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Some bypaths in the study of Epilepsy.

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Some bypaths in the study of Epilepsy.

From time immemorial Epilepsy has claimed the interest of non-scientific and scientific men alike. The suddenness of onset and dramatic nature of the attack, the peculiarities of temperament and eccentricities of those who suffer from it, and the dreams and visions they describe, have in ancient and medieval ages surrounded the disease with a halo of mystery and respect. While, in modern times, the frequency of its occurrence, its intractability, and the close relationship of the disease, on the one hand, to insanity, and, on the other, to genius of the highest order, have combined to attract the attention of scientific men.

The Greeks of old called Epilepsy the “sacred disease” (γυνοὺς ἐπίζω), and Aristeus, a Greek physician born towards the end of the 2nd Century A.D., gives several explanations for the use of this term. It was so called, he says, either from the greatness of the evil,
for the word ἑπίας also means great, or because the cure of it is not human but divine' - he adds that the name may have originated 'from the notion that the disease occurred through the entrance of a demon into the man'.

Plato in the "Timaeus" describes the use of the term 'sacred' to the circumstance of the head or brain being the part affected in epilepsy. "When the phlegm is mingled", he says, "with black bile, and dispersed about the course of the head, which are the divinest parts of us, and disturb them in sleep, the attack is not so divine, but, when assailing those who are awake, it is hard to be got rid of; and, being an affection of a sacred part, it is most justly called sacred'.

It is interesting to note that Hippocrates, the "Father of Medicine" (born about 460 B.C.), entirely disagreed with the notion entertained by his fellow countrymen that epilepsy was peculiarly a sacred disease, or one specially inflicted by the gods. In the treatise Ἐπί Τεπίδων Νόσου he emphatically points out that the incomprehensible nature of the
malady is no reason for concluding it to be divine, because many other diseases, and notably the paroxysms of intermittent fevers, are just as much above the reach of the human understanding. He believed that epilepsy results from natural causes.

Like the Greeks, the Romans ascribed the disease to the malice of demons or to the anger of their offended deities, and they too called it "morbus sacer". "Morbus convulsivus" was another of its names, for, if a person were seized with epilepsy in the Senate house, it was considered an evil omen, and all business of the State was suspended for that day. Still another name applied to epilepsy by Latin writers was "morbus qui spuratius", because those present were accustomed to spit upon the epileptic man, or into their own bosoms, either to express their abomination or to arrest the evil omen from themselves."

During the two thousand years, which elapsed between the days of Plato and Aristotle and the early part of the 17th century, the notions of epilepsy held by lay writers,
Christians and pagans alike, appear to have undergone but little change. The universal idea of the epileptic was that he was possessed by a demon or a prophet—an individual inspired by God. It would be a sterile inquiry to examine the conceptions of medical writers during the same period, for though interesting from a historical point of view, they are not much more instructive than the demoniacal pathology already referred to. So let us pass at once to the middle of the 19th century. We find then several rival explanations of the nature of epilepsy in the field. At one time Todd's so-called "humoral" theory was in favour. Todd said the disease was due to "the gradual accumulation of morbid materials in the blood till it reaches such an amount that it operates upon the brain...as it were, in an explosive manner"; and he considered the phenomena of the epileptic attack analogous to the effects of strychnine poisoning. Another theory was the one advanced by
Adelphi, in the Galtonian lecture for 1860, that epileptic convulsions were due to an insufficient supply of arterial blood in the cerebral vessels; and he compared the condition with the empty arteries of asphyxia.

In 1875, (now Sir Llew.) Broadbent suggested the possibility of low arterial tension and absence of vascular tone being the cause of epilepsy; and he drew attention to the effects on the disease of Potassium Bromide and Belladonna, both arterial contractors.

Still another explanation was that of Rothnagel and others, who held that the condition was due to discharges from a special convulsive centre in the pons Varolii or medulla oblongata.

