

284 goes. We do not always distinguish impressions of
different degrees; but things that are opposite to each
other, as sweet & bitter. One application
is that it explains as *juxta se posita magis dis-*
crepant, why so much of our knowledge depends
upon comparison; so we only know degrees. Newton
has discovered various degrees in the same colour.
He has a red of the 1st 2^d 3^d 4th 5th & 6th order. If
was presented with a red of the third order he would think
it the brightest till he saw the second & first. To the
fourth order he would call dull and weak if seen
by itself but compared with the fifth or sixth he found
it not so dull as it had appeared before. These explain
habit. All our impressions repeated grow weaker and
weaker. The same degree of light we perceive less
and less from being more accustomed to it. The theory
of this is untouched. The fact is in general certain.
There may be some doubt as to the extent of it. This
law partly takes place with regard to indifferent
perceptions; that a man up with a moderate degree
of light, he would not see less at the end of the fourth
hour; But it applies to all our perceptions of plea-
sure and pain, as also to the impressions being plea-
sant at one time that were disagreeable at another

and we can show that pain and pleasure are 285
strictly connected with the force of impressions.
To bring down pain it becomes pleasurable, and
bringing down pleasure it becomes painful. Now the pre-
sent case of law of impressions becoming weaker in
consequence of repetition, applies in the case of medi-
cines operating upon the nerves especially without
perception, or if attended with pleasure or pain.
It applies equally to sedative impressions, and it
furnishes a strong objection to sedatives acting by
mixture. In other cases of mixture we know no-
thing analogous to this. If sedatives then act by
mixture the effects should be constant and steady.
I own it is a strong objection but to me not in-
mountable. As sedatives and stimulants are often com-
bined the latter may modify the former in quan-
tity as well as in their effects. But supposing this
not the case this mixture takes place in a small
portion of the nerves, and may produce its sedative
effects by modifying the motion in the rest of the
nerve. This doctrine gives occasion to many in-
structions both as to morals & medicine. I shall
speak of the latter hereafter.

The mind perceives but one thing at once. If two impressions are made at the same time, one only should be perceived. However several simultaneous impressions do operate on our system; but it is only where they can unite in making one single impression, which they often do. We now have learned to distinguish the colours of the prism; Blue and yellow are considered as simple ones; if they be so blended in such small portions that the eye does not distinguish them they produce the compound colour of green; The same thing takes place in sound, and hence we can distinguish the difference of simple and compound impressions; nor does this contradict the law of perceiving but one thing at once. Further, sensation is not strictly confined to the presence of the object. But the same lively perception that came from the present object of sense remains for some time after the object is removed. While it remains so another impression that would have united with it will unite with it still remaining, only a certain quickness of succession is here necessary. Hence this is proved in the motion of a body appearing continued tho' it be a discrete one.

Such is the apparent continuation of the flame of a 259 burning stick whirled round. By a device of Galenus C. — we have learned to ascertain the shades of colours precisely without the use of words; He distinguished Insults by the various shades of the same colour. Instead of words he fell upon this contrivance of producing the colour. He got as as steady colour as could be contrived; he then measured the quantity of these by the space they occupied. In forming a circle he made one half of it allionately blue the other yellow, and made them unite in one by putting the circle into motion. Suppose in the whole, eight parts of green three of yellow and five of blue made a certain shade; & so of the rest. It isto be observed that the union of our perception seems to be limited to perceptions of the same kind. So there is no union between colour & sound, they produce no mutual sensation, This mixture of sensations is more or less accurate, it is hard by properly so with regard to blue and red, where we will have more perceptions of the distinct parts of which the colour is composed. There are certain sounds or tones uniting more perfectly and giving the pleasure of harmony. In like manner our unitas with odour but not with colours. A

230 while or red rose gives no Idea of the smell of it.
There are perceptions of touch that manifestly blend
with both taste and odours, such are the acids.
Heat and cold do also blend with these perceptions
of touch; these are still ambiguous between
the chemical and mechanical, But impressions
made with small points will imitate those of
heat. These views very strongly combine the analogy
of the manner of operating explained before; and
apply very probably in the operation of medicines
either with or without perception to be considered
in another place. —

