or many~~ one candle is added to one
 or one thousand. ~~The~~ ^{the} difference of noise made by dropping ^{in 2} ~~in 2~~ ^{shells} ~~in 2~~
^{on the table} is not easily distinguished by the ear,
 neither is the fact whether ~~two of one of~~
~~two of the same 38 ton guns are at any~~
~~moment discharged, as was proved by~~
~~38 ton cannon has been fired off discharged~~
~~from the muzzle of an iron clad,~~
 or two of them simultaneously, as was proved
 by evidence lately taken in reference to the burst
 on a board the Thunderer

Faculty of visualizing

variability
is under control
so differ from hallucinations
depends on subordinate faculties, vision & memory
which are generally present,
but don't actually occur

Cases of persons who possess it

Not only poets & painters but mechanics, strategists, chess players

I find it not very uncommon

Most persons have small power

James:

Spectator - B. & D. - 2 letters

My own experiments of opening & shutting eyes

Another
An other sense, provides imagery - what is said of twilight of ideas (all
Programme - to analyse ideas by ^{imitating} ~~help of~~ imagery as far as they were
originally translated

7

Everett - presupposes a genus -

No statistical view, dream of grouping heterogeneous facts - nor more so?

Composite portraits - Magic lanterns - by Tilly's apparatus - photographs

Blended portraits, dist. composite - what is common is brought out

Faint composites - adjust to bring out the desired features, a disregard the rest

Composites from coins - thanks to poets

Picture of murderers by

It is a process of pictorial statistics - as Quetelet's Anthropometrie was numerical.

The faintest image leaves some photographic trace - my experiments

Composites are perfect examples of generalizations

14 - Sir Wm Hamilton

16. At moment of adjusting components, a sense of satisfaction like the sudden recognition of a doubtful memory
17. Generic images what they are
 Hardly in theme
 My own sense of catching likeness of scenery, & some type.
 - ~~Unpleasant~~ composites made by placing down a row of things
 - mental images can be changed in position & size - ? imagination
 Only to our practice in seeing changes in real objects as we move
 Hence we can combine different sizes
 Hence we get axioms of proportion & simultaneity
 Instruction to watch first shape, then degradation of a generic image
 Clergyman preaching
 Alternation ideas struggle, one overcomes. probably that which has been obtained felt
~~But~~ Eye if placed in field of camera with mental composite, by same as photograph
 with a fifty fold exposure produces a fifty fold effect?
 No. & this is a fertile source of error
 I have experimented. - to far nothing incompatible with Weber's law
 What the law is - 1 candle to 1 or 1000 to 1000. 1.2 slightly doubled is 1 or 2 gone for
 If Weber's law is true, its application to say 10 exposure to a double effect than 10th for a single effect
 If all true the law must be something like it to first facts of short exposure
 being a once not much left that that of very long exposure indeed.
 Conclusion that composites are trustworthy - mental ones not at all to
 components not weighted - not truly generic - not numerous enough - not
 so adapted as to bring out the generic feature in the best way.
 Human mind is an imperfect intellectual apparatus.
 Generalizations are never to be trusted.
 General impressions are like axioms to most people.
 My hate Statistics a numerical list
 Man of Science inherent to such folly.
 Eye not good guide to medium limits & cannot produce composites

False beliefs and
~~Superstition~~ and false general

The e.

Every branch of human knowledge has passed through a pre-scientific stage, in which ~~specimen~~ notions of various kinds were current which had not as yet been submitted to the tests of measurement and numbers. ~~In that stage the grossest errors obtained are almost~~ ^{are} interspersed. These notions are shown by the accurate processes of enquiry ^{are} to be full of fallacy, ~~they are~~ often ludicrously wrong. The amount of error to which popular notions ^{are subject} in such branches of enquiry as ^{say} medicine and meteorology is astonishing. It seems incredible ^{to our minds} that such ~~great~~ ^{great} and gifted men should have ~~presented~~ ^{presented} ~~no~~ ^{no} physical ~~errors~~ in the way they ~~did~~ in the last century; that they ~~should not~~ ^{should not} ~~have~~ ^{should have} neglected ^{what we now look upon as} obvious ~~conditions~~ ^{conditions} of ~~their~~ ^{their} ~~work~~ ^{work} in that that the fallacies of the faculty should have been as great as we know them to have been. Again the weather is a subject that every Englishman has talked about almost daily for centuries, owing to the variability of our climate, and the quantity of nonsense that has been ~~is~~ ^{is} ~~popular~~ ^{popular} current in the subject is ludicrous to us now that we understand so much of its main features through the system of daily charts showing the simultaneous state of the weather over large areas. I will mention merely one of these errors as an example that is ~~so~~ ^{so} obvious abroad when mentioned ~~as~~ ^{as} soon as we reason about it. It is the influence of the age of the moon upon a fresh ^{clear} ~~quartz~~ ^{quartz}.

I need not multiply examples of the errors of popular generalization: they are to be found ~~as~~ ^{as} I said in every branch of knowledge before it has ^{been} ~~reached~~ ^{reached} the scientific, before it has been laid hold of in the firm ^{scientific} grasp of processes that depend on exact measurement and numbers. ^{the point that the fact may be taken for granted, and the task that I set undertake this night is to explain the cause of it.}

butly ^{pleaded hypothesis} Seasonality analogies of the mental process,
they may be considered as accurate. Thurston

Finally I shall show that the mind is incompetent
to blend them in their ^{proper} proportions, ~~as a matter of fact~~ besides ^{having an important meaning} ~~being~~
~~over its task is doing~~ so much of it as it deals with
on wild principles. My conclusion ^{with the} that the offhand
impressions of the mind are a fertile source of ~~error~~ ^{fallacies} &
^{the influence of} superstition & ~~new~~ ^{new} state from which the savage & the
child are never free & it is only by the ^{strict} methods of
scientific enquiry, ^{namely} by measurement & number,
that their ~~errors~~ ^{fallacies} can be swept away & truth ^{is} ~~is~~ ^{is} derived.

Such in a few words is the forshadowing of my argument
that ~~may~~ ^{is necessary} to right. I ~~shall say~~ ^{have described} it at the outset ^{in order} to save us ~~far~~ ^{much}
as may be the ~~possibility~~ ^{difficulty} that would ~~arise otherwise~~ ^{almost certainly} arise as I
proceeded, as to what I was ~~about~~ ^{drawing out}, For I have to deal with three
topics all of which are unfamiliar to most persons. ~~in~~
in order to make out my argument I have ^{first} to speak of

By means of the first, I shew ^{of these objects} ~~that the memory~~ ^{how} ~~the memory~~ are blended together by the second, I shew what blends it & what results therefrom. I had ^{to} by the law of weber I explain ^{the} faculty of the mind ^{where} it produces blended images, & what is their generalisation in any kind.

The physiological aspect of memory is ^{simple & blended} ~~simple~~ ^{plain} ~~simple~~
^{a much brief} ~~When~~ ^{Whenever} ~~any~~ ^{any} ~~brain cells~~ ^{glow} ~~have been excited~~ ^{stimulated} ~~through~~
^{as sense} ~~some impression of the senses~~ ^{the become} ~~to~~ ^{to} ~~speech~~
~~under~~ ^{under various circumstances} ~~and very liable to become again~~ ^{excited} ~~under~~
^{from various causes} ~~the stimulation of adjacent cells~~ ^{the result is} ~~that case~~
^{is the reproduction of their previous state, which results in that, more or less definite} ~~these effects may be called~~ ^{blended} ~~memory~~ ^{memory} ~~must~~
~~could be called~~ ^{the simultaneous} ~~excitation~~ ^{excitation} ~~of~~
~~several associated~~ ^{elements} ~~brain cells~~
 under the influence of a single stimulus.

imaginary sense impression
 of a more or less definite form
 which we call memory

There cannot be a doubt ^{we know the full defined} but that ~~our~~ memories
 often ^{blend} together, because we ^{find} ~~confuse~~ our recollections, ^{to be often confused} in seeing
~~some picture of an acquaintance~~ a member of
 a family with whom we have but a slight
 acquaintance ^{it often happens that we recognize him to be} ~~we often are sure that he is~~
 one of ~~the family~~ ^{members} but cannot recollect which.
 We can then a picture of mountain & ^{water} lake
 and are sure that ^{have seen the original} ~~we know it~~ but whether
 it is Swiss or Scottish or Norwegian ~~or any~~ where
^(with certainty of it has been a memory of many such landscapes)
~~we cannot recall.~~ ^{the physiologist today}
^{blended} memory is simple enough, ^{single memory is due to} a ~~state of~~ ^{unprepared}
^{has been irritated} excited by ^{to} certain brain cells
^{the} ~~which~~ ^{some excitation} the ~~irritation~~ is ~~likely~~ ^{liable} to ^{recur} ~~be~~ again
~~produced~~ set up ~~to~~ in sympathy in association
 with ^{a subsequent excitation} ~~the~~ ^{irritation} of neighbouring cells. They ~~first~~
^{have become} so ^{so} ~~to~~ ^{irritable to} ~~be~~ affected. ^{Blinded}
^{memory would} ~~the~~ ^{irritation} ~~the~~ ^{irritation} ~~the~~ ^{irritation}
 of several associated brain cells. ^{in a sequence of} ~~the~~ ^{the} ~~the~~ ^{the}
 stimulus of some kind would excite them all at once.

The most vivid ^{of the most vivid kind} memories ^{blend} together
 as in the ~~gro~~ ^{compounds of faces & places} ~~strange~~ ^{combinations} which occur
 in our dreams. ^{in various forms of detail} It is indeed rare
 that we see either one or the other ^{in its} exact form
 it was, but ~~they are~~ ^{individually} merged ^{are usually} merged
 into one result.

In the minds of some persons
 the ~~phenomenon~~ ^{memories} of blended objects ~~become~~ ^{become}
 conspicuous objects. ^{being retained in the memory of examination, & capable of being put not difficult to analyse.}
 These are persons who possess
 what is called the visualizing faculty in a high
 degree. Persons whose memories in their health

water every day life ^{are} ~~are~~ ^{are} spectral; they see clear
 with sharp contours and their fully natural colors. ^{the objects} ~~the objects~~ ^{are} every memory
 in their minds eye ^{is associated with some} ~~is associated with some~~ ^{is associated with some}
 is associated with a visible form. I do not

know any faculty that varies ~~between~~ ^{in different persons}
~~between such wide extremes~~ ^{as their} ~~as their~~ ^{as their}
 do ~~not~~ ^{do} in a higher ^{degree} because their ^{range lies} ~~range lies~~ ^{range lies}
 perfection & nothing less, ^{they are some like the painter mentioned by Bosc.} ~~they are some like the painter mentioned by Bosc.~~
 I have made ^{many} ~~many~~ ^{many} engravings of ^{Subj.} ~~Subj.~~
 and ^{have collected} ~~have collected~~ ^{have collected} several ^{of which} ~~of which~~ ^{of which}
 a recent one that has attracted some attention and will
 well serve my purpose. In the Spectator - appear

Mr. George Hodder has very kindly ^{furnished me} ~~furnished me~~ ^{furnished me} many additional particulars
 which clearly show that images in his case also can blend.

Memory in ~~the~~ most ^{neat} common form, has not
 vividness enough to reproduce the original
 sense unimpaired. It may be ^{so} tenacious and
 accurate ^{in a sketchy manner} so that a face ^{or landscape} cursorily seen ^{for long} shall
 not be forgotten. ~~Yet it may be even if the person~~
~~though he is an artist~~ ~~was an artist~~ ~~he~~ ~~might not be at all competent~~
 to draw ^{in a way that would please himself} from memory. ~~Yet~~ ~~careless~~
 enough ~~the same person~~ ^{He} has ~~the~~ all the ^{capacity} materials
 to reproduce the sense ~~imperfectly~~ ~~for as a fact~~ ~~blended memory~~ ~~because it may come~~
~~before his mind's eye in a dream, or delirium,~~
^{sometimes} under the influence of some poison, or in various
 other morbid conditions. ~~the faculty of memory~~
~~the faculty of visualising~~ ^{his} ~~memory~~ ~~both exist~~
~~in him~~ ~~but they do not act in concert~~ ~~in his~~
 healthy, waking, everyday life. It is ~~unusually~~
 difficult in a case like this ~~very common~~ ~~me~~ to
 say what blended memories are like. They work
 behind a veil and are ^{in a visible form} ~~invisible~~ ~~though~~ ~~we know~~
^{capable of expressing themselves under the conditions} ~~they are these~~ ~~for the reasons~~ ~~already stated.~~

It is better to learn what blended memories are like
 in those rare cases ~~when~~ in which all memories are
 distinctly visualised

Composite

make 3 masks
show line list of the composite of the
Hitlerian character

murderers &
include 3 composite murderers

Phot Camera & Photostat used to work
my flight.

Weber's last

cards & strips of tape
hammer machine

rotate disc equally divided equal
" " " according to Delboreuf

Artists combine 3 gifts: ^{accurate} ^{original} ^(imagination) or general aptitudes ² ³ f. 12
— 2 essential to a scientific man 1 & give original ideas —

I only saw him misgiving when I spoke of ease of artist

Reply to Van Vord's letter: —

"Nothing is easier than to imagine & to watch mental

"the motion is the motion of any thing & which motion is
natural e.g. a wheel, a crank etc. In many such cases

"I incline to think the process consists in calling up a sort of typical
"image formed out of innumerable bygone experiences"

This is Mr. Peckham's independent view quite unsuggested by myself & is all
the more valuable on that account

Fault of weak & mystic mind

Pendulum swinging

Weber's physiological law.

Abney

(with abstract)

In Case, 2, & Muskin 1

— Phil New (Wharfedale) 2

— Poole 3

— Hart 3

— Smith Brown 7

Station of Sheldrake

— Maskelyne 2

Ferris 1

Bamber V. Watson 1

— Knowles 1

Keane Paul 1

King T. White 1

— Macmillan 1

— Miss L. West 1

— Lepros 1

(Miss North. continue)

ARITHMETICAL TABLES.

Numeration Table.		Avoirdupois Weight.		Imperial Dry Measure.	
Units.....	1	For all goods except Gold, Silver, and Jewels.		Avoided of water lb. oz.	
Tens.....	12			2 gallons.....	= 1 moggins..... = 6 5
Hundreds.....	123			4 moggins.....	= 1 pint..... = 1 4
Thousands.....	1234	16 Drains.....	1 Ounce..... = 67	2 pints.....	= 1 quart..... = 2 8
Tens of Thousands.....	12345	16 Ounces.....	1 Pound..... = 16	4 quarts.....	= 1 gallon..... = 10 0
Hundreds of Thousands.....	123456	16 Pounds.....	1 Stone..... = 14	2 gallons.....	= 1 peck..... = 10 0
Millions.....	1234567	38 Pounds.....	1 Quarter..... = 28	4 pecks.....	= 1 bushel..... = 80 0
Tens of Millions.....	12345678	4 Quarters.....	1 Hundredweight..... = 112	8 bushels.....	= 1 quarter..... = 640 0
C. of Millions.....	123456789	10 Cwt.....	1 Ton..... = 2000		
Sterling Money Table.		Hay and Straw Weight.		Square Measure.	
4 Farthings.....	1 Penny..... = 4	36 B. Straw.....	1 T. ass..... = 36	144 square inches.....	= 1 square foot.
12 Pence.....	1 Shilling..... = 12	60 B. Hay.....	1 T. ass..... = 60	9 square feet.....	= 1 square yard.
2 Shillings.....	1 Florin..... = 2	36 B. Straw.....	1 T. ass..... = 36	36 square yards.....	= 1 square pole.
2 Shillings & 8 pence.....	1 Half-Crown..... = 2	16 T. ass.....	1 Load..... = 16	40 square poles.....	= 1 rood.
5 Shillings.....	1 Crown..... = 5			4 roods.....	= 1 acre.
10 Shillings.....	1 Half-Sov..... = 10				
20 Shillings, 1 Sov. or 1 Pound.....	2			Table of Motion.	
21 Shillings.....	1 Guinea..... = 21			60 seconds..... = 1 minute.	
				60 minutes..... = 1 degree.	
				90 degrees..... = 1 sign.	
				12 signs, or 360°..... = the circle of the earth.	
Arithmetical Signs.		Long or Linear Measure.			
+ Plus; Sign of Addition.		12 Lines.....	1 Inch..... = 12		
- Minus; Sign of Subtraction.		12 Inches.....	1 Foot..... = 12		
x Sign of Multiplication.		3 Feet.....	1 Yard..... = 3		
÷ Sign of Division.		2 Yards.....	1 Fathom..... = 2		
= Sign of Equality.		2 Fathoms.....	1 Pole..... = 2		
:: Sign of Proportion.		16 Poles.....	1 Furlong..... = 16		
√ Sign of the Square Root.		8 Furlongs.....	1 Mile..... = 8		
∛ Sign of the Cube Root.				Table of Time.	
° Degree, ' minute, " second.				60 Seconds..... 1 Minute.	
∴ Therefore.				60 Minutes..... 1 Hour.	
				24 Hours..... 1 Day.	
				7 Days..... 1 Week.	
				4 Weeks..... 1 Month.	
				365 Days..... 1 Year.	
				366 Days..... 1 Leap Year.	
				52 Weeks..... 1 Year.	
				12 Calendar or	
				13 Lunar Months 1 Year.	
Troy Weight.		Sea or Cubic Measure.		Days in the Months.	
For Gold, Silver, and Jewels.		1728 cubic inches = 1 cubic foot.		Thirty days hath September,	
24 Grains.....	1 Pennyweight, div	27 cubic feet = 1 cubic yard.		April, June, and November,	
20 Pennyweights 1 Ounce.....	oz.	214 cubic feet = 1 solid perch		All the rest have thirty-one,	
12 Ounces 1 Pound.....	lb.	mason's work		Excepting February alone, (clear,	
		121 cubic feet = 1 solid perch		Which has but twenty-eight days	
		brickwork.		And twenty-nine in each leap year	
Apothecaries' Weight.		Imperial Heaped Measure.			
For Mixing Medicines.		1½ Avoid. of water.			
20 Grains.....	1 Scruple..... = 20	8 gallons..... = 1 bushel..... = 80			
3 Scruples.....	1 Dram..... = 3	2 bushels..... = 1 sack..... = 240			
8 Drams.....	1 Ounce..... = 8	12 sacks..... = 1 chaldron = 2308			
12 Ounces.....	1 Pound..... = 12				

MULTIPLICATION TABLE.