But all these notions have long been consigned to the limbus of exploded ideas, and how all pathologists accept the explanation, which Dr. Hughlings Jackson was the first to advance, that all the phenomena of epilepsy result from a sudden liberation of nervous energy.
in the brain, that this energy proceeds from a "discharging lesion" in the gray matter of the cerebral cortex, and that the lesion or derangement of the gray matter is nutritive in its nature.

Since Dr. Hughlings Jackson first wrote on the subject his ideas have been clarified and elaborated by many distinguished medical authors, and notably by Sir Wm. Gowers, in his brilliant autograph on Epilepsy in Albee's "System of Medicine" and elsewhere.

If, therefore, one were asked to describe the pathology of Epilepsy according to modern views, one would have to preface one's remarks with the statement that the functions of the gray matter of the brain depend upon a capacity for instant release of nerve-energy, that the nerve energy is normally held in control and is only released as the result of a stimulus — in epileptics, however, there is a loss of balance between release and control, and we have, as it were, a nerve storm, resulting from this defective equilibrium between the normal tendency of the molecules of nervous tissue to unite and release thir
latent energy (at the bidding of a stimulus) and the normal control which keeps them from doing so. The energy, in fact, is released in the absence of the stimulus. Healthy nervous action may be described as an orderly discharge which always takes place in a definite direction as the result of a definite stimulus. In spilexy the discharge "has no other cause than the nutritional augmentation of its own tendency." It is a spontaneous uncontrollable outburst, as though gunpowder should explode when no match had been applied to it.

From this point one is strongly tempted to take the pathological inquiry a step further, and to follow Sir W. Gowers and others into their fascinating speculations on the nature of nerve force itself. But, in nerve phenomena, nature has woven for us such a tangle as tissue, the threads of fact and evidence are so scanty and the difficulties of unravelling the knot in the present state of our knowledge, so insurmountable that it will be wiser to
Tread no further into the regions of conjectural pathology, but, leaving that aspect of the subject at the point that has been reached, to enter upon the clinical side of the disease. For it is the clinical side of Epilepsy that is to form my main consideration; and I wish to examine with some minuteness into the nature of various groups of obnoxious mental phenomena, the relationship of which to Epilepsy, though almost certain, has not yet been fully established.

Before, however, commencing to discuss conditions which are departures from the usual form of the disease, it will be useful to quote Sir W. Watson's classical description of the ordinary epileptic seizure, for his graphic picture of the type will be a fitting introduction to the atypical forms with which I am chiefly concerned.

"A man", Sir W. Watson writes, "in the apparent enjoyment of perfect health shall suddenly utter a loud cry, and fall instantly to the ground, senseless and convulsed. He strains and struggle violently,
His breathing is embarrassed or suspended; his face becomes turgid and livid; he foams at the mouth; a choking sound is heard in his windpipe; he appears to be at the point of death by apnoea. But presently, and by degrees, these alarming phenomena diminish, and at length cease; the patient is left exhausted, heavy, stupid, comatose; but his life is no longer in danger. And in a short time he is once more to all appearance perfectly well. The same train of morbid phenomena recur, however, again and again, at different, and mostly at irregular intervals.

Such is the usual form of epilepsy. Let me draw attention to four points in this description, which, as will be seen hereafter, have an important bearing on the variations from this standard which are now to occupy my attention—

1st, suddenness of the attack,
2nd, loss of consciousness,
3rd, completeness of recovery,
4th, tendency of the attack to recur.
The minor manifestations of the epileptic neurosis are many and varied. None of them are more interesting than the conditions known as "Dreamy Mental States" and "Ruminicences". These phenomena lie in that vast borderland in which are found the connecting links which bridge over the narrow gulf separating mental health from mental disease, and instances are found sometimes on one side of the bridge and sometimes on the other.

A brief survey of the characteristics of this "dreamy mental state" must be attempted before its relationship with Epilepsy can be made evident. But, at the outset, we are met by the difficulty that all patients—very highly educated ones—tell us that the sensations they experience are so peculiar, so obscure, and so evanescent, that they can hardly find words to describe them adequately. They complain vaguely of "a sensation of being somewhere else than they are", or of a temporary loss of consciousness of personality, or of a constantly recurring confusion of thought. Sometimes
They speak of sudden sensations of despair, or of impending death. And sometimes, as a patient once described his feelings to me—an expression of awful fear at the recollection coming over his face—they say their thoughts are too terrible too horrible to be put into words.