Lect. XLVIII. Jan^y. 23^d. —

I was yesterday upon sensation from compound im-
pressions; I go on now to when in what respects our sen-
sations are simple or compound. Most of them ex-
pose external distances and we separate ourselves from
their Bodies. We consider them as separate Bodies in-
so far as they appear discrete. We seldom take one so-
ly from a single impression. But we receive a con-
currence of impressions from it & entertain a number of
sensations; this is their qualities. Hence the human un-
derstanding and in consequence volition. Most of our
sensations may be renewed by memory without a re-

newal of impressions. This gives the formation of 230
one principal complex Idea: This is properly romance.
Hence it depends that we have a consciousness
of our own Identity, and also that of objects perceived
at different times. Next, the mind in passing from
one sensation to another, has a new perception arising
from the two considered together; this is what we
call relation; and it seems to be infinitely diversified
but may be reduced to a few general heads, I think to
three. First to that of situations in place and time;
Hence the relation of above and below, hither and thither,
first and last and every consideration of order.
The second head is that of resemblance or di-
similitude of other qualities, wherein particularly we
observe degrees, and comprehend every thing of pro-
portion or diversity. The third head is that of cause
& effect: It arises from observation of space & time
but occurs wherever we observe a complication of
non-existence and new qualities. I am inclined to
mention two relations more particularly belonging
to one of the three former heads but requiring to be
mentioned separately. The first is the relation of
qualities to their subject. Whether we be right or
wrong in our perception of objects, we take all their
qualities in by referring them to one thing. Kno-

260 this particular thing is the relation of all other
bodies to ourselves, but in especial manner as giv-
ing pleasure or pain. We necessarily perceive the plea-
sure and pain of other men and of all animals, and
we extend this perception to others in proportion as
we may have sympathy for them. It is what I call
interesting relation. It is in this that what we call
judgement, chiefly consists. All intuitive judge-
ments are no more than perceptions of relation per-
haps. But of it I shall say more hereafter. —

I go on next to speak of memory; having hitherto
spoke more strictly of sensation.

It is a law that two Ideas, being so connected
that when one of them is renewed the other is
necessarily renewed also at the same time. And
it extends further, for that Idea renews a third
and so on ad infinitum almost. We can perceive
plainly on what it depends, viz: the relations just
now marked. It is only related Ideas that are thus
associated in the memory. In the first place the re-
lation of space and time, but more certainly the re-
lation of resemblance at the same time; and still
further when cause and effect are added. Also the re-
lation of qualities to the subject afford a particu-

lar foundation of association; and still more re- 261
markably all interested relations afford it. A most
curious particular is that we not only associate
one sensation with the last, but upon any sen-
sation occurring we compare it with one laid up
in the memory long ago & indeed with everything
formerly laid up: Hence you see how relations come
to be; and hence the arrangement upon which de-
pends the whole of our knowledge. The memory is
in this respect a common place book, according
very much with that, ^{the plan of} which, I formerly laid down
in my chemical Class where every impression
is set down without order, and afterwards ar-
ranged by reminiscence. I observe further
that the power of memory, or firmness of these
associations depends upon various circumstances.
First upon the nature of original impressions
whether depending upon attention or, that, being
given, depending upon the force of original im-
pressions; and that again being given the me-
mory depends upon repetitions. We distinguish
between sensation arising from the object and
the renewal of it by memory. Our Ideas become
weaker in the last case than in the former;

262 fainter & fainter the greater the distance of the
time from the presence of the object. Next the
Power of the memory depends upon the distinct-
ness of our complex sensations; for tho' these
consist of different parts, we readily refer them
to one and take little notice of the rest of the in-
siduents. We have an Idea of a thousand faces
in their absence; but we would give an indistinct
and imperfect account of the features. Yet they
are more durable in the memory in proportion
as they are more distinct. Another is the percep-
tion of the relation of one body to another; the
better this is marked the better we remember
it. Reflex sensation, pleasure, or pain and in-
terested relation occasion that their objects are
more distinctly retained than many others. These
are likewise foundations of memory; I have
mentioned in what manner it is lost; first from
length of time and want of repetition; for want
of various relations; that is the exercise of them;
from want of the exercise of association; and the
circumstances point out how much the same
faculty must strengthen by exercise. The memo-

ry is different at different times of human life 263
according to the state of the sensorium commune.
It is weak at first and becomes stronger with
age; Memory is considerably different at the same
period in different persons; this may depend up-
on the state of the organization. I only mention
one or two general distinctions in our memory.
The first is that some peoples memory is found
in the sensual or arbitrary associations of
perception only. Upon this it is established that
the most arbitrary signs may be agreed upon a-
mong men as masters of Ideas. We agree up-
on sounds or figures if there are but connected
by time; they come to be ever after, of power-
enough to renew the Idea by preserving that
figure or repeating that sound. This is the
foundation of language & writing; which
have no other relation but merely the most sim-
ple one of place & time which unites them for-
ever after. It is not necessary that one figure
should appear, but any other figure presented
along with that animal will answer equally

