

Papers Received after Publication of Inquiry into Human Faculty and its Development

Publication/Creation

1880-1892

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direct

months arrangement.

reverse

~~W. Larden~~
 Miss Merrifield
 A. Schuster
 Mrs Alfred Oster
 J. Seare
 B. Wood Smith
 G. Darwin
 Mrs Henderson's mother

W. Larden
 Jessie Ozler
 H. C. Baird
 Miss Brewster
 G. S. Butler
 G. B. Dyer
 Mrs Headlow
 Mrs K (comm. of Mrs Headlow)

7

D

Miss
Croftfield
Communicated
John Alford
other letters

Quatro Lifen

G. F. Smythe
U.S.
See his subsequent
letters

Lucina
Nixon

WH Preece

Mrs Tanner

Miss B
Bournemouth
Boarding House
Communicated
by Rev George Henslow

TH Waller

Edgeworth

C. Armbuster

Miss Henslow

Neve Loring
2

Wozes

Mrs H. F.
(Sliver) Wiles
S.R.O

of
Cand Ann
Herschel

Mrs Hawes

W. Beau Lewis

Kathleen Burke's (Miss Lewis school)
Visualization of wine-Dates colour

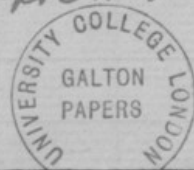
The date of the 18th of November is always associated ^{with} my mind with the colour green and the image of a ship, as on that day I left Australia in a sailing vessel & I had a bunch of choona green grapes in my hands, saw the green tops of the headlands gradually fading away, and the green waves of the ocean and the green colour of the saloon cushions



Richard Sargent ^{Superintendent of the}
 (Librarian ^{Reading Room} B. M.)

Words - visualization

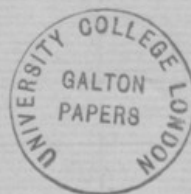
I acquired the power of reading at a very early age, and read incessantly: For several years every word I uttered appeared before my eyes in print, the letters apparently floating in the air. I took it for granted that it was the same with other people, and was astonished when they not only disclaimed the possession of any such faculty, but disbelieved that I possessed it myself. At this time I had no companions out of my own family, which was a small one. In a few years, when from associating with other boys I talked more & properly read less, the faculty gradually disappeared, and I could only see the ~~print~~ spoken word in type by a distinct mental effort.



Nov: 7. Howlett

I often hear rich, grand military-like or Wagner-like
but original music, as well as music known to me, amidst
the rhythmical clatter of a railway train

Music - hallucinations



Price town relations I. 3

Hallucination - Sweeping

Once while seated in my room I thought I heard some one sweeping in the next room, the door between being open. Presently the dust became so disagreeable as to cause me to cough. I arose to close the door and was surprised to find the supposed noise of sweeping was made by a dog's tail wagging on a clean matting.

Another instance - ~~to be ready~~ ^{was} ~~to be ready~~ "Bleak House" about "Bain" "Lily Headlock" or took out an unalterable position it had been "singing" - which was quite clear



Charles Darwin

d. April 19. 1882

"Do you not think that you ought to hear the case of the answerers?
I think so, because I can call up faces of many school-boys whom
I have not seen for 60 years with much distinctness, but now-a-days
I may talk with a man for more than an hour, and see him
several times consecutively, and after a month I am quite unable
to recollect what he is at all like. The picture is quite washed out"

Faces - memory of



F. Y. Edgeworth permitted to name & to use
see find out

I enclose drawings of my curve giving two forms between which it hovers. When the mind runs rapidly over the curve the more regular form (Fig 1) is apt to present itself, but when attention is confined to a decade it straightens itself (as in Fig 2);

I have had this presentation as long as I can remember; certainly at the age of four when it used to be my amusement trying how high I could count. The hundreds I think of as along the vertical digit line; the thousands up to 100,000 along the curve. The

base; it becomes quite a straight line and of greater length than when viewed as part of the curve.

Notes latter decades are as represented in the figure somewhat huddled up.

I do not think of the number curve as localized, except so far as to speaking of a vertical and left-handed direction may imply a directional forcing, but rather as in a dream.

~~In thinking of week days Sunday there is a curve~~

My sister (Mrs Sanderson) thinks and has always thought of numbers as arranged on a perpendicular line ascending like Jacobs ladder to the sky, where the millions and billions diffuse themselves as stars. 10 is half way between 1 and 20, 50 is half way between 20 and 100, 100-1000 is shorter than 50-100.

Cousins Mrs Arthur Butler. (see lithograph)

I have ascertained by repeated questioning the accuracy of the proportions marked on the line and stated in words. There seems to be some sense of interruption at 10-12, once but not consistently described as a notch.



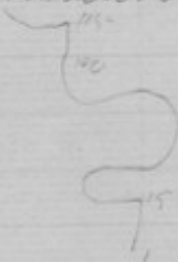
Challenham Martha & his little's (communicated
by W. Larden)

I have had some difficulty in drawing the accompanying figure as the image seems to desert me as I put pen to paper, but I think I have described it fairly.

There is a sharp angle at 15, perhaps due to the fact that I learnt the multiplication table up to that number) but after that the image proceeds in curves.

It is rather confused between 50 & 80 and in consequence I often find myself making mistakes in addition when I reach those numbers. The image is in one plane and vertical, the figure 1 being on a level with the eyes, 100 is read to the left of 1. I can hold an image in my mind of about 200 numbers at once.

I may add that only one member of my family can describe any image of this character or has any idea of what I mean when I talk about it, and she, my sister who is always considered to be mad like me sees nearly the same shaped image though not so distinctly. With her the first change in direction comes at 12 not 15.



Alice Osler

The line starting at myself as I goes straight away from me sloping upwards a very little until about 10 or 12, and then it would become too confused to see them if the straight line were continued as a slight curve to the left begins. The whole line slopes a very little upwards receding from me almost on the plane of my eyes. I see nothing beyond 100. I am conscious of the line though it is blank until any figures are mentioned and then they immediately take their place on the curve.

Roya Osler. I see these figures (see lithograph) in the air not in paper. I can see them up to a hundred and twenty 120. The pencil lines are only put in to show the difference of level.

The figures shown in 1882 is not the same as that in 1879. The days of the week in the air, the stars show where I probably stand. The days slope down to the right hand, the colours in each case is in a patch covering each word.

| | written in Dec 1879 | written in April 1882 |
|-----------|---------------------|-----------------------|
| Sunday | white | black |
| Monday | pale yellow | whitish |
| Tuesday | blue | yellowish white |
| Wednesday | light brown | blue |
| Thursday | black | brown |
| Friday | orange very dark | very black |
| Saturday | black | black |

He himself has no number form.

Leptic Osler also questioned by his brother. She views the present illustrations herself. The report has the air of mad necessary carefulness.

The numerals appear as colored figures in the air and they always take the arrangement shown in the lithograph figure. The units rise up straight in front, the 1 being the lowest and nearest and the others rising above but sloping back at an incline described as about 60° from an horizontal plane and so they continue up to 12 then they go off horizontally to the left up to 20, where they gradually rise and recede to the 100 which is rather a long way off. If by an effort attempt is made to look beyond 100 they are distinctly seen still receding but going off more horizontally. Single numbers when named are distinctly immediately seen in their right places according to their arrangement.

- written Dec 1879
- 12 very dark green
 - 11 like 10 but dark
 - 10 pinkish yellow
 - 9 very black
 - 8 yellowish grey
 - 7 chocolate colour
 - 6 dull red
 - 5 yellow
 - 4 dark blue
 - 3 light blue
 - 2 very pale yellow
 - 1 black.

The two following statements are particularly valuable because I had an opportunity of verifying the persistence of the figures at an interval of 2 1/2 years. I thought the children's statements were correct and again questioned the daughter, begging that if he happened to have notes of what had been written before that he would not refer to them or if they had by chance been written since he would let me know. I received a full reply from another sister from his home, saying that he did not think that any notes had been kept or that if they exist they have not been seen since. He is as far as he knows, spoken about since the publication of my book in 1879. He enclosed the statements from both his wife and daughter. I give extracts in both cases from what was written in 1879 & 1882 respectively.

Given identical to laws number form = adds

- written April 1882
- Black
 - 2000
 - chocolate colour
 - reddish
 - Salmon colour
 - dark blue
 - light blue
 - cream colour

The statement in 1882 is that the figures are seen on a dark ground nothing else being visible at the same time. Parts only of the whole figure form can be seen at one time, the whole being too large to be seen at once. Single figures named as thought of appear then in their places with spaces left for intermediate figures. She has a difficulty in describing 1 except that it appears as a vertical line (1). The 100 can be lighter than the black ground against which it is seen. The same color that is associated with the single numerals is seen when combined with 1 and with 0, as 10, 11, 12, 20, 100, 50 etc.

The father says of her that she is most careful and reliable and takes the utmost pains to be correct. The day comes when she is asked to describe the statements of others. She says that she has heard of this.

(Continued)

Meteorological Office,
April 1st. 1882.

Sir,

You are requested to attend a meeting of the Meteorological
Council, on Wednesday, the 5th April, at 2 p.m.

I am,



Fesic Order continued

All the days of the week are visible at once. ~~They are then from a~~
~~stand-point between Sunday and Monday and a little backward~~
 Sunday & Monday, lie ^{to the side} ~~in front~~ had the remaining days slope down

Fesic order continued

All the days of the week appear visible at once ^{in various colored symbols.} Sunday & Monday are immediate in front, Monday being to the left, and the other days sloping down at equal distances apart, to the left.

Sunday; a green book in a green patch. ^{Monday} Green and white, rather in stripes like a Venetian blind & Tuesday; a patch of dull yellow with a faint ~~lines~~ Tues. in it. Wednesday; a monogram of M N & W jumbled together, the letters in yellow shaded with brown. Thursday; a dull brown patch. Friday. A brown gate with brown lattice work on lower half (sketch sent). Saturday; a yellow patch rather in a hole.

The months of the year were in a slight arch, the present year only being visible at one time, each Christmas hiding like a barrier what is beyond it, the Christmas being visible as a Christmas tree in a pot (see lithograph). In 1882 the arch was the same but no mention was made of the Christmas tree.

The description in 1882 was identical ^{in colour} with the above. ^{As regards} ~~details~~ ^{except} that the Christmas tree ~~was~~ not alluded to, and the Sunday had ceased to be an actual book & had become a boundary, which in the ^{attached to the description} annexed drawing would well represent a book standing in its edge. The "Tues" is not spoken of. The appearance ~~gate in Friday~~ is not mentioned, but an appearance of wire-work.



Ford - Pearce Family

I have selected this ^{part, Quaker} family, as representative ⁱⁿ of an unusual
 considerable degree ^{mostly} of the ~~all the more~~ ^{the more} remarkable
 striking characteristics of the ~~visual~~ ^{visual} faculty. I have reason
 to believe that other members ^{of it}, besides those mentioned below are
 similarly ~~disposed~~ ^{naturally disposed} to think in number forms
 to have color associations with letters ^{to persons} & personality numerals.
 other objects, to think in pictures, & it may be ^{to see} ⁱⁿ ^{the} ^{dark}

I have selected this part, Quaker family, as representative
 in an unusual degree the more remarkable ^{accommodations} ^{features}
 of the ~~visual~~ ^{visual} faculty. I have reason to believe
 that other members of it besides those mentioned below are
 naturally disposed to think in pictures, to have colour
 associations with words, to personify numerals and to
 invariably think of them as depicted in Number-forms.
 I will speak of the latter peculiarity only, in this place, and
 of the others later on.



~~Miss Ford~~

It caused us much surprise to find there were, on comparing notes among our friends that there were even some persons who could not recall a single face to their mind, as with ourselves, we found there was scarcely a word or a letter which did not present itself in some pictorial form to our minds, so that one might almost say the letter was the symbol for the vision, and not the vision the symbol for the letter.

My ~~figures~~ ^{numerals} are a procession of persons who walk from me, 1 being the nearest. 1 is indolent and regarded with indifference by the rest. 2 is also indolent but seems to be well meaning. 3 is delightful & amusing, & very sympathetic (but this last quality is because I always try to make every thing divide into sets of 3. When sitting under dull sermons I worry myself to divide the words & pages into sets of 3, or in driving I divide the papers by into similar sets, so that 3 is a familiar person) 4 is odious; grim & neat & ready to find fault with those who fail in these last qualities. 5 is kind but stupid, 10, 11 & 12 are very excellent persons. Behind them little pairs is later

by the earlier figures to keep strictly in marching order & all of them, except 8 & 9 who walk moodily on, look back and wave their hands and talk & laugh, but 10, 11 & 12 are serious persons, with their reformer hats. After 12 the procession grows too dim to be seen. I only know that after 12 through the earlier numbers look up to the teens and twenties with enormous awe it is yet true that the 'teens are a bad set. This procession appears as a whole if one does "sams" or thinks of the multiplication table, but if one thinks of a separate figure only that portion of the procession appears distinctly which belongs to that figure. [The writer of the foregoing is a student at the Slade school of art, personally known to myself. ~~statements of character~~ It has been accompanied with verbal explanation in answer to my inquiries ^{with} of her & of her mother, & I have no reason to distrust the accuracy of the statement. F.S.]

I think my mother was the only one among us who had ^{f. 15}
any mental chart for the figures, but so strongly and so early
was this impressed upon her mind, that she says as a child
she always thought the phrase which she had heard the servants
use "upwards of 50," etc, was a reference to this chart and was
only disabused of this idea by finding that the phrase did not
always coincide with the chart. [The form ^{consists of} a straight
line sloping upward to the right, the tens are prominent,
the rest are all in the same plane. The number thought
of is never seen singly but associated with those ^{in the neighbourhood} above
and below it. The figures have no colour, they are
in dark writing on a white ground.]

Ford - Pearse family continued

f. 16



My mother, I think, is)

The Cousin writes in answer to inquiries; -

I have discovered the basis of most of ~~the~~^{my} family on the subject of numbers.

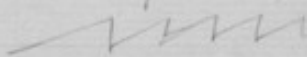
Ornston 28. I imagine them as written numbers but not at all in space

Solward 23. No peculiarities

Marcia 22. First there is black space; In this the numbers stand out as more or less bright spots; 1-4 bright; 5-9 misty; 10, 11 and especially 12 very bright; 13-19 misty; 20 bright. They are in a straight perpendicular line. The high numbers highest up

Rosa 21. In line away from her in ^a crooked ^{line} ~~plant~~. The line changes direction at 100 and again at 1000 (see for) ~~the~~ ^{the} tens stand out in larger numbers and ~~these~~ are nearer ^{to one another} the further they are from her. She does not see the figures nor the numbers themselves, but still they are there.

to Pease → Self (Gerald) 18. If I am thinking of the lower numbers whose meaning I can easily grasp, say 1-20 I think of them in a horizontal line across my eyes, probably from ^{having} seen them written on a black board at the time when I was most interested in numbers. It seems about 3 feet ^{off} in front of me, beginning 1 foot to the right & extending to 3 feet to the left of me. When I think of larger numbers they are in a line at right angles to the former, i.e. in a horizontal line ^{going} directly away from me. Above 20 ~~only~~ the tens stand out clearly, then only the even hundreds and the even thousands, but the further they are from me the more misty do they become. Some years ago I clearly remember I used to think of them as in the figure.



at Pease not done

Jora 15. In a row far away from her like mine;
the hundreds, millions & billions are of the shapes
shown in Fig.

Cara 14. Numbers are mixed up together "like
stars in a jumble"

Arthinton 13. None

Oswald 10. Figures in a steep slant upwards (see Fig)



His New Geom Henslow

I have always appreciated my numbers from childhood upwards, in the arrangement shown in the fig. , but am quite at a loss to know how they arose. You will see that my alphabet corresponds with the latter, but the letters are associated with colours which seem to me to be partly derived from the initial letters as B for blue, or else from sound as E for green. Some letters never seem to be associated with colour at all.



Had Suberter sent the
how the numbers ^{would be} ^{written} ^{by} ^{himself} ^{or} ^{by} ^{his} ^{brother}.

(writing to his brother)
Miss Henslow If my ~~own~~ visualising were to go, I believe I should have no memory left. Therefore being born blind has always puzzled me immensely, as I can hardly imagine how any body can think without seeing. If I am asked to spell a word, I see it printed & then read off the letters slowly. How many people have a twist at 10 and 12! [this was after reading my first memoir on the subject] It is very curious; one can understand the 10 twist, but why 12 should have it is odd, unless it is from the clock which theory I am strongly inclined to believe. I used to look at the clock for my age & thought I should not like to get out of the clock, as I suppose I had to shoot upwards when I did so. What a lot of nonsense this would seem to some people. How can you [i.e. his brother] do sums with your fingers all the wrong way! I suppose you would call mine the wrong way.

The form is given in fig. 21. The figs, -
There are no colors, all the numbers are suspended in space. I stand a little below 1 and look at them towards the left. When very young I did sums by the clock, but do not remember it. I used to see the early numerals as above, when quite a child. I have always disliked 5 and liked 6, 7 & 8.

Mr^s (Anne) Barnard (née Stenlow)

In number form see fig.)

The year is written of the year from a circle, they go round the ~~circle~~^{same} way as the figures on the clock. The division between June & July is at the top of the circle, that between Dec & Jan is at the bottom. She adds

My mother saw the year the other way round. I believe she also saw numerals

^{Mr^s Barnard}
" ^{Mr^s Stenlow} questioned the whole ^{of the Barnard} family separately, taking care that they should not hear of it from each other first, & allow no time for fancies; except in the case of Charlotte, the youngest child not 4, who I think had overheard some conversation about ~~the~~ it". ~~the result~~

The result is given at length. It comes to this - ~~the result~~
^{my husband} could hardly understand what was meant & four of the children ~~the~~ others saw ^{numbers} ~~them~~ in more or less incomplete forms. ~~the~~ Sedgwick alone knew what I meant (if I except Charlotte) and without hesitation drew me such a charmingly eccentric diagram ^{see fig.} that doubts were raised by his papa as to whether he might not be revealing, so 2 days afterwards I asked for a fresh copy. It was identical with the first [I have seen both F.S.] except that the 9 is (unintentionally) out of the straight line.

^{Charlotte} ~~she~~ said without hesitation that she saw them & on my asking her to write them down in the direction ^{in which she saw them} began writing them from right to left fig. just in the way in which I always see the earlier numbers. I remember when I first brought her to write the numerals she always bothered me by writing them in that way,

These are ~~some~~ ^{an eye with letter} specimens of date-forms & alphabets, but all ^{truly forms} ~~these~~ are of Inferior interest & I omit them.

Walter Laeden (Challentum)

It is hard to give a brief account, the images being too indefinite. I give the diagram and description as I generally see the image but as I mentally, sometimes vary, my point of view in space the proportions seem to alter.

The ~~gener~~ numbers from 1 to 100 appear like on, or themselves, form a broken curved line in space. Each multiple of 10 is at a break; the line being a sort of catenary between a series of supports [it is as a washerwoman's clothes' lines]. The osculating plane of each portion is vertical, and the vertical plane containing e.g. 30-40 will contain the whole of the curve between them [therefore the clothes' line sinuate seems correct]. But the osculating planes are inclined to each other in succession, ~~that~~ in the poles on which the clothes' line is hung ~~and stand in a straight line but not~~ ^{from a point} the total inclination being 180° so that the vertical osculating plane containing from 90-100 has come to be parallel to that containing from 1-12. [In other words, the poles on which the clothes' line is hung, ~~are ranged in~~ ^{are ranged in} a sort of half-circle]. The whole ~~the~~ curve slopes upwards. From 1 to 10 and to 20 it is steep; from 20-30 there is a gentle ascent; 30-40-50 be getting successively steeper finally 100 is joined to 1 by a dotted line in my image.

It is rather curious and significant of the effect of the great use of 12 in coinage, in lengths or in time, on my mind that the first part slopes steeply from 1-10, then there is a small twist of the osculating plane and the ascent 10-12 is left steep; then an ascent to 20 steep after another small twist of osculating plane. So there is a break at 12 as well as at all multiples of 10. Next at 20 the osculating plane turns through about 90° and the ascent is gradual, growing steeper towards 30. From 30-40 there is about 70° more twist, after this the ~~twist~~ ^{twist} remains; twist of 20° is made in decreasing amount until the plane has ^{finally} turned through 180° in reaching 100. The slope in the whole gets

fleeter & steeper up to 100. There are some irregularities
 of which I cannot be sure just now, & in fact are not well defined.
 Above 100 the numbers go over the same cycle, and up
 to near 150. I can certainly see 140 occupy ~~the~~ its proper place,
 that of 40. But for large numbers as 1140, I can only say
 that there are no ~~for~~ new positions for them. I cannot say
 that I see the entire number in the place of 40. If I think
 of it as 11 hundred and 40, then I see 40 in its place, ^{I see "11" in its place}
 see 100 in its place; the picture is not single though the numbers
 combine. If I think of it as 1 thousand, 140; then I see
 140 in its place and 1000 where 100 ~~is~~ is with a cypher added in
 imagination. In fact it is evident that as one is familiar
 from the multiplication table with numbers up to 144, so
 they preserve their entirety in the image.

There is no distinct colour or shading. I seem to stand near 1
 hence 20-30 appears a large space because there is no
 fore-shortening. ~~The~~ 100 lies high up to my right and
 behind me. The numbers appear closer together as they get
 further from me. ~~In the diagram~~

Number forms

f. 23

Plate . . . shows the number-forms of twenty members of tri families, and that in three of the families there is considerable similarity, in the shape of the forms. Those of the H-W family though totally different in detail are more like one another than to any other of the numerous forms on Plates I & II. In the M-u family the curious parallel lines of father & daughter J.M-u & V.M-u are quite peculiar to the family. In the Chm M & his sister the forms are said to be nearly the same. I could add other instances, one is where a mental image of 'pips' disposed as in dominoes or cards, was common both to mother & boy.

The hereditary tendency to see Number forms is considerable, & undoubted as will be seen from the following quotations to which many others could be added. It is seldom ^{happened} that a person was found to know about them before I had suggested the inquiry, whether & what members of his family had the same peculiarities as himself and the result of the inquiry was usually a surprise to him.

In these cases that the ^{similarity of the} forms was derived ^{from} the method of instruction, the alternative ^{of an inherited habit} is much more probable, scarcely that

I. 480. Quota Vidocq, les vrais Mystères de Paris I. 134. & effects that crime is transmitted in some families from generation to generation - & think the crime (1) against person (2) against property are separately inherited.

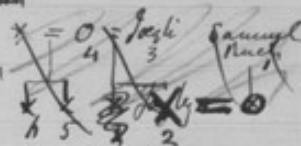
Against property

487. Cases. Lametthrye ^(?) œuvres Philosophiques in 4th London 1781. L'homme machine p. 45 - monomania for theft of a woman during pregnancy transmitted to her children. Gall Sur les fonctions du cerveau Paris 1825

I. p. 207-8 gives other cases. Vidocq of cit I 134 gives a case that he warrants. 487. Joegly & Ruch families. On ~~the~~ ^{the same} boat

criminal bench were placed the man & woman persons as numbered in annexed diagram

(which I have made) accused of 45 thefts.



1-6 inclusive were condemned to hard labour

in imprisonment, 7 got off but under

strong suspicion



487 Caroline Arbouin, 2 brothers, mother & sister-in-law.

490. Legonpif family. - 3 brothers, brother-in-law, & sister all condemned. Their grand father & father had both been hung in the pre-revolutionary days, their ^(?) uncles, one of their aunts has been long at the hulks (bagues), one of their nephews is at the Bagne of Brest & the rest of the family is following its destiny. quoted from Siecle 13 Dec 1843.

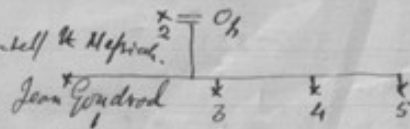
492 out of 126 children at a reformatory ^{one or more of} the near relatives of 30 that is 1 in 4 had ~~gone~~ were criminal

Against persons

500 Morosities morale qualities

504 cases. Le Droit. Bulletin de Tribunaux X année n° 99 p 399 - (Feb 1845)

- 1 executed - a horrible trait. after his arrestation he proclaimed himself the Heir.
- 2 often in hands of justice
3. Several condemnations
- 4 condemned to death
- 5 condemned to death having murdered his wife having first had her half devoured by wild dog
- 6 5 year imprisonment as accomplice to 4



506. A singular case of wild beast like outbreak of murderous fury in the Bourbonnais. ^ by J. M. Morlo. in his new wife followed by the savage murder of her & her mother a month later in evidence it was shown that the father is a fit of fury had shot his wife at the moment of her confinement, that the brother is an excess of jealousy had blown his brains out and that an angle is now (fokke's interdiction) an instance

514. Amusing story from Aristotle's Ethics 66vii. The man was dragging his father by the hair ~~to~~ round the room who at last called out, "Enough, enough, my son I did not drag my own father to a greater distance than this".

524. Professor Schoderer, who he prints 52d-3t he pulled up by hisa officer. (1) on the moral (2) on the mental generosity of 8 cases.

0 = X



Mrs. Marsineau

The numbers appear as dots or short lines with more distinct dots or longer lines at the tens. But their position is much more definite than their form so that I find it difficult to represent them where they turn a corner. From 0 to 20 they are in a perpendicular line, with a certain change at 12 difficult to define. Perhaps 13, 14, be are less distinct than 11 and 12. At 20 the line turns to the left and goes on horizontally to 100.

~~Then~~ it turns perpendicularly downwards to 120, then horizontally to the right. But here it becomes indistinct after a while time, and never comes round to the point from which it started because the diagram changes. The hundreds are set apart in a series by themselves like a fresh set of units, and the series of units begins over again. I can remember being able to count up to 20 and not beyond. Possibly this may account for the series turning a corner and making as it were a fresh start at 20.

The numbers are somewhat crowded together between 50 and 100, so that the 50 is not so much out of the middle of the horizontal line as it otherwise would be. I was not aware of this till I began to put it on paper, after the 100.

My mother's idea of numbers is that she sees the figures themselves arranged perpendicularly as far as 20, 1 being the lowest, then obliquely to the right as far as 30 then nearly straight upwards to 100.

My sister has no such idea of numbers but both she and my mother and I arrange the months ^[in the opposite direction to the figures in a clock] in a circle. My sister places January at the lowest point of the circle, I a little to the left of the lowest point and my mother near the top. I cannot think of the months in any connection without this image coming into my mind.



Mr. ^{John} Martineau (brother to Miss Martineau)

[I have copied the received a plan of his number-form and a section of it with description, ~~but~~ which I have for the sake of compactness combined into a single perspective view (see lithograph)]

His daughter ^{Violet J. Martineau} sees numbers in parallel rows of lines, slanting downwards. She has no picture of them beyond 100.

She sees the months in a kind of Chinese bridge form, from May to Sep! being level. A new bridge begins with a new year (see lithograph)

His son at 9 1/2 has no picture of numbers nor of the months but says he pictures certain names in certain shapes, Jemima being like a dark lantern, Maud like a spade, Ida like a spring, &c. This I am afraid is rather unintelligible.



Heredity is believed (by Mrs Barnard) to have seen number forms
Henslow number forms - colored letters - v voice

Elder sister Miss Henslow [her diagram is fainter]
a younger Mrs Barnard & family I crops questioned the whole
family, separately taken care that they should not hear of it from each
other, first to allow no time for fancies; except in the case of Charlotte
the youngest child 1 1/2 years who I think had overheard some conversation
about it this is the result

Cary, ^{a young hybrid to A.F.} not could hardly make him understand what I meant

Mary 9 1/2
Arthur
Leonard
Ethel } Sotto



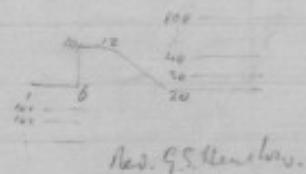
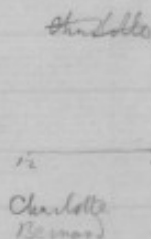
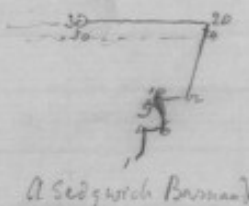
Henslow 10 years thought he had ^{seen from first in a straight line in ten years old at 450} something. he had one for the
Alphabet & numbers

Harriet 10 ^{said she} saw the figures in lines 1-10
11-12

Rose 12 thought she saw them in a straight line from left to right

Charlotte ^{said} without hesitation that she saw them & on my asking her
to write them down she did so begin writing them down from right to left 1320
I remember when I first taught her to write numerals she always bothered
me by writing them in that way

Sedgwick 11 years alone knew what I meant directly (if I except
Charlotte) & without hesitation drew me such a charming / eccentric
diagram that doubts were raised by his papa as to whether he might not
be inventing so 2 days afterwards I asked for a ^{fresh} copy. It was
identical with the first except that the 9 is (unintentionally) out of
the straight line



Mrs Henslow in prison

that is 4 sort over a non-family } = 6 in all
+ Mrs Henslow probably
+ Charlotte.

Wm. Henslow

Wonder the condition of those who are born blind has often puzzled me ~~exceeding~~ immensely as I can hardly imagine how any body can think without seeing

~~Wm. Henslow~~ Boarding House

Mrs. P. B. Henslow (Singer, and Henslow) 'her note the author says she had a very distinct idea of numbers but has lost it entirely from talking so much about ornativity' [This had been made by question & answer]

Emilia Warner 'I shall be glad to say a few words to one who writes not quite enough such idiosyncrasies to scores. --- They found me if I had made too bold in intended these thoughts that I have often wished to utter to one who could understand

Excellent written copy letter & with one exception I have never found a person who possessed a like idiosyncrasy & I am very curious to know if it is really a rare one. This is why I am tempted to write you after becoming so very much interested in your article in Nature

Mrs. Henslow (and her sisters) - 'I think this thing is Sacred - conscious of explained - journey of life - getting on in life. --- (good) Her fortune is always the best. ---



Miss Hatched The w^l nature of the phonetic that those gifted with powers of sound & occurrence etc. w^d be most likely to retain vivid impressions & to be able to "look" at these after words ^{at these} phenomena & yet recollection may do not rank high among your mental virtuosity. Miss Hatched not however can be partly accounted for by the habits of guarded & cautious expression among those I think might even lead some to see on the side of coldness in their descriptions. While quite as many non-scientific persons are apt likely to exaggerate the vividness & depth of their mental images.

I find it a great help in teaching little children that when say "only one melon" one be 11, 12, etc. at least as often as the usual names & in like manner tenly-one, tenly-two be for 101, 102; clearly, twelve, be. This breaks the habit of considering the second decade as something quite peculiar & anomalous and also of looking at 100 as a natural stop in the flow of numbers.




Mr. Hubbard Heredity columns & letters. Self & 2 daughters & brother
 letters to John Brown,

Very ~~repeated~~ vivid mental images by an ~~mean~~ implies by accurate mental images.

very important letters

Miss Hughes ^{2 letters} ^{supernatural of color} Certainly my pictures are more panoramic than the eye can take in (the given examples - quilt) When not strong finds the power of making new figures in mind beyond - I have a good deal to do with the other students at College & am disappointed in not finding as yet a single one possessing a strong visualizing faculty (Compare with Capt. Gore Booth) very curious ^{for} day & week form.

Miss Smith Jacob - very puzzling form but interesting as showing how unlike the idea is to anything visible at once, and her concepts about horizon of $\frac{5}{12}$ or $\frac{11}{12}$

Miss Knapp. very curious  or ^{my thought} she says if the figures are not drawn absolutely square they confuse her

the ground in her diagram are right type at her focal distance (i.e. reading) Experiments on her as to range of calligraphy. - a little be experiments on groups of ²⁰ groups ^{small} groups on such experiments. it came to find I seem to be a little over to visualize 52. 87. 15. km

Mr. Liebreich & Mr. Koch her daughter both see colors & letters

Miss Lefrog



it was Miss and Miss Knapp says that I made a transcription of

Mr. Parkman (ask about this)

"My husband who is decidedly very much a mental arithmetic, says he always fixes his eye on some definite object and in that seems to see the sum worked out"

[I think it is clear that floating imagery is idle work, the holding an image fast is usually a great strain.]

J. Sisson - his own small imperfect powers well described.

Mr. Top Smith - Imagery appears about 20 feet off. If she sketched from memory she would raise her head & look before her - view the wanted image

Miss Stephen - False words - part of of: ... speech before going to sleep
'I write these words' meaning them better

Miss Stone - Powerful memory, no artificial aid - repeats backwards & forwards, - any how.

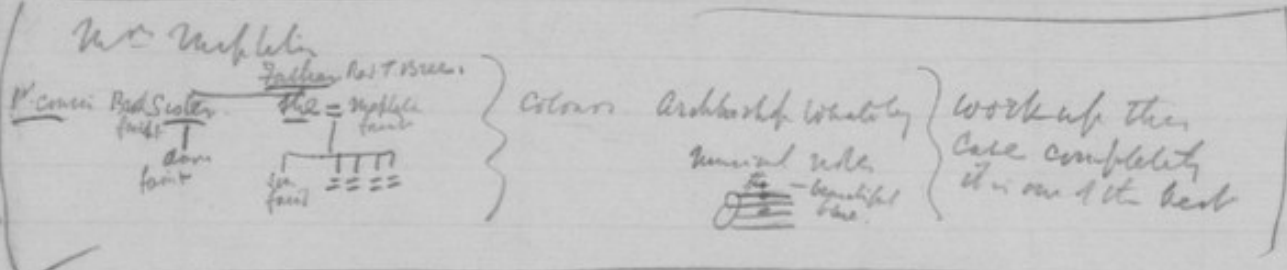
Miss Stone - colours - "Occasionally when uncertain how a word should be spelt, I have considered what colour it ought to be & have decided in that way. I believe this has often been a great help to me in spelling both in English & foreign languages" [Hence there can be ^{an accurate} notice of a word from its written form. The sense before to spelling.]

Miss Stone's finds out of about 20 Welsh girls from 12 to 18 and one connects any idea of colour with letters or words. As I could find out was that some two fingers, beginning at the bottom & going upwards while some see them going downwards.
Her sister sees days of week in colour patches.



Mrs Anna Wood (who has self used so well)
begs for persons with little power or less influence to give me any
account of mental vision

M de N. mind blown in her mouth, a member from

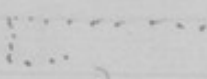


Martineau



The father - the daughter see the first
in pencil the same way

Mrs Martineau



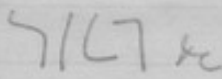
Mrs Marshall of Hadrow



Virginia Union - Easy form to print

Her mouth with eyes are all different

2 letters - one recent



Mrs Chas O'Brien - goes had deliver me!

8-10th anniversary - Verse

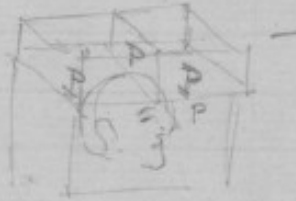


Elles Stones print { AEIOU
as colours { red blue green
* orange }

with the note & remark on 3rd page of letter

9. Handson Peculiarities of Mental Vision
[Point of view]

analyse this - is all cases it is as though of object
was seen in front though referred backward



Mr. Hawser's views & the reversed Zenerian

Mr. Hawser's view on totalities ideas

Learn Colpitts description of the form (which is lithographed) but add to the
form the diagram \times in his picture

Miss Smith now Mrs Norman Moore ^{coloured}
* Months of the year { showing something in
her schedule }

Colpitts Gore Booth RE \times quote what he says about the proportion of colours can think
out of one plane (it is on the back of the schedule)
Nephew to Miss Arch. Smith. same sort of number form

Miss Wilkes - number form & coloured numbers

Miss Charlotte O'Brien, "I see a whole room very vividly. A panorama of scenery
I can turn round in."

Prof. Alfelt - Prof. in physics Science Allahabad. says his own power was much greater
in childhood than now [prob. lost by disease in his case]

Mr. Fred. Henry - has a number form? heres? with Miss Charlotte O'Brien

Miss Shuttleworth coloured numbers & characteristics of numbers like Miss Arch. Smith

Miss Rachel ^{account} George ^{Stoney} Eleanor ^{panelle} Anna all see forms

Mrs. Farwell who ^{long ago} ^{has} ^{been} ^{very} ^{long} ^{at} ^{the} ^{root} ^{of} ^{the} ^{subject} ^{but}
am quite surprised to find how difficult it is to get people to take a real interest in it unless
especially, as you say, seem to understand it & little and become really irritated if one persists
in talking what seems to them as a sort of nonsense" - She quotes "The Atlantic Monthly" case

Other family Alice Eliza Catherine ^{H.F.} (her alleged occurrence) John Day & W.H.F.
see sketch in copy book - they are all concerned with ~~the~~ ~~subject~~

Guillermo Mass & his daughter

Alice Wood's own genealogy & number color forms

Frederic Petric & his sliding rule image

Clark as a child ran to the nearest clock when he wanted to count

Hale & Clark's book (the American)

Meredith account of his form by the letter tables about him when a child

G. F. Smythe note how he fixes a one omitted block in his number form



f. 34r

ATHENÆUM CLUB,
PALL MALL.

*The House & Finance Sub Committee
will meet on Friday next
March 31st 1882 at 4 o'clock
To consider Auditors special Reports*

Headlaw | Martineau | & Booth & Smith

Ford-Pearce | Edgeworth | Osler

Heredity in
Number - forms

Headlaw

Pearce

Martineau

Edgeworth

~~& Booth~~ Cheltenham Martineau
& Osler

Osler

The following history of Number forms will seem pure nonsense to nineteen out of every twenty readers who have no personal experience of the kind & who have never ~~discovered~~ ^{dreamt} that others may possess a faculty in which they are wholly deficient. Such persons are apt not only to disbelieve in the asserted faculty, but even to become irritated when their deficiency is intimated to them. It is just as with the colour blind people who ~~cannot believe that they make~~ ^{cannot believe that they make} ~~blunders in matching~~ ^{blunders in matching} ~~that is ludicrous, wrong &~~ ^{different hues} ~~the normal eye.~~ They will speak of red and green as certainly different ^{with closed eyes, they have in some affected people} but ~~that it is a matter of over-representation~~ ^{that it is a matter of over-representation} in dwelling ~~on~~ ^{on} such petty distinctions ^{as that which separate, a} ~~between a bright green~~ ^{between a bright green} the colour of a ripe red strawberry from that of its green leaf!

It is very difficult to ^{convey to the} ~~impress~~ ^{lead} the readers to whom these histories
 1. number-forms ^{may} seem ~~pure nonsense~~ ^{as merely} ~~with adequate evidence~~ ^(of their authenticity)
 as ^{the} ~~a~~ ^{compact} ~~form~~. I do not myself ^{see} ~~see~~ them and my
 conviction that they ^{may} ~~and~~ exist is strong evidence, in the
 imaginations of ^{other} persons is derived from a much larger
 body of evidence than ^{could be indigestible in a readable volume} ~~I could present~~. After ~~much~~ ^{careful} consideration
 the plan I propose is this. I shall first give ^{in Plate I an} ~~an~~ ^{array} ~~array~~ ^{of} ~~of~~ ^{cases} ~~cases~~ ^{which} ~~which~~ ^{Number-forms} ~~Number-forms~~ ^{were} ~~were ^{seen} ~~seen~~ ^{by} ~~by ^{more} ~~more~~ ^{than} ~~than~~ ^{one} ~~one~~ ^{member} ~~member~~
 of the same family, ^{these} ~~these~~ ^{with} ~~with ^{we} ~~we ^{might} ~~might ^{expect} ~~expect ^{to} ~~to ^{include} ~~include
 cases illustrated by ^a ~~a~~ ^{page} ~~page~~ ^{full} ~~full of the forms ^{referred} ~~referred~~ ^{to} ~~to.
 Then (I shall in Plate II) give ^{selection} ~~selection~~ from returns made
 by the authorities of various educational establishments, ^{namely} ~~namely~~ ^{Chatterdown} ~~Chatterdown~~ ^{Cheltenham} ~~Cheltenham~~ ^{Wendover} ~~Wendover~~ [&] ~~&~~ ^{Charlton} ~~Charlton~~ ^{schools} ~~schools ⁱⁿ ~~in~~ ^{this} ~~this~~ ^{county} ~~county,
 and ^{many} ~~many~~ ^{directions} ~~directions~~ [&] ~~&~~ ^{Vapor} ~~Vapor~~ ⁱⁿ ~~in~~ ^{the} ~~the ^{United} ~~United~~ ^{States} ~~States~~. In these I have
 appended ^{some} ~~some~~ ^{other} ~~other ^{forms} ~~forms ^{as} ~~as ^{many} ~~many~~ ^{as} ~~as~~ ^{possible} ~~possible~~ ^{to} ~~to ^{fill} ~~fill~~ ^{up} ~~up~~ ^{the} ~~the ^{space} ~~space~~ ⁱⁿ ~~in~~ ^{the} ~~the ^{Plate} ~~Plate ^{III} ~~III~~.
 In Plate III I give some of
 the more remarkable varieties, associated particularly with ^{peculiarities} ~~peculiarities~~ ^{of} ~~of~~ ^{light} ~~light~~ [&] ~~&~~ ^{shade} ~~shade ^{or} ~~or ^{with} ~~with~~ ^{color} ~~color and in Plate IV which is appended
 to colored illustrations of various kinds ^{which} ~~which~~ ^{will} ~~will ^{be} ~~be ^{found} ~~found~~ ^{reproducing} ~~reproducing ^{some} ~~some~~ ^{of} ~~of~~ ^{the} ~~the ^{colored} ~~colored ^{number} ~~number~~ ^{forms} ~~forms~~ ^{that} ~~that ^{have} ~~have ^{been} ~~been ^{sent} ~~sent ^{me} ~~me~~.
 These and the ^{following} ~~following~~ ^{explanatory} ~~explanatory~~ ^{letter} ~~letter~~ ^{preface} ~~preface~~ ^{statements} ~~statements will serve as
 a fair sample of the character of the evidence and of the ^{variety} ~~variety~~ ^{of} ~~of~~ ^{the} ~~the~~ ^{number} ~~number~~ ^{forms} ~~forms. It will ^{be} ~~be~~ ^{seen} ~~seen ^{how} ~~how ^{mutually} ~~mutually~~ ^{corroborative} ~~corroborative~~
 the expressions of the various writers are and how similar
 in ^{some} ~~some~~ ^{sense} ~~sense ^{is} ~~is ⁱⁿ ~~in~~ ^{their} ~~their~~ ^{essential} ~~essential~~ ^{character} ~~character ^{and} ~~and~~ ^{their} ~~their~~ ^{diversity} ~~diversity~~
 & yet how diverse ⁱⁿ ~~in~~ ^{details} ~~details ^{and} ~~and ^{their} ~~their~~ ^{several} ~~several~~ ^{experiences} ~~experiences. It is ^{unreasonable} ~~unreasonable~~
 to ^{suppose} ~~suppose~~ ^{that} ~~that~~ ^{these} ~~these ^{maps} ~~maps~~ ^{of} ~~of~~ ^{concurrent} ~~concurrent ^{testimony} ~~testimony~~ ^{can} ~~can ^{be} ~~be ^{deceptive} ~~deceptive~~, especially
 when ^{the} ~~the ^{general} ~~general ^{tone} ~~tone~~ ^{of} ~~of ^{careful} ~~careful~~ ^{self-analysis} ~~self-analysis~~
 and anxious accuracy of statement with which the statements are
 pervaded. I have myself further grounds for accepting them
 as trustworthy. In many cases want of space has prevented me
 from giving more than a part of a communication, ^{as} ~~as~~ ^{one} ~~one ^{letter} ~~letter~~
 out of two or three, which in their entirety ^{by} ~~by~~ ^{their} ~~their ^{reiteration} ~~reiteration~~
 became ⁱⁿ ~~in~~ ^{various} ~~various ^{terms} ~~terms ^{more} ~~more~~ ^{emphatic} ~~emphatic~~, ^{and} ~~and ^I ~~I ^{have} ~~have ^{often} ~~often ^{asked} ~~asked ^{for} ~~for~~
 verbal explanations & asked many questions & received ⁱⁿ ~~in~~ ^{reply} ~~reply~~
 which I have not given here.~~

Mr. Archibald (Susan E.) Smith - Core Book
These are the two members of a family having considerable mathematical tastes & powers.

Mr. Archibald Smith

Numbers - forms

Numbers present themselves in different ways. In childhood I had a distinct moral character in my mind for each low number. The even numbers were decidedly the superior characters. Eight was a special favorite, kind gentle & ready to help in the little ones. Seven a selfish creature caring only for itself; Four a good little thing particularly attached to eight. I distinctly remember the little dramas the figures used to enact in my sums. To this day the prime numbers seem somewhat harsh and self-subsisting, "at a distance from their kind," and twelve is to me a more beautiful number than ten from the many multiples that make it up, in other words from its kindly relations to so many small numbers.

They also appear in an ascending curve, steep at first & becoming less so after 10 or 12. ^(see fig.) The higher numbers present themselves in numerals as "321", but with no special background. My curve is in dreamland and has very little reference to the object actually before my eyes.

was

* Capt J. Gore-Booth RE

(Gore Booth - Small family)
mem. + their from their to their
number forms

p. 38

I refer all numerals to a perfectly well defined but irregular curve in my mind. I cannot in the least trace this to any cause but I have always had this curve in my mind. As I hear any number pronounced the number starts up involuntarily in its place in the curve like the notes of a piano.

The same curve is used for figures up to 1000 by the tens becoming hundreds & similar below from 1000 to 100,000 by the tens becoming thousands, & so on but getting fainter as I look forward or back. The missing numbers follow exactly the same curve.

The months of the year arrange themselves in a

circular curve. The weeks and days as is the numerical curve. I cannot explain this. I dare say the idea may have been unconsciously suggested by the face of a clock as the number of months corresponds to the number of hour figures, but why the months should be seen by me in the reverse way to the figures of the clock, I do not know. [This Dec. is at the top of the circle, & Jan. corresponds in this case to XII on the clock, Jan to XI & so on, going round backwards.]

Number forms

(d'Abbadie) writing in 1880. (Zootoph's friend 67)

"I mentioned the case of a photo-spher whose 4, 14, 24 etc all step out of the rank in his mind's eye. He had a haze in his mind from 50 up to 100 but lately 80 has sprung out, not like Sergeants as 4, 14, 24, but like a Captain further out still and five or six times as large as the privates 1, 2, 3, 5, 6 etc. "were I repetitions" said he, "I would conclude that my death will occur in the 80 [AD. 1880] of the nineteenth century."

I quote the rest of the description under "partly accounted for"

(d'Abbadie)

Number-forms.

(23)

Mrs. Jacques Bertillon son of the anthropologist & under Sec^y of the Anthropol. Society told me that he was brought up near a garden where he has involuntarily fixed the first 40 numbers coming up is rather onward before him. 7 is an old barrel of water sunk in the ground where his father filled his watering pot. 40 is a large tree beyond. His mind pictures no locality for numbers above 40.

Cheltenham ^{notes} Master (fig 18-19)

Number - four

"I have had some difficulty in drawing the accompanying figure as the image seems to desert me as I put pen to paper, but I think I have described it fairly. There is a sharp angle at 15° (perhaps due to the fact that I learnt the multiplication table up to that number) but after that the image proceeds in curves. It is rather compressed between 50 & 80 and in consequence I often find myself making mistakes in addition when I reach those numbers. The image is in one plane and vertical, the figure 1 being on a level with the eyes. 100 is made to the left of 1. I can hold an image in my mind of about 200 numbers at once." Omitting what he says of dates, he goes on "I may further add that only one member of my family can describe any image of this character or have any idea of what I mean when I talk of it, and she my sister who is always considered to be much like me sees nearly the same shaped image although not so distinctly. With her the ~~change~~ first change in direction comes at 12 and 15."

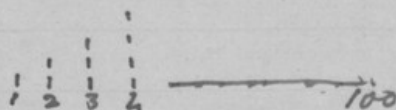
No sketch discoverable yet.

Edith Grace

comm. by J. Archibald

Number forms

I do not really see the numbers objectively. I know it more, and I know quite well that numbers go from left to right in a straight line to 100. Then there are a hundred units in that hundred. In fact each number figure bears the weight of its own number over it.



M. M. Adamson Prof. Lewis school

Number forms

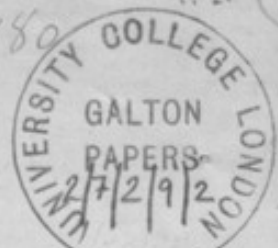
The numbers appear to me mentally in a long line of ~~figures~~ written figures, beginning at the left & going to the right, those which appear immediately in front of me are from about 12 to 16. In this long line certain numbers seem to stand higher than the others, forming land marks or barriers. Among these are 4 8 12 20 24 and after that each tenth number 30 40 50 etc. 100 stands up particularly high and is a great distance to the right. Numbers above 100 seem quite in the far distance

12 14 15 16 17 18 19 20 30 40 100

Lecours de Boisbouffon
Paris 11 juillet 1880

Mental Imagery

Monsieur,



En honore de votre lettre, j'empresse

de y répondre. J'ai également reçu votre
brochure. Dont j vous remercie, mais,

malheureusement, j ne sais pas l'anglais
et suis obligé d'attendre que quelqu'un
puisse m'en donner quelque interprétation.

J crois cependant, comprendre, par quelques
mots que j'ai pu saisir, que vous avez
traité la question au point de vue
physiologique? J'ai toujours pensé qu'il
y avait de ce côté des études très intéressantes
à faire, mais j'ai du, pour ma part,
me renseigner dans les applications artistiques

Si c'était sur ce sujet que vous
desirez des renseignements, j'aurais
vous indiquer, comme les titres probants,
mes principaux élèves.

Vous avez à Londres un artiste d'un
très grand talent M^r Legros et
dans le nord de l'Angleterre M^r Solon.

En France, mes élèves sont au premier
rang dans l'art. Cette année, encore,
plusieurs d'entre eux et particulièrement
MM^{rs} Carin et Hermitte ont obtenu
au Salon de très brillants succès. Tous
montrent, par la diversité de leurs talents
que la méthode a la propriété d.



D - favoriser le développement des facultés
naturelles et par conséquent l'originalité
qui résulte de la variété des organisations.
Quant à la partie élémentaire de ma méthode,
il serait naturel de croire que les circonstances
lui sont favorables; mais il n'en est rien
jusqu'à présent. On a aujourd'hui en France
une grande et très louable ambition au
sujet de l'éducation en général. On voudrait
développer tous les enseignements et, en même
temps, en augmenter le nombre, mais on
s'aperçoit que le temps est insuffisant pour
un aussi vaste programme, et l'on cherche
à sortir de la difficulté au moyen de
méthodes abrégées. De là, les étranges systèmes

qui se présentent pour l'enseignement
 du Dessin et dont les pompeuses et
 fatigieuses promesses attirent Seules
 l'attention.

C'est un tems à laisser passer avant
 que les méthodes rationnelles et
 sines aient leur tour.

J'aurais bien, Monsieur, que les
 renseignements que j. vous donne
 ne soient pas ceux que vous auriez
 désirés. J'ai vu que quelques
 médecins et Savants se sont occupés
 de mes idées mais je n'ai pas pu noter

De leurs travaux d'ailleurs peu importants.
 Durant, si les circonstances vous amenaient à
 Paris, j'aurais plaisir à causer avec vous
 sur des sujets qui nous intéressent l'un
 et l'autre. j'aurais aussi l'occasion de
 vous montrer la série des études de mémoire-
 faites par mes élèves. vous jugeriez par là
 quel degré surprenant de développement
 l'exercice méthodique peut obtenir de la
 mémoire picturale ou de l'imagerie
mentale.

En attendant veuillez recevoir,
 Monsieur, l'expression de mes sentiments
 sympathiques et de ma parfaite considération

H. Jacq de Boisbaudran

V. making numbers

f. 1r

Hazelwood,
The Park,
Miss Lane Care
Cheltenham.

August 6
1884

Dear Mr Galton,

I have been much
occupied during the last week,
so that I have only just fin-
ished re-writing the paper in
the way you suggested, and
since you were so good as to say
you would look at it again, I
now venture to trouble you with it,



f 1v

though I do not like the
thought of in any way adding
to your correspondence while
away in the country.

My address from Aug. 11th to 25th
will be _____

The Rev^d G. Edmund Walker,
Doddington Rectory,
March,
Cambridgeshire.

in case you might have any-
thing to say about the M. S., —

I have tried the experiments you spoke of, about the sense of smell, but with little or no success. I am sorry to say; still I enclose the results, such as they are, together with some further instances of its keenness in some members of our family.

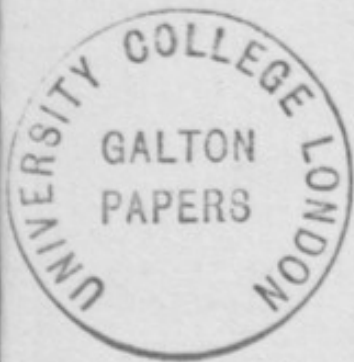
Some day I will try some more experiments, for they need to be repeated many times really to arrive at any conclusion.

I should like to tell you with what great interest I am now

reading for the first time
your book "Inquiries into
Human Faculty." —

The descriptions of the various
ways of seeing mental pictures,
numbers, etc. specially inter-
-ested me, and one of the
diagrams as to the idea called
up by numbers, was almost
the same as my own.

I remember many years
ago you gave a lecture at
the Birmingham Philosophical



Hazelwood,
The Park,
Cheltenham.

Society, which I was
disappointed at missing,
but which I heard of after-
wards through our friend
W. Levett, who, I believe
had the pleasure of meeting
you at the time, and I
had one of your papers of
questions to fill in, about
the faculty of visualising.

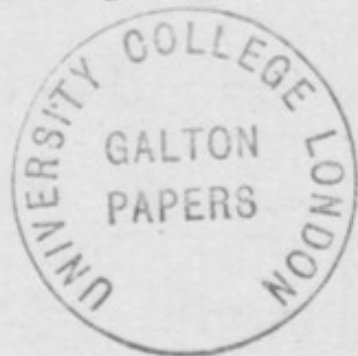
Last night in our family circle, we went through some of the questions. My eldest-sister immediately said that when she thinks of a number she always sees distinctly the actual figures before her mind's eye, 1, 0, 0, for a hundred etc. while I cannot do so without an effort which I can only compare to straining the mental eyesight. "A hundred" always seems to me a certain distance up in the air.

F. 4r

It is very curious and interesting to think of these things and I am anxious to finish the book. Will you mind though, if I say that we none of us could quite agree with what you say as to the relative sensitiveness of taste in men and women? Of course men are better judges of wine for they drink it and care about it so much more! and as to their "making better Tea and Coffee," I can't help thinking, that it is because it is generally under exceptional circumstances that they have to do,

It is an easy matter to make good tea for one person, which is what a man generally has to do, - or, if he happens to be entertaining friends, he empties half the tea-caddy in! -

I hope you will not think it impertinent to have ventured on a criticism of anything you said, - but that was just what occurred to us as we read it.



I am,

yours sincerely,

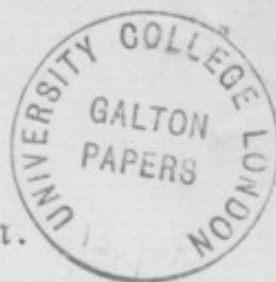
Jessie E. Carter.

Miss Jesse E Carter

F. 5r

Sense of Smell
Aug 9/84

Hazelwood,
The Park,
Cheltenham.



My mother's 2nd sister, Mrs J. S. James when she was young had a very keen sense of smell, though now it is rather dull.

She says that a short time before the birth of her first child, this sense became something remarkable, so that every smell seemed intensely magnified, and she could distinguish the different odour of everyone who came near her, also their sex.

At last this came to be quite distressing, and she kept to her own room for some time, and as she lay in bed with her eyes closed, could always tell who had come in by the sense of smell alone. She said that she was often quite overcome by it, and that sometimes ^{it made her} actually sick.

One kind old friend used to come & see her, and always my Aunt was violently sick as soon as he had left, - she could not bear it.

Her mother was in just the same condition for some time before her own birth.

Experiments on the sense of smell.

1.st time.

Four ivory balls were placed on a small tray, and I held one in my hand for about 3 minutes, [while the others were warmed at the fire, lest the nose might distinguish the difference by the cold touch, - this was done in each case] it was then replaced on the tray & mixed with the others, and I smelt them one after another, - blind-folded, - and immediately detected the right one, on which I had put a small pencil mark.

2.nd time.

My mother held 1 ball, (marked)
 my Aunt . . . another, do.

2 were warmed at the fire.

I picked out one of those that had been held in a hand, but could not distinguish who had held it.

(It seemed all through as if the faint distinctive odour only lasted about $\frac{1}{4}$ of a minute.)

3rd time

f. 6

Held one Ball in my own hand,
and mixed it with 4 others, — and
at once picked it out, after quickly
smelling all five.

4th time

My Mother and Aunt each held
a ball for a few minutes, and I
noticed a distinct difference, but
could not say which was which

5th time.

Four balls were used, —
Mother held one, I another,
they were then mixed, and
my Mother smell them, and
picked out mine as one that had been
held, but could not say whether it was
hers or mine.

Names of letters

7, The Terrace, Camden Square,

Camden Road, London, N.W.

Monday 10 June 1854

Sir,

Referring to your
 remark at p 145 of
 your inquiries into
 human families that
 you could find that
 different ones have
 one but arranged us
 any language to
 different number ✓
 may remind you



that in Greek the
 letters of the alphabet
 when called by their
 ordinary names have
 different genders, a,
 b, c, d, e, g, i, j, k,
 o, p, q, r, s, t, u, v,
 w, x, y, z being masculine
 & f, h, l, m, n, r, s &
 a being feminine: but
 that the names nearly
 unmounted a, be, ce, de,

e, fe se on always
manutina In Canal's
French Gardens Eng-
mans 1878 p 76.

Yours

Your obedient servant

G. M. Galton



Francis Galton Esq F.R.S.

Rev J. B. F. De Certe
(illegible)

f. 1r

33 West 25th St

Worth reading? New York Aug 16. 1894.

Dear Sir



Have read your "Inquiries," etc.,
with great interest & profit. I have
been particularly interested by the
part on visualization & visions.
Of late years I have studied the eye
more or less, & I feel moved to
send you a query or two, hoping
that you may find time to reply.

When a boy I had a habit of
miting in the air. It was all per-
fectly real to me, but I had
some very uncomplimentary criti-

cases in this connection from mem-
 bers of the family that I gave it up.
 On a day or two ago I thought I would
 try it again, & it will just as
 real as ever. I am not at all like
 Alice's little Bill the baron, who
 after losing his slate pencil, wrote
 all day with his fingers without making
 a mark. I cannot write a printed
 hand, but for the ink flows so
 freely from the tip of my fingers
 that the result is uninterrupted cur
give as when I write without taking
my pen from the paper.

I have a great many curious
 experiences, & feel surprised that

you do not, "as a matter of course",
mention things so familiar to me.