While the attack lasts the sufferer appears to possess, as it were, a double personality; and the condition appears to be analogous to what each one of us has experienced when, between sleeping and waking, and before consciousness has fully returned, the ideas and hallucinations of a dream persist for a time, so that, even when fully awake, one imagines he really sees the image or hears the voices of his dream.

In highly intellectual persons, the experiences of the "dreamy mental state" are generally of a very brilliant nature, as if the whole middle of the universe lay clear before him; and he imagines that he has solved the great mysteries of Time and Eternity and that he knows and understands "the unknowable."
A very vivid picture of sensations of this character has been drawn by the Russian novelist, Dostoevsky, who was from youth subject to epilepsy of a severe type, and who, probably, in the novel to which I refer, is describing his own experiences.

"I remember," he writes in "The Idiot," among other things, a phenomenon which used to precede his epileptic attacks, when they came on in a waking state. In the midst of the dejection, the mental marasmus, the anxiety, which he experienced, there were moments in which all of a sudden, his brain became inflamed and all his vital forces suddenly rose to a prodigious degree of intensity. The sensation of life, of conscious existence, was multiplied almost tenfold in those swiftly passing moments. A strange light illuminated his heart and mind. All agitation was calmed, all doubt and perplexity resolved itself into a superior harmony, a serene and tranquil quiet, which yet was completely rational. These radiant moments lasted only for an instant. But that instant was in truth
inaffable . . . . . . . . . . . . . . . . . No doubt it was to this same ‘instant’ that the epileptic Mahomet referred, when he said that he used to visit all the abodes of Allah in less time than he would take to empty his water-jar.

It should be noted that ‘attacks’ of the ‘dreamy mental state’ are sudden and unexpected at onset, they last for but a short time, the individual who suffers from them is apparently unaffected subsequently (except by the recollection of his experience), and they tend to recur again and again.

Closely akin to the ‘dreamy mental state’, and of far commoner occurrence, is the condition which gives rise to what are known as ‘Reminiscences’.

Stated shortly, a ‘reminiscence’ is a vague and evanescent feeling that a place or event is perfectly familiar, although the place is being visited or the event happening for the first time. For example, a person enters a room in a house he has never visited before, and suddenly he feels that the room and everything in it are perfectly
familiar, although he knows it is quite impossible he can have seen it before. The sensation has been very clearly described by Dickens in "David Copperfield" — "we have all some experience of a feeling, which comes over us occasionally, of what we are saying and doing having been said or done before, in a remote time — of our having been surrounded, din, ages ago, by the same faces, objects and circumstances — of our knowing perfectly what will be said next, as if we suddenly remembered it."

Many other writers have given accurate description of these sensations — Thus, in Sir Walter Scott's "Journal," under the date 20th May 1828, we read: — "A day of hard work, being, I think, eight pages before dinner. I cannot, I am sure, tell if it is worth marking down that yesterday at dinner-time I was strangely haunted by what I would call the sense of pre-existence — reliable, a confused idea that nothing that passed was said for the first time, that the same topics had been discussed and the same persons had stated
The same opinions on the same subjects.....
The sensation was so strong as to resemble what is called a mirage in the desert, or a
cairnure on board - ship, when lakes are seen in the desert and sylvan landscapes in the
sea."

So too to - tone, the once celebrated author of the "Year Book", etc., records the following
experience he had, when shown into a
certain room in a certain part of London
where he had never been before:—"On
looking round everything appeared perfectly
familiar to me; I seemed to recognise
every object. I said to myself, "What is this?
I was never here before, and yet I have
seen all this; and, if so, there is a very
peculiar knot in the shutter? I opened the
shutter and found the knot. How then, I
thought, here is something I cannot explain
on my principles; there must be some
power behind matter." [5]

Now, "reminiscences" occur quite commonly
to absolutely healthy persons. Indeed, many
people, to whom I have spoken on the subject,
not only recognised the description at once
but were surprised to hear that they are not the universal experience of all mankind. But that they are akin to the "dreamy mental state" and bear an important relationship to Epilepsy, I hope to show more clearly later on.