2	3	4	5	6	7	8	9	10	11	12
TIMES	TIMES	TIMES	TIMES	TIMES	TIMES	TIMES	TIMES	TIMES	TIMES	TIMES
1 are 2	1 are 3	1 are 4	1 are 5	1 are 6	1 are 7	1 are 8	1 are 9	1 are 10	1 are 11	1 are 12
2 - 4	2 - 6	2 - 8	2 - 10	2 - 12	2 - 14	2 - 16	2 - 18	2 - 20	2 - 22	2 - 24
3 - 6	3 - 9	3 - 12	3 - 15	3 - 18	3 - 21	3 - 24	3 - 27	3 - 30	3 - 33	3 - 36
4 - 8	4 - 12	4 - 16	4 - 20	4 - 24	4 - 28	4 - 32	4 - 36	4 - 40	4 - 44	4 - 48
5 - 10	5 - 15	5 - 20	5 - 25	5 - 30	5 - 35	5 - 40	5 - 45	5 - 50	5 - 55	5 - 60
6 - 12	6 - 18	6 - 24	6 - 30	6 - 36	6 - 42	6 - 48	6 - 54	6 - 60	6 - 66	6 - 72
7 - 14	7 - 21	7 - 28	7 - 35	7 - 42	7 - 49	7 - 56	7 - 63	7 - 70	7 - 77	7 - 84
8 - 16	8 - 24	8 - 32	8 - 40	8 - 48	8 - 56	8 - 64	8 - 72	8 - 80	8 - 88	8 - 96
9 - 18	9 - 27	9 - 36	9 - 45	9 - 54	9 - 63	9 - 72	9 - 81	9 - 90	9 - 99	9 - 108
10 - 20	10 - 30	10 - 40	10 - 50	10 - 60	10 - 70	10 - 80	10 - 90	10 - 100	10 - 110	10 - 120
11 - 22	11 - 33	11 - 44	11 - 55	11 - 66	11 - 77	11 - 88	11 - 99	11 - 110	11 - 121	11 - 132
12 - 24	12 - 36	12 - 48	12 - 60	12 - 72	12 - 84	12 - 96	12 - 108	12 - 120	12 - 132	12 - 144

42 Rutland Gate
April 20 / 80

SW f. 1r

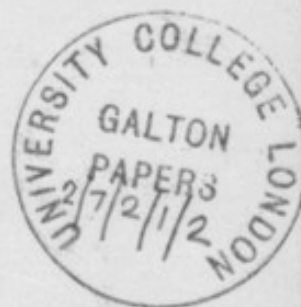
My dear Sir

The returns you have
been so kind as to collect a
send me from the Charterhouse
boys, are indeed most valuable

Clas.	Total	Distinct Forms	Doubtful	Colour the boys not forms	no appreciation	Per Cent
A	13	3 ^{new} 23	-	1	9	70
B	30	10 33	1	2	17	57
K	29	6 21	-	2	21	72
	<u>72</u>	<u>19</u> 26			<u>47</u>	<u>65</u>

About one quarter appear to have
distinct number forms whereas
among adults only about

See over



form over

f. 1v

Class	Distinct forms	Double and colour or other numeral peculiarities	Total
A	3	1	13
B	10	3	30
C	7	-	74
D	3	2	19
E	5	2	17
F	4	2	37
G	2	-	13
H	6	2	29
	40	12	168 172

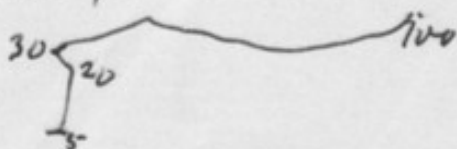
Charterhouse

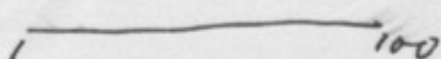
K series

f. 2

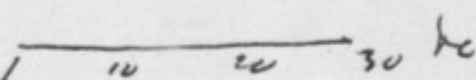
K. 29 boxes

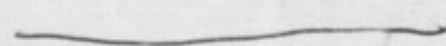
4. No form but coloured forms

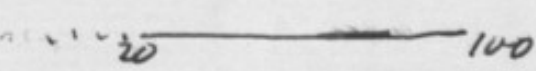
3. 

10 

9 

6 

12 

19 

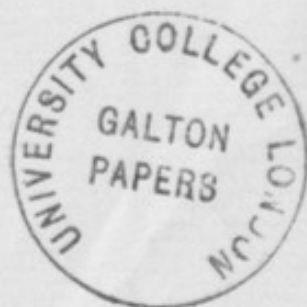
100
1

23. numbers taken off of as sheets.

7 & 8 have number association

22 & 21 have none.

29 Total



f. 3

Charterhouse . G. cases . 13 .

2

6

11 #
10 / 123
9 8 7 6 5

30
20
1

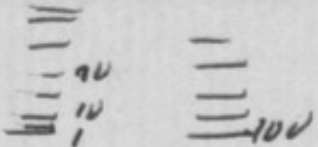
2 cases

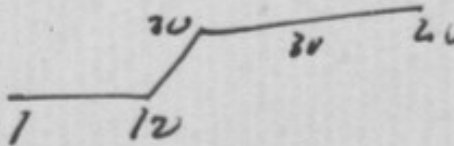
11 have no number form

13

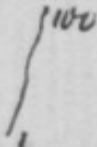


Charterhouse F. 37 cases. f.4

14  - Favorite numbers

31 

11 a long unending line _____
(months of year)

10 rise & recede up to 100 

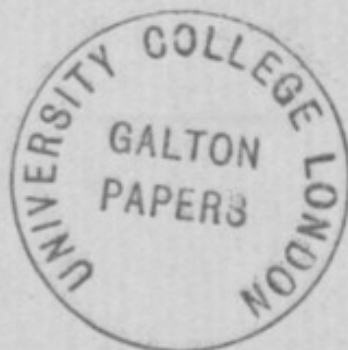
(19) Personified numerals

(35) Color associations with numerals

4 + 2 others

6
31 no associates

37



Charlottesville

E

f.5

17 cases

15. . . . 30 to 100

17. 10
⑥. Later that has happened go back (left
left. front Right
Fairness

7 occasionally '2 3 5 6 7 8

③. Later must this
along a straight line with a break
in it at AD. The objects themselves
are seen on the line (as a battle)

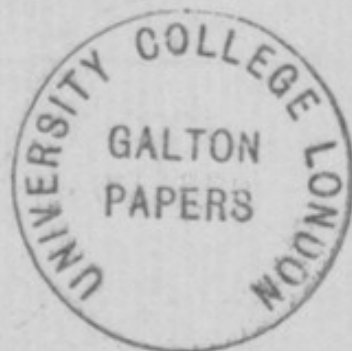
14. Written in a line. ———

9. As in Colenso's arithmetic, where learning
10 50 100

10 (1 10 20 30)
13. not often but occasionally - colours then are
in red.

$$5 + 2 = 7$$

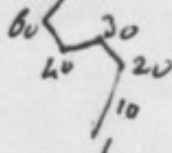
10 none at all
17



Charterhouse ~~D~~ cases 19 ^{p.6}

(14) has ~~correct~~ association, no number form.

9



4x10. always appear in a straight line —

13. always as in the multiplication table.
from which I learnt them

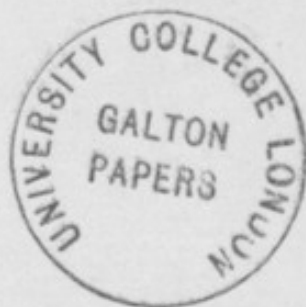
(10) neither written nor printed but as separate objects

3 + (2) (doubtful)

5

14 no number form

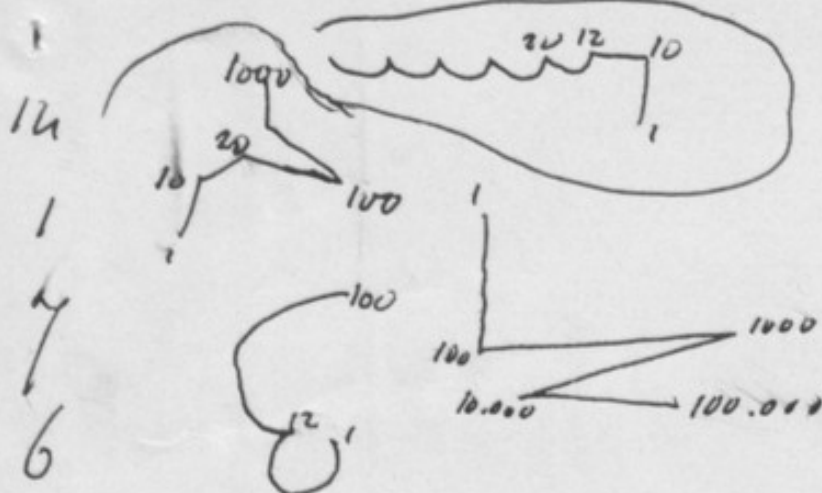
19 Total



Charterhouse

Cases

14 bags ^{f.7}



II 5 10

8

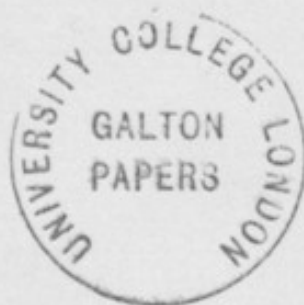
10 all in a straight line

Total 7

of them
7 have none

Total

vertical line



Charter House

(B set) f.8

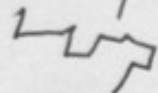
B. series of 30 boys, classified
in order of the complexity of their
number forms -

29 as strange

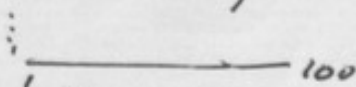
19 ^{also} (columns)

22 different places

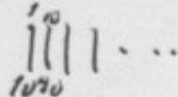
6



17



14



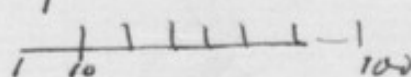
5



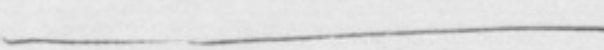
22



15



16



4



10 - on fingers

9 - dimly associated with light & darkness

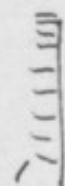
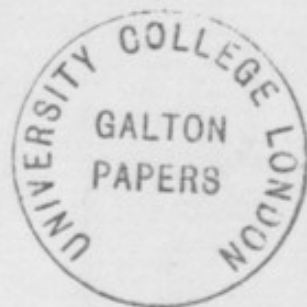
13 in all

? and (24) 1 always appears with 8 no other
number-form

? 14 in all

26 nothing

30

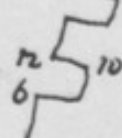


Charlestown

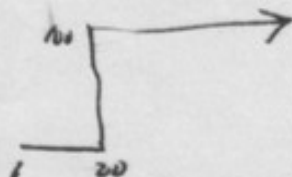
A. set

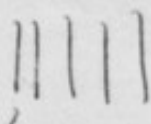
f. 9

A. 13 boys claped in the order
of the complexity of their number forms

11 — 

7 —————



3. 

13.  *months only*

h. no form but some numbers are soft & nice & easy
while others as 3 11. 27 are harsh & uncomfortable

3 or 5

10 or 8 have no forms.



Please
address

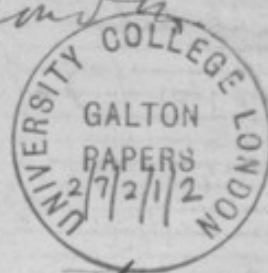
42 Rutland Gate
(to prevent return,

London

F 40r

Sch 20/80

~~rough
draft~~



Mr. I have been abroad since the beginning of this month and it was only yesterday that I had an opportunity of seeing your review in the 'Times' of my 'Mental Imagery'. I should be very glad, if you cared to do so, - if you would give me information on the following point raised in your review.

Leaving out all question as to whether the phrases I used were the best, and regarding simply the matter in question, I understand the difference between our views to be this.

You say that the true sensorium (the C. quadrate-ventral, etc.) may be acted upon either from above or below, in which of course I agree. (by the cerebral surface or by the retinal nerves),

but you seem to hesitate to acknowledge (1) that its excitation from below almost certainly spreads above and ^{(2) certainly} to deny that its excitation from above may spread below.

If A, B, C be these three great links, we both agree that B may be excited by either A or C ^(in the generalisation) but we do not agree that if B be excited by one of them an overflow of excitation may affect the other.

I dare say that I do ~~do~~ injustice in ascribing the view (1), which I am sure is contrary to

that held by most physiologists & metabolists
and will pass on to view (2)

My reasons for supposing the overflow of
excitation ^(be apt to) extend from A through B
to C are in the main those which induced
Prof: Wundt, ^{of Heidelberg} to hold the same opinion. I
enclose ^(very elegant) brief translations, ^{together with} a note of my own
referring to a passage in Dr. Wundt's Darwin's
Zoonomia. I would send more references,
but Wundt is the only book I have at
hand. (You of course know the work, as
one that goes into the physiology of the brain
as well as into its psychology, with the usual
German thoroughness and with much less than
the usual German ^{cumbersome} complexity.)

The information I want you kindly to
give me, is why you think my views
wrong?

Will you please send back the extract, to
save me the trouble of making another one.
I enclose an envelope ^{ready} addressed, so as not
to force you incognito in any way if
you dislike to quit it. I hope to be back in 10 days.

Let me just say a word about the last
part of your review, in which you have

p. 11

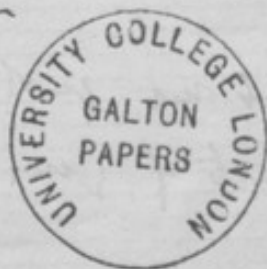
really omitted the point on which I laid
most emphasis, and the omission of which is the
justification of your conclusion, that the
tendency to visualise ought to be corrected
by abstract thinking. (I completely and
paraphrase what you said, but state as I
believe, correctly the substance of it)

My contention which you omit is that
it is 'impossible' to generalise justly
without the use of the visualising faculty
in such a way as to form generic images,
and that philosophers ~~were~~ ^{are} apt to sin
through over-~~correcting~~ ^{representing} it instead of
educating it in the right way.

Yours faithfully
Francis Galton

(with respect to these)
I need scarcely insist on the further fact, that
visions and memory-pictures are connected by a perfectly
continuous series of cases. I have abundant evidence
myself of it, and Fechner (Psychophysik) fully acknowledges it

To the Editor of the Artists in
the Times of Sept 3 . m
Mental Imagery.





Blank Schedules,

Visualising

Old & new

CHURCHFIELD,
EDCBASTON,
BIRMINGHAM.

QUESTIONS ON THE FACULTY OF VISUALISING.

For explanations, see the other side of this paper.

The replies will be used for *statistical purposes only*, and should be addressed to—

FRANCIS GALTON, 42, RUTLAND GATE, LONDON.

QUESTIONS.	REPLIES.
1. Illumination	
2. Definition	
3. Completeness	
4. Colouring	
5. Extent of field of view	
<i>Different kinds of Imagery.</i>	
6. Printed pages	
7. Furniture	
8. Persons	
9. Scenery	
10. Geography	
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15. Card-playing	
16. Chess	
<i>Other Senses.</i>	
17. Tones of voices	
18. Music	
19. Smells	
20. Tastes	

Signature of Sender and

Address

QUESTIONS ON THE FACULTY OF VISUALISING.

By FRANCIS GALTON, F.R.S.



THE object of these Questions is to elicit the degree and manner in which different persons possess the power of seeing images in their mind's eye.

From inquiries I have already made, it is certain that remarkable variations exist both in the strength and in the quality of this faculty, and it is highly probable that a statistical inquiry into them will throw light upon more than one psychological problem.

Before answering the Questions 1 to 5 (see the Schedule on the back of this page), think of some definite object—say your breakfast-table, as you sat down to it this morning—and consider carefully the picture that rises before your mind's eye. 1. *Illumination*.—Is the image dim, or fairly clear? Is its brightness comparable to that of the actual scene? 2. *Definition*.—Are the objects sharply defined, or are any or most of them little more than blotches of light and shade? 3. *Completeness*.—Are all the details of the breakfast-table seen with equal clearness, like a real scene, or do some parts obtrude themselves while others are barely visualised? 4. *Colouring*.—Are the colours of the china, of the toast, bread crust, mustard, meat, parsley, or whatever may have been on the table, quite distinct and natural? 5. *Extent of field of view*.—Does it correspond in breadth and height to the real field of view?

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F. G.

QUESTIONS ON VISUALISING AND OTHER ALLIED FACULTIES.

By FRANCIS GALTON, F.R.S., 42, RUTLAND GATE, LONDON, S.W.

* * * The replies will be used for STATISTICAL PURPOSES ONLY (as in "Nature," January 15, 1880, on "Visualised Numerals.")

THE object of these Questions is to elicit the degree in which different persons possess the power of seeing images in their mind's eye, and of reviving past sensations.

From inquiries I have already made, it appears that remarkable variations exist both in the strength and in the quality of these faculties, and it is highly probable that a statistical inquiry into them will throw light upon more than one psychological problem.

Before addressing yourself to any of the Questions on the opposite page, think of some definite object—suppose it is your breakfast-table as you sat down to it this morning—and consider carefully the picture that rises before your mind's eye.