On the other hand, I feel almost sur-
prised by something you say, be-
cause they seem so familiar to

me:

I often see things with my eyes
shut, & see points that, previously,
I had not noticed, & open my eyes
shut for objects thus unobserved
photographed upon the retina. I can
see almost any color, as will, with my
eyes shut, & easily produce a light
as dazzling as electric light, &
which is so painful that I abstain
altogether now from the practice. Very
like however you are familiar

with all these things & a thousand
more besides

The special point which I wish to speak of
is suggested by pp. 99. & 103 ^{.105-6} of your "dequies";
namely, the power to project images on paper.

I understand you that these images are real.

At least it is coming clear to my
mind that we must regard them so.

Otherwise ~~to~~ are we not obliged to go back
to the "initial fallacy" of your correspon-
dant on p. 88. I seem to be moving
to words this position; that, in as-

much as I can project upon a white
screen the image previously photo-
graphed upon the retina from with-
out - so the mind within may pro-
duce upon the retina the figure
of which it has a distinct bel-

collection, & then project it upon
white paper. If so what we call
 phantoms & visions are, in a sense,
real. I mean for instance that the
 form seen by a "distempered mind"
 , so called, is as real as the shadow
of a dial, or the image thrown
 upon a screen by a magic lan-
 tern. In this view the mania ~~is~~
 must often illustrate, ^{contain} reserved
 powers existing in man, & ~~that~~
 it also seems to follow that the real
 mania is the man who refuses
 to recognize the fact that the vision
 of the "unfortunate one" is not
altogether at fault, in fact not
 at fault at all, the error being

the attempt at reasoning which follows & ^{f. 3v}
assigns that the real shadow is real substance,
I find no one to talk with on such

subjects & at the mere suggestion
I meet with pooh poohs. I find
that is not advisable to talk
with my own wife, as I can-
not make her believe that I
can see her "with my eyes shut."
Most persons do not seem to
read the A. B. C. of Optics

I am especially interested now
for the reason that I have ac-
cepted an invitation to give a
lecture the coming season before
the American Institute of Fine Phil-
osophy on the subject of Angels



I greatly fear that I, an orthodox
of the orthodox, may exploit some
great heresy; & yet I have now
tined my views in general & some
of our Theo. Professors who. thinks

I have a truth or two for the world
on the subject of angels, & say
"go ahead"



I should esteem it a great favor
'if you could let me know what
you think of the power of the mind
to photograph its ^{or perceptions} thoughts, upon the
retina, & to project the image
upon the screen. This may be
a potent impossibility, a pure
absurdity; yet how otherwise

can one, for instance, explain the
 visualization of numbers. Must
 it not be regarded, on the accepted
 philosophy, which I don't want
to accept, as an act of pure
 memory?

By your pardon this long
 & too hasty communication &
 with thanks for your book of
 "Inquiries" I remain yours truly

(Rev) B. F. De Certe (S. N.)

Frances Galton F.R.S. Rector Ch. St. John
 Evangelist. N. York



Dear Sir

f. 1r

Secretary's Office
General Post Office

June 12th 1883



Sir

In your lately published work "Inquiries into Human Faculty," you quote a dictum, ascribed to Napoleon, to the effect that - those, who, from some physical or moral peculiarity of character, form a picture of everything, are unfit to command no matter what knowledge, intellect, courage, or good qualities they may have. This saying you profess yourself unable fully to understand & I therefore venture to direct your attention to a paragraph in Helpe's "Brevia," p. 55, which seems to bear upon the point.

The passage runs thus: -

"There is something
'animal about deasiveness. If

F. Galton Esq.

' The mind be a fine and discursive
 ' mind, inclined to thought and
 ' stored with knowledge, it must
 ' be hard for it to be swiftly decisive.
 ' One of the main qualifications for
 ' decisiveness is to be able to shut
 ' your eyes to all manner of minor
 ' considerations & sometimes of major
 ' considerations. To do this requires
 ' courage, which is an animal virtue,
 ' and can be much enlarged by
 ' practice.

' Let us take a numerical illustration,
 ' showing the rough & ready way in
 ' which decisions are arrived at
 ' by the neglect of minor considerations.
 ' Let there be 8 considerations of
 ' the following values: no. 1 value
 ' 17; no. 2 value 9; and then 6
 ' others the values of which are
 ' not ascertained; but it is reasonably
 ' to be concluded that no one of
 ' them is higher than 4.

' A decisive man sees at once
 ' that, if he acts in a particular

way, he will have on his side no 1
 = 77. He sees that no. 2 will be
 against him. He has not time
 (perhaps it is on the field of
 battle) to ascertain to which side
 the other six will incline. He
 assumes however that they will be
 evenly balanced; he knows that
 the highest value of any of them
 is only 4; he takes at once the
 decision which is supported by no
 1 value 17.

Had there been time for looking
 carefully at each of the 8 unascertained
 considerations, it might have
 turned out that the smaller
 considerations would have entirely
 altered the decision. The man, not
 practised in decisiveness, cannot
 bear, even in a moment of peril,
 to overlook this possibility.

Helpe thus shows that a
 high visualising power tends
 directly to promote indecision

2

nes
e,

2,

is.

oly

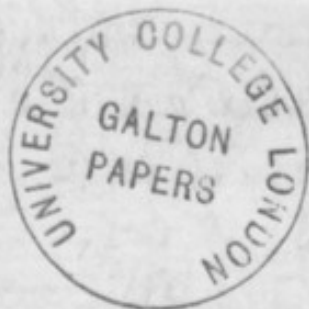
and Napoleon knows that no man without decision is fit to command.

You may very possibly be acquainted with the passage; in which case I have to apologise for occupying your valuable time to no purpose.

I am, Sir

Yours faithfully

Edward Cabbie



Misprints - ~~corrected~~
 Number - ~~named~~ Columbast Leeds
 Late errata 12 Sept. 1883

Francis Galton Esq. F.R.S.
 Mess^{rs} Macmillan & Co
 London



Dear Sir,

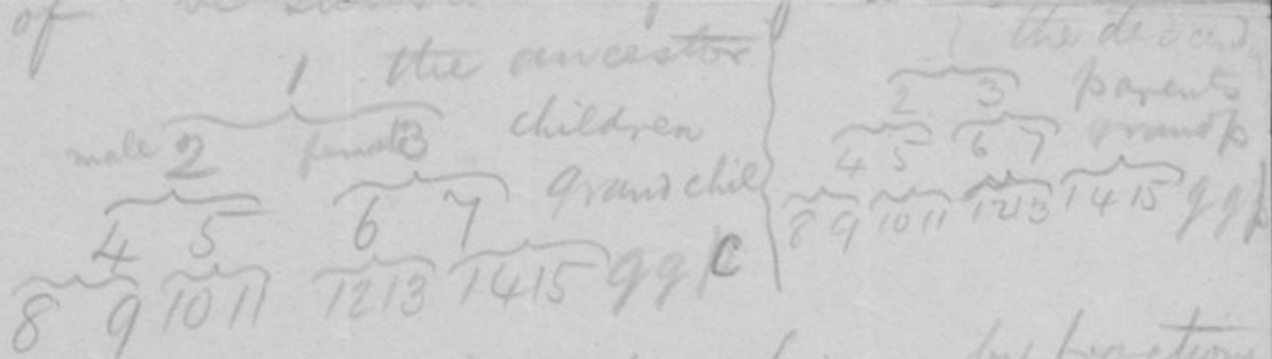
I have been greatly interested in the perusal of your work on Human Faculty. I venture to remark the following ~~errata~~

- p 128 $\frac{1}{3}$ from bottom for "Eighty eight"
 read "ninety eight"
 p 141 second line for "Fig 65" read "63"
 292 sixth ~~line~~ "Unioni" "Union"
 296 13th ~~line~~ Existing Exciting
 322 last but 2 above the table 1.5 1.15

Your proposal to ~~read~~ ^{say} on-naught
on-one &c might I think be improved
 to by saying One-ty for "wuntty"
Onety one, Onety two &c

My impression when reading the book which I have not now at hand was that your argument about the dwindling away of the descendants of those who married late involved this fallacy that at the end of each generation the population will be found stationary.

I have been much interested in your letter to Nature. You may have noticed that the application of your proposed method can be inverted if desired if the words "son of" be substituted for "father of"



Cousin ships might be shown by fractions
Thus my $\frac{4+5}{6}$ would be the son of the daughter of the father + mother of my father. I would be his $\frac{6+7}{4}$ son of the son of his mother father + mother

Yours respectfully
J. Greaves

(A. H. Grant)

Color Form

F. 1r

Souix Falls, S. D., U. S. A.

Apr. 20th, 1892.

Mr. Francis Galton, F. R. S.,

Dear Sir:-

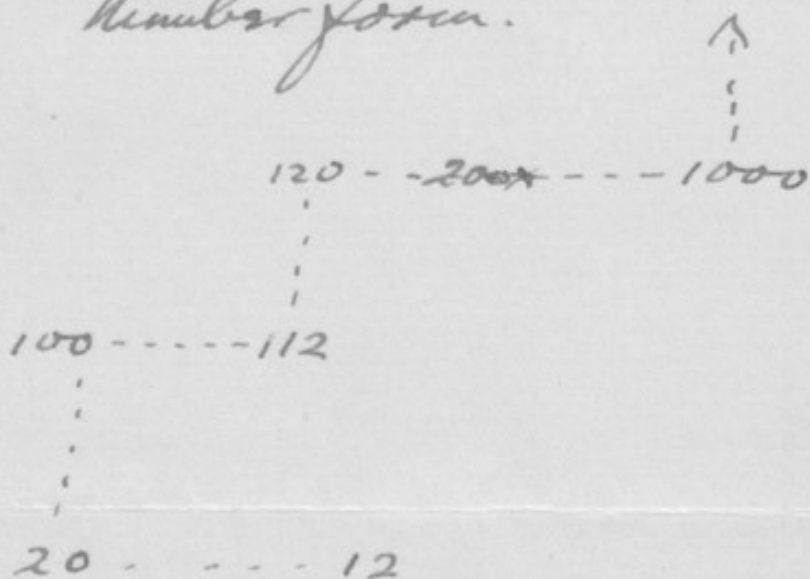
I have just read, with deep interest, your "Inquiries into Human Faculty". If you are still compiling statistics in those lines it would give me pleasure to cooperate with you to the utmost of my ability. Although a minister of the Unitarian church, I have had, as Registrar of Cornell University, considerable experience in the taking and compiling of statistics, and can therefore guarantee accuracy. If you care to accept of this offer, please inform me as to the details that you desire. I take the

liberty of appending certain
curves or forms of my own.

Very truly,
Arthur H. Croaut



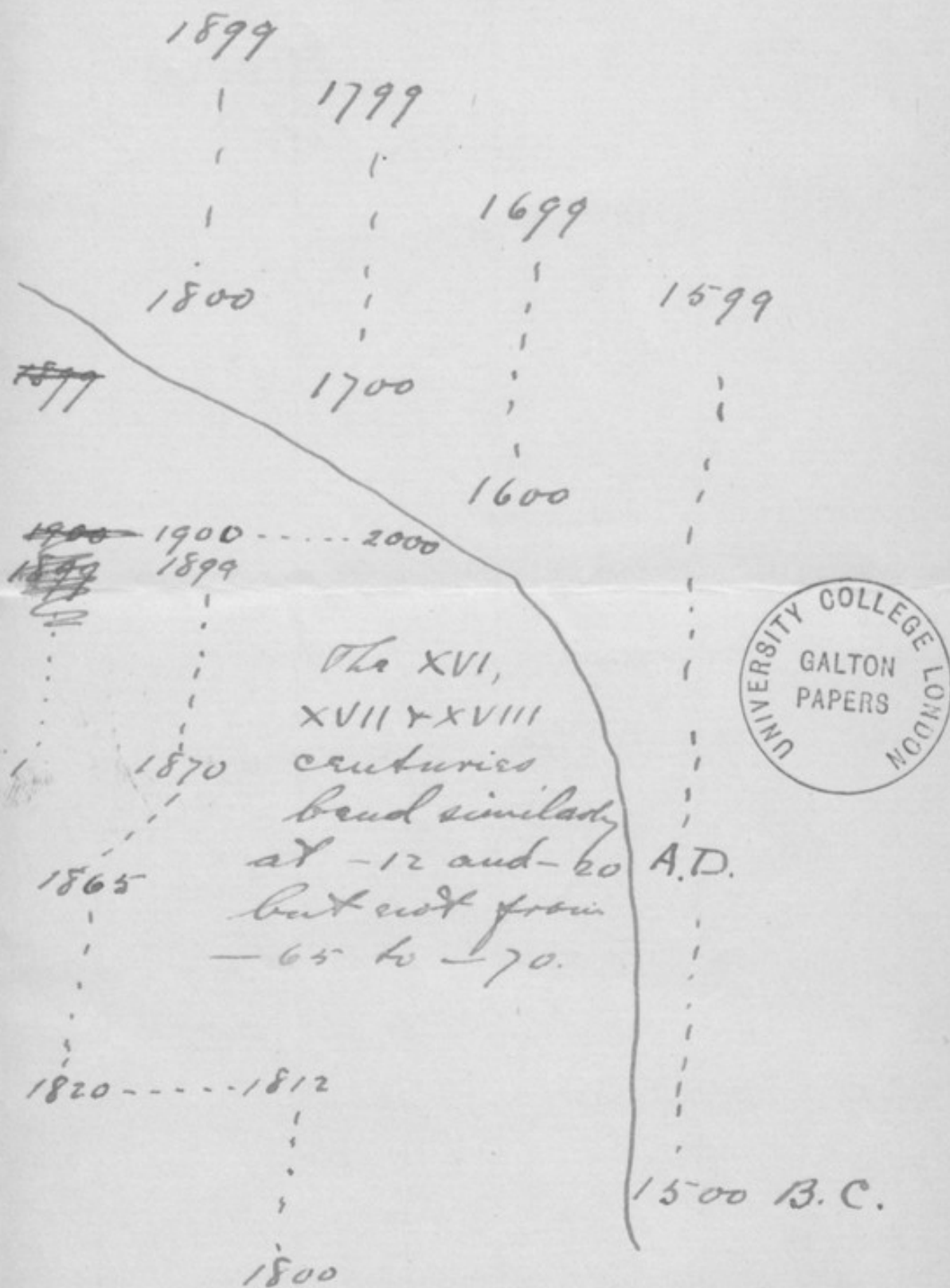
Number form.



* Each successive hundred up to
1000 takes the form from 100 to 200,
e.g. ⁴²⁰ 400 - - - - 500
400 - - - - 412

All numbers up to 300 equally
distinct. Above that only cen-
tinals are as distinct, e.g. 600,
1000, 2100, etc.

Notes. The last ^{four} three centuries
 are in parallel vertical
 lines, but not co. terminous.



Books of Old Testament

Malachi

Ruth

Judges

Josh.

Deut.

Creation

Gen. Ex. Lev. Num.

Books of New Testament

Mat. Rev.

Year

May June July August September

April

March

February

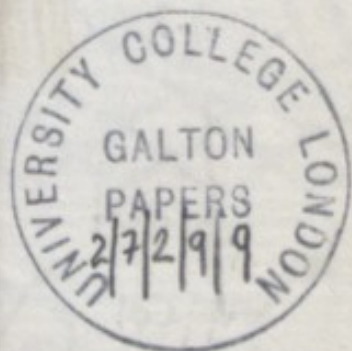
January

These form
a circle

October November
December



Religion



Oaklands
St. Mark's Rd., Notting Hill 17 July 1883.

Dear Sir,

The Editor of the British Quarterly has forwarded to me your letter of the 10th, which I need hardly say gives me real gratification as assuring me that I have rightly interpreted you. Your book was, in some sense, a revelation to me, & I hope to be able to follow up the line of enquiry more fully than was possible in a review-notice. I am now engaged on a paper on what I

F. 2

shall call "The Religion of Evolution"
which will probably appear in the
Fortnightly of September or October,
in which I shall try to elucidate the
constructive religious elements of Evolution
as suggested in your work on
'Human Faculty'. Meantime allow me
to express my feeling of obligation personally
I to thank you for your letter.

I may state that my ~~feeling~~ ^{attitude towards}
the popular forms of religion is one
rather of traditional tenderness than
of intellectual acceptance. But I
believe they can be expanded & transmuted,
& that is what has to be done. If it
can be done without destroying the old
faith & love so much (I would almost
say infinitely much) the better.

Believe me

Yours sincerely

Francis Galton Esq

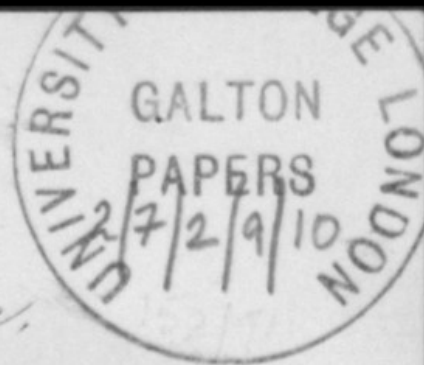
J. S. Henderson

f. 1

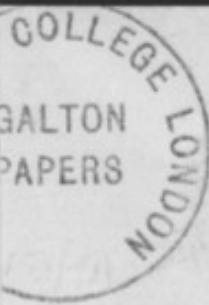
[Faint handwritten scribbles]

Major Hime,

Royal Artillery.



f.1



f.2r

John

Major Hime,

Royal Artillery.

ARTILLERY INSTITUTION,

WINDSOR, 2 Oct. 83.

Napoleon. Corrected in H.F.

Sir

In your very interesting book on the "Human Faculties," p. 112, you mention that you have failed to verify a dictum of Napoleon's, quoted in Humé's "Modern Tactics." Permit me to assist you in this small matter.

Humé traces the dictum from a small French book entitled, "Maximes de Guerre et Pensées de Napoléon 1^{er}"; 5th ed.; Paris, 1863; Dumaine, Rue et Passage Dauphine, 30.

To save you time I give you the French of the words of Napoleon

you have quoted from Hume. They occur in the 73rd Maxim, p. 42, of the book referred to:—

"Il est des hommes qui, par leur constitution physique et morale, se font de chaque chose un tableau; quelque savoir, quelque esprit, quelque courage et quelques bonnes qualités qu'ils aient d'ailleurs, la nature ne les a point appelés au commandement des armées de."

Possibly the following "Pensée," No. 1, p. 213, of the same book, may give you a clue to what Napoleon meant by the word "tableau":—

"L'esprit d'un bon général devrait ressembler, quant à la clarté, au verre du télescope, qui a passé sur la meule, et ne présente



pas de tableaux à l'œil."

Will you allow me to add that your chap. on "Mental Imagery" astonished me much? I have frequently heard people declare they "saw" figures, faces, &c; but I invariably disbelieved them. I remember one very clear case. When it was my lot to teach N. C. Officers & Men the Morse alphabet, I invariably (and successfully) taught it by means of certain groupings of the signs & a kind of mnemonic technique. A sergeant (who was afterwards killed at Sandula, Edwards by name) said he could learn the alphabet straight thro, A, B, C &c &c., as he could

"see" the alphabet that way. I did not believe him; but I acted as if I did, & he learnt perfectly in one night what took the rest several weeks to learn.

I am not conscious of any such "Mental Imagery" myself; yet I must have some capacity for it, as the following proves. Some weeks ago I dreamt our old family doctor, a formal, pompous old man, was crossing a river in a ferry-boat, when a sudden whirl of wind took off his hat & wig. I "saw" the whole thing so vividly that I awoke with loud shouts of laughter, awaking my ~~own~~ soldier servant, who was in great alarm as he thought my reason was fled.

Believe me

yours faithfully,

H. W. L. Hime

Major, R.A.

Major Hume
Royal Artillery
R. H. Institute
Woodward

f. 4



P. S.

I cannot resist adding that the wood cut, p. 344, of your book, has caused the greatest amusement in the R. A. Mess here. It is the portrait of an old friend whom we constantly see among the recruits, in the Orderly Room, in the Cells, & at Courts Martial. His martial ardour is not long-lived, & he generally deserts.

Jan Key MD
High Street
Worcester
Cape Colony
13th June 1891

Dear Sir /
I am not aware whether
you remember a visualization
- particularly with regard to
colour - still proper. It has
struck me that Ossian's poems
present a vivid example
- I am very sorry that I have
not time to work out the
comparial study.

Another observation which
as a medical man you will
appreciate is at least what
it is worth. Play of colour
is found in many nations
of Bile. There are also,

UNIVERSITY COLLEGE LONDON
GALTON
PAPERS
2/7/2/9/11

greens and yellow, - has many more
colours I know not, certainly purple.

Now I have been a victim
suffer for infancy in a most
peculiar way. Among the
things fatigue and spasm
being on the exposed sensitive
symptoms of feeding and indigestion.

At any rate the faeces are
prone to black, green, red-
dish, and various appearances,
while before a attack of
jaundice I had pink (staining)

respiration; and at the
times pink (like) blood. I
was exposed out here to the sun.

With all regard

I am

Yours &c
Geo. Key M.B.

Turing

H.S. Muller

Aug. 4.

Number four

1884.

My dear Sir

Possibly you may
be interested in re-

ceiving answers to
the questions on

"Visualising & other
Altered Faculties"

to be found in
Appendix F of

your "Inquiries into
Human Faculties"



I number the
 questions for reference
 as they are numbered
 there -

I enclose also schemes
 of my ideas of
numbers - the year
 - the week & history -

I write in the names
 of columns where I

see them, not being a
 practical artist I
 should probably give
 a false idea if I
 tried to paint
 them.

I expect to see my
 sister shortly and may
 be able to supply
 you with her number
 forms also if you
 wish for them.

I am yours very truly

H. S. Malden

Killlands. Holmwood
 Surrey.

PTO.

Ps. In drawing my
figures I am much
dissatisfied - They are
not very like what I
call the reality but
they indicate it to the
best of my power.

To
Francis Galton Esq.

225. Kc.



✈



f. 3c

Sept: 13.

1884.

STANDISH
PROOF
92 BURY

My dear Sir
I hope that I
do not trouble you
with constant dribbles
of small information.

I shall always be quite
content to trust to the
Post Office & believe
that my letters arrive
without putting you to
the inconvenience of
answering.

I enclose now my Mother's

[Mrs Henry Malden. nie
 G. A. Drinkwater. Bethune)
numberforms & schemes
of the week & year.
 Not at all like mine.

Also I should like to
 mention 3 pairs of
 twins. Two daughters
 of G. A. Fuller Esq of
 the Rookery: Westcott,
 Dorling. Mrs Whatman,
 & Mrs Charrington, twins.

P. 40

So, unlike that you would not know that they were sisters.

Mr Whatman slight, petite, very fair, one child.

Mr Charrington much taller & fuller-coloured in all respects, four children.

In the same family there is another pair of twins, so much alike that I never could tell them apart. One is quite lately married.

They are more like Mr Whatman than Mr Charrington.

My third case of twins is one of curious longevity. The very distant of mine Miss Elizabeth Carnegie died

P. 4v

at Leamington a few months
back aged 100 years & 5 weeks.

Her twin sister Christina

died over 70. both un-
married. Their mother

Lady Carnegie, widow of

Sir David Carnegie. Bart,

& daughter of Andrew

Elliot Governor of New

York before the American

War died in 1860 aged

96. ^{in the sup 97} I believe that it

is unusual for twins to

average about 86 years

between them.

Believe me

Yours very truly

H. S. Malden.



The Week

f. 5r.

G. M.

Friday, Thursday, Wednesday,
Saturday, Sunday, Monday, Tuesday,



The year G. M.

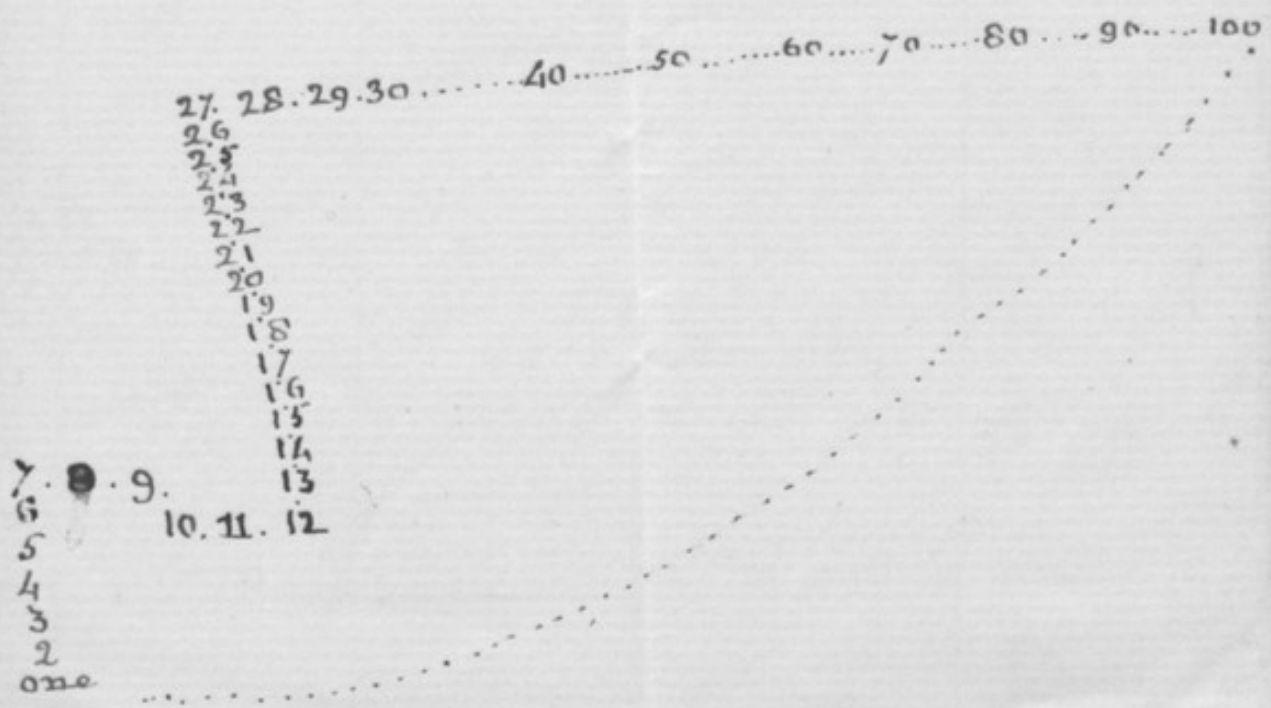


April, March, Feb, Jan, May, June, July, Aug, Sept, Oct, Nov, Dec



Numbers

G. M.



The Week G.M.

f. 5v

Saturday
Friday
Thursday
Wednesday
Tuesday
Monday
Sunday

Thursday

Wednesday

Tuesday

Monday

Sunday

Sent by H.C. Maldea
his mother's 'former'

Sep 13 / 14

Answers to Questions on Visualising & other Allied Faculties.



1. Illumination. Quite bright & clear and comparable to the reality.
2. Definition. all as clear and well defined as can be expected in the case of a short sighted person.
3. Colouring. quite distinct & natural.
4. Extent. I think only equal to reality. I cannot see four faces of a die nor two hemispheres at once.
5. Distance. as in reality. I cannot project an image upon paper.
6. Command. I can retain it by an effort for some time, but more easily if I close my eyes - with much greater difficulty if I have spectacles on. The fatigue falls upon the eye balls generally.
7. Persons. I have a very slight power of recalling persons & do not recognize them easily at all. At the same time if I sit up late enough & work my brain by writing or conversation or sometimes by reading I can see as many ghosts as I like (sometimes more) but usually as many as I like because I can choose them at pleasure.

I can also hear sounds in the same circumstances.

F. Scenery. I can recall scenes most vividly & find great pleasure in doing so. A smell ~~that reminds me of some place or other~~ (smells such as tar - the country after rain in summer - gunpowder * etc.) will very vividly recall the place in which I smelt it last.

{ * note - It always appeared to me a very striking bit of realism that when Scott, in the "Abbot", describes the agitation of Queen Mary on being reminded of Darnley's murder, he makes her not only recall "Black John of Osmistoun & his kinsman Hob", but also exclaim, "Fie, how sweet they are and how they smell of powder". The smell is exactly what would have seized with me if I had had knowledge of the deed. }

- to continue - I can easily form pictures from the descriptions of some poets & some novelists - Scott's "Scotch Scenery", Kingsley's "English Scenery", some bits of Milton (I can see all "L'Allegro & Il Penseroso" etc.), nearly all old ballads which deal with scenery at all, Maryat's "Sea Scenes", Clark Russell's "Sea Scenes", the descriptions of some War Correspondents, of many military men such as Napier, who are trained to observe the features of a country, descriptions by the poets Crabbe, Robert Blomfield (the "Farmer's boy"), Burns, John Clare - all of these draw pictures which I readily conceive in my mind's eye clear in all details. While few travellers are

of any use to me in that way - Those who labour their descriptions most are often of least use - Byron is of no use, Wordsworth (though I consider him the greatest of 'later English poets') is of less use than I should have expected - Bulwer-Lytton is of none -

I should have added that I can readily find pictures from the descriptions by Chaucer, Macaulay, (as of battle of Sedge-Moore) Tennyson, and from those of the authoress of a little book called "A Tussler Idyll".

Homer is of more use to me in this way than Vergil.

9. Comparison - ^{Motion} ~~Want of motion~~ is what my pictures lack - they do alter but they move in jerks like hand clock-work. (See under 7 for last part of question)

10. Numerals xi. (on separate sheet.)

11. I have no such specialties - but if describing any event I picture it to myself.

- 12. A. Vivid & comparable to reality.
- B. Good or fair - Even sound which I can vividly imagine & which I detect, is the holding together of the leaves of a book between the finger & thumb of
- C. Far good; the rest, faint.
- D. Very faint.
- E. Fair only, or faint. F. Non-existent

13. Music. None at all. I have no idea of music apart from words, and it gives me no pleasure unless I can fit words to it - I often do of course mentally fit words to music which has some acknowledgment by others as belonging to it.

14. - Agas - as a child I had less command over my ideas - they were not I think more vivid - but I would be tormented by them. I was ^{tormented} for instance by Smitram's "Companions" - Now I can see them, but dismiss them also.

Numbers - I see stretching away from my feet upwards - inclined at an angle of 60° at least - This series - a sort of ladder with a figure, written up to 100 & then a figure i numeral, for each rung, goes on indefinitely i perspective, getting obscure therefore higher up. If I am dealing with high figures I am somehow lifted up the ladder, & the low ones are obscure below me. They are all black, except eight which is green.

I see fractions quite apart from this scheme.

If I think of eight and a half I see

- $8 \frac{1}{2}$ standing all alone.

(picture on another sheet).

(I am quite unable to explain the existence of these old men - the one on Thursday is more distinct than the one on Saturday, but they are both rather indistinct especially about the legs)



The year - is a circle, round which I travel in the opposite direction to that of the hands of a watch. The months are generally coloured and have their names printed across them. The New Year is at the bottom, but August, not Midsummer, is at the top. About Christmas is the figure of an old man, on the sixth of September (his birthday) is a figure of my sister. There are no other figures, but each day of each month is printed in numerals in its place. (picture on another sheet).

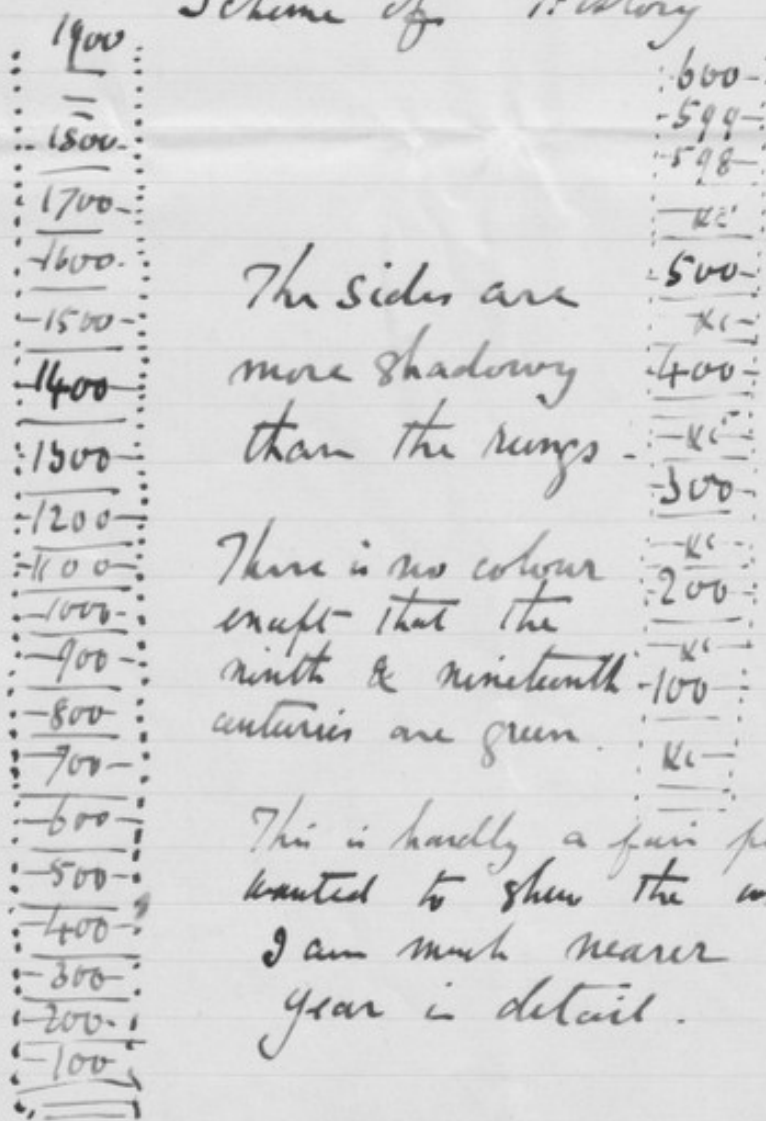
The week, stretches downward in front of me, much as numbers stretch upwards. I start at the top on Sunday & go down. Each day has its name printed across it, and on Thursdays and Saturdays are old men with crowns upon their heads. On Friday is Robinson's rescue's man black without clothes. (picture on another sheet)

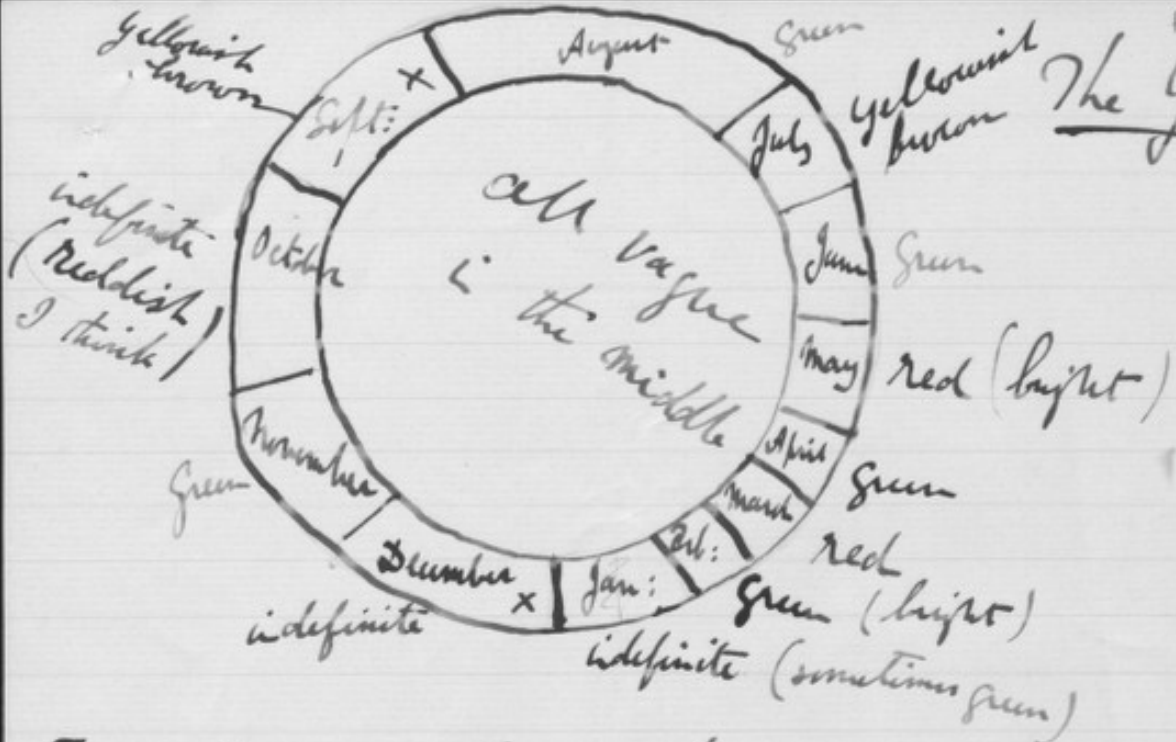
Next week does not get shape till it begins. On Saturday the past week stretches upwards behind me & in front is a very vague image of the same kind.

History - I can only compare to my idea of numerals; a sort of ladder with the date in figures forming each rung, and full of an infinite number of views, scenes, portraits and things of all kinds. History BC descends on my right as I look at it to Anno Domini - History since then ascends on my left as I look at it. (NB. probably when this image was formed my knowledge of Roman History stopped at Actium & my knowledge of later history began with Henry II).

As with the numerals I travel up & down somewhere
 so as to be near the parts of my ladder which
 I require. The history AD goes up to about
 AD 1900, the history BC begins about 600 BC.
 I have a serious difficulty in recollecting
 the sequence of events in early Oriental
 history, which I have only read since coming
 to years of discretion, because it will not
 come into my ladder - There are no
 centuries before BC 600 - I have
 to think how events fit in time, instead of
 seeing them as clearly as I see marks on
 the wall, or better even.

Scheme of History



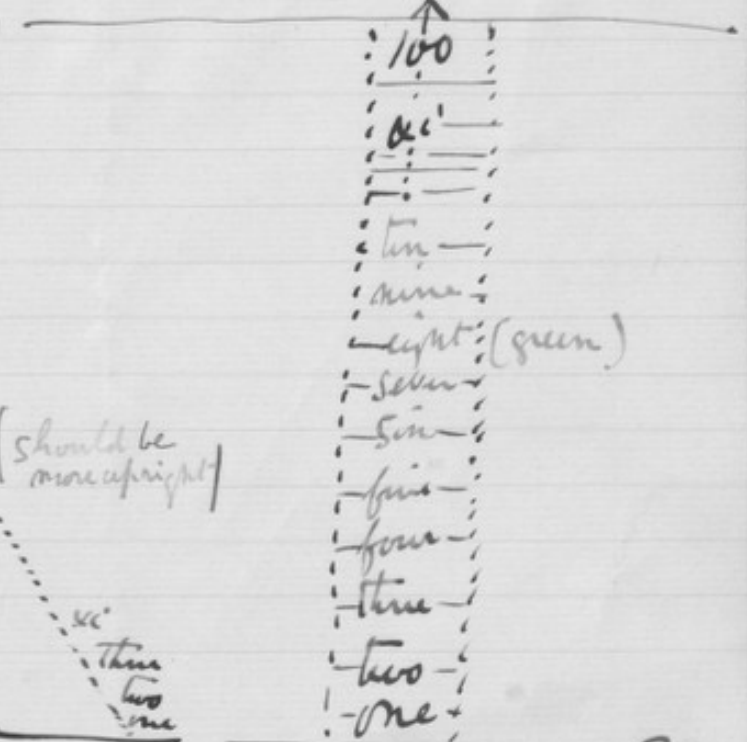


Figures I cannot draw - they are at x & x -
 N.B August was our great holiday month as children.
 The size of these months varies a little, but this is generally correct. If I have known long Januaries & short Decembers.

(colours)

| | |
|-------|-----------|
| vague | Sunday |
| red | Monday |
| all | Tuesday |
| vague | Wednesday |
| green | Thursday |
| vague | Friday |
| | Saturday |

The week (looking back from Saturday)
 The names are really printed on each day. The figures are at x x x.



Numerals

from the front & i profile - they continue indefinitely.
 80 & 800 & 8000 &c are green as well as 8.
 (should be more upright)
 &c
 three
 two
 one

Dear Meredith

F. 1r

July 14

1884

Celibate

Fellowships

Good

My dear Sir

The acquaintance I had the pleasure of making with you at Haver a few days ago, encourages me to put forth a remark on your recent publication, which I have been ~~for~~ reading with very great interest. I refer to what you say on the injury you suppose Celibate Fellowships to have done to the perpetuation of superior talent. These fellowships seem no doubt to hold out inducements to able men to refrain from marriage.

But let me call your attention to certain facts within my own observation which tend to show how ineffective this inducement has been really found to be.

I look back to the Cambridge Cal^r for the ^{few} years ~~with~~ nearest to the date of my own degree, having personal acquaintance with the careers of all the most eminent men of that period. I take the half-dozen or so highest names on the two Triposes - of men who as chapsmen obtained these life-fellowships with restricted or deferred marriage. Will you do me the favour to refer to the Calendar, understanding that the Fellows are designated & asterisks to their names.

In 1828 of the first 6 wranglers
 5 were clerical fellows - and of
 these ~~1, 3, 4, 5, 6~~^{no} 1 married
 about the age of 37 - no 5 is still
 unmarried - 3, 4, 6 married
 early - 2 was a layman.

In 1829 nos 1, 4, 5, 8 married
 near upon 40 - nos 7 were laymen

In 1830 nos 1, 2, 3, 4 married early
 throwing up their fellowships
 5 died early, 6 married rather
 late.

In 1831 the Senior took no fellowship
 marrying at once. Of 2 I cannot
 speak, 3, 4 and 6 were laymen

In 1832 the first half dozen were
 I think all laymen, except
 perhaps 4. no 7 married
 about 37.

(Laymen, for remember, except
 in a few cases only held fellowships
 six or seven years.)

On the Classical Tripos

- 1827 1. married very early
 2 was a layman
 3 married early

- 1828 1, 2. married early
 5 died early (married a
 not I cannot say)

- 1829 1 got preferment and
 then up fellowship early
 died in middle life, I think
 unmarried.



- 2 layman unmarried to
 this day.
 3. married early ✓
 4. layman -

- 1830 1, 2. married early
 3 layman - died unmarried
 4 myself - married about 42 -
 later I ^{certainly} think the any of
 my the above - who married.
 5. ill health & died early
 1. a layman

- 1831 ~~1~~, 2, married early
 3 married about 37



1832 1. c lagman
 2, 3. married early
 4 married late
 5 lagman, unmarried still
 8 married early -

1833 1. lagman - unmarried still
 2. married in middle life
 3. lagman

1834 1, 2, 4, married early
 4, 5 married in middle life
 3. 6 lagmen

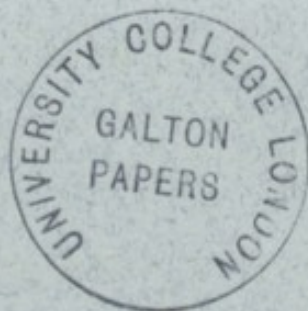
I submit that these figures
 go a long way to refute your
 reasoning on the presumed
 ill effect of the old celibate
 fellow ship system. No doubt

That same system had other
 evil effects of its own, but let
 us be fair to it. You know the
 old saying *Heroum filii rotd,*
 and I fancy the common
 observation is generally true
 that clever parents do not
 produce impuising children.
 Sir Robert Peel once solemnly
 declared that there was no
 instance of the kind between
 Philip & Alexander — and
 Chatham & W. Pitt. I know
 it used to be the common
 remark at my college that
 the sons of ^{our} incumbents were
 generally fools. The rule is
 not universal — but I have
 observed some truth in it.

Pray excuse this random
intrusion upon your time
and the really valuable
studies to which you devote
it and believe me
my dear Sir

Yours very faithfully

C. Merivale





D. Galton.

Dear Sir.

Since I read an article of yours on "Visualized Numerals" several years ago, and wrote you of my own strong visualizing power in several directions, I have been exceedingly interested in all that relates to the "Human Faculty, and its Development" and have just finished reading your book by that name.

When in London this
Autumn, and after receiving
the directions you kindly
sent me as to how to get
there, I went to your
"Anthropomorphic Laboratory"
and had the various
measures taken.

On my return home I copied
the series of questions in the
back of your book on the
"Human Faculty"; and have
interested myself since in
trying to get answers to them
from my friends.

In this way, one of them,
a very especial friend, told
me of her curious ideas as to
numbers, giving them characters
instead of color or position.

I remembered your saying
(in your book) that you
had had but five or six

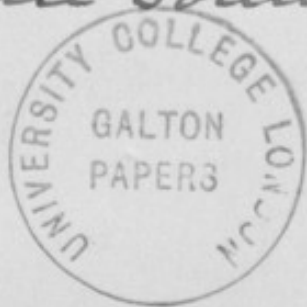
of such peculiar examples,
and I at once decided to
have my friend write down
her impressions to send you.

I enclose these now.

She is one of the most
absolutely straightforward

people I have ever met,
and even not imaginative;
so that her account is to
be entirely relied upon - she
tells ^{it} the same way every time
she is asked.

She says she has always thought
of Numbers in this way - yet
she can never recall faces, and
in many other points is almost
without the visualizing
power. She has no number
form at all. In the special
Senses both Taste and Touch
are stronger, (visually) than
Smell or Sight, while Sound is
almost absent.



If you should care for any
other particulars from her
I shall be glad to get them
for you.

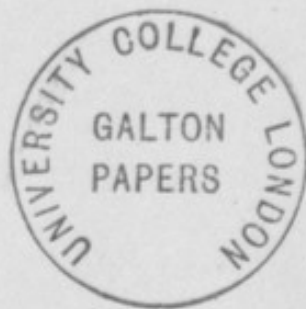
Hoping this may be of interest
to you

I remain

Yours truly.

Virginia C. Minor.

128 East 24th St.,
New York.



The only trace I find in my
own mind of characters
attached to numbers is that
2 pleases me, and 9 has
always seemed to rule over

all the other numbers,
and is, besides, cold and
unapproachable.

I am the daughter of a physician & scientific man of some note in the City of Charleston, South Carolina. I was between twenty & twenty five before I in any way noticed the peculiar way in which I regarded numbers - though it has existed since my childhood. Miss Minor's speaking of her visualizing numbers was the first thing that attracted my attention to it. To me they have all well-defined characters, with strongly marked attractions & repulsions to and from each other. This continues not only through the units but through the entire multiplication table. I never knew any one else who in the least degree felt in this way, nor have I any idea what caused it. Thus - all the regular numbers are feminine in their characteristics - & the irregular, masculine - (this is not hard & fast only dimly felt) One & two I have very little thought of, but 2 - has more character than 1. 3 dominates over 2 & greatly adores 5. 4 is a much little number with a strong repulsion ~~from~~ ^{to} 7. 5 - is a happy-go-lucky kind of chap who waltzes through the multiplication table very much at his ease.

F.4V

with-himself & every one else. 6 is a nice
lady like little number, who has a young
or sisterly affection for 7 - whom she also
somewhat fears. 7 - looks down upon
the others - even his superior eight - but
fears & admires 9 - whom he would like
to imitate as far as possible. 8 is much
proud of being the multiple of 4 - but
stands in great awe of 9 - who is king
of them all. A self-conceited number
is 9. who thinks there is not another
creature in the multiplication table equal
to him. He is proud of all the queer things
attached to him. The fact that every number
which is a multiple of 9 - adds to it, is
the great feather in his cap. (Of course I
heard ^{it} fact when I was more than a child
but I immediately thought how it fitted
his character. ^{10-11/2. I do not think much of only I don't care!!} The next thing is the
way they like or dislike their various
associations with-each other. 3 is proud
because 2. makes it five - 7 multiplies it
to 6. 4 feels such an antipathy to 7 - that
she intensely dislikes that 3 should make
her into that number. 5 is proud of the
easy way he goes through the multiplication
table, but for some unknown reason likes
to be multiplied by 3 to 15 - but disdains
that 4 should multiply it to 20.

7 is is rather disagreeable all the way ^{f.5}
through - is proud of his own doings
but haughty to the rest but especially
6 whom he thinks takes a liberty in
meeting him 42. 5 is a favorite of
them all. They all think a great
deal of the way they affect twelve -
I don't know why unless because it
is the final number - 8 - 7 9 differ
greatly on the subject - 7 five thinks
himself clever to have made it 60!
In fact there is not a single operation
in the either addition or multiplication
that my characters have not their
opinion about through the 12 tables.
This sounds like a fairy tale but
is an unconscious element in my
mind in every arithmetical operation
which I perform - 7 strange as it
may seem I often feel slightly apolo-
getic when I make them do things
I know they dislike, but being no
mathematician I meddle with them
as little as possible.

Lulia W. Porcher.

Number
Form

[Osgood]

P. 1r

MIDLAND RAILWAY.
Hotels & Refreshment Rooms.
WILLIAM TOWLE, MANAGER.

TELEGRAPHIC ADDRESS TO ALL
MIDLAND RAILWAY HOTELS.
"MIDOTEL."



Aug 3rd

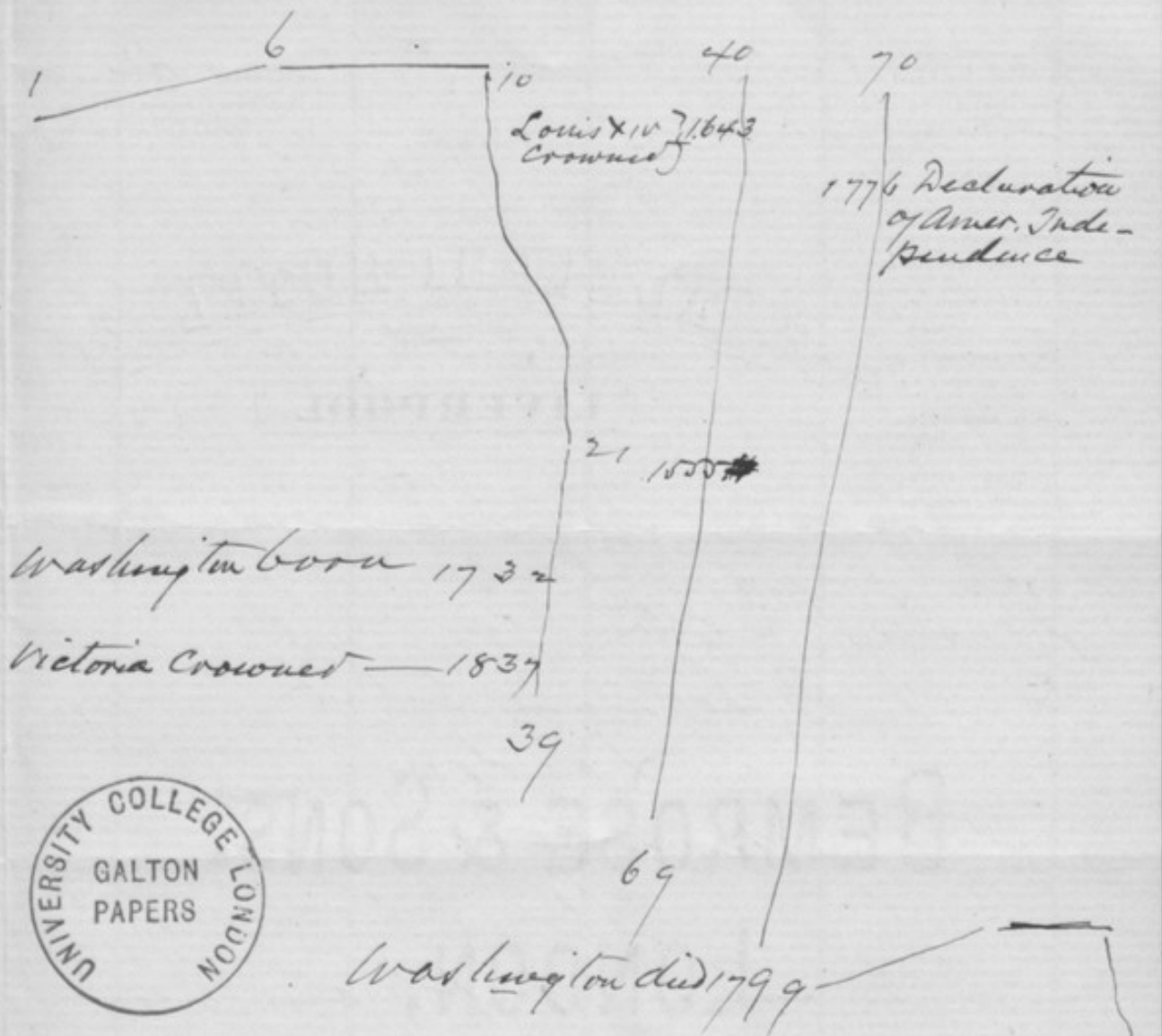
1892

Francis Galton Esq
Athenaeum Club
London

My dear Sir,

After expressing to you the sense of pleasure which I derived from my meeting with you at Dr. Ferrier's & afterwards at Mrs. Flower's, I would like to thank you for the great delight which your books have given me.

And now I respond to your request for my "number figure".



Charles V of Spain abdicated.

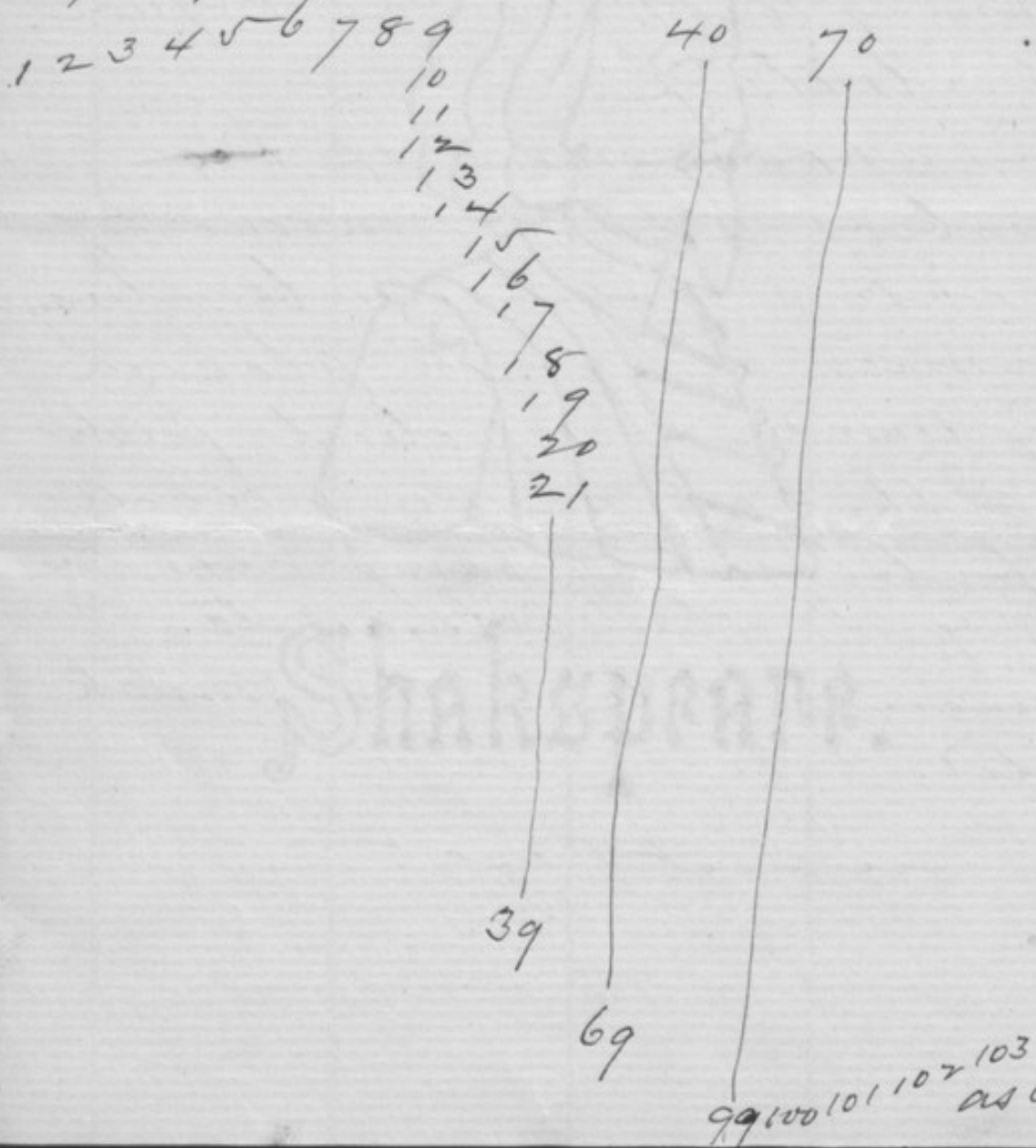
Louis XIV died 1715

These few examples will suffice.

Further - the ^{months} ~~days~~ of the year and the hours of the day occupy in my mind an oval figure, July corresponding to 12 o'clock noon,

2

I cannot remember when I first became Conscious of this possession. My friends called it "uncanny" and until I read your "Inquiries into Human Faculties", years ago, I did not know that other persons had a "number figure". My figure is as follows: -



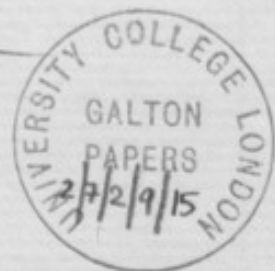
f. 24

As you will observe³, the numbers 1 to 6 are upon an ascending plane. 6 to 9 horizontal, 9 to 21 follow a line verging toward the right, then follow a straight perpendicular to 39, from 40 to 69 which stands lower than 39, & from 70 to 99 which occupies a lower plane than 69. Beginning with 100 the figure repeats itself.

This arrangement of ~~fig~~ numbers aids my memory, because a given number always assumes a definite place in my mind. If a patient's pulse be in the 70s my mind recalls the pulse beat as being near the top of the third column etc.

Memory of dates is thus much aided. E.g.

See next page: —



and December to 12 o'clock mid-⁵night. That is to say, the Months have their oval, the hours their oval, but when I think of a Morning hour its ^{place} corresponds to the place occupied by a Spring month &c &c.

Again: I see the letters of the alphabet as follows: -

| | | |
|---|---|---|
| a | L | g |
| b | | f |
| c | m | |
| d | | u |
| e | n | |
| f | | |
| g | o | |
| h | p | v |
| i | | x |
| j | l | y |
| k | R | z |

Again: - To my mind the days of the week distinctly follow each other horizontally and I always see the names:

Sunday. Monday Tuesday wednesday Th. Fr. Sat.

wed. & Sat. Each occupying a higher position than do the other days.

Aug. 3, 1921.



Shakespeare



I invariably refer bits ⁽⁶⁾ of verse and f. 45
of prose precisely to the place on the
page where I first saw them. This,
however, is common.

In response to your question as to
whether these figures appear to be
objective or subjective, I could not
at once reply. Upon thinking over
the matter I find that they are
always objective. Not distinctly
so, but I have become certain
that they are outside my mind.

Wishing you many years of
ability to give your readers
renewed enjoyment of your
peculiarly fascinating methods
of inquiry into the varieties of
human faculties.