Before, however, I consider the scientific aspect of the subject, it will be interesting to refer to some of the current popular explanations of the phenomena.

One of the commonest ideas on the subject is that these sensations are evidence of a state of pre-existence. Wordsworth seems to refer to them when he speaks of "Those shadowy recollections, Which be they what they may, Are yet the fountain light of all our day."

And the whole of his magnificent ode on "Intimations of Immortality" suggests the thought that he wrote from a "full experience of reminiscence." We see the same idea expressed too in the following beautiful lines of Coleridge:

"Oft o'er my brain doth that strange fancy roll, Which makes the present, while the past doth last, Seem a mere semblance of some unknown past,
Mind with such feelings as people the Soul
self-questioned in its sleep; and some have said
be kind are yet this robe of flesh we wore?" 
Another and more prosaic explanation is
that known as the "dual-brain theory," which
supposes that at times the two hemispheres
of the brain do not act together, and so
separate impressions of the same scene are
produced on each hemisphere. The one is
a blurred picture, the other, complete in
outline, is transmitted to consciousness, where
it stirs up vague recollections of the for-
mer image, and the mind explains the two
impressions as being one a "reminiscence" of
the other.

Now, though neither of these suggestions can
be considered adequate, they are both of
great interest — the one opening up the fas-
tinating subject of the origin of various re-
ligious beliefs (and it might be made the
text of an interesting discourse on the hindrance
that has been caused to the progress of neuro-
logy by the mythical speculations of succes-
sive metaphysical doctrines), the other leading
us into the hazy realms of psychology.
and the mysteries connected with the abyssal depths of personality.

To return, however, to more solid ground - The only adequate explanation of the cessation of "reminiscences" that I have met with is that suggested by Dr. Campbell Thompson. He considers the sensation due to a temporary negative condition of consciousness, probably dependant upon some slight localised nervous discharge; and, taking the example of a person entering a room into which he had never been before, and experiencing the sensation that the whole scene is familiar, he supposes that the impressions made on the brain at the moment of entering the room do not "rise into consciousness", owing to some temporary negative condition of the higher centres, but are faintly retained in the nerve cells. When the brain becomes normal a few seconds later, the whole scene is grappled with, and with it a faint recollection of the original impression, which is now conceived of as a faint recollection of some past event. This suggestion at once associates the sensa-
tions of a 'reminiscence' with that form of 'dizziness' or vertigo, the relationship of which with Epilepsy is well established, and which it is my intention to make fuller reference to later on.

The epileptic element in both is essentially 'loss of consciousness', the negative condition of the higher centres being apparently absolute, however short a time it may last.

The 'dreamy mental state', on the other hand, is somewhat different, suggesting rather an excitation of consciousness, though the faculty of attention is in abeyance for the time being. Here we have ideas crowding in upon the mind with a rapidity which is overwhelming in its insistence. Time, space and infinity appear to be annihilated; and, while the condition lasts, the sufferer, if such he can be called, lives in a veritable maelstrom of ideas and emotions, quite foreign to his ordinary normal state.

Now, what exactly is the relationship between these sensations of 'reminiscence' and the 'dreamy mental state' and true Epilepsy?
It appears to be this—while both conditions, especially the former, may be said to be fairly common in normal persons, there can be no doubt that, when the experience becomes frequent in any individual, or of increased intensity, it must be regarded as a precursor of epileptic fits, or rather, as a manifestation of petit mal itself in a minimised form.