1. *Illumination*.—Is the image dim or fairly clear? Is its brightness comparable to that of the actual scene?

2. *Definition*.—Are all the objects pretty well defined at the same time, or is the place of sharpest definition at any one moment more contracted than it is in a real scene?

3. *Colouring*.—Are the colours of the china, of the toast, bread crust, mustard, meat, parsley, or whatever may have been on the table, quite distinct and natural?

4. *Extent of field of view*.—Call up the image of some panoramic view (the walls of your room might suffice), can you force yourself to see mentally a wider range of it than could be taken in by any single glance of the eyes? Can you mentally see more than three faces of a die, or more than one hemisphere of a globe at the same instant of time?

5. *Distance of images*.—Where do mental images appear to be situated? within the head, within the eye-ball, just in front of the eyes, or at a distance corresponding to reality? Can you project an image upon a piece of paper?

6. *Command over images*.—Can you retain a mental picture steadily before the eyes? When you do so does it grow brighter or dimmer? When the act of retaining it becomes wearisome, in what part of the head or eye-ball is the fatigue felt?

7. *Persons*.—Can you recall with distinctness the features of all near relations and many other persons? Can you at will cause your mental image of any or most of them to sit, stand, or turn slowly round? Can you deliberately seat the image of a well-known person in a chair and see it with enough distinctness to enable you to sketch it leisurely (supposing yourself able to draw)?

8. *Scenery*.—Do you preserve the recollection of scenery with much precision of detail, and do you find pleasure in dwelling on it? Can you easily form mental pictures from the descriptions of scenery that are so frequently met with in novels and books of travel?

9. *Comparison with reality*.—What difference do you perceive between a very vivid mental picture called up in the dark, and a real scene? Have you ever mistaken a mental image for a reality, when in health and wide awake?

10. *Numerals and dates*.—Are these invariably associated in your mind with any peculiar mental imagery, whether of written or printed figures, diagrams, or colours? If so, explain fully, and say if you can account for the association?

11. *Specialties*.—If you happen to have special aptitudes for mechanics, mathematics (either geometry of three dimensions or pure analysis), mental arithmetic, or chess-playing blindfold, please explain fully how far your processes depend on the use of visual images, and how far otherwise.

12. Call up before your imagination the objects specified in the six following paragraphs, numbered A. to F., and consider carefully whether your mental representation of them generally, is in each group very faint, faint, fair, good, or vivid and comparable to the actual sensation:—

A. *Light and colour*.—An evenly clouded sky (omitting all landscape) first bright, then gloomy. A thick surrounding haze, first white, then successively blue, yellow, green, and red.

B. *Sound*.—The beat of rain against the window panes, the crack of a whip, a church bell, the hum of bees, the whistle of a railway, the clinking of tea-spoons and saucers, the slam of a door.

C. *Smells*.—Tar, roses, an oil lamp blown out, hay, violets, a fur coat, gas, tobacco.

D. *Tastes*.—Salt, sugar, lemon juice, raisins, chocolate, currant jelly.

E. *Touch*.—Velvet, silk, soap, gum, sand, dough, a crisp dead leaf, the prick of a pin.

F. *Other sensations*.—Heat, hunger, cold, thirst, fatigue, fever, drowsiness, a bad cold.

13. *Music*.—Have you any aptitude for mentally recalling music, or for imagining it?

14. *At different ages*.—Do you recollect what your power of visualising, &c., were in childhood? Have they varied much within your recollection?

General remarks.—Supplementary information written here, or on a separate piece of paper will be acceptable.

F. G.



* * * This half-sheet only need be returned. Address to F. GALTON, 42, Rutland Gate, London, S.W.

f. 46

QUESTIONS.	REPLIES.	
1. Illumination		
2. Definition		
3. Colouring		
4. Extent of field view		
5. Distance		
6. Command over imagery		
7. Persons		
8. Scenery		
9. Comparison with reality		
10. Numerals and dates		
11. Specialties		
	Light and colour. A.	Tastes. D.
	Sound. B.	Touch. E.
12. General sensations	Smells. C.	Other sensations. F.
13. Music		
14. At different ages		
General remarks		

Full Address of Sender.
(Ladies should prefix Mrs. or Miss,
as the case may be.)

QUESTIONS ON VISUALISING AND OTHER ALLIED FACULTIES.

By FRANCIS GALTON, F.R.S., 42, RUTLAND GATE, LONDON, S.W.

* * The replies will be used for STATISTICAL PURPOSES ONLY (as in "Nature," January 15, 1880, on "Visualised Numerals.")

THE object of these Questions is to elicit the degree in which different persons possess the power of seeing images in their mind's eye, and of reviving past sensations.

From inquiries I have already made, it appears that remarkable variations exist both in the strength and in the quality of these faculties, and it is highly probable that a statistical inquiry into them will throw light upon more than one psychological problem.

Before addressing yourself to any of the Questions on the opposite page, think of some definite object—suppose it is your breakfast-table as you sat down to it this morning—and consider carefully the picture that rises before your mind's eye.

1. *Illumination*.—Is the image dim or fairly clear? Is its brightness comparable to that of the actual scene?

2. *Definition*.—Are all the objects pretty well defined at the same time, or is the place of sharpest definition at any one moment more contracted than it is in a real scene?

3. *Colouring*.—Are the colours of the china, of the toast, bread crust, mustard, meat, parsley, or whatever may have been on the table, quite distinct and natural?

4. *Extent of field of view*.—Call up the image of some panoramic view (the walls of your room might suffice), can you force yourself to see mentally a wider range of it than could be taken in by any single glance of the eyes? Can you mentally see more than three faces of a die, or more than one hemisphere of a globe at the same instant of time?

5. *Distance of images*.—Where do mental images appear to be situated? within the head, within the eye-ball, just in front of the eyes, or at a distance corresponding to reality? Can you project an image upon a piece of paper?

6. *Command over images*.—Can you retain a mental picture steadily before the eyes? When you do so does it grow brighter or dimmer? When the act of retaining it becomes wearisome, in what part of the head or eye-ball is the fatigue felt?

7. *Persons*.—Can you recall with distinctness the features of all near relations and many other persons? Can you at will cause your mental image of any or most of them to sit, stand, or turn slowly round? Can you deliberately seat the image of a well-known person in a chair and see it with enough distinctness to enable you to sketch it leisurely (supposing yourself able to draw)?

8. *Scenery*.—Do you preserve the recollection of scenery with much precision of detail, and do you find pleasure in dwelling on it? Can you easily form mental pictures from the descriptions of scenery that are so frequently met with in novels and books of travel?

9. *Comparison with reality*.—What difference do you perceive between a very vivid mental picture called up in the dark, and a real scene? Have you ever mistaken a mental image for a reality, when in health and wide awake?

10. *Numerals and dates*.—Are these invariably associated in your mind with any peculiar mental imagery, whether of written or printed figures, diagrams, or colours? If so, explain fully, and say if you can account for the association?

11. *Specialities*.—If you happen to have special aptitudes for mechanics, mathematics (either geometry of three dimensions or pure analysis), mental arithmetic, or chess-playing blindfold, please explain fully how far your processes depend on the use of visual images, and how far otherwise.

12. Call up before your imagination the objects specified in the six following paragraphs, numbered A. to F., and consider carefully whether your mental representation of them generally, is in each group very faint, faint, fair, good, or vivid and comparable to the actual sensation:—

A. *Light and colour*.—An evenly clouded sky (omitting all landscape) first bright, then gloomy. A thick surrounding haze, first white, then successively blue, yellow, green, and red.

B. *Sound*.—The beat of rain against the window panes, the crack of a whip, a church bell, the hum of bees, the whistle of a railway, the clinking of tea-spoons and saucers, the slam of a door.

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Full Address of Sender.
(Ladies should prefix Mrs. or Miss,
as the case may be.)



Questions on Mental Imagery

answers
replies } F. Galton - 42 Rutland Gate, London
to

- a. How long is it since you began to learn mechanical drawing?
- b. Mention two or three of the more important drawings that you have recently made.

Recall one of these drawings to your memory, trying to "see" it as clearly as you can in your "mind's eye",— then answer the following questions.

- c. Can you mentally see the whole of the drawing at the same time, in the same way that you would see it if you really looked at it, or do you mentally see it in parts and imperfectly?
- d. How far is the image vivid, steady, and defined? Is it ever as much so as images seen in dreams?
- e. Where does the image appear to be situated? In the head, in the eyeball, in front of the eyes, or where? Is its apparent position always the same?
- f. Could you mentally project the image on a blank piece of drawing paper and hold it so steadily there as to be able to draw its outline?
- g. Do you think that your practice in mechanical drawing has or has not increased the vividness and precision of the images you see?
- h. Further information relative to any peculiarities in your mental images would be acceptable.
- k. Give your name and full address. They are for identification only, not for publication.

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With variation to the original catalogue Dec 1/79

f. 24c

Members of the Birmingham Philosophical Society,

OCTOBER, 1879.

Members are particularly requested to communicate to the Secretaries any changes of address.

✓ Airy, O., M.A.	257, Hagley Road.
✓ Albright, Miss	Mariemont, Westbourne Road.
✓ Albright, G.	Mariemont, Westbourne Road.
✓ Alcock, A. E., M.A.	King Edward's School.
✓ Allison, C. H.	36, Carpenter Road.
✓ Barker, Dr. Annie Reay	Calthorpe Road.
✓ Beale, C.	Carpenter Road.
✓ Bevan, Rev. J. O., M.A.	Russell House, Walmley.
✓ Bennett, H.	Church Road.
✓ Bennett P. D.	Church Road.
✓ Blake, J. G., M.D.	Harborne Road.
✓ Bowlby, Rev. H. B., M.A.	St. Philip's Rectory.
✓ Bruce, A., M.A.	King Edward's School.
Caswell, C. B.	13, George Road.
Carter, E. Harold	Hazelwood, Edgbaston.
✓ Chance, R. L.	Chad Hill.
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✓ Collins, J. T.	Churchfield, Edgbaston.
✓ Cooper, Miss	Edgbaston High School for Girls.
✓ Crosskey, Rev. H. W., F.G.S.	28, George Road.
Dale, R. W., M.A.	Bristol Road.
✓ Davies, Miss J. K.	Hagley Road.
✓ Davis, E. May, B.A.	Green Hill, Moseley.
✓ Deane, Rev. G., D.Sc., F.G.S.	Spring Hill College.
✓ Deeley, John	Priory Road, Edgbaston.
✓ Dell, Rev. R., M.A.	37, Highfield Road.
✓ Drummond, A.	Gosta Green.
Edmunds, Mrs. H.	Portland Road.
✓ Elkington, Alfred	Sandyford, Augustus Road.
✓ Emmanuel, Rev. J. G., B.A.	36, Beaufort Road.
✓ Evans, S., LL.D.	Heathfield, Alleyn Park, near Dulwich.
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✓ Forster, E.	St. Paul's Road, Smethwick.
✓ Fryer, H. M., M.A.	King Edward's School.
✓ Fulford, H. C.	Birchfield Lodge, Birchfield.
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Gibson, George A., M.B., D.Sc.	10, Old Square.
✓ Gore, G., LL.D., F.R.S.	Islington Row.
✓ Goode, T. F.	The Moors, Handsworth.
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✓ Hill, Alfred	270, Hagley Road.
✓ Hinds, W., M.D.	Easy Row.
✓ Hodgkinson, W. L.	Birchfield Lodge, Handsworth.
✓ Hookham, G., M.A.	Sutton Coldfield.
✓ Hopkins, A. N.	110, Bristol Road.
✓ Holden, Arthur	The Elms, Acocks Green.
✓ Hopkinson, J., D.Sc. M.A.	78, Holland Road, Kensington, London.



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Jordan, Furneaux	Gate House, New Edmund Street.
Keeling, G. S.	Anchorage Road, Sutton Coldfield.
Kenrick, J. A.	Norfolk Road.
Kenward, J., F.S.A.	Victoria Road, Harborne.
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Mitford, <i>Major</i>	Handsworth. <i>Burns</i>
Naden, Thomas	Temple Street.
New, Herbert, Jun.	1, Chad Valley.
Norris, R., M.D.	Birchfield.
Osler, Follett, F.R.S.	Southbank, Edgbaston.
Osler, Miss	Southbank, Edgbaston.
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Parker, Mr. Lawley	Edgbaston.
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Ryland, Fred	Chad Hill Cottage.
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Schwartz, Dr.	Queen's College.
Simon, Rev. D. W., Ph.D.	Hayfield House, Moseley.
Snedley, W. T., F.R.A.S.	Trinity Road, Birchfield.
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Taylor, R. Jun.	Colmore Row.
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Tonks, E.	Packwood Grange, Knowle.
Tye, G. S.	62, Villa Road, Handsworth.
Tyde, A.	1, Villa Grove, Villa Road, Handsworth.
Udall, J.	Board School, Rea Street South.
Vardy, Mrs.	King Edward's School, New Street.
Vardy, Rev. A. R., M.A.	King Edward's School, New Street.
Vardy, J. A.	49, Wheellys Road.
Walker, G. P.	24, Hagley Road.
Warden, C., M.D.	39, Temple Street.
Watson, Rev. H. W., M.A.	Berkswell.
Watson, C. J.	Smallbrook Street.
West, I. F.	Hagley Road.
Wills, A. W.	Wyde Green.

? 93. Recent work

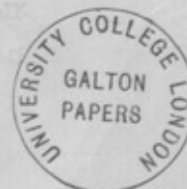
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Birmingham Philosophical Society.

SESSION 1879-80.



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REV. A. R. VARDY, M.A.

The next Meeting of the Members of this Society will be held in the BOARD ROOM OF THE GRAMMAR SCHOOL, on THURSDAY, NOVEMBER 13TH, at 7-30.

A Paper will be read by Mr. FRANCIS GALTON, F.R.S., on "Combined Portraits and the Combination of Sense Impressions generally." *Camera Illustrations of Composite Portraiture will be exhibited.*

The following, having been duly nominated, will be proposed as Members of the Society:

MISS CLARKE, M.D.; nominated by Dr. Heslop and Mr. Lawson Tait.

C. A. McMUNN, M.D., Wolverhampton; nominated by Mr. Lawson Tait and Dr. Saundby.

C. R. SMITH, M.D., Wolverhampton; nominated by Dr. Saundby and Mr. Lawson Tait.

MR. T. R. HOLLIDAY, 101, Harborne Road; nominated by Mr. W. Mathews and The Rev. A. R. Vardy.

Mr. H. BALL, Charlotte Road; nominated by Mr. O. Airy and Mr. R. Levett.

The Society will meet on the SECOND THURSDAY of each Month from October to June (January excepted), and in February there will be a Meeting on the Fourth Thursday as well as on the Second. Members are requested to communicate to the Secretaries the Titles of any Papers they are willing to read, and particulars concerning Experiments, Specimens, or Scientific Apparatus they are prepared to exhibit.

At each Meeting, after the reading of the Paper, it is intended to give opportunity for the exhibition and explanation of objects of scientific interest.

H. W. CROSSKEY, 28, George Road,

R. LEVETT, Prospect Road, Moseley,

Secretaries.

[OVER.]

The subjoined Report was presented to the Annual Meeting, held on October 9th :
The Society now consists of 120 Members.

During the past year, the following Papers have been read :

- "Pliny's Natural History," by The Rev. A. R. VARDY, M.A.
- "The Mode of Development of Mammalian Blood," by Dr. NORRIS. This Paper was illustrated by numerous Microphotographs, which were exhibited by the aid of the Oxy-hydrogen Light.
- "The Evolution of Conscience," by Dr. D. W. SIMON.
- "The Glacial Phenomena of the Vosges Mountains," by The Rev. H. W. CROSSKEY, F.G.S.
- "Recent Metalloscopic and Allied Researches," by Dr. SAUNDEY.
- "The Researches of Mr. W. Crookes, F.R.S., concerning Molecular Motions in Rarefied Gases," by The Rev. H. W. WATSON, M.A. (illustrated by experiments).
- "On the Connection between General and Technical Education," by Dr. BLAKE.
- "Our Philosophy and our Life—an Estimate of the Influence of Scientific Research on Modern Thought and Character," by Mr. J. KENWARD, F.S.A.
- "Researches on the Digestive Principles of Plants," by Mr. LAWSON TAIT.
- "On the Structure and Distribution of the Pre-Cambrian Rocks of Britain," by Prof. T. G. BONNEY, F.R.S., &c.

The Proceedings, containing in full the Papers read during the Session, are in the Press. Dr. Norris's Paper will be illustrated by numerous Photographs, prepared by himself.

Part I of the Proceedings has been re-printed, so as to be uniform with Part II ; and can be obtained by Members from the Secretaries. Price 2s.

It is proposed to bind together, in one vol., the Three Parts of the Proceedings, and to place copies in the principal Libraries of the country.

The Society contributed a special grant of £25 to the Reference Library Fund.

f.1

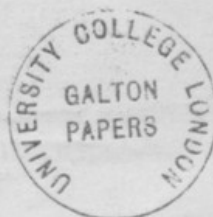
Visualising
Summaries of Returns



Miss Lewis
Charterhouse

Cheltenham
Worcester
Prince Wm
Vapor

(Miss Cooper of Egbash
sent 10 replies of her teachers
see her letter - the schedules.)



Object of inquiry
 Nature of imagery generally not subdivisions
 of numerals or particulars
 of hallucinations
 Addressing a hallucination

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f.3

The object of this memoir is to give an outline of ~~necessary~~ a brief outline and ~~unhappy~~ incomplete account of some inquiries ^{which} have been occupied during the past year, on mental imagery, and which I am still pursuing. There is however enough to ~~be said~~ to justify the following remarks.