I remain

Most Sympathetically

& Truly Yours

Hamilton Asgood
95 Mt Vernon St
Boston, Mass
U. S. A.



f.4v

MIDLAND RAILWAY.
Hotels & Refreshment Rooms.
WILLIAM TOWLE. *MANAGER.*

TELEGRAPHIC ADDRESS TO ALL
MIDLAND RAILWAY HOTELS.
"MIDOTEL."

MIDLAND GRAND HOTEL
ST PANCRAS, LONDON.

QUEENS HOTEL.
LEEDS.

MIDLAND HOTEL.
BRADFORD.

MIDLAND HOTEL.
DERBY.

MIDLAND HOTEL.
NORCANNON BAY.

ADELPHI HOTEL

LIVERPOOL.

189

BEMROSE & SONS,
LONDON,
& DERBY.

Leicester Mills,

J.H.P. Robinson, July 21/83.

"Very suggestive" F.G. on envelope

Dear Sir,
Mental Imagery? Good

I have just read your new book with very great interest. It appears to be to be worthy of ranging on the same shelf with the "Origin of Species" and the "Descent of Man." My daughter was very proud of appearing in the frontispiece of so important a volume. Your chapters on "Mental

"Imagery" were of most
interest to me. My friends
are inclined to ridicule
the idea that I can
see pictures. You are
perhaps aware that I do
many groups and pictorial
compositions in photography.
It is an absolute fact that
I mentally see my subjects,
I might almost say
complete, but not quite
down to minute details.
If I look for these details
the image weakens.

I can retain the picture
in my eye - or perhaps I should
say can call it up when
wanted - for weeks. I saw
a small copy of a large
combination picture I
did a few years ago.

This is composed of 6 separate
negatives taken at different
times, yet the picture was
so vivid to me that I had
no need of a sketch. My
subjects seldom seem to you,
they come at once. I may
seldom dream and if I do
I cannot remember them, but

F. 2v

I thoroughly enjoy "making
dreams," in which I can
call up the scenery of my
travels for many years.
The landscapes I conjure up
are full of colour, but
my subjects appear in black
and white, perhaps because
colour is not necessary
in a photograph.

I have wanted an
excuse for a long time
for asking you to accept
an Enamel of Mr Darwin,
perhaps you will oblige me
by accepting the one I send.

by this post. It is from
 a private negative by
 Mr Leonard Darwin. I
 have done several for
 the family and am allowed
 to do a few for myself.

It is not fine as an enamel,
 the negative being too weak
 to give good results, but
 I believe it is considered one
 of the best likenesses of
 the great subject.


I remain dear Sir
 Yours truly
H. P. Benson







LONDON 1860 BERLIN 1865 DUBLIN 1865 PARIS 1867 DUBLIN 1872 VIENNA 1873 LONDON 1873 LONDON 1874
 BENGAL 1870 BENGAL 1870 BENGAL 1871 BENGAL 1872 BENGAL 1873 BENGAL 1874 BENGAL 1874
 LONDON 1863 LONDON 1865 LONDON 1873 LONDON 1877 CORNWALL 1861 CORNWALL 1865
 CORNWALL 1864 CORNWALL 1865 CORNWALL 1867 CORNWALL 1870 CORNWALL 1871 CORNWALL 1872 CORNWALL 1875 CORNWALL 1877 SCOTLAND 1861 SCOTLAND 1862 SCOTLAND 1863 SCOTLAND 1864 SCOTLAND 1864 SCOTLAND 1865 SCOTLAND 1867

THE GOLD MEDAL OF THE PARIS UNIVERSAL EXHIBITION



WAS AWARDED TO M^r. ROBINSON BEING THE FIFTY-THIRD MEDAL WITH WHICH HE HAS BEEN HONORED AT INTERNATIONAL AND OTHER EXHIBITIONS

H.P. ROBINSON
 GREAT HALL STUDIO
 TUNBRIDGE WELLS

ALL NEGATIVES ARE PRESERVED

COPIES OF THIS PORTRAIT CAN BE HAD AT ANY TIME OR ENLARGEMENTS FROM IT ON PAPER OR PORCELAIN FINISHED IN MONOCHROME OR COLOUR. IT IS ALSO ADAPTED FOR REPRODUCTION IN IMPERISHABLE ENAMEL

Tunbridge Wells

from H.P. Robinson

F.4V

Cambridge Mills,

f. 5r

July 25/83.

Composite photo

Dear Sir,



I am extremely obliged to you for your very great kindness in sending me a copy of your book, which arrived this morning. I shall always value it very much.

There is still a good deal of dissatisfaction about the composite-photographs of the two girls. Mrs Robinson

and two or three others,
 insist that you have
 made a mistake and
 that the three girls are
 combined. They are certain
 they can see Grand in
 the photograph, but I understand
 from your first letter
 that Edith & May are
 combined in the frontispiece
 picture and Grand excluded.

Referring again to visualization
 I fancy that the reason
 why I see my photographs
 compositions in monochrome

is that I see the finished
result in my mind's
 eye. This seems to me
 to be a perfectly distinct
 faculty to the visualization
 of remembered scenery.

What puzzles me is why
 both kinds should often
 come unasked, without,
 apparently, any effort of
 the will.

I remain D^r Sir,

Yours very truly
 H. P. Shiner

GALTON
PAPERS
COLLEGE LONDON

f. 75

Cambridge Wells;
July 28/83.
Composite photo

Dear Sir,

I have just looked
out the negatives and
I find the ones you
have used in the book
are marked "3 sisters."
There is such a distinct
sensations of the three
that I feel sure you have
made a mistake in labelling
them from two. I am
sorry I have mislaid
your first letter, describing

the negatives or that
would have settled
the question.

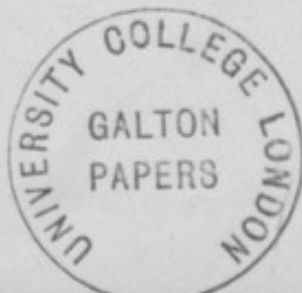
Anyhow it is a
triumph for your system
that there should be any
doubt about who sat
for this family portrait.
Here is another little

puzzle. (if you are not tired
of the subject.) My eldest-
girl is very intellectual.
She reads the toughest books
and masters them. She
reads Darwin and Spencer,

and had discovered your
book in the Library and
read it before I knew it
was published. She is also
a South Kensington Redallist.

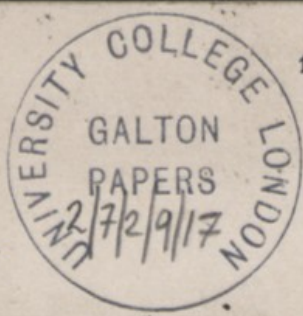
The youngest is an admirable
Tennis player but has
no taste whatever for reading
or art. Yet they are sufficient
alike to make it difficult
to say which your compositions
are most like.

Yours very truly
H. P. Robinson



f. 1r

18, CORNWALL TERRACE,
REGENTS PARK, N.W.



Ap. 26

Why not
Inception, Insception, and Perception?

They have all the same derivation, &
the idea of commencement attaching to the
first is not inappropriate.

S. J. D.

POST CARD



THE ADDRESS ONLY TO BE WRITTEN ON THIS SIDE.

f. 1v



F. Galton } F.A.S.
42 Rutland Gate
Hole Park

Crystal Palace Hotel

f. 1r

~~Wimbledon~~ ~~Upper~~ ~~Wimbledon~~

Stammers April 24. 84.

My dear Sir, ^{? value}

I fear that you will hardly remember that 11 years ago I had the pleasure of meeting you at dinner at our friends, the John Howards, & that you then told me that you were a $\frac{3}{4}$ supporter of Euthanasia. I have taken the liberty of sending to your address two vols. w^{ch} I reprint from the "Fortnightly Review",

& W: contain the article in question. Your name is taken, I hope not in vain, 2 or 3 times in the course of the other articles.

My wife & I read with great interest of book on Human Faculties; & my wife begs to enclose a translation from a passage in a Dutch book by Professor Beets of Utrecht whom we met in Switzerland last summer.

We shall be at the above

address at Homewood prin.
 next Monday till the middle
 of June (when we go abroad).

It wd give us much pleasure
 if you wd lunch ^(10a.) or dine ^(7a.) with
 us quietly some day. We
 are always there Sat^s & Sunday
 & indeed generally, 6 days out
 of seven. If you come any
 day except Sat. or Sunday, please
 drop us a line before. I might
 give you some curious details
 about nervous weakness &
stammering wh^{ch} is common

To several members of our
family (including Mr Charles
Randall) but Mr is not known
to have existed in any
common ancestor.

Believe me
Yrs very faithfully
Lionel A. T. Memabe



f. 3

Well might Goethe say that the presence of the musician always disturbs the enjoyment of music. . . . Nevertheless I sh^d contradict Goethe if he asserted that the sense of sight has nothing to do with music; for I must make the important confession to my readers that I really see music itself; and I do not doubt that they, if they examined themselves & paid some attention to their own sensations, might make the same discovery. There are tones & combinations of tones w^h appear to my eye like sparks of fire, thick & thin stripes, crooked pins, snakes & corkscrews; they are like flashes of lightning, love knots cracknels, hog's tails, streams of water & zigzags, & I see the possibility of writing down an entire piece of music in figures, according to my experience. (translated from Dutch)

From Dr Beethoven's "Camera Obscura".
A collection of sketches of life in Holland written
some 40 years ago.

Sent by the wife of
Lieut. A. Tollemache

*Sent me with a bundle
by Lionel Folliemore*

9.4c



Privatdocent Dr. Kraepelin-Leipzig:

2. „Experimentelle Studien über Associationen“.

Indem der Vortragende auf die Nothwendigkeit exacterer Untersuchungsmethoden des Status psychicus von Geisteskranken hinweist, berichtet er über experimentelle Studien, welche er zunächst an Gesunden über das Verhalten der sprachlichen Associationen angestellt hat, um damit eine Basis für spätere Untersuchungen unter pathologischen Verhältnissen zu gewinnen. Im Anschlusse an die früheren Klassifikationen, besonders diejenige Trautscholds, constatirt er ein mässiges Ueberwiegen der äusseren über die inneren Associationen und macht dann noch auf die grosse Rolle aufmerksam, welche den Substantiven, als den unmittelbaren Repräsentanten von Sinneseindrücken, bei der Bildung der Associationen zukommt (gegen 90% aller Associationen). Auffallend ist ferner die entschiedene Neigung zu einer deductiven, vom Allgemeinen zum Besonderen schreitenden Richtung der associativen Verbindungen (10 Mal so häufig, als das umgekehrte Verhalten). Ueber den Ursprung der Associationen liess sich in einer gegen 1000 Versuche betragenden Reihe feststellen, dass 41% derselben aus der früheren Kindheit, 36% der Schülerzeit und 23% der Studentenzeit entstammten.

Die nach der bekannten Wundt'schen Methode angestellten Zeitmessungen ergaben beträchtlich kürzere Werthe, als diejenigen früherer Beobachter, zum grössten Theil wohl wegen der geänderten Berechnungsmethode. Vortragender hatte nämlich nicht einfach Mittel berechnet, sondern die Häufigkeit der einzelnen Beobachtungswerthe als Ordinaten aufgetragen, indem er als Abscissen staffelweise die verschiedenen beobachteten Zeiträume benützte. Für zwei Beobachter, Trautscholdt und Kraepelin, ergaben sich nach Abzug der Wortreaktionen auf diese Weise die Werthe 0,400" und 0,570" als häufigste Dauer der Associationszeit. Entschieden kürzer fielen die durch den blossen Klang und die durch sprachliche Gewöhnung bewirkten Associationen aus, entschieden länger dagegen die Subsumtionen, namentlich jene, bei denen das Reizwort ein Abstractum war (0,750 resp. 0,775"). Die Erkenntniss, ob ein Gegenstand angenehm oder unangenehm sei, nahm nur 0,175 resp. 0,200" in Anspruch, die Subsumtion eines Wortes in eine der sprachlichen Kategorien gar nur 0,03—0,05".

Der Einfluss der Uebung auf die Associationen machte sich einmal in der Wiederkehr derselben Vorstellungen, dann aber auch in einer bestimmten Direction der gesammten associativen Thätigkeit bemerkbar. Es wurde nachgewiesen, dass bei Wiederholung derselben Reizworte in den ersten vier Tagen durchschnittlich etwas über 50% der Associationen wiederkehren; von da an nimmt diese Zahl rasch ab, doch bleiben selbst nach vielen Monaten noch 20—25% konstant, ein Beweis dafür, in wie stereotypen Bahnen sich unser Denken zum grossen Theil bewegt. Die allgemeine Richtung unseres Vorstellungsverlaufes kann in der Weise beeinflusst werden, dass z. B. die oft wiederholte Lösung bestimmter associativer Aufgaben, etwa die Association von Eigenschaften oder Thätigkeiten, uns mehrere Minuten, bisweilen jedoch auch einige Tage lang trotz unseres energischen Gegenstrebens die Neigung zur Reproduction derartiger Vorstellungen aufzwingt.

Umgekehrt bewirkt die Ermüdung ausser einer entschiedenem Verlängerung und Erschwerung der Associationen, namentlich derjenigen, welche höhere Anforderungen an unsere psychischen Leistungen stellen, ein sehr auffallendes Hervortreten von rein äusserlichen, namentlich von Klangassociationen, Reimen und dergl. Zugleich macht sich eine stereotype Wiederkehr derselben Wörter bemerkbar.

Ueber die Beeinflussung durch medikamentöse Stoffe konnte der Vortragende bisher nur wenige Versuche anstellen; es geht aus denselben hervor, dass dieselbe eine ausgiebigere ist, als bei den einfacheren psychischen Vorgängen, sich sonst aber im Allgemeinen in gleichem Sinne zu bewegen scheint. Aether und Amylnitrit bewirkten eine anfängliche, namentlich bei ersterem beträchtliche, Verlängerung der Associationszeiten; die reaktive Verkürzung war (vielleicht wegen zu grosser Intensität der Narkose) beim Aether wenig markirt, sehr deutlich dagegen beim Amylnitrit. Unter der Einwirkung des Alcohols liessen sich wiederum zwei Stadien, eine initiale Verkürzung und eine sekundäre Verlängerung der Werthe nachweisen; auch hier war jedoch das erste Stadium nicht immer sehr deutlich. Die Qualität der Associationen schien durch diesen letzteren Stoff im Sinne eines Ueberwiegens der durch Assonanz und Gewöhnung vermittelten Vorstellungsverbindungen beeinflusst zu werden.

Ueber den wichtigsten Punkt dieser Untersuchungen, die individuellen Differenzen, liegt zwar schon ziemlich viel Material vor, doch bedarf dasselbe noch weiterer Durcharbeitung. Vor Allem zeigten sich Unterschiede in der relativen Häufigkeit der inneren und äusseren Associationen, in der verschiedenen Beeinflussung der Vorstellungsverbindungen durch die sprachlichen Symbole, insbesondere den Klang, durch individuelle Erinnerungen (grössere oder geringere Beeinflussung durch neue Erfahrungen und Eindrücke), sowie in der Zahl der stereotypen Associationen. Zweifellos ist die Würdigung

dieser Differenzen für das Verständniss der gegebenen psychischen Individualität von grösster Bedeutung. Auch hinsichtlich der Dauer der Associationen ergaben sich bemerkenswerthe Abweichungen. Bei Kraepelin waren dieselben 0,170" länger als bei Trautscholdt, ein Unterschied, der sich im selben Sinne bewegt, wie derjenige der einfachen Reaktionen (0,030"), aber durch seine Grösse (fast ein Drittel der Gesamtdauer) auf fundamentale Verschiedenheiten in dem Ablaufe der Vorstellungen bei beiden Versuchspersonen hinweist. Für einzelne associative Aufgaben, z. B. die Auffindung eines Reimes, vergrössert sich diese Differenz bis auf 0,300", während sie für andere, die Associationen von Eigenschaften, auf 0 sinkt oder, wie bei der Association von Thätigkeiten, sogar negativ wird. Offenbar sind hier die allgemeinen Grundlagen der Vorstellungsverbindungen in ganz verschiedener Weise entwickelt. Einer anderen Versuchsperson fiel es ganz ausserordentlich schwer, Eigenschaften zu associiren, so dass der grösste Theil derselben schliesslich aus Participien bestand; gleichzeitig war auch das Gedächtniss für diese Associationen auffallend gering. Das nähere Studium dieser individuellen Differenzen nach den verschiedensten Richtungen hin ist es, von dem der Redner auch Aufschlüsse über psychopathische Zustände erwartet, vor Allem über jene schwierigen Uebergangsformen, bei denen es uns ja noch immer so sehr an Anhaltspunkten für eine exacte wissenschaftliche Beurtheilung mangelt.

Good. Useful.

Material for a possible
later edition of Human Faculty

esp. Visualizing,
Number forms
etc.

Must be gone through for

~~P. 78A~~ → 117?
Galton II

New Edition

~~117~~

Subjects
Alphabetically
Arranged → Not so

F. H. C.

[F. H. Collins]



? give a chapter on dreams
& the causation of the
several well known kinds.
— cold producing excursions
taken with no clothing etc.

F.H.L.

"O" in a review means valueless for reference
Human Fac

Athenaeum says "Spent by half-baked arrangement"

Pall Mall deals with two aspects of human life - the
 existence of generic types of humanity, + of individual
 differences.

Saturday "might improve sentence on hours
 caused by snakes." * + alludes to de
 Quincey's opinion dreams as quotable

Conscription

~~Collected papers rejected. not suitable for use~~
to Compte rendu sur le recrutement de l'armée ^{depuis} 1859

Mean ^{the 27th total} out of 305,339 ^{yearly} comprising the 'classe' of 1858
the net total subjected to the conscription was 267,333

p. 42 of these were rejected ^{for being too short} 16,491 or 6.17 per cent
^{for infirmity} 43,829 " 23.88 per cent
Total 80,320 30.05

that is under 1 metre 472 mm (4.83)
the average height of all examined is 1 metre 453 mm (4.76)
Exceptional causes of infirmity (not hereditary)



- Column 9 blindness from accidents (totals 468) 27
- 10 loss of an eye or its use (includes) 1,272
- 15 Deafness following a disease or wound 390
- 33 loss of use of limbs by accident or wound 503
- 38 " " " " (also) 503
- 39 mutilation of fingers or other organs 4,672

4,367 ← (there is too much for it
80,320 ← (i mean those who are
naturally excluded &
deafness & blindness
who become deaf
& blind from wounds)

28.41 percent = 75,953

28.41
6.17 (stature)
22.24

Weakness of constitution alone gives 22,200 out of the 80,320 or more than 1/4
= 22,200 out of the 267,333 = 8.30 percent

Malthus & Population

Preventive & positive checks
19 must vary inversely, when
pop: is constant

50. Savages ^{often} grow deformed when
their life is made less laborious

56. Though savages have abundant
space yet they crowd so together
as to lose that advantage - their
cabins stink more than the
dens of any wild animals. Their
atmosphere is worse than that of
the most crowded cities

107. The only advantage in savage
life is the greater leisure.

110. Without the pressure of want
the world could never have been
peopled; the natural state of
man is sloth.

Queere Do not secular meteorological
variations serve as a great
pump, to pump out waves of
barbarian emigration & devation

130 Social condition of the early
Germans

mem a man who produces a
permanent increase of food equal
to the supply of 1 month does
in fact enable 1 couple to marry
12 or 15 months earlier. The
gain is only 1 that single pair.
not a pair in each generation

166 As the effective strength of an animal is only the strength of his weakest part, so the power of the earth to maintain, is only its power in years of dearth. This is especially true of pastoral & uncivilised nations.

211 Tyranny checks agriculture

251 Whatever is strongly recommended and generally practised is at length considered as a kind of religious duty.

310 Labourers could marry without a cottage (in Norway) and these are limited.

420 It would be easy to make common people understand the theory of pop: as well as the man at the Lac de Joux.

440 If we mourned the children who might have been born, we sh^d always be in mourning.

444 Recruits to towns always flowing in from the country.

574 We cannot predict the mode in which insufficient subsistence checks pop: but we can predict the fact.

II. 19. Bickerstaff family

202 It has been remarked that many countries when most populous exported corn, but when pop: was low they imported it.

227. Natural & moral evil are the instruments wh: warn us to avoid any mode of conduct. If we multiply too fast we die of poverty and contagious diseases.
228. It is no answer to say that this has only just been discovered for such is the case with medicine, house-building - &c.
256. There are perhaps few actions that lead to directly to diminish the general happiness, as to marry without the means of supporting children.
338. Greater respect & personal liberty should be accorded to single women as life discouragement to Celibacy.
339. Instruct children in principles of population.
391. Industry is only helpful to a man so far as he is more industrious than his neighbors - if all were equal, so the preference would be as much felt as if they were equally idle.
404. Every child that dies under 10 years of age is a loss to the nation of all that has been expended on his subsistence up to that period.
413. Taxes should be made as little injurious as possible to human vigor.
414. In every old state, it is observed that many grow up people remain for a time, unmarried.
- Mean there is always a large body unmarried. These ought to be the best fit to breed but they usually contain a large proportion of the most fit.

19. Pontiac checks - what they are

21. Prevented & pontiac checks must
buy in series as ~~each~~ others, paper being
constant.

- (Nesbitt was a violence)

39. In savage life. women who have to migrate & wander
advance are incapable of carrying about children
on her back in the utmost, the others must follow or die.

39. filthy habitations & disease - epidemics

43. Fishermen can only exist near sea or large rivers.

43. Hunters require much space. like the beaver they
hunt.

44. 2 American women ^(savages) infertile - probably all savages
have the sexual habit. - Bruce is quoted also Le Vauclant.

47-8. Inefficient tool of savage women - unfavorably to
child bearing

48. Must suckle their children for many years, during
which they do not cohabit.

50. Lafitau says ^{females} children of women who have pain
in labour are destroyed lest they inherit the
weakness of its parent.

moeurs de Sauvages I. 592.

50. Children perish under the rigour of savage life

50. Many quotations to show the savages grow up
deformed when their life is not so laborious. - See

(over leaf)

51. may not marry unless thankful enough to support a family. (mean what ~~Kerr~~ ^{Hall} says about the Eskimauit "who can't get women unless they look well on")

52. Unwholesome life - gluttony & abstinence

53. other ailments - not long lived

56 - though they have abundant choice of space yet they crowd so together as to lose that advantage

57. Their cabins stink more than the deas of any wild animal. (Perouse)

57 Like the atmosphere of the most crowded cities

84. Vagabond life of women must be very unfavorable to chastity & to large families

84.-7 Otaheite is well argued. an island certainly ~~both~~ well peopled (204,000.) but why do people stay there?

88. Porevick societies - promiscuous intercourse, infanticide,

93. wars & the habit of the conquerors to kill or carry off the vict & porting (mean after sea they in the cocoanuts)

(Quere as to checker to pop: in Pitcairn ^{Norfolk} Island)

104 Curious statement that women in Formosa are not allowed to bring children into the world before the age of 35.

107 The only advantage in Savage life is greater leisure

108 Spartan ^{show sparta up as savage} heroism ^{their qualities} (like commodities in a market) will be produced that are most wanted. fortitude & patience under pain in a country where there were most often felt

German, ancient

- 110. Without the problem of war the world c^d never have been peopled. The natural state of man is sloth.
- 112. Nations of shepherds are formidable invaders because of their habits of ~~forming~~ moving all together. Good wall.
- 113. They are great colonisers

Quere do not secular meteorology: conditions form a great jump to jump out barbarians over civilized neighbours in successive waves of invasions

(Quere how was it that the Scythians etc became able to tickle the Romans at the time they did & not go long before into Italy? Had they new arms? Or was it merely the wealth of Italy then became known.)

115-116-123 An epitome of barbarian invasions of Italy.

117-118 Consequent important plagues - quoted from Gibbon.

123-124. Macchiavelli's account of barbarian emigration see note about it

124. Gibbon & Hume & Robertson all doubt the greater population of Northern Europe previous to the invasion.

130. Tacitus ^{de mor: Germ: c. XVI} says the Germans content themselves with wife. they live in houses surrounded by vacant spaces. (mean these are courtiers, favorable (fertility) chaste, every mother suckles her own child).
... the more numerous a man's kindred the more comfortable his old age. nor is it any advantage (to the childless). (read this in Tacitus)

131. Here we see that prolific source of successive armies under which the Roman empire struggled to long & ultimately sank.



132. The superabundant people went out to fields
 & colonies & were either killed or succeeded

133. The success of human beings was thus
 most rapid.

134. They stopped when they had settled Italy &
 then they took to sea piracy & collected
 them over Germany & France, Spain Greece Britain
 (Merr p. 111 says they came from the middle
 latitudes of Europe & Asia)

136. Now their veg men can't multiply freely as
 before - marriage is delayed particularly in
 Norway.

139. Epidemics less common in cold
 countries than overcrowding, then in hot
 since the starvation check is more keenly
 felt in the former

140. Mallet thinks they make expeditions
 not because they wanted room but through
 wasteful spirit. (see ante p. 137)

140 This period of history is a most important
 one.

(Merr a man who produces a permanent increase
 of food is equal to the supply of 1 month henceforth
 -ward & to over enables 1 couple to marry 12 or 15 months
 earlier. Their better gain is only to one single pair not
 a pair in each successive generation)

Scythia

157-7-8,

The Arabs are encouraged by their
beliefs in Paradise. 10 children set a man
Paradise.

166. as the effective strength of an animal is
of the strength of his weakest part, so the
power of the earth to maintain is only its power
in years of dearth - This is especially true of

167 uncultivated nations. & of pastoral

Africa

Insecurity of property

171 Deserted frontier provinces

173. Prohibitive but tackle their children for 2 or 3 years
polygamy - slaves don't marry

174 Famines are frequent

181 Question how far polygamy increases
pop: If full of monogamy, it c^ont.

Asia

196-7 Famine & small pox

197. Disgusting overcrowding of the young

204. Emperor Catherine encouraged manufactures
& the population at once made a start

208. note. Abundance of food is not ^{always} direct bullock
an indirect agent on population - It removes
other checks, as epidemics

Turkish dominions & Persia

211. Tyranny checks agriculture

213. proof of it. ~~based on a "it is remarked"~~

218. X^{trans} families more numerous than those
of the polygamatous Turks.

212. Marriage in Persia is expensive. the poor
can't marry till late.

Hindustan & Tibet, (h)

p. 13v

- 223 Religious encouragement to marriage
224 An elder brother not mar: before the
younger is to be shunned
231. India subject to dread of famines
235 Polyandry of Nairs
239 Sui-tary in Tibet
240. numerous ecclesiastics

China & Japan

248. High honor given to agriculture
250. Religious motives to marriage
251. "Wholesale is strongly recommended &
"generally practiced & at length considered
"as a kind of religious duty." (Staunton)
252. Fortunes seldom continue considerable
in the same family, in China, beyond the
third generation.
253 Patient industry of the Chinese & yet
they can hardly live.
257 Celibacy of the bonzes (priests) 1,000,000 in
the Empire and of the literary bachelors.
(men religion preaches marriage in one place
at home & celibacy in another)
258-9. Dealers to buy a full grown slave then to breed him
consequently servants in China, as in England, are
in great part unmarried
260. In epidemics
261. Exposure of children
262. 2000 annually in Peking
264 families.



Excerpts

- 272 Equal division of property must increase popⁿ
- 274. Repeated Colonisations.
- 275 infanticides - Solon
- 277 Plato's scheme of marriage
- 280 Aristotle
- ... 284 - Others



Romans

- 288 When property had passed in few hands the citizens could do nothing for they were supplanted in the labour market by the slaves - they w^d have ceased to exist except for the corn distributions - this was not enough to support a family
- 291 Knights - more unmarried than married.

(Needham's Essay XI.)

Book II Modern Europe

305 Norway

- 306. Laws of mortality very variable in different countries & it is within the power of man to alter it.
- 306 Mortality in Norway less than in any other country
- 307 therefore the preventive checks must be proportionately great - wh: they are; marriage - see beg beg few
- 308. Enrollment into the army at age of 25-30 & 10 year service, a cause of this (was removed)
- 310 Labourers can't marry without a cottage & land & these are limited. there are no manufactures.
- 313 there are many servants in a house

326 Sweden ~~26~~ mortality much greater than in Norway
It is populated just up to its production power.

Prussia

366. where licentious habits prevent the
births per thousand are always fewer than
elsewhere.

368 The true encouragement to marriage is the
high price of labour & an increase of employment

374. Annual marriage reciprocal to
annual deaths

378 more evidence of this

383 Direct encouragements to marriage must
be accompanied by increased mortality

384. Then in France early marriage, to avoid
conscription produced crowds of children
who died

388 Then mortality;

Switzerland,

393 Sudden agitation to procure more population
partially girls (prohibited) or

411 Great extinction of Bourgeoisie families

414-g interesting account of conversation

at the Lac de Semp. early marriage being
a transient source of occupation & utility

420. It will be easy to make common people
understand the theory as well as the above

422 France F. 13r
Pop. increased rather than diminished
by the revolution

440. If we mourned the children who might
have been born we shall always be mourning

" It will not do to say that because deaths
by war &c. are made up by more births
that no harm has been done by them
men in full vigour versus infants.

442 Great number of children in France

449. England

Preventive check; gentlemen of sufficient
income for a bachelor only. — Well put.

450. Tradesmen & farmers — clerks — labourers

452. Servants

453. Marriage is only 1 in 123 $\frac{1}{2}$

452-3. Unhealthiness of towns

464. Recruits to towns always flowing in from
the country

471. A large proportion of births in the
west not the best town for a country

482. Scotland & Ireland

488. In Shetland, landlords encouraged to marry
poverty & distress

490. Island of Jura

491. In a parish in Elgin only 3 bachelors in a
pop. of 830

492. Difficult to depopulate by taking away
people; take away its industry & it is done
at once.

493. Scotch women seem best wife

503. In a parish in Orkney, the annual number of marriages depends much on the state of the year $\frac{1}{2}$

505 Encouragement to marriage in Ireland.

506 On the fruitfulness of marriages.

(544 + 549) An extraordinary healthiness generally succeeds any very great mortality

555 General deductions

That the check is chiefly want of food is shown by the rapid increase, when food by some means is suddenly increased

All new colonies increase rapidly - Greece Israelites - English in America - Spain in S America - then Quito - Lima - Port-au-Prince in Brazil - United States

558. Agriculture suitable occupation to breeding

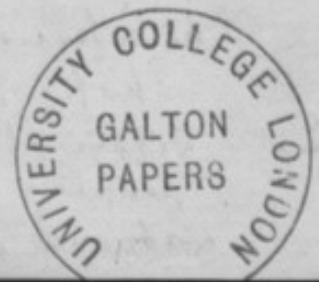
561. A certain degree of emigration is favorable to the population of the mother country

565 Great causes of disease are weak crowded houses & bad food.

566 Fever in fact (means debilitation of mind, besides over-crowding)

574 We cannot predict the mode in which insufficient subsistence checks population but we can predict the fact.

End of vol. I



119. The Bickerstaff family, an ancient one, directed their attention to their own bread. & made a judicious cope with man & the milkmaid.

51. Poverty, and not absolute famine, is the specific effect of the principle of population.

58. Indigence

71. There is no fear so totally ill grounded as the fear of debilitation from emigration.

73. Poor law

97. Dependent poverty ought to be held discreditable.

202. It has been remarked that many countries at the time when they were most populous have exported corn but when their population was low have lived in poverty & want.

208. Prosperity cause of population, not vice versa.

Book IV. 225. Natural propens. of pop: is everywhere checked by restraint, vice & misery. As it must be restrained, let us choose the best.

227. Natural & moral evil are the instruments that warn us to avoid any mode of conduct. If we multiply too fast we die of poverty & contagious disease.

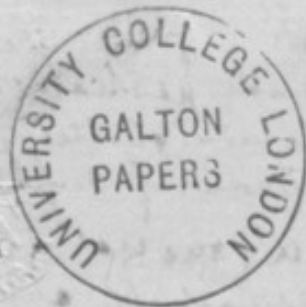
218. It is no answer to say that their has only just been discovered. Such is the case with medicines, home building &c.

256. There are perhaps few actions that tend so directly to diminish the general happiness as to marry without the means of supporting children.

317. Plan of a gradual abolition of the poor law
This is a remarkable chapter.

333. Tendency to pop: in France, again referred to.

338. A greater degree of respect of personal liberty sh^d be accorded to single women as left discouragement to celibacy.
339. Instruct children on the principles of prop^rty. refers to Adam Smith Wealth of Nations vol III ch. vi. c. 115 see note p. 340.
350. A youth would be just as much justified in indulging his sexual passion and criminating as his benevolence.
368. Again about France & her pop^l; a quotation from Arthur Young vol I. c. XII p. 408.
396. Industry is only helpful so far as a man is more industrious than his neighbours for if all were equally so the profusion of w^ould w^ould be as much felt as if they were equally idle. (I paraphrase this)
406. Every child that dies under 10 years of age is a loss to the nation of all that had been expended in its subsistence till that period.
413. Taxes sh^d be made as little injurious as possible to human persons.
414. In every old state it is observed that many courses of people remain for a time unmarried.



There is always a large body, unpaired
 these ought to be the best fit to breed; they
 actually contain a large proportion of
 the most fit.)

~~the large number of children in France &
 and marriage & death~~

refinement & culture are costly - therefore
 old civilizations the refined & cultured
 classes are debarred from marriage by considerations
 of expense

A man must see his way to settling himself
 before he marries - farmers cottages
 469 checks the population in England
 472 Infant mortality in towns
 induced from country

471. Numerous large proportion of
 births is a bad sign for a country
 it means large infant mortality

489. Shellemden encouraged marriage &
 they did so overmuch

491 - In South, Devon only 3 bachelors in a
 population of 500 - each marriage yielded 7 children

h3 marriages dependent on the goodness
of the harvest

Ireland Q3 about the encouragement of marriage
by priests, for their fees

579. Dr. Short (reference given) says that a severe
mortal epidemic is commonly followed by an
uncommon healthiness - which having been killed off

572. Again reference to extraordinary fecundity of
French before the revolution - from Meeker. (see
to this)

(we don't know what produces infertility - ^{in some of} but that
nations with thinned blood, whose social conditions
prevent it from being too fertile.)



Energy

f. 16

42. R. Hill St. S. W.

From Life of Luc Castan by A. Helpe.
p. 157

" There are every where men of an immense capacity for labour, if their duties are such as come to them day by day to be done, and are connected with self-advancement or renown; but that man is somewhat of a prodigy who is found, in self-appointed labour, as earnest, as strenuous, and as fresh for his work, as those who receive impulses daily renewed which keep them up to their appointed tasks. "

W. I have taken out
the book of this
book's energy

Hereditary nature of crime by J. B. Thompson. p. 47
Resident Surgeon General Prison the Scotland Yard
Journal of Mental Science Jan 1870 (Churchill)

Michel de Montaigne Essays - on the Resemblance
of Children to their fathers

The existence of communities of crime, who have no
respect for the laws of marriage nor of incest, & who
only connect themselves with those of their own nature
& habits.

Miners form a type - so have fishermen - but
especially the Criminals - Hugo. Rarely to distinguish
a non-habitual Criminal in walking through a crowd.

The common thieves have all coarse angular chunky
stuffed set of features & dirty complexion - the women are

ugly in form face & action - (In note) As in all families
a race whose play: degeneration is found to among the
Criminal class after abnormal skulls - spinal club foot
cleft palate, have like deafness paralysis epilepsy vertigo
deformity & mental disorder seem to run in some families

491. Examination of all the great prisons in that prisoners
as a class are of mean & defective intellect. & generally stupid
mean, weak minded & imbecile. - The boys are remarkably
stupid -

oblivion of moral feeling 492. Extraordinary
accumulation of morbid appearances in post mortem exam-
scarcely one can be said to die of one disease. - 9 in 10
are of inferior intellect but all are exceptional cunning.

out of 5-432 prisoners 673 ^{or 12 per cent} required treatment on account
of mental condition 580. weak mind 36 dth. & suicidal 57 epileptic

p. 18

493. It is hard to get at history of criminals for they are always changing their names. Here is one remarkable case. 3 brothers had families amounting to 15 in all. 14 of these were utterers of base coin & the 15th boy thought an exception was afterwards detected setting fire to his house after entering it at 4 times its value. Again at the same prison 109 prisoners were known to be in the same prison out of 50 families of one family 8 were known other 2 or 3 at the same time - ~~In another family in prison at same time once 7.~~ - of 2 families 6 were in prison about the same time, viz 4 brothers & 2 sisters - of 3 families 3 from each, &c &c - of husbands & wives

presumedly married 35 couples were known and probably twice that number with the nearest truth see other cases. 494 out.

495 - Squirrel says that of all diseases insanity is the most hereditary. $\frac{1}{3}$ or $\frac{1}{2}$ of the cases are found to be so. - Various writers have proved that silliness & imbecility are in a most remarkable degree transmissible.

Creteism & crime alternate, & diverge in some family. ~~with~~ idiocy epilepsy eccentricity - crime all transform - also dipsomania.

Epilepsy death rate in England generally out of 0.009 of pop. - in prison criminal epileptics is 0.94.

h. 49 D. Incurable nature of crime in the
 Criminal class. — out of 904 in
 a few years 440 were re-convicted.

h. 49 D. Proposed to break up the caste of
 Criminals

? In what proportion
 Is the Criminal popⁿ really self maintaining
 yⁿ in what it is a risk to which the worst
 grants. —

Twin's

~~ATHEMUM CLUB~~

PALL MALL S.W.

In the event of a new
edition there are 2 important
papers in Journal Mental
Science Jan 1853

I p 539. Twin's suffering
from similar attacks of
melancholia

II p. 540. Twin's suffering
from mania

There is yet a 3^d paper
wh. I have not read yet

III Oct 1853. I rec. that,
the Twins.

D. Stam a Physicain Problem Macmillan 1864 p. 215

Twins

h. 16. Bartley relates the case of two twin sisters in Hungary, who lived 22 years, and who, although joined together by organic union, and having a communicating system of blood vessels, were of most dissimilar temperament and dispositions.

Reference also to an article in the Lancet by Sir James Simpson March 1869 on the Franconian twins

h. 21 Co. also were Petta & Christina the Prepsburg twins who were united by an organic connexion. One was pleasant quiet and amiable; the other was plain, ill-tempered, quarrelsome & of extremely excitable nervous

24. Gigantic men at Potsdam, the descendants, no doubt of Frederick's Guards

49-50. Black parents having purely white children



52 (note) The phrase "organe inermes" 17

57 Night blindness. Currier describes a district the Commune de Vendémion seriously overspread with this disease, due originally to a single family who had largely intermarried

61 interchangeable & transformable diseases

77 Immigrant, Crofting & making a fine breed in the South with German & Holland immigrants in Berlin with French in Ireland with English & Scotch.



Benedict

on Criminals

1877



Also the operation of previous stimuli is heightening or diminishing the sensibility
is equally true for the nerves and for the psychological life.

11.4. Physiological consequences have familiarized us with the mechanism how it is that
one of different but related influences, ideas and perceptions on the one side and
compound sentiments (such as the erotic, aesthetic) form themselves, and associate themselves
together and so amongst other things create a definite desire. Finally, through the
connection with the empirical presentation, the ~~mind~~ ^{idea} desire will be satisfied,
with the stimulus that by a certain strength, according to
a pre-established mechanism results in action.

We are able to cross the borders of scientific psychology with the
following proposition: -

Man thinks, feels, wills exactly according to the anatomical & physiological plan
of the brain and according to its physiological development

Many persons may have been alarmed at the plain speech of this proposition & may
have explained to themselves "this is ~~not~~ pure materialism"

That is a word, with which we frighten not only old women, but also the
expressions of the late Nestor, those who are more ugly than old women namely
men who are old women.

It would be easy for me to show you that this ~~idea~~ ^{idea} has nothing to do with
materialism as a metaphysical view of the world and above all, nothing with
metaphysics. No dualist will affirm that the human being as an infant
has another soul (what he has as child, as youth, as man, as old man. No dualist
will further affirm that the soul becomes changed into another when an individual
suffers epileptic becomes insane through inflammation of the brain. And yet how
different is the physical relation in the different conditions of age and health.

These differences are however parallel to the differences of development, of
the physiological character & of the nourishment of the brain. We are
consequently entitled to ~~eliminate the soul~~ make an abstraction of the
soul in psychology just as the physicists do of energy.

The functional laws of the brain are those of psychology.

11.5 I will now proceed to ~~take~~ a nearer view of the main proposition already stated.

The simple anatomical (gross) plan gives us before primarily an explanation
as to the wealth or poverty of the elements & their connections. Also in relation
to the function there exists a fundamental of not so abstract a plan, insofar
as the nerve system is affected to a definite extent by the combined causes
of excitement

Psychologically speaking we say there is an innate temperament, but this
concrete notion must be extended to embrace the condition of excitability throughout the whole
sphere of brain life.

That naturally a certain relation (and this is ^{not} of Jules Verne) are in a problem
to alter temperament to a certain degree, is taught us by history & daily experience.
If not left ~~restricted~~ as regards the creating a dominant ideas and feelings, and therefore
as regards the willing and acting, is education in the widest sense of the word; that is special
education, example, relations & experiences.

The education and development of the brain obtains a new meaning through this, namely
that the manner & intensity of its action is capable of improving all anatomical elements
and undoubtedly creating them anew. There is no doubt that the building up of the brain
to its present height is an example of a product of development to an anatomical richness out
of anatomical poverty.

Honored especially: you will comprehend the whole question deduction at a glance
when I put the question, what would have happened to Raphael if he had been born
in Turgay about the Turgay, without Fiesole & Perucino, without the Florentines
& the Romans of the cinque cento.

Perhaps you will not content with the answer "a genius without any
occupation"

This answer is nevertheless on consideration false. No Raphael could hold
today be born among the Turgays. Nature requires centuries of anthropological
development & the nature requires even larger development of culture before such
a brain can arise. The master of the Stange - the Loggias outtopped his
contemporaries by only a small step, in comparison with the difference between

11.6

The moving thought in the highest intellectual life is now the remodelling of the conception of the world and especially the way of looking at man on a scientific basis. But the academic life of the higher schools in Austria is behind hand in this. If this error be not soon remedied there will Austria cease to be an academic power except in such matters as Geology, Zoology & Mineralogy.

(more above)

Honored assembly, what a how much have we to seek abnormally from our criminals. There are many crimes that are ~~conditioned~~ dependent on imperfect development and other conditions. The largest contingent of them come from those who are capable of improvement. In these one can find nothing anatomical - so also in those who have lacked owing to an abnormal temperament, that is in those who have abnormal excitability in a normally ~~formed~~ brain. Here the what we find is, be negative both in the skull and in the brain. We would call these classes of criminals physiological, in distinction to anatomical. The negative results would lead to at least $\frac{1}{2}$ but hardly $\frac{1}{2}$ of the whole.

p. 9

A great proportion of negative results is consequently to be expected. In this case I have sought, found, written & taught.

By the ~~same~~ negative results of my opponents I have set a large number of the same from my own experience. It ~~belongs~~ is a serious error in sense and morals to try to draw an advantage in argument from isolated cases. So long as the question is not accurately answered, negative results as the history of science teaches us on every page have another meaning, namely, ~~collected~~ negative (if it?) (Bergabung)

In respect to positive results we have however to grasp a great variety of them. How wide is the difference between the boarder the thief, the forger of notes and the knavish promoter. Again with respect to the same form of crime the psychology is very different. Would you put Orestes and Thackeray in the same class? or a common thief murderer with a Corsican blood avenger. Not less different is a pickpocket from a burglar. Our inquiry today is beside, purely empirical, purely formal. We know nothing of the physiological significance of the separate abnormalities, consequently nothing of the psychological. We are at the standpoint of the botanist Linnaeus.

Herberich, Wierchow has already established by a study of the skulls of crimals that ~~with~~ the ~~apparent~~ ~~various~~ varieties of the human race or vast variety of abnormal forms of the skull on going. My own results ~~cannot~~ lead to a similar conclusion.

p. 10

Honored assembly! with reluctance I proceed to communicate to you certain results already obtained. I say with reluctance, because I am of the opinion that it is in truth the highest mission of literary men to propagate the truth and truths in wide circles; thereby to raise the general intelligence and the special knowledge of the people generally. Not to seek for truth in the noise of the Forum, I hold to be a degradation of knowledge & an unfair attempt. Falsehood & slanders may work loudly & swiftly, but truth labors quietly & slowly.

In the skulls one must not expect to find more splinters, but links of a chain, whose ends one must have seen & known in order to know its slightest trace. [The blundering metaphor is his, not mine F.S.] This is not a delicate measurement that can reveal the letters and when for instance, a head like that of Francesco's has not been measured the observation is lost to science. I had seen 400 murderers before I spoke of the important [results]? If the appearance had been evident at a first glance then the old priests of the old Nile would have long ago made out the natural history of criminals.

When people are making a stir in the newspapers about 12 brains & 2 skulls, my observations are to be counted by hundreds & my measurements by thousands and one hour of measuring involves according to the method I had employed a weeks construction & calculation. At the same time I have made ~~previously~~ ^{on your} parallel investigations concerning those brain affections that are hereditary ^{or are} from childhood, the hereditary ^{or are} skull & brain ^{or are} ~~abnormalities~~ ^{abnormalities} concerning the so called ~~idiopathic~~ ^{idiopathic} forms (that is with accompaniment by no special attack) ~~one finds~~ ^{one finds} the same abnormalities of skull as with criminals. I have then drawn percentages of deviations from the normal type in normal individuals, in the insane, in the morally perverted and in the

different categories of all these. You see how untrue is the imputation, that
if I had spoken of a single characteristic type in numerous skulls.

I will now pass on to particular forms of skull and first to that
which was a days is of the most practical importance Microcephaly which
shows itself in smallness of the size of the head especially of its circumference.

of its cubic content & its long diameter
Microcephaly signifies psychical poverty of which we know nothing a priori
whether it affects pre-eminently the domain of intellect, sensibility, will. We are
not to be surprised if a microcephalous man is imbecille, dull, or in any unusual
way is. It is however the fact that we cannot lay normal claims to a micro-
cephalous person in any intellectual direction. While it is true
we cannot expect the principle of retributive to any microcephalous person.

I show you here the plaster cast of a microcephalous ~~man~~ murderer with a photograph
of the man. The dimensions of this skull are smaller than the average of Dechani's
microcephalous Celtic skulls. Microcephaly is seldom found a criminal or lunatic
with the exception of cretins & perhaps very seldom in the hereditary instance.

The following example is that of Macrocephaly or Cephalonia; it is that
Haskell's skull. The shape of this skull has a double meaning. On the one hand
it shows an unusually eminently mental ground plan. Frederick Schiller belonged
to one of the most remarkable large heads. On the other side it shows a Great but
a badly acting brain and as an example of this the skull & brain of Haskell will
serve. Cephalonia is evidence of hypertrophy of the brain.

It has long been a current doctrine of the schools that hypertrophy of an organ means
also a remarkably good development of the organ with increased function or an
overgrowth of an important element. In order that this may be ascertained
in respect to a brain, it must be hardened for a month, then cut & compared in many
places with the brains of persons known psychically to have been normal. To do this
requires months of work.

That Schiller & Hegel obviously judging from the skull, had a heavy brain, like
Mozart with not surprise you. Their brain was hypertrophied in the sense of
unequal development.

172. You will not doubt as to the probability that the brain hypertrophy of the brain of
Haskell was not of the same sort as that of the renowned mathematician Gauss
but a to speak foolishness kind, that is to say that it was conditional on a
hypertrophy of the connecting tissue.

Highly sensible! Let us dwell for a moment on the psychology of Haskell
an hypertrophied brain such as his probably was, is excitable with difficulty
& has reduced powers of guidance. The meaning of the latter phrase is that it deals
with difficultly combined ideas and feelings. Intellectual imagination (Phantasie)
is also deficient.

The bad working of a nerve implies a decline of its nutrition. This explains in
the physical sphere active disgust and consequently active ~~effort~~, for example
through amusement to again excite the brain.

This was the physiological antecedent that drove Haskell to the act. Amusement
was an irresistible need to the dullness of his sensibility. In prison, without
the implication of world amusement after a short period of excitability, he fell
into apathetic indifference.

The way in which the conditions of the case are treated here, shows from the
sad relations of our medical life ~~that~~ as a patriot with ~~in the present time~~
half by

if you to remark that since a point is sure to be turned against me
in the collection of results, that point is especially the basis of my inquiries.
Formerly sentences have not thought of this.

Let us now revert to our theme.

I will pass over the typical deviations of Dolichocephaly & Brachycephaly &c.
I will only mention two forms. The first I have described as Brachy-
cephalic occipitalis. That is as the shortening of the skull at the back
of the head. In extreme cases this condition is striking. While the frontal
parietal portion are powerfully framed the hinder part is microcephalous.

This form of head is extremely rare among normal individuals, it is

I will read you this copulation which appeared in the "Wiener medizinischen Presse", July 23/76;

- " to the body.
- " Since the exhibition at Vienna I have undertaken to make a journey abroad
- " every year in order to study the different collections of brains, that would be
- " of service to me for my atlas which I am about to publish on the
- " topography of the brain surface.
- " To this end I came to Vienna to look at the collection of criminal skulls
- " brains
- " He showed me twelve of which one is abnormal in the lag of
- " the convolution & fissures. I took upon the publication of these brains
- " in the form of an atlas the of great importance, as such abnormalities
- " have hitherto remained unobserved. On this account I begged Prof
- " Benedikt to admit himself of my private photo-lithographic studies
- " to receive for their publication.
- " I feel myself bound to declare that the criminal skulls which
- " Benedikt showed me must be considered as abnormal from a
- " pure anatomical stand point. It is for example beyond doubt
- " that the small skull in Benedikt's collection are altogether below
- " the mean and that what he calls Brachycephalia occipitalis, and
- " steepness of front of parietal bone (Scheitel steilheit) are genuine
- " deviations from the normal type. See Prof. Wladimir Bezol and Kien-

You see that scientific investigation, long before in a new view of crime & punishment. You will ask, but how can society that to itself of science shall be permitted to refer precisely the most dangerous crimes to anatomical facts? It is self evident that there cannot be discrepancy in their opinion concerning individual guilt or punishment. The truth has however no real danger hidden behind it. Two other points must be considered 1. the protection of society. In this relation the mathematical proportion of demerit may be accepted as right, that it is it is better to do a little wrong than to suffer a great one. When society cannot protect its ~~undoubtedly~~ incomparably more worthy existence than that of the criminals, otherwise than by capital punishment - must it is undoubtedly justified although this punishment ~~must~~ seem an unjust one towards the individual.

But it is a matter of experience that capital punishment does not terrify and guilty persons can be made harmless through a more intelligent justice to society has no need of this extreme principle. The leading principle towards the criminal must be that of ~~human~~ improvement or in absence of probability of improving him. Society will be ~~stronger~~ stronger in the future in the true criminal ~~is not~~ harmful not only through itself but through its descendants. Besides this moral fault due to anatomical conditions are the more likely to be propagated. One would certainly say, in that ~~circumstances~~ circumstances the ~~most~~ most ~~care~~ care, especially capital punishment for criminal ~~murder~~ if it can ever be ascertained. Here must society execute ~~the~~ ~~most~~ ~~effective~~ ~~means~~ ~~which~~ ~~we~~ ~~see~~ ~~in~~ ~~the~~ ~~future~~ ~~perhaps~~ ~~for~~ ~~all~~, with the teaching of ~~forewarn~~ ~~in~~ ~~the~~ ~~popular~~ ~~knowledge~~ ~~and~~ ~~the~~ ~~tear~~ ~~of~~ ~~marriage~~ ~~in~~ ~~marriage~~ ~~customs~~ ~~than~~ ~~the~~ ~~fatherly~~ ~~of~~ ~~the~~ ~~church~~ & an anthropological capital will be rated higher than ~~the~~ ~~popularity~~.

House of Correction will be analysed into places of ~~constant~~ ~~detention~~ ~~of~~ ~~correction~~ and habitual criminals must be detained all their lives long in ~~places~~ ~~in~~ ~~isolated~~ ~~colonies~~. It is incomparably more dangerous to the security of society, if offences do not fall under the conception of crime & if the execution do not come in the track of the criminal, as when a murder is not punished. The acquitted

of known promoters demonstrates incomparably more than an over mild dealing of justice

We will now glance over the arguments that may be brought against the suppression of capital punishment. First of all examples of (such) legislation shall be cited

In the first instance they cite the example of Germany & Italy. The last is a particularly unhappy one - Since the Italians have shaken off the yoke of the Parliamentarism - ... ? ... the suppression of capital punishment is in progress also the official & Germany is not very happy. In Germany at this moment is a circle of importance, somewhat called the Prussian Junkers. From among them have arisen ~~great~~ ^{eminent} statesmen like Bismarck, warriors like Moltke, and considerable administrators.

p 17

In history of the future will (to painfully it - - - democratic spirit) say truly that by Sadown & Sedan it was not the Prussian aristocrats, but the Prussian Junker who gained the victory, with all his great political virtues and his superior 'Scovinisme'. Bright light brings out also distinct shadows & therefore has this circle forced many reactionary caprices on the most recent culture-life of Germany & its lawgiving. Wherefore gentlemen to converse with the Prussian - - - (stuff)

It has been said that in lawgiving one cannot make a sudden change but the argument is an ... error. Between the years 1868-73 out of 280 condemnations to death only 7 were executed, or 2.7 per cent. When one has peacefully descended from 100 to 3 it requires no sudden spring to go from 3 to 0.

It has been said that the right of the Crown to pardon must be respected. At this moment by the side of the actual monarch a most closest alliance with him is the spirit of the age & of progress, & the people are drawn to this triple alliance. Only a few sentences now come to execution. Hence a true jus gladii is restricted to exceptional cases is become effectual owing to the right of pardon.

If one thinks that the history shows the tendency to be to the suppression of capital punishment it may be looked upon as an act of loyalty on the side of the legislative bodies to the monarch a melancholy duty. The coming generation will be determined to look upon capital punishment generally as an error in true philosophy and a last remnant of a cruel justice.

p 18

The argument that most affects the masses culminates in the phrase, shall murderers be ^{supplied} with the money of the taxpayer. Poor economy of taxpayers. You are not only many times misused in state management, but much more in ... matters. Shall regard to economy ~~be~~ ^{be} ~~question~~ ^{question} ~~have~~ ^{have} ~~weight~~ ^{weight} in the question whether society can or not ~~summarily~~ ^{summarily} put to death with credit to itself. Otherwise let executions take place in a large concert room with high prices of admission to prepare amusement for the shameless poor.

Another argument says that the people are not ripe for the suppression of capital punishment. Consequently not when to lay as the guilty person deserves death shall he die (- - - about people I know nothing of)

What do you say when an artist violates the rules of good taste and makes conceptions to the gallery. You are shocked, and yet in the highest question of good manner shall the voice of the people prevail!

Is it ~~however~~ true that the "people" are not ripe? I have no relations with the Cads (- - -)

It however interests me to learn how that important factor of the "people", the workman thinks. I put myself in the way of obtaining information and learnt that the Vienna workmen were ready to appear by thousands at a public meeting & to pass resolutions for the suppression of capital punishment.

Moreover the conditions of the case have greatly altered. Since that portion of the people cannot ^{anymore} ~~any longer~~ ^{any longer} witness the melancholy spectacle of a public execution, as one will soon hear the cry "You know taking the area from us, keep the carcass yourself."

It has further been said "One is perhaps ripe in many parts of the Kingdom"

but not universall, and one must especially bear the Gallicians in mind. Ladies & gentlemen, to that has been made an effective answer
p. 19. Herr Dr. Julius Weisbach has provided material for a discourse on the races of Austria by his Craniological studies, to the effect that all the Austrian races stand on the same anthropological grade.

They think will strike many of you, but it will be than far clear that this science-like fact idea it is once brought home to the consciousness of the Austrian people is of incomparably greater political importance, than all the ingenious words of correction in Austrian patriotism and than all the police regulations. Now, to whose anatomical outlines are developed, can on the one side, no more look down with pride on the Carpathian-people, & they will see that nature has powerfully worked in anticipation of their ~~social~~ ^{apart from} ~~evolutionary~~ ⁱⁿ vocation. Nothing more can be said in future about ~~unfitness~~ ^{insufficient} development. May Austrian statesmen use out a small fraction of the time they have devoted to ~~back-going~~ ^{pulling} backwords and the state of Austrian culture will be prepared.

Kind nature has mightily worked in anticipation. If murders are incomparably more frequent in Gallicia than formerly, this is due to the drunkenness of the people.

Non-chaotic, systematic poisoning is ~~not~~ ^{is} ~~not~~ ^{is} affected by the interests of the pocketed classes. The many murders do not stain the murderers so much as those who pocket the sin-money of the poisoning, and those who permit the poisoning. The blood of the condemned will not wipe away their dark spot. Place the Gallician peasant in a well conducted home, to enjoy beer or wine instead of brandy, then he will not make a beast of himself, he will work instead of committing murder in despair at the ruin of his household.

~~Conclude now~~ ^{Conclude now} ~~that~~ ^{that} ~~the~~ ^{the} same varieties & conditions, that may be cited as qualifications for capital punishment. Above all though the murder of parents. This fact does not however cover the psychological purport.

Would you hang Orestes?
One thinks of the potentiality of mercy.

The office of mercy is to correct the unfairness of law, but not to import unfairness into law. If we are obliged to allow that capital punishment is no equivalent for this crime, so it cannot be the case in respect to the murder of parents and this form of crime is absolutely uncontagious. There is no gradual difference between imprisonment & capital punishment. But murders by poison, of a brother for money is certainly not divided by a gulf that cannot be filled, from the abominable crime of Orestes.

p. 20

Still more incomparably ~~is~~ ^{is} a physiological standpoint is the ~~crime~~ ^{crime} of the deed ~~in~~ ⁱⁿ general as a reason for ~~the~~ ^{the} increased of its heort. Cruelty on the one hand is caused ~~through~~ ^{through} ~~the~~ ^{the} most part the effect of a legitimate irritation, to that murder even when it has been planned for a long time must be looked upon as a chronic disease disposition, or else is consequence of a latent or moment of points to an innate defect. The most deformed brain that I ~~know~~ ^{know} was found in a skull where there were cavities in the temples such as are seldom seen in man. These preparations however once found in the shoulder of a respectable Slovak village justice who perpetrated a fearful Lynch murder on his an incendiary woman.

Where propaganda has not grown in proportion a national peculiarity it is of little if no ~~use~~ ^{use} danger as to justify a backward step in the right way of looking at justice. The gallows has certainly not rooted out brigandage, but schools & the rise of material well-being has done so. Our Alpine lands, ~~have~~ ^{have} notwithstanding their fearful soil, produced no Rostza Saporz, and one of the best established insights into the psychology of criminals, on scientific grounds will be to correct the present inconsiderateness in pronouncing sentences of insufficient length and in too early an appeal to ~~the~~ ^{the} ~~law~~ ^{law}, and to make relapses as rare as possible.