More than 30 years ago a medical man, who was an epileptic, described his own case in "The Practitioner" as follows. He stated that he suffered from boyhood from reminiscences, and that immediately before his first epileptic fit, which occurred in middle life, these experiences recurred with unusual frequency and vividness. This writer appears to have been the first to suggest that the conditions were allied, and he states that, in his own case, he there after always considered the recurrence of a reminiscence as "an indication for immediate rest and treatment"; and, in this way, he appears to have succumbed to some extent, in warding off attacks of a
In 1888 Dr. Hughlings-Jackson published a very valuable contribution to our knowledge of the subject, from a minute analysis of 50 cases of epilepsy, in all of which the "dreamy mental state" or "reminiscences" was a symptom, he drew several important conclusions. He was the first medical writer of repute to insist on the importance of the phenomena, both for scientific purposes and from the patient's point of view; for scientific purposes, because these slight paroxysms are easier to examine than severe ones; for the patient's sake, because, if they are not carefully considered, the question of epilepsy may be altogether overlooked till definite grand mal is established.

Dr. Hughlings-Jackson pointed out that the "dreamy mental state" must not be considered as an "aura" (the "intellectual aura" of other writers), but as a definite epileptic seizure, having very often a particular sense of its own, such as a peculiar smell or taste, or similar sensation. He showed that, coexistent with the "dreamy state"
though there is not always loss, there is always some defect of consciousness; he laid particular stress on the "paroxysmalness" of the condition as pointing to its epileptic nature; and, finally, he maintained that the "warning" or "aura" of taste, smell, etc., must be looked upon as a clue to the position of the position of the epileptogenic focus in the brain, from which the discharge of nerve force starts.

Since Dr. Hughlings-Jackson's paper numerous cases of a similar nature have been published, and numerous papers written on the subject.

In this connection one must make particular mention of Sir J. Crichton-Browne's interesting Coventhich lecture for 1875. This author fully endorses the opinions expressed by Dr. Hughlings-Jackson in 1888, and employs acute arguments and analogies to further elaborate the views. Dr. Hughlings-Jackson was the first to lay stress upon the phenomena of "reminiscence" and the "dreamy mental state." Sir James Crichton-Browne says, "They cannot be
properly called normal. Even in the slightest and most transient forms they involve a disorder of mind, twitching and transient disordered, like cramps in a few fibres of a muscle, but disorder none the less.

"They are dependant," he thinks, "on a defect of consciousness in one direction, indicated by vagueness as to present surroundings; and an increase of consciousness in another, indicated by the too frequent revival of former surroundings." 

"There is, then," he continued, "a negative element in the loss of control of the highest centres, and a positive element in the raised activities of other nervous arrangements, permitting of new cerebral combinations, somewhat akin to those which take place during the activity of the imagination and flights of genius."

Sir James compared the visions of the dream mental state to those experienced as the result of a vivid dream, but he qualifies the analogy by remarking that the former involves a residuum of object consciousness larger than a dream contains, and a
volume of subject consciousness to which a
dream hardly reaches. It stands in the
same relation to a dream that the dark-
ness of an eclipse does to the most fre-
guently recurring darkness of night.

It is interesting to find that the experiences
of the "dreamy mental state," and reminiscence
rarely stand alone; for, side by side with
them are often other symptoms point-
ing to unstable mental equilibrium, such
as vertigo, loss of orientation, claustropho-
bria and agoraphobia, etc.

Now, vertigo is of especial importance in this
connection, for its relationship to epilepsy
is undoubted.

It is important clinically to distinguish be-
tween various types of vertigo.

1. It occurs as a symptom in a great va-
rity of diseases of the ear.

2. It is commonly the result of cerebral
anemia, due to arterio-sclerosis of the
cerebral vessels, especially coronary disease.

3. It is occasionally a symptom of some
cerebrovascular disease such as tumorous
or syphilitic gumma.
It is common (4) in neuroasthenia, (5) in gastric disorders, and (6) as a result of dyspnem. 

(7) The vertigo of Epilepsy is a quite distinct condition from any of the above, and may occur as part of the "aura" preceding the convolution, or alone, when it constitutes in itself an attack of petit mal. Sir W. Gowers says that the giddiness preceding an epileptic fit is a purely motor symptom and is "the result of the influence on consciousness of the greater energy of the centre of one hemisphere."