264 will as its own. Now the use of this is that some have a memory depending upon place and time, which is a memory without judgement. The memory of others again is most disposed to observe the resemblance of cause & effect. And no great judgement can be without a great memory. It is this last memory that in its diversity gives all the difference of human genius. A great deal might be said in explaining that general portion, but I must pass it over as less concerning my subject. But it is of the utmost importance to observe that memory depending upon association is faithful to portion, order &c. The sensations are recalled in the order of time. Hence an ordinary train of thinking that must be spontaneous. It is here that to a certain degree we have the power of diversifying this, while our organs remain in their healthy condition. —

Lect. XLIX. Jan. 7. 17. —

Tho' the objects of our attention are prodigiously various, yet the heads of relations are but few: and

with regard to one particular relation its heads 265 are not many. We find a spontaneous and almost absolutely necessary train of thinking. One man will mark relations not common such as the foundations of wit, but they must be natural and obviously just; and as the eye passes from one object to another so does the mind from one train of thinking to another; and here too is a foundation of difference of judgement. When a man acts and thinks consistently with the surrounding objects he is said to be possessed of common sense; he follows a common & ordinary train of thinking. It is by the contrary inconsistency that we distinguish between mad men and sound men, dreaming and waking thoughts. There is an intermediate degree in this respect. On different occasions in different men we perceive more or less firmness or attention, and if for various purposes in life that be interrupted it must be renewed again. And this in a person capable of it we properly call presence of mind. Some cannot bear an interruption without being thrown into confusion. The chief circumstances of interruption are all those that are attended

266 with passions which throw him into a flutter. Further memory is exercised two ways running by different. The most ordinary is where sensations are only renewed. And some times memory renews it with all the force of the first object which made the impression; In that case I call it imagination. I go on now to observe that the ordinary case of memory is that some external impression first causes a sensation, & the mind passes to some Idea relating to it & the whole can be traced back to some external impression. In Delirium the Idea is renewed without the external impression. It is difficult however to say when the cause of Dreams or Delirium is placed in the mind, and not in external impression, such as uneasy posture &c. The action of the internal may be doubted. But as we perceive that the internal sensations can be excited by the beating of an artery in the ear & when the eyes are shut; and as we see in so many instances Ideas excited without being able to trace the external impressions, there is no doubt but that Ideas may be re-

newed from external impressions. If they act 267 upon the extremity of the Nerves, I call the cause internal corporeal. In Delirium & Dreaming two things are to be observed, that the Ideas are nearer to sensation, & are therefore more Imagination than memory. In some measure they are actual impressions & therefore tho' made on the sensorium they may have the same effects as if made first on the extremity of the nerves & afterwards propagated to the sensorium; & hence we judge of Delirium in proportion to the force of sensation. Another circumstance is that the Ideas are incoherent and inconsistent. I shall give a theory to explain that. As our waking thinking can be interrupted by impressions supervening, so it is probable that impressions are made in different portions of the sensorium exciting Ideas mutually interrupting each other. There is but one law of association which operates the same as in our waking thinking; and if it was not for the interruption of different internal impressions the Brain would be consistent. Probably it is owing to the sensorium resisting the

268 passage from one Idea to another; probably to
the sensorium being blocked up to a certain de-
gree not allowing this passage of or from one I-
dea to another. The whole business of memory is
connected with a particular state of organiza-
tion, and being open in one place and shut in an-
other, it produces incoherence in dreaming. A
greater frequency of dreams is to be considered
as the first step to delirium. But when I said
that dreams might be some times coherent, I
did it to observe farther that their force is more
or less according to the more or less freedom of
the sensorium, which in some places is ve-
ry free and gives an easy train. But without
violent & strong impressions the chance is in
favour of connection; hence the somnolent will
get out of their bed and walk with more stea-
diness than when waking. This foundation of
what they perform is either founded in pas-
sion or in which may be considered as
a passion. Most of those people that do get up ge-
nerally beat those who are sleeping with them. A