So also it seems to me a mistake to inflict a single punishment for a number of crimes through which the sum of the penalties for the several crimes cannot be clearly expressed. It will cost trouble to society in many exceptional

cases to maintain the distinct capital punishment. But that is the
 sacred part of a true principle that the overwhelming feelings of
 of honorable society stay in check, while the individual in the presence
 of acute & chronic passion can hardly ~~withstand~~ do mischief.

The suppression of capital punishment is an important moral moment
 with consciousness of a people. I do not doubt that in a short time the
 state of culture will ~~be~~ be judged by the existence or absence
 of public executioners

May caution in their respect belong not to the lazzard but to the
 progressive states of culture



[The remainder of the page contains extremely faint, illegible handwriting, likely bleed-through from the reverse side of the paper.]

Comp. photo.

Glaf scale for preparing the cartes de visite prints so that their ~~edges~~ images may admit readily of being

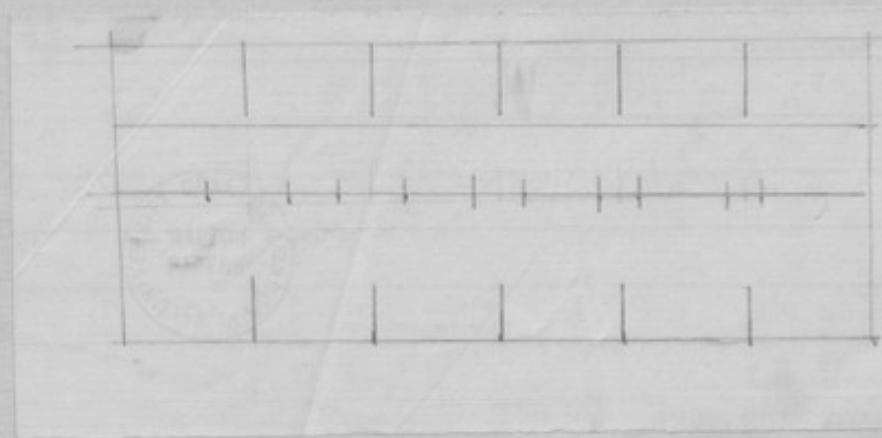
1. of being enlarged accurately to scale
2. When so enlarged of being adjusted to make comparison from



1. Fix line of pupils by passing first a, then b.
2. Fix interval between that & the line of mouth by passing c. The point of a should be vertically above that of c.
3. Fix median line by d. & ? by an additional mark ^{d'} under the chin. This may be advisable in case one of the other marks drops off. ~~if c is~~

In photographing from this, do not regard the face at all, but adjust for a & c - then screw the frame holder ^{calculated} into the proper position to bring the portrait before the lens.

Adjust ^{each} the negative on a ^{separate} frame ^(means) of a, b & c (& by the additional mark ^{under the chin} ~~also~~), & make comparison quickly.



In glaf scale



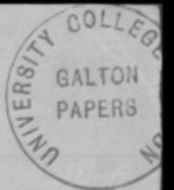
17 Monte Christo (Vallée & Dumas)
Vol VI p. 121
Edition Paris 1845.

F. 29

Vous vous rappelez votre
patrie ?

Quand je ferme les yeux
je revois tout ce que j'ai
vu. Il y a deux regards,
le regard du corps et le regard
de l'âme. Le regard du corps
peut oublier parfois, mais
celui de l'âme se souvient
toujours."





Transactions of the Ophthalmological Society
18. Adlard London 1881

1. 197 14,816 males percentage of colour blind 4.16
6,157 females 0.40

even these few females had mostly slight individual defects

198 Males pronounced cases

especially 3.5
few 4.9
friends 5.9
491 examined
deaf - dumb 13.7
145

chiefly in paler shades - the wealthy are less liable than the poorer but cases there are above the average

the poorer classes are more colour blind than the better off
artisan & labourer children nearly twice as great as those
of the professional & wealthy classes

Education constant has an effect - and not the least proof of
life because adults do not ^{have it left} ~~show more~~ than children

201

hereditary character is manifest in brother here it is ^{was} transmitted
in some ~~the~~ ^{under notice} ~~some~~ ^{down to} ~~the~~ ^{3rd generation}

Maudsley Pathology of the mind

Macmillan 1879

f. 31

- 143 How much religious feeling is due to physiological causes
144 - Zeal in religion madness & erotomania
323 - Frauds of hysterical women

Crime generally and depressed wages - not connected (see New Clay below)

Thefts by letter carriers greatest when wages are low

Crime in different trades (Dr. Clarke's list)

Repression of crime by different degrees of discipline

School discipline

Nature of temptation two balances - an extra weight on one side to evil case

Fesham's law - fortune morale - law of fatigue.

Franklin's ^{with crime} high wages. New John Clay - quoted in p. 415 of Hill's repression of crime Parker 1857
is the title with the history of who commit crime - see Table p. 416. Makes the comparison with
Suicides, variations in the amount of crime between good & bad years the relation
frequency of crime is as 1346 : 946 (see note p. 421) it is as 10 : 7 - This paper is published
in Journal of Statistical Society XVIII part I. March 1855. Hill agrees
with this, p. 437

Sanitary improvements lessening crime H.V. p. 307 311.

p. 219 Trades of men, who become or are criminals, see Report of Commission on
the Constabulary Force 1839 and the reports of the Notices of the Metropolitan
& Criminal Commitments



Goulds ~~Method~~ & ~~Un~~attered Statistics
New York 18 kg

| | | | |
|------|----------------------------------|----|------|
| 1530 | Soldiers distance of last object | 47 | with |
| | 2kg Sakers | 36 | with |
| | Full Blacks | 45 | |
| | Indians | 52 | |

partly accounted for at base down

35/1000 (28.6
 70
 300
 280
 200



J. - Clarke
Statistics of Trades
of Criminals

ON HER MAJESTY'S SERVICE.



Table showing the Trade or Occupation of each prisoner admitted into H.M. Convict Prison, Pentonville from 1st October 1875 to 30th September 1876.

In accordance with the Statutes of the 27th Victoria Chapter 124 - "Statutes of the 27th Victoria Chapter 124 - Statistics of Trades of Criminals"

| Trade or occupation. | Number of each | Trade or occupation | Number of each | Trade or occupation | Number of each | Trade or occupation | Number of each |
|-------------------------------|----------------|---|----------------|--|----------------|--|--------------------------------|
| Bookbinders | 1 | Cabinet maker | 3 | Mason's labourer | 8 | Carmen | 31 |
| Cigar maker | 1 | Jewellers & assist ^{ts} | 3 | | | | |
| Pavior | 1 | Saddler | 3 | Waxmen | 10 | Stokers | 34 |
| Interpreter | 1 | Shoemaker | 3 | Masons | 10 | General labourers | 113 |
| Pipe maker | 1 | Edge tool grinder | 3 | Boys under 17 (no trade) | 10 | Tailors | |
| Engraver's labourer | 1 | Policeman | 3 | Plasterers | 11 | House & coach painters | 35 |
| Glass cutter | 1 | Chemist | 3 | Gardeners | 11 | Bricklayers | 35 |
| Railway servant | 1 | Musician | 3 | Sawyers | 11 | Engineers, drivers and boiler makers | 38 |
| Cab driver | 1 | Umbrella maker | 3 | | | | |
| Herbalist | 1 | Provision dealer | 3 | Sweeps | 12 | | |
| Thatcher | 1 | Fishmonger | 3 | Packers & merch ^{ants} | 12 | Carpenters and joiners | 39 |
| Army officer | 1 | | | | | | |
| Brewer | 1 | Coopers | 4 | House dealers | 13 | | |
| Firework maker | 1 | Draper's assistants | 4 | | | | |
| Iron bedstead maker | 1 | Glass blowers & cutters | 4 | Cooks & Stewards | 14 | Sailors & fishermen | 42 |
| Coal agent | 1 | Farmers | 4 | Porters | 14 | Bricklayers labourers | 43 |
| Suggler | 1 | Hair dresser | 4 | Stone masons | 14 | | |
| Bill Poster | 1 | Lithographer & Photogr ^{apher} | 4 | Butchers | 14 | Hotel and gentle- men's servants | 45 |
| Dairyman | 1 | Green grocer | 4 | Printers and printers labourers | 14 | and grooms | |
| Faulker | 1 | Nail maker | 4 | | | | |
| Leather bag maker | 1 | Leather seller & currier | 4 | Moulders & Casters | 15 | Blacksmiths and | 48 |
| Salico printer | 1 | | | Gas fitters & plumbers | 15 | Strikers | |
| Hatters | 2 | Dyers | 5 | Saddlers | 17 | Soldiers | 48 |
| Locksmith | 2 | Trench & Electro plater | 5 | Metal rollers | 17 | Shoemakers | 49 |
| Oil refiner | 2 | Teacher | 5 | Lin, iron, and brass workers | | 18 | Costermongers |
| Rope maker | 2 | Ironmonger and foreman of cutlers | 5 | Letter carriers, Postmasters and Sorters | 19 | | Hawkers and general dealers |
| Lawbooks assist ^{ts} | 2 | Canal boatman | 5 | | | | Miners |
| Architect & Surveyor | 2 | Knife cutters | 5 | Laundry labourers | 25 | Clocks, Commercial travellers and other office men | 83 |
| Theodori | 2 | Slater | 5 | Factory hands | 26 | | |
| Firewood cutter | 2 | Dover & Cattle dealer | 5 | | | | |
| Sailmaker | 2 | | | | | | |
| Metal Broker | 2 | Gunsmiths | 7 | | | | |
| Brushmaker | 2 | Weavers | 7 | | | | |
| Street musician | 2 | Brickmakers | 7 | | | | |
| Tool maker | 2 | Greg shop keeper & barman | 7 | | | | |
| Licensed victualler | 2 | | | | | | |
| Farrier | 2 | Riveters | 8 | Bakers | 30 | | |
| Auctioneer | 2 | Shoemakers & Chans ^{ers} | 8 | | | | |
| Potters | 2 | | | | | | |

1631



J. Swain

Piety



Prison of Epileptics.





In envelope entitled: - "Piety of Epileptics"
"Dr. Lawson"

A Features of the confirmed epileptic Constitution

1. Instability manifesting itself in a tendency to explosive phenomena shown
 - (a) $\frac{1}{2}$ in excitement of a mobile character.
(Intellectual instability).
 - (b) in convulsions
(Sensory-motor instability).
 - (c) in evolution of heat.
(Thermal instability).
 - (d) in oscillation between apparently opposed emotional states as in changes from extreme expressions of piety to extreme manifestations of vice.
(Moral instability.)

B. Instable manifestations of Piety regarded as a feature of epileptic Constitution because

- (1) These are almost invariably more shown by epileptics.

(7) ~~The~~ The instability which characterises the more complex mental and bodily phenomena of epileptics must simultaneously affect the naturally unstable and superficial area of the Emotions.

(C) ~~Because~~ The Piety of epileptics is a consistent feature of their insane state.

1. They see no inconsistency between their earnest prayers at one moment and their degraded viewlessness during the next.
2. They entertain no sense of repentance when convicted of lying, stealing and other crimes.
3. Their piety is apparently not the result of education but due to the same nutritional instability and ~~sense of insecurity~~ which produces their Epilepsy - because the large mass of them belong to parents who have no inclination towards the religious education of their children.
4. Observation shows that epileptics are characterised by a highly unstable emotional state and that



The mere nature of the exciting cause is sufficient to determine what form the expression of the emotion will take - whether e.g. it will be manifested in a propensity to homicide or to benediction

(5) Their piety is as a rule essentially selfish.



These considerations appear to me to show that the mental state of epileptics illustrates Mr Galton's statement - that "the strong sense of sinfulness in a Christian is partly due to the doctrines of his intellectual creed" because

1. Where in the epileptic, dementia has diminished or abrogated the power of reflection the epileptic though swayed by constant religious emotions, retains as much sense of repentance for his sins than he does sorrow for his convulsions or anxiety as regarding the injury he may have inflicted upon others during his periods of excitement

2. They supply instances in which

Emotional instability exists without the
inhibitory power of intelligence and
consequently show the psychology of
emotion per se and its relation to piety.
The practical issue of the severance of
emotion from intelligence is that
the oscillations from a vicious to a
virtuous form of emotional expression
are exceedingly rapid and not
accompanied by that sense of
inconsistency which is the first
advance towards conviction of sin
and repentance.



- 70. Feeble characters - no strong instinct - take ~~what~~ in preference from others. depend on circumstances whether they turn out good or bad
- 71. Good characters - strong predominance of the moral sentiments - To some it is the greatest of pleasures to do good to them - misfortunes of others cause them lively pain charitable & faultless
- 72. Odd irrational characters - are perverse in their instincts, are incorrigible if over sanguine he insists on dreaming of riches & adventures any absurdity to get them; if over timorous he sees difficulties where there are none. - Nurses they love privations that save money, - quotes La Bruyere chap. x disagrees with him
- 74. Prodigals - quite careless of the future - Exaggeration of possessive instinct, accumulate what is of no use, out to sale of accumulation, money, titles - Contradictory & paradoxical persons always in opposition even to those they ought to like the best
- 76. Vainschief makers - lovers of spreading false ideas partly as a joke. often through mere love of the marvellous - absence of self respect. Irritable & choleric persons
- 77 Instincts in races ~~deser~~ ^{deser} ~~deser~~
- 84. Muscovite character ^{quotes Henri Martin} - absence of variety in their surroundings. spent imitation leading to despotism centralization - worshipful of force. - Slav agricultural agriculture in borders - soldiers have to undergo an iron discipline or he deprecates lookers of moral sense - In letters are sophisticated
 Hindus ^{quotes M. L. L. L.} ^{Lamarque} des races humaines, ^{produces} a method de conquete et de civilisation 1858. on Mongols & Hindus. the latter have insufficient conscience their strange religions human sacrifice their - cow worship - though cruel & not tenacious of life they deal first with white led by Europeans. Courage implies a sense of duty & a clear intelligence - The Hindus are always beaten & down trodden - Justice seems to them a tyrannous chain to be escaped from by trickery - spring perjury excite no shame in them - a condemned man is an unchucky a father who does not take bribes is a fool. Infanticide of females. - Suffers horrible cruelties - He believes in half castes. Such great differences as there are between European & Hindus makes it impossible they could be really of same descent. The
- 92. (b) is only linguistic
- 94. utterly disbeliever that a race can alter through change of external circumstances
- 95 Chinese - immutability - states that the official newspaper is published in same shape same typography same colors as 1000 years ago - Chinese have no moral energy - bear any amount of ill-treatment from chiefs - small care for life yet not brave. Moral

- 96. sentiment dwarfed - infantile common. - the marked features of character are, avarice, dishonesty, cruelty, with bad taste and patience & perseverance of an extraordinary degree on the good side. De Quereux says that all Chinese are fundamental of exactly the same monotonous pattern of character - want of diversity of character is common to the lower races. Ewald says the more ignoble the race the less its variability - this is shown in the shape of the skull. Personality is most manifest in the free races, the "les race de jour".
- 98. Egyptians - also immobility. Roman compares them with the Chinese as being both infantile and aged in their characters. Egypt & China are sisters in history, as regards their parallelism of development.
- 101. Arabs - finding Islamism more conformable to their ^{low} natural instincts than Judaism, embraced it, not through violence but from taste. Essentially idle despite manual labour, allow old buildings to perish. Their miserable life is dirt & rags in conformity to their taste - they love hard & short life. ^{no great loss for} ~~consequence for~~ short life. - Nothing like the English system of exterminating the natives & replacing them by Anglo-Saxons. The Arab is essentially a thief. He fights by ambush & surprises, not courageously (hon & fair). The perfect Arab rule is the infinitely juster rule of France, because the latter does not accord with his instincts. - False, he uses golden protestations, being very fond of poetic forms.
- 114. Kabyles - a positive nature, likes facts - not inventions nor poetical but literal may hand crafts. Morose, difficult to get on with, unscrupulous. Pessimist fond of independence. Democratic & egalitarian - vivid on points of honor - very active & loving a fight - Careless of books & instruction - no religious tendency. Were in no way transformed by centuries of Roman civilization.
- 121. Biskara etc.
- 127. Beni-Mezab Puritans of Islamism
- 135- Arabs do neither understand nor love our civilization, which is no favor to them - consequently they borrow nothing from it & prefer their own.
- 134. It is not all races that resist Europe's civilization. Some have gentle natures (and more susceptible) as the Mexicans, Guaranis of Paraguay - (He again speaks of raising a race by intermarriage - half-castes)
- 138. Astani Negro races - Sabines - human sacrifices. - shows absence of all the higher sentiments - morality - kindness, pity, charity, - a deep hopefulness



140 The profusion of them induced by the most abominable sentiments. The small reflection power of the race and distract them from the gross needs of life & create barbarous governments, religions, manners. & cruel rites. - They can't do better.

142 Their slavish propensity - they consent to be slaves - Quaker Speke & M'Leod. at least one of his wives were executed daily - for some superstition or vengeance. ^{Heck} feebleness of their sentiments is shown by their non-progression.

144. Oceania (Papuan)

149. Bushman

150. Dissect ideas of beauty.

152. Reason why inferior races disappear before higher ones [Africans do other races than the Anglo Saxons kill by their way?]

153. It is a great mistake to suppose that high civilization should content and improve inferior races - They have not the necessary sentiments & are ill at ease under the new yoke - They will stand all sorts of cruelty from men who are about their level but hate those who w^d reform them. Thus the Hindus were quiet under the P^o Moral men under the English. - The Red men of America always in war with the Whites.

155 If on the other hand we examine a noble race of barbarians & behold an opportunity of rising in power, they rise at once. Germany & the Romans

156 Summary of chapters - 1. no good attempt to raise an inferior race you must introduce new blood. 2. make half castes. 3. the law of sapiently bred races by their betters is a law of nature. 4. the misery of a race conquered by its equal who can't assimilate, as Italians & Austrians. 5. a highly gifted race conquered by a ^{highly gifted} ^{less} advanced one as Greeks by Romans, is always good; the latter adopt the civilization of the former.

160 Race conquered by a less gifted one is horrible as Poles by Russians. 6. advantage of intermixture of high breeds, get more ~~variety~~ ^{variety} variety [& variability]

162 Divergence of sentiments in the 2 sexes. - quotes Michelet that a woman ^{is} ^{is} always gracefully curved - never the direct, just line. She is always above or below it. Love sanctity, chivalry, magnanimity - not justice. - Very imperious, fond of the marvellous & chivalrous. little interest in positive truths - maternal love makes her courageous - Government sentimental, ambition, desire [of power, of command], love of glory & honors - When she loves bad she goes to the devil

4)

164. Diversity of sentiments according to age.

174. Effect of illness on moral sentiments - lunacy makes irritable

Female in considerable change of character - Moral perversion on the first stage of madness are the first effects of mania, that have as yet made no apparent change with transference - ^{Autopsy cases} Effects of smallpox in making a good natured man permanently irritable to an extreme degree, even this else being unchanged - This has lasted 14 years already. Plutarch chap. Delay of divine justice, speaks of a libertine & cheat, who tumbled from a height on to his head and soon after was a man of



176 singular integrity & religion - Some madmen have recovered reason though a scapel fell ^{through} of a limb into water, and through the concussion of a powder explosion. We should see it is the instructive nature that is ^{principally} most affected ^{in the beginning of} the madness.

177. Changes of character through moral influence. No physical difference but latent sentiments are roused & new instincts show themselves, { these were latent capabilities over which partial uses of left hemisphere largely has dominated } Thus a man the crippling of a limb by a wound, reading the lives of the saints excited a domestic religious sentiment in Ignatius Loyola & utterly changed his thoughts. His ambition became directed to a new direction - So the de Ranee the Trappist

178 a man who took to the desert life. - "Conversion" ^{may} transform the character from a base to a noble one. Alibi was imposed by it - So good characters may turn to bad under violent emotions - Those who committed excesses in the French Revolution were not necessarily, essentially immoral.

181. Physical needs & the instinct to satisfy them. Food, conservation of the race. instincts for what does & repugnance for what ~~does not~~ ^{does not} satisfy instincts - need

182 born suckle - Effects of castration - if delayed this sentiment has been roused & remains - Instinct not obvious in animals. Herbivorous animals, breeding the smell

184 of a wild beast - Injurious of birds - nest building. The will cannot suppress the instincts - We can only avoid the causes that excite them. But develops antagonistic sentiments as by education in man & ^{in animals} ^{approprismment}

185. By crossing races you can change the ~~more~~ instincts of the children.

187 Law concerning the exercise of the reflection faculties during action of instinct. The exercise of the reflection faculties is subjected to the instruction when they work together. Man has an entire tract in his instinct when no opposite sentiment opposes it.

187. Reflection faculties may vary themselves, a piece of intellectual
 188. Speculations. But when instinctive feelings arise, reflection follows
 the direction they point out. Thus when a man has ~~any~~ good sentiments,
 his thoughts are good; when bad or crooked his thoughts are so also. The
 thoughts of man follow his feelings. He can't think in the region of
 sentiments which he does not at the time possess. Reflection can't
 create an instinct. A man who has no moral sense can have thoughts
 conformable to good if his egoistic sentiments of rational interest surpass
 those of self-love, prudence, fear; - but egoistic sentiments are not
 moral ones. - Certain men have absolutely deprived of some ^{ordinary} ~~instinctive~~
 faculties - they may be very intelligent for all that.

- 191. Instinctive thoughts are more frequent than pieces of speculation ones.
- 192. Sentiments & passions are the premises of our reasoning.
- 193. We summarize character saying such a man has affection & gratitude - had another
 had no pity, dignity, fear, prudence &c. - Example of a woman who
 had lost her father to deny declaring she hated black, it did not suit her complexion
 she had no filial love or sense of propriety, therefore she spoke her mind out
 without consideration; there was any thing reprehensible a day to
- 195. The dominant ideas of each people always accord; with their
 instinctive sentiments, wants & passions & these vary according as
 circumstances excite such & such instincts. Thus the religious
 instincts of the middle ages - The oppressed people appealed to the prelates
 to defend them & they did & the people were protected.
- 197. Rascals & despotic persons are blinded, not voluntarily or from
 infirmity - but voluntarily or often by force (by necessity) by a natural effect
 (if no opposite instinct is aroused) This is very marked in the insane where
 sentiments are ^{the} stronger than the senses. Beliefs supported by sentiments
 without any material or scientific proof, pass much more power
 over the minds of men than intellectual truths based on observation &
 reasoning - thus religion etc. matters. Galtes were not so base.
- 199. Opinions - are sentiments, & what follows from them, systematized. Persons
 of energetic sentiments can imagine others looking at things from a different point
 of view - they think their antagonists are men of bad faith. In the colouring
 hypocrites are those who act contrary to their sentiments. One man will
 laugh

- hand at afflictive events, another is irritated or made desperate by them
200. Example of absurd declamation against freedom by the editor of le Monde 1865.
204. Epicureans never modify opinions based on eudaimonic sentiment [Larousse can't fade of their own cases]
206. Love of the marvellous
209. It is impossible to bring all men to one way of thinking ^{where sentiment is in question} because of the diversity of interests; some will think that the bad which others think good.
213. Moral sense. In Earnest says, parents who commit some fault try to hide it from their children, looking on them as incorruptible judges before whom they must stand.
216. The most intelligent & best instructed persons are not always those who know how to conduct themselves with most propriety. They make meditate & execute most immoral & wrong acts without feeling that they are wrong. [don't be found out!]
220. Quotations from Reid showing that he thought all men had like consciences.
221. Same is more true to nature
225. Larousse Foucault's maxims are entirely based on the egoistic sentiment & a very complete deduction from them ^{through} "the virtues lose themselves in self-interest as the waves lose themselves in the sea". Many maxims are cast out they are picked out, 15, 16, 44, 78, 83, 93, 121, 146, 154, 195, 200, 205, 213, 253, 468, 481, Supplement 3, 4, 12, 29. —
228. Behaves virtuous. determines pursuit of duty soon though disagreeable [See same page good people do what they think it right; bad ones what they like but] Larousse Foucault write in perfect good faith. — a maxim 337 shows ^{that} ^{the} ^{virtues} ^{lose} ^{themselves} ⁱⁿ ^{self} ^{interest} ^{as} ^{the} ^{waves} ^{lose} ^{themselves} ⁱⁿ ^{the} ^{sea} ^{of} ^{the} ^{egoistic} ^{sentiment} ^{of} ^{the} ^{human} ^{race} ^{and} ^{the} ^{virtues} ^{lose} ^{themselves} ⁱⁿ ^{self} ^{interest} ^{as} ^{the} ^{waves} ^{lose} ^{themselves} ⁱⁿ ^{the} ^{sea} ^{of} ^{the} ^{egoistic} ^{sentiment} ^{of} ^{the} ^{human} ^{race} ^{and} ^{the} ^{virtues} ^{lose} ^{themselves} ⁱⁿ ^{self} ^{interest} ^{as} ^{the} ^{waves} ^{lose} ^{themselves} ⁱⁿ ^{the} ^{sea} ^{of} ^{the} ^{egoistic} ^{sentiment} ^{of} ^{the} ^{human} ^{race} ^{and} ^{the} ^{virtues} ^{lose} ^{themselves} ⁱⁿ ^{self} ^{interest} ^{as} ^{the} ^{waves} ^{lose} ^{themselves} ⁱⁿ ^{the} ^{sea} ^{of} ^{the} ^{egoistic} ^{sentiment} ^{of} 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- 232 the strength of the moral & egoistic sentiments. - The moral sense is one of the last that appear in man, the first are the affections, personal interest, fear, self-love, & hope. it is by these one can act upon youth
- 235 Moral conscience. is not personal conscience [the power of introspection]
- 236 quotes a good instance of confounding the two from Bantain. "as soon as a man has acquired personal conscience, he at once recognises that he is a moral being, that there is a law directing his acts, forbidding him that which is bad, prescribing that which is good." If the moral conscience is not the decision, as guided by egoistic sentiments, & vary extremely according to circumstances than Vallnarguel's maxims 135. (quoted). but the moral conscience is resolute & steady - Moralists talk of criminals having smothered the voice of conscience - they had none to smother. Remorse is due to violation of moral sense or of duty. does not exist otherwise - Persons who commit in hot blood are followed by remorse - but if men commit them in cold blood & have no remorse they can't have moral sense. - they may ^{still} be ~~deceived~~ on egoistic grounds at having got into a scrape. Theologians call their attention (and caution). Criminals who are reprimanded have no feeling but satisfaction at getting off - A moral mind feels - ~~it~~ Remorse is not a ~~natural~~ ^{artificial} emotion at reading of the insensibility of criminals. It is certain that those who meditate & commit the cold blooded crimes have no moral sense. - (This ~~same~~ idea led him to investigate the subject of this book). Gives a case from the Journal "Le Droit" 27 Oct. 1842
- 241 Another case 244. another.
247. Religious sense - quite different to the moral - causality, fear & hope ^{are} its basis. - He makes much of causality. - Nothing stimulates the religious sense in population so much as general calamity
- 249 The affectionate sentiments in women are strong help. - unmarried men. but if she has a husband the religious ardour disappears - Other strong bad sentiments concern to give varied allures to the young - vendetta - hating - covetousness - jealousy of his dog - The moral man imagines a religion that is wholly moral. - A man who has no morality thinks nothing
- 250 of constraining his duty ~~to~~ aid in his immoral projects. 251 bandits
253. Very moral persons who have no dogmatic creed. the religious sentiment has no influence on their moral behaviour.

256. The relig: sent: is very useful to those whose moral sense is feeble. They are commanded to follow a certain line in the name of a deity whom they fear & revere & from whom they hope. Unfortunately ^{some} people fall always into dogma & intolerance. Among the Papian race, morals are one, its precepts exactly the same [??] - compare it with doctrine. 25b. One cannot be too prudent with the religious sentiment. it is a shield for mad outbreaks.

257. Papians are always bad, whether as exaggerators, perverts, or perverters. Moral sentiments paper, to the stage of papians are changed in character & become vices.

258. in the impassioned condition - one papians takes possession - it is a perfectly normal phase. The condition may be chronic and make "originals" or fanatics. And a man can judge well enough of other men & of other qualities within himself. He can't see their own faults. We have all occasionally some dominant papians & therefore a grain of madness. - - - - -

267. Philosophers & moralists are far from supposing that a man can be involuntarily blinded by his papians - rather Jules Simon to the effect that no papians is capable of producing an effect without the intervention of my will - He writes says no. if he has no sentiments opposing the papians he can't work to combat it, nothing urges him to do so.

268. It is not the violence of the papians that blinds him, but the absence of conflicting sentiments. - a very touching story of a young man who had a strange homicidal mania towards his mother - then his ^{his} sister-in-law. He entered a mad house - what into a mad house begging for restoration - - - - -

27h. He rather better explains himself - madness is not the papians itself but the ignorance of its being a papians with the absence of sentiments that could alone enlighten the mind on that subject.

27D. On some effects of the impassioned state. - a man loses prudence, does not care about hiding his projects, immoral, criminal before accomplishing them & speaking of them after.

27g. Curious experience of many people who work for death of a sick wealthy man betray themselves, ^{perverting} by ascribing to the malady more gravity than it has. The most intelligent persons are no better able to conceal their papians than the vulgar.



280. Psychological character of pleasure & pain.

Pleasure is the satisfaction of instinctive taste - Perverse, e.g. melancholy, idle, active, debauched, proud, miserly, wasteful, ascetic - the suicidal madman in self-destruction - All that modifies the instincts change the

281. Objects of pleasure & pain. The pleasure of age (youth & boyhood) differs. Our sentiments are so mixed that pleasure is rarely unalloyed - when it is it is "bonheur" Men of perverse sentiments, without any moral sense feel real pleasure in accomplishing monstrous acts - hatred, vengeance, jealousy. Happiness is of short duration - there are contractions - continued succession of different

284. sentiments requiring different sorts of satisfaction. - One is quite wrong in placing happiness in the same object for all men.

290. Obstinacy. - Inequality of character -

303. "She rears the best of all her brood & twins and yet she is the least reasonable of them."

311. It is vain to search for a point where water ends & mud begins because the conditions overlap.

315. An eloquent tirade against "reasoning as essential attribute inseparable from the human mind"

337. - the ~~most~~ ^{most} ~~inconvenient~~ ^{inconvenient} of all sorts of discomforts, compared to the pleasure of avarice he when duty does not speak the most desirable object invariably attends - [He evidently thinks that a man who has no moral sense can have no sense of duty, but?]

The rest of this volume contains nothing I care to note
neither does the next volume until

Vol
II

119. Physical character of criminals

1. Moral insensibility, 2. Perversity, 3. Impudence, 4. want of foresight

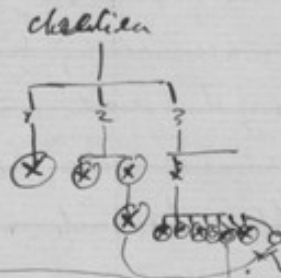
171. Cases given from reports of criminal trials & behaviors of the criminals,

185 Curious account of criminal children - mal formed & backward in development - their parentage - carelessness about horrible scenes on the putrefied body of a murdered person, no natural disgust, no pity, no horror towards one another - They are much more remarkable for the absence of moral sense than for perverse disposition - the former is proved by the absence of remorse. - All the most explicit reports.

190. yet they may have love of life, family affection & religious sentiments.
 206. "Pendant" criminals ask pardon of God & man, exhibit by handies
 to take warning - but these are egotistic; they don't expect remorse
 & horror of the crime

211 quote Ferrus Des prisonniers p. 292 He was a learned doctor,
 inspector of prisons

410. Genealogies of criminals
 O = fem
 X = male
 O = convict



401
 Villet & Lemaire. Hugot & Honoré, 4 of the principal criminals of a band of desperadoes &
 Lemaire (his aunt Villet) ^{was the ringleader; chief he} took the number at last for the pastime - Villet was the
 most intellectual & planned. - His son Prosper was an intelligent & bad as his father,
 Villet's wife, his son to perpetual labor his daughter ^{Felice} for a term of years

Christian Family

1) Jean Christian. is gr. grand father to Lemaire, had 3 children
 5) Pierre
 6) Thomas
 7) Jean Baptiste

5) Pierre - son of Jean Francois condemned to perpetual labor for theft & murder - I & J
 6) Thomas - son of Francois labor to life for ^{murder} his wife
 7) Jean - son of Francois condemned to death for murder - His son ^J, transported to Cayenne
 for theft & was uncle to Lemaire.

7) Jean Baptiste. son of ^{his} son of Jean Francois (married Marie Tauré) & had the
 following children:
 1) Jean Francois condemned to may theft,
 died in prison
 2) Benoit, died of a fall from a roof when attempting
 robbery
 3) X. alias Clair condemned to may theft
 d. Oct 25
 4) Marie René died in prison - may theft
 5) Marie Rose ditto - ditto <sup>she had no other
 children already
 offered in prison
 for theft</sup>
 6) Victor now in prison for theft
 7) Victoire Christian wife of Théophile Lemaire
 mother of the accused Lemaire

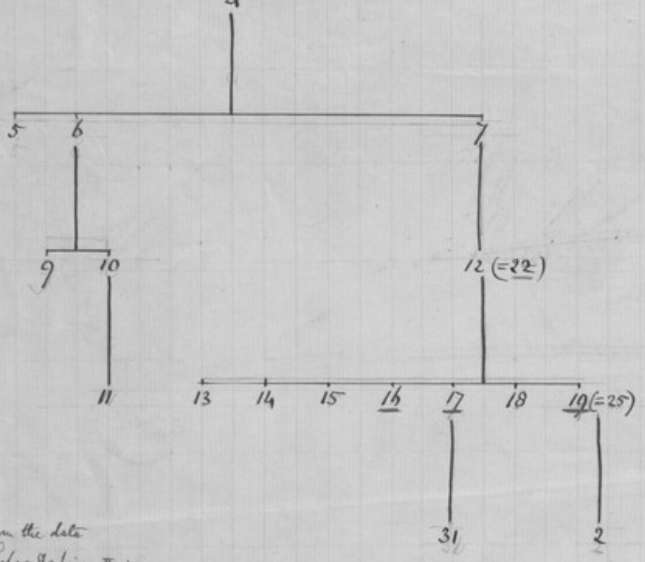


Tauré Family

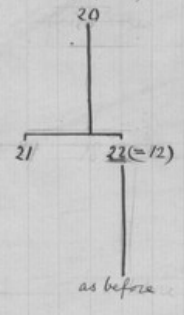
André Tauré ²⁰ suspected of may arms, ~~had~~ had
 1) a son ^{convicted}

2) Marie Rose who married Jean Francois Christian (see above)
 and had & was the mother of the 7 children there named - she was
 evidence against her grandson Lemaire

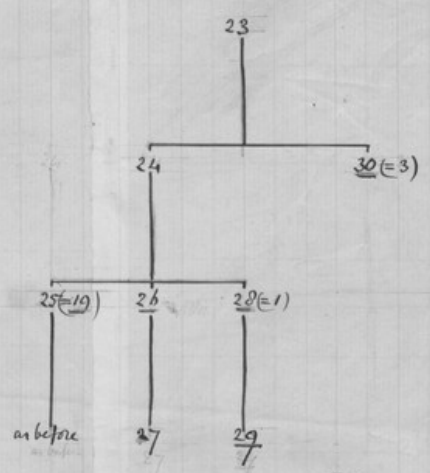
Children family



Tamari family



Alliance of the families of
Christen, Louvain, August and Pilot



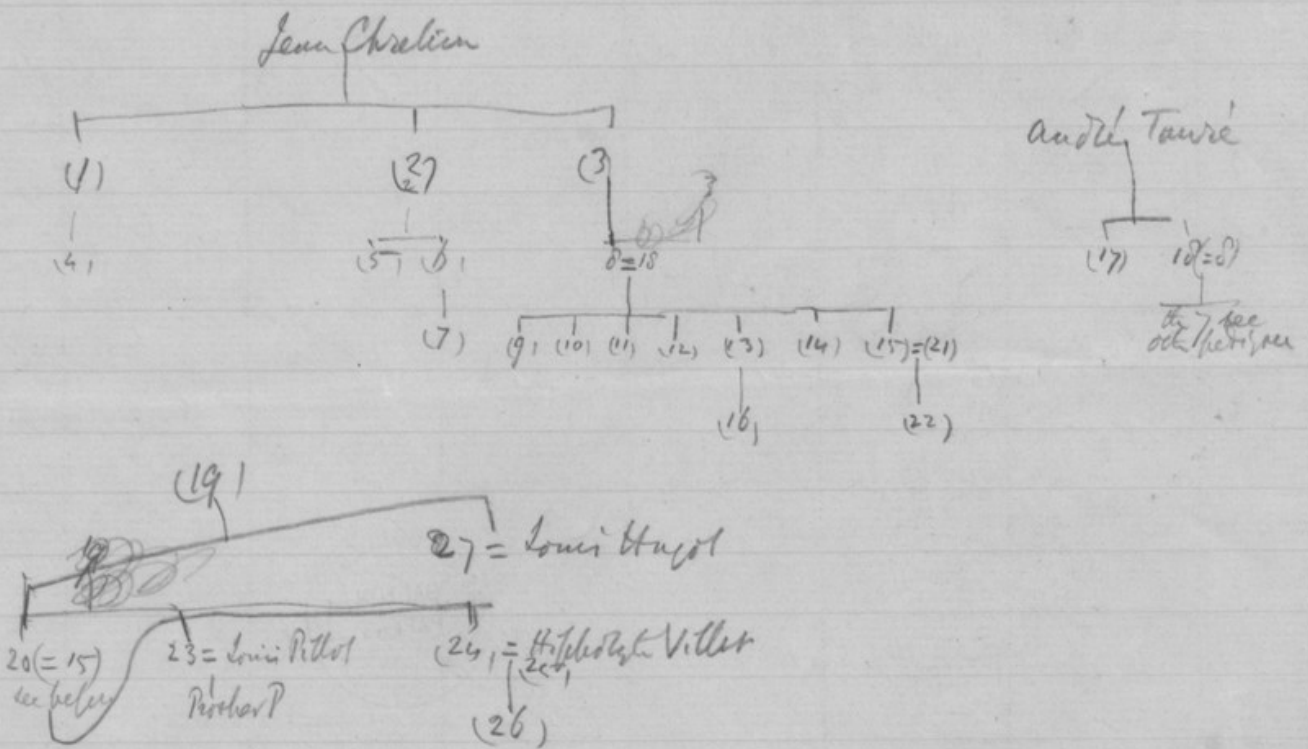
Derived from the data
Bancroft
Bancroft's Register Volume II, 410
Pete. Maudslayi (1867)

These numbers mean families
31 persons
viz 21 males
10 females.



ancestry of the families of Christian Lemaire & Hugot & Pitlot.

- 29) Claude Lemaire ^{had} children (20) Aubin, whose ^{children} Christian (see 15 above) a war father of Lemaire Pitlot & war father of Prosper Pitlot 'accused of being in the band' (23) Augustine, married Louis Villet, the father, chief of the band & mother of Prosper Villet (28) Victorie, wife of Hippolyte Villet (24) Anne Françoise married Louis Hugot ^{one of the four murderers} of the four above mentioned (31)

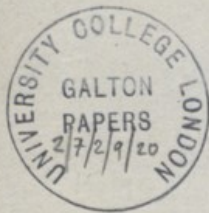


LE MOUVEMENT LITTÉRAIRE EN ANGLETERRE

Mr. Francis Galton vient de publier, chez l'éditeur Macmillan, un ouvrage qui contient l'exposition et le résultat de ses travaux psychologiques depuis l'apparition de son livre *Hereditary Genius*. Ce nouvel ouvrage a pour titre *Recherches sur les Facultés de l'Homme et leur développement*. (*Inquiries into Human Faculty and its Development*). Plus darwinien que Darwin à un certain point de vue, il suit Mr. Herbert Spencer dans ses doctrines sociologiques, mais toujours d'une manière originale. Il y a chez ce savant et ce penseur un curieux mélange d'exactitude mathématique et de hardiesse spéculative. Il aime à tirer des lois et des formules de l'ensemble d'une quantité de faits curieusement observés et classés dans la rigueur et l'ordre de la statistique; mais il n'hésite jamais devant les inductions *a priori*, qui lui semblent être la conséquence naturelle des faits observés. Il apporte du reste à ses recherches la plus entière, je dirais presque la plus naïve bonne foi, ne dédaignant aucune manifestation psychologique, et appliquant avec le même zèle impartial sa méthode scientifique à l'examen des phénomènes spirites et des miracles religieux.

L'enseignement qui ressort de son livre, c'est que l'humanité est perfectible par la sélection, la loi héréditaire étant quelque influence que l'on puisse attribuer à l'éducation et aux milieux, aussi inéluctable que la fatalité de l'antique Destin. Comme il ne recule jamais devant les conséquences logiques, il propose une série de lois destinées à assurer cette sélection. Elles sembleraient à beaucoup monstrueuses et attentatoires à la liberté humaine; et cependant il y a longtemps que des médecins ont émis l'idée d'entraver légalement la reproduction de certaines maladies et infirmités en interdisant le mariage aux personnes qui en sont atteintes, et l'opinion n'est pas loin de se prononcer en ce sens. Mais c'est une question que je ne puis qu'indiquer dans une revue courante, et il ne suffit de signaler à l'attention ce livre qui a sa place marquée dans la bibliothèque internationale de philosophie et d'histoire de M. Germer-Baillière.

L'histoire n'a rien produit en fait d'œuvres générales depuis quelque temps. Elle se confine à la biographie ou aux études restreintes. Je signalerai particulièrement une biographie de lord Byron, par M. J. Cordy Jeaffreson, intitulée *The real lord*



19/8/83

... qui fournit les vivres; dans les postes on est mieux nourri, car le caporal d'ordinaire se rend tous les matins au marché avec deux hommes de corvées, ses chapelets de sapacks en bandouillères. Il se débrouille avec les annamites, flanquant quelquefois des coups de cadouille à ceux qui sont trop exigeants, et tâchant de leur *carotter* de quoi *boire la verte* en revenant.

On ne fait presque pas d'exercice, une heure par jour, pour ne pas en perdre l'habitude, et une heure de théorie; le reste du temps on fait des corvées générales pour l'entretien du fort et pour cultiver le jardin potager qui est très grand et d'un bon rapport. Pour ces travaux on ne se *la foule* pas et on ne fait pas de cérémonies, le casque, pantalon et chemise voilà tout.

Au milieu du fort il y a une pelouse où le soir on va se coucher, ou faire une partie de boules en attendant la retraite, car on ne sort guère que pour aller boire chez Agny ou Canvono, les deux empoisonneurs patentés. Baria, sauf l'église et l'inspection, ne se compose que de quelques centaines de cagnas annamites qui ne rappellent en rien l'avenue de l'Opéra, je vous assure.

Les environs sont admirables par exemple; je ne crois pas qu'il soit possible de trouver plus beau, plus poétique que le bord de l'arroyo, du côté des cascades, de grands arbres en se joignant forment une voûte de feuillage d'une fraîcheur admi-

... le danger de vous étouffer par terre ou de laisser trainer à manger, vous êtes envahis par des milliers de fourmis; il y en a des rouges, grosses comme de petites crevettes, qui pincement, allez!... Il y a des vampires, chauves-souris, grosses araignées, caméléons, toquais, moustiques, que sais-je!...

En revanche il y a aussi de bien jolis oiseaux, des aigrettes, des oiseaux de paradis, des martins-pêcheurs, des pigeons verts, des perruches qui se vendent 5 sous, et mille autres dont je ne connais pas le nom. Nous avons aussi des aigles qui viennent jusque dans la cour du quartier attraper au vol les croûtes qu'on leur jette.

Que! vaste champ pour un chasseur! en outre des animaux ci-dessus nommés, il y a des sangliers, des cerfs, des lapins, des coqs et des poules sauvages en masse, il y a aussi des singes par centaines; à 1,000 m. du fort on n'a pas le temps de charger son fusil.

Il ne faut pas se faire d'illusion, la Cochinchine est un beau et bon pays qui rapportera plus tard au centuple ce qu'on a fait pour lui. Nos rapports sont bons avec les Annamites qui se disputent pour être enrôlés dans les tirailleurs et font de bons soldats. Le Tonkin est encore meilleur, paraît-il. J'ai vu des camarades qui en arrivaient; ils m'en ont dit mille merveilles, soit au point de vue du pays et des habitants; ils ne demandent qu'à y retourner. Le pays

f. 2c



Galton

For the last five weeks a strike, which threatens even yet to assume a very formidable shape, has been going on in the iron trade, though at present it is confined to the works of Messrs. Easton and Anderson, at Erith. Its object is to put down, or at least to prevent any extension—for on that point there is some discrepancy of statement—of piece-work. *Prima facie* it would probably strike most persons that nothing could be fairer than the system of "payment by results," whenever the nature of the case admitted of its application; first, because that system would afford the master a remedy against what is alleged to be the growing and disastrous tendency, the idleness and "scamping" of work; and secondly, because it would enable each workman to make the most of his capital—that is to say, his industry and skill. The other side is stated by *Mr. John Burnett*, on behalf of the Amalgamated Society of Engineers, who are supporting, if not directing, the action of Messrs. Easton's men. In the course of a long letter, he says:—

We dislike piece-work on principle, as tempting men to over-exertion, and as also leading them to care less for the quality and soundness of their work than for the quantity turned off. It also tends materially to impoverish men employed by the day, as it keeps down the time-rate of wages. It also increases the probable elements of disagreement between employers and employed by substituting a practically unlimited number of piece prices for a simple rate of wages per day agreed upon by master and man. It has led to the introduction of the piece-master, or "butty" system, under which the man in charge of a given job is virtually a taskmaster, and reaps the benefit of the labour of the other men employed on the work by appropriating any surplus of its price that may remain, after wages are paid, to himself. In Lancashire and elsewhere it has led to more dishonesty between man and man in the workshop than any other system ever devised. Piece-work is never equitably carried out in the way in which writers on the subject seem to imagine. If the skilful man makes more than a certain per-centage above time wages, down comes the price of the article produced, both of the skilled and unskilled workman. Formerly it was no uncommon thing for workmen to be allowed to make double time, if they could, at the prices fixed; but now they are seldom allowed to make more than time and one-half. In the majority of shops time and a quarter is now the rule. In numerous instances men are working at piece-work rates for bare time wages, and, stated broadly, this is the tendency of all piece-work—to reduce toil to mere task-work, and thus destroy that feeling of spontaneity, freshness, and pride of handiwork which is the essential of all sound workmanship. In every district where piece-work is the rule time wages have not advanced to any perceptible extent during the last twenty-five years; whereas in districts where the system does not prevail wages have advanced from 10 to 50 per cent. At the same time, it is to be observed, piece-work prices have fallen during the same period from 5 to 50 per cent.

On Friday at the first special general meeting of the Iron Trades Employers' Association, held at Derby, the following resolutions were carried unanimously:—

"That since, as a rule, employers are compelled by the law of freedom of

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significance of that often lightly used expression may rarely present itself to the mind on ordinary occasions; but the subject has already attracted public attention, and as it becomes more thoroughly understood will yet command it more and more. I venture to think that the preachers for the Hospital Sunday collection should fully satisfy themselves that they are not committing themselves or their congregations to the support of practices from which they would recoil in protest of our common nature."

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...and the grain or sense was taken note of and answered by speakers who were quite competent to do so. The first Slave Circular was, in his opinion, a mistake; but the Admiralty was not wholly answerable for it. Indeed, the Admiralty had not so much to do with it as the India and Foreign offices. He regretted that it did not undergo proper revision. He thought that Mr. Ward Hunt was away at the time. The circular had been revised and reissued in another form, and so far as he knew it was drawn up by some of the highest authorities in this country:—
He would not mention names, but he believed it had undergone the revision of the highest legal authority, or of some of the highest legal authorities. As to the necessity for issuing the circular he would say nothing. The Admiralty had to administer the affairs of the navy, and it was not for him to say what complications might not have arisen between nations, perhaps on the confines of India and others nearer home, which might have necessitated the issue of some instructions to our naval officers. He thought it very likely such was the case. Certainly the circular did not alter the state of the law as it now stood, and it merely reiterated instructions which were undoubtedly given by preceding Liberal Governments.

Sir T. Lawrence, M.P. told the Dorking Conservative Association

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Journal de St. Peters



seemly as a criterion for the rest of mankind, for however diverse the instincts and faculties of different races may be, each may be good of its kind. The moral and intellectual wealth of the world consists in the variety of the gifts of the men who compose it, and any attempt to assimilate all the members of a nation to one common type would be the reverse of improvement. In every race there are probably elements which, if they gained the controlling power, would lead to the degeneration of that race; while there are others which, carefully guarded and cultivated, would lead to improvement. It is the object of Mr. Galton to direct attention to these hereditary characteristics, and to describe new methods of appraising and defining them. He commences with "features," his study of which has led him to express not a mere opinion, but a definite statement, that the prevalent type of English face has greatly changed at different periods. The loan collections of portraits and the National Portrait Gallery have afforded facilities for this study, and as an instance of the observations made it may be noted that the portraits painted about the time of Holbein have usually high cheekbones, long upper lips, thin eyebrows, and long dark hair. Cromwell's Ironsides were dark-haired men, who gave the observer the impression that they were of a peculiar breed. Englishmen now are a fair and reddish race, as was shown by a diagram presented by the Anthropometric Committee to the British Association in 1880, which was prepared from an examination of individuals amongst the professional classes. That diagram Mr. Galton has compared with the official description of the members of the Arctic Expedition in the *Alert* and *Discovery*, and finds the proportions of the various shades of hair colour to be the same. Seventy-sevenths of the crews had complexions described as light, fair, fresh, ruddy, or freckled, and the same proportion had blue or grey eyes. To obtain really representative faces, Mr. Galton adopted the method of composite portraiture, and the frontispiece to the book is a photograph of the most remarkable of his experiments. Thus to obtain an idea of what six different designers of medals considered the features of Alexander the Great, Mr. Galton made a composite portrait from the British Museum collection, and to obtain a family portrait he made a print which combines the portraits of a father and mother, and their two sons and two daughters. The characteristic features of health, disease, and criminality are shown by composite portraits of in the first case twenty-three officers and privates of the Royal Engineers, and in the last by eight and four portraits respectively of convicted criminals. These portraits give a better idea of the type than can be obtained from the features of an individual, and it is to be hoped that amateur photographers will respond to Mr. Galton's appeal, and take up the subject of composite portraiture. In connection with bodily qualities, he points out that the proportion of weakly and misshapen individuals is not to be estimated by observations made in the streets; for the worst cases are out of sight in various institutions. "Our human civilised stock is far more weakly through congenital imperfection than that of any other species of animals, whether wild or domestic." That is only too true, and must remain so, until our social habits are revolutionised, though, as Mr. Galton further points out, it is by no means the most shapely or the biggest personages who endure hardship the best. "Some very shabby-looking men have extraordinary stamina," and it may be that the sickly-looking and puny residents in towns are better adapted for the conditions in which they live and work than the stalwart and ruddy-looking men of the shires. Some of Mr. Galton's remarks on

64c HUMAN FACULTY AND ITS DEVELOPMENT.*

THE now numerous memoirs on various subjects connected with human faculty and its development, contributed by Mr. Francis Galton to contemporary science, are gathered together in this volume, so far as their substance is concerned, and we have one of the most novel and certainly most interesting books of the century—novel, because the method of dealing with the subject is original, and interesting because the matters dealt with have an important bearing on the future progress of the human race. The book is, as it is intended to be, eminently suggestive; for although the author has advanced further than any one else in the peculiar lines of study followed, he has by no means exhausted any of his subjects. His main object has been to take note of the varied hereditary faculties of different men, and of the great differences in families and races, with the view of discovering to what extent history shows the practicability of supplanting inefficient human stock by better strains, and how far it may be our duty to, so to speak, aid the processes of evolution. In arriving at any conclusions which seem warranted by the evidence, we must be careful not to take our own instincts of what is best and most

* Inquiries into Human Faculty and its Development. By FRANCIS GALTON, F.R.S. London: Macmillan and Co.

SECONDARY BATTERIES.—III.

By JOHN T. SPRAGUE.

(Continued from p. 328.)

30. **CHARGING.**—In order to charge a secondary battery it is necessary to employ an E M F greater than its own, and greater in proportion to the rate of charge desired. All such excess of E M F is energy lost in overcoming resistance, therefore slow charge is most economical under this head, though other practical considerations have to be taken into account; that is, against energy lost at the rate of the square of the current I , generated, we have to consider time, and interest on plant. But in addition to the loss of energy involved, a small charging current is desirable for two good reasons: 1, the product is in better condition, the particles in closer contact and better electrical connection; 2, there is less loss by uncombined gases escaping.

31. *Loss of Gases.*—Throughout the charging there is a constant escape of gases going on, chiefly oxygen. But the loss of either gas means total loss of the equivalent of electricity involved in the decomposition from which it arises. If O is obviously wasted, it is certain the H is lost too, or, on the other hand, that the total power of the cell is reduced by its incapacity to take up the O. But the escape of H indicates at once, either that the rate of charging current is too great, or else that the limit of the economical charge is approached. As in all cases of electrolysis we are brought to the question of *density of current*, the rate at which a unit area of surface can act properly, and this in the case of a secondary receiving charge is, of necessity, a *lowering capacity*, because it is not mere surface we have to consider, as in the case of the zinc of a battery which remains unchanged, but the diminishing quantity of sulphate of lead upon that surface remaining unconverted. But as shown, § 29, the increase of free acid tends to increase the current, and the combination of these two causes results in a growing loss of gases as the charge proceeds. Obviously, therefore, it is bad economy to press the charge to the full capacity.

Messrs. Gladstone and Tribe give an experiment on this point which, though actually relating to two plates covered with red-lead, is a fair representation of what occurs in general cells. They passed a current of 1 ampère for thirty-one hours through the two plates, of which, however, they do not give the area.

| Time. Hours. | Hydrogen. | | Oxygen. | |
|-----------------|-----------|-----------|---------|-----------|
| | Lost. | Absorbed. | Lost. | Absorbed. |
| 1 | 0 | 312 | 0 | 156 |
| 10 | 21 | 297 | 99 | 60 |
| 20 | 270 | 50 | 111 | 49 |
| 31 | 300 | 6 | 135 | 18 |
| Total .. | 5,230 | 4,489 | 3,120 | 1,737 |

Total Capacity 4,574 1,294

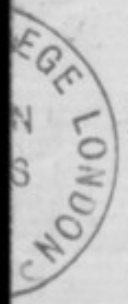
The figures represent cubic centimetres, and as the oxygen stored exceeds the capacity of the materials it is evident that either the plate itself received some or else a large quantity remained "occluded." But the figures for each hour's action show distinctly

lead, &c., is an advantage. It saves the formation, it concentrates the material into smaller bulk, and it is claimed that an equal weight of material does more work. On the other hand, it has the disadvantages arising from conditions described in § 29. The mass of material is only in uncertain mechanical contact with the conducting plate, instead of in molecular union, and therefore subject to disintegration. This defect applies to the multifarious "inventions" based on the "lead tree," in which every imaginable mixture of materials has been patented for obtaining a spongy mass of lead having larger surface in small space, and to collections of shot, granulated lead, carbon, &c.

35. At first, this cell was made, of necessity, with some material such as felt, asbestos cloth, &c., to bind the material to the plates. These all add to the resistance, resist circulation of liquid, and sooner or later rot away and disintegrate. By the combination of the patents of Swan, Sellon, and Volkmar with that of Faure, this battery assumes the form of small masses of the porous material contained in spaces in lead plates. There are a variety of means of effecting this, such as making the plates of an open network, or of perforated sheet; but the whole question resolves itself into the thickness of the porous mass which can be used to advantage; and its proportion to, and effectual securing to the lead conductor.

36. *Dimensions and Capacity.*—The latest improved form is made in several types. A consists of 7 positive plates, each $37 \times 23 \cdot 5$

Enquiries about the
human mind



J. Falton wrote in 1869 a book
 about Hereditary Genius which
 gave him at once a foremost
 place among scientific enquirers.
 And when lately the English Review
 for psychology (Mind) gave a
 retrospective glance over ~~the~~ recent
~~best~~ years, it assigned the
 palm of originality to Falton.
 He has now collected some of
 his Essays into a volume -
 he will give a few extracts, without
 stopping at the chapter about
 mental vision of numbers -
 of which Dr. Vining gave a
 translation at the time when it
 appeared in a periodical -
 he will mention what seems
 important for the teacher
 under the heading: Variety
 of human nature, the author

by way of introduction says the following:
"we must free our minds";
[to the end of the paragraph]

~~Quintessentially~~ quintessentially qualities. Fulton says that we have no trustworthy evidence of past generations. He considers the present conditions far from satisfactory & capable of very great improvement. But he is convinced that progress has been made in England, also within ~~the last~~ years.

"Though the bulk of the population" [page 21] to end of sentence]
"Attain achievements" [page 23 to the end of paragraph]
These words have the more weight as they have been uttered after full consideration & enquiry. And in England as well as here, it is alleged that the upper classes determine bodily, -

From the "New School paper" -

Dear Mr. Lattin

The above is
the translation of the
little Review, which I return.

Yours very truly
L. Veale

This wants of course no
answer.



July 6th

UNIVERSITY COLLEGE LONDON

f. 6v



38, Onslow Gardens,
S.W.

7 Onderzoekingen betreffende den menschelijken geest.

Francis Galton schreef in 1869 een werk over erfelijkheid van 't genie, dat hem terstond in de voorste rij van wetenschappelijke onderzoekers plaatste. En toen onlangs het Engelsche Tijdschrift voor zielkunde (Mind) een blik terugvloog op de laatste jaren, moest het den eerepalm der oorspronkelijkheid toekennen aan Galton.

Deze heeft nu verschillende opstellen in de laatste jaren door hem in onderscheiden tijdschriften geplaatst vereenigd tot een boekdeel dat juist verschenen is. We zullen achtereenvolgens een en ander daaruit meedeelen zonder lang stil te staan bij het hoofdstuk over 't geestelijk zien van cijfers, waarvan Dr. Sinia reeds toen ze in een tijdschrift stonden, een vertaling leverde.

Hier zullen we vooral meedeelen wat ons voor den opvoeder van beteekenis schijnt te zijn.

Onder het opschrift: „Verscheidenheid der werkelijke natuur“ zegt de schrijver bij wijze van inleiding het volgende.