I wished to find some facts that would ~~show~~ ^{exhibit} ~~new~~ light on the variety of mental disposition, ~~not as affected by education~~ but in the natural, intrinsic character and it seemed to me ^{possibly} that ~~some~~ ^{of these} questions would be framed that should elicit such facts, ~~and~~ ^{always supplying} ~~and~~ ^{after} ~~that~~ ^{but to} ~~be~~ ^{and} ~~not to accept~~ ^{criticise} ~~them~~ ^{with} too blind a faith.

The ~~first~~ ^{proposed} ~~question~~ ^{question} referred to mental imagery; that is to say to the power possessed by each ~~different~~ ^{different} individual, whom I offered to recall, ~~with a~~ ^{any} ~~familiar scene~~ ^{familiar scene} ~~what he had seen~~ ^{in the form} of a mental picture. He was asked to ~~reproduce~~ ^{reproduce} ~~his own~~ ^{the appearance of} breakfast table as he sat down to it on that ~~one~~ ^{morning}, and to ~~state~~ ^{state} how far he ~~was~~ ^{was} capable of reproducing a picture of it in his mind's eye. Various ~~and~~ ^{the way asked} ~~whether~~ ^{whether} how far the picture he had raised in his imagination ~~was~~ ^{was} complete, ~~whether it resembled what he had actually seen~~ ^{whether it resembled what he had actually seen} ~~whether the objects were or were not~~ ^{whether the objects were or were not} sharply defined, whether their colours were natural & distinct whether the mental scene was or was not comparable in its brightness to the real scene, and so forth. I enquired

last by printed questions, in an original & a revised form. A ~~word~~ ^{word} of mouth. The first results amazed me.

I had ~~previously~~ ^{previously} enquired ~~first~~ ^{first} of my friends & acquaintances ~~as an~~ ^{as an} ~~example~~ ^{example} in the Royal Society, ~~as~~ ^{as} ~~best~~ ^{best} ~~qualified~~ ^{qualified} ~~class~~ ^{class} of these ~~persons~~ ^{persons}. I knew to ~~be~~ ^{be} ~~accurate~~ ^{accurate} ~~information~~ ^{information} ~~from~~ ^{from} ~~the~~ ^{the} ~~fact~~ ^{fact} ~~that~~ ^{that} ~~they~~ ^{they} ~~are~~ ^{are} ~~all~~ ^{all} ~~of~~ ^{of} ~~the~~ ^{the} ~~same~~ ^{same} ~~order~~ ^{order} ~~of~~ ^{of} ~~the~~ ^{the} ~~mind~~ ^{mind} ~~and~~ ^{and} ~~that~~ ^{that} ~~they~~ ^{they} ~~are~~ ^{are} ~~all~~ ^{all} ~~of~~ ^{of} ~~the~~ ^{the} ~~same~~ ^{same} ~~order~~ ^{order} ~~of~~ ^{of} ~~the~~ ^{the} ~~mind~~ ^{mind} ~~and~~ ^{and} ~~that~~ ^{that} ~~they~~ ^{they} ~~are~~ ^{are} ~~all~~ ^{all} ~~of~~ ^{of} ~~the~~ ^{the} ~~same~~ ^{same} ~~order~~ ^{order} ~~of~~ ^{of} ~~the~~ ^{the} ~~mind~~ ^{mind} ~~and~~ ^{and} ~~that~~ ^{that} ~~they~~ ^{they} ~~are~~ ^{are} ~~all~~ ^{all} ~~of~~ ^{of} ~~the~~ ^{the} ~~same~~ ^{same} ~~order~~ ^{order} ~~of~~ ^{of} ~~the~~ ^{the} ~~mind~~ ^{mind} ~~and~~ ^{and} ~~that~~ ^{that} ~~they~~ ^{they} ~~are~~ ^{are} ~~all~~ ^{all} ~~of~~ ^{of} ~~the~~ ^{the} ~~same~~ ^{same} ~~order~~ 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I got at first no help at all. (2)

Yet to my astonishment, these accurate observers protested for the most part that mental imagery was unknown to them, ~~and~~ they refused to believe in its existence except as an exceptional phenomenon ^{and evidently looked on the account of it as being an elegant and fine thing not to be taken}. I will quote ^{exactly} from the ~~return~~ letters of ^{one of these} correspondents which may be taken as a fair sample of the ~~response~~ spirit of the responses that I most frequently received. It is the more ^{noteworthy} as he belongs to a family in which the existence of the faculty ^{has been habitually ascribed}.
 Quote Major Hertschel.

This frame of mind & absence of the power of creating images appear to be ~~shared~~ ^{equally common among} the members of the French Academy for M. Antoine d'Abbadie, a member, of the Institute judging from the following report of one of the ~~members~~ who sympathizing with my views ~~having~~ a great deal to say ^{about} his own personal experiences, made ~~many~~ inquiries among them for me. He says.

On the other hand when ^{I was} in general society ^{and} I asked questions of those I met, I found an entirely different ~~condition~~ state of experience to prevail. I ~~found~~ ^{met with} many men & ^{larger numbers of} women who declared that ~~their~~ mental images were habitual and distinct, ^{with them} full of color & of

brightness, & that they could call up ~~before~~ ^{in their} ~~before~~ ^{mind's eye} with a force & vividness that
 was comparable to the real scene. The more I pressed
 them with ~~each~~ ^{convincing & becoming} questioning, the more ~~evident was~~ ^{convincing & becoming},
 the truthfulness of their description. They spoke of
 what they mentally saw with the same assurance
 & tone of emotion ^{as} that ^{as} any of us might ~~find ourselves~~ ^{falling into} if we were explaining what we saw with
 our own eyes to a blind man ^{who} ~~doubted~~ ^{insisted upon} the
 existence of light in others. Reopened ^{with} ~~their~~ ^{to me}
^{look heart} ~~persecuted~~ ⁱⁿ inquiries, and by degrees ^{increasing} ~~my~~ ^{friends}
 in the scientific world began to believe that they
 might be deficient in a faculty that was elsewhere
 very common & distributed, and again, by degrees I found
 men of science here & there who possessed the faculty in
 which their fellows were mostly deficient. & Some of these
~~whose~~ ^{who} possessed it in a very high degree, and from
~~these~~ ^{from them} I obtained abundant information of ~~an~~ most
 careful & precise kind which has been doubly acceptable
 first for its intrinsic value and secondly as a
 standard by which I might ~~in some degree~~ ^{in a} guide
 myself in accepting ~~what was set me by~~ ^{what was set me by} ~~left~~ ^{left} persons
 less accustomed to accurate observation. & I may at once
 say that of the numerous statements I have received
 the general result has been that the contents of those
 received from persons in whose statements I ~~have~~
~~could~~ ^{could not but rely} have confirmed the statements
 of those whom on a priori grounds I ~~had~~ ^{almost} ~~accepted~~ ^{had accepted}
~~and~~ ^{with caution} ~~in the first~~ ^{the first} ~~is that it is possible to obtain information~~
^{here there are two results} ~~in the mind of others~~ ^{in a form suitable for scientific treatment by}
^{or what power in the mind of others} ~~and taking advantage of~~ ^{the second is}
~~that there is the first fact result~~ ^{that men of}
 eminence in the scientific world have in the
 whole, very little power of mental imagery. ^{Their}
 (Even 3 b)

Evening more in detail,
 I divided ^{by 100} the papers ^{of men} into 2 groups according to the described
 vividness of their mental images: (1) Perfectly clear & defined (2) high
 dim, having previously made more numerous subdivisions

In the first 50 I find 11 names of high repute
 in the last 50 I find 17, & these latter are on the whole
 of decidedly more ^{intellectual} weight than the former. I have tested their
 general result in detail ^{in many ways} and have no hesitation about its truth the fact
 that the tendency of vivid images is considerably less among the ablest
 than among the less able men. So far as I can judge from personal
 knowledge & ^{repute} I certainly think the character of the ^{group of} vivid images ^{differs}
 from those who do not have it by the inclusion ^{of a certain} of a certain
 flightiness or oddity of disposition. I do not find on the whole ^{that}
 that they are superior in the power of influence over others either
^{compared with} or of sterling superiority of another kind, & compensate to
 this. I find the most effective writers are certainly

I find at least as large a proportion of popular writers
 & of able public speakers in the ^{lower} group. Yet with all
 this some of the very ablest of men have ~~the~~ the gift of mental
 images to a ~~great extent~~ is developed to an unusual degree &
 the general conclusion I think is that you cannot have too much
 of it so long as it is kept ^{personally} subordinate to the rest & for
 higher qualities of ~~abstract reasoning~~ dealing with pure abstractions

Their mental work is not effected by ^{carried on} ~~visualizing~~ ^{means of} ~~visualizing~~ the elements of their thoughts but in more ^{hidden} ~~abstract~~ ways difficult of definition. ^{with which I will not quarrel.} ~~to which~~ ^{their} ~~peculiar~~ ^{peculiar} ~~cause~~ stand as cause or as consequence of scientific exigence? I suspect it is both. ^{The great facility} ~~A very great readiness of the~~ ^{mind to call up} ~~concrete images~~ ^{concrete images} interfere with ^{the habit of} ~~the habit of~~ ^{forming} ~~forming~~ ^{abstract} ~~abstract~~ ^{ideas} ~~ideas~~ and it is the ^{more common} ~~habit~~ ^{habit} of ^{dwell} ~~dwelling~~ ^{upon} ~~upon~~ ^{abstract ideas} ~~abstract ideas~~ with the ^{greater} ~~ease~~ ^{ease} of handling them that the intellectual superiority of one mind over another, ^{in science & metaphysics} ~~chiefly~~ ^{chiefly} lies. Vivid mental images, being antagonistic to abstract thought, is worse than useless to a scientific man. ^{He is} ~~He is~~ ^{probably} ~~the~~ ^{the} ~~better~~ ^{better} to never have had ^{the faculty of producing it} ~~it at all~~, or if he ^{requires it by nature} ~~has~~ ^{it by nature} to have lost it by disuse.

The answers to my inquiries fall into two ^{sets} ~~parts~~ in respect to each sex, but in this paper I shall only deal with males. The one ^{set} ~~group~~ consists of the returns I have received from persons to whom I sent the question & who cared to reply to them. These ~~can~~ ^{may} be used ^{for statistical purposes except generally because} ~~under~~ ^{cannot} ~~strict~~ ^{strict} ~~limitations~~. They do not come from a haphazard choice group of Englishmen but from those who had enough to tell to make them think it worth their while to send an answer at all. ^{Therefore they contain an unduly high proportion of cases of vivid imagery.} ~~They~~ ^{show} ~~the~~ ^{in a satisfactory manner} ~~the~~ ^{the} ~~relation~~ ^{relation} ~~development~~ ^{development} of the various ~~different~~ ^{different} ~~elements~~ ^{elements} concerned in mental images, with ~~different~~ ^{different} ~~degrees~~ ^{degrees} of vividness. The other set consists of the returns sent by every boy in the science classes of a large public school, the Charterhouse, which were collected for me by the science master, ^{of that school} ~~Mr~~ ^{W. H. Poole} who had taken pains previously to explain to the boys

the ^{exact} meaning of the questions asked & afterward set them to be answered just as he would have set any other piece of school work. These answers

172 in number ~~and~~ give a basis for statistical results.

I have ~~every~~ reason to believe in their general trustworthiness, from intrinsic evidence, from the confidence that Poole seems to ^{have} placed in them, ~~and~~ from the agreement with the answers ^{received from} ~~the~~ ^{in the first set that were returned by} scientific men & from metaphysicians. ~~These~~ ^{form a considerable impediment to my first set.}

Of this the reader will be able to judge for himself ^{of this point being various} from the quotations.

I have taken the returns of 100 adult males for my first set. The ten of these who had the intuitivity faculty most strongly are as follows.

Quote



F. 9

(6)

As an anti-thesis to these I now give the
ten who ~~hyper~~ ^{hypocrite} it ~~the~~ in the lowest degree.

The medium ten of the list cannot for the reasons
already given be taken as the ^{representative} average of men
nevertheless I present them here in order to
show the character of my returns.

Lastly as a matter of more interest, I give
a collection to illustrate the cases ^{half way} ~~intermediate~~
between the median & the lowest, namely
those that rank ~~in order of~~ between numbers
70 & 80

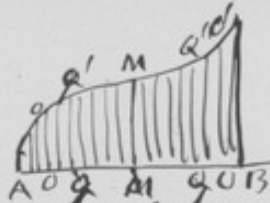
I will now bring these results into a compact
statistical form accordg to a principle which
I advocated some time ago under the title
of Statistics by Intercomparison* & which ^{now} ~~was~~ used
on more than occasion since* & to which reference
is made in a memoir by Mr. M. A. Lister* on the
law of the Geometric Mean. ^{Neglected} ~~Abandoned~~ all
theory about the law of the deviation of magnitudes,
beyond ~~accepting~~ the universally ^{accepted one} ~~fact~~ in Statistics that
~~exceptional~~ very great or very small magnitudes, are
much rarer than median magnitudes, I proceed
as follows. I suppose all the cases under observation
to be sorted in the order of their magnitude beginning
with the highest & ending with the lowest. Then ~~being~~

describe the middlemost

the ~~universally~~ observed fact

just attributed to they may always be represented

by a figure like that as in the annexed figure
 consisting of a number of ordinates placed at equal distances apart, and where the length of each successive ordinate is proportional to the magnitude of each successive case, the height of these ordinates will increase rapidly at the outset, they will be nearly ^{but} vary little about the middle of the curve & they will increase rapidly at the end.



This is the simple logical consequence of the fact that ~~the great or very small magnitudes~~ are much rarer than ~~the middle magnitudes~~. ~~It is a fact to be observed that the shape of the curve, which is the frequency of the large or small magnitudes, is such that it is not possible to fit a straight line to it.~~ If we know the bounding line of the curve we have a perfect knowledge of the statistical conditions.

express the shape of the curve when the curve is purely an empirical one, ~~and not~~ with the fewest measurements

it is obvious that they should ~~not~~ be taken at equal intervals apart, but be most frequent where the slope of the curve is more rapid.

Now there is abundant reason ^{both} empirical & theoretical for choosing ~~guiding or~~ suggesting a uniform method of choosing the position of these ordinates.

There can be no doubt about those of them; viz the middlemost MM' which is identical with the mean in the ideally perfect curve, and the quartiles qq' QQ' have the merit (the difference between these & MM' is the "probable error" of the ideal statistical curve).

The next measurement may very conveniently be the upper & lower octile oo' OO' & so we may continue halving & obtaining upper and lower 16-ile, 32-ile & so far as desired.

I prefer this plan ~~from its~~ in account of its simplicity to the more theoretically accurate ~~but more complicated~~ plan suggested in my "Statistics by Circumference", from which in applying this method

to the present ^{subject} ~~case~~, I have sorted the
 100 cases in the order of the vividness of the mental
 imagery, as well I could, guided by ~~not only~~ ^{partly}
 by the horneri quoted ^{partly} by the ~~rest~~ ^{rest} of the returns
 this I have done just as I should classify any
 other set of objects differing in magnitude, - the
 which I had no definite method of measurement
 namely by intercomparison. & I will now ~~take~~
 describe the medial, the two quartiles, the upper
 & lower octiles, ^{& appear lower 11th, 12th, 25th, 50th} the extreme cases observed.

These are the 1st ^{11th} the 2nd ^{25th} ^{50th} ^{75th} ^{88th} ^{94th} ^{100th}
 Taking these in the order of their magnitudes, they
 are the 1st ^{11th} 12th 25th ^{50th} 75th 88th 94th 100th

Rank	100 cases	relation	My powers are zero. To my consciousness there is almost no appearance of numbers with objectivity or total imperfection. I recollect the breakfast table but do not see it
11	100	lowest	I am very rarely able to recall any object whatever with any sort of distinctness. I occasionally see objects in a way with recall itself but even then it is more like a generalised image than an individual one. I seem to be almost destitute of virtuality, however as the control
6	94	lower	dim & not comparable in brightness to the real scene. Badly defined with blotches & light; very incomplete. The colors are right but very little of each object is seen at once
12	88	lower	image of my breakfast table fairly clear but not equal to the real scene. Defined, the part where I eat and its surroundings are pretty well so. All the colors are quite clear & distinct
25	75	medial	fairly clear. illumination of actual scene fairly represented well defined, and parts do not obscure themselves but attention being directed to different parts in succession to call up the whole
50	50	high	I can see my breakfast table as equally familiar thing with my mind's eye quite as well in all particulars as I can do if the reality is before me
75	25	high	The image once seen is perfectly clear & bright
88	12	high	brilliant, distinct, never blotchy
94	6	high	
100	1	highest	

(25) dim certainly not comparable to actual scene, I have to think of separately of the several things on the table to bring them clearly before the mind's eye & when I think of some things the others fade away in comparison

50. Coals Fairly clear. Brightness probably at least $\frac{1}{2}$ to $\frac{2}{3}$ of original definition. parts very much, one or two objects being much more distinct than the others but the latter come at last of attention be paid to them

Proceeding now to the second set of cases, namely the 172 Charterhouse boys the corresponding cases are

rank 172 cases

- 172 Hoxworth
- 162 Hoxworth
- 139 Upper 8-ile
- 129 Upper 4-ile
- 86 Medical
- 43 Bright
- 22 Lower 8-ile
- 11 Bright 16-ile
- 1 Bright

The image is very faint, none of the objects are clearly defined; the view is confused. The image is somewhat dim. I see the general effect but if I pitch down enough things the rest nearly vanishes rather dim.

See the colours just as they were before me and quite natural. The colour look more clear than they really are.

and these, so far as it appears at present represent well the statistics of the faculty among boys.

It will give more confidence in ^{my} ~~the~~ compendious method of treatment, if I annex as I do ^{believe} at present a few cases of ~~in which it is developed~~ highest & others of the lowest development of their faculty in Charterhouse.