The importance of vertigo occurring as itself a form of petit mal lies in its frequency, and in the fact that it is seldom associated with grand mal in the same person. Hence, it is generally necessary to make very careful inquiries before one can certainly ascertain its existence. The chief characteristic of the condition is the momentary loss, or impairment, of consciousness, which is so sudden in its onset and ending that the patient may be wholly unconscious of it. It is to this latter form of epileptic...
verily that I wish to draw attention as being analogous to the phenomena of the
'dreamy mental state'.

The attacks are commonly described as 'fits of absence', or a patient may tell his
doctor that 'he sometimes loses himself.'

A few examples will serve to make their nature clear:
A man is engaged in conversation, for in-
stance, when he suddenly stops in the middle
of the sentence he is uttering, a look of be-
wildered comes over his face, and though
he does not fall, he is unconscious. This
state lasts for 3 or 4 seconds, when he re-
covers himself completely and continues
his talk as if nothing had happened.
Again, a man is playing at cards and
holds in his hand a card he is about
to throw on the table. Suddenly he be-
comes motionless, closes his eyes, or stays
recently before him, and then after draw-
ing a deep breath, he continues to play.
As a rule patients who suffer from these
attacks are only made aware of the fact
by the statements of their friends.

Toroszar remarks that epileptic attacks
is comparable with somnambulism, and
in support of this view he cites the following
interesting case:— An architect who re-
sides in Paris and has long been subject
to Epilepsy does not fear to go up the
highest scaffolding, and yet he is aware
that he often has fits whilst walking
across narrow planks at a considerable
height. He has never met with an ac-
cident, although when in a fit he runs
rapidly over the scaffolding, uttering, or
rather shrieking out, his own name in an
abrupt loud voice. A quarter of a
minute afterwards he resumes his occu-
pation and gives his orders to his workmen,
but unless he be told of it he has no
idea of the singular act he has been
committing.

It is possible that to epileptic vertigo one
must look for an explanation of those
curious lapses of memory which some
orators suffer from. Suddenly, in the
middle of a speech, the thread of the dis-
course is lost, and no effort on the part
of the speaker can recall the line of an-
argument that has been interrupted. The late
Lord Randolph Churchill more than once
alarmed the House of Commons in this way
some time before he developed definite symp-
toms of the mental disease which caused
his death. And, more recently, his son,
Mr. Winston Churchill, had an embarrass-
ing experience of a very similar nature.
Closely allied to the temporary abruptions of
cerebral function I have been considering,
and to the family of epileptic disorders,
is the curious loss of the sense of their own
personality which some persons occasionally
suffer from. Lord Beaconsfield tells us that
he was not always assured of his own iden-
tity or even existence, and that he sometimes
found it necessary to shout aloud "to
make sure that he was alive". The at-
tacks, if such they can be called, appear
to have occurred most commonly at night,
and the great politician was in the habit,
at those times of taking down a volume
from his shelves and looking into it for
his name, "to be convinced that I had not
been dreaming of myself".  (503)
Slight mental aberrations of this latter sort undoubtedly occur far more commonly to highly intellectual persons than to men of average ability. And the lives of celebrated people supply a thousand examples which the average biographer dismisses lightly as due to the eccentricity of geniuses. That the phenomena have, however, a far deeper significance will, I think, be suggested by another aspect of Epilepsy, which I now proceed to consider. I refer to the relationship between Epilepsy and Genius.

I have remarked at the beginning of this dissertation that of all diseases Epilepsy may claim to stand in the front rank for the interest it has always excited in the minds of medical observers. In the study of men, apart from the ailments to which they are liable, no type of man is more fascinating both to his contemporaries and to posterity than the so-called 'man of genius'. A high degree of intellectual power certainly brings its possessors heavy penalties; for no detail of such a man's
life is sacred from the public gaze, no mark or blemish is safe from the biographer's scrutiny — It is not surprising, therefore, to find careful record of more or less definite epilepsy occurring among men of genius; but, at the first blush, it does appear strange, not to say repellent, that it should be maintained that the disease and the type of man are closely, some say causally, related. Yet such is the case —