We moeten onzen geest ontdoen van veel vooroordeel, voor we goed kunnen oordeelen over de richting waarin verschillende rassen moeten verbeterd worden. We moeten er voor op onze hoede zijn, om niet ons eigen instinktmatig gevoel van wat het best en het meest gepast is, als een toetssteen te nemen voor het overige menschdom. De instinkten en vermogens van verschillende menschen en menschenrassen verschillen bijna evenzeer als die van onderscheiden dieren; en hoezeer ze ook mogen verschillen, ieder kan goed zijn in zijn soort; de aap moge een afkeer hebben van de slang, maar een slang is in haar soort een even volmaakt dier als de aap. De levende natuur bestaat niet uit een herhaling van gelijke elementen maar uit een eindelooze verscheidenheid. De zedelijke en verstandelijke rijkdom van een natie bestaat voor een goed deel in de groote verscheidenheid van de gaven der menschen, die de natie vormen, en het zou het tegendeel van vooruitgang zijn, indien we alle burgers naar een zelfden standaard wilden vormen. Toch zijn er bestanddeelen, die verouderd zijn of een gevolg van ontarding. Het doel van dit werk is om die bestanddeelen aan te wijzen, welke den vooruitgang helpen vormen. Daarbij zal niet naar volledigheid worden gestreefd maar de aandacht beperkt tot eenige weinige zaken.

Lichamelijke eigenschappen. Galton zegt, dat we van voorgaande geslachten geen vertrouwbare opgaven bezitten. Hij acht den tegenwoordigen toestand verre van bevredigend en vatbaar voor zeer groote verbetering. Maar hij is overtuigd, dat men in Engeland vooruitgegaan is, ook in de laatste jaren.

„Ofschoon de groote massa der bevolking kan achteruitgaan, er zijn veel teekenen, die er op wijzen, dat de beter gehuisvesten en beter gevoeden vooruitgaan.“

„De athletische oefeningen op de scholen en de colleges overtreffen die van vroeger. Voor een deel moet dat zonder twijfel worden toege-

Het Nieuwe Schouwblad
22/6/83.

schreven aan de geschikte manier om ze te verrichten, maar niet geheel. Ik twijfel er niet aan of het gezonder en overvloediger voedsel, de matigheid in het drinken, het beter koken, de warmer kleeren, de luchtiger slaapkamers, de grootere zindelijkheid, de vollediger verandering in gewoontes, en de gezonder leefwijze der meisjes, die later moeders worden, hebben veel invloed ten goede op het meer bevoorrecht deel van ons ras.

Deze woorden zijn van te meer gewicht omdat ze zijn uitgesproken na rijp beraad, na een grondig onderzoek. En in Engeland wordt even goed als hier beweerd, dat de meer gegoede standen lichamelijk achteruitgaan.

schrijven eene eigen methode ge...

De inleider beantwoordt de verschillende vragen tot hem gericht en weerlegt verschillende bedenkingen door de genoemde sprekers geopperd.

De voorzitter wil thans de debatten sluiten, doch daar velen nog iets op 't hart hebben, wordt de discussie nog eenigen tijd voortgezet.

De heeren Boerma, Wijn en Bartstra blijven bij hun bezwaren. De heer Leutscher schaaft zich aan de zijde van den inleider, hoopt, dat de bespreking vooral practische resultaten moge opleveren, geeft nog een voorbeeld ter opheldering en waarschuwt aan weerszijden voor overdrijving. De heer Fikkert heeft den indruk gekregen, dat de inleider en zijn bestrijders niet zoo ver van elkander staan; in de manier van toepassing moge eenig verschil bestaan, in beginsel is men het eens. Ten bewijze, dat de persoon zeer veel afdoet, herinnert hij aan Dupuis' teeken-methode. De heer Wijn bespreekt nog het corrigeeren, waarna de inleider daarover zijne meening zegt en verschillende manieren aangeeft, waarop men corrigeeren kan. De heer Hildebrand zegt, dat 't corrigeeren weinig moeite oplevert, zoolang het schriftelijk werk van dien aard is, dat de gebruikte woorden en zinsvormen van alle leerlingen dezelfde zijn. Dan kan men klassikaal nazien; doch wanneer, zoo als in de hoogere afdelingen, de leerlingen meer zelfstandig hun taak verrichten en verschillende, soms zeer uiteenlopende taalvormen ter uitdrukking hunner gedachten kiezen, vindt hij, evenals de heer Bartstra, het corrigeeren een moeilijk en lastig punt voor den onderwijzer.

Herhalingsonderwijs.

Van hetgeen over dit onderwerp te Winschoten is besproken, geeft de heer Hildebrand in de *Pr. Gr. Ct.* het volgende verslag. Inleider was Jhr. mr. Alberda van Ekenstein.

Vestigt men, zegt de inleider, den blik op de aanvankelijke resultaten van 't herhalingsonderwijs, dan krijgt men eene treurige gewaarwording, als men de zaak graag spoedig in orde wil zien; doch, uit een menschkundig oogpunt beschouwd, ondervindt men ook bemoedigende gewaarwordingen. Het gaat met het herhalingsonderwijs als met alle andere zaken, wat goed is, komt niet spoedig terecht. Hoe vaak toch ziet men niet dat wat eensklaps in orde kwam, spoedig weer had uitgediend; terwijl datgene, wat met veel moeite en opoffering na langer tijd werd ingevoerd, blijvend werd en vaste wortels had geschoten. Zoo moet het ook met het herhalingsonderwijs gaan. Raadpleegt men 't regeeringsverslag over 1882, dan blijken de resultaten nog gering te zijn. „In de praktijk,“ zoo luidt het daar, „blijkt nog herhaaldelijk de gehechtheid van sommige gemeentebesturen aan de oude avondschool, waar leerlingen van allerlei jaren en vorderingen worden toegelaten Administratieve en finantieele moeilijkheden gerezen tusschen onderscheidene gemeentebesturen en onderwijzers, waren niet bevorderlijk aan de zaak.“ — De inleider heeft elke gemeente in deze provincie nagegaan en bevonden, dat in het



of the jailers, they felt bound to tell the Governor of the Bastille, who was a man incapable of pity. Determined to deprive the prisoner of his insect-friend, the Governor went to his cell and said: „Well, Mr. Pelisson, I hear you have found a companion.“ „It is true,“ replied he, „and though we cannot converse, we understand each other very well.“ „But I can hardly believe what I have been told,“ said the Governor, „and I should like to be convinced of the truth.“

Pelisson, not suspecting any bad intention, immediately called the insect, which came and fed in his hand, and allowed itself to be caressed. The Governor, watching an opportunity

connexions, and the light thus thrown upon their origin in their author's mind often enables one to see new implications in them which would hardly have suggested themselves when the articles first appeared in the naked form.

The peculiar shape which the central Darwinian impulse has taken in Mr. Galton's idiosyncrasy—he, if any man, will forgive us for thus envisaging the matter—is a very original one. In the first place, its intimate alliance with the mathematical faculty in his case has cast him upon the habitual employment of statistical methods which have hardly ever been applied to this class of question by any other investigator. Then, again, his singular ingenuity in discovering devices for rendering into objective form what seems at first sight the most elusive subjective element (conspicuously shown in the invention of composite portraiture) has enabled him to apply these or similar methods with measurable accuracy to many phenomena which most other people would have regarded as hopelessly given over to the vaguest conjecture. Once more, the unusual mixture in his nature of the inductive and the deductive temperaments (for they are temperaments rather than consciously adopted methods in most men) has made him occupy a middle position between the pure Darwinian and the pure Spencerian standpoints, which is productive of much excellent and light-giving conciliatory work. On the one hand, Mr. Galton is never apt to jump at conclusions when, by any possibility of ingenious research, facts and experiments can be forthcoming to test the truth of rival hypotheses; on the other hand, he is never afraid to apply *a priori* reasoning in the boldest manner whenever he has a firm basis of ascertained fact on which to ground it. His work is thus always fresh and, above all things, eminently suggestive. There is hardly a single line of thought pursued in this book which does not open out endless vistas of future research for coming psychologists and anthropologists; hardly a thread which does not serve as a clue to guide us through innumerable minor labyrinths, unexplored, as yet, by the author himself. For general philosophical grasp, and for insight into the deeper problems of human nature, the work is well worthy of Mr. Galton's high reputation.

The same general motive which led Mr. Darwin into his great theory of the origin of species has led Mr. Galton more specifically to investigate the question of the improvableity of the human race. This is the key-note of his present book, which deals in particular with the influence of inherited nature, and the possibility of applying deliberate selection to the best family strains. In the matter of inherited qualities, Mr. Galton has pushed scientific determinism to its logical conclusions. For him, the individual is at birth in the main (potentially, at least) all that he can ever become; while making every due allowance, with even Puritanical scrupulousity, for the effects of nurture and circumstances, he feels, probably more fully than anyone else has ever before felt, the paramount importance of the inherited traits. Every man being essentially a compound of his progenitors, the facts of race become the most important

facts of all in the history of the individual. In his essay on twins, Mr. Galton very instructively shows the irresistible power of these predetermining causes, and exhibits the inherited nature as working out its own predestined course almost as relentlessly as the Nemesis of a Greek tragedy. Sadder than this idea undoubtedly is, there are, on the other hand, many elements of comfort for the faltering optimist in other parts of Mr. Galton's work. His discussion of the Malthusian problem is certainly the most cheerful chapter in that dismal dilemma of the dismal science that we ever remember to have read; while his simple discovery that you can absolutely annihilate a feeble or undesirable race, gradually, peacefully, and almost unconsciously, by no more violent means than by never marrying off its women until they are twenty-nine years old, is a most encouraging one for those people who have too readily taken it for granted that the extinction of a race must necessarily imply gross cruelty or great misery. The possible ethnographical implications of this calculation are also very valuable; they help to explain how the descendants of a once very small or insignificant fraction in a population may come at last to swamp and outnumber all the rest.

Of the practical measures by which Mr. Galton thinks such a systematic improvement of the human (or national) stock might be effected, we can only say that they seem for the present perhaps a trifle premature. It will not be till altruism has gained a far wider body of converts than at present that any united action, or even any considerable individual action, can be taken in any such direction. So long as the balance of material continues to place the balance of material advantages in the hands (on the average) of the least altruistic and often of the least really valuable members of the community, it seems useless to expect either that moral self-restraint will prevent the multiplication of consciously inferior stocks (physically, intellectually, morally), or that special inducements will be given for the multiplication of stocks recognised as superior in one or all of these respects. On the contrary, the actual tendency seems to act towards the repression of such better stocks, inasmuch as merit, growing later and later of recognition, can seldom now marry until its best powers have been impaired. If the spread of Mr. Galton's opinions can do anything towards bringing about a better state of public feeling, it is well; but we must confess we see little prospect of his counsels producing more than the most limited result in the present jarring world of mainly unscrupulous and self-regarding units. Among a society where hereditary insanity, hereditary cancer, hereditary scrofula, hereditary drunkenness, and hereditary crime go on placidly reproducing themselves each after his kind, from generation to generation, without even a thought of responsibility incurred—may, more, among a society where merely to suggest the bare notion of such responsibility is regarded as probably wicked and certainly indelicate—what hope is there of such moral and united efforts for the general amelioration of the human race as

Mr. Galton ingeniously suggests? He must pay the usual penalty, we fear, for being so much in advance of the men among whom he lives.

There are two less immediately connected and minor portions of Mr. Galton's work which it would be impossible to pass over entirely in silence. The investigations into the phenomena of visualisation, number-forms, &c., are very curious; and, as so many eminent persons testify to the reality of the phenomena, it is difficult to doubt that there is some truth in them. At the same time, to those introspective people who have never themselves experienced anything in the remotest degree resembling them, they certainly sound, at first hearing, extremely incredible. One's first impulse, indeed, is to believe that hundreds of intelligent and scientifically minded correspondents have entered into a vast conspiracy to deceive Mr. Galton; and, even after one has read oneself out of this primitive incredulity, it is hard to suppose that the "subjects" have not highly coloured their descriptions of their own peculiar faculty. If the phenomena are really genuine, we cannot deny that it is so much the worse for our hopes of raising psychology to the position of a real science; for the existence of such singular diversities of mental faculty between individuals, if proved, would make unification and generalisation in psychological matters even more difficult and more hopeless than ever. The other point is the investigations into the efficacy of prayer. These are narrated with a quaint, scientific naïveté, which is not intended, doubtless, to be ironical, but which is as perfect a specimen of irony, in the pure Greek sense of the word, as we ever remember to have seen. The transparent candour, reverence, and scientific precision of Mr. Galton's reasoning will prove (quite unintentionally) a thousand times more annoying to dogmatism than any other tone that could possibly have been adopted. Abuse the dogmatists can stand, but gentle persuasion and clear logic are really too trying. When Mr. Galton remarks that he has not yet examined into the truth of Father Clarke's statement that "substantial curative effects are often produced by pilgrimages to Lourdes," or notes the absence of any marked answer to the daily prayer "that the nobility may be ended with grace, wisdom, and understanding," or cites the history of English dual houses in opposition to the belief of the Psalmist that the descendants of the righteous shall continue while those of the wicked shall fail, he is only honestly applying the methods with which he is familiar elsewhere to the particular subject under dispute; but it is almost impossible for unscientific readers not to suspect him of intentional satire.

Taking the book as a whole, it is the worthy production of a mind which is keen, acute, and subtle, as well as powerful; and it is one which no psychologist, no evolutionist, and no moralist can afford to leave unread. As to the politicians, they need it more than anybody; but what fraction of a chance is there that they will ever read it? And yet, if the blind lead the blind, what wonder that they both tumble into the ditch?

GRANT ALLEN.

SCIENCE.

Inquiries into Human Faculty and its Development. By Francis Galton. (Macmillan.)

IN this deeply interesting and very valuable work Mr. Galton has gathered together into a single strand the main threads of all his enquiries into human faculties undertaken since the publication of *Hereditary Genius*. To a great extent his present book may be regarded as supplementary to that classical investigation, though its field is considerably wider, and its excursions on either side of the central line of thought are far more devoted than in his earlier contribution to the science of humanity. Many of the papers which go to make it up are already familiar to the readers of contemporary magazine literature; but they are here presented in somewhat fresh



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tions found by him at Stonehenge.—Mr. W. M. F. Petrie read some notes on a collection of plectra of the fifteenth, sixteenth, and seventeenth centuries from the Great Pyramid.—Mr. E. Wilmott exhibited a further collection of rubbings from the brasses in Cobham church, which were commented on by Mr. Waller.—Mr. J. Nightingale exhibited a fine pre-Reformation chalice from Wylye church, and a panel gilt tankard of very good design from Puggestons church, Wilts.—Mr. P. B. Brown sent a watch by Daniel Quare, with a silver "cock," and other watches.

BROWNING SOCIETY.—(Annual Meeting, Friday, July 6.)

THE REV. J. S. JONES in the Chair.—The second annual Report was read and adopted, and the officers for the year elected.—A short paper on "Saul" was read by the Rev. H. C. Beeching, which was mainly an account of the poem.—In the discussion that followed part was taken by the Chairman, Mrs. Sutherland Orr, Miss Hickey, Dr. Berdoe, Mr. Furnival, Mr. Kingsland, and Mr. Gonner.

FINE ART.

GRAND SALE OF PICTURES, at reduced prices (Engravings, Chromes, and Chromaliths), handsomely framed. Every one who purchases pictures should see a sale. Very suitable for wedding and Christmas presents.—550, 552, 554, Strand, near Waterloo-bridge.

The Parthenon. By James Fergusson. (John Murray.)

THIS handsome and well-illustrated volume is really a comprehensive treatise on the various modes of roofing and lighting employed in the temples of the Greeks—a very difficult problem, certainly not dealt with satisfactorily by any of the numerous archaeologists who have hitherto discussed the subject.

The main object of Mr. Fergusson's work—on which he has expended much study both of historical evidence and of the buildings themselves, aided in no small degree by his practical knowledge of architecture—is to combat the old and once universally accepted theory of the "hole-in-the-roof" (hypæthrum) method of lighting the cells, with its statue of the deity to whom the temple was consecrated.

In the first place, Mr. Fergusson denies that any but a very small minority of the temples were hypæthral; and, secondly, that the hypæthrum, when it did exist, was in the cella roof at all. The objections to what may be called the orthodox theory are, first, that rain and snow, during the violent storms not infrequent in Greece, would certainly wet all parts of the cella and beat upon the statue itself—a very serious matter in the case of one made of gold and ivory. That this could have been allowed is extremely improbable, especially as Pausanias (book v., chap. xi.) is careful to describe the various methods by which the ivory was preserved by a careful attention to the exact amount of moisture it required. Thus, at Olympia, the great statue of Zeus by Pheidias was rubbed with oil on account of the damp nature of the surrounding soil; while at Athens the similar statue of Athena, in the dry air of the acropolis, was cleaned with water to keep the ivory in good state. Such refinements as these would surely have been idle had the statues been exposed to the beat of rain.

The second objection is the inartistic effect supposed to be produced by the sun-light

arabaldian or Piedmontese "buzzurro" can intrude; we penetrate into the kitchen parlour of the tannery of Fontebranda, and into the ridd study, of dust and cobwebs, where the five-notary gape of the most characteristic of Bian types) who has slowly bought large and all of the district out of their heirlooms, air hovers, their once princely villa or their bit of heavily taxed field, sits among his pers dealing out loans of a few scudi and orking his way to a place as papal chamberlain or as Italian senator. He shows us, pecially in the longest story of this collection, called "A Vagabond"—which is a wonderful instance of the romantic charm hich can be got out of passionately felt alism—the tragedy, sordid and grotesque, and it not without a sullen dignity, of those poor Italian lives, worn to the bone by national overt, by ignorance, by work amid malaria, y which we people of the North, deluded y laughter in the theatres and strutting and y louting in the streets, insist upon seeing only y cheerful. But there remains a figure, y which I could wish that Sig. Pratesi should ad the moral likeness (the bodily portrait ord only require an Italian Millet), a figure, ightfully typical of a class, which has remained urst into my recollection, of a tall, gaunt old essant of the marsh-land by the Adriatic, dry and hollow-cheeked, like a saint of Polu- uolo, grizzled and wrinkled, and bent by emature old age, standing with feeble knock- g knees and bowed back, the embodiment of er-work and famine, and the dull, savage abeility which accompanies them, staring ceantly at the numbers posted up outside the ittery office of a hamlet near Pesaro: a heap f five or six wretched cottages, without a urch, without a school, but with its office of the lottery all covered with coloured advertise- ments and surmounted by its shield of Savoy, as it was a few years back by its tiara and keys. A figure such as this is missing in Sig. Pratesi's book; but perhaps there are things hich a man who feels the miseries of the poor folk of Italy in so vivid and tragic a manner as not the heart to delineate.

VERNON DEE.

SELECTED FOREIGN BOOKS.

GENERAL LITERATURE.

- ABHANDLUNGEN d. archäologisch-epigraphischen Seminars der Universität Wien. IV. Untersuchungen zur griechischen Künstlergeschichte, v. E. Löwy. Wien: Gerold's Sohn. 4 M. 80 Pf.
BENARD-DEMOISE, L. Types et Travers. Paris: Calmann Lévy. 3 fr. 50 c.
CLARKE, J. Notts: Mœurs au Jour. Paris: Dentu. 3 fr. 50 c.
GURNEATTE, A. de. Carteggio Dantesco del Duca Gastone di Sarmonea. Milan: Hoepli. 3 fr.
JONCKHELT, W. J. A. Geschiedenis der Nederlandse Letterkunde. 3. Deel. Groningen: Wolters. 2 fl. 20 c.
CLAERIE, J. Notts: Mœurs au Jour. Paris: Dentu. 3 fr. 50 c.
ROBERT, F. Afrika als Handelsgebiet. Wien: Gerold's Sohn. 5 M.
SCARFAGNINI, G. A. Dante in Germania. Parte II. Milan: Hoepli. 30 fr.
SCHREIBER, D. F. Mémoires aus dem Földszige in Spanien (1825-54). Hrsz. v. P. v. Cybalaka. Posen: Helma. 4 M.
MONUMENTA graphica medii ævi ex archivis et bibliothecis imperii austriaci collecta. Die Texte der Schriftstücke hirsz. v. Th. Sickel. 30. Lfg. Wien: Gerold's Sohn. 30 M.
SPREN, E. v. Göttilin u. die Partekämpfe in Rom der J. 60-63. Darmst.: Karov. 3 M. 60 Pf.
PUFFER, F. Jan Steinhove. Adriaan. 3 fl. 75 c.

HISTORY, ETC.

- BÉRENGER-FÉRAUD, L. J. B. La Race provençale. Paris: Didier. 8 fr.
BERGOLINI, F. Saggi critici di Storia italiana. Milan: Hoepli. 4 fr.
BLOK, W. J. Eenige hollandsche Stad in de middeleeuwen. The Hague: Nijhoff. 2 fl. 25 c.
BRONCKORST, S. v. Mémoires aus dem Földszige in Spanien (1825-54). Hrsz. v. P. v. Cybalaka. Posen: Helma. 4 M.
MONUMENTA graphica medii ævi ex archivis et bibliothecis imperii austriaci collecta. Die Texte der Schriftstücke hirsz. v. Th. Sickel. 30. Lfg. Wien: Gerold's Sohn. 30 M.
SPREN, E. v. Göttilin u. die Partekämpfe in Rom der J. 60-63. Darmst.: Karov. 3 M. 60 Pf.
PUFFER, F. Jan Steinhove. Adriaan. 3 fl. 75 c.

PHYSICAL SCIENCE AND PHILOSOPHY.

- BISCHOP, A. H. Planten van Nederlandch-Indië. Amsterdam: de Ruys. 10 fl.
BROCA, P. Mémoires d'Anthropologie. T. IV. Paris: Reinwald. 10 fr.
CASPARI, H. Beiträge zur Kenntnis d. Hautgewebes der Octodon. Halle: Teusch. 1 M.
KLIFFSTEIN, A. v. Beiträge zur geologischen u. topographischen Kenntnis der östlichen Alpen. 2. Bd. 2. Abth. Gessen: Ricker. 3 M.
LEYDER, F. Untersuchungen zur Anatomie u. Histologie der Thiere. Bonn: Strauss. 20 M.
LIEBOW, O. Theorie der Bewegung d. Grundwassers in den Alluvionen der Flussgebiete. Stuttgart: Neff. 2 M.
MILLER-HAUENFELD, A. R. v. Theoretische Meteorologie. Wien: Spitzhagen. 1 M.
SCHREIBER, A. Das Eis u. seine Betrachtung. Breslau: Korn. 14 M.
TORBER, A. Die elektrischen Uhren u. die elektrische Fernschreibung. Wien: Hartleben. 2 M.
VALLOT, J. Recherches physico-chimiques sur la Terre végétale et ses Rapports avec la Distribution géographique des Plantes. Paris: Lechevalier. 4 fr.
WANNA, v. FRIESE, H. Ritter. Flora ptinacina s. Coburg. Die botanische Aembeit v. d. d. Reich der Prisen v. Sachsen-Coburg-Gotha. 1. Th. Wien: Gerold's Sohn. 60 M.
ZINCKEL, O. P. Die geologischen Horizonte der fossilen Kohlen. Leipzig: Seuf. 3 M.

PHILOLOGY, ETC.

- ERACIUS. Deutsches Gedicht d. 18. Jahrh. Hrsz. v. H. Graf. Strassburg: Trübner. 2 M.
LEVY, J. Neuhelbisches u. ebraisches Wörterbuch des. die Talmudim u. Midraschim. 16. Lfg. Leipzig: Brockhaus. 19 M.
MARTENS, J. L. Concordantie op den Kona. Batavia: Bruiding. 2 M.
NAGTEWEL, E. De Juvenalis vita observationes. Dorpat: Karov. 1 M.
THERIEN, L. v. Pergamische Inschriften. Würzburg: Stahel. 80 Pf.
WEISS, P. De Rachisium Plantinae retractione quae ferat. Berlin: Mayer & Müller. 1 M. 20 Pf.

CORRESPONDENCE.

A CAXTON FRAGMENT.

Oxford: July 7, 1883.

College libraries still afford a field for bibliographical research, in spite of the generations of students who as fellows or scholars have lived in close proximity to them. The MSS., indeed, in Oxford colleges have been fully catalogued by the late Mr. Oxze, who was not likely to pass over anything valuable; but only Merton, Balliol, and Magdalen, and (to a small extent) Oriol and Worcester, have issued catalogues of their printed books. With regard to the rest, we may reasonably hope for discoveries in the future; at Queen's, for instance, there is a copy of an undescribed edition of the "A B C," the few known issues of which are fully treated by Mr. Bradshaw in the third volume of the Communications of the Cambridge Antiquarian Society. But the present letter will be confined to one or two results of a cursory search among the bindings of the printed books of Merton College.

Of the Directorium Sacrodotium or Prædicatorium Sarum three issues by Caxton are known to exist. Of the first version, printed before 1480, a unique fragment of sixteen pages is in the British Museum. Of the first edition of the second version (1487?) there is a unique copy, also in the British Museum; of the second edition of this second version (1489?) there is again but one perfect copy known, which is to be found among Bagford's fragments in Harleian MS. 5019. It is of this last issue that another fragment was found at Merton on July 1. In 1844 Dr. Hobbhouse, lately Bishop of Nelson, discovered parts of eight leaves in the binding of a book in that library which, although taken out at the time, bound separately, and catalogued, seem to have escaped even the sharp eyes of Mr. Blades. These eight leaves are numbered v 2, v 3, v 4, v 5, v 6, v 7, v 8, and v 9, and have all lost a line or two at the foot of the page and (with the exception of v 5, v 6, and v 7) also a piece of the outer edge of the text.

not forestalled my identification of the Trisanton with the Trent, which, so far as I know, is entirely novel. Mr. H. Neville's statement (ACADEMY, May 26) that the Arun appears in old maps as the Tarant is decisive with regard to the identity of Ptolemy's Trisanton; and my own suggestion of the Sussex Ouse must therefore be withdrawn. The name of Trisanton, or Trisanton, appears to have belonged to no fewer than six British rivers. In addition to those which have already been mentioned, the Midland Trent, the Sussex Tarant, and the Montgomeryshire Taranson, there are the Tarrant and the Trent in Dorset, and the Hampshire Test. The last-mentioned name (Testa in the Cod. Dab.) differs from the rest in having been corrupted from an earlier form of the British name. This may be explained by the fact that the territory traversed by the lower waters of this river belongs to the very oldest of the Saxon conquests. In support of the identity of the names of Testa and Trisanton, it may be remarked that the maps

which—whether we assign an earlier or later date to the Apocalypse—St. John was confessedly writing, supplied the groundwork of his imagery, and offered, as with the writings of the Hebrew prophets, a first fulfilment of his vision, regard such a supposed accomplishment as inadequate to satisfy the deep and wide interest which these mysterious books—recent not unreasonably being thus given over as repetitions, and treat the whole work with less consideration than it deserves? We sincerely regret that the results of so much conscientious labour, such wide and various reading, and such accurate scholarship, set forth with so much brilliancy of language and richness of illustration, should be thus discredited by self-confident dogmatism. If Dr. Farrar wishes his books to take a lasting place in theological literature, he must adopt greater calmness of tone and modesty of assertion.

Inquiries into the Human Faculty and its Development.
By FRANCIS GALTON, F.R.S., Author of "Hereditary Genius." London: Macmillan and Co.

The writer of these "Inquiries" has been long and favourably known for many researches and observations, principally of a statistical character, bearing upon evolution. The many, and as regards subject-matter widely separated, essays forming the present volume, which, the author says, is "suggestive" rather than "encyclopedic," have been brought together in the hope that they will further our knowledge of evolution. The author desires to consider whether it is not our duty to endeavour to supplant inefficient human stock by better strains, "by such efforts as may be reasonable, thus exerting ourselves to further the ends of evolution more rapidly and with less distress than if events were left to their own course." This mighty desideratum is considered in various aspects, and a number of very curious and interesting questions bearing more or less directly upon its elucidation are brought under the reader's notice. Mr. Galton has advanced a number of ingenious speculations concerning some very abstract and complex problems; and if he has not exhausted any of the numerous inquiries he has ventured to essay, he has unquestionably propounded some very curious hypotheses, and indulged himself and his readers with some amusing, though perhaps not very practical, suggestions.

His fondness for statistical inquiry has naturally led him to contemplate philosophical questions from the statistical point of view, and he endeavours to discover a "type" or an "average" in realms of inquiry which scarcely lend themselves to such a mode of research. A general peculiarity is supposed to underlie multitudes of individual differences, and distinctions of race, class, and family are shown to be related by a common characteristic which he terms "composite portraits." By the process of "composite portraits," he is enabled to obtain from a number of photographic portraits a single picture which shall contain that which is common to all the faces he depicts. In this way he obtains what he considers to be a typical or ideal average picture. By taking groups of persons made up of a number of individuals having common characteristics, the typical picture which is obtained is not like any one in particular, and contains, nevertheless, a certain general resemblance to them all. The details of the method by which the composite portraits were obtained are fully explained in a paper given in the Appendix, but the general plan followed was to arrange all the photographs to be combined in proper position, and then to photograph each in succession on the same plate, giving to each one the same fractional exposure. If there were ten portraits, and the full time of exposure required to get a good picture was twenty seconds, each of the ten pictures would have an exposure of two seconds. The compound face that depicted, the author tells us, has "an ideal composition." Mr. Galton gives on the frontispiece of his book a collection of fourteen actual composite photographs, several of which are very striking. One is a composite face obtained from twelve officers and eleven privates of the Royal Engineers, and certainly the face thus obtained does exhibit a type characteristic of the soldier. It need scarcely be said that it contrasts very remarkably with the composite picture of the criminals, and of persons suffering from disease depicted in the same page; nor does it appear that, as might be supposed by the uninitiated, one dominant face has overpowered the rest. There is also a composite picture of a million Alexander the Greats, consisting of the images of six different medals. The composite portraits of consumptive patients are very characteristic.

There are many curious remarks on the subject of sensitiveness, which will interest the readers of Mr. Galton's pages. The beginning of Quakers is accounted for upon the supposition that a number of colour-blind people took to drab raiment. As their evolution gradually proceeded, those people acquired an actual dislike to colours, and, of course, took no interest in art of any kind. By intermarriage the number of colour and art loving people increased, while the intensity of their views became more and more marked. Of late years it has been discovered that evolution could not be successfully furthered by colour-blind people, and hence the Quaker body has gradually deteriorated in power, and has lost its consequence. It is thought that, beaten in the struggle for existence, it will soon cease to be—a distinguishing peculiarity becoming merged in the more dominant characteristics of greater advantage in the battle of life. The sensitiveness of Elicia is low, and then take pleasure in being operated upon, and in hurting themselves. The sense of taste in men is more acute than it is in women; hence they are the better judges of flavours, even of tea. Men are more straightforward than women, and therefore cling more persistently to the object of their choice; but we think that Mr. Galton's experience in this particular is very exceptional, or his range of observation must have been too limited to have enabled him to form a correct conclusion. We should have said the truth was the other way.

Under the head of "Character" Mr. Francis Galton offers some remarks not very favourable to the female sex:—

"The wily-nilly disposition of the female in matters of love is as apparent in the butterfly as in man, and must have been continuously favoured from the earliest stages of animal evolution down to the present time. . . . Coyness and caprice have become a heritage of the sex, together with a cohort of allied weaknesses and petty deceptions, that men have come to think venial and even amiable in women, but which they would not tolerate among themselves." Mr. Galton's conclusions appear to be arrived at from statistical investigation, which it is suggested should be more fully carried out by schoolmasters who have exceptional advantages, and who may look upon the children under their care as "the fauna and flora of Elicia's undescribed species in an entirely new land." Whether parents will agree in this view concerning the duties of those to whom the rearing of their children is committed may be open to doubt. Mental power and the capability of observing what goes on in his own mind and in external nature seems to be man what bees and other parasites are to dogs, birds, and savages. Mr. Galton finds that pets that are kept clean suffer from terrible rashes, for, in consequence of there being no cutaneous irritation, the creatures are evidently bored,

and they have not even the amusement or occupation derived from the operation of scratching themselves.

Mr. Galton is, however, convinced that the race is improving, and that evolution is really being furthered in a sort of a way, but not systematically and steadily and as a religious duty. Tall people among the well fed and well educated are more numerous than they were, and the development, both of body and mind, is advancing; but there is room for difference of opinion as to the question whether this is due to the tactics of philosophers trained in the method of furthering evolution or to statesmen and lovers of mankind guided by humbler and less ambitious considerations. The many philosophical suggestions made for improving the human race from the time of Plato to our own day have, as even Mr. Galton must admit, proved futile, because they have left out of account the most important factor of all, the influence of human will, of taste, of passion, of prejudice, of caprice. Human nature is often interfered with alliances that would be deemed by philosophers highly advantageous to the interests of the future of humanity, and certain to further the ends of evolution.

The application of human experience to the explanation of brute facts is put forth with no less confidence than advised, "an incapacity of relying on oneself and a faith in others are," according to our author, "probably the conditions that compel brutes to congregate and live in herds." These opinions compressed in the words which we have printed in italics as applied to brutes do not appear to have presented themselves to the author's mind. Is it only gregarious brute animals which "possess a want" of self-reliance from which slavish aptitudes have gradually become evolved? Mr. Galton seems to forget that gregarious instincts and slavish aptitudes, which he so much condemns, which are the result of physical barbarism, are as apparent in those who, like himself, construct a more accurate and a demonstrated truth, and a faithful speculation into a justified belief as in those who are "willing slaves to tradition, authority, and custom," say, there is no more difficulty in discovering tyrants and willing slaves among the scientific than among any other sections of modern workers and thinkers. That sort of argument of which we have lately had so many striking examples in disquisitions which assume to be philosophical, and which has the inestimable advantage of being employed in support of opposite and conflicting views, is here constantly made use of in the most innocent manner. For example, the advantages and disadvantages as regards preponderance and power of large numbers and of small numbers are fully set forth. A small tribe is sure to be slaughtered or enslaved; a large one falls to pieces through its own "unwieldiness." It must be "either deficient in centralization or straitened in food or both." "Self-reliant individuals" are required; but neither too few nor too many. The importance of gregarious instincts in savage life is fully set forth; but they are not equally important to "all forms of savage life." Natural selection tends to give one leader, "and to repress superabundant leaders." As we have been taught before, this wonderful law of natural selection creates and destroys, reduces and enlarges, raises and represses, originates and annihilates.

The author's remarks on the "Possibilities of Theocratic Intervention" and on what he calls the "Objective Efficacy of Prayer" will disappoint thoughtful readers. Many of the comparisons he makes to explain his views are ill-chosen and implausible, and much of what is said to do duty for argument is only a string of words arranged in argument form.

The following extracts will illustrate the way in which Mr. Galton discusses the question of the objective efficacy of prayer:—

"We simply look to the main issue—Do six persons who pray, or are prayed for, recover on the average more rapidly than others?" I have discovered hardly any instance in which a medical man of repute has attributed recovery to the influence of prayer. The universal habit of the scientific world to ignore the power of prayer is a very important fact."

Is this a fact at all? What evidence has Mr. Galton to bring forward in support of this outrageous assertion concerning the scientific world?

Were the founders of dual families, asks Mr. Galton, "the eminently devout children of eminently pious parents?" The author informs his readers that the progenitors of at least four of the existing dual houses were not "raised into existence" on account of devout habits, and then proceeds to show that they were enabled solely on account of their descent from Charles II. and four of his mistresses. "The founders of our great families too often owed their advancement to tricky and time-serving courtiership." Devout men are bad business men, and "praying people are not practical." Pious enterprises are not attended with immunity from danger and insurance premiums are not reduced in favour of the pious. If prayerful habits had any influence on temporal success the fact would have been discovered by insurance offices. "Does he habitually use family prayers and private devotions?" would be one of the questions put to persons about to insure. Accidents "befall churches equally with other buildings of the same class."

"Hence the prayers of the clergy for protection against the perils and dangers of the night, for security during the day, and for recovery from sickness, appear to be futile in result. The distribution of still births appears unaffected by piety. The solubility, probably from the want of wholesome restraint, felt in the lumbering walks of life, and very religious people of all denominations, probably in part from their meditations on the terrors of hell, are peculiarly subject to it" (insanity).

"All belief in the efficacy of prayer," Mr. Galton prophesies, "will be given up." The above extracts speak for themselves, and only too clearly show not only that the author of this work has proved to his own satisfaction that prayer is useless and piety a vain conceit, but that he is either not acquainted with the very elements of the prayer controversy, or that for some reason he has omitted all reference to them. If the objections urged by Mr. Galton had any real force, this matter, so disturbing to the mind of pure physicists, would have been settled long ago.

The author is careful to point out what he considers "the large effects of religious persecution in comparatively recent years" on the natural character of races, "a theme upon which he has already enlarged in his 'Hereditary Genius.'" A nation, he informs us, ought not to be held together by purely gregarious instincts, "a mob of slaves, clinging to one another through fear." It should consist of "vigorous self-reliant men, united to one another by innumerable ties" and, as he ought to have added, well versed in the new doctrines of evolution and determined to destroy their weaker brethren in obedience to the great law of the survival of the fittest in the struggle for existence. Instead of wasting his time upon the records of the past and preparing for a future state, the new animal man is to "awake to a fuller knowledge of his relatively great position, and begin to assume a deliberate part in furthering the great work of evolution." It is his "religious duty," says Mr. Galton, to do this "deliberately and systematically." This is the practical outcome of the new philosophy for the new animal—the only religious duty he has to fulfil in the new Cosmos.

We have endeavoured to discover in this work the leading ideas which the author desires to bring under the notice of his readers. His programme is sufficiently ambitious; but with every desire to give credit for the ingenuity and patience displayed by the author, we cannot say that he has even stated his case with that precision which we are entitled to look for from a statistical observer and a mathematician. The proposal to reconsider the true place and function of man in the order of the world is of surpassing interest to us all; but in the fragmentary and incomplete form in which the matter is here considered little is gained in the way of speculation, and nothing added in the shape of solid knowledge or discovery.

Whether we look at the matter from the purely speculative or from the practical side, we seem to gain little that the mind can lay hold of. To influence the future of humanity has been the desire and the effort of the best men who have lived before and since the time of Socrates, and it strikes us as almost ridiculous in a living author to put this forward as a new aim or one in any special way flowing from or suggested by the results of modern research and thought. Every father capable of reflection has not only hoped, but has tried to do so. The suggestion that it is only recently that men have thought of acting for the benefit of their successors is almost an insult to the intelligence and to the virtue of our forefathers. To say that it is our duty to influence the future of humanity and to further the evolution of a higher humanity is only another way of saying that we should obey the instinct which teaches us to care for those that come after us.

When Mr. Galton passes from the speculative to the practical region, we find much not only in question, but to condemn. Who is to decide whether a man's issue is not likely to be well fitted "to play their part as citizens?" Do not weak men have strong children, stupid ones wise, wicked good?—while, on the other hand, do we not find the weak emanating from the strong, and bad from good? The practical inferences which are the outcome of all this odd and very imperfectly worked out speculation are as much opposed to philosophy as they are to common sense and good feeling. Neither are they new. Celliway, it need scarcely be said, has been enjoined often enough where it would undoubtedly be right, and it has not been left to modern philosophers to discover this mode of benefiting humanity in the future; but as regards the manner in which this end is to be gained Mr. Galton says not a word. Would he propose laws to regulate men's conduct in this respect? If so, who is to administer them, and who is to decide and enforce the penalty of disobedience? Fancy a jury of evolutionists, or an evolutionary dictator, with the power of deciding once and for all when and upon whom Celliway was to be enforced! If Mr. Galton has thought over this question we should like to have his suggestions concerning the constitution of the court that is to have the power of furthering evolution and influencing the future of humanity upon the principles suggested by him, and hinted at often enough by a number of fanciful speculators, who, claiming after the philosophic depths, and just touching the surface with the very tips of their wings, straightway consider themselves entitled to pose as the regenerators of mankind.

"Our part in the universe may possibly in some distant way be outcome of that of the cells in an organized body, and our personalities may be the transient but essential elements of an immortal and cosmic mind."

If any intelligent person sets to work to analyze this sentence, what will he make of it? Our part in the world may be analogous to that of a cell, say, of a leaf or other organ or texture. Our "personalities" may be the essential "elements" of what in fact is not personal. The individual may be individual, only a part of the universal. The divisible may be indivisible. In fact, experiment, observation, mathematics, statistics, and all the armoury of exact science lead us to the everlasting sea of the imagination and the fancy. The author cannot even refrain from trespassing upon the territory of those with whom he is at issue, a territory which for him is not matter, which cannot be seen, or touched, or measured, or weighed—and so cannot be proved (by his methods of proof) to exist. We are henceforth to apply ourselves to elicit the "religious significance" of the doctrine of evolution; whether if we substitute for religious anti-religious, Mr. Galton would be able to demonstrate any difference in the meaning conveyed by the words he uses we take leave to doubt.



MR. FRANCIS GALTON has a teeming brain, and the various memoirs and essays which he has recently collected and arranged under the title of "Inquiries into Human Faculty and its Development," beyond their general interest, are full of hints and suggestions for the schoolmaster.



Oct. 1, '83.]

JOURNAL OF EDUCATION.

One of these hints we hope will be generally adopted. Each school should possess a register of its pupils, containing a brief summary of family antecedents, measurements of growth, illnesses, and physical peculiarities, and a series of photographs taken at stated intervals. Schools offer exceptional facilities for such methodical records, and their *laches* in this respect seems to Mr. Galton a cruel waste of opportunity. The scheme has been partially carried out at Marlborough, and we would suggest to Mr. Galton that he should draw up and circulate among schools a form of anthropometric register, giving the heads of information that he and his fellow-workers desiderate.

THE most original, but to our minds the least satisfactory, chapter in the book is that on twins. It occurred to Mr. Galton that the life-history of twins would afford a certain criterium by which to estimate the relative shares of heredity and education (of Nature and Nurture, as the author happily terms it) in framing the character and intellect. His induction is two-fold. First he takes the case of two twins who closely resembled each other in childhood, and inquires whether dissimilar surroundings in after-life have produced dissimilar characters. Next he takes the case of unlike twins (we would suggest the term "doublets"), whose nurture and surroundings have been as nearly as possible identical, to find out whether the same education tends to obliterate the original difference. The conclusion at which he arrives (we wish we could discuss the steps) is that education is almost powerless to diminish natural difference of character. It seems to us that a far larger number of instances and far more carefully sifted evidence are required to establish so sweeping a proposition. Educators are too apt to magnify their office, but the most thorough-going of determinists has never so absolutely vilified it, and the Civil Service Commissioners are not likely to adopt Mr. Galton's corollary and assign marks in competitive examinations for family merit. The physicist has not yet absorbed the schoolmaster. Let each stick to his own province and render mutual help.

his eagerness to make an impression, forgets his former plea, and states that to make a good show of punctual-attendance pupils is the surest way to promotion. The Board, by its craze for results, has placed a direct premium on dishonesty. We are no worshippers of "results," and it may be as the writer states, but if so,

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JOURNAL

in very general use, in which the nature of acceleration is inaccurately described:—

"If a body weighing w pounds lie on a platform which is descending with an acceleration of n feet per second, find the pressure on the platform."

Of course, it is evident here, that if the velocity of the descending platform is increased by n feet per second, the increase taking place in a month, the pressure of the weight on it will be very different from its value if the increase takes place in the $\frac{1}{10000}$ th part of a second—a distinction which is ignored in the question, and which the beginner is not likely to evolve for himself.

"Find the tension of a rope which draws a carriage of w tons weight up a smooth incline of 1 in n , and causes an increase of velocity of m feet per second."

There is the same omission here as in the previous question, and the looseness of language employed in these and similar questions is very likely to lead to erroneous ideas in the mind of the beginner.

I believe it to be important that the student should be taught to distinguish velocity from acceleration, and I think it unfortunate that scientific men have not adopted a standard term to signify a *unit velocity*, and another to signify *unit acceleration*; the only suggestion in this reference that I have met with is one by Professor Lodge who, in his *Elementary Mechanics*, proposes to call the unit velocity "a speed" and the unit acceleration "a hurry." Were some such system agreed upon, I am sure that a great deal of the loose language ordinarily employed, and many erroneous ideas prevalent, would be done away with.

Recently electricians have met in congress, and decided on the adoption of very precise definitions of the magnitudes with which the science of Electricity deals. The result is, that even a practical electrician, with very little theoretical knowledge, will at once see how absurd it is to speak of a quantity of electricity as so many amperes, or the power of a current as so many ergs or kilogramme-mètres, instead of so many watts.

Why should not the C. G. S. system be completed by the addition of terms for the *unit velocity*, the *unit acceleration*, and the *unit momentum*?

If these were separately named, the student would not be so prone to confound them as he is at present; and the experience of high-class electricians, as related to me in conversation, goes to show the great practical advantage of a systematic nomenclature and the ease with which it could be introduced if a few people zealously set themselves to work with such an object.

After the kinematical conceptions of velocity and acceleration, we come to that of *Mass*, or quantity of matter. On one supposition, the mass of a body and the equality of the masses of two different bodies would present no difficulty to the mind of even the mere beginner. Granted that in the ultimate conceivable analysis of all apparently different kinds of matter—wood, clay, platinum, feathers, &c.—we should meet with atoms all absolutely alike in every respect, except that they occupy different points in space, then the mass of any body might be defined as *the number of these atoms contained in it*. Moreover, it would be clear that by a mere rearrangement of the atoms in a feather, a piece of platinum could be produced. We know that some recent speculations and experiments (founded, I believe, on Spectrum Analysis) have aimed at proving the identity of the substratum in all matter.

If, then, this ultimate identity exists, no difficulty can be felt in

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J. Macmillan & Co.
Publishers.
25 & 26, BEDFORD STREET, COVENT GARDEN, W.C.
LONDON, June 1, 1883
J. Colman June 2

Literature.

DEPARTMENT FROM FORTY-FIVE AND ON
 Introduction by F. G. Colman, F.R.S.
 London: Macmillan & Co.

There are two volumes in Mr. Colman's series, and the first is "The History of the English Language," which is a history of the language from its origin to the present time. The second volume is "The History of the English Literature," which is a history of the literature from its origin to the present time. The first volume is a history of the language, and the second is a history of the literature. The first volume is a history of the language, and the second is a history of the literature.

Questions which are addressed. In Mr. Colman's Introduction to the first volume, he discusses the history of the English language, and the history of the English literature. He discusses the history of the English language, and the history of the English literature. He discusses the history of the English language, and the history of the English literature.

The reader is struck with the indefatigable and laborious research in which the author has engaged. He has searched in no ordinary way, but he has searched in a way which is not only thorough, but also original. He has searched in a way which is not only thorough, but also original. He has searched in a way which is not only thorough, but also original.

That of the most curious coincidences that I have ever known is, that the author of the first volume is the same person as the author of the second volume. This is a very curious coincidence, and it is one which is not only curious, but also interesting. It is one which is not only curious, but also interesting.

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MISCELLANEOUS
The following advertisements were provided for the
for insertion under their proper headings.

WEEKLY MARKET

| Item | Price | Item | Price |
|----------|-------|----------|-------|
| Wheat | 1.10 | Corn | .75 |
| Oats | .60 | Rye | .80 |
| Barley | .70 | Flour | 1.20 |
| Beans | .90 | Peas | .85 |
| Lentils | .80 | Butter | 1.50 |
| Milk | .15 | Eggs | .12 |
| Chickens | 1.00 | Ducks | .80 |
| Geese | .90 | Pigs | .60 |
| Stocks | 1.20 | Iron | .80 |
| Copper | .90 | Lead | .70 |
| Zinc | .80 | Gold | 1.80 |
| Silver | .15 | Platinum | 1.50 |

MARKET REPORT
The following are the prices of the various commodities as reported by the market makers.

Board, Tolson, & Co., Inc.
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Board, Tolson, & Co., Inc.
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GALTON'S INQUIRY INTO MORAL FACULTY

MR. GALTON'S new book was originally, as he says, a series of papers and essays. He has revised, condensed, and written and rearranged them but they remain practically as he composed, and they are very interesting reading. The least philosophical part, they take up the first half, and it is certain that with but few exceptions, and a few more, they are all of a high order of interest and value, and most persons will derive from Mr. Galton's volume something that will give them a new view of every man, however commonplace he may seem, that are well worth the pains of character and temperament. These inquiries into the nature and origin of human nature Mr. Galton has explained. His

As a series of papers, they are well illustrated by Francis Galton, F.R.S. London: Macmillan & Co. 1883.

Day Review.

[May 26, 1883.]

It is, as it is described in these papers, most of all original direction. He writes about the biological theories and views the natural history of human beings, like the First Principles of Darwin, with a whole of his own invention. The least philosophical part, they take up the first half, and it is certain that with but few exceptions, and a few more, they are all of a high order of interest and value, and most persons will derive from Mr. Galton's volume something that will give them a new view of every man, however commonplace he may seem, that are well worth the pains of character and temperament. These inquiries into the nature and origin of human nature Mr. Galton has explained. His

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Through this in the author's general aim, his book is more interesting in content than any other that has appeared in the English language. It is an excellent paper, and the author's aim is to give a new view of every man, however commonplace he may seem, that are well worth the pains of character and temperament. These inquiries into the nature and origin of human nature Mr. Galton has explained. His

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THE ST. JAMES'S GAZETTE.

SATURDAY, MAY 12, 1883.

THE DEVELOPMENT OF HUMAN FACULTY.*

Of all the inquiries suggested by the doctrine of evolution, none can be so interesting, of course, as that which relates to the development of man. By this time the chief results have become matters of popular knowledge. The hairy animal, with his pointed ears, his tail, and his formidable teeth, is now familiar to every schoolboy as the progenitor of mankind. Some adventurous genealogists push their researches yet further, and find the patriarch of the human race, we believe, in a little hairy worm that lived in a tidal estuary. But, gratifying as this knowledge is, there remains not only the task of filling up links in the past, but also that of searching into the future. The process of evolution is still going on; and when the philosopher has answered the question, "Whence?" he finds himself forthwith confronted with the problem, "Whither?" Even on this more difficult subject of research the men of science are not without an answer. They tell us that after long ages a time will come when all life on this globe will be exhausted; and when the earth will revolve in darkness round a contracted and chilly sun. But long before that happens considerable changes will take place in our physical conditions. The moon is drawing nearer and nearer to the earth; and the consequent force of the tides will have other effects besides making sea-bathing dangerous. But, after all, the philosophers can give us only broad indications of the state of the world in those far-off days; and thus, though it is safe to predict that of living things only the fittest will survive, our ignorance of what will then be the conditions of life prevents us from pronouncing which species will linger longest in the world. It is impossible to avoid the apprehension that man, despite his intelligence and adaptability, will find it hard to maintain the struggle for existence with some of the creatures he now despises; and it may be that the last living thing that will freeze under the dim inclement sky will be a man. Nevertheless, the time during which man will continue to exist promises to be long enough to afford matter for endless speculation as to what line the improvement of the species may take, and the modes in which we can best help it on. This is the subject on which Mr. Galton gives us his views in the interesting book before us.

In more than one passage the late Mr. Mill expressed his opinion that of all the ways in which the different levels attained by various peoples can be explained the most shallow is to account for them by difference of race. Mr. Galton comes to an opposite conclusion. In a nearly valuable essay on the domestication of animals he shows that nearly every wild creature has had its chance of being domesticated, and that only a few have possessed the requisite qualities. Either they dislike human-kind, like the lion; or they prefer freedom to comfort, like the African elephant; or they are useless to man, like the seal; or they gradually cease to breed in captivity, like the North American

* "Inquiries into Human Faculty and its Development." By Francis Galton, F.R.S. (London: Macmillan and Co., 1869.)

turkey; or they fall in some other particular, and thus remain destined to live their wild life as long as their race continues. Mr. Galton draws the inference that "slight differences in natural dispositions of human races may in one case lead inevitably to some particular career, and in another case may make that career an impossibility." A further argument for the predominance of nature over nurture is supplied by the history of twins. The similarity of twins has been a frequent subject of novels and plays ever since the time of the Greek comedians; and Mr. Galton has collected a number of instances in which this resemblance actually existed in a most startling degree. Not in the similarity in such cases confined to personal appearance, bodily growth, and the like; it extends to character, and even to the association of ideas. Mr. Galton tells a curious anecdote, as he justly styles it, concerning one pair of twins: that one of them, being in Scotland, bought a set of champagne-glasses as a surprise for his brother; while at the same time his brother, being in England, bought a set of precisely the same pattern as a surprise for the first. When nature produces this similarity, difference of external circumstances appears to have little effect upon it. Conversely, when twins are naturally unlike in character, tastes, and aptitudes, the diversity endures although the twins are subjected to exactly the same training, and even when the causes conducive to assimilation begin to act from the earliest moment of existence and continue until the period of adult life. There is, then, in Mr. Galton's opinion, "no escape from the conclusion that nature prevails enormously over nurture when the differences of nurture do not exceed what is commonly to be found among persons of the same rank of society and in the same country."

From these considerations it follows that, while the evolutionist will have every respect for school boards and all the machinery of education, he will hold that something more than the study of the humane arts is requisite for the highest development of mankind. The teachings which leave enduring marks are those that conform to the natural aptitudes of the child. Thus the true aim must be to produce the best natural aptitudes; and this can only be effected by the cultivation of race. Some important institutions have had an influence in an opposite direction. During the Middle Ages learning was practically confined to the clergy, and priests were forbidden to marry. So, too, it is only within the last few years that celibacy has ceased to be imposed on Fellows of colleges—a system as unreasonable as if "the winning horses at races were rendered incapable to become sires." Mr. Galton has been informed (with perfect accuracy) that since the abolition of this restriction many marriages have ensued; and he has "no doubt that the number of Englishmen naturally endowed with high scholastic faculties will be sensibly increased in future generations." A wiser application of endowments has been that practised in some places in France—namely, to supply a marriage portion for the *écuyer* of the village. The system of competitive examinations offers an opportunity of indirectly attaining a similar object. Those trials are most likely to be perpetuated in which early marriages are the practice. Accordingly, to encourage early marriages among persons of good race, Mr. Galton proposes that in examinations for public offices a certain number of marks should always be given for family merit. Every candidate who could show that his relations were numerous, long-lived, and thriving, would in this way have an advantage over persons coming of a weakly and unpropitious stock. As the benefits of the system become apparent, it may be reduced to greater precision. Family histories may be kept, describing every member of the family, stating his tastes and aptitudes, recording his infirmities and various illnesses, and registering his bodily growth and the gradual increase of the circumference of his head. Mr. Galton does not propose that these compilations should be published; but it is clear that, to produce their full benefit, they ought at least to be kept at Somerset House for reference. At present when a gentleman is summoned to be judged he exhibits a surprising alacrity in making known that his sisters, his cousins, and his aunts have all been afflicted with homicidal insanity. Unfortunately, during courtship statistics of this kind are too often neglected; and it is only by the establishment of such an office as we suggest that the student of "eugenics" will be enabled to marry in a really scientific manner. In the meantime he is not absolutely without resources. Mr. Galton has made the very curious and interesting discovery that by photographing on the same plate a number of different persons, a composite photograph can be produced in which concerning features are accentuated, while points of difference practically disappear. In this manner generic types may be obtained of different classes of people. One illustration, for example, exhibits a typical portrait of violent criminals, composed from eight individuals, and another of consumptive women, composed from thirty individuals. If this method is carried out, Mr. Galton thinks it will be possible, even in the absence of a family history, by carefully scanning a person's features, to pronounce to what type of character and constitution that person belongs.

We do not propose to follow Mr. Galton's inquiries into the efficacy of prayer, nor his eloquently illustrated essay on fantastic associations of ideas with numbers, dates, and the like. That a gentleman should conceive a series of numerals as something like the scales of a piano, or that a lady should picture to herself the months of the year as a row of mountain-peaks, may be, as Mr. Galton assumes us, quite a common phenomenon and perfectly consistent with sanity. But while Mr. Galton's labours have not always been wisely directed, and though he has been a little too much in a hurry to apply his statistical treatment where it is not altogether suitable, we gladly acknowledge the merits of his very remarkable book. Whatever judgment the reader may form as to the conclusions arrived at, he will admit that these pages contain a large variety of curious and suggestive facts; and, even where he fails to be instructed, he will for the most part be stimulated and amused.

there was nothing to be said. But Mr. Laing urges that the data on which Mr. Chamberlain's statements were based were not obtainable by himself without considerable delay. Every one must wish the Board of Trade success in its efforts to protect the lives of sailors against the terrible incidents of their trade; but no useful end is to be gained by reckless and exaggerated imputations.

subscribed in three days to carry out the project, which they intended to execute without asking any help from the State. The Russian Exhibition will certainly suffer if the Milanese persist in their idea. Milan is an industrial town with large resources of its own; while Rome is really a large hotel, entirely dependent on the strangers who flock to visit the city.

Some of the gangs of desperadoes who infest various regions in the West spread more terror than Apaches on the war-path. A singular fact about these Western outlaws is that their bands are often composed of whole families. The Younger brothers, the Jasons brothers, the Shepherds brothers, the Miller brothers, have in turn made their names notorious throughout the West. A most unpleasant band of brothers named Barlow are at present keeping the villages of Kansas in an almost continual state of excitement; and the inhabitants are everywhere arming themselves for self-protection, as the Barlows are liable to turn up at any moment. Their latest exploit has created widespread alarm. On the evening of the 19th of April they went to the store of the postmaster at Newmansville, Kansas, and demanded liquor. On being refused they robbed the store, robbed the sale, and murdered the postmaster's wife. They then departed, after "showing free" at those who were attracted to the spot by the disturbance. Sheriff Blair, with a posse of police, started at once in pursuit of them; but slight hopes were entertained of their capture. The Barlow brothers are said to be tenderly attached to each other, and are the sole support of an aged mother, whose anxiety respecting her boys never allows her, she says, a moment's rest. It is felt, however, that their private virtues do not altogether compensate for the mischiefs their public vices, is calculated to inspire in the breasts of their fellow-citizens.

A duel of an interesting character may shortly be expected in Italy. The difficulty is between two fencing masters, Massaccio Parisi, the champion Neapolitan fencer, and the Baron di San Malato, who, it may be remembered, went to Paris last year to measure swords with the best French fencer, and it arose out of the same French tip. The Naples School of Fencing issued a protest against the Baron's representation of himself as a typical Italian swordsman. The result was a challenge to Signor Casella, who had drawn up the protest, and chanced to be in Paris, to a match with buttons, robbed with chalk, so as to make sure of the hits being seen. This, as implying a suspicion of intended foul play, was not accepted; nor was a similar challenge to another subscriber to the protest. On his return to Italy, Signor Malato gave an attack of arms at Bologna, and sent to Paris to meet

during his tenure of office as Adjuvant-Superintendent of the Naval Reserves; and as he will be compelled to be absent from the Congress to which allusion has been made, I shall have the pleasure of reading the paper which he has prepared at the first meeting of that Congress. Lifelong and life-saving and I may congratulate you on the circumstance that, without overstepping your proper limits, you have been able to render a benefit, not only to your fellow-countrymen and all sailors, but also upon all who travel by sea—who, I may say, in these days of rapid communication constitute a large proportion of civilized mankind. On behalf of the Queen, I wish to convey her thanks to the Governments of foreign nations and the colonies for their cordial co-operation, and to their representatives for the interesting exertions, which have just been so justly acknowledged. I offer to them not only my thanks, but my best wishes.

The Archbishop of Canterbury offered up an appropriate prayer, and the choir at the evening of of gallery sang the Hymn of Faith.