- 172
- 162
- 139
- 129
- 86
- 43
- 22
- 11
- 1

Station 1

Character of ~~from~~ where Station is
removed from the lowest
the summit of the whole cliff
distance ^{up cliff} of station from lowest

position in
cliff

lowest

Highest to ~~from~~ summit

lower

semi-ostr.
ostr.
Gastropod

upper
S. Semisucc.
ostr.
Clam

Middlemost

Middlemost

Gravel

ostr.

Semi-ostr.

highest



Vividness

f. 14



Vividness of mental imagery

Adult Males

Sampler of 100 cases, classified by intercomparison by intercomparison, with series

Place in class.

- Highest
(Brenton)
- Semi octile
(D. G. F. Yeo)
- Upper octile
(T. W. Erie)
- Quartile
(F. Pollock)
- Middlemost
(D. G. Conter)
- Quartile
(Leons)
- Lower octile
(H. W. Darnon)
- Semi octile
(New D. Simon)
- Lowest
(L. H. Deane)

Brilliant, distinct; never blotchy

The image once seen, is perfectly clear and bright

I can see my breakfast table or any equally familiar thing with my mind's eye quite as well in all particulars as I can do if the reality is before me.

Fairly clear; illumination of actual scene is fairly represented; well defined. Parts do not obtrude themselves but attention has to be directed to different parts in succession to call up the whole

Fairly clear, brightish probably at least from one half to two thirds of original. Definition varies very much one or two objects being much more distinct than the others, but the latter come out clearly if attention be paid to them

Dim, certainly not comparable to the actual scene. I have to think separately of the several things on the table to bring them clearly before the mind's eye and when I think of some things, the others fade away in confusion

Dim and not comparable in brightness to the real scene. Badly defined with blotches of light; very incomplete. Very little of each object is seen at one time

I am very rarely able to recall any object whatever with any sort of distinctness. Very occasionally an object or image will recall itself but even then it is more like a generalized image than an individual one. I seem to be almost destitute of virtualizing power as under control

My powers are zero. To my consciousness there is almost no association of memory with objective virtual impressions. I recollect the breakfast table but do not see it.

From 100 returns of adult males

p. 15

^{brightness of mental images} ^{adult males}
the upper portion of a list of 100 cases classified by intensity of recall
at least as brilliant as the reality - ~~as brilliant~~

- 1 F.W. Burton — brilliant, distinct, never blotchy.
- 2 Ned F. Henslett. Quite comparable to the real object. I feel as though I was doggedly eyeing when recalling the scene to my mental vision.
- 3 Montague Robb — In some instances, quite as bright as an actual scene.
- 4 Henry Tedder. Thinking of the breakfast table this morning all the objects in my mental picture are ~~(as bright as)~~ as bright as the actual scene.
- 5 Arthur Saunders Brightness as in the actual scene.
- 6 J. G. F. Geo. The image once seen is perfectly clear & bright.
- 7 Ned G. Headlow. Brightness at first quite comparable to actual scene.
- 8 B. Woodd Smith. The mental image appears to correspond in all respects with the reality. I think it is as clear as the actual scene.
- 9 E. O. Connor The brightness is perfectly comparable to that of the real scene.
- 10 J. J. Murphy. I think the illumination of the imaginary image is nearly equal to that of the real one.
- 11 Anonymous ^{quite bright - bright as all the objects seen. I was well defined at the time} I can see my breakfast table or any equally familiar thing with my mind's eye quite as well in all particulars as I can do if the reality is before me.
- 12 T. W. Eole

~~See Anonymous~~ } Quite as bright as reality
Clause

W. Anderson Smith - Evidently very brilliant at times.

15 perfectly clear & bright.

In all these cases ~~except one~~ the mental field of view is directly stated or otherwise implied to be coextension with reality. ~~Robb says in the case of~~
~~the one claiming more~~ (Anonymous) says I can easily take
the mentally a much wider field of view than I should be able
to do by a single glance in reality.

Viewing of mental images. - Adult Males
From 100 returns of adult males
the middle portion of a list of 100 cases classified by intercomparison
Medium cases of Illumination Deficient Completion

p. 16

Sir Norman Haurin.

h5 Clear and complete. I can recall all the colors
but it seems to me to be by a second effort

Prof. Cosmo Nobbe

h6 Fairly clear & not incomparable in illumination with
that of the real scene, especially when I first catch it. After
it becomes fainter, when more particularly attended to.
The objects are sharply enough defined when they first
appear. The details are not all seen at once with equal
clearness & distinctness; rather one object is represented
after another & each in succession, proper more out of
view than the actual object would in direct vision.
The colours are distinct & natural till I begin to puzzle
over them

M. C. Wroughton.

h7 Fairly clear, not quite comparable to the actual scene
Some objects are more sharply defined than others, the
more familiar objects coming more distinctly in my
mind. The colours are most distinctly seen.

C. Scammon

h8 Fairly clear as a general image; details rather
misty. Imprecision of colour, through its relative effect
The relative effects of masses & colours of a landscape
is clearly marked, enabling me to reconstruct it in
my mind.

h9 J. S. Manton. Fairly clear, but not equal to the scene. Defined
but not sharply. Not all seen with equal clearness.
Colours not distinct; rather hazy.

h10 Dr. George Coats. Fairly clear. Brightness probably at
least $\frac{1}{2}$ to $\frac{2}{3}$ of original [the writer is a physiologist].

Definition varies very much, one or two objects being much
more distinct than the others, but the latter come out
clearly if attention is given to them. The colouring of
large objects is fairly good. but details are wanting.
The colouring of the whole field is generally good.

(Continued)

Continued) From 100 cases of adult males,

P. 47

Medium cases of Illumination Deficiency & A or

51 J. S. Dismorr. Image of my breakfast table fairly clear but not quite so bright as the reality - Altogether it is pretty well defined; the fact when I sit at the bureau - things are pretty well so. All the colors are quite clear & distinct.

52 T. J. Crockett Browne. Fairly clear but brightness not comparable to that of the actual scene. The objects are sharply defined; some of them are salient & others insignificant & dim but by separate efforts I can take a virtualized inventory of the whole table. The colors are quite distinct & natural.

53 W. Matthews. Details of breakfast table ^{the scene is} when reflected in are fairly defined and complete in the assigned particular but I have had a familiarity of many years with my own breakfast table, & the above would not be the case with a table seen casually, unless there were some striking peculiarity in it.

H. Harslee

54 I can recall any single object or group of objects but not the whole ~~scene~~ table at once. The things recalled are generally clearly defined. Our table is a long one; I can in my mind pass my eyes all down the table & see the different things distinctly but not the whole table at once. I can recall the colors pretty accurately & without difficulty but not the patterns in the chairs or unless they are somewhat geometrical.

As regard extent of field of view

Dismorr. I can see mentally all round the room in a second or so.

I imagine I can see all round a globe without difficulty. I cannot answer this question with certainty.

T. Crockett Browne. It is more limited than the real field of vision in all directions. It is circular with hazy margins.

D. George Conley. It is probably as large as the real field but only the central part is distinct at one time.

From 100 returns of adult males

the lowest with the end of the list of 100 cases,
classified by intercomparison.

these 100 by inverted
Leitz very last

very dim and indistinct

100
H. H. Leitz. My powers are zero. To my consciousness there is almost no operation of memory with objective virtual impressions. I recollect the breakfast table but do not see it.

99
Sir James Paget. Extremely dim. The impressions are in all respects so dim vague and transient that I doubt whether they can reasonably be called 'images'. They are incomparably less than those of dreams.

98
G. J. Romanes. No. My memory is not of the nature of a spontaneous vision, though I remember well where a word occurs in a page, how furniture looks in a room. The ideas are not felt to be mental pictures, but that rather the mental symbols of facts.

97
Sir Edmund Van Caine - No individual objects, only a general idea (of the breakfast table) of a very uncertain kind.

96
Major Herschel. It is only by a figure of speech that I can describe my recollection of a scene as a "mental image" which I can "see" with my "mind's eye." - The memory preserves it & the mind can at will roam over the whole or study minutely any part.

95
Pierazzi Smyth. No power of virtualizing. Between sleeping & waking, in sleep, in health, with eyes closed, some remarkable scenes have occasionally presented themselves, but cannot recall them when awake, with eyes open, & by daylight or under any circumstances when a copy could be made of them on paper. Have drawn both men & places many days or weeks after seeing them but it was by an effort of memory, acting on slight at the time & assisted by trial and error on the paper, a canvas, whether in black, yellow, or colour, afterwards.

94
Rev. D. Simon. I am very rarely able to recall any object whatever with any sort of distinctness. Very occasionally an object or image will recall itself but even then it is more like a generalized image than an individual image. I seem to be almost destitute of virtualizing power as under control.

(Continued)

Continued

Very dim & indistinct

93 Edmund Toulton. Dim imperfect & coloring very indistinct.

92 James Sully. Usually very dim. I cannot speak of its brightness but only of its faintness - not well defined, very incomplete, the colors reproduced much less vividly than light & shade.

91 M^r. Alister. Dim; poor definition; could not sketch from it. I have a difficulty in seeing two images together. The coloring is faint & I can only recall it by a special effort for each object.

Harriet Barrow. Dim & not comparable in brightness to the real scene. Badly defined with blotches of light; very incomplete. The colors are light but very little of each object is seen at one time.

Edmund B. Tyler. Dim and indistinct; yet I can give account of their morning breakfast table; split herrings, broiled chicken, bacon, rolls, rather light colored marmalade, faint green plates with stiff pink flowers, the girls' dresses, &c. &c. But my imagination is seldom pictorial except between sleeping and waking when I sometimes see rather vivid forms. I can also tell where all the dishes were, & where the people sat at breakfast (I was on a visit.).

~~Edmund Toulton. Dim imperfect & coloring very indistinct.~~

F. 20

Brightness & definition broadness of Images

Charterhouse boys A to O inclusive

Samples from 77 Cases adapted by intercomparison

1 13.28. The image is perfectly clear. I can see every feature on every one's face, everything on the table with great clearness - The light is quite as bright as reality

$\frac{1}{16}$ 13.VII. This is very clear and is as bright as it actually was. Every thing occurs most distinctly - I can imagine every thing at once but can think ~~much~~ a great deal more clearly by thinking more in that particular object

$\frac{1}{8}$ 13.18. To me the picture seems quite clear and the brightness equal to the real scene. I cannot see the whole scene at the same instant but I see one thing at once & can turn my eye mentally to another object very quickly so that I soon get the whole scene before my mind

$\frac{1}{4}$ 8.16. The image is fairly clear but its brightness is ~~dimmer~~ ^{less} than the actual. The objects are mostly defined clearly and at the same time

$\frac{12}{2}$ C.12. The image is fairly clear, but its brightness is not comparable to that of the actual scene. The objects are pretty well defined at the same time.

$\frac{1}{4}$ 13.12. The image is fairly clear. I cannot see everything at once but as I think of them they come clearly before me. The objects are all defined at the same time & the place of sharpest definition is more contracted than in a real scene

(Continued) ————— Charleston

A 6-8 inclusive } } cases

 $\frac{1}{5}$

B. 15. I can call up to my mind the picture of the breakfast table in every detail, but seem to see everything in it through a darkened pane of glass. I see just the same number of people plates &c the whole time provided of course that I do not change my idea of the scene to any great degree.

 $\frac{1}{16}$

A. 7. The image is dim dark, and smaller than the actual scene & the objects were seen more distinctly. The whole picture has more or less of a dark green tint

lowest

A. 11. Image dim, the brightness much less than in the real scene. Only one object is very clearly visible at the same time

Brightness & Definition

Vividness of Imagery

F. 22

Charlesworth boys E L K G 5 cases
Sample from 95 cases classified by intercomparison

highest G. 10. The image that arises in my mind is perfectly clear. Its brightness is decidedly comparable to that of the actual scene, for I can see in my mind's eye just as well as if I was beholding the scene with my own eyes.

$\frac{1}{16}$ E. 12. I see it exactly as it was, all clearly defined just as it was.

$\frac{1}{8}$ K. 16. Fairly clear, I cannot see everything at the same time, but what I do see seems always real.

$\frac{1}{4}$ G. 2. Fairly clear, the objects are pretty well defined at the same time.

M E. 8. The image is pretty clear but not so clear as the actual thing. I cannot take in the whole table at once and I cannot see more than 3 plates at once, and when I try to take in both ends of the table I cannot see anything of the middle. I can see nothing beyond the table but the table itself seems to stand out of the distance beyond.

This is rather lower than it is on account of the following.

$\frac{1}{4}$ G. 5. If I think of any particular thing without the others it seems clear, all at once are not very clear.

$\frac{1}{8}$ E. 17. Rather dim; the objects are pretty well defined.

$\frac{1}{16}$ E. 24. Dim. The place of sharpest definition is more contracted than in a real scene.

lowest G. 1. Very dim. I can only see one part at a time.

Compassion with reality

from women
who answered
2nd schedule

f. 23r

Mr. Archibald
Smith

One great difference between real scenes & mental pictures of my past life is that the latter are generally in a sort of twilight. To imagine something requires a distinct mental effort, and the most distant the least. The more grey & colorless do the pictures appear.

Miss Paterson

The real scene is the brightest

Mr. W. B. B. B.

I do not ~~see~~ think any difference, except perhaps being further off.

Miss H. H.

I cannot see mentally in the dark so well as in the light. The dark softens the images and makes them duller, and they look smaller & without much color.

Mr. Tanner

(? meaning)

I never realize any difference between the image & the reality. The only occasion on which I have momentarily acted (as I told you) as if the picture was real, it was unvoluntary. I did not believe I saw the things.

Mr. Brown

I see no better for being in the dark & shutting my eyes.

Miss N. O. Brown

I should see it far away. another kind of country, dreamlike

Miss Hawthorne

Rather smaller

Charleshouse
by W. H. Poole

The only difference is the one already mentioned with regard to past scenes in which I have had a part. I now look on and see the image of myself acting or passing in the past scenes instead of my feeling the past scenes again. With regard to purely imaginary pictures of natural scenery or of other people, birds & mortals I am no bar to the mental eye which takes a bird's eye view through the roofs of houses & over large tracts of land. It can see into all the rooms of a house at once.



Command over Ingers
& here I put me.

Wagon 11 } answered
+ no reply 2 } later

Mr. Tanner. I have the greatest difficulty in doing

- B 16. Much smaller
 C 5 Smaller and not so distinct
 C. 10 Much smaller
 D 4 Seems smaller
 E 1 very small and close
 K 27 a little smaller
 K 20 Seems farther off
 A 7 much smaller and very far off... The image is dim, dark, and smaller than the actual size.
 D 17 All the objects are clear, defined but the image appears much smaller. It does not change in size while looking at it.
 G 1 They are much smaller
 F 10 The part I look at is much smaller than reality, with a haze of black all round; it is like a small picture
 K 10 The difference that I see is, that every thing I call up in my mind seems to be a long way off.
 K 18 The difference is that it is much smaller.



Image larger than reality

- C 14 The place and objects in a mental picture seem to be larger altogether than the reality; thus a room seems loftier and broader and the objects in it taller
 F 23 They look larger than the objects really are and seem much farther off... they look about 5 yards off.

- G 10 I can most certainly project any image whatsoever upon a piece of paper
- K 6 I can think things to be upon a blank piece of paper
- J 16 I can easily project an image upon a piece of paper
- F 16 I can produce an image on paper if it can be drawn
- E 1 I can imagine an orange or anything else on a plate at any distance
- D 11 I can place a mental image wherever I like, outside the head, either in the air or upon any substance
- F 4 After looking at a blank wall for some time I can imagine what I am thinking of
- B 1 I can half project an image upon paper but could not draw round it, it being too indistinct. I see the effect but not the details of it
- F 5 I can project an image on a piece of paper a little
- C 2 I find it very hard to project an image on a piece of paper, but if I think for some time and look very hard ^{at the paper} sometimes can.
- B 28 I can project an image on to anything, but the longer I keep it the fainter it gets, and I don't think I could keep it long enough to trace it.
- B 7 By shutting my eyes I can distinctly see the picture I am thinking of; but by looking at a piece of paper I can only see a hazy picture

Other trustworthy cases at least

18 Total
Quite trustworthy
perhaps many others who say "yes" & many of whom may really mean it.



Chamberlain
A-D

Perfectly distinct,
bright & natural

White cloth blue china against
coffee pot - buff stand with wicker
drawing, table, - all clear

and details seen perfectly

Colours distinct and natural
till I begin to puzzle over them

Faintly distinct though not
certain that all are accurately
recalled

Natural but very indistinct

Faint - can only recall colour
by a special effort for each
object

Nil

Nil

B 26. Yes, perfectly distinct & natural
The colours look more
clear than they really are

I see the colours just as if they
were before me and perfectly
natural

Quite distinct and natural

Quite distinct & natural

23 B. The china white of egg & knifes
and all clear, but each thing as the artist
I read, lean, mustard pots and salt
see each distinct.
C. I. They are all distinct after a little
thought & are natural

C. 7. The colours of the most prominent
things on the table are distinct, as the white
table cloth and yellow mustard

Colours not very distinct

The colours are very dim

The image is very dim, none of
Nil

Chamberlain
E-K

F. 26

F. 23. The colours look more clear than they
really are.

F. 16. The colours are especially distinct in
every case

E. 10. All colours are especially perfectly distinct
to me in my mind's eye, in whatever scene or
shape they appear to me.

E. 13. The colours of the china &c are quite
distinct and natural

(by way) yes. - quite distinct & natural

E. 14. Some are; china, mustard pots, - the
others are not.

F. 24. They are natural but not very distinct

F. 19. The colours seem to be more like shades, but
they have some colour in them

Key Nil



Command over Imagery { 2.3 males
viz those who announced
my second schedule

127

Peculiar vivid automatic power

Neo P. Henslow

Pictures no great command to keep the image, it will change. Pictures change exactly like disjunctive views and are quite automatic unless by a voluntary effort I force a new one (see numerous descriptions)

Bacon v O'Han Jackson

I can retain a mental picture only by the constant effort to renew it, because its natural propensity is to be replaced by others.