physician beat his comrade in this manner, & 162
was afterwards cured of rising in sleep by his
companion keeping ^{him} ~~her~~ ^{himself} by the bedside
and making application to it when ever he
tempted to rise. A man sleeping will walk with
steadiness and safety along the ridge of a house-
top; which is not surprising. We would do that
as well waking, (as we can walk along a line on
the ground) were it not prevented by fear, and
attention to surrounding objects. It has been a
question to what degree ~~the~~ ^{the} eyes are open, in such
case it might be supposed the attention would be
called off. Certain it is that in many cases it
happens with the eyes open, and yet the attention
is still confined to one train and what relates to
that. You will, from all that we have said ra-
dily understand why in running over any length
of relation, we can hardly avoid interruptions
from occasional impressions. Silence and dark-
ness are favourable to thinking. We are preserved
consistent by surrounding objects, and the conceiv-
ings of our own Identity; and when we are in danger

270 of losing sight of that in Delirium and Coma,
it is only to be remedied by presenting to us the
impressions of objects and these most familiar
to us. Chaur gives us a story of a stupor from
a fall; the man at length recovered, and first of
all had a perception of sounds & voices; he heard
them speak of a wound, but never applied it to
himself, till the return of more of his senses made
him understand that he was spoke of. The sensorium
is shut up to a greater or lesser degree; In a stupor
the eyes are closed before we lose our sensibility, &
the ears are open; and so when patients thus af-
fected recover, their ears are opened which they
may exercise for a long time while the portion
of the sensorium, that should allow the tracing
of these relations is still shut up. The ears may
be awake without giving that sensation that will
restore us to our own Identity, and therefore the
eyes must be open. We may conclude that in re-
solving Ideas we are limited to the objects of sight
& hearing. We do not observe that signs succeed one
the purpose both of our intellectual and moral opera-

271 lions. It limits our pleasure but it prevents the
imagination of pain; the sense of which we can
not recall. Yet it is to be noticed that the fainter im-
pressions of the agreeable or disagreeable are all easi-
ly renewable; but what is more to our purpose is
that tho' we do not renew the Idea or sensations
of the Body without their signs. We can renew
our irritability though not our sensibility, as
when we are hungry, in the case of Victuals and
so also in medicines. A sight of Opacuanha will
renew the motions which the former exhibition
of it occasioned, tho' the exact sensation of its taste
is not renewed. —

Lect. I. Jan^y. 28th —.

Yesterday I forgot some particular applications
as for instance, that there is a curious law in
our memory, as to signs which tho' not sufficient
to renew sensations or reflex ones of pain or plea-
sure, yet oft renew desires. I forgot altogether
that as the memory is a renewal of signs and
Ideas, there is something which we call remem-
berance. If I see a single object I have seen before

§ 12 I immediately recollect I have seen it before. We first lose our memory of signs, next that of Ideas, and last of all, that of reminiscence, or recollecting the former seeing of an object from a second sight. I divided this subject into two; the one sensation the other reflex sensation such as pleasure & Pain which is well or volition. Hence desire & aversion. All this which belongs to the will is divided into agreeable and disagreeable. Authors have made a third head, of Indifferent or indifferent; whether this third is real or not may be difficult to say. It is certain that many things may be such, as very little or not at all to concern us.

Pleasure

is not to be defined. The pleasure of Colour & sound give so many specific sensations as I can not attend to now. Common language has given us no steady foundation of difference between disagreeable and pleasant, disagreeable & painful; but there is a difference. Every body knows the difference betwixt the agreeableness of colour & the disagreeableness of the tickling of a feather. We call these pleasures that are excited by the

by the Pleasures of Imagination & therefore 213
mental. We perceive a gradation in our different sensations, as for instance the pleasures of imagination hardly seem to make any impression on the Body. Next to these are the pleasures of sound which are more evidently corporeal; but from their harmony and lasting impression on the mind they are considered also as mental. These of smell which without the object are not to be renewed are purely corporeal. Taste is a corporeal pleasure which depends upon a matter contact of external bodies, and which we refer to external Bodies or our own; and of this there is no memory, it depends always upon present impressions. But as to thirst and hunger their degrees are higher and they are reckoned among the corporeal or sensual. The other as connected with the appetite of lust are more powerful in agitating the whole frame and are considered in the highest light of corporeal and sensual, & give the greatest pleasure. In distinguishing these, to the first we would apply the term of agreeable to the last that of pleasure. In