The Prince of Wales then said: "In the Queen's name I declare this exhibition open." This announcement was followed by a flourish of trumpets by the State Trumpeters, and by other bands in various parts of the building, while a royal salute was fired by a battery of Royal Artillery in Hyde Park. Queen's Medalist's "Hymn of Faith." The procession was then re-formed, and returned through the Foreign Courts and Lighthouse buildings to the entrance-hall, whence the royal visitors took their departure.

At various points along the route taken by the royal procession were grouped representative bodies of fishermen from different parts of the British coast, and fishermen from the same districts, and also from the Continent. Such is the men and the women were their ordinary working dress, and gave the courts in which they were stationed a picturesque appearance. The Queen's Watermen were also stationed along the route of the procession. The Yeomen of the Guard were on duty, and the Honourable Corps of Gentlemen-at-Arms was stationed near the door. A Guard of Honour of the six British Cavalry regiments was mounted at the entrance of the building, and a Guard of Honour of the Royal Naval Volunteers was stationed in the entrance-hall.

The movement which has culminated in the exhibition which has thus been opened is the outgrowth of the fishery exhibitions which were held successively at Berlin, Norwich, and Edinburgh. There has long been a desire for an exhibition on a grander scale in London, to illustrate the modes by which the nation and of bringing before the public generally their duty in regard to the protection of the interests and the development of the resources of the fisheries of our country, the safe-guarding of our fishermen's lives and the improvement of their homes, and in order also to bring fish into more general use as an article of food. The movement took definite shape at a meeting in July, 1881, in the hall of the Fishmongers' Company, when resolutions were adopted to the effect that it was desirable to hold a grand International Exhibition in London in the present year; that a communication should be addressed to the Government informing them of the proposal, and requesting their co-operation; that a committee should be requested to draw up at the termination of the exhibition a report on the fisheries of the British Empire, and the best method of improving them; and that corresponding committees should be formed round the coast. The chairmanship of the Executive Committee was accepted by Mr. Edward Lubbock, M.P., and a committee was formed representing the various fishery interests of the United Kingdom. But the scheme was not publicly launched till February in last year, when, at a representative meeting in Willis's Rooms, the Duke of Richmond and Gordon read a report by the committee, and the Prince of Wales and the Duke of Edinburgh expressed a strong interest in the undertaking. The proposal was favourably received, not only in this country but throughout the world; every foreign State for forwarding the business of the exhibition; and the result is the magnificent collection of all the nations in the subject in view, which is now open to public inspection in the grounds of the Royal Horticultural Society at South Kensington.

The exhibition is classified into seven divisions. The first of these deals with fishing—including everything immediately relating to and connected with the actual working of all kinds of fishing—and is divided into two sections: sea fishing and fresh-water fishing. As to sea fishing, the variety of objects which have been brought together will certainly enable the public to understand better the importance of this branch of the industry. Here we find fishing gear of every description and of all nations, including nets, lines, hooks, lures, and trawls; fishing craft of all nations, and models and representations; models of harbours, and plans for fishing purposes; and there is a splendid display of fish and life-saving apparatus. In the fresh-water section there is a very fine collection of roach, perch, bream, artificial flies, and other apparatus. Class 2 relates to the economic condition of fisheries. Class 3 (commercial and economic) consists of fish caught, and those products of our fisheries from which oil, manure, and various matters applicable to mechanical, agricultural, or ornamental purposes are obtained. A large collection of objects will attract attention on account of their beauty and the variety of purposes to which the skins of certain kinds of fish and species are applied, notwithstanding their unsavoury nature; and much interest will no doubt be taken in the beautiful display of coral, tortoise-shell, and other ornaments, and the several methods by which they are turned to account. There are also plans and models of breeding and rearing establishments, including oyster and other shell-fish grounds; and all apparatus and implements connected with the same, and for transporting fish and ova; representations illustrative of the development and progressive growth of fish; models and drawings of fish preserves and ladders; drawings with reference to the diseases of fish; processes for rendering streams polluted by sewage and chemical and other works innocuous to fish life; illustrations of the diseases of fish; and to those qualities of salt and fresh water which affect aquatic animals; as to the bottom of the sea and of lakes, aquatic plants in relation to

MR. GALTON ON HUMAN FACULTY.*

For some years past, Mr. Francis Galton has published from time to time, in various reviews or in the transactions of scientific societies, a number of extremely interesting memoirs on subjects connected more or less directly with the line of thought which he first indicated in his admirable work on Hereditary Genius; and to many of these scattered papers we called the attention of our readers at the time of their original appearance. He has done well, however, to collect and condense the most important among them now into a single volume; both because they were well worthy of presentation in a more lasting and popular form, and also because he is thus enabled to bring out more fully their organic connection with one another as well as with the main stream of his own special philosophical thinking. In the history of the great modern evolutionary movement—a movement which spreads itself into every department of thought and action—Mr. Galton occupies a distinct and conspicuous niche; he is the final philosophic outcome of the purest scientific determinism; and he represents the moment at which such determinism quits the arena of metaphysical discussion, to take a firmer place for itself on the incontrovertible ground of inductive and statistical inquiry. He no more argues than a chemist or a physicist would do; he takes, selects, and arranges his facts, eliminates from them as far as possible the unnecessary or misleading factors, applies the strictest experimental methods, and deduces his results with the closest approach to mathematical accuracy that has yet been attained in researches of this character. We may occasionally differ from some of his minor conclusions, but it is impossible not to admire the originality and excellence of his method, the philosophic breadth of his grasp, and the extraordinary ingenuity with which he has overcome the difficulty of applying the principles of statistics to a very vague and indefinite subject matter.

The contents of the volume are by no means easy to summarize, because of the great variety in the themes incidentally touched upon, and the somewhat fragmentary or merely suggestive character of the whole. The book does not, indeed, pretend to be systematic; it aims rather at throwing a number of independent, though mutually complementary, sidelights on sundry important questions of anthropological interest. Taking it roughly in the lump, we may say that it deals chiefly with two aspects of human life; in the first place, the existence of generic types of humanity, and in the second place, the existence of considerable individual divergences. Both these subjects are treated for the most part as throwing light on the importance of the hereditary principle, especially as regards the value of race. The most popularly interesting part of the book is that which deals with Mr. Galton's ingenious invention of composite portraiture. The central idea of this device (stripped of all the necessary complications of practice) lies in the combination of a certain number of selected photographs—say of criminals, or of consumptives, or of scientific men—into a single picture, by taking a single compound from them all, each being exposed for an equal time before the same sensitive plate. In this way, we get, not a vague and meaningless distortion, but a clear and distinct typical face, quite surprising in its individuality and life-like appearance. Some such composites are given as a frontispiece to this volume, and it is interesting to compare the grossness or low cunning of the criminal types with the honest intelligence of the ideal Royal Engineer; or to note the delicacy of fibre and spirituality of expression which accompany the phthisical tendency, beside the bluntness of normal health and the relative coarseness or heaviness of other diseases. It might have seemed at first sight as though the perception of such typical peculiarities must always remain a matter of the vaguest and most fanciful personal interpretation; Mr. Galton has so eliminated the subjective or emotional element that it becomes a matter of the very plainest and most measurable evidence.

Hardly less ingenious are Mr. Galton's appliances for determining the relative sensitiveness of individuals, as shown in his sequence of test-weights and his adjustable whistles for discovering the limit of hearing for high and low notes in various persons and at various ages, or even among different animals. His plea for family registers, we fear, will be of little use; for though families might be willing to record all the good points in their own favour, it is to be anticipated that they would cook the books on the bad side of the account, just as most pedigrees keep religious note of distinguished ancestors, but omit or positively falsify the record of the butchers and bakers and candlestick makers who may happen to enter into the family genealogy. The study of criminals and the insane, on which Mr. Galton touches briefly, is very luminous in character, as is also the admirable little essay on the gregarious and slavish instincts in humanity, inherited from the days of absolute despotism, and now so injurious in their effect upon nascent impulses towards originality or innovation. Both here and in his remarkable paper on the first domestication of animals Mr. Galton uses analogies from the brute world with excellent effect. But the most scientifically valuable of all the scattered strains of thought which make up the book is probably that pursued in the consideration of the life-history of twins. In this inquiry, we are shown by numerous examples how closely the lives of both children born under such almost absolute identity of conditions usually resemble one another in all fundamental particulars—features,

* "Inquiries into Human Faculty and its Development." By Francis Galton, F.R.S. London: Macmillan and Co. 1884.

character, and constitutional peculiarities being all but identical in many cases. Sometimes one twin, in one place, buys a particular object as a present for his brother; while the other twin, in another place, buys the self-same object at the self-same time for the like purpose. Sometimes both catch the same childish complaints simultaneously; sometimes the two constitutions run down together from failure of a vital organ, and both die within a few weeks of one another from the same hereditary disease. There is a certain awful scientific fatalism in this portion of the book that almost appals one by the clearness with which it sets forth the sure and pitiless march of organic maladies. The only part of Mr. Galton's work which seems to us in our scepticism a little hard to swallow is that which relates to visualization and colour associations. A great many distinguished people come forward to assure him that they think of the number ten, say, as blue and of nineteen as pale yellow, or that they see the multiplication table in visible form as a staircase or a series of dots. We must confess that such visions appear to us decidedly fanciful and not quite partaking of the nature of perfect sanity. However, if Mr. Galton is supplied by correspondents with a great many strange facts, he is at least right in thoroughly ventilating them, and there is so much in the book for which we are grateful to his organizing intelligence that he will forgive us, we hope, for hesitating to accept these curious phenomena without further consideration. In an age of brain waves and psychical research we cannot be too particular about the evidence we admit, on subjective matters, even from such distinguished sources as some of Mr. Galton's eminent correspondents.

drowned. Perhaps one is not much the wiser; but still there is this to be said, that one seldom comes across that interesting subject, while few people in the day in London fail to meet with the exhausted cab horse.

The report from the Philippine Islands that the staff of the British North Borneo Company, "which recently took possession of the coast of North Borneo," has been attacked and slaughtered by the natives, cannot of course be relied upon as strictly authentic, but it is to be feared that some disaster has overtaken this ill-starred undertaking. It has been very unlucky from the beginning. First De Witt was killed, then Mr. Hatton met his death, and now comes this alarming rumour concerning the massacre of the whole staff. The latest intelligence from North Borneo represented the three new settlements of Elopura, Kudat, and Sandakan as flourishing afloat. Elopura had already a population of 3,000 persons, of whom the majority were Chinese. "In North Borneo," said a recent report, "unlike most new colonies, there is a feeling of perfect security to life and property. The authorities seem to have no difficulty in enforcing the law and keeping order." But that of course relates only to the settlers themselves. Outside the settlement there exists a mass of native savagery quite capable at any moment of massacring the colonists to the last man.

With the re-entré of M^{me}. Patti in the perennially charming "Barbiere" on Saturday last, the Italian Opera season may be said to have reached its culminating point. The character of Rosina is to the present generation solely identified with M^{me}. Patti, and it is difficult to believe that the part can have ever been more charmingly represented. Her performance on Saturday was characterized by all the well-known features which are thoroughly familiar to opera-goers, nor was any falling-off perceptible in the beauty of her voice or the perfection of her vocalization and acting. In the lesson scene, in accordance with what is becoming an established custom, M^{me}. Patti introduced the scena "Ernani, in solami," and Payne's ballad "Home, Sweet Home," the latter of which was rapturously encored by the crowded audience which filled the theatre. The remainder of the cast exhibited the weakness of the company in not possessing a genuine buffo. Signor de Reszke sang admirably as Don Basilio, but, clever as he is, he is not seen to advantage in comic parts.

Every one knows the stories of the influence exercised by female beauty on the course of judicial proceedings in ancient Greece. Sir F. Leighton's great picture in the Academy last year recalled one of them; and, allowance being made for the difference of manners, much the same thing seems to happen sometimes in our own law courts at the present day. Such at any rate was the conclusion which the Queen's Bench Division came to on Saturday in a case where a young lady of great personal attractions had been awarded very heavy damages against a railway company. The damages seemed to their lordships altogether unwarranted by the evidence, and they were convinced that the jury "had taken into consideration matters that they ought to have disregarded." What these matters were appeared from the argument of the counsel for the company. Not only was the plaintiff very good-looking herself, but she had several good-looking sisters, who gave evidence on her behalf, and "the worst of all was that the best-looking of the lot was reserved for the last." This vision of fair women was too much for the susceptibilities of the jury; nothing that the Attorney-General could say had the slightest impression on them, and even the Lord Chief Justice failed to bring them to reason. Gallantry must clearly be added to the list of virtues possessed by the British jurymen.

If "M. Irazan Uedoresco" is not a romancer, the whole art of naval warfare will speedily be revolutionized. A Zurich firm is constructing for the Roumanian Government an under-water boat, the invention of the above-named gentleman. This alarming craft is to carry a sufficient supply of air for a twelve hours' trip below the surface. It will be lighted by electricity, and if successful will be able to demolish every vessel in the navy. The torpedo is nothing to this new enemy of the ironclad. Colonel Beaumont has been at work for some time upon a similar invention, but his under-water boat has not yet taken practical shape. It would seem as if long before we see "airial navies grappling in the central blue" the naval battles of the future may be fought beneath the surface of the sea.

The inexhaustible wallet of the *Times* Paris correspondent, in which he keeps stores of anecdotes gleaned from the interviewing of a lifetime, is this morning again in requisition, but it has yielded little save a good story of Mehmet Ali and a few sayings of Lord Beaconsfield. The

the unpopularity of France and Russia as being of one blood, and alluding to the anti-Clerical character of the demonstration, urged that the priest should not be combated except when he trespassed on the political arena. General Canio, Garibaldi's son-in-law, was the last speaker, and had an enthusiastic reception.

SOUTH AFRICA.—THE BASUTOLAND QUESTION.

The Durban correspondent of the *Standard* telegraphs:—The Rev. Mr. Weber, the Superintendent of the German Missions in Zululand, writes that the missionary Schröder was murdered on the 6th inst., and the body was incased on the 8th. It had six assegai wounds, and the stomach had been cut open. The deceased lived quite alone. Mr. Hörman, another German missionary, living near Oham, is reported to have been murdered.

A *Daily News* telegram from Cape Town says that the news of the murder of Mr. Hörman is unconfirmed. He adds:—"The proposals of the home Government respecting Basutoland have been received with satisfaction by the press and the public here, with the exception of the organ of the extreme Dutch party, which prophesies that they will cause the early dissolution of the Cape Parliament."

THE AGITATION AGAINST MR. ILBERT'S BILL.

The *Daily News* publishes the following telegram from Calcutta:—

The students charged with disturbances have been acquitted, except one, who has been sentenced to one week's imprisonment.

The *Statesman* exposes the attempt recently made by the opponents of the Ilbert Bill to make capital in England against the Viceroy by getting the Lieutenant-Governor to prosecute several native editors, thereby goading the natives to commit acts of violence.

Sous ce titre, M. Galton a réuni un grand nombre de mémoires et d'articles publiés par lui depuis dix ans dans des recueils très divers. Son livre, nous dit-il, « n'a d'autre but que d'être suggestif et ne prétend en aucune façon être encyclopédique. » Son intention générale a été de prendre note des diverses facultés héréditaires chez l'homme et des grandes différences qui se rencontrent dans les diverses familles et les diverses races. « Voulez-vous connaître les Grecs et les Romains, disait Hume, étudiez les Anglais et les Français d'aujourd'hui. Les hommes décrits par Tacite et Polybe ressemblent aux habitants du monde qui nous entourent. » M. Galton professe une opinion toute contraire et ce qui le frappe avant tout, ce sont les différences : « Les instincts et les facultés des divers hommes et des diverses races sont, sous un grand nombre de rapports, aussi différents que ceux des animaux renfermés dans les diverses cages de nos jardins zoologiques; mais, malgré les différences et les antagonismes, chacun peut être bon à sa manière » (p. 2). Et ailleurs, après avoir fait ressortir les particularités mentales, variables d'un individu à l'autre, il ajoute avec beaucoup de raison : « On finira par voir combien les métaphysiciens et les psychologues ont erré en supposant que leur propres opérations mentales, instincts et axiomes, sont identiques avec ceux du reste de l'humanité au lieu de

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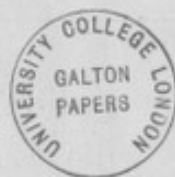
leur être spéciaux à eux-mêmes. » Il y a là sans doute une légère exagération; mais, pour notre part, nous ne pouvons que souscrire à une thèse qui au fond se réduit à ceci : l'étude psychologique s'appuie sur les détails, au contraire de la spéculation métaphysique qui les néglige.

Les trente-cinq articles ou mémoires qui composent ce volume sont de valeur et de longueur très inégales (quelques-unes n'ont pas plus de trois pages), et il serait impossible même d'en faire un simple mention. Indiquons seulement les principaux.

Le travail sur « Les portraits composites » et les « Images génériques » est connu du public français par la traduction publiée, dans la *Revue scientifique* du 13 juillet 1878, d'un des mémoires de Galton. On sait que le procédé consiste à recueillir les portraits photographiés de différentes personnes prises sous le même aspect (par exemple de face et éclairées toutes du côté droit) à réduire ces portraits à la même taille, à les disposer comme les feuillets d'un livre et à les photographier successivement. L'effet du portrait composite est de mettre en évidence tous les traits dans lesquels il y a concordance, pour ne laisser qu'une faible trace des particularités individuelles. Dans son volume, M. Galton donne 12 photographies obtenues par cette méthode. Notons parmi les plus curieuses celle de 6 membres d'une même famille (hommes et femmes), celle qui, pour l'auteur, représente la santé, d'après 23 cas; deux types de criminels, d'après 8 et 4 cas; deux types de tuberculose, d'après 6 et 9 cas, etc.

Les « Expériences psychométriques » publiées, d'abord dans *Brain*, ont été analysées ici (numéro de décembre 1879, p. 677 et suivantes). On se rappelle que leur principal résultat est que les associations qui se rapportent à l'époque de la jeunesse ont une tendance à se reproduire automatiquement d'une manière beaucoup plus fréquente que les autres.

Enfin la *Statistics of mental Imagery* publiée dans le *Mind* a été aussi analysée ici (août 1880, p. 236). On peut rapprocher de ce travail deux ordres de recherches non connues de nos lecteurs. La première a pour objet l'appréciation de poids successifs : elle mesure la délicatesse de la sensibilité chez les diverses personnes pour apprécier des poids identiques comme forme, couleur, mais différents par le poids spécifique. [La seconde, intitulée « Formes numériques » (*Number-forms*) décrit une particularité qui se rencontre chez un certain nombre d'individus. Les gens imaginatifs pensent presque toujours les nombres sous la forme de quelque image visuelle. Ainsi l'idée ou le mot six ne sonne pas mentalement à leur oreille; mais la figure 6 est évoquée dans leur imagination sous une forme écrite ou imprimée. Mais il y a un fait psychologique plus étrange qui a été révélé à l'auteur par hasard, lorsqu'il se livrait à son enquête sur les images mentales. « Elle consiste en l'apparition soudaine et automatique, dans le champ mental de la vision, d'une forme vive et invariable, dans laquelle tout nombre, lorsqu'il est pensé, a sa place déterminée. Cette forme peut consister



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la vie aux multiples influences qui agissent sur la vie réelle des collectivités humaines, mais habituée à suivre les saines impulsions du cœur et de l'esprit, quelles que soient les luttes que se livrent entre elles les diverses forces qui produisent la conduite individuelle. La loi des formes, qui règle le monde extérieur, comme le maître doit diriger l'enseignement, caractérise l'élève comme sujet incapable plus ou moins de se diriger par lui-même, partant subordonné à l'autorité du maître dans la tâche qui incombe à ce dernier de l'émanciper de son incapacité et de le transformer peu à peu en sujet raisonnable, doué d'entière autonomie. Telle est la personnalité de l'élève des écoles primaires, à peine ébauchée à grands traits, d'après les lois dans lesquelles se condense la science pédagogique. Que les maîtres la connaissent et la respectent avec une sorte de vénération (626-629). »

Si nous avons donné une idée à peu près exacte de l'objet et des divisions du livre, de la méthode et de l'esprit de l'auteur, on nous accordera sans doute que nous annonçons ici un travail des plus sérieux. C'est le plus complet, à notre connaissance, de ceux par lesquels la pédagogie a pu s'affirmer. M. Berra ouvre une voie où l'on doit marcher d'après ses indications, si l'on veut faire plus encore en pédagogie, si l'on veut faire œuvre qui vaille. On peut déclarer que d'ores et déjà grâce à lui, la science de l'éducation est un fait. Peu importe le plus ou moins de nouveauté des données que l'auteur des *Apuntes* a fait concourir à son œuvre, si dans ses lignes essentielles l'édifice véritablement scientifique. M. Berra se félicite du résultat, et il a raison. Il

une simple ligne d'une forme
rangées d'un arrangement particulier, ou en un espace ombré. » Rien n'est plus dissemblable que ces figures, selon les individus : angles de toute sorte, courbures, courbes, zigzags, etc. L'auteur donne 63 planches représentant ces diverses formes numériques.

Rapprochons de ce fait les « associations de couleurs » propres à certains individus. L'un des correspondants de Galton voit les chiffres de 1 à 9 diversement colorés : 1 blanc, 2 jaune, 3 rouge brique pâle, 4 brun 5 gris noirâtre, 6 brun rougeâtre, 7 vert, 8 bleuâtre, 9 brun rougeâtre à peu près comme 6. Ces couleurs, très distinctes quand les chiffres sont représentés séparément, deviennent moins apparentes dans les nombres composés. — L'association des couleurs se fait aussi avec les lettres, du moins avec les voyelles : une personne voit A blanc, E rouge, I jaune brillant, O noir, V pourpre, Y un peu comme I. Ces couleurs diffèrent d'ailleurs d'un individu à l'autre. L'auteur rappelle à ce sujet le cas fort connu des frères Nussbaumer, chez qui les sensations de couleurs étaient excitées simultanément par des sensations de son. Tout jeunes, ils qualifiaient un voix de jaune, une autre de gris brun : ce qui excitait naturellement le rire des assistants. Le phénomène était constant chez les deux frères avec de légères variations. Ainsi le *so* était orangé pour l'un, orangé jaune pour l'autre ; le *ré*, bleu foncé pour l'un, marron pour l'autre. — L'auteur ne se livre d'ailleurs à aucune recherche sur les causes probables de cette association.

Mentionnons encore une intéressante étude sur les jumeaux, sur les visionnaires, sur le caractère (assez court), sur les criminels et les fous, sur les méthodes statistiques, sur la domestication des animaux, etc.

Dans une courte conclusion, dont nous donnons la substance, l'auteur met en lumière l'idée fondamentale de ce livre, qui d'ailleurs se trouve déjà exposée dans *Hereditary Genius*. Nous sommes conduits à reconnaître une grande variété de facultés naturelles, utiles et nuisibles, chez les membres d'une même race et dans la famille humaine en général. Elles tendent à se transmettre par hérédité. Nous devons remarquer aussi que les facultés de l'homme en général ne sont pas à la hauteur de ce qu'exige une civilisation élevée et croissante : ce qui est dû principalement à ce que nos ancêtres ont vécu pendant des siècles dans des conditions incivilisées et à ce que, dans les temps plus récents, une capricieuse distribution des richesses a créé certaines immunités contre l'action usuelle de la sélection. Comment pouvons-nous aider la marche des événements ? En favorisant le cours de l'évolution. En examinant le mystère auguste de l'existence consciente et les arrières-fonds insondable de l'évolution, nous trouvons que le dernier résultat de longues et multiples douleurs d'enfantement, c'est que l'homme intelligent et bon s'est trouvé être. Il sait combien il est peu de chose ; mais il voit que sur cette terre, en ce moment du temps, il apparaît comme héritier d'âges inconnus et à la merci des circonstances.



L'accident arrivé à M. de Chambord il y a quelques mois, en descendant de voiture, était ce qu'on appelle vulgairement *un coup de fouet*, c'est-à-dire, pour les médecins, une déchirure musculaire ou veineuse dans le mollet, et n'avait rien à voir avec la maladie actuelle.

M. Vulpian, après avoir examiné attentivement le malade, pensa, comme ses confrères autrichiens, qu'il s'agissait d'un cancer de l'estomac; néanmoins il conservait quelques doutes, parce que les accidents s'étaient manifestés plus brusquement que de coutume dans les cas de cancer; mais la présence de la tumeur, et en particulier ce fait que l'oncle de M. de Chambord, le duc d'Angoulême, était mort d'un cancer de l'estomac, firent qu'il se prononça pour cette dernière maladie.

Le traitement fut institué toutefois en vue de remédier à l'irritation considérable de l'estomac, qui était le phénomène le plus saillant de la maladie, et chose curieuse, une amélioration très manifeste ne tarda pas à survenir dans l'état du malade. C'est au régime lacté que M. Vulpian attribue cette amélioration, et il pense, avec raison selon nous, qu'on ne l'a pas continué assez longtemps, et que c'est peut-être à l'abandon trop rapide de ce régime et à la reprise d'une autre alimentation qu'il faut attribuer la rechute qui eut lieu dans la nuit du 8 au 9 août et qui se termina par la mort, le 24 du même mois.

L'autopsie ne fut pas permise. Mme de Chambord s'y opposa, et c'était, avait-elle dit, l'intention nettement exprimée à plusieurs reprises par son mari. Néanmoins les manœuvres nécessaires pour pratiquer l'embaumement permirent aux médecins d'examiner les organes qu'ils supposaient ma-

jades. C'était l'estomac, comme nous l'avons dit, et en outre, le cœur et les reins.

Pour examiner l'estomac, il fallut inciser la tumeur qui siégeait en avant de lui, et c'est ainsi qu'on put voir qu'il n'y avait pas de cancer; pour voir le cœur, on dut enlever l'œsophage, ce long canal qui, comme on le sait, conduit les aliments de la bouche dans l'estomac, et après avoir ouvert celui-ci, on ouvrit naturellement l'œsophage, ce qui permit de constater à la fois, et l'absence de cancer à l'estomac, et la présence d'ulcérations nombreuses à l'œsophage.

Disons de suite, pour ne pas trop nous étendre sur l'autopsie, que le cœur, l'aorte et les reins étaient altérés assez profondément.

M. Vulpian a discuté longuement pourquoi les altérations de l'œsophage n'ont donné lieu à aucun symptôme; pourquoi, au contraire, l'estomac a paru le seul malade; il cherche les causes de ces ulcérations que rien n'a fait prévoir avant l'ouverture du corps, l'importance de cette erreur sur la suite de la maladie et la possibilité de la guérison. Nous ne pouvons que résumer cette intéressante discussion.

Les lésions de l'œsophage pouvaient se manifester par deux symptômes, une contraction de ses parois qui aurait empêché les aliments d'aller jusqu'à l'estomac, et une douleur vive au passage de ces aliments. Or, on n'a jamais constaté aucun de ces deux phénomènes; les aliments ont toujours facilement passé et n'ont jamais provoqué aucune douleur; la douleur ne survenait que dix minutes ou un quart d'heure après, et les vomissements plus tard encore.

Au contraire, l'estomac conservait pour lui, si l'on peut ainsi dire, tous les symptômes de la maladie: la douleur se faisait

sentir dans la région qu'il occupe; la tumeur y siégeait également, et les vomissements, qui étaient si marqués au début et à la fin de la maladie, ont cessé lorsque le régime lacté, employé pour remédier à l'irritation de l'estomac, a été suivi avec persévérance.

Le diagnostic des médecins était donc entièrement justifié. La cause des ulcérations constatées dans l'œsophage et dans l'estomac est assez obscure; mais, sans entrer dans la discussion savante de M. Vulpian, nous devons reproduire l'opinion qu'il émet à propos des bruits qui ont couru dans les journaux sur une tentative d'empoisonnement dont le prince aurait été la victime. Aucun poison ne donne lieu à des ulcérations limitées exclusivement à la partie inférieure de l'œsophage; en cas d'empoisonnement avec une substance capable de produire des ulcérations, elles siègent au contraire dans la bouche et dans toute l'étendue de ce conduit; en outre, il existe plusieurs symptômes qui n'ont jamais été observés chez M. de Chambord, ni pendant la vie, ni à l'examen des organes pendant l'embaumement.

Si la rechute n'avait pas eu lieu le 9 août, la guérison eût-elle été possible? C'est là une question à laquelle on ne saurait répondre nettement, vu l'ignorance des causes des lésions ulcéreuses de l'œsophage et de l'estomac. Quel qu'edt été le traitement, il est malheureusement probable que la rechute devait avoir fatalement lieu à un moment ou à un autre. « S'il ne s'agissait que d'une atteinte de cataracte aigu de l'œsophage et de l'estomac, dit M. Vulpian, une guérison relative pouvait avoir lieu; mais dans les conditions où se trouvaient désormais ces parties des voies digestives, et dans l'état que présentaient les artères, le cœur

et les reins, il ne pouvait y avoir qu'une survie courte et misérable. Les fonctions digestives se seraient opérées d'une façon pénible et probablement incomplète; les forces ne se seraient relevées que bien difficilement et lentement, et même, alors qu'il n'y aurait pas eu de rechute, la vie n'aurait pas pu durer longtemps, menacée qu'elle aurait été sans cesse par les accidents que peuvent déterminer ces lésions des artères et du cœur. »

Nous devons, avant de terminer, relever une singulière erreur qui a été commise par quelques journalistes, entre autres un collaborateur de *l'Intransigeant*. Faisant allusion à l'altération des reins signalée par M. Vulpian, notre confrère a dit qu'il n'était pas étonnant que le comte de Chambord n'ait pas laissé de postérité, cette altération l'ayant rendu stérile. N'en déplaise à notre confrère, les reins n'ont rien à voir dans la fécondité; ils sont situés profondément dans l'abdomen, beaucoup plus volumineux et infiniment moins visibles que les organes chargés de la fonction de reproduction.

M. Gallon est, parmi les psychologues anglais, un des esprits les plus chercheurs et les plus curieux. Il a publié déjà deux très intéressants volumes sur *l'Hérédité du talent et du génie*, et sur *les Hommes de science en Angleterre*. Dans le premier il examinait dans quelle mesure les grands talents et le génie se transmettent dans une famille. Dans le second il publiait des documents sur un grand nombre d'hommes de science, sur leurs habitudes intellectuelles, sur leur manière de travailler, sur les circonstances qui ont développé en eux le génie

A ces deux volumes on ajoute un troisième (1) intitulé : *Inquiries into Human Faculty and its development*, dans lequel se trouvent réunis un certain nombre de travaux, dont quelques-uns ont, lors de leur publication sous forme d'articles dans des revues spéciales, attiré vivement l'attention. Parmi ceux-ci nous signalerons particulièrement un mémoire sur les Portraits dit composites. M. Galton, frappe, comme tout le monde, de l'« air de famille » qu'on trouve en général aux différents membres d'une même famille, a voulu réaliser cette sorte d'abstraction, et, par synthèse de plusieurs photographies, obtenir une photographie représentant le type — type entièrement idéal — duquel se rapprochent les personnes de même sang. Voici comment s'y prend l'auteur.

Étant donné les photographies des descendants de mêmes parents, il s'agit d'en dégager une photographie où se trouve fixé un type rappelant les éléments dont il dérive. M. Galton commence par réduire toutes les photographies à une même dimension, il faut déjà qu'elles aient toutes été prises dans une même pose et sous un même jour. Ceci fait, on photographie sur une même plaque toutes les photographies, en s'accordant à chacune d'elles qu'un temps de pose très court et identique. De cette façon, les diverses images se superposent.

Mais le temps de pose étant très court, il en résulte que les traits particulièrement personnels de la physionomie ne ressortent que très faiblement.

Au contraire, les traits communs à toutes les physionomies, en se superposant, acquièrent une intensité notable dans le composite. Que ce soit la forme de la tête ou de la bouche, que ce soit la saillie des arcades

faciales, le nez, les yeux, etc., tout cet air de ressemblance qu'il est parfois difficile d'analyser sans ce secours expérimental.

La photographie obtenue ne ressemble en général d'une façon absolue à aucun des éléments qui ont contribué à la former : elle ressemble plus ou moins à tous, et donne ainsi un type idéal, qui est celui duquel tous les éléments se rapprochent. On y retrouve ce qui est commun à tous. M. Galton a fait de très nombreux portraits composites — c'est ainsi qu'il nomme ces sortes de photographies composées à l'aide de plusieurs éléments, — et il en donne plusieurs échantillons dans son livre.

Les résultats en sont très intéressants et très nets. Généralisant sa méthode, M. Galton a cherché à obtenir des types composites sans tenir compte des liens de famille. Par exemple, il a cherché et obtenu le type du criminel, du phisique, etc., etc., en s'appuyant sur un grand nombre d'expériences. Il faut avouer que les résultats en sont très curieux : ces composites sont très vrais. Le type du phisique est très exact, et donne bien le facies du malade.

Un autre mémoire de M. Galton, publié dans le même livre, porte sur l'étude psychologique et physique des jumeaux. Au point de vue physique, M. Galton a noté des ressemblances si fortes entre certains jumeaux que les parents même étaient incapables de distinguer un enfant de l'autre. Par exemple, l'auteur cite deux jeunes filles qui se ressemblaient à tel point que lorsque l'une désirait se dispenser de sa leçon de piano, qu'elle prenait après sa sœur, cette dernière, après avoir pris sa leçon, quittait la chambre un instant sous prétexte d'aller chercher sa sœur, puis revenait et prenait la seconde leçon à sa place. Ni la mère, ni le professeur ne s'apercevaient de l'erreur volontaire de personne.

selon les prescriptions du médecin, sa petite fille très bien portante, l'ayant confondue avec l'autre enfant, légèrement malade. Enfin, un maître d'école raconte à M. Galton qu'il lui est tellement impossible de distinguer deux frères l'un de l'autre, que lorsque des plaintes lui sont faites, au sujet de l'un ou de l'autre, il est obligé de les fouetter tous deux pour être sûr d'atteindre le coupable. Voilà Thémis borgne !

M. Galton n'a pas réuni moins de neuf cas de fiançailles, pendant lesquelles l'un des deux futurs époux se trouvait fort embarrassé par la grande ressemblance, soit de la fiancée avec sa sœur, soit du fiancé avec son frère.

Il y a des cas où l'organisation physique des jumeaux est identique, on peut s'en faire une idée en consultant le cas de deux frères qui se trouvaient atteints de la même maladie, en même temps, étant à une grande distance l'un de l'autre. Chacun jugeait de l'état de son frère en considérant son propre état, tant le parallélisme était rigoureux. On a vu les mêmes hallucinations s'emparer, à la même heure, de deux jumeaux séparés par plusieurs lieues.

En un mot, il semble que, dans certains cas, les jumeaux vivent d'une vie parallèle, physique et mentale. A côté de ces cas, cependant, il y en a où la différence est grande. Parmi ces derniers, les plus singuliers sont ceux où deux jumeaux sont complémentaires l'un de l'autre, c'est-à-dire où l'un possède les facultés qui manquent à l'autre, si bien, qu'en combinant les deux on aurait une sorte de type humain idéal, bien doué et bien équilibré.

L'ouvrage de M. Galton contient encore un nombre assez grand d'études psychologiques très intéressantes, sur la psychométrie, sur la coloration mentale des mots, sur l'efficacité de la prière, etc. Les recher-

majorité des savants naissent dans les villes, très peu sur les bords de la mer. L'âge des parents à l'époque où ces savants ont été conçus était en moyenne trente-six ans pour le père, trente ans pour la mère. Quant aux savants eux-mêmes, ils sont le plus souvent les enfants premiers nés, ou des enfants uniques. Leurs parents sont généralement prolifiques; eux-mêmes le sont moins, bien que leur constitution et leur santé soient en général excellentes. M. Galton croit beaucoup à la transmission héréditaire des dons de l'esprit, et cite nombre de familles dans lesquelles plusieurs générations se sont illustrées dans la science.

Les parents des savants sont le plus souvent bien doués, physiquement et intellectuellement. Des facultés intellectuelles des savants, celle qui varie le plus est la mémoire; tels l'ont excellente, tels nulle; chez les uns, c'est la mémoire des détails; chez d'autres, celle des grands traits; chez l'un, c'est la mémoire des choses, c'est l'autre, celle des mots. L'influence de la science sur les idées religieuses des savants est peu considérable. Pour sept ou huit, qui trouvent à concilier leurs idées religieuses les enseignements de la science, un seul les trouve inconciliables. Il est vrai que M. Galton ne dit pas à quelle étude sont voués ces derniers, chose essentielle à considérer dans le débat.

Le goût de la science est, dans la majorité des cas, inné et date de l'enfance la plus tendre. L'entourage scientifique est ensuite la cause la plus fréquente du développement de ce goût. M. Galton cite un cas curieux d'un savant qui n'est devenu astronome qu'à cause de sa passion pour le bronze poli et luisant des instruments.

Les faisceaux qui nous procurent les sen-

(1) Un volume in-8°. Londres 1883. Macmillan.

THE ARTISTIC AND LITERARY CORRESPONDENCE.

AND

Universal Compendium of the Press.

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LONDON. W.C.

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Cutting from

Manchester Guardian

Date

August 6

Signature

Address of the Journal

Manchester

RECENT SCIENCE BOOKS.

It will probably be the opinion of many of the readers of Mr. Francis Galton's "Inquiries into Human Faculty and its Development" (London: Macmillan and Co.) that the author out-science science. A book which avowedly seeks to deal with all problems of human nature by the statistical method, which elevates Darwinism into a new religion, and really leaves no room for the moral force except as an outcome of purely physical conditions, will probably shock more people than it will charm. Mr. Galton desires to persuade mankind to assist evolution by the deliberate exercise of the principles of selection. Possibly with the increase of knowledge and the improvement of the general conditions of life, a good deal that Mr. Galton desires will come to pass unconsciously; but it may be safely said that average human nature will at present instinctively rebel against teaching which reduces all moral progress to a mere question of the survival of the fittest and the extinction, not of criminality, but of the hereditary criminal. Mr. Galton's book is not one which can be wisely recommended to the very immature mind. The volume is a singular expression of cleverness and originality, combined with extraordinary narrowness. Strange to say, this narrowness is in no way more conspicuously shown than in Mr. Galton's handling of statistics. The book is made up of papers which have previously appeared in the magazines or in the transactions of learned societies, and which are here strung together into a fairly consecutive series. Mr. Galton's researches on composite portraiture and mental imagery have already attracted attention, and they constitute conspicuous foundations of his philosophy. Amongst the striking things which Mr. Galton says is that women have less delicate powers of discrimination than men, in support of which rather heterodox statement he points out that they rarely distinguish the merits of wine at the dinner table, and that the sorters of wool, the tasters of tea, and the tuners of piano fortes are all men. This may be taken as an illustration that the value of the book lies in Mr. Galton's close observations, rather than in his generalizations.



BIBLIOGRAPHIE.

Inquiries into human faculties by Francis Galton, London, 1869, Macmillan. M. Galton a réuni en un volume ses études sur la transmission des aptitudes mentales. Ses recherches sur les conditions qui favorisent la production d'un type supérieur de l'humanité se rattachent aux études précédentes, et démontrent un esprit attentif et curieux des lois mystérieuses de la nature. Le but qu'il poursuit se tend à rien moins qu'à dominer la nature par la science, et à accélérer l'évolution en la poussant dans le sens du progrès. C'est avec une modestie triomphante que l'auteur initiale cette branche encore si peu explorée de l'anthropologie ; révéler à l'homme le dessein sacré par le terme nouveau de culture évangélique. La difficulté d'atteindre à l'amélioration de la race humaine se serait pu surmonter. M. Galton insiste sur le devoir moral qui incombe à chacun et à tous dans cette grande tâche de perfectionnement. Pris dans son ensemble, l'humanité n'est point fixe, ses qualités varient, se développent ou s'atrophient sous l'impression de causes multiples et peu décelées, mais ce qui est certain, c'est que les facultés, les inclinations bonnes ou mauvaises tendent à se fixer par hérédité. Les hommes bons et intelligents de tous les pays ont une fonction à remplir dans l'évolution ; ils peuvent influer sur la qualité de l'humanité, la façonner, l'affiner. Même ceux-là qui ont la conviction contraire, qui ont la conviction que l'homme absorbe de l'aveugle que lui-même contribue à sa perfectionnement et d'être un instrument de régu-

lération pour l'avenir, ils se peuvent que lui léguer des éléments de perturbation physique et morale, ceux-là ont aussi un rôle à jouer dans l'évolution et en droit à acquiescer à la reconnaissance d'ins éléments de grand concours humain au principe frappé de déchéance. La supériorité innée peut apparaître à titre individuel dans une famille pour s'évanouir dans les générations suivantes ; on doit généralement faire moins de cas de cette explosion transitoire d'un mérite tout personnel avec l'excellence éphémère d'une famille, où le mérite s'affirme de père en fils, et passe comme un héritage agrandi entre des mains dignes de le posséder. Un individu doué de dons élevés peut exceptionnellement être un brillant spécimen d'une race inférieure, ou le spécimen moyen d'une race meilleure, comme il peut être le représentant excellent d'une race à laquelle il transmettra en appasage l'énergie native avec les qualités intellectuelles et morales qui le distinguent. Mais à quel signe reconnaître l'exception brillante et passagère avec la saine possession d'une force susceptible d'un développement ultérieur et individuel ? C'est dans les descendants que se traduit la marque d'origine. S'ils rétrogradent, s'ils se détériorent, c'est que les parents n'ont été qu'un accident heureux dans un plus primitif plus grossier ; s'ils perpétuent les dons transmis à titre de prédispositions innées, c'est qu'ils ont reçu le germe d'une organisation plus parfaite. Un mérite réel, qui, loin de s'éteindre dans une seule génération, s'affirme dans les suivantes avec les modifications et les adaptations nouvelles que comportent les éle-

ments renouvelés d'innéité, dénote dans une famille la formation d'un centre plus élevé de développement, dont l'influence se retrouve d'une façon saisissante chez les descendants. Parmi les moyens capables d'activer l'amélioration de l'espèce humaine au double point de vue du mérite individuel et de la valeur ancestrale transmise se place, d'abord, la nécessité de protéger et de favoriser, non les fibres faibles que la nature a traitées en marbre, mais les intelligences qu'elle s'est plu à combler de ses dons. C'est une sorte de sélection physiologique et sociale imaginée par notre auteur. Il propose d'accorder la préférence aux jeunes gens issus d'une famille où le mérite physique et morale est un garant de l'excellence de la race. Le système actuel des concours pour les jeunes gens qui se destinent aux fonctions publiques ne vise que le mérite personnel, et ne prend nul souci de l'origine et des antécédents ancestraux, et combien, cependant, il est important de ne pas le perdre de vue ! Une intelligence moyenne, soutenue par un travail cérébral opiniâtre, une certaine facilité d'assimilation assurent le plus de chances de succès aux candidats qui affrontent les épreuves des programmes officiels. La part faite à l'action héréditaire y est nulle, on ne tient aucun compte de la légitime influence qu'elle est appelée à exercer. On se prive ainsi des renseignements que la nature a pris soin de fournir elle-même sur la mesure et la portée des forces organiques dont on veut se servir. Devant l'épineuse vivante du présent comment ne pas interroger le passé ? La présence la plus vulgaire commande de s'enquérir de la nature, de la solidité des matériaux qu'on veut employer ; à

l'âge où le caractère n'est pas formé, comment décider si des tendances latentes nerveuses s'éclairciront pas dans l'âge mûr, si l'on néglige ce facteur important — l'hérédité. L'appoint ancestral doit peser dans la balance. Entre deux compétiteurs d'un mérite égal, mais dont l'un appartiendrait à une famille où la durée de la vie a été abrégée par aucune de ces maladies qui se répètent chez les descendants, et dont l'autre serait issu de parents où le niveau intellectuel et moral ou l'intégrité physique aurait reçu une attente dont la trace fatale se retrouverait chez les survivants, il n'y a pas à hésiter. On peut prédire que les chances d'une carrière longue et honorable sont en faveur du premier. L'usage de noter soigneusement les événements de l'ordre physique et mental qui participent au développement d'une existence humaine serait fort instructif, s'il tendait à se généraliser. Chaque famille devrait recueillir ses annales, et léguer à sa postérité le soin de continuer cette œuvre d'historiographie privée. Des observations scrupuleusement exactes considéreraient les lois si obscures de l'hérédité croisée et directe. En Allemagne commencent à se répandre l'habitude de tenir registre de tous les faits qui accompagnent la naissance d'un enfant, et qui se produisent au cours de la croissance. Dans les familles où cette coutume s'est établie on consigne à chaque petit être qui apparaît au cabinet où sont inscrits les détails de sa jeune existence, et que l'on consulte aussi longtemps que l'enfant demeure sous l'aile maternelle. En résumé, M. Galton demande qu'on

prenne en main la cause des forts, de ceux qui ont dans le passé des gages d'une organisation meilleure. Peut-être y viendra-t-on d'une manière méthodique, et au nom de progrès se montrera-t-on plus que jamais dément aux vainqueurs et d'un sort vaincus dans la grande mêlée de la vie. Il est difficile de ne pas croire avec l'auteur à la puissance de transmission des facultés humaines, à la continuité de dons qui s'affirment et s'affaiblissent à travers plusieurs générations pour aboutir à un épanouissement radical, à un assemblage exquis et charmant des qualités les plus rares de l'esprit et du cœur. Il n'est pas moins prouvé qu'il existe des familles où la disposition au crime est innée ; on y vient au monde assailli ou insensible, à moins qu'on ne finisse dans une maison de santé. Cédant à son goût pour les espèces de la statistique, M. Galton demande qu'on institue des recherches sur la religion pratique des hommes bons et intelligents de toutes les races et de tous les pays, et qu'on découvre les motifs moraux de leur conduite. Le pouvoir de l'éducation est très grand pour influencer à toute une catégorie d'hommes des sentiments simultanés et presque instinctifs qui produisent une sorte d'atmosphère morale et déterminent une tournure générale d'esprit ; les préjugés religieux et philiques s'incorporent ainsi avec la texture même du cerveau, mais hors cette masse confuse et non raisonnée d'impulsions indisciplinées sur les idées, l'action de la nature est prépondérante. Entre des penchants innés et des tendances imposées par l'éducation, la victoire n'est pas douteuse.

C'est sur des jumeaux qu'on peut le mieux étudier l'influence respective de la nature et de l'éducation pour façonner les inclinations et les aptitudes intellectuelles. Entourés des mêmes circonstances extérieures, ayant les mêmes maîtres, subissant les mêmes associations d'idées, les jumeaux se prêtent mieux que des enfants d'un âge et d'un milieu différents à l'observation comparée des tendances naturelles et des tendances acquises. On voit des jumeaux presque identiques au début de la vie se diversifier sous l'action de causes qui échappent au contrôle et même à l'appréciation des parents et des maîtres. Puisque le cours de cette carrière nous amène sur la frontière des impressions inconscientes et des haillons d'idées qui défilent toute explication, il nous en faut de représentations visuelles de chiffres et des lettres de l'alphabet qui laissent certains cerveaux, très bien organisés sous tous les rapports. Il est des personnes qui associent constamment des groupes de chiffres, ou des caractères alphabétiques avec des sons, des couleurs ou des images mentales d'une forme déterminée. Ces particularités bizarres ont sans doute leurs racines dans des relations et des rapprochements établis de très bonne heure par l'intelligence naissante de l'enfant. Ce serait allonger au delà des bornes fixées cet article si nous voulions y faire entrer toutes les matières que la plume savante et chercheuse de M. Galton a fouillées pour en tirer un jour nouveau. L'esprit ne se laisse pas à suivre un guide qui de chaque buisson fait jaillir un échalot. M. R.



2/8/83

... Le comte de Chambord a été pris de saignement de nez, hier, et de vomissement. Il a éprouvé une grande lassitude.

« Le docteur Mayer, appelé au milieu de la nuit, paraît moins rassuré sur l'état du malade. »

« Le prince a passé plusieurs heures dehors, hier. La journée a été calme et sans aucun incident fâcheux. »

— Le vice-amiral Peyron, commandant en chef et préfet maritime de 5^e arrondissement à Toulon, a été appelé par télégraphe à Paris, où il est arrivé le 8 août à midi. Il a été reçu immédiatement par le ministre de la marine et le président du conseil, qui lui a offert le portefeuille de la marine et des colonies, devant vacant par suite de la démission donnée par M. Charles Irujo pour raisons de santé, dès la clôture de la session législative.

Le vice-amiral Peyron ayant accepté le portefeuille qu'on lui proposait, sa nomination a été soumise le même soir à l'approbation du président de la république, à M. Charles Vastrier.

On peut donc considérer la retraite de M. Charles Irujo comme définitive et son remplacement par le vice-amiral Peyron comme certain.

Le vice-amiral Peyron a occupé à deux reprises différentes, sous les ministères de l'amiral Cloué et de l'amiral Jauréguiberry, le poste important de chef d'état-major général au ministère de la marine. Très au courant de tous les détails de ce grand service, il passe à juste titre pour un des officiers généraux les plus distingués.

Le vice-amiral Peyron est âgé de soixante ans. Il a parcouru une carrière des plus brillantes. Entré au service en 1839; aspirant en 1841; enseigne de vaisseau en 1845; lieutenant de vaisseau en 1852; capitaine de frégate en 1861; capitaine de vaisseau en 1867;

... tant pas réalisée, le garde des sceaux dispose d'un délai d'un mois.

Le loi ayant été votée le 1^{er} août et transmise au plus tôt à la chancellerie, le 2 août le délai expirera au plus tôt le 2 septembre.

Nous croyons savoir que le gouvernement a l'intention d'user de ce délai intégralement.

Le principal motif de cette résolution est que l'on ne veut pas suspendre l'immobilité des magistrats sur les sièges avant les vacances judiciaires. Or, celles-ci commencent le 1^{er} septembre, précisément à l'expiration du délai constitutionnel de promulgation des lois. (Héra.)

— C'est M. Ferdinand de Lesseps qui a présidé à la cérémonie de la distribution des prix au lycée Henri IV. Il a parlé de verve : « Il est d'usage, parmi les écoliers, à dit M. de Lesseps, de se raconter leurs faits et gestes des vacances. J'étais à Henri IV en 1815. Eh bien ! je vais vous raconter mes faits et gestes depuis soixante ans. » Et il a retracé sa vie d'écolier : « Pas fort en géographie, j'avais toutes les palmes du monde à distinguer sur une carte le nord d'avec le sud ; ceci soit dit pour encourager les élèves qui ne sont pas les premiers. »

Il a parlé ensuite des travaux qui ont illustré sa vie, de ce canal de Suez, son œuvre glorieuse. « Il est vrai qu'un cela j'ai été convaincu d'être un plagiaire ; car il est démontré clair comme le jour que l'idée même que j'ai exécutée avait été suggérée à Salomon par une de ses femmes. »

Notons encore un plaisant paradoxe sur les garanties, dont M. de Lesseps estime que l'on abuse peut-être un peu : « En parlant sans parler de cholestérol, voyez certaines personnes se précipiter contre le diable, d'est de n'en pas avoir peur. Il n'y a pas d'exemple d'un homme courageux, regardant l'épée en face, qui l'ait attrapé. D'ail-

... que jours, au gouvernement de Madrid est tombé. « Le bruit court que Orléans est encore vivant. Mais jusqu'à la nouvelle paraît improbable. »

Enfin l'Agence Reuter communique une dépêche de Durban d'après laquelle il serait à peu près certain que Orléans est toujours vivant. Il serait arrivé sur la partie nord du territoire zoulou qui confine au Natal et que l'Angleterre a érigé en territoire « réservé » au roi.

— Un steamer anglais, le *Queen of Thame*, qui fait le service de Bassorah à Hongkong, vient d'arriver en Angleterre la nuit, d'une collision qui a eu lieu dans la Manche, en face de Dover, entre deux bateaux norvégiens, dont les noms sont inconnus. Un des bateaux a coulé. Des 13 hommes d'équipage qui se trouvaient à bord, 12 ont été sauvés.

Italie.

Rome, 9 août. — Dans le consistoire d'aujourd'hui, le pape a prononcé quelques allocutions. Il a prononcé les nouveaux archevêques et évêques, notamment ceux de Labonne, Turin, Briga, Otrante, Diorio, Gênes, Linares, Tivoli, Porto-Alegre, Guarda, Braganza, Barcelone, Bija, Portofino, Banharat, Virecht, etc.

— Le *Davids* publie une conversation de l'un de ses correspondants avec M. Palmieri, directeur de l'Observatoire du Vésuve. En voici quelques extraits :

Les phénomènes géologiques de Casancicola ne ressemblent en rien à ce qu'on désigne généralement sous le nom de tremblement de terre.

La secousse a été instantanée à Casancicola, ce qu'elle ne fut précédemment ni à Corchia, ni à Modif, ni dans les Calabres.

On ne doit plus admettre les mouvements tournois auxquels les savants ont cru antre-

Madrid. Le conseil, composé des quatre ministres en ce moment à Madrid, est le ministre de la marine est à la Granja avec Alphonse XII, le ministre des affaires étrangères est en Galice, le ministre des travaux publics aux eaux, se rend à sept heures et fit appeler M. le lieutenant-général Blanco, ex-gouverneur de Cuba, officier dévoué au roi, et lui offrit le commandement d'une colonne composée de six bataillons de ligne et de chasseurs, de quelques escadrons de hussards rouges et bleus, de deux pièces de neuf canonniers aux ordres des généraux Cordeba, Melis, Pastor.

En même temps, les Compagnies reçurent ordre de tenir des trains spéciaux prêts avant minuit et d'autres instructions prescrivaient aux capitaines-généraux de Séville et d'autres provinces de concentrer vers Merid, Cadix et Belmez les troupes disponibles, tandis qu'on commandait aux autorités militaires et civiles de surveiller et d'écraser sévèrement toute tentative de désordre. Le roi, à la Granja, et M. Sagasta, ainsi que les autres ministres, furent prévenus par des télégrammes détaillés.

Toutes les autorités de la capitale, les hommes politiques de tous les partis dynastiques, les autorités municipales, vinrent successivement offrir leur concours à M. le maréchal Campos. On remarqua beaucoup les chaleureuses déclarations de M. Boerra, ex-son directeur de la gauche dynastique, et M. Boerra télégraphia sa démarche à M. le maréchal Sarrasin, Moret et Balaguer, qui l'approuvèrent de la même façon. Une foule de généraux et d'officiers de Madrid et de provinces se mirent à la disposition du ministre de la guerre, qui fit congédier toutes les troupes et rappeler les officiers en congé.

Ce fut une nuit d'anxiété et d'agitation continue dans la capitale, et les cafés restèrent ouverts plus tard que de coutume. La police pria poliment les groupes de curieux de

... se retirer et dans d'autres endroits avec armes et bagages, et dans une exaltation assez grande pour que les troupes portugaises causent quelquefois à les déserter de force.

Les autorités portugaises interdirent les fugitifs sous bonne garde et, dès lundi dans la matinée, les autorités civiles et militaires échappées de leur prison furent entrées en communication avec le gouvernement de Madrid et lui annoncer que la population civile était en immense majorité restée indifférente et même hostile à ce mouvement qui avait été d'un bout à l'autre purement militaire et républicain-socialiste. Le caractère militaire de cette échauffourée de casernes et de sous-officiers est justement ce qui a fait le plus profond et le plus fâcheux impression dans le pays et dans Madrid tout particulièrement.

On lit dans le même journal :

Une conversation qu'un de nos collaborateurs a eue avec une notabilité de parti républicain espagnol confirme les renseignements que nous avons publiés hier en dernière heure. Nous reproduisons, sans en garantir bien entendu l'authenticité, les nouvelles informations communiquées à notre collaborateur :

« Je puis vous affirmer, lui a dit son interlocuteur, que, malgré les démentis officiels, la situation, surtout en Catalogne, est des plus graves. Il est loisible qu'un seul des régiments et sous-officiers se trouve à la tête de l'insurrection. Depuis longtemps les cris de : *Muerre à Marqués Campos* se répètent dans les quartiers (casernes), sans qu'on ait osé les réprimer, et un grand nombre d'officiers supérieurs sont, de leur côté, ouvertement, avec le mouvement républicain qui est celui et qui est prêt à éclater sur les points principaux de la Péninsule.

« En Catalogne particulièrement, l'insurrection est loin d'être répouée, et il y a plus

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W. Francis Galtton F.A.S.



10. Supplies for the Public Health.

There are three ways in which a collection of public health supplies can be obtained. The first is by direct purchase from the manufacturer. The second is by purchase from a wholesaler. The third is by purchase from a retailer. The first method is the most direct and the most economical. The second method is the most convenient. The third method is the most expensive.

11. Supplies for the Public Health.

The second method is the most convenient. It involves the purchase of supplies from a wholesaler. This method is the most common. It is the most convenient because it allows the purchaser to obtain a large quantity of supplies at a lower price than if they were purchased from a retailer. It also allows the purchaser to obtain a wide variety of supplies from one source.

12. Supplies for the Public Health.

The third method is the most expensive. It involves the purchase of supplies from a retailer. This method is the most expensive because the retailer must add a profit margin to the wholesale price. It is also the most inconvenient because the retailer may not have the full range of supplies available.

13. Supplies for the Public Health.

The first method is the most direct and the most economical. It involves the purchase of supplies from the manufacturer. This method is the most direct because it allows the purchaser to obtain supplies at the lowest possible price. It is also the most economical because it allows the purchaser to obtain a large quantity of supplies at a lower price than if they were purchased from a wholesaler or retailer.

14. Supplies for the Public Health.

The second method is the most convenient. It involves the purchase of supplies from a wholesaler. This method is the most convenient because it allows the purchaser to obtain a large quantity of supplies at a lower price than if they were purchased from a retailer. It also allows the purchaser to obtain a wide variety of supplies from one source.