B. Wood Smith.

Pretty steadily. I don't think it grows dimmer but is apt to give place to some image associated with it, corresponding to my natural habit of thought, which is rather active than concentrated

In order of persistency

A. Schuster

(Great power see his MS notes)

When an image first appears it is dim; as I look at it, more and more details are springing up. I can now turn to another image and ~~renew~~ again by looking at it make it complete in all its details. If this process is done pretty quickly; (I can generally do it in 5 to 10 seconds) I can turn back to the first image and still see it clear in all its details. I can thus with the greatest ease retain 3 images all representing large panoramic views. I can turn to either of them and see it distinctly the moment I look at it. I have not tried more than 3 but think I could manage 5 or 6. (The effort of making out the details of an image is the same as that of making out details of a distant object (being sharp sighted) and the fatigue is of the same in the two cases.)

S. O. Connor

I can retain a mental image steadily before the eyes, but the image gets neither brighter nor dimmer, and quite corresponds to reality. Half an hour does not tire me of looking at an image in my mind. I have never tried longer. I think

Anonymous baronets
& Willink

I can retain a mental picture steadily before my eyes for a considerable time. As I do so it becomes brighter. I feel the fatigue of so retaining the picture in the front of the eye ball, the sensation is very much the same as when trying to make out an object in the dark.

J. S. Dimmock

A mental image grows brighter when retained. Fatigue is felt in the forehead when tired of this.

W. H. Preece.

I can retain a mental picture steadily; for instance an apparatus that I am describing, and am not conscious of dulness of illumination or fatigue.

Eustace Plann

Sappho I say, just as long as in looking on a scene the eye wanders (unwillingly) from point to point. Fatigue expresses itself by momentary disappearances of the image.

J. J. Murphy

I have no difficulty in retaining an image for a short time. I feel the same difficulty in retaining it that I feel in keeping up a steady gaze at an object. I am not conscious of fatigue in the attempt.

T. H. Waller

Can retain it steadily, but am not conscious of its getting brighter or dimmer after it is fairly formed, which is generally in a few seconds. In trying to form a mental picture it is not at first vivid. The strain seems in the forehead.

Anonymous

I can retain a mental picture steadily for a good long time, till it becomes dimmer and a weariness is felt in the eye-lids.

Capt Douglas Puller

The image does not remain very long unless renewed by an effort of will.

Rev F. Howlett

Retained by a succession of slight efforts, otherwise the image becomes blurred. Scarcely conscious of any fatigue, but probably a little in upper part of eye ball.

J. A. Stewart

It grows dimmer; but I can make it brighter by concentrating attention upon it. I cannot localize the locus of fatigue.

Continued

Command over Imagery

23 males, viz
those who answered
my second schedule
in this

Rev. J. C. W. Ellis.

Yes:- It grows brighter & dimmer -
forehead

W. Larden.

No, I cannot. It is jerky and fitful. The
effort to retain an image resembles an effort of
memory

J. Lander Brewster

Not steadily. It does not change in brightness
but becomes hazy and disappears. In the forehead.

Brian Hooker.

Not. - It grows dimmer. - In the eyeball.

G. Hawtrey.

Not steadily. Fatigue felt

Anonymous
Scientific Gent by
Wittich

No; grows rapidly dimmer. In back of head.

H. G. Wittich

No & never could. [but compare with this his
reply to earlier questions viz that the image is dim
at first but by trying bit by bit by drawing from
memory the clearness increases up to the full extent
of his memory.]

Herschel

(does not count)



Command over Imagery,
or sense of fatigue.

woman 14 } answered 2-3
no reply +2 } Schedule

p. 30

Exceptionally vivid & automatic

Miss O'Brien

No. one image further out and then

Miss N. O'Brien
Miss Tanner.

Gets indistinct & crowded up with others
I have the greatest difficulty in doing this. I have little power of concentration of thought. The effort of calling up an image and retaining it is felt partly at the back of the eye, but chiefly above, in the front part of the head where I think.

In order of command

Miss Bethany

Yes; remains the same. No fatigue

Miss Hawthorn

Yes; no change; back of eyes

Miss Brown

I fancy I can ^{practically} retain an image as long as I want it, but forcing myself to keep it there is another matter, producing the same feeling in the forehead as trying to think out something I cannot grasp.

Anonymous
by H. G. Wallinck

I can, but it is an effort: the greater effort I make, the brighter the image becomes. Fatigue is felt in the top of the head

Miss Dalgreen

Yes; first the imagination becomes brighter then fainter; fatigue is felt in my forehead

Miss Henshaw

Yes; no change till I am tired; then it becomes dimmer. Fatigue in the eyeballs and above and between the eyes.

Ann Miss Boyle

I think fixing the mind's eye on something tends to make the image grow dim for the moment. It does not tire in any long, consecutive.

Miss Herschel

If I force myself to retain uninterruptedly the distinct recollection of a seen object or group for a longer time than natural, say 5 minutes, the effort is eventually aided by darkness. The attention at last will wander. If the mental picture disappears and is forgotten for a moment and has to be replaced. At last comes a slight sense of dizziness & I ease up from sense of general weariness, but (I think) with no local pain.

Miss Backwell

No, not steadily

Miss Archibald Smith

I cannot retain a mental image long before my eyes. The fatigue is felt between the eyes.

Miss Courtney

It does not appear to have anything to do with the eye; I hold the image in my mind

- 1) Perfectly clear & definite
- 2) High intermediate
- 3) Low intermediate
- 4) Very dim.



(1) certain

3 anonymous

J. Dyer Buckworth

J. L. G. Bunker

J. E. Geo.

T.W. Cole

F.W. Farver

V. Allen Sacke

Rev. H. H. H.

Arthur H. H.

Novel

Huggins +

Arthur H. H.

F.W. Farver

Charles G. H.

Carter

William H.

P. O'Connor

Schmidt

C. H. Lee

D. H. H.

Capt. Douglas H. H.

H. Tedder

J. J. Murphy

Robb

W. Andrew Smith

R. T. H. Waller

B. Woods Smith

O. A. H.

Rev. F. H. H.

W. H. Kelly

F. W. Lane

Major H. H.

F. H. H.

Arthur H. H.

A.B.

(2)

Henry Ball

George Bunker +

J. Bunker

Earrest

Cricket Brown +

Bark +

J. Bruce Clark

A. Geo. Coates

* Collins

Detest

L. T. Faguer +

Core

* Matthews

L. R. H. H.

* H. H.

Stacy

Ward +

* John Ball +

* H. H.

H. H.

* Martin

Preece +

* Vaughan Price

Robertson +

* Siemens +

* Southall

* G. H. H.

* W. H. H.

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* W. H. H.

best pos marked *

(3)

Anonymous

Hawley

Brian H. H.

Rev. H. H.

Larkin

Bevan

Rev. Arthur Balle

C. B. Casley

Charles Darwin +

J. M. Balfour +

James

Machonell

Max Müller +

Stephen Paget

Geo. Richmond

Shule

S. W. Walton

Rev. J. Venn +

B. (Willrich)

C. (Willrich)

20

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(4)

Robert H. H.

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Comparison of 1 & 2 in X

1	2
Bunker	H. H.
Allen Sacke	Romanes
Geo	Tyler
	Marshall
Huggins	H. H.
Schmidt	Pragge Smith
Douglas H. H.	H. H.
Bunker	H. H.
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Hochst.

Upper semioctile

Upper octile

Upper quintile

Middlemost



Colour

It is natural with all the cases in which the image is ^{distinct} bright & clear

Among the ^{some} medium cases there are 12 cases in which the images are more deficient in color than in form. In one case it is the reverse, the picture is a well known painter's R.A.

In the lowest case color is absent as well as form.

Douglas Galton (light color quite distinct) George Richardson (RA) (darker left eye) (more distinct than the form)

Henderson very faintly distinct, but not so bright as natural

C.B. Cayley (faintly) Ned Arthur Butler (generally) (unless expected)

J.O. Bevan - mostly neutral

George Bush - strongly dull

~~W.L. Dainton~~

* Preece no. the coloring is deficient J.A. Stewart colors more faint. I can represent form better than color.

George Stacey correct but not so bright as natural.

New W. Whitford This is not clear or distinct. The brown color & so: of some is for the writer difficult to reproduce.

C. Siemens - Quoted closely in 'illumination' & 'color'

J.S. Martin not distinct, rather hazy

H.G. Witherell All fairly so. I have always had greater difficulty in recalling colors than form.

* Mr. Preece told me that when he received & answered my questions he had practised himself in reproducing color & had succeeded perfectly. It now came with great pleasure to recall ~~color~~.

Highest 100 ^{new F. Howard} ~~London~~ Perfectly distinct bright & natural
 Higher 16.6 90 Norman Moore. White cloth, blue china, arcan & coffee pot, salt
 Stand with blue drawing, 'coat, all clear
 Side 88 Wendy Kelly All details seen perfectly
 L. 75 Croom Nobsen Color distinct & natural till I began to
 puzzle over them
 Medial 50 Sir / Fager Fairly distinct though not certain that all
 are accurately recalled
 Lower 4. 25 E. W. Wilson Natural but very indistinct
 Side 12 M. A. Wilson Faint, can only recall it by a special
 effort for each object
 16 de 6 - not
 Lowest 1 - not



Scenery see revised classification

99 women

Highest
Miss Herschel



Much precision and the greatest pleasure. word painted scenery makes an impression nearly as distinct as the recollection of places I have seen. The recollection of scenery I have enjoyed is the construction of ideal scenery is among the most vivid of mental pleasures to me. In the former case I sometimes find the same that the geography of the place, its position with regard to surrounding countries and seas, is inseparable from the picture and seems to set it like a frame. Also that in recalling the scenery of distant countries whether seen or read about, there is in the first instance almost invariably a turning of the mental gaze to the direction N. E. W. over an imaginary slope from the spot where I am. Scenery constructed from written descriptions or by an effort of the imagination dwells in the memory with nearly the same clearness, sharpness & perspective as if it had been formerly actually presented to the sight. There will be gaps in it however, unfilled up unless by a fresh effort and then the new details take their proper place in the next summing up of the picture.

Miss August Scott
Mrs. Huggins
Mrs. Henry Wall
Mrs. Tammor
Ann M. B. Boyle
(Knot in knot)

Yes certainly. Sometimes it is painful from excessive vividness. I can see places throughout a book but the scenes seem rather stiff.

Miss Catherine Herschel
Miss Palmer
Anna Blaney
Anna Condon Collier
Miss Halkett
Miss Day
(Knot in knot)

Recalled scenery with the greatest pleasure, can follow descriptions of scenery. Books of travel give me great pleasure, this pleasure must be from extracting

Miss Raymond
Miss Alice Balfour

Miss Eleanor Bask
(Knot in knot)

Vividly recall any scenery and delight in it. Can readily follow descriptions in books, &c. and could draw from them.

Miss Annie Mary Barker
(Lower Charles)

Can recall general outline of scenery, and some details with much pleasure. Written descriptions of scenery followed slowly
[can follow geographical descriptions easily, including movements & scenery, &c.]

Miss Courtney
Lower Oclite

I can distinctly remember the general effect of scenery I have seen. I cannot form a picture easily from description but that I think is the fault of the writer. I always form some

Anna Lloyd
Lower Ambrose

Many scenes which I have beheld as traveller abroad I remember well, and when pictures speak to me of Montney, Milan, certain aspects of those places instantly return. If morning or evening is described, I picture it out with local sunset or sunrise that have impressed me. With regard to scenery, it depends on what author I read. Wordsworth & Tennyson make me see what they describe but Sir Walter Scott never does.

Miss Field
Lower

Extent of Field of View & Scale of Imagery

There are two separate tendencies which become confused in many of the replies.

One is, to see little more than the object on which attention is forced, so that the field of view is narrowed.

The other is, to see every thing on a reduced scale, as if it were seen through the small end of a telescope. In this vision the spectator may take a bird's eye, may see herself as an actor; in other words it is a perception of the occurrence not a plain reproduction of a virtual act.

13 cases greater than reality

56. like reality

* 30 (apparently) smaller

Some out of the set of 9 referring to scale of imagery may not imply that the field of view was smaller.



Extent of Field of View

99 women

1.36

Mrs Herschel 1
W. Herschel

(A long & very striking account, & has
copied in full)

Mrs Tanner 2

I always see all sides of a room at once, and
can place myself in the middle. I can see
an entire sphere

Ann Mrs Boyle 3

I can see at once all round the room and
behind my chair

Anonymous 4
H. G. Wollinck

I feel as if I see more than is actually visible,
more than ~~a~~ half a ball, &c.

Mrs Henslow 5

Yes, I see all round the room. If I try
to see all the faces of a die, it is immediate
of transparent white glass, and I see through
it. The globe is not very good

Mrs Worlock 6

I can imagine distinctly the whole of any
room, church, landscape, square, &c. that I
really know well

Mrs O'Brien 7

I see a whole room not very vividly. A panorama
of scenery I can turn round in

Mrs Constanta Herschel

larger than the real in lateral dimensions.
The scene usually appears as if I stood further
away than I really did. Also without
imagining any change of position, I can see
through the front objects.

From Charleston lady
sent by W. H. Poole.

The picture appears exactly where it happened
with an image of myself a part of it, in the position
from which I looked at it in reality, so that the
mental eye sees more than was seen by me at the
time. Objects that were behind me appear in the mental
picture behind the image of myself but there and the
image are in some cases very dim indeed compared
to the rest of picture. I could not project my picture on
a paper, each object must occupy its full real space
so that one appears to be living in the past to the time
being, and surrounded by solid objects

Miss Herschel (a long & very striking account)
to be extracted in full.

Miss Henslow Yes I see all round the room. If I try to see all the faces of a die it is immediately transparent white glass, and I see through it; The globe is not very good

Miss Bostock I can imagine distinctly the whole of any room, church, landscape, square, &c. that I really know well

Miss Anna Lloyd 10 Mentally I find I take in rather a wide field of vision, and objects stand in proportion to each other pretty clearly, but their accurate form I forget

Miss Palgrave 11 I see mentally a wider range of a view than I could by a single glance of my eye

Miss Duckworth 12 So much as one sees by slightly moving the head

Miss Browne I think not without great effort, when I inspect I really do not hold them together, only the change is too rapid to be perceptible

Jane Wren 13 Generally smaller but sometimes large. 2 undeposited

Miss Day 14 A mental glance will take in the whole scene, but when a pause is made to observe more closely, the whole becomes left clear, and the mental vision has to be concentrated in a small space at a time, to obtain distinctness. Then the view equals the real for a moment, then diminishes to the field of view of a telescope

Maria Turrell 15 I see the left side of the table as if in twilight, the right side quite in deep shadow where the object looked at is above my clear

Ellen Porter 16 Indirect shadow on left of picture.

Miss M. P. Herrick 17 Breadth less than actual, height about the same

May Allen 18 Breadth and height nearly the same as the object

Anna Stacey 19 Height & breadth somewhat smaller than in reality, somewhat less than the real scene.

Miss Alfred Jones 20 Very small; about as much can be seen mentally as could be attentively noticed in one glance actually.

Alice Wood 21 I am inclined to think that the width and height are somewhat less than in the real scene.

Miss Ley Blake 22 Smaller than nature

- Mr. G. S. Joz 88 If anything, rather smaller than the real object
 Mrs. Kennedy 89 I believe I have a tendency always to contract to recall any field of vision.
 Kate Andrews 90 It is rather smaller
 Mrs. Arch. Smith 91 I cannot see more at a time than I actually should with
 Laura B. Smith 92 Smaller my eyes; indeed not so much. It would be by the
 exercise of memory that I sh^d see it at all
 Mrs. Romanes 92 Smaller I think, more like a picture than a real view
 Emma Keller 93 Smaller
 Mrs. R. Simmonds 94 Smaller
 F. Fowle 95 Smaller than in Plato's
 Mrs. A. S. Fleming 96 When the table is large I only seem to see the part nearest to me
 Mrs. Pope 97 very limited
 Mrs. Litchfield 98 very small
 Mrs. Field 99 nothing seen at all
 Lowest 99 (There is confusion here & there between extent of
 field & scale of vision. - see latter)

21 cases
 9 from next page
 30

Scale of imagery

- Miss Lena Churchill Things generally appear larger than otherwise
- Miss M. Shaen I think I see things from somewhat of a bird's eye point of view
- Miss Cooper The image corresponds to the reality; but in this respect I am more strongly impressed with the sense of short-sightedness than in real life
- Miss Amy Cameron Patton As a rule objects appear to me a little smaller than in reality
- Miss Ellen Porter Everything is a little smaller than life, but all in exact proportion. Field of view proportionately equal to real field of view
- Miss Halkett Things appear to me as clear as in actual vision, but everything on a smaller scale, like looking through the wrong end of a telescope.
- ~~Miss Ellen Buck~~ Smaller
- Miss Ellen Buck The whole has a look of being far off and somewhat smaller.
- Laura B. Smith Mental picture smaller as a whole than actual scene.
- Eleanor Stacey The whole sometimes smaller than in reality
- ~~Miss Dornier~~ Smaller I think, more

(There is confusion here & there between scale of imagery & extent of field of view - see latter)

Chatterhouse

Hallucination Illusion

1.40

7

Difference between a very vivid mental picture and a real scene

Have you ever mistaken a mental image for a reality when in health & wide awake.