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LONDON, July 5. 83

"English Mechanic" June 29

sensitivity will meet with objectors, as, for instance, where having said that as a rule he finds men possessed of more delicate powers of discrimination than women, he mentions pianoforte tuners, tasters of tea and wine, sorters of wool, and the like. That women rarely if ever practise these arts is due rather to the conditions under which they are practised than to any inferiority on the part of women in forming an accurate judgment. So far as tuning pianofortes is concerned, so long as the work is carried on at the factory, there seems no reason why women should not be employed, as then it is simply a question of a trained ear, and certainly women have as much appreciation for music as men. Mr. Galton, however, destroys one popular delusion when he says that blind people have not, as a rule, that acuteness of other senses with which they have been credited. His experiments point to the conclusion that the blind succeed in many things, not by their superior sensitivity, but by the guidance they obtain from the multitude of collateral indications to which they give heed. Those who can see, habitually overlook and neglect these indications. The power of reading by touch is not very wonderful. Lord Hatherley rapidly acquired it, though in his case it may be said that there was already the intelligence to do anything that was possible. Mr. Galton has made a very large number of experiments with test weights of various sizes and specific gravities, and has selected common cartridge cases, which are filled with layers of shot, wool, and wadding in various proportions, with which the experimenter is tested as to his sense of weight. The outcome of the application of these tests leads Mr. Galton to affirm that "our apparently simplest perceptions are very complex. We hardly ever act on the information given by only one element of one sense, and our sensitivity in any desired direction cannot be rightly determined except by carefully-devised apparatus judiciously used." In his section on "anthropometric registers," Mr. Galton deals with a matter which is certainly of much importance, but which, we are afraid, will not be carried out in the scientific manner. The world may be beginning to awaken to the fact that the life of the individual is in some real sense a prolongation of the lives of his ancestry; but the "world" is not prepared to keep a truthful record of all that concerns the habits and character of every member of the family. Measurements and photographs might be kept with some honesty, but there would be a tendency to destroy all notes relating to the lives of the persons who happened to turn out "black sheep." It is, however, undoubtedly the fact that "those who care to initiate and carry on a family chronicle illustrated by abundant photographic portraiture, will produce a work that they and their children and their descendants in more remote generations will assuredly be grateful for." If we had only such records as the height, weight, complexion, temperament, &c., of even half a dozen English families during the past eight centuries, together with their ages at death and the cause, with a list of diseases from which they had suffered—in short, a brief life-history of the different members of several families, we should possess information the value of which could not be over-estimated. Mr. Galton considers that no time should be lost, and that we should at once encourage a habit of compiling personal and family histories which may be of immense advantage to posterity, and cannot fail to be of intense interest to our successors. Mr. Galton would have us measure our faculties on the plan indicated by his system of test weights for ascertaining the sensitivity of touch, because we are all curiously unconscious of our personal pecu-

liarities, which even our most intimate friends often fail to remark. Many of us are deaf to high or low notes, not a few are colour-blind on one side or the other of the spectrum, whilst some possess the power of imagery, visualised numerals, colours connected with sounds, and other special associations of ideas unknown to themselves, or if known unrecognised as peculiarities. Of such peculiarities the author gives a variety of examples, as he does of other interesting facts, not the least notable of which are the instances he mentions of twins in which the individuals in their characteristics and peculiarities were the complements of one another. As to mental imagery, Mr. Galton tells us that his questions, at first addressed to scientific men, met with answers which astonished him, because he had expected that they at least would give accurate accounts of their power of visualising. Thus, he asked them to picture their breakfast table, then whether the image was clear or dim, which was the place of sharpest definition, whether the colouring of the articles seen was quite distinct and natural, and so on. Many of his subjects protested that such mental imagery was unknown to them; but others—persons in general society—convinced him that they did possess the power of mental imagery in a very high degree. Whether he is justified in saying that "scientific men, as a class, have feeble power of visual representation" is another matter, because the scientific men may regard what is called mental imagery as merely the effect of memory. The distinction is, however, clear; it is not a question of remembering how many cups and saucers there were and their colour, or how many persons sat down, but whether the scene can be mentally pictured exactly as it was, with the various articles in their relative positions and of their distinctive colours. Mr. Galton concludes that an over-ready perception of sharp mental pictures is antagonistic to the acquirement of habits of highly generalised and abstract thought, and that the highest minds are probably those in which the faculty is not lost, but subordinated, ready for use on suitable occasions. The missing faculty is, however, replaced by other modes of conception, and those who declare themselves entirely deficient in the power of seeing mental pictures can, nevertheless, give life-like descriptions of what they have seen. The instances Mr. Galton gives of this faculty of visualising form a most interesting chapter or division of his book. They are illustrated by four plates of diagrams collected from various sources, giving, however, chiefly number-forms, though one relates to colour associations. From those who can visualise scenes of ordinary life it is but a step to the "visionaries" proper, and what Mr. Galton here tells us will suffice to account for all the ghost stories.

The chapters on Domestication of Animals, on Objective Efficacy of Prayer, on Selection and Race, will afford much food for useful thought. Overbred animals, says Mr. Galton, have little stamina; they resemble the "weedy" colts so often reared from first-class racers. Much depends on what is meant by "overbred." It may be quite true that there are many causes to check the unlimited improvement of highly-bred animals, but "weedy" colts are scarcely evidence of deterioration of breed, because it may be that one or other of the parents has been over-worked, a point which Mr. Galton notes on another page when he says that mares who win races as fillies are not allowed to waste their strength in being ridden or driven, but are reserved for the stud, at which, by the bye, it may be mentioned they often produce "weedy" progeny because they have suffered injury through training for the races which gave them the

honour of being selected to perpetuate the species.

In his section on the influence of man upon race, Mr. Galton deals with a point which is often the subject of some confusion—the sentiment against the gradual extinction of an inferior race, as if it were equivalent to the destruction of a large number of men. It is nothing of the kind, where the change is introduced silently and slowly through the earlier marriages of members of the superior race, through their greater vitality and better chances of getting a livelihood. As a matter of fact, inferior races are being gradually extinguished in all parts of the civilised globe, and there is probably hardly a spot that within the last few thousand years has not been tenanted by very different races. "Aborigines" is a most misleading word, as Mr. Galton shows by the numerous instances he cites of the intermixture of races, those who inhabit Spain forming a very remarkable example. To those who would urge that, as social forces and self-interests are too strong to be resisted, nothing can be done to vary the future human stock, Mr. Galton replies sufficiently, "they need not be resisted; they can be guided." His suggestions may seem very unlikely to work well; but it is probable that some of them will be adopted, and that mankind will eventually endeavour to direct its own evolution.

of spherical aberration capable of being neutralised by the bending is equal to the spherical aberration of the combined objective, the neutralisation of which is the object sought, then this bending back will be just sufficient to entirely free the objective from all spherical aberration. With regard to the aberrations of the higher order, however, it is better to choose for the cut a still shorter radius of curvature, and to carry the bending back only far enough to neutralise the aberration in question, during which, however, the bending of the flint glass lens, to recoup for the latter the above-described best form, must be effected in a correspondingly lesser degree.

The space between the lenses *cc* and *bb* (Fig. 4) resulting from this change of form, will then represent a meniscus, which, if consisting of the same material (crown glass), would have a very long focus, whose spherical aberration, however, would be equal to that of the objective which it is cut out of.

On closer examination of the mode of neutralising the spherical aberration, it appears that the flint glass lens of the double objective (Fig. 1) has, in comparison with it, a little the advantage, on account of its greater power of refraction, especially in regard to the aberrations of the higher order. But this inconsiderable advantage is abundantly outweighed by the circumstance that, with this new mode, a very large margin is left for the choice of the radius of curvature of the cut, whereby, in fact, the advantage of a much higher correction of the spherical aberration may be obtained than would be possible in a double objective, even if the chromatic over-correction at the rim were entirely left out of

Occultations of Fixed Stars

| Day of Month. | Name of Star. | Magn. | Disappearance. | Moon's Limb. | Angle from N. or S. |
|---------------|---------------|-------|------------------|--------------|---------------------|
| 14 | 28 Libræ | 6 | h. m. 11 11 p.m. | Dark | 89 |
| 17 | B.A.C. 6681 | 6 | 11 31 .. | Dark | 120 |
| 22 | α Capricorni | 4½ | 2 14 a.m. | Bright | 151 |
| 22 | β Capricorni | 6 | 2 41 .. | Bright | 81 |

; Star below the

in the early morning of the 20th, and enter her Last Quarter 15.4 minutes after midnight on the 26th.

| Day of Month. | Moon's Age at Noon. | Souths. |
|---------------|---------------------|-------------|
| | Days. | h. m. |
| 1 | 26.2 | 9 1.4 a.m. |
| 6 | 1.9 | 1 41.5 p.m. |
| 11 | 6.9 | 5 25.3 .. |
| 16 | 11.9 | 9 16.0 .. |
| 21 | 16.9 | *12 47.3 .. |
| 26 | 21.9 | 5 6.4 a.m. |
| 31 | 26.9 | 9 45.6 .. |

* After midnight on the 20th.

The Moon will be in conjunction with Saturn at 11 p.m. on the 1st; with Venus at 11 p.m. and with Mercury at midnight on the 2nd; with Jupiter at 6 p.m. on the 4th; with Saturn again at 10 a.m. on the 29th; and with Mars at 8 o'clock that same evening.

Mercury

Attains his greatest Elongation West from the Sun (21° 26') at 10 a.m. on the 2nd, and quite obviously is a Morning Star after this until he comes into superior conjunction with the Sun, which occurs at 11 o'clock on the night of the 29th. He may probably be caught before sunrise at the beginning of the month; but each succeeding day brings him into a worse position for, and renders him a less interesting object to the observer. His angular diameter steadily decreases from 8' on the 1st to 5' by the 31st.

| Day of Month. | Right Ascension. | Declination North. | Souths. |
|---------------|------------------|--------------------|--------------|
| | h. m. | ° | h. m. |
| 1 | 5 8.2 | 19 39.9 | 10 31.7 a.m. |
| 6 | 5 30.5 | 21 0.8 | 10 34.2 .. |
| 11 | 6 0.6 | 22 16.5 | 10 44.6 .. |
| 16 | 6 38.1 | 23 5.1 | 11 2.3 .. |
| 21 | 7 21.1 | 22 57.2 | 11 35.5 .. |
| 26 | 8 6.2 | 21 45.2 | 11 50.9 .. |
| 31 | 8 50.2 | 19 31.8 | 0 15.1 p.m. |

Hence it will be seen that Mercury will travel from Taurus right across Gemini and into Cancer during July. He will be in conjunction with Venus at 6 a.m. on the 4th, and again at 4 p.m. on the 8th, as also with Jupiter at 10 a.m. on the 29th.

Venus

Is a Morning Star during the entire month, and may be seen before sunrise; but, for the reason given last month, is becoming less and less an object of interest for the observer with the telescope. Her angular diameter decreases 10.6" on July 1st to 10' by the end of the month.

| Day of Month. | Right Ascension. | Declination North. | Souths. |
|---------------|------------------|--------------------|--------------|
| | h. m. | ° | h. m. |
| 1 | 5 5.1 | 22 5.7 | 10 28.6 a.m. |
| 6 | 5 31.8 | 22 42.4 | 10 35.0 .. |
| 11 | 5 57.6 | 23 4.9 | 10 41.6 .. |
| 16 | 6 24.1 | 23 16.9 | 10 48.4 .. |
| 21 | 6 56.7 | 22 59.9 | 10 55.2 .. |
| 26 | 7 17.2 | 22 32.1 | 11 2.0 .. |
| 31 | 7 45.5 | 21 47.6 | 11 8.5 .. |

The above Ephemeris shows how Venus passes through the same region of the sky this month

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Greenwich Mean Time of Southing of Six of the Principal Fixed Stars on the Night of July 1st, 1883.

| Star. | Souths. |
|--------------------|-----------------|
| Antares | 9 45 54.76 p.m. |
| α Herculis | 10 50 56.95 .. |
| α Ophiuchi | 10 56 58.11 .. |
| γ Draconis | 11 15 18.15 .. |
| Vega | 11 54 17.12 .. |
| ζ Aquilæ | 12 40 46.98 .. |

The Method of ascertaining the Greenwich Mean Time of Southing of either of the Stars in the above List for any other night in July, as also that of determining the Local Instant of its Transit at any other Station, will be found on p. 375 of Vol. XXXVI.

PRACTICAL NOTES ON PLUMBING.—LXX*

By P. J. DAVIES, H.M.A.S.P., &c.

(Continued from page 331.)

Cast-Iron Frames.

THESE frames are made suitable for single, double, or treble throw cranks. The frame at Fig. 246 is a treble throw, with compound gear. The handle 2, and flywheel is shown fixed upon a countershaft 3, and works as follows. Suppose the countershaft to have a pinion or small wheel, having, say, six teeth, leaves, or cogs, and which runs into a large spur-wheel 6, fixed on the crank-shaft 5. Now, suppose this large spur-wheel to have 120 teeth or cogs, turn the handle six times round, and the cranks will make one revolution, hence we say that the frame is geared for six to one. Now turn back to Fig. 310. This lever is usually made 16in. to 18in. long, and to the proportion of the radius or throw of the crank. Suppose the pump-crank to give a 9in. stroke, that is a 4in crank, and the handle leverage to be

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Macmillan & Co.

Publishers,

29 & 30, BEDFORD STREET, COVENT GARDEN, W.C.

LONDON, Oct: 18. 83

Daily News Oct 18

"Inquiries into Human Faculty and its Development." By Francis Galton, F.R.S. (Macmillan and Co.) The doctrine of evolution is not perhaps quite so modern as its latest teachers assume; and it has been driven so hard and into such dogmatic intolerance by some of its latest zealots, that we cannot wonder if its sweeping generalisations provoke antagonism. The idea of "furthering" Evolution, which is the keynote of the present treatise, is more original, perhaps. One cannot help mistrusting statistical tables collected for the purpose of fitting into theories, all more or less vitiated by what may be called the mechanical fallacy, the fallacy of leaving out of the account the disturbing and incalculable elements of human nature and mortal destiny. The time may come when men and women will live only for each other's benefit, and marry with the single view to the improvement of the species. In the meantime, the most careful training and the most rational system of education will be apt to be deranged by impulses and motives and influences to which the reason and the will are as straw before the wind. Nevertheless, it cannot be denied that "Inquiries" such as these into the determining conditions of human faculty are of the deepest interest for all thoughtful minds, and suggest, if they do not solve, problems of the most mysterious significance. Mr. Galton, like Mr. Herbert Spencer, is an indefatigable searcher after instances and examples upon which to build a temple for the future Faith. The foundations are somewhat loose, but the structure is imposing. And whether we agree or disagree with his conclusions, we recognise with admiration the ample range of his premises, and admire the freedom and independence of mind with which he conducts his investigations.



Orville



Island, have been published. The most unworldly of men, he was dear to men of the world and to all literary men in America. His beautiful home at Newport was a centre of hospitality.

GENERAL LE FLÔ, formerly the French ambassador at St. Petersburg, who is now living in retirement at his chateau near Morlaix, is said to be preparing for publication the memoirs of his diplomatic career.

A FRENCH prose translation of some of Shelley's lyrics will be published next winter.

THE late Sir William Knollys deserves to be mentioned in these columns as the author of a translation of some of the odes of Horace, which was printed for private circulation and reviewed in this journal. He translated the Duc de Fersen's account of Napoleon's Russian expedition and prefixed to it an essay on the campaign. Sir William was also for two or three years Vice-President of the Council of Military Education. He was a most accomplished gentleman, a scholar as well as a soldier.

SCIENCE

Inquiries into Human Faculty and its Development. By F. Galton. (Macmillan & Co.)

The contents of Mr. Galton's latest book are most miscellaneous. It is, in fact, a collection of all the memoirs the author has written since his valuable work 'Hereditary Genius.' We only miss the lecture on 'Typical Laws of Heredity' which appeared in *Nature* and the essay on Pangenesis in the *Contemporary*, both of which would certainly have found a congenial place in this volume. It would have been better, perhaps, if the heterogeneous nature of its contents had appeared more distinctly in the title of the book, which is under the present circumstances somewhat misleading. It is, indeed, difficult to connect with human faculty the chapter on the domestication of animals, or that remarkable piece of scientific irony the section on the 'Objective Efficacy of Prayer,' which originally appeared in the *Fortnightly* under the title 'Statistical Inquiries into the Efficacy of Prayer.' On the other hand, the title is sufficiently vague to cover even the multifarious subjects which have engaged Mr. Galton's ingenuity during the past ten years.

For it is this quality, ingenuity, which strikes one most in examining these inquiries. Who but Mr. Galton would have thought of estimating, as he has done, the number of strokes with a brush required to produce a portrait? Who but he, again, would have thought it possible to estimate numerically the number and character of the associations we have with words of different degrees of abstraction? The part of Mr. Galton's work with which the general public are already to some extent familiar, his method of composite portraiture, is an admirable example of his ingenuity. By means of photographs superimposed on the same sensitive plate he has been able to obtain pictorial averages of various classes of faces, and he gives in his frontispiece examples of his results. Taking everything into consideration, they are remarkably successful in obtaining individualized repre-

sentations of the typical qualities of faces. One of the most striking examples is a highly individual "composite" of Alexander the Great, obtained from six different medals. Here, however, art had been before him in selecting the typical features. The success of his method should be indicated by the varying degrees of vividness with which the composites come out according to their supposed similarity of feature. Yet a composite containing one hundred "single gentlemen rolled into one" appears equally definite as another containing only six, and even more definite than another containing twenty-three.

The multifarious contents of Mr. Galton's "hotchpot," to use a term which he particularly affects, divide themselves into two separate classes of inquiry—special investigations into psychological phenomena, and general conclusions on the power of man over his own evolution owing to the principle of heredity. The more special inquiries apply to various human characteristics and faculties the statistical method which has been so fruitful in other branches of science. We have already spoken of Mr. Galton's pictorial averages; he has also statistical methods of measuring the sensitivity of various individuals to differences of weight and of the pitch of shrill sounds. The former is based on Fechner's law, but takes no account of the variations of "threshold" at which small differences become first perceptible. One of his most valuable and ingenious contributions is that dealing with the associations which connect themselves with various ideas. Mr. Galton comes to the conclusion that early associations are the most persistent.

Another branch of Mr. Galton's special investigations deals with topics which would seem congenial to the Society of Psychological Research. In four instructive memoirs he writes about the variations of the visual faculty in different individuals. The first treats of the power of visualizing objects brought consciously into memory, the next deals with the curious association of numbers with fixed diagrams in consciousness which is found in one out of every twenty-five educated persons, and the third with some equally curious associations of sounds, mostly vowels, with colour. The fourth is a memoir on the visions of sane persons, and brings us within measurable distance of a scientific explanation of ghosts. These investigations bring out another quality of Mr. Galton's work, besides its ingenuity, which was equally needed for their success. The patient industry which collected these facts from all quarters of the globe seems to be a family trait which Mr. Galton shares with his great kinsman Charles Darwin, whose special investigations into cross-fertilization, earthworms, &c., were likewise distinguished by the use of statistics.

By these special inquiries Mr. Galton has transplanted to these shores the quantitative methods of physiological psychology which distinguish the German schools of Fechner and Wundt. He has established by his example and initiation the science of psychometry, and pointed to the line of inquiry on which the scientific portions of psychology can alone become scientific. That part of psychology which approaches metaphysics more nearly than science is naturally not

touched by his methods, but may be affected by his results, as the more general conclusions of his book indicate.

One more of the special memoirs may be here referred to as leading on to the other section of Mr. Galton's work. In order to investigate whether birth or education—or, as he terms it, nature or nurture—has most to do with determining a man's character, Mr. Galton took the crucial case of twins. In some cases of twins nature turned them out alike, and no differences of nurture could alter their similarity of disposition. In other cases when the twins were unlike, no sameness of education was capable of rendering the two characters similar. The conclusion is drawn, natural to the author of 'Hereditary Genius,' that nature has by far the predominant influence. To have been entirely conclusive the investigation should have included some standard of similarity. The whole essay is full of interesting details, strange stories of mistaken identity, of a man who is not himself, but his brother, being changed at birth, and so on, and is an admirable example how gossip may be elevated into science.

Having shown that men's character depends on their birth, Mr. Galton, in the more general speculations of his book, attempts the difficult task of suggesting how the average capacity of man may be kept at the highest level of efficiency and developed to higher levels. He would endeavour, by public opinion, to control the composition of future generations by encouraging early marriage between the most favourable specimens of the race, and discouraging marriage of persons likely to produce inferior children. The science or art of "eugenics"—man-breeding, one might English it—is the method by which the natural selection of man should be guided by man himself into the most beneficial channels. Even at present something is done in this direction by the veto which public opinion casts on the marriage of those who have consumption or an hereditary taint of insanity. Mr. Galton would extend this censorship of public opinion by a general encouragement of marriage in families of ability and discouragement in the reverse case. With his usual ingenuity, he suggests a plan by which "family merit" should receive extra marks in competitive examinations for the Civil Service; so that those who are most able, besides being the most energetic and long-lived. He thus advocates the foundation of an order of natural nobility who will have family pride enough not to indulge in misalliances with merely rich heiresses who have very little family merit. Plato finds in Mr. Galton an eloquent advocate of his theories, and, what is more, the popular theories of democracy receive a rude repulse of their assumption that all men are born equal. The discussion of this important problem leads our author to higher flights, in which he points out that man "should regard himself more as a freeman, with power of shaping the course of future humanity." And he concludes by saying:—

"The chief result of these inquiries has been to elicit the religious significance of the doctrine of evolution. It suggests an alteration in our mental attitude and imposes a new moral duty.

The new mental attitude is one of greater sense of moral freedom, responsibility, and opportunity; the new duty consists in endeavour to further evolution, especially that of the human race."

We do not think that Mr. Galton exaggerates in any way the importance of the problem which he has made prominent. The only question is, how far the end aimed at by him is practical under the present conditions of society; and it is tolerably clear that it can only be reached by what Mr. Herbert Spencer would call "unconscious adjustment," and not by any system, however ingenious, of family marks. It is curious that the speculations of Malthus which indirectly led to the Darwinian theory should still more indirectly lead to a refutation of Malthus's principal conclusion, the duty of late marriage among the most prudent of mankind.

The note struck in Mr. Galton's concluding words as to the religious significance of the topics he has discussed refers back to a third division of his inquiries, which deal with religious phenomena aggressively from the point of view of the psychologist and the statistician. He has been led to discuss the possibilities of theocratic intervention with the observed order of things—hence his investigation as to the effect of prayer on longevity. It argues considerable naïveté on his part if he expects his statistical treatment will satisfy any opponent. His remarks, however, as to the impossibility of theocratic intervention interfering with the results of scientific investigation (pp. 271-6) are novel and effective. It is extremely curious to see this attack on the old creed by a distinguished adherent of the new; but on the whole the result is by no means satisfactory, and the sections of the book dealing with it are by no means equal to the remainder of the work.

As the reader will have seen from this rough enumeration of its contents, Mr. Galton's new work is a valuable contribution to contemporary speculation. In few speculative works will the reader find so much that is novel and interesting on almost every page. On the other hand, it must be granted that much of the effect of the book is spoiled by the haphazard arrangement of its contents, and the difficulty of catching the general drift of such a heterogeneous collection of studies. Mr. Galton's psychometric researches and his theory of eugenics might appropriately have been developed in separate volumes, in which they would have been more effective than when combined; and his attacks on religious prejudices and the like might have been entirely omitted with advantage.

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numerous. Their titles alone would occupy more space than can be devoted to this article. References to nearly all of them will be found in the Catalogue of the Royal Society. A few of the earliest may be here mentioned, as indicating the lines of research in pure mathematics on which he first entered, and which, for the most part, he continued to follow until about thirteen years ago, when he turned his attention to questions in physics, more particularly to the polarization of light and electrical discharges. The *Philosophical Magazine* for 1850 contains no fewer than four papers from his pen, three of which relate to equations and expressions in the calculus of quaternions, and the fourth to cones of the second order. In the volume for 1852 he discusses a problem in combinational analysis, which is a generalized form of the celebrated fifteen young ladies question; his solution is obtained by the aid of determinants. The *Genealogical and Pedigree Mathematical Journal* for 1852 contained his researches on the calculus of operations, in which he succeeded in extending and generalizing theorems due to Boole and Carnichael. This subject he afterwards followed out to a considerable extent, embodying the results of his more matured researches in formal memoirs read before the Royal Society in 1859-1862. One of these is printed in the *Philosophical Transactions* and the others in the *Proceedings of the Royal Society*. The first paper which he communicated to that learned body dates so far back as 1854; it relates to the theory of invariants—a theory which we owe to the genius and labours of Cayley and Sylvester. To the *Quarterly Journal of Mathematics* in 1863 and to the *Manchester Memoirs* for 1865 he contributed papers on the theory of differential resolvents, a department of analysis with which the names of Cockle and Harley are usually associated.

If it should be said (and this would only be true in a sense) that Spottiswoode did not himself originate any new theory or devise any new system, it cannot be denied that he gave powerful aid in developing and perfecting the theories and systems of others. To very few men are we more indebted than to him for our improved powers of analysis. His memoirs in the *Philosophical Transactions* on the sextactic points of a plane curve, on the contact of conics with surfaces, and on other geometrical problems, are masterpieces of analytical investigation.

Spottiswoode was more than a skilful manipulator of mathematical symbols or solver of mathematical problems; he looked to the principles of his science. He delighted in the discovery of new fundamental conceptions, and in showing how "whole theories might be coordinated." His presidential address before the London Mathematical Society in 1871, in which he dealt with recent generalizations in algebra, excited much interest at the time both in England and America, especially among the cultivators of symbolic logic. His address as president of the British Association at Dublin in 1878, and his earlier address as president of Section A at Birmingham in 1865, will ever remain monuments of his philosophic power.

We have not touched on Spottiswoode's more recent works, his revolving polariscope, his

early German Reformation tract, directed principally against Murner, one of Luther's chief opponents, with quaint woodcut illustrations and borders; 318, Opera Nuova Piacevole, e da Ridere de uno Villano Lavoratore nomato Grillo, el quale volse diventar Medico, in Rima Historiata, Venice, 1538, with several beautiful woodcuts; and finally 395, Les Visions Admirables du Peirin de Parmasse; ou Divertissement des Bonnes Compagnies et des Esprits Curieux, par un des Beaux Esprits de ce Temps, Paris, 1635, a collection of facetiæ, very rare. We have said that all these books were obtained at moderate prices, and it may be added that such was the case generally with the books sold on this occasion.

MR. H. F. TURLIE.

MR. H. F. TURLIE, the Editor of *Notes and Queries*, expired very suddenly of heart disease on evening of Thursday, June 28th, the first anniversary of his father's death. On the Wednesday he had been busily at work, and in the afternoon went to Norwood Cemetery, where his father was buried, and gave instructions for fresh to be placed on the grave in view of his lying it on the morrow. The next day he felt slightly unwell, and remained in his room as a measure of precaution, but till the evening of his death no danger was apprehended.

Turlie was the fourth surviving son of the well-known organist of Westminster Cathedral, who was born in the York Road, on the 23rd of July, 1835. In September, the family went to live in the Abbey, and Turlie was educated in the latter School, under Dr. Williamson. In instance, and from 1846 under Dr. Williams. His health being delicate, he was educated at Westminster for a time and a private school at Lyme Regis, kept by Robert. From Lyme Regis Mr. Turlie went to Westminster, and shortly after completed his education, he was appointed a temporary clerk in the War Office, his tastes lay in a different direction, and a few years he found more congenial occupation in the work on which he was engaged on the day of his death, first as assistant to Mr. Dorn and then to the late Dr. Dorn, and finally as editor himself, he succeeded, on the death of Dr. Dorn, in the year 1878.

In very early boyhood he had given evidence of a fondness for archeology, and particularly for church architecture and antiquities, which increased as he accumulated knowledge of the subject. No detail was too small for his careful notice, nor by him were any pains spared in gathering information from all who could impart from special stores—were they architects, clerks of works, stonemasons, or bricklayers.

Westminster Abbey, endeared to him by associations of family, friends, and long residence, was the centre of his affections in the world of architecture; and probably few were so well equipped as himself with a minute knowledge of its history, its structure, its monuments, and all its surroundings. Church ceremonial of the more stately kind had, from his schooldays, the strongest fascination for him. The service held in the chapel of the Savoy over his remains marked in a befitting manner the termination of a career which, short comparatively though it was, was long enough for his amiable qualities to earn for him a large number of friends in all stations of life, who will not soon forget the kind, considerate, and self-sacrificing man who has prematurely gone to his rest.

CHARLES LAMB'S LETTERS.

Attention.—On July 2, 1883. My experience as a biographer of Lamb and editor of his essays leads me to believe that there probably still exist in private collections many

letters of Lamb's that have not yet been printed. Several of great interest came into my hands while I was preparing the notes to my edition of 'Elia.' As I hope to edit in a companion volume the poems and other writings of Lamb, I should be sincerely obliged if any one possessing original letters, hitherto unpublished, would allow me to see them or to have copies of them.

ALFRED AINGER.

Literary Gossip.

MR. MACKENZIE WALLACE is engaged upon a volume to be entitled 'Egypt and the Egyptian Question,' which will be published by Messrs. Macmillan & Co. early in the autumn season.

THE same publishers have in preparation a translation of Dr. Moritz Busch's forthcoming work on Prince Bismarck in his relations to German politics and political parties, and in private life. The work is sure to attract the attention of all readers of the instructive and entertaining volumes which Dr. Busch published five years ago upon Bismarck in the Franco-German War.

We are glad to learn from a letter we publish above that the success of Mr. Ainger's recent edition of the 'Essays of Elia' has been such as to encourage the publishers to undertake a companion volume of Lamb's plays, poems, 'Rosamund Gray,' and the critical essays on Hogarth and the Elizabethan dramatists. Mr. Ainger, we believe, intends to arrange the poems in chronological order, and thus to show for the first time their autobiographical value.

PROF. HUXLEY will write an article in the first number of the illustrated magazine which Messrs. Macmillan are to start in October; so will Mr. Grant Allen. Mr. Swinburne will contribute a poem of some length called 'Les Casquets.' It is descriptive of the Casquets Lighthouse in the Channel Islands.

The Record Society has this week issued to its members the seventh and eighth volumes of its publications. These two books deal with the Lancashire and Cheshire records, now preserved in the Public Record Office, and have been very carefully edited by Mr. W. D. Selby, whose extensive acquaintance with all classes of records is well known. The Society is to be congratulated on the publication of two books of such value.

A NEW work by Mr. Percy Fitzgerald, entitled 'Kings and Queens of an Hour: Records of Love and Adventure,' will be published this month by Messrs. Tinsley Brothers.

MR. H. WESTON EVE, M.A., head master of University College School, has become Dean of the College of Preceptors, in the place of Mr. A. K. Isbister, deceased.

MR. W. H. BUSH, of Bristol, has presented to the Birthplace Library at Stratford-on-Avon an interesting collection of printed and manuscript papers on Shakespearean subjects. They are mostly of the present century, and include autograph letters of Malone, Britton, and others.

A NEW volume on the 'Theory and Practice of Education,' by the head master of Uppingham School, will be published very shortly by the Cambridge University Press.

THE Cambridge Independent Press appears to-day for the first time as a penny paper—

in anticipation, as its conductors declare, of the measure extending parliamentary suffrage in the counties, which is expected to become law "next session."

A CROMWELLIAN celebration is to take place next week at the village of Houghton, in Huntingdonshire. A collection of pictures, coins, busts, and satirical representations of Cromwell, belonging to Mr. De Kewer Williams, will be exhibited on the occasion.

MESSRS. BURNS & OATES have in the press a work for the Rev. H. Formby, entitled 'Hebraica, Græce, Latine,' &c., a sequel to the same author's 'An Investigation into the Growing Unbelief of the Educated Classes.'

MR. J. H. INGRAM writes:— "Appended to my paper on Chatterton, in this month's *Harper's Monthly Magazine*, is a 'Note,' for which I am not answerable, respecting the poet's portraits. The information given in the 'Note' is neither correct nor complete, nor is it in accordance with my opinions."

THE parish registers of Farleigh, Surrey, 1679 to 1812, are about to be published by subscription by Mr. R. G. Rice, of Croydon. Copies of all the monumental inscriptions in the church and churchyard will also be given.

DR. MARTIN LUTHER'S letter, 'An die Rådherren aller städte Deutsches Lands: das sie Christliche Schulen Aufrichten und Halten Sollen,' Wittenberg, 1524, is just about to appear in a facsimile edition, printed by the well-known printer Drugulin of Leipzig.

KANT'S tractate 'Zum Ewigen Frieden' is being translated for the Peace Society. It was first published in 1795, and shows the Republican views of the author. The same philosopher's 'Lehre vom Gewissen' is critically examined by Dr. W. Wohlrahe in a brief work just issued from the press at Gotha. This writer holds that Kant's three definitions of conscience given in various parts of his writings are not essentially different, and denies the assertion of the illustrious philosopher that there cannot be such a thing as erring conscience.

PROF. C. ELIOT NORTON, the scholarly editor of the correspondence of Emerson and Carlyle, is one of the many Americans who have come to Europe this summer. Prof. Norton intends to pass most of his holiday in Switzerland.

THE death is announced of the Rev. Charles T. Brooks, an American translator and poet, at the age of seventy. Although Mr. Brooks was an able teacher of the religion of Channing in the birthplace of Channing, Newport, he had many years left the pulpit and devoted himself to literature. He was distinguished for his translations from the German, which include Jean Paul's 'Titan' and 'Hesperus'; Goethe's 'Faust'; Hans Sachs's 'The Unlike Children of Eve'; Grillparzer's 'Ahnfrau'; and a large number of miscellaneous poems by Schiller, Rückert, Anastasianus Grün, and others. The carefulness and excellence of Mr. Brooks's translations, especially those of works so difficult as 'Titan' and 'Hesperus,' elicited a warm compliment from Carlyle. His original works are also considerable; a volume entitled 'Songs of Field and Flood,' and a number of festival poems connected with the town of Newport, Rhode

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Literatur.

Entwicklung der Seele.

Besprochen von Dr. Eduard Reich zu Glücksburg.

§ 1.

Mehrere vorzügliche Arbeiten verdankt die Wissenschaft Francis Galton*). Ich brauche blos an «Hereditary Genius» (1869), «English Men of Science» (1874), an die vor dreissig Jahren erschienene Beschreibung seiner nach Süd-Afrika unternommenen Reise, an das Werk über die Kunst des Reisens, von welchem zwischen 1854 und 1872 mehrere Auflagen gedruckt wurden, zu erinnern. Ausserdem veröffentlichte der Verfasser zwischen 1863 und 1883 eine Zahl von Aufsätzen in philosophischen, anthropologischen, medicinischen und allgemeinen Zeitschriften Englands, welche Gegenstände von hervorragender Wichtigkeit behandeln; ich nenne nur die Aufsätze über anthropologische Statistik, Domestication der Thiere, Physiognomik, Zwillinge, Erblichkeit, Psychologie — Arbeiten, welche Galton sammeln und als besonderes Buch herausgeben sollte! Wir haben in Galton mit einem Gelehrten es zu thun, der es versteht, gründlich zu forschen, klar zu denken und richtig anzuwenden, mit einem ausdauernden, eifrigen und originellen Kopf, der zugleich grosse Welt- und Lebens-Erfahrung sein Eigen nennt.

§ 2.

Mit dieser höchst begründeten guten Meinung treten wir an Lectüre und Besprechung des vorliegenden Werkes. Jedes Blatt, welches wir aufschlagen, befestigt unser gutes Vorurtheil und sagt uns, dass wir es hier mit Forschungen und Meditationen zu thun haben, welche für die wahre Anthropologie — unter welcher ich weit mehr verstehe, als die gewöhnlichen Spielereien der Schädelausmessung! — von grösster Tragweite sind.

In den ersten Hauptstücken des Buches macht dasjenige, was man etwa als eine Anthropologie der Gesichtszüge bezeichnen könnte, den Gegenstand der Betrachtung aus. Weiter sind studirt die körperlichen Eigenschaften der Individuen, Klassen und Rassen, die Kraft, das Empfindungs-Vermögen, die Ordnung der Probe-Wägungen und was sonst zur Anthropometrie gehört, der Charakter, die Verbrecher und Irrsinnigen, die Heerden- und Sklaven-Instincte, die geistigen Unterschiede, die geistigen Gebilde, die Zahlenformen, die Zusammenstellungen der Farben, die Visionäre, Pflege (Ernährung) und Natur, Vergesellschaftungen, psychometrische Versuche, die Vorhalle des Bewusstseins, die ersten Gefühle, Geschichte von Zwergen, Verhäuslichung von Thieren, Wirksamkeit des Gebets, Enthusiasmus, die beobachtete Folge der Ereignisse, Auswahl und Rasse, Bevölkerung, Uebervölkerung und Verfall von Rassen, Einfluss des Menschen auf die Rasse, frühzeitige und späte Heirathen, Anthropologie der Familie, natürliche Anlagen u. s. w.

§ 3.

Alle diese Entwicklungen hängen nicht lose, sondern organisch zusammen und sind aus einem gemeinsamen höheren Gesichtspunkte unternommen. Es wäre geradezu unmöglich, die Ergebnisse der Untersuchungen Galton's mit wenigen Worten hier anzuführen; wir sind genöthigt, auf das inhaltreiche

*) Francis Galton, Inquiries into Human Faculty and its development. London, 1883 (Macmillan & Co.), in 8°. — XII und 388 Seiten.

Werk selbst zu weisen. Nur das Eine können wir aussprechen, dass so manches Capitel der Medicin, Anthropologie und Philosophie durch die Arbeit des Autors und die Folgerungen aus derselben sowohl eine wesentliche Bereicherung erfährt, wie andererseits in dem einen und dem anderen Punkte geradezu Anstösse zu völliger Umgestaltung bekommt. Möge darum keiner der genannten Berufsgenossen und Niemand, der mit der Geschichte der Civilisation sich beschäftigt, es unterlassen, Galton's neues Werk zum Gegenstande ebenso ernsthaften wie eingehenden Studiums zu machen.

Elektro-technische Bibliothek.

Besprochen von H. Schmidt.

Von der in No. 10 dieser Zeitschrift besprochenen «Elektro-technischen Bibliothek» gingen uns in letzter Zeit die Lieferungen 8—20 zu.

Auch bei diesen sämtlichen Lieferungen muss man die Deutlichkeit der einzelnen Abbildungen bewundern. Band II. enthält Abhandlungen über die elektrische Kraftübertragung und ihre Anwendung in der Praxis. Namentlich sind die Motoren sehr ausführlich behandelt. Im III. Band wird der Leser in sehr ausführlicher Weise mit der neuesten, grossartigen Erfindung, dem elektrischen Licht, bekannt gemacht. Dieser Aufsatz ist von Dr. A. Ritter v. Urbanitzky, dem Verfasser des uns vor Kurzem zugegangenen Werkes: «Die Elektrizität im Dienste der Menschheit», s. No. 20, Seite 14 u. 15. Vornehmlich sind es die elektrischen Lampen und Beleuchtungskörper, denen der Verfasser eine längere sehr ausführliche Abhandlung zutheil werden lässt; selbiger Aufsatz umfasst in dem gegen 220 Seiten starken Bande fast 180 Seiten.

Der IV. Band enthält verschiedenes über galvanische Batterien. Wie in dem vorigen Bande die elektrischen Lampen, so nehmen in diesem Bande (Lieferung 17 incl.) die galvanischen Elemente den grössten Theil desselben ein.

In dem nächsten, V. Bande, von dem uns bis jetzt nur Lieferung 17—20 incl. vorliegt, wird die Telegraphie näher behandelt, doch werden wir in nächster Zeit auf diese und die weiteren Lieferungen noch einmal zu sprechen kommen.

Mannigfaltiges.

Vereinswesen. Unter der Bezeichnung «La Santé, société végétarienne de Genève», hat sich in Genf ein Verein gebildet, dessen Zweck nach Artikel I. der uns übersandten Statuten ist: Erkenntniss und Ausübung der Hygiene, des Vegetarismus, der Naturheilkunde und überhaupt alles dessen, was, direkt oder indirekt, auf die menschliche Gesundheit Bezug hat, volksthümlich zu machen. Wir wünschen demselben ausgezeichneten Erfolg und recht viele Nachfolger! Bei dieser Gelegenheit können wir unseren Lesern nicht vorenthalten, dass der vegetarische Verein für Schlesien, welcher seinen Sitz in Breslau, gegen vierzig Mitglieder und eine sehr hübsch ausgewählte und sorgfältig geordnete Büchersammlung hatte, im Laufe des Sommers in Trümmer gefallen ist. Die Schuld trägt die Persönlichkeit des Vorsitzenden, der, wie er nicht verstanden hat, den Verein zu beleben, später durch sein Verhalten die namhaftesten und eifrigsten Mitglieder zum Austritt veranlasste. Die natürliche Folge war die Auflösung

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des Vereins, die, keineswegs streng statutengemäss, mit einer an's Komische streifenden Hast erfolgte, und bei welcher sich die wenigen zur General-Versammlung erschienenen «Generäle» in die bewegliche Kriegsbeute theilten. Schade nur um die nette Bibliothek, die dabei verschleudert wurde. Um den Verein weniger, denn er hat für den Vegetarismus in Schlesien nichts Erhebliches geleistet, er schlummere in Frieden! Die Idee schlummert nicht, sie wird sich weiter Bahn brechen und sicher über kurz oder lang in Schlesien durch einen neuen Verein repräsentirt werden. Vorläufig muss und wird unser Blatt die Stelle eines solchen vertreten. H. E.

Impfsegen. Dr. med. Crüwell in Danzig, welcher vor Kurzem vom dortigen Polizei-Präsidium beauftragt wurde, fortan über alle zu seiner Kenntniss gelangenden Impfschäden Bericht zu erstatten, hat sich, wie er uns mittheilt, noch am selben Tage zu folgender Anzeige genöthigt gesehen:

Im Anschluss an die mir heute zur Kenntnissnahme übersandene Verfügung, betreffend Vorkommnisse beim Impfgeschäft, erlaube ich mir gleich heute Behufs rechtzeitiger Erhebung des Thatbestandes den folgenden Fall aus meiner Praxis mitzuthellen:

Der einjährige Knabe des Herrn Parinski hier, Gr. Gasse 17 II., wurde Mitte August geimpft. Bald darauf erkrankte derselbe an einem pockenartigen Hautsyphilid, welches von den Eltern für Windpocken gehalten wurde. Der ältere, drei Jahre alte, bis dahin vollständig gesunde Bruder des Knaben bekam denselben Ausschlag und ist seit vorgestern an Rachendiphtheritis erkrankt. — Hiermit ist meines Wissens zum ersten Male der Anfang zu einem experimentellen Nachweis des längst vermutheten Zusammenhanges zwischen Impfsyphilis und Diphtheritis gemacht.

Ein alter Vegetarier. — Der 75jährige bair. Forstmeister Fr. Hochfärber, unser Mitarbeiter, dessen geniale Idee der Benützung des Gesteins zur Wiederherstellung der Bodenzeugungskraft unsren Lesern aus einer Reihe gediegener Aufsätze bekannt wird, hat sich, nachdem er aus innerem Triebe sein ganzes Leben lang äusserst einfach, urvegetarisch gelebt, in vorgerücktem Alter dem bewussten Vegetarismus freudig angeschlossen. Nach seinen Mittheilungen hat er in jungen Jahren von Pflanzenkost, ohne Milch und Eier, die er sich kostenhalber nicht anthun konnte, gelebt und Fleisch und Bier alle Jahre 3mal, zu Ostern, Pfingsten und Weihnachten gehabt, dabei oft wochenlang im Walde unter harter Arbeit zugebracht und unzähligmal im Freien geschlafen. In seinem selbstgeschaffenen Heim am Starnberger See arbeitet er noch jetzt wie ein junger Mann und verschmäh't es nicht, Steine zu karren u. a. dgl. Werke zu verrichten. Seine geistige Leistungsfähigkeit wird am besten durch die in seinen Aufsätzen niedergelegten Gedanken bewiesen. H. E.

«Der Yogi ist ein Freund aller lebendigen Wesen. Es ist bekannt, dass ein ächter indischer Yogi selbst von Insekten sich eher verzehren lässt, als sie tödtet. Man kann, wenn man will, über solche Gewissenhaftigkeit lachen, zu wünschen aber wäre, dass manche wissenschaftliche und unwissenschaftliche Thierquäler etwas von dieser Gewissenhaftigkeit der Buddhisten und der Yogis an sich hätten.»

Schelling (Philosophie der Mythologie).

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34 Hefte der „Deutschen Pomologie“ von W. Lauche, neu und gut erhalten, sind billig zu verkaufen durch M. Wolf, Genthin, Diench's Baumschulen. Die folgenden Hefte können weiter bezogen werden.

New York

ment for his godfather, etc. There is also some valuable discourse about the horrible and the brutal in the plays of Elizabeth's time, and a timely reminder that London in Shakespeare's day offered plenty of opportunities for the lover of horticulture and of wild flowers to gratify his eye and enlarge his knowledge. Besides the pictorial illustrations already mentioned, is one of Stratford-on-Avon in 1769, from an old print, and a facsimile of a list of holders of corn in the ward in which New Place was situated, from the original MS. return dated February, 1598, containing Shakespeare's name for ten quarters, the third (quantitatively) on the list. It would be superfluous to speak of the wealth of information concerning the manners and customs of the period covered by this work, for which we are under lasting obligations to Mr. Halliwell-Phillips.

— "A non-graduate officer" writes:

"E. I. R.'s" explanation of truthfulness in schools is confirmed by the experience of West Point, where every pupil represents a distinct Congressional district, and the standard is as high as at the University of Virginia. As is well known, personal discipline at the Military Academy, down to very small details, is exceedingly strict. But for every breach reported the inculcated cadet is required to offer an explanation. If he denies the offence, the matter is dropped, on the supposition that the reporting officer was in error. The rare deviation from exact and honorable truthfulness, by an occasional moral idiot, proves the rule by the social pressure and ostracism that at once follow. This is not born of geography, but depends upon the happy traditions of the past carefully preserved by *esprit de corps*."

GALTON'S DEVELOPMENT OF THE HUMAN FACULTY.

Inquiries into Human Faculty, and its Development. By Francis Galton, F.R.S. Macmillan & Co. 1883. Pp. 280.

PRETTY much all that Mr. Galton has written since the publication of his work on 'Hereditary Genius,' in 1869, is here brought together in something like logical sequence, to some extent rewritten, and with much that is new interpolated. Traces of the fragmentary origin of the work still remain, and make it, as the author intended, more suggestive than encyclopaedic.

If photographs of several members of the same family, between whom a strong family likeness exists, be reduced to the same size, degree of lightness or darkness, and the same point of view, superposed with much exactness so that the eyes coincide, and then exposed successively to the sensitized plate of a photographic camera—each an equal fraction of the whole time required to take a perfect picture—it is evident that those points and features in which the several component faces coincide will stand out clearly, while those in which they differ will be blurred. This process Galton described five years ago and named composite portraiture; but his methods and results are here greatly improved, and a number of typical portraits are given. In one case, six members of the same family, male and female, parents and children, are combined into a portrait which friends of the family recognized as typical of it, while differing as to which member was represented. A remarkably clear portrait of Alexander the Great is produced from six different medals. Portraits of criminals, consumptives, royal engineers, etc., are obtained in some cases from fifty or even one hundred components. These pictorial averages, Galton thinks, may be serviceable in retouching negatives, in obtaining the physiognomy of crime and diseases, and in defining the most vigorous type toward which a race is developing along the line of its best tendencies. They also suggest how "general im-

pressions are founded upon blended memories," and perhaps how some perceptions are combined into ideas. So, too, statistical tables and moral averages reveal general traits by emphasizing the common and eliminating the individual elements. If brain-cells respond to the action of summated impressions in a way at all analogous to the response of the photographic plate to the successive portraits, then the old strife between nominalism and realism has received something not altogether unlike an experimental solution. At any rate, psychology receives a most suggestive illustration; and this, for a science which deals so largely with things invisible, impalpable, and imponderable, is of the greatest value.

Men of the best stock, or "eugenic" men, differ from those of a lower order in two fundamental ways. First, they have more energy or capacity for work, a high degree of which, our author thinks, distinguishes all his scientific countrymen. Idiots are feeble and listless, domestic pets grow dull if stimuli to activity are removed. Even fleas keep dogs active and well-conditioned, which if kept too clean cease to thrive. True, if all men were energetic, there would be little scope for pity or charitable institutions; but it would be wrong to preserve a sickly breed for the sole purpose of tending it. In the second place, eugenic men distinguish more grades of sensitiveness between a just observable impression and an intensity of it which passes over into pain. The feeble-minded often burn themselves intentionally because the impression is not so strong as to be more than a pleasant tonic. Words, Galton tells us, distinguish but five degrees of weight; blind men's touch is not finer than others, and savages and sailors do not have finer senses for forest or sea than cultivated men, but they merely know better what to look for and where to seek it. His tests revealed the fact that old people cannot hear high notes, but that some animals—e. g., the cat—have an exquisite ear for tones higher than man can ordinarily recognize. In another section, anthropometric laboratories are suggested where methodic photographing of school-children shall be undertaken, and where members of each family shall go at stated intervals to be not only photographed, but weighed, measured, etc. This kind of lore must, of course, be of slow growth, but we owe this to our children, who are but the prolongation of our own lives, and need all the experience and self-knowledge of mind, body, and character we can give them. Gregarious habits all the way down their long pedigrees have made it very hard for individual men to stand, think, and act freely and independently for themselves. Quakerism is recruited from among the color-blind, and favors color-blindness. The comparative effects of nature and nurture are best studied in the life-history of twins, thirty-five pairs of which are collected, to show how predominant heredity is over education and environment. Almost every kind of animal has, at some time and place, been trained and more or less domesticated. Those now most subject to man are chosen by slow selection as the most docile, strong, useful, etc. The objective efficacy of prayer is made extremely improbable, we are told in another section, by statistics. The longevity of royal personages, which is prayed for so universally, is not increased. Insurance offices do not discriminate risks on life or property prayed for; commercial enterprises are not more secure if devout men are shareholders, or when religious bodies deposit their funds or charities in them. Missionary vessels are no better risks than trading ships, and slavers have an exceptional immunity from accident. The writer pleads for a greater sense of freedom, opportunity, and responsibility; for public funds for portending poor marriageable

girls. Even charities might be directed in this and other ways toward the other great duty of furthering evolution by stocking the world with more "healthy, intelligent, moral, and fair-natured citizens."

The most fascinating, as well as the most original, part of the book is the sections on visualizing, of which the author's previous studies have been greatly extended, and the different forms of which are illustrated by scores of diagrams. Mental imagery is often so vivid that artists can draw from it, as Blake did. Seeing faces in the fire or forms in the clouds, blindfold chess-playing, playing or speaking from notes or manuscript seen only with the mind's eye, are forms of it. It is hereditary, dulled by language and book-making, strongest in children, not connected with sharpness of vision, and far more comprehensive than any field of vision. Bushmen show it in their drawing, and Eskimos in their remarkable geographical instincts. It is cultivated unconsciously by dressmakers, tacticians, engineers, architects, by most systems of mnemonics, and the means of developing it should be taken into most serious consideration by educators. The study of "number-forms" is only one aspect of it. About one person in twenty sees numerals in some form of visual imagery. Figures are seen or thought along lines: with sharp curves and angles at ten or twelve, and at twenty, thirty, forty, etc. These lines or forms bend now up, now down, are now lost, run behind the back or into the pocket, follow the outline of hills on the horizon near the home of childhood, and are constant for years in the same individual. Often colors are associated with numbers, vowels, or even consonants. These were named by Deuhler and Lehmann, who first observed them, phosisms; and Galton gives colored diagrams of several interesting cases of this color-association, and connects the whole topic with the experience of visionaries and dreamers, and suggests that partial irrigation of the brain by the blood, causing suppression of action in some parts of it, may have something to do with it. The forms which animals seem to carry in their psychic organization of the habitations they build with such regularity; the order in which storks and other birds migrate in flocks; fashion in artistic forms and curves, as in the patterns of prints, wallpaper, missals, etc.; and even the form of handwriting, so expressive of character as Galton thinks it to be, are illustrations of the all-pervasive nature of the visualizing faculty, which seems to be checked only by the rise of abstract ideas and the habit of thinking in words instead of in pictures.

One result of these studies is to emphasize the distinction now so often referred to by psychologists, but never as yet well wrought out, between the relative preponderance of aural and of visual impressions, in determining the type of mental development. This would no doubt have been more apparent to the author if he had extended his observations to younger children, in whom there seem to be two leading genera or types of intelligence—the one in which mental operations are mainly in terms of sight, especially form, supplemented by motor impulses, and even by tactile impressions, and to which all memorized or other forms of words are difficult, unnatural, and misleading, because all their natural thinking is visualization; and another, very different, type, in which verbal forms appealing to the ear and following audible signs are dominant. The latter order of minds have little imagination, little constructive or inventive power, are not natural geometers or seers in any Swedenborgian sense, but are often endowed with high poetic and rhythmic faculties. The author has almost no light to shed on the origin of the

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W. H. Murray

visualizing faculty; in fact, its cause and development do not seem especially to have interested him. In a word, Mr. Galton has given us his view of a great number of topics of contemporary psychology and anthropologic interest with freshness and originality, but with little evidence of a knowledge of the rich and varied literature already existing on some of his topics, which are touched upon only in the most superficial, conjectural way. His remarks about, e. g., visionaries, enthusiasm, and test-weights, have little value, and are naive and unsuggestive. This, however, for all who labor in a field so vast as psycho-anthropology has now become, is at some points probably almost a form of fate.

fect, that this movement must have had a mover. But not all men have this belief before it is brought to them. From one who was a missionary, and is now a teacher of missionaries, this testimony is not without weight.

The Société d'Histoire de France has just completed the publication, in three volumes, 8vo, of the *Memoirs of Nicolas Goules*, who was for thirty years attached to the person of Gaston d'Orléans. The first thirteen chapters were purposely omitted, being exceedingly frank confessions of the writer's early life. Some idea of them was given by M. A. Cellery in a lecture before the Cercle St-Simon in February, when it was announced that he intended to publish these 'Confessions de Goules,' with original researches for the last twenty-three years of the autobiographer's career.

Part 6 of Vogt and Specht's illustrated work on the 'Mammalia,' the appearance of the first number of which, treating of the Old World monkeys, we had recently occasion to notice in our columns, carries the subject completely through the Quadrumana and Chiroptera (bats) to the Insectivores. Although, strictly speaking, the work may be said to be of a popular character, it does not partake of that ordinary stamp of popularity which distinguishes the vast majority of entertaining treatises on natural history. Adequate space is allotted to the description and habits of the individual species, and, in addition, no inconsiderable attention is paid to anatomical details, geographical and geological distribution, and the broader questions connected with the origin and evolution of forms. It is hardly necessary to state that the name of Professor Vogt is a sufficient guarantee of the general accuracy and proper selection of the materials of the text—conditions unfortunately too frequently overlooked in works of a similar nature. Too high praise cannot be bestowed upon the illustrations by Specht, which in artistic finish, in truthfulness of detail, and in faithful representation of that inexpressible something inseparably associated with the *tout ensemble* of animal belongings, probably equal, if, indeed, they do not surpass everything of a similar kind hitherto attempted, not even excepting the masterpieces of Wolf. The plate in Part 5 representing the jaguar and capybara is in the very best style of the wood engraver.

—Some two years ago, a young man from Wisconsin, walking in High Holborn, was driven into a second-hand book-booth by a sudden shower. He noticed a bundle of books marked "American," and took one out. Happening to open it at the fly-leaf, he read there, in a very plain hand, the name "John Howard Payne." Thereupon he readily paid the shilling which was all that was asked for the book, and made many inquiries to discover how it came into the hands of the dealer, but without success. The book, a small one (5¼ x 3 inches), was entitled 'The New Pocket Biographical Dictionary,' by John Kingston, 3d ed., pp. 508. It was published in Baltimore in 1811, when Payne was nineteen, and an actor on the stage in that city. It is a not improbable conjecture that he bought the book then and there and carried it to England, to which he voyaged within a year or two. When his fortunes declined and he was even thrown into prison, he naturally lost his books. The little Baltimore manual, redolent of "Sweet Home," associated with early successes, and so convenient for the pocket, may well have been one of the last possessions he gave up. Either Payne, or some subsequent English owner, had the book very tastefully bound in calf. One page of the fly-leaf bears the following words to guide the binder, which are scrupulously

copied on the back of the book: "American Literature, Biography, Biographical Dictionary, Kingston." Whether these directing words are in Payne's handwriting is a question as to which chirographic experts disagree, and which outsiders must feel incompetent to decide. The words, "John Howard Payne," betoken a youthful writer. The hand is handsome, and every letter is distinctly and gracefully formed. The six words on the opposite page, while having many points of resemblance to the signature, are more carelessly and hastily written, and argue an older writer. It is worth inquiry whether autographs of Payne are common, and especially whether any of them are earlier than that in the Kingston volume.

—The April number of the *Antiquary* contains a paper by Mr. Gomme—one of the best-known and most successful investigators in the early history of institutions—upon "Nottingham Borough Records." The key to the article is found in the following passage: "English municipal history has never completely claimed for itself a Roman origin, because there are such extensive breaks in the chain of evidence as to forbid such a proposition ever reaching beyond the domain of theory—theory, too, of special schools of thought. But, on the other hand, English municipal history has not fully claimed for itself its origin in the village system of agricultural communities, which belongs to the Teutonic and to the Celtic origins." For the matter of that, any continuity in municipal life from Roman to mediæval times is now given up, we believe, even for Italy and southern France. The line of inquiry here indicated is the same as that of Mr. Round in his articles upon the "Domesday of Colchester" (see the *Notion* for March 8); it has also been followed out upon the Continent, especially in Germany (very elaborately) by Von Maurer, and in Belgium by Van der Kindere. Mr. Gomme gives, from the Nottingham records, several cases of the right of preemption, which is so integral a part of the village-community theory. In the same number is an article on "The Church Ceremony of Marriage," showing how "the Church prayer-book has preserved for us a genuine piece of folk-lore," the very words even of the old formula being incorporated in the ritual. Another article is by Mr. C. F. Keary, upon "The Coinage of Christian Europe"—a continuation of articles upon classical numismatics. This paper traces very clearly and completely the history of coinage from the later Roman Empire to the Middle Ages. For the Middle Ages proper one would desire a little more fulness, particularly in regard to the successive debasements of the coins and the history of the mark.

—While of no startling vigor in its political department, the new organ of English Conservatism, the *National Review*, promises rather better than fairly well in literature, poetry excepted. For instance, Mr. Edward Ford discourses instructively, in its third number, on the "Names and Characters in the 'Vicar of Wakefield,'" and contends, more than plausibly, that the places and persons of the tale were far from being pure inventions. Wakefield being no other than Wakefield, it is maintained that the "small cure, . . . worth only £15 a year," "a journey of seventy miles" from that town, which the Vicar left for it, is to be identified with Kirkby Moorside, rated in "the King's books," at the time when Villiers died there, at £14 6s. 10d. The surroundings of the Vicar's new home correspond in all respects with ascertained facts. The "prattling river" in front of the Vicar's house was the Dove. Welbridge, where Moses sold the horse, we have in the petty market-town of Welburn, about a mile distant

from Kirkby Moorside. With less certainty, Mr. Ford traces "Thornhill Castle" to Helmsley, finds "the Wells" at Harrogate, and locates "the races" at Doncaster. "Eleven miles" from the parsonage of Dr. Primrose was the prison to which he was taken, and this, most probably, was at Pickering. With equal likelihood, as it is shown, it was at Boroughbridge, near the confluence of the Ure, the Swale, and the Ouse, that Olivia narrowly escaped being drowned "in the midst of a rapid stream." George Romney, it is suggested, after adduction of strong circumstantial evidence, was the artist who executed the memorable picture, of undisposable frame. The benevolent Sir Wm. Thornhill, it is pretty conclusively made out, was intended for Sir George Savile, the friend of both Burke and Pitt, or "Savile of Thornhill," as he was commonly designated, with reference to a parish included in his ancestral domains. But these details must suffice. As Washington Irving says of Goldsmith, in a strain of mainly divinatorial criticism the truthfulness of which Mr. Ford has interestingly ratified by his researches, "scarcely any adventure or character is given in his works that may not be traced to his own many-colored story."

—The preface to the second edition of Mr. Halliwell-Phillips's 'Outlines of the Life of Shakespeare' (Longmans, Green & Co.) bears date of April, 1882. Our tardy notice of this monumental work was published in the following December, when the indefatigable author was closing his preface to a third edition, which reached us about a month ago. The 703 pages have become 736, though, by an unusual and inconvenient compensation, the index has shrunk even within its former too scanty dimensions; and one who wishes to compare the differences in the two editions has, from lack of any table of contents, a genuine taste of the difficulties of Shakespearian research. It will be found that the Outlines proper have been enlarged just one-half, with no corresponding increase in the Illustrative Notes, which are, however, so greatly modified by omissions that the owner of the third edition can by no means rest contented that he has not the second, as in the case of most books. This remark equally applies to other portions, such as the body of essays following the Notes, from which we now miss those on the spurious plays, on North's Plutarch, on an early notice of Hamlet, on Lord Pembroke's actors, on the Coventry Mysteries, on the First Folio. In general, we remark an improvement in the arrangement and classification, the transpositions being so numerous that one may easily err in estimating the extent of the changes.

—No great discovery leading directly up to the poet has been made in the past year, but it is getting nearer to his person to be shown a facsimile of Richard Quiney's letter, the only one addressed to Shakespeare known to exist. This whole episode has, with good judgment, been much dwelt upon in the new edition, and we realize the perpetual gloaming in the author's chosen field when reading the fresh particulars about the husbands of Shakespeare's married daughters—namely, Dr. John Hall and Thomas Quiney—and the daughter of the former pair, Mrs. Thomas Nash. For one slight particular, we remark that this lady, Elizabeth Hall, is now said to have been born in February, 1608, whereas the second edition gave her baptismal date precisely as February 21. More is made of the subject of Shakespeare's birthplace, and two views are given of the cellar, the only unchanged portion; of his butcher's apprenticeship; of his marriage, and the inferences to be drawn from the circumstances attending it; of Ben Jonson's first contact with him; of Davenant's attach-

AND PROVISION OF THE UNITED STATES COURTS IN A tangled mass of antique and modern systems, full of puzzling and unexpected problems, which are often solved differently in different circuits. We have known a circuit judge to be so bothered by the question of jurisdiction over a corporation alleged to be "found" within the district—a matter as to which the law ought to be perfectly plain—that he was obliged to refer it, in order that evidence might be taken, and the case dragged on for months before it could be ascertained whether the defendant was or not before the court. Only lawyers constantly practicing before United States courts know how full of stumbling-blocks is the path of the most wary

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"Only the actions of the just
Smell sweet and blossom in the dust,"

as Herrick's well-known couplet. It is rather hard that Shirley should be defrauded of one of the few poems that are yet remembered in connection with his name—I am, Sir, &c.,

W. R. H.

[We are heartily sorry for our blunder, which is undeniable.—
Ed. Spectator.]

BOOKS.

MR. GALTON'S INQUIRIES INTO HUMAN FACULTY,
AND ITS DEVELOPMENT.*

Those who have read any of Mr. Galton's previous writings, especially his *Hereditary Genius*, will not be surprised at finding in this work an extraordinary amount of curious investigation into matters somewhat apart from the ordinary line of scientific research, pursued with indefatigable industry, great ingenuity, and no small amount of labour.

The author lays no claim to being exhaustive, but aims rather at being *suggestive*, while, at the same time, something like logical sequence is preserved by an arrangement and revisal of various short treatises, which have previously appeared in a more desultory shape and order in various publications. If his leading ideas are not altogether new, there is certainly much novelty in many of his facts, in his method of exact collection and verification of them, in the importance with which he successfully invests most of them, and in the way in which he has managed to bring all of them to bear upon a common purpose.

The dominant ideas of this curious volume undoubtedly are (1), the very great variety which occurs in the psychological development of different individuals of the human race; (2), the great extent to which this is due to original construction (personal and hereditary, especially the latter), rather than to education and surroundings; (3), as the logical conclusion of all this, that it is possible and is our "religious" duty, both individually and socially, to use every lawful means to further that evolution which is ever going on, more or less rapidly,—to be, so to speak, "workers together" with the great First Cause in that improvement which, with enormous waste of material and force and much suffering, is the slow and gradual result of the constitution of things.

Such is the key-note of the whole book; but in the course of its discussions there is an immense amount of extremely interesting matter, one of the most curious specimens of which is the author's pet method of discovering the typical or generalised features of certain groups of persons by photographs of many individuals (all, of course, in the same position and of the same size), which are rapidly exposed to the camera so as to be superimposed on each other, the traits which are individual and exceptional leaving only a slight shade, while those common to the whole become intensified by the cumulative process. Wonderfully distinct faces, from groups of members of one family, or criminals, or persons of tubercular constitution, &c., are shown on the frontispiece. He gives an anecdote of how the mother of two girls who were not specially like each other, on seeing their generalised photograph, said,—“Oh, that is A.”—“No, it must be B. I never knew before that they were at all like each other!”

The inquiry into the variety of power in different persons to "visualise" their thoughts is one of the most elaborately worked-out portions, and there are very odd illustrations of a strange propensity, that of mentally investing different numbers or different letters of the alphabet with special colours, and of picturing certain series of numbers in peculiar and apparently senseless arrangements as to relative position. These vagaries seem to be much more common than is generally supposed, because the persons so constituted seldom confess their idiosyncrasy, from fear of ridicule. The present writer has all his life been unable to dissociate the printed letters of the alphabet from what seems to him their appropriate colours, and he is quite unable to trace this propensity to any association formed in childhood. It is, perhaps, worthy of notice that all these colours are *tertiary*, never pure, or even secondary.

Perhaps the most curious chapter is one upon "Twins." The author must have had an overwhelming amount of correspondence on this subject, as well as on many others which he has

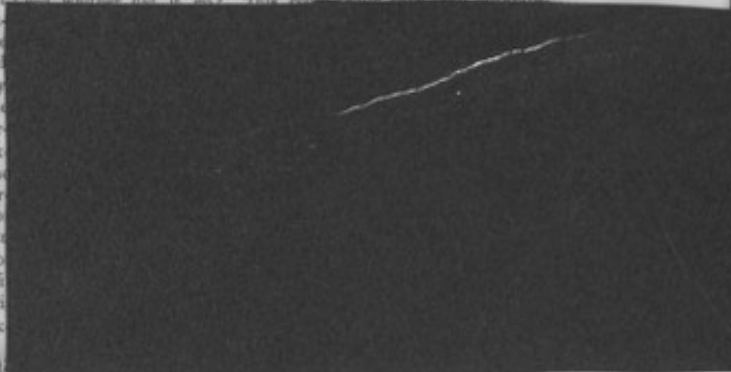
subjected to a sort of statistical test. The result of his inquiries is substantially this:—That in that large majority of cases of twins in which the mental and moral characteristics of two brothers or two sisters are as similar as their faces, the former is the result of original mental constitution, apart from and even in spite of great differences of education and outward circumstances. There are also examples of twins, far separate in locality, taking the same disease at the same time, and each feeling assured that his brother had so suffered. The following is a strong instance of similarity; it was sent to the author by the brother of the twins:—

"A was coming home from India, on leave; the ship did not arrive for some days after it was due; the twin-brother B had come up from his quarters to receive A, and their old mother was very nervous. One morning, A rushed in, saying, 'Oh, mother, how are you?' Her answer was, 'No, B, it's a bad joke; you know how anxious I am; and it was a little time before A could persuade her that he was the right man.'"

Of thirty-five pairs of twins, sixteen are described as closely similar in tastes and disposition. In the remaining nineteen, they were much alike, but with certain minor differences, the latter mainly depending on greater or less vigour of nerve and vital energy. In twenty cases, the dissimilarity of the twins was very great, both in body and mind, in spite of identity of nurture.

There is a good deal both of fact and speculation tending to illustrate the now common doctrine of "unconscious cerebration," a hypothesis which, though containing an idea somewhat difficult to grasp, affords the only reasonable explanation of a great variety of phenomena in dreaming, and in many more or less morbid conditions. Mr. Galton applies it to the visual and auditory hallucinations both of the insane and of the sane, these phenomena being undoubtedly much more common in the latter than is generally known. After a summary of facts, many of which are very interesting, he says:—

"The weirdness of visions lies in their sudden appearance, in their vividness while present, and in their sudden departure. An incident in the Zoological Gardens struck me as a helpful simile. I happened to walk to the seal-pond at a moment when a sheen rested on the unbroken surface of the water. After waiting a while, I became suddenly aware of the head of a seal, black, conspicuous, and motionless, just as though it had always been there, at a spot on which my eye had rested a moment previously, and seen nothing. Again, after a while, my eye wandered, and on its returning to the spot, the seal was gone. The water had closed in silence over its head without leaving a ripple, and the sheen on the surface of the pond was as unbroken as when I first reached it. Where did the seal come from, and whither did it go? This could really have been answered



He makes use of the metaphor that there is what he calls "the antechamber of the brain," a sort of storehouse of ideas not completely within the range of consciousness, but lying close at hand, out of which the conscious mind in the "presence-chamber" summons those ideas of which it is in want when in active exercise, with more or less relevancy, according to its logical power, and the richness of the contents of the so-called "antechamber":—

"The consequence of all this is that the mind frequently does good work without the slightest exertion. In composition, it will often produce a better effect than if it acted with effort, because the essence of good composition is that the ideas should be connected by the easiest possible transitions. When a man has been thinking hard and long upon a subject, he becomes temporarily familiar with certain steps of thought, certain short-cuts, and certain far-fetched associations, that do not commend themselves to the minds of other persons, nor, indeed, to his own at other times; therefore, it is better that his transitory familiarity with them should come to an end, before he begins to write or speak."

After a pause, his ideas will have lost their adventitious



Party introduced

Visualiser
Spectator
11/8/83

* *Inquiries into Human Faculty and Development*. By Francis Galton, F.R.S. London: Macmillan and Co. 1883.

relations to each other, and stand in those which will meet with ready acceptance in the minds of others.

The hypothesis of one portion of the mind communicating with another portion as with a different person is one not sufficiently worked out by psychologists, either in the form of suggestions from the "ante-chamber" in a normal and active condition of the whole mind, or in those conditions of sleep or of hallucination in which the conscious mind is actually deceived, and mistakes the thoughts or words for those of another individuality. One ingenious writer, the late Dr. Wigan, in a book too little known, suggests that it depends on the fact of division of the brain into right and left hemispheres. This view is scarcely confirmed by modern physiology; but if the "partial-irrigation" theory of our author is correct, it follows that in dreams it is nearly always the same portion or track of brain which is deficient in sensitiveness, those portions which are connected with the sense of improbability or absurdity, whence the absence of surprise characteristic of most dreams.

These are a few specimens of the many corners of anthropology somewhat out of the beaten track of investigation into which Mr. Galton penetrates. If he fails in many instances to convince, the reader cannot avoid having innumerable and most novel and interesting lines of further research suggested to him. The region of Mr. Galton's investigations naturally invests his book with a materialistic and necessitarian aspect; but he seldom states dogmatically what his opinions are, and those who are the most averse to the narrow so-called philosophy of the period, will find little in this work which is necessarily inconsistent with their own views,—an example, among many others, of that strange rapprochement which is frequently made between certain phases of the Calvinistic theology, and that style of thought which a good Calvinist must look upon as the most objectionable of all. I propose of the same remark; we cannot close without quoting our author's words on the ever-present question of the vast amount of evil and of apparent waste on our globe. Anticipating the ultimate cooling and practical extinction of this planet, he says:—

Neither can we discover whether organisms here are capable of attaining the average development of organisms in either of the planets that are probably circling round most of the myriads of stars, whose physical constitution, wherever it has been observed spectroscopically, does not differ much from that of our Sun. But we perceive around us a countless number of abortive seeds and germs; we find, out of any group of a thousand men selected at random, some who are crippled, insane, idiotic, and otherwise incurably imperfect in body or mind, and it is possible that this world may rank among other worlds as one of these.

One of the weak points in Mr. Galton's speculations seems to us to be his endeavour to impress his readers with the feasibility of improving the breed of our fellow-men. We fear that there are motives constantly in action, and which will not only ever be so, but will be so in an increasing degree, and some of them connected with the noblest portion of our nature, diametrically opposed to the practical helping-on of evolution by the survival of the fittest. The hope must be a feeble one which is driven to seek for an example of social arrangements tending in this direction, in the abolition of celibate Fellowships in the two old Universities.

DIDEROT AND THE PLAYERS.*

THE centenary of Diderot's death, after modern fashion, will be in the course of celebration in one more year. On July 31st, 1785,

* *The Paradox of Acting*. Translated from Diderot's "Paradoxe sur le Comédien." By Walter Herries Pollock. With a Preface by Henry Irving. London: Chatto and Windus. 1882.

this oddity of authorship "died suddenly, on rising from table." "He has been censured," an enemy tells us, "for employing needlessly a scientific language, and for having recourse to metaphysical doctrines, frequently unintelligible; and for having introduced a number of definitions incapable of enlightening the ignorant, and which the philosopher seems to have invented for no other purpose than to have it thought that he had great ideas, while, in fact, he had not the art of expressing perspicuously and simply the ideas of others." Nobody ever suggested so many parallels as Diderot. The son of a prosperous cutler, and a Jesuit student carefully educated for a family canonry up to tonsure-point, he rejected priesthood and canonry, and was sent to Paris to ensue the traditional alternative, the study of the law. True instance of the irrepressible bent of letters, he would have none of respectability in that form either, and for a time was deprived of his allowance because he insisted on scribbling. His variety of turn stood in the way of the highest success, as it has often done; though probably, as it has done quite as often, it provided ample compensation in the joy of work and the elasticity of mind. Poetry, science, sentimental comedies, dictionaries (of medicine, and of arts and trades!), speculative metaphysics, political satire (for which he was imprisoned, like most men), critical treatises, and improper stories, the man wrote them all. His manner was many-sided as his matter. He reminds us of Thucydides in his provoking involutions of style, of a mixture of Plato and Aristophanes in his philosophic comedy; and of the Aristotelian spirit in his dissertations, such as that which is our special text. In his variety of iron-in-the-fire, he is like his famous contemporaries Goldsmith and Beaumarchais—who died, the first ten years before, the second fifteen years after him—among other things, in that he wrote one or two stage-plays, with a result not uncommon in the case of those who entangle themselves in that thorny path. The irritation engendered by the eternal peculiarities of actors (speaking of them, of course, as a body), their amazing vanities, jealousies, and littlenesses, their literal rendering of "All the world's a stage," their chartered libertinism in the matter of correspondence and appointments, their funny and dictatorial attitude towards authorship; and, alas! their lax interpretation of the sanctities of honour and bargain—in fine, the selfishness of their existence from that of all other men, evidently drove him one day into the outburst of contemptuous protest known as the *Paradoxe sur le Comédien*; as in other directions, a similar irritation roused the soul of Jeremy Collier, and gall-tipped the pen of Churchill. The same thing may be happening again before very long. The social position of actors has been in appearance curiously changed of late. We are not speaking of the honours (beginning to be a little overdone, perhaps) paid to an exceptional artist like Mr. Irving, any more than a man moralising on the decadence of the House of Commons in the fine old qualities of courtesy, and manliness, and self-restraint, is alluding to the few statesmanlike figures in it. A social revolution appears to be taking place on the stage. To the old actors, it was almost an hereditary art; and from their cradle they regarded it as the serious business of life. By the new, more and more recruited from the ranks of well-born idlers, it is, we fear, looked upon as little less than the pastime which the good-natured applause of drawing-rooms has suggested to them as a means of personal display. Even as these ephemerals have come in, the old country companies, which nursed the real dramatic art, and it is probable that none but the dramatic authors, blamed and abused, of course (in the usual fairness of so-called critical perception) for the defects of their material, know how more and more impossible it is becoming every day to find the artist, to say nothing of a company of artists, who can be trusted with the expression of any strong emotion, which defies self-consciousness and demands self-abandonment. We have heard it said that modern audiences laugh at grave love-scenes on the stage. Who would not, as modern actors play them? Yet nobody among the most typical of modern audiences of the upper class—those of the Haymarket—seems much disposed to laugh when Mrs. Bernard Beere plays Sardon's *Fidèle*. The part is one which, without true acting, could be only ridiculous.

The social petting which these society actors receive, and endow some of their fellows with, is but a paltry set-off for the rapid decadence of all vigorous acting; and from another and a painful point of view, such stories as those told of *The Squire* and *Moths*, in the papers of last year, do the theatrical pro-

Hysteria. A notice of Lady Florence Dixie's story & the insipidness of Dr. Watts. The James' Gazette March 22/83 page 11, quotes ^{from} the British Medical Journal ~~previously~~ just out, on the delirium of women of unstable nervous equilibrium. which especially refers to the standard work 'Les Hystériques' by Dr. Legrand de Saule, Physician to the Salpêtrière Paris. The works of Charcot & of Bourneville are also quoted.

YORK "SALVATION" ARMY

TO THE EDITOR OF THE STANDARD.

SIR,—Having read your very able article in to-day's issue on the proceedings of the Salvation Army, I shall be glad to call your attention to one part of the so-called "prayer meeting" conducted by this Branch.

Some few nights ago there was held in the large Circus rented by the Salvationists a "long all-night meeting," and part of the service consisted of (to use their own term) "Creeping for Jesus," and it is a positive fact that during this part the place was in complete darkness for two hours, the gas having been turned out purposely, as is customary on these occasions. Now, Sir, there were present persons of all ages, sexes, and positions, and the idea with them of "Creeping for Jesus" means crawling about the floor indiscriminately amongst each other.

When we read in the papers two days ago of a case where a young girl named Barnes prosecuted one of the "Captains" for indecently insulting her, and of the girl, on leaving the Court, having been mobbed by the Salvationists, there appears to be only one conclusion to be drawn.

I am, Sir, your obedient servant,
TRUE RELIGION.

April 13.

1883

TAXATION OF SILVER PLATE.—A Deputation of workin... the consisting of nineteen redre-

at York

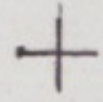
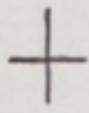
This was done by Capt Booth

Joe Brady was one of 25 children
Globe. April 17/83

Female delirious

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299 Euston Rd

f. 3r

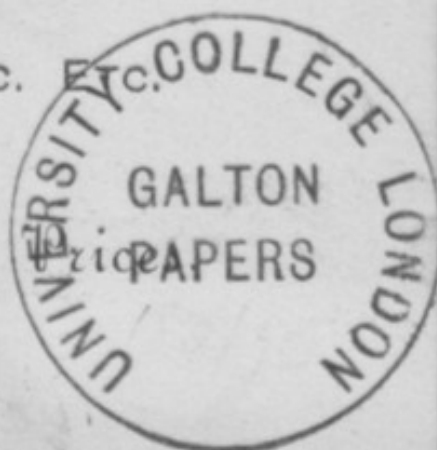
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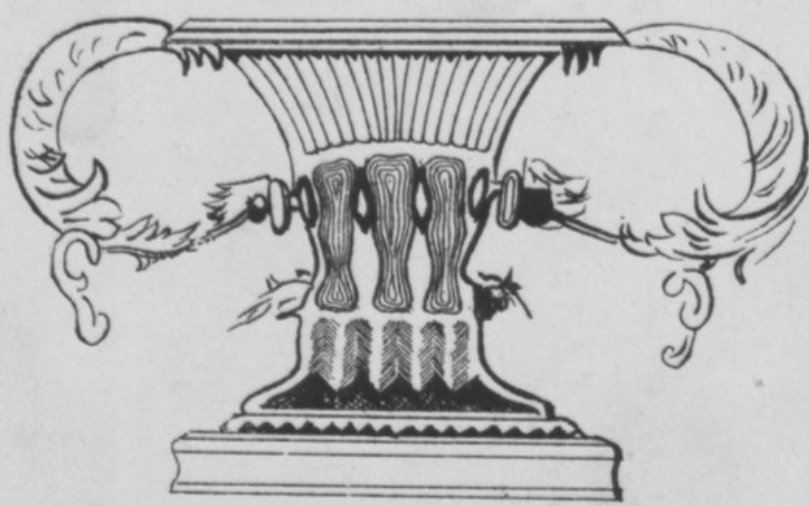


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THE SHADE of NAPOLEON Visiting his Tomb.

In this Print may be traced a full-length Figure of Napoleon, a small head of Napoleon, Wellington, and Murat, a Map of Europe, with Napoleons principal Battles, &c. &c.

f. 4v

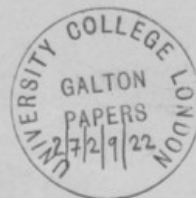


Odd Sketches.
(Clouds, Photos, etc)





P. 1v



5119

Frank Benson Good.

MART FEB DER (



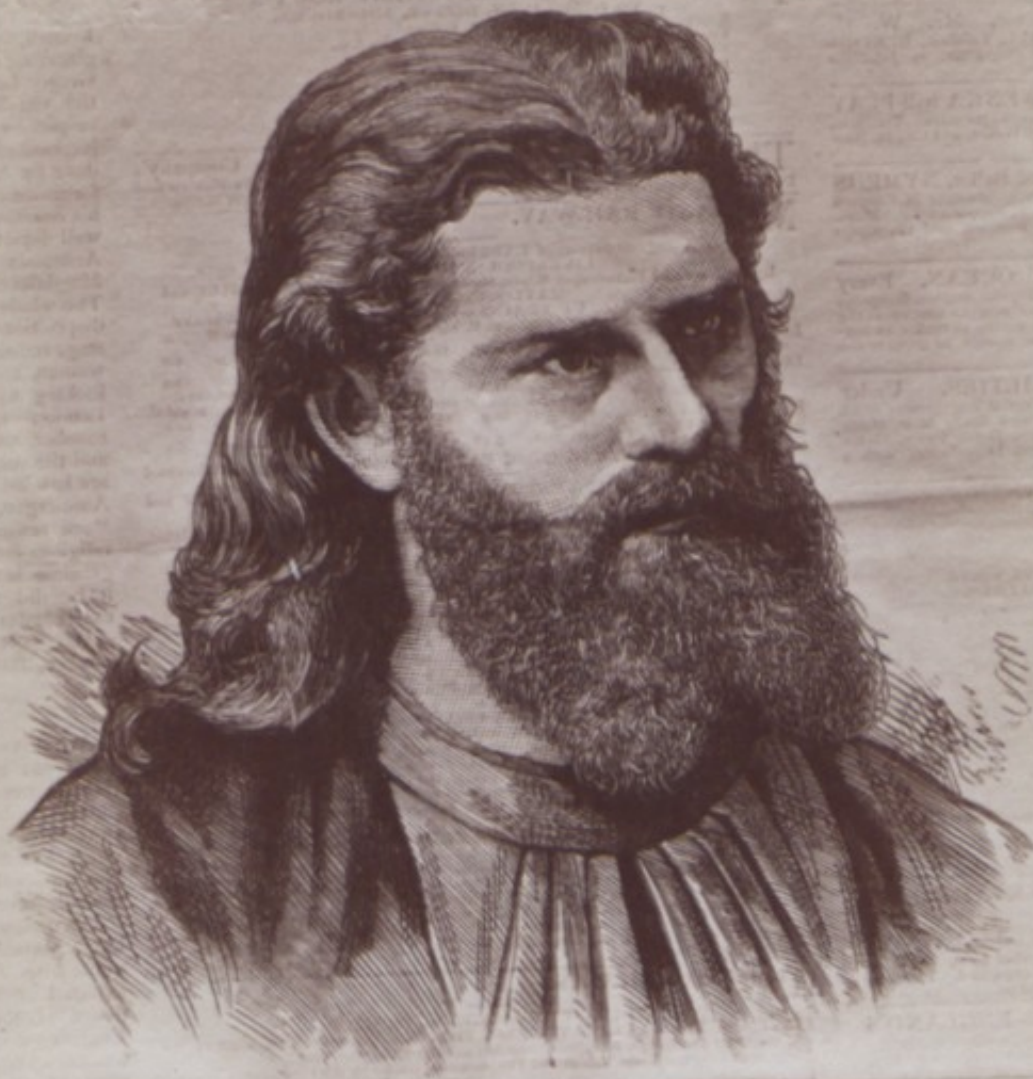
JOSEPH MAYER ("CHRIST")



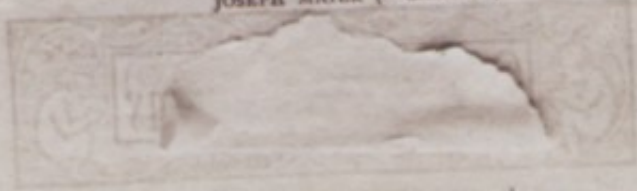
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MARTIN LUTHER ("JOSEPH OF")



JOSEPH MAIER ("CHRIST")



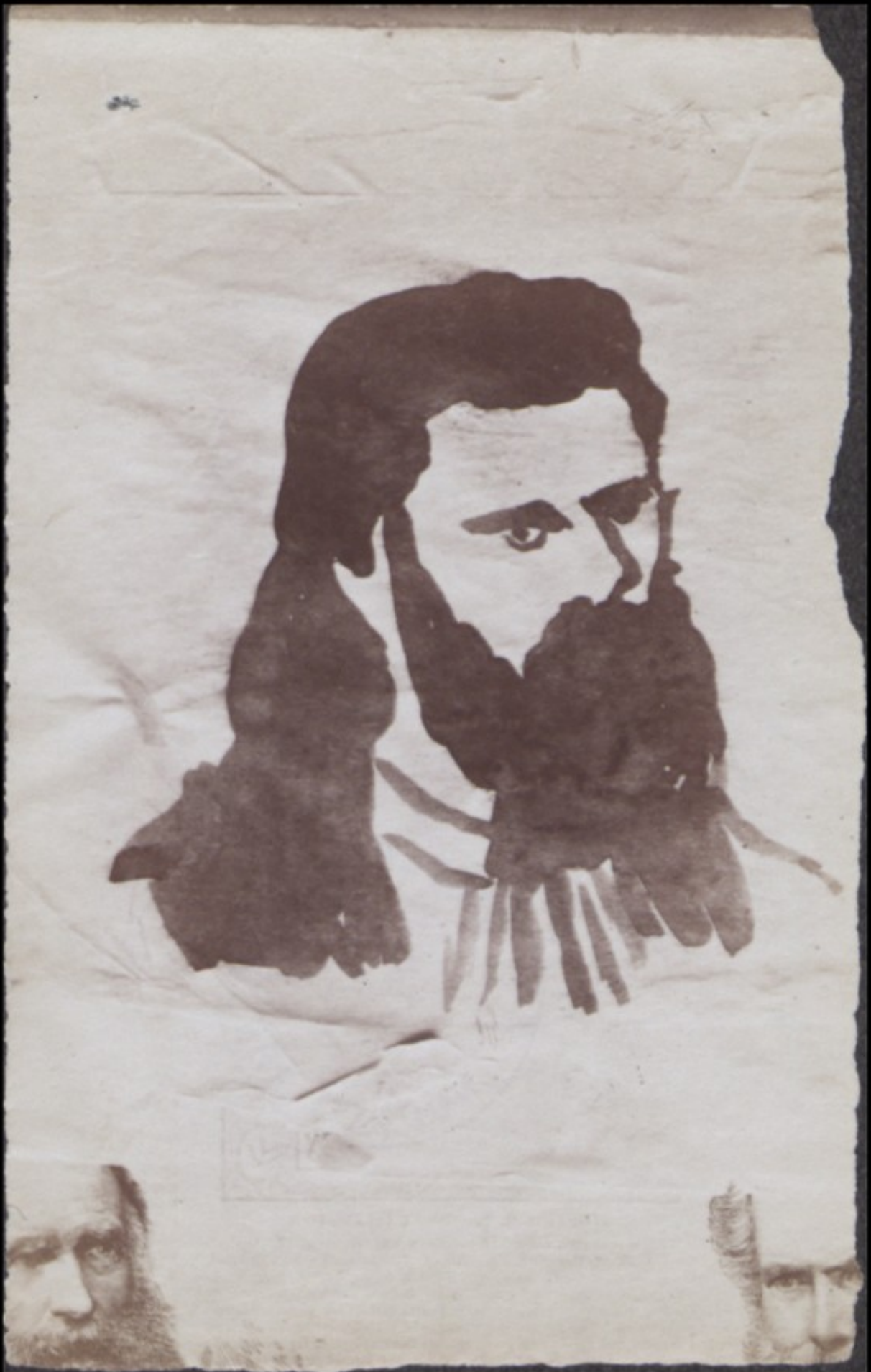
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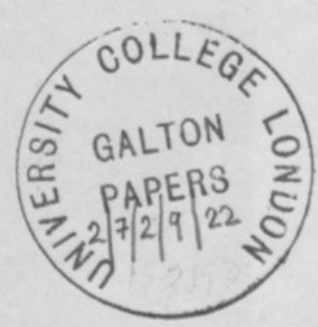


THE NEW GATEWAY OF MOUNT TERVIVICE—THE CAR

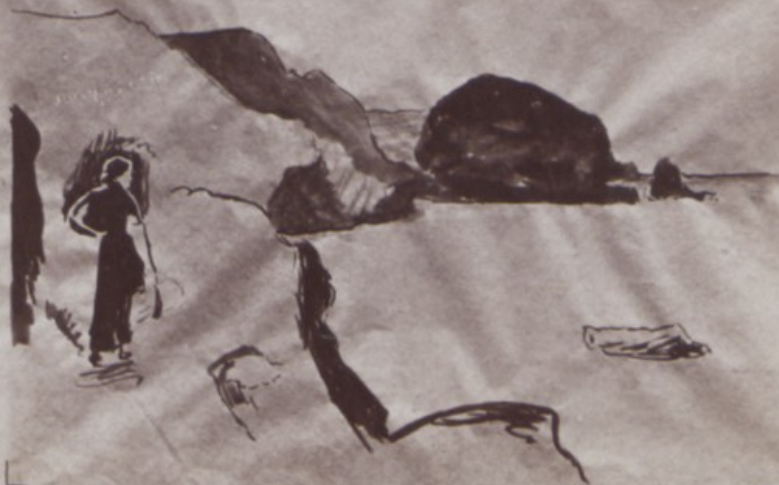


"ON THE COAST OF CORNWALL"
FROM THE EXHIBITION OF THE ROYAL ACADEMY OF ARTS IN 1851 BY MISS THOMAS WOOD

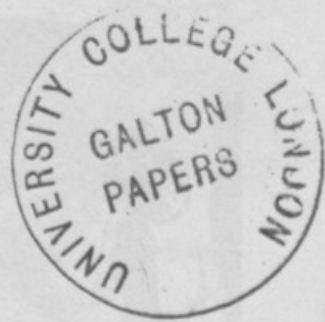
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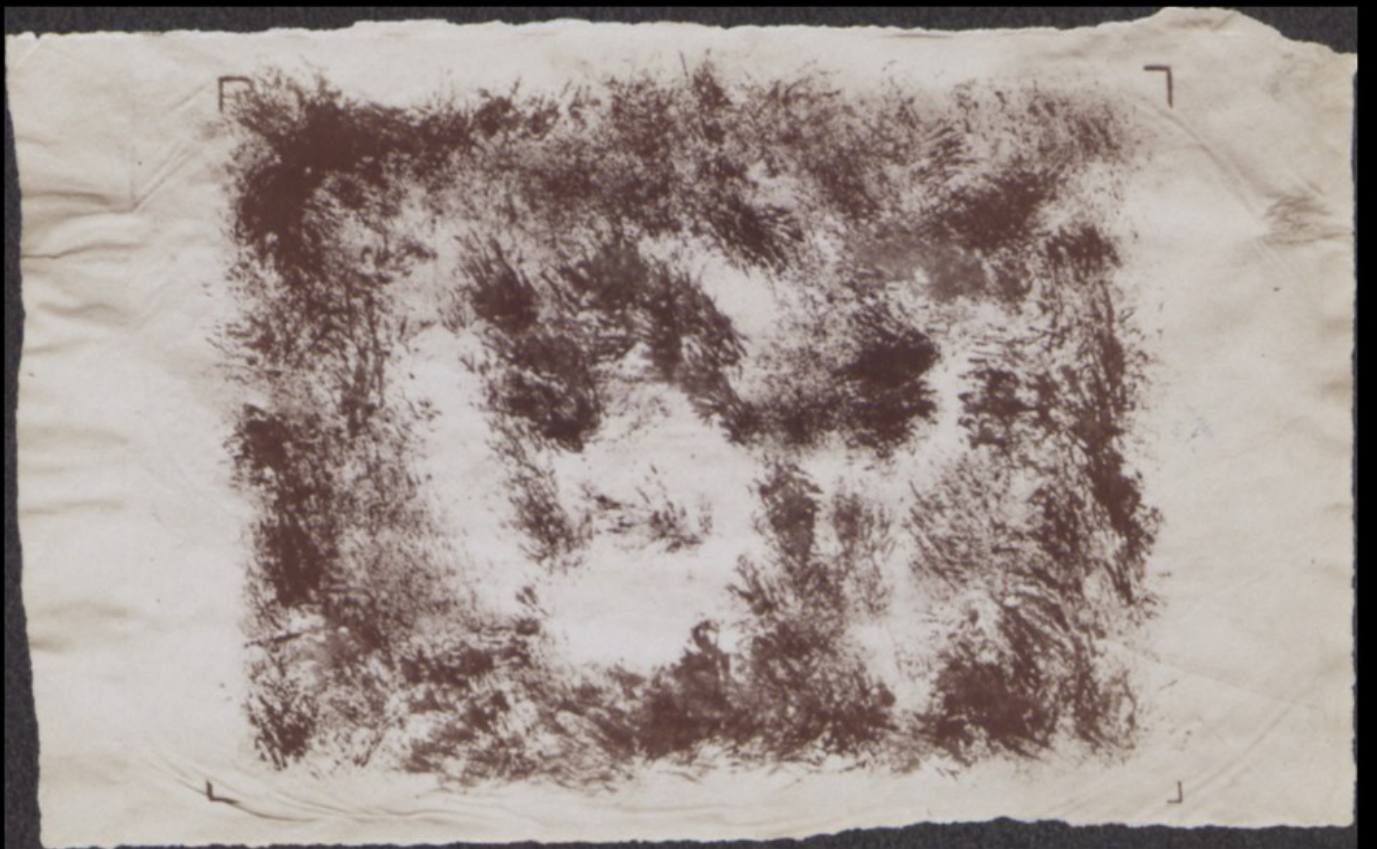


THE NEW HIGHWAY OF MOUNT CASSIDY—THE CAR

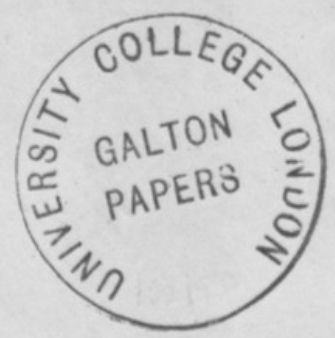


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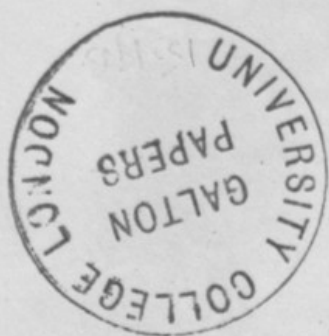


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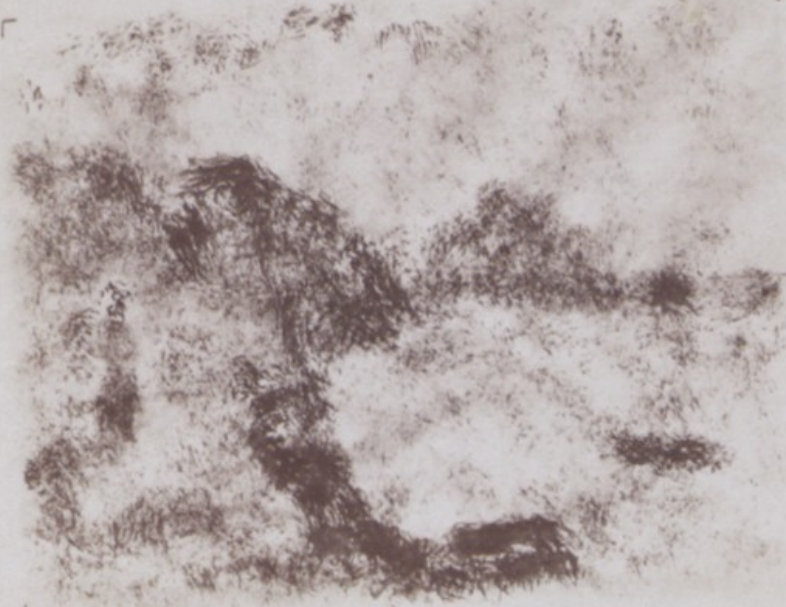


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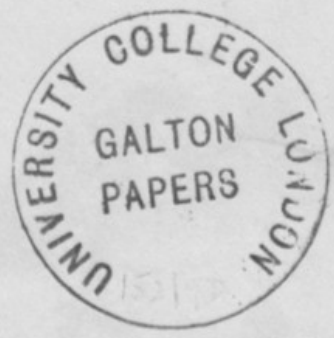


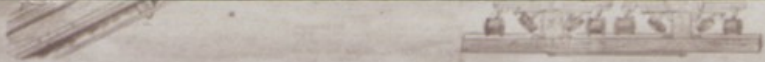
THE NEW RAILWAY OF MOUNT VESUVIUS—THE CAR



FROM THE JOURNAL OF THE GREAT BRITISH EXPEDITION TO MOUNT VESUVIUS, 1872

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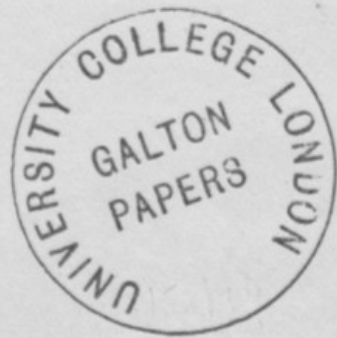


THE NEW RAILWAY UP MOUNT VESUVIUS—THE CAR



"ON THE COAST OF CORNWALL"
FROM THE PICTURE BY THE REV. GEORGE BARRETT—A WATER-COLOURED DRAWING

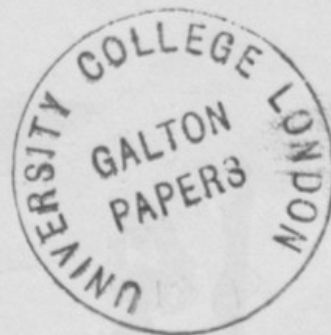
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THE NEW RAILWAY TO MOUNT VEZUVIUS - THE CAS

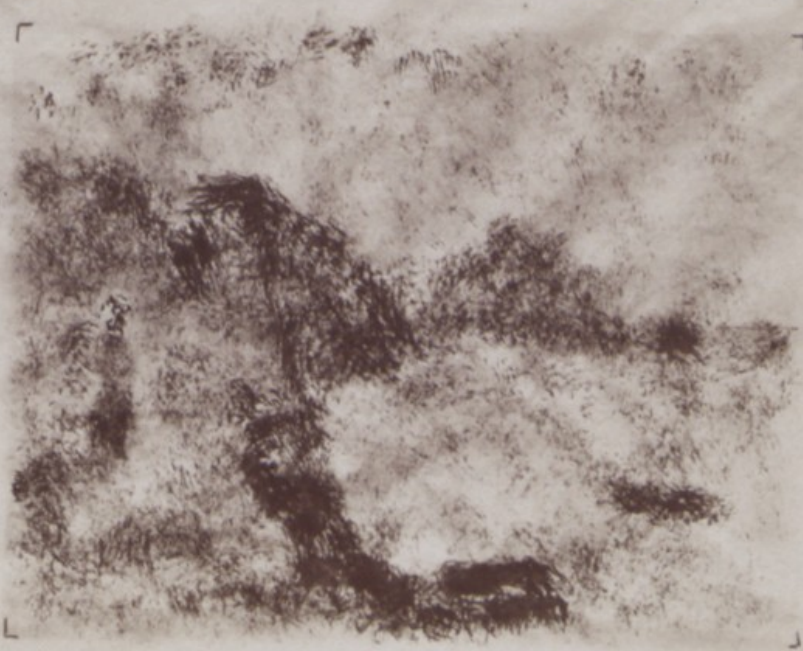


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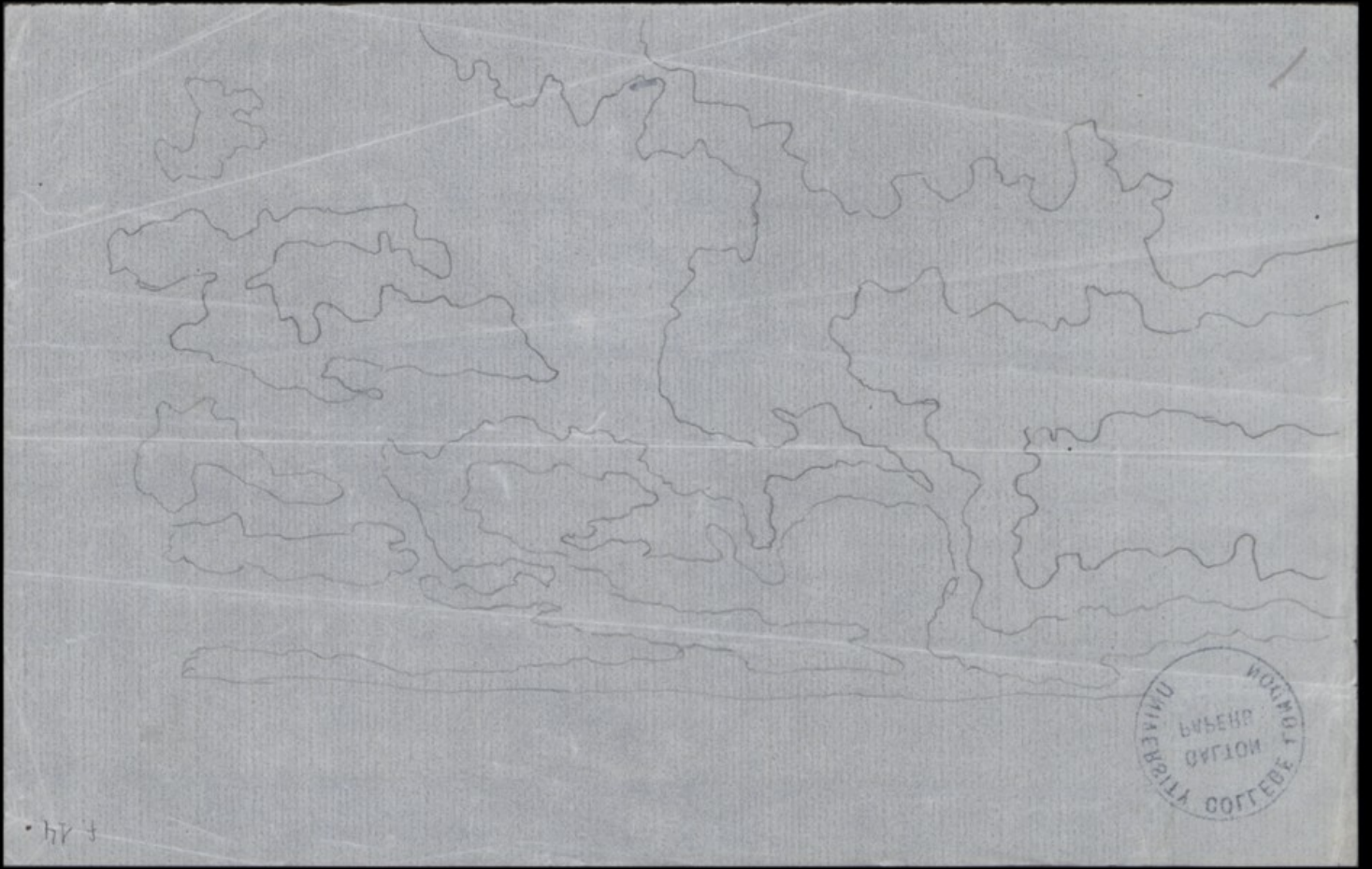
THE NEW RAILWAY UP MOUNT VESUVIUS—THE CAR



FROM THE TERRACE OF THE GREAT MOUNTAIN EXHIBITION TO MOUNT VESUVIUS, ITALY

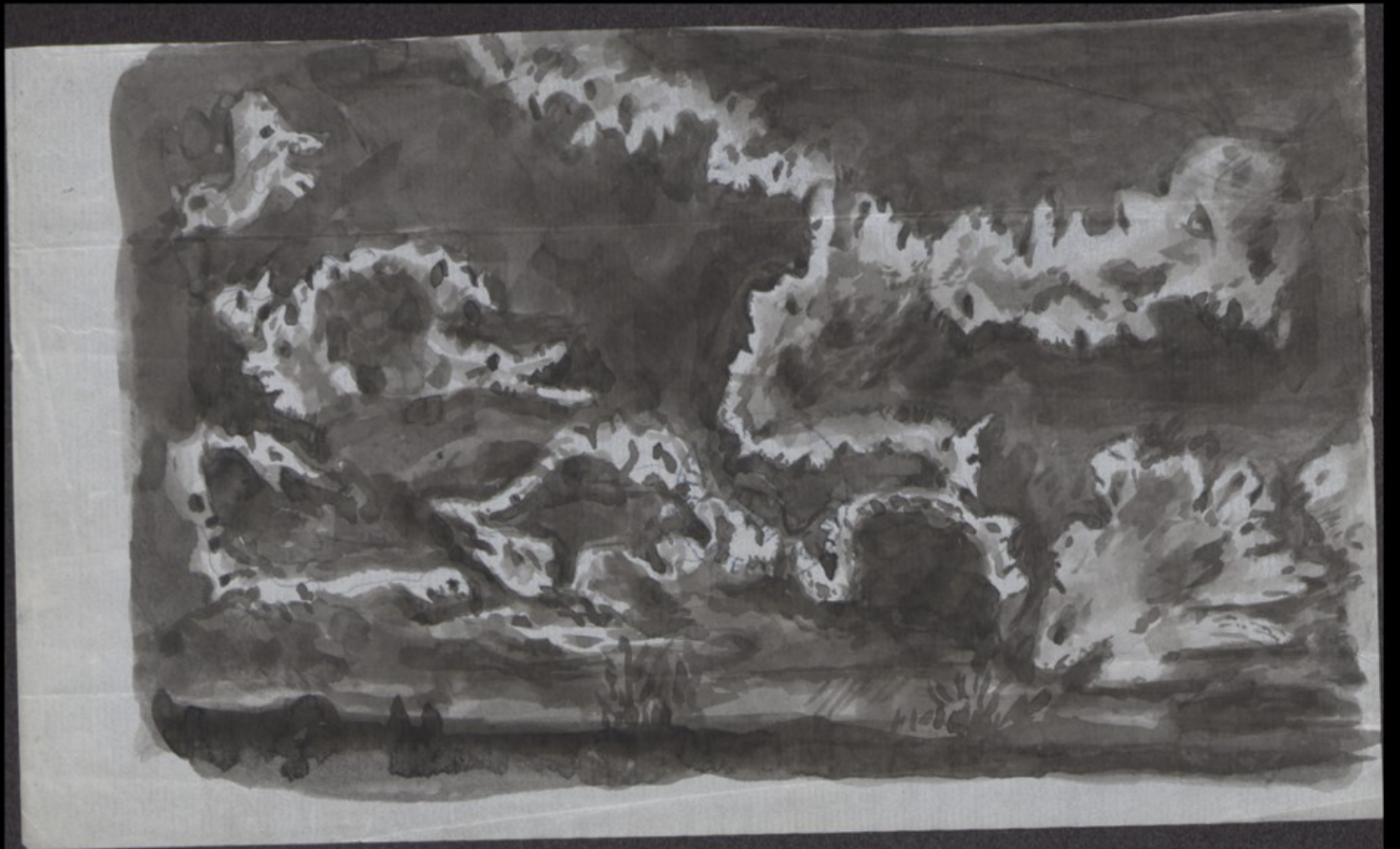
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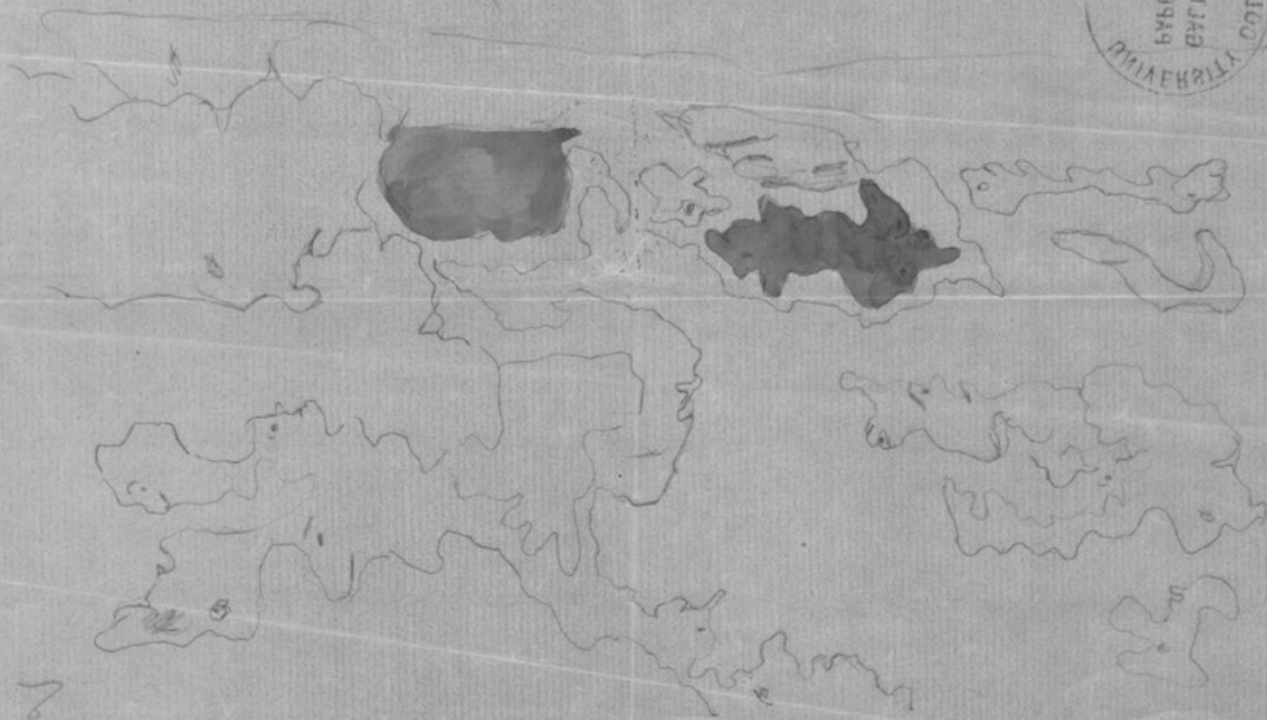
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ИТБРЕВІІІІІІ
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СОГГЕДЕ



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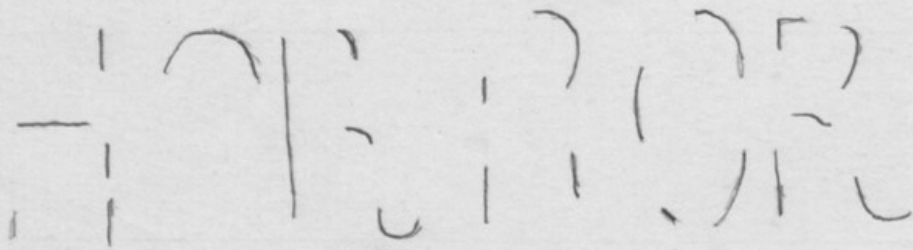






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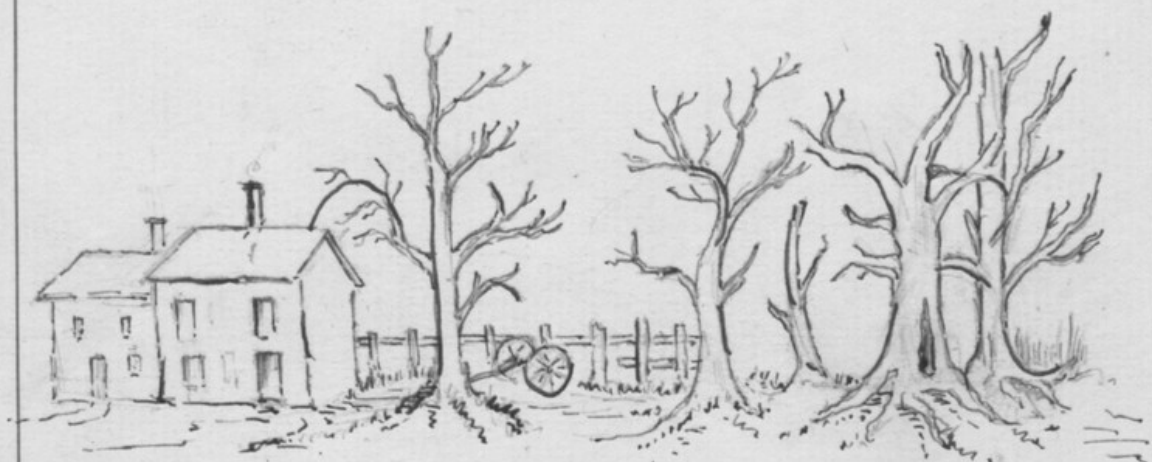
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2. plus those that are neglected and unmarked



3. plus others that are added by the imagination

HORROR

f. 3v

Can find no reference
to this. F.H.C.



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HORROR

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1. The portions that are selected and remarked.

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2. plus those that are neglected and unmarked



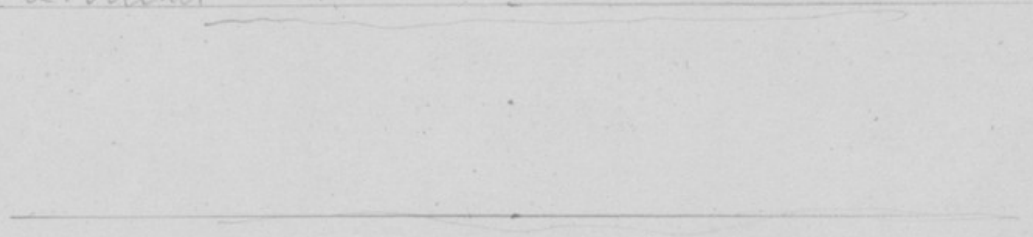
3. plus others that are added by the imagination.

LECTURE

Those parts of the pattern that the eye selects

- 1) Those parts that are selected and remarked
- 2) plus those that are neglected and unmarked
- 3) plus ~~others~~ that are added by the imagination

The Portentis



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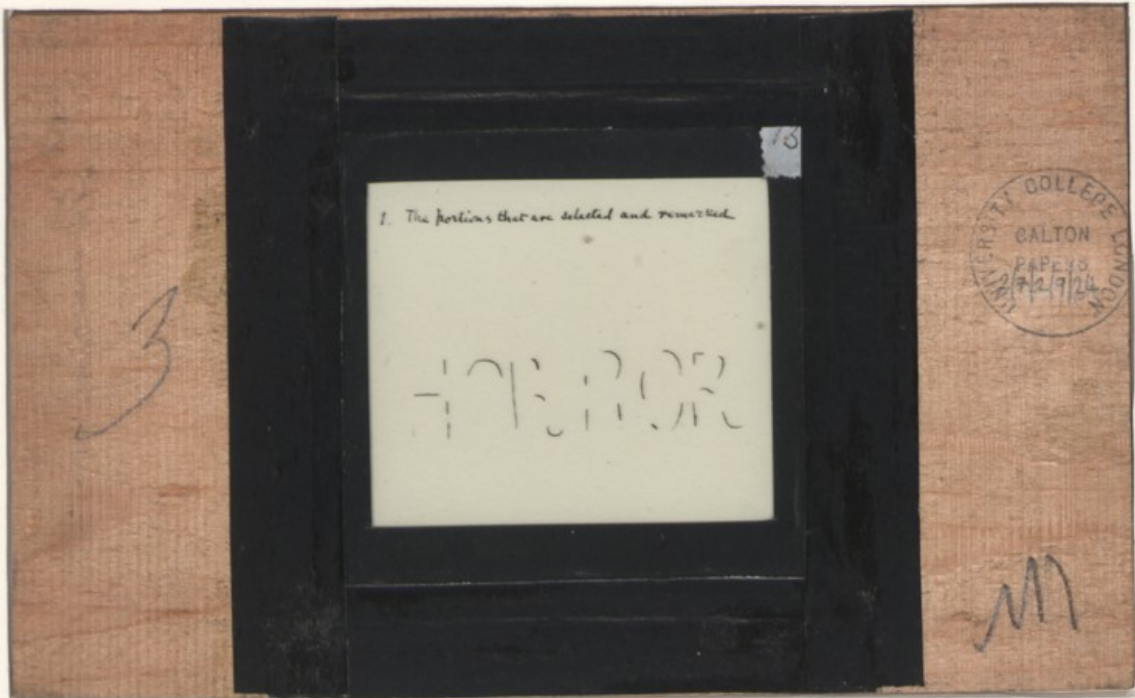
F. 2

F. Galton Esq^r F. R. S
42 Portland Gate

Glass.

From. The Royal Instⁿ





1. The portions that are selected and removed.

HARPER

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2/2/92

M

2. *Alas those that are neglected and unmarked.*



2

MA

3 *These others that are added by the imagination*

HORROR

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M

THE DOCTORS PUZZLED.

WASHINGTON, Ga., July 6.—A singular incident, which attracts the attention of the medical fraternity, is connected with the death of Mrs. Carey, a widow, 60 years of age. The woman was taken sick with the measles. The disease left an aneurism of the left femoral artery. From a clot of blood in the main artery of the left leg mortification set in and caused her death. Mrs. Hendricks, the twin-sister of Mrs. Carey, then contracted the measles, which has run an identical course with the other case, with so far a similar result. In order to prove, if possible, a fatal termination in this case Dr. Andrews and Dr. Hill have amputated the diseased leg, and are now awaiting the result.

in Times

OFFICE OF

GEORGE C. YEATON,
ATTORNEY AT LAW,

Yeaton

GALTON 2/7/2/9/25

South Berwick, Me., *July 7* 1885-

Francis Galton F. R. S.

My dear Sir:

I read yesterday
-day in your work on the "Hereditary
Faculties" what you write concerning
"Twinning" - In the evening, enclosed,
which I cut from yesterday's
issue of "New York Times" (Daily)

fell under my eye - It is so
far all an illustration of your
text - I send it - Of course,
I have ^{not} ^{undertaken} ~~no~~ ^{to} verify
the facts -

Believing you address I
trust in case of your publishes,

Respectfully,

G. C. Yeaton