- E 6 ~~Yes~~ When out shooting, rabbits have often seemed to pop when they did not.
- F 4 I have often imagined that I saw figures gliding among the trees while walking through a wood at night
- F 25 Yes, often in the dark
- D 16 I hardly perceive any difference between a very vivid mental image and the real scene and have sometimes mistaken an image for a reality
- B 5 I have continually mistaken a mental image for a reality
- F 1 Yes, often in the night
- K 10 I have sometimes mistaken a mental scene when wide awake for the real.
- F 30 Yes, often.
- K 28 Yes, I have
- F 2 Yes
- F 33 Yes
- F 37 Yes
- F 11 I have never taken an image for a reality when in health except when half expecting the arrival of something unnatural, as in a haunted house for instance.
- B 13 Only in this one case; If I have been staring thinking about some one for some time, and directly afterwards if I saw somebody close to me I should most probably think it was the object of my thoughts and address him or her as such.
- B 28 I have often thought things hanging up such as dressing gowns, cloaks, &c. were the garments of real persons in them.
- B 7 Often when lying awake in the early morning I have caught myself talking as if some one was in the room, and I have watched a certain place for a considerable time, seeing in it the figure of some one that I know or have been with a short time before.
- 2 23 I often see flashes of light, always on the right side and I always feel confident of having seen lightning. This is always in the daytime & in perfect health.



Charterhouse boys

out of 172 cases 23 have number-forms, consisting of more than a single line, ~~15~~¹⁶ have forms consisting of one straight line, mostly vertical or horizontal, but in rare cases oblique or receding, and there are 6 cases not of forms exactly, but of some peculiarity in the way of seeing numbers. I give drawings of ~~16~~¹⁶ of the 22 forms omitting the ~~one~~ most difficult complicated ^{one} and 5 of the simpler sort. The descriptions of the former are as follows.

B. 29. The figures 1 2 3 - 6 are at about equal distances from each other on a line going round the inside of my skull from a little above & behind my left ear [round by the forehead] to a little above and behind my right ear. After 6 the line goes behind my head. The other numbers are all over the top of my head. Thus 4040 1432 is rather in front of the hole of my ear, 1480 is over my left eye, 4040 is on the top of my head, not very far back. In Arithmetic and Algebra the front third of the top of my head gets tired and aches; in English the middle of the top. I cannot account for these notions.

B. 22. I cannot really describe on paper the picture, though I can always call it up. it is something after the above fashion (see fig:). After every 10, beginning with the 20, there is a jump down to a lower plane which ascends with a rather sudden rise at the 1 and then more steadily, to the next 10. In dates the arrangement is different except in years B.C. In years A.D. [a figure is drawn] the arrangements between each 100 resemble those of my notations except that I suppose myself to stand at the nearest date instead of at the one, as I do in numbers. Or else I look at them from a bird's-eye view.

A. 11. Numerals (and dates a little) are connected in my mind with a sort of perspective line which zigzags a good deal and turns to the right at each 6 (see fig). I can only account for this by the fact that the first addition sum I could grasp was $6+4=10$



B. 19. (see fig.)

1 appears ~~white~~ black, 2 white, 3 white, 4 very dark blue, 5 bluish
iron colour, 6 orange, 7 yellow, 8 red, 9 red, 0 like water.

B. 6. Numerals always come in the following order (see Fig)
but dates as follows [two sketches are made ^{each} showing a
line in numerous ~~different~~ zig zags, and of the same class
as but by no means identical in details with the
number-forms.] I cannot account for the association

F. 14. The numerals 1-10 seem very close together, from
10 to 20 they seem wider and bigger. From 20 to 100 the
spaces are equal; from 100 to 1000 the hundreds divide
the spaces equally and are close together. After 1000 there
is confusion of noughts with ones at the beginning.
3 seems to have been my favourite number; 9 a hateful
^{perhaps} one because it is so difficult to multiply or divide with it
or to subtract it

C. 14. no description (see fig.)

C. 6. ^{my numbers go thus}
~~No description~~ (see fig.)

C. 7. numerals always take a diagram of the following shape (see fig.)

K. 3. no description (see fig.)

C. 1. numerals are associated with a figure (see fig.) and all
numbers seem to be in black, never in any other colour. Dates
seem always to be printed in ink, but in no particular figure.

D. 9. Numerals are associated in my mind with a diagram (see fig.)
The figures are written and not coloured at all. The only
difference ^{between them} being that 1 is much lighter & more distinct than 100

E. 10. The numbers come in black (see fig.) I cannot explain
it. When I think of dates, like that of the battle of
Waterloo, a picture of what I think it was like comes
into my head.



G. 2. As in diagram (see Fig). After the numbers are as written figures in yellow. After 11 they go anyhow.

B. 17 The figures go in a straight line up to 100 and then I put the 100 to one side and count up again along the line till I get to another 100. Then I make a column of hundreds, & so on. The figures appear printed in plain letters.

B. 14 The numerals seem to come to me by tens in straight lines thus [the fig: shows a succession of short parallel vertical lines of 1-10, 10-20, &c] up to 1000, where they get hazy. This seems to have originated in learning the numbers by tens at a time, especially the multiplication table, and the figures appear printed.

A. 10. Numbers appear as figures arranged in rows from left to right. I cannot account for this.

B. 5. I have a distinct image up to 70 (see Fig), but no further. The letters (? figures) are written but always in red ink.

F. 31 No description (see Fig)

B. 27. No description (see Fig)

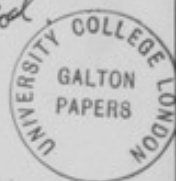
E. 17. Numbers appear seem to ascend slanting up to 30, where they begin to slant a great deal more and so go on to 100 where I lose sight of them.

A. 7. The numerals 1-20 go in a horizontal line from right to left. From 20 to 100 they go up perpendicularly. From 100 ~~ad infinitum~~ they go from left to right. Dates always go in a perpendicular straight line downwards until the Norman Conquest when they arrange themselves in periods thus, [a diagram was annexed] I think the association about the dates comes from this arrangement of the dates of the Kings in a little history I once used. The numbers always seem in ordinary figures in my own writing.

E. 7. Occasionally, and in red, as in diagram (see Fig)



People occasionally use figures (see fig) and in red forms consisting only of straight lines.



- F. 7. Numerals generally appear printed, and they always seem to grow higher and to recede as they get towards 100, at which point they seem lost. They are never coloured.
- K. 9. When I think of numbers they seem to start straight up before me, getting closer & closer together as they get higher.
- B. 16. Numerals go upwards in a vertical line, the divisions of it being into small spaces representing ten each. I have no mental image above 100. Dates generally appear in figures of the size of those printed in newspapers.
- G. 6. ~~In a vertical line divided by cross lines at 20, 30, 40, 50~~
In a vertical line from 1 to 30 with a short cross bar at 20 & again at 30.
- C. 14. Printed figures in a straight line upwards.
- C. 8. Numbers are always in a continual straight ^{vertical} line. I cannot account for it as I have always had the same feeling.
- B. 15. My figures go off in a perfectly straight line from about a yard in front of me. They are always present as written numbers. 1 is quite clear and so is everything up to 100, they begin to fade at about 125. All multiples of 10 are particularly prominent as especially 10 itself, 100 & all the multiples of 100. My idea is that I began to learn 1, 2, 3, first and therefore they are the most nearly associated with me. The figures are never coloured.
- C. 10. All numerals and dates appear in a straight ^{horizontal} line. They are all black and written.
- E. 6. I see them on a road as it were; the numbers are always written. At 12 there seems a stop; then it goes on again.

• Charleston

C. 2. If I think of numbers it is in a straight line and from left to right; but I always think of dates in columns as in a book

K. 6. In a straight horizontal line from left to right

K. 10. Generally in a straight line from 1 on the left to

100 or more on the right.

D. 4. Numerals always appear in a straight line. No peculiar place for dates

E. 14. They seem to be written in a line

K. 1. Numerals & dates always come in the same straight lines.

K. 19. They are in a muddle up to 20 but go thence up to 100 in a straight line. They are all printed

F. 11. Numerals and dates always appear to me in print, and in a long unending line always in the same places. They are as if printed on a white surface. I cannot account for this though it has always been the same [A drawing ^{understanding is given} of the months of the year disposed in a circle "anti-clock-way", ^{with} in differently coloured quarters Summer is blue, Spring dark brown, winter grey, autumn red.]

E. 6. [Dates of past ^{events} go back in a slant downwards to the left, the front being the present time; those of future events slant downwards to the right. ^{There} ^{that} are thought of are alone seen ^{in their places} and they are separated ^{from} ^{each other} by gaps. -

B. 4. Only by the shape of the figures and by a diagram in the forehead in the shape of a wheel, round which the numbers revolve. This latter I can only associate with the measurement & description of angles in trigonometry. The diagram is very faint and principally remembered without anything [in the way of figures].

B. 1. I imagine my numerals up to 9 by what fingers they come on when I count upon them. After 9 I have no mental images. 3 would be on my second finger and 7 also by counting up to the fifth & counting back. I have no images for dates

Charlesworth

E.g. The numbers seem to me to be printed as in Colenso's arithmetic, because that was what I first learnt them out of.

D. 13 I always see the figures in my mind as I learnt them in the multiplication table, that is printed, and when I conjure them up I always see them in the same order as I learnt them.

D. 8. Numerals & dates appear neither written nor printed but merely as objects, separately. They are remembered merely by the proportion of the sum which the addition or subtraction of a certain number of digits bears to the rest.

K. 23. ^{Generally.} Once I was told that if you counted a flock of sheep jumping over a gate, it would send you to sleep, so I generally think of them. [!]

A. 1

A. 4. If I am adding two numbers such as sixes together I see two masses of something to represent six [these are arranged in an accompanying figure in parallel lines] and a piece outside them. I always say $12+1$. Dates are always written in big figures in the air.



Color apocryphus & personification

F. 19. 1 is a youth 2 a young lady 3 a female companion for 2
4 a middle aged man, 5 an elderly lady 6 a sort of
Esquire, 7 a young man of twenty one years, 8 a
middle aged lady, 9 rather a powerful sort of man, a
magistrate.

A. 4. Some figures are soft & nice (6, 2, 8, 9) while others
such as 3, 11, 27, are harsh and uncomfortable.

D. 14. Every numeral seems to have a colour of its own;
as 1 is grey, 2 brown, 3 white, 4 black, 5 blue, 6 white
8 yellow, 9 red, &c. &c. They are always seen printed
in their own colour. Also each number has a character
of its own. I cannot account for it.

F. 35. Every number has a colour in my mind 1 is white
2 grey, 3 blue, 4 brown, 5 orange, 6 blue, 7 green,
8 red, 9 dark brown, 10 yellow, 11 dark grey, 12 black.

B. 9. Numerals are in printed figures and are dimly
associated with light & darkness.

E. 13. Occasionally appears in red.

K. 4. Figures appear to be written but in different
colours. For instance 9 appears goldenish, 7 a kind of
purplish blue, 8 white, &c.

see also previously written out.

B. 19 - colours

G. 2 - all in yellow

B. 10 written in red

D. 9 1 hand writes more distinct than 100

B. 5 in red

F. 14 personified



Position ~~Distance~~ of Images

f. 48

(4)

Percent

14	Further than reality	9	8
63	corresponding to reality	39	36
14	various distances including head	9	8
{ 7	a little in front of eyes	35	20
{ 28	Just in front of eyes		
9	In eye ball	6	6
25	In head	15	15

No returns
5 more out of the protection paper left which should have been clamped here as no returns

ABP

172 Total

$$\begin{array}{r} 14/140(9 \\ 126 \\ \hline 140 \end{array}$$

$$\begin{array}{r} 14/130(39 \\ 48 \\ \hline 150 \end{array}$$

$$\begin{array}{r} 14 \\ 13 \\ 14 \\ 35 \\ 9 \\ 25 \\ \hline 160 \end{array}$$

$$\begin{array}{r} 172/1400(8 \\ 1376 \\ \hline 24 \end{array}$$

$$\begin{array}{r} 172/3500(20 \\ 3440 \\ \hline 60 \end{array}$$

$$\begin{array}{r} 172/1300(30 \\ 516 \\ \hline 1140 \\ 1560 \\ \hline 1204 \end{array}$$

$$\begin{array}{r} 172/900(5 \\ 850 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 16/350(22 \\ 32 \\ \hline 30 \\ 16/90(1 \\ 16 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 172/2500(15 \\ 122 \\ \hline 780 \\ 680 \\ \hline 98 \end{array}$$

Various Distances

- K 12 Before the eyes; sometimes in the head, sometimes down in the lower regions, sometimes in my head
 B 4 In front of the eye, or at a distance, in the farthest point of view or nearer at will.
 C 2 My mental images appear sometimes within the eyeball and sometimes at a distance corresponding to reality. I generally find if I have a mental image of something moving, or at a long distance off I see it at a distance corresponding to reality, but if it is something stationary or very near, I see it in my head or eye ball
 F 4 In the daytime in the eye ball, but at night about a yard or two off
 G 11 I can place a mental image wherever I like outside the head.
 A 12 I can think of a thing ^{anywhere} wherever I like, but the distance between it and the front of my eye is always filled up with some foreground.
 E 6 In the head if the eyes are open; if shut, in the eye
 B 29 A landscape is outside of my head in front of my eyes, with a little way off. all other things are inside at the back of my head.

Head
 5 cases (others)

- C 10 Behind the eyes
 B 30 Sometimes in the head, sometimes at distance corresponding to reality but not in eye ball

14 Total

Further off than reality

- K 14 A long distance off
 B 19 A little further off than the real scene. Sometimes I include myself sometimes not
 F 10 Objects all appear a long way in front of my eyes.

5 cases - at a distance corresponding to reality or perhaps a little further off

6 other cases

14 Total



Corresponding to reality but can't project
on paper

- 8 5 As a rule in the same place where they were, and I
generally see myself either standing or sitting in the
same place as I had done when looking at them. For instance
to recall "a road to ruin" in the Royal Academy I have
just to think of the objects round (the policeman, crowd,
especially myself and then I can see all the five
pictures following one another with perfect clearness.
- B 15 Exactly in the same place as when I saw them.
I have no power of drawing a scene on paper as if I
saw the lines of it on the paper to start with, but
I could paint what is in my mind, is a distinct
picture of what happened, from memory.

2
46
8

Other cases

{ Cases stating "in front of my eyes" which I do not
interpret as "just in front" but as at a distance corresponding
-ing to reality - some of these say "yes" to the question about
project an image on to paper but I do not accept these. They
are too deficient in detail to show that the question was understood.

- B 1 At a distance corresponding to reality, viz if I look up or think of them when
they follow my eyes up in the same position.

6

Other cases

~~Other cases~~

63 Total



5 } cases no returns
2 }

7 Total
out of the projection on paper set, which should have been
classified here as "no returns"

12 Grand Total

15 cases, just in front of eyes. / can't project on paper

4 " " "

"yes" to question about projection
but I don't accept these

also as below

C 9 inside the eye lid

B 25 closely in front of the eyes

A 13 very close in front of the eyes

E 3 a little way in front of the eyes

E 8 a short distance in front but I don't seem able
to keep it long when it is there; it seems to move
away to the left

D 12 just in front. I have to turn my eyes upwards a little

B 21 close; almost within the eyeball

(then also says "yes" to the projection on paper
but I don't)

E 1 in mist, just in front of eyes

28 Total

A little in front

A 1 They appear to be situated rather above the level of the
eye, about a foot or so in front of me

B 6 at a little distance in front of me, situated in the air.

A 7 But in distant scenes I don't think corresponding to the reality.
Rather above the level of the eye, about a foot or so in front of me,
Other cases

7 Total

In eye ball

A 11 appears to be situated within the eyeball. The image is on a dark
background and only one thing is seen, at least clearly for the time

E 12 ^{back} within the eyeball & up the forehead — "yes" to projection but unsure

5 cases within the eye ball two of these say "yes" & one of them

E 4 at the back of the ^{add "a faint one"} i.e. projection on paper. this I accept

3 1 more case Eye ball not exactly in the head

8 cases Total



In head

A	$\frac{3}{3\frac{1}{2}}$	{ In back of head
F	$3\frac{1}{2}$	
ready case somewhere in head		
A	8	within the head, floating about
F	3	somewhere in head, in or about the eyes
E	9	In the back of the head as if a mirror was put there to reflect the image
B	12	Far off in the head
B	24	Between the eyes, just behind the bone
S	3	In my head and I try to draw my eyes to look back
A	10	The image whether close or far, seems to be in my head
12	other cases	
25	Total	



Field of View General Results

p. 53

(3)

No. of
Cases

9
183

Peculiarities

very small contracted

45

decidedly contracted

74

51

Unclashed principally from
want of sufficient light + moisture

47

near but not quite collected
badly

30

quite correspond to reality

1?

not got out (Kcases)

172

total

$$74:172::x:100$$

$$172/7400 \text{ (43)}$$

688

520

- F 36 I see them as plainly as if they were in front of me
- F 5 All the objects appear well defined at once but the place of sharpest definition is best seen, and it appears just as it does in reality
- G 10 When looking at any thing in my mind's eye, all the objects are clearly defined and I see everything as it would appear before me with my eyes.
- B 14 I see just the same number of people, plates, &c the whole time, provided of course that I do not change my idea of the scene to any great degree
- B 22 Much as if you were looking at any thing with the body's eye
- K 4 I see everything as if I were looking at it from any particular place
- B 4 The objects are more defined separately, but all are pretty well defined at the same time
- C 14 The objects can all be recalled pretty distinctly and the place of sharpest definition at any moment does not seem more contracted than in the real scene.
- D 5 In looking at a large object (a wall for instance covered with pictures) I see them all, but unless looking at each individually I do not understand them all once
- B 28 All the objects do not come into the picture at once, but are seen about as much as in a real scene

~~10~~ ²⁰ other cases to mind the same effect



~~10~~ ¹⁶ cases where field of view corresponds to reality

~~17~~ ¹⁷ cases of objects ^{one mostly} pretty well defined at the same time ^{17 almost natural}

~~87~~ ⁸⁷ I feel that at the same time than I do in the actual scene

~~44~~ ⁴⁴ other cases running into the above

~~27~~ ²⁷ Total of cases where field of view quite or nearly corresponds to reality

57 balance unclassified

19. very small

Peculiarities

- B 2 I see one object only distinctly at the ^{one} same time, just as when looking at a real image. That which I see most distinctly is always brighter in colour, or rather seems to have more light shining from it than the other less distinct objects.
- E 17 a little to the right on the opposite side seems more contracted, a little round at all is dark, but a light is outside the darkness.
- F 10 The part I look at is much smaller than reality, with a haze of black all round; it is like a small picture.
- B 5 I always see myself in the scene from a point considerably higher than reality and from a point behind my back as represented in the scene.
- very small
- A 9 I have to fix my eyes on one spot in my imagination and that alone is fairly defined.
- E 8 I cannot take in the whole table at once and I cannot see more than 3 plates at once, and when I try to take in both ends of the table I cannot see anything of the middle, but the table itself seems to stand out of the darkness beyond.
- A 4 By thinking of each thing separately, I can get a moderate bright image. I do not think I see the things on the table separately except by thinking of each one separately.
- B 2 I cannot see anything unless I look specially at it, which is not the case with my real eyes.
- F 21 I have to move my mental eyes a good deal about.
- C 2 The objects are not defined at the same time, but I think of them one at a time; also, if I am thinking of anything as a map for instance, I can only imagine one name at a time.

9
19

Other cases. It ~~is~~ about the same effect, that the point of definition is much more contracted in the ^{mental} image than in that of a real object.

Other case where it is decidedly more contracted. Small

8. h } I see less at the same time than I do in the actual scene
in the same time
- 4h } other cases.

72 Grand total where field of view is decidedly contracted

- F 7 The one called up in the dark only appears at the place of sharpest definition & the real one you can see all over at once.

Charles House Colours & Brightness

f. 56r

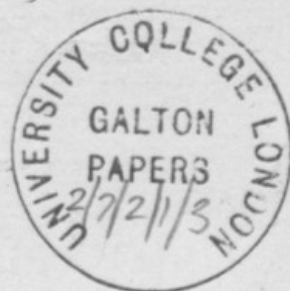
3 more vivid than reality }
124 perfectly clear & clear } 127
36 ~~same as last~~ dim & dull or grey 3-36
5 colours changed (localities)

168

4

172

unaccounted for



Definition

13 very dim

15 dim

144

172

The rest clear or very much so

f. 56v

Registered.

is Galton Esq.

Rutland Gate.

S. H.

Image very dim (not especially in regard to colour but also to outline) see Mem. below *

- A 16 The image is very dim, none of the objects are clearly defined the view is contracted
- B 25 Image dull, nobody's face is clear, eatables not at all clear perspective of table exaggerated, colour dim. But the objects near me are pretty well defined and I can picture my own plate
- B 15 I can call up to my mind the picture of the breakfast table in every detail, but seem to see everything through a darkened pane of glass. No mental picture has ever appeared to me which contained any large degree of light or brightness.
- F 10 Very dim, picture in the dark always, appear very indistinct, if they are of a room it appears as if ~~the~~ hung with very dark paper, if of a man it is as though he had a dark complexion
- C 11 The image & the colours are very dim
- A 1 The image is dim, dark, and smaller than the actual size
- J 3 Dim in most respects. It is rather as if a fog were hanging over it.
- G 8 The image is rather dim and I only seem to see a little at a time.
- F 33 It is rather dim
- E 3 The mental picture is generally rather dim and seems as if seen in highlight
- ~~See also~~ rather dim
- F 17 It is very dim
- E 1 The image is very dim; I can only fix attention on one or two things close together, at a time. The rest of the things on the table appear dimly
- B 1 The image is somewhat dim. I see the general effect but if I hit off one single thing the rest seems nearly vanish

(A6, A7, C4, F33, E1.)
* Mem: in only 5 of these the colours indistinct in the rest they are distinct

See Table

Other cases

13 Total

14 Cases of rather dim
other cases

15 Total



Shunter houseColour & brightnessMore vivid than reality

- C 9 A vivid mental picture is very highly coloured and not in its natural colours
 F 23 The colours look more clear than they really are
 B 29 The image has either little light or else unnatural brightness. The same part of the table changes in brightness

3 cases

Peculiarities

- D 5 I can recall the place of the colours but sometimes blue is changed for red, and vice versa.
 F 35 None of the colours are at all natural or distinct
 F 30 Quite distinct but not quite natural
 F 16 They are changed
 F 1 The colours are all mixed up.
 A 3 ^{colours dim} Black & white are quite distinct; the colours are faded
 A 5 all the objects appear in shades of grey
 A 7 The whole picture has more or less of a dark green tint
 F 14 They are all of a grey colour differing in shades in different parts
 F 19 They more resemble shades, but they have some colour in them
 B 10 Everything is distinct except the toast. Directly I think of that the vision fades and I see a piece of paper covered with various shades of dark brown

- 5 Colours very dim 5 cases
 7 dim & indistinct 7 cases
 8 not quite so bright 8 cases
 5 Some not quite clear
 5 while others are } 5 cases
 36 no ~~4~~ 5 cases

Colours quite clear

- C 3 The colours are exactly as they really were
 K 7 Perfectly plain
 F 11 The colours are especially distinct in every case
 D 7 I see the colours just as if they were before me & quite natural

120 Other cases many with emphatic phrases, of clear colour vision & including 2 or 3 where there was some little dimness

124 quite clear.

more G 10 is a very perfect case

Worcester College. Rev^d A.D. H. H. (then made other notes to me)
 leads returns of 38 boys out of 135 asked - in 3 divisions of school
 Handic. & B.C. also vowels & colours from 15 persons.

Classification of Charter House^A Standard as in Statistics of Mental Imagery

Charter House Standard	Q. Q.	Q. Q.	A group.	25 boys asked. Science. higher in school it is 23 boys
X			P. J. Duke	all colours natural except blue
X			E. S. Poole	
	X		Ballou	
	X		Crofton	
X			David	
X	X		Wolfeslan	
	X		Harper	rather of picture larger than real. dancing lights
X			Lambly	Black & white as in a sketch except blue & white - Separate
X			Hutchings	cannot think of green scenery. Vision.
X			Burnes	mental picture narrower & flatter. Music's vision.
X			Moore	(music?)
	X		Whitehouse	very day dreams
X			Collinson	coloured numerals {mean if I was a machine without thinking about it}
	X		Perry	
9	5		The answers at 985. suppose the remainder to have no intelligence of the many asked about the Standard would be a little lower than the Charter House 9 about that number is 16 below it	



B group. 50 boys asked. - next below the last in the school
 15 replied only

X			Hornby	
X			Clark	in saying lines of heart I always follow the lines with book
X			Thring	have learnt it from. (Vision independent of will)
	X		B. Talbot	[It is G. Talbot who sees colours]
	X		Beacon	
	X		Senwell	
	X		Stainton	
X			Hoare	(vision, not described)
X			Plumbridge	day dream
	X		Budd Lee	
	X		Witham	
	X		Unkissed	
6	6		to carry over	

Chaitenhouse scale

O B M q o

1	6	1	6	carried over
			x	Bennett
	x	3		Pinney
	x			Morant
	8		7	

Times & day dreams

ms

C. 60 boys aged - lower boys. (includes Edmund Hills)

x				wallin	Kale & Joseph clones whenever I shut my eyes	v
		x		Hawley		
		x		Engelsack	in	
	x			Goodenough	have	
x				Constance	If I think the image departs it is some seconds before it returns	
				Bolton		
	x			Dyson	Rankin of a brand white wallain, I tried to blow away V some dist. at it. (Vison) (scold)	
x			x	Whisk	Adverts in wall	v
			x	Barrow		
	6.		3			

M. H. U. sends also

x G. Talbot
a boy in the school

very strongly colored

C

3 brothers Ben Bonley also sends clown and same in each case C

then comes wife Mabel F. Floyer does the same & sends full account C

Results

9. Number forms

5 near of life vision v

3. music m

6 noteworthy peculiarities h

5 colours c

Charles House tents

Q	M	R
x		
x		
x		
x		
	x	
		x
		x

Guyon

Bryan

Crew

Potter

Hurin

Rafferty

Lundberg

Recalls features of many persons almost as better than of my friend's relations - Once a vision - Auditory impressions have mistaken sounds & smells when expecting them, never visions.

Generally the power of V's is increased since childhood almost invariably the image becomes dimmer.

Nurses Vassar (colored) female

x	Shaw
x	Abbott
x	Shore
x	Barand
x	Buck
x	Gardner
x	Lloyd
x	Platter
x	Martin
x	Dwyer
x	Barnum
x	Harrison
x	Asery
x	Farling
x	Erskine
x	Burke
x	Leland
x	Smith
x	Sterling
x	Bryan

The mental picture in the dark has no atmosphere of light or brightness though the colors may be distinct, & never mistaken due to reality.

The image is often so vivid as to produce nearly all the details which the reality would produce.

Miscellaneous

x	Sloan
x	Wardwell
x	Werry
x	Wells
x	Wells

I have often as a child filled vision with imaginary persons which were as distinct as first ones & not looking like any one I have ever seen. - I have little mistaken & mental images of reality.

Phantasmagoria (good to look)

Miss Lewis school

33 questioned

2 ~~h~~ cases of member formsM M Adamson

The numbers appear to me in a long line of written figures, beginning at the left and going to the right; those directly in front of me being from about 12 to 6. In this long line certain numbers seem to stand higher than the others forming land marks or barriers, viz 2, 8, 12, 20, 24 & after that 30, 40, 42 are among these. 100 stands up particularly high and is a great distance to the right. Numbers above 100 seem quite in the far distance.

Ansree Brown

Numerals always seem appear to me to stretch in one long continued sloping line string in a sloping direction upwards and to the right. If I think of any fixed number I see it in red roughly-made figures.

Sidel

^{2012 higher form}
 These numbers stand peculiarly, quite other than elsewhere.

Extent of Field of view

f. 65

1 — 0

6 — 0

12 (M. Shickel) Much smaller than the real, I seem only to see what is straight in front as it were

25 (G. Darwin) I think the field of view distinctly smaller than the reality. The object I picture flares out, distinct with a hazy outline. On the other hand I have a pretty vivid picture of the whole room. (in Louisa Taylor) - Sides & remote end of table indistinct & blurred.
50 corresponds to reality

75

11



80

11

94 (Rev T.H. Waller) A wider range - A faint perception I think of more than 3 sides of a room. Rather more I think than one hemisphere. Am not quite sure about this

100 (Tedder) My mental ~~view~~ ~~appearance~~ field of vision is larger than the normal one. In the former I appear to see everything from some commanding point of view, which at once embraces every object and all sides of every object

Others
105 high quote. Pease I seem to see the whole room as though my ~~mind~~ eye was everywhere. I can see all around objects that I have handled

(Schuster) I can see 3 walls of a room hang a with an effort the 4th. I can see all the faces of a die and the whole globe, but die & globe then look transparent

See also Wood Smith - & Dittmar -
Recalled Markelov

Colour

(99 women

F 66

emphatically spoken of

Miss Halkett Impression of colour most vivid. Every shade reproduced
 Miss A. S. Loz vivid and natural
 Edith Green The coloring is very distinct
 Mrs. Benecke Perfectly
 Alice Woods. The colors are so clear & distinct that I could
 match them in paint with great ease, but through
~~color~~ can image the shape of the cap, 'tact each be
 I cannot distinctly image the pattern of caps & plaids

⁵
 12 where the colour recollection ^{is natural whole} ~~exceeds~~ the illumination is only fairly clear

69 - 'natural'

Weak



J. J. Clemons In clear images the colors are distinct & natural
 L. Galton Quite distinct when I think of them but without thinking the
 colors would not make themselves felt
 S. Denman The colors are distinct but slightly more subdued than natural.
 Anonymous Not very distinct but harmonious
 F. Fowler My colors are distinct & natural; the white a little too
 prominent
 M. Pope The coloring of the china are quite distinct; the table
 cloth appears grey.
 Mrs. Haskins The white caps on black trays are fairly clear, the other
 objects on white cloth very hazy
 Miss Henderson The coloring is not so distinct in those objects which she
 has bright colors as the pink robe to the china; otherwise
 all seems right
 J. K. Davies Somewhat fainter than the original
 Miss J. Blake Less vivid

To
 5

nothing said including Miss Field who sees nothing

Colour

(99 women. f. 67

5 cases when the brightness is emphatically mentioned

• 12 cases when it is described as quite natural & distinct
while the image is only fairly clear

68 cases when it is distinct & natural without any other
remarkable fact in connection

(? 10 n) 9 cases when it is not good

5 uninterpretable or sense too weak to admit of colour being seen

99



Distance of images only 22 cases



- Res. Hadow
Always outside the head
- 1 above
3 upper ocular
6 upper quadrant
11 Medial
- at a distance corresponding to reality
- 17 lower quadrant (Res. Waller) externally of head & sometimes (the right hand)
(Brian Hooker) ~~fact~~ in front of my eyes.
(Anonymous) it appears to be just above my eyes
Baron & O'Brien looked
- 20 lower ocular They seem to be situated within the head, somewhere
about the forehead, because each thinking is going on there, but I
can without an effort project a dim image outside
- 22 below. Distinct within the head
& 2 anonymous

Power of projecting on paper

J.S. Dimmock Holding a blank piece of paper in my hand, I
can imagine on it a photograph or any object that
it will hold.

(Anonymous Barreter) -

J.J. Marbury (? as to meaning of answer)

Rev. Ellis

Prece. I can project images on paper

? as to one or two more. the others to me is
are latent

(Recollect the Bachman)

Boarding of images

(99 women F 69)

1. Highest
(Miss Ryland)

I can distinctly recall actual scenes. I am 69 and can recall the rooms, their furniture to the patterns of the carpets and paper of the walls, in five different houses in which I have lived from the time I was 8 years old. The objects are distinctly defined & the details are seen with equal clearness.

2. Miss Sward

I can see in imagination the breakfast table of two families, pattern of china, shapes of kettle tea-pot &c. I see it all as vividly as if there, and of the same size as far as I can say. All that I see at once, on thinking of the table is clear. By thinking I can add more things, putting them clearly on

3. From Chester
house - a lady
communicated
W. H. Poole.

The table, china, &c. are very nearly if not quite as clear as reality. I think I am not exaggerating when I say that all the objects are as clearly defined as once as in reality; the mental eye appearing able to travel quite as rapidly from one point to another as the actual eye, thus seeming to look at every thing at once.

4. Charlotte
Angus Scott.

So far as I can say, the image that presents itself to my mind of anything I have seen (is tolerably lately) is as nearly as possible exactly like the real thing [unless of course I was absorbed in something, in which case I have only a vague general impression] This is especially the case with regard to illumination definition & colouring. With regard to completeness, I believe I see most clearly the part most nearly related to the exciting cause of the image.

5. Mrs. Adelaide Cameron
Galloway.

The image is bright & clear as in reality; it is defined sharply & distinctly; each detail comes out in its proper light & shade and as truthfully and equally as in reality.

6. Hon. Mrs. R. Boyle.
First subochite

Quite like reality. The whole scene is perfectly clear and defined, not as in reality one thing after another is more distinct, in order of inspection.

12 Edith Green
First oculte

Vividness of imagery

199 women 170

I can see the morning's breakfast table perfectly clearly. All the objects are clearly defined. The table however was laid simply, with few things upon it.

25 Mrs. Alice
Balfour
First quartile

Fairly clear and brightly comparable to actual scene. Each object is sharply defined as I think of it & in completeness is like a real scene. A scene arises in my mind so clearly that I feel I could draw it, but if I try to do so I fail, which proves that the image in my mind is really less distinct than I imagine.

50 Mrs. Constance
A. Herschel
Midpoint

Quite as bright as the real scene. The central objects are quite clear, those beyond & at the edge are dim, but can be brought into focus at will. When any object is omitted its place is supplied by a block of light or shade. The completeness of the image depends on the familiarity with the scene. If it is a well known spot the parts preserve their real relations of size, distinctness and brightness.

75 Mrs. Tanna
Last quartile

Illumination not vivid as a rule, only so when the imagination is strongly excited, or when the vividness is involuntary. Definition is clear, & everything is in proportion & natural.

87 Mrs. Denman
Last oculte

The brightness of the picture is not comparable to the ^{actual} scene. The objects are only sharply defined when thought of separately, except those in the foreground.

94 Mrs. Haankin
Last suboculte

I see my breakfast table only in relation to the other objects in the room. It is something like a dipping view. The white cups on black tray are fairly clear, the other objects on white cloth very hazy.

95 Mrs. Hens
Ball

The illumination is only partially diffused, it seems to be focused on whatever point I mentally turn to, all else is dim. The definition of each point as I turn to it is minute and accurate.

96 Mrs. J. J.
Clemens

Image as a whole clear, but nothing like as bright as the reality. Some objects are sharply defined e.g. a flower with withered edges. Details are not equally clear. Rosy cheeks are opposite, a dark unremembered figure on the right.

97 Mrs. M.
Fowke.

Distinct in outline but light dim. I recall the objects not by thinking separately of them, the persons are the most distinct, (things are always subordinated to the persons present).

98 Mrs.
O'Brien

If steadily thought of it blends me altogether and only strongly illuminated points appear. But if I were thinking of other things the whole scene might spring out in all its points. The ^{higher} ~~point~~ definition is very contracted, often very clear.

99 Mrs. Field
Lowest

Can only recall scenes with much thought & through a clear recollection of the locality of each object. Can only reproduce a faint im up of scenes when very much impressed & though somewhat of an artist can never draw from memory, although possessing a remarkably quick, clear & true sight for actual scenes. Faces of even dear friends not recently seen can only be recalled in a faint & blurred way.