And, indeed, when once the association has been suggested, it is quite remarkable what a number of great names occur to one's mind in connection with this disease. The cases of Julius Caesar, Augustus, Peter the Great, Mahomet, Charles V, and many others will at once suggest themselves to any medical reader of biography. Obviously, however, the lives of great men living in a remote uncritical past cannot be considered of much value in forming the basis of a scientific theory. And so, it is the study of men of genius living in more recent times that has forced modern
to the conclusion that genius is the result of a morbid mental state, and that the exact disease concerned is epileptoid in its nature. In other words, they maintain that genius is psychic epilepsy.

We have seen that, of the various hypotheses that have been advanced at various times to explain the pathology of epilepsy, one alone, at the present moment, holds the field—the theory that epilepsy is a recurring sudden brief discharge of nerve energy in some part of the cerebral cortex, not due to the normal cause of such discharge. If this explanation of epilepsy be accepted— as it must be, seeing that clinical and experimental observers are agreed on the point—by what process of reasoning can the phenomena of genius be brought into line with the theory?

It is to Professor Lombroso of Turin that we are indebted for the clearest exposition of the view we are considering, and his work on "The Man of Genius" is a powerful argument in support of the thesis that genius is a degeneration and not, as the late
F. W. H. Myers and other psychologists maintain "a culminating manifestation of cerebral evolution."

Lombroso has brought into focus, as it were, the hazy ideas on the subject of preceding generations. He has collected the opinions of thoughtful men from the times of Aristotle and Plato onwards. He has analysed the lives and actions of the great men of all ages, and, coming to recent times, when biographical details are more complete and reliable, he has marshalled before us the symptoms of genius, in the same way that a physician would set out in order the symptoms of a group of patients suffering from the same ailment.

It would be beyond the scope of my subject to follow Lombroso through the vast range of statistics he has collected, and by which he appears to have proved that all genius is more or less a neurosis, so I will narrow my inquiry to a consideration of the actual type of neurosis concerned, viz.: Epilepsy.

It is certainly a very remarkable fact that, as in numerous cases a blow or fall on the
lead has produced motor epilepsy, so there are several well-authenticated cases of the unexpected development of genius subsequent to accidents of a similar nature. The argument, of course, is that on the one hand the injury has damaged the motor areas of the brain, while on the other it is the nerve cells of the highest cerebral centres that have—shall we say—suffered derangement.

But it is the self-revelations of men of highly developed intellect themselves that furnish us with the best clue to the nature and evolution of genius. If we examine the descriptions they have given of the sensation of inspiration, of the feelings they have at the moment of the creative act, we shall find that, almost without exception, they speak of an unknown force, a sort of necessity, that compels them to act or to write. It comes unbidden, they say, and they are not answerable for it. It is something extraneous to themselves, and has but little to do with their general life. It is, as it were, a capricious gift of nature that is sometimes lent to them and sometimes
Thus Nietzsche, speaking of his own work, tells us,—"All writing makes me angry and ashamed, for me writing is a necessity! But why then do you write?" Yes, my dear friend, let me say it in confidence: I have hitherto found no other means of ridding myself of my thoughts. "And why do you wish to rid yourself of them?" "Why?" "Do you wish? Do I so wish?—I must."—

Does not this confession suggest an analogy between a hypothetical 'nervous storm' in the higher intellectual centres, manifesting itself by creation, and the motory convulsions of ordinary grand mal?—no two writers have left a profounder mark on French 19th Century literature than the brothers St. Hérouard, and their diary and letters are a very remarkable example of genius self-revealed.

In the "Diary", for instance, we read as follows: "No one writes the books they intended to write; for it is impossible to foresee what may inspire one with a motive. There is some unknown power.... some superior
will, in fact, a kind of necessity, which orders the work and guides your pen; so much so that that which comes from one's hand often appears not to be your own. Your book astonishes as much as something that was latent in you of which you were not conscious.

And Zola, in "Romanciers Naturalistes," gives us this confession by Balzac—The man of genius "works under the union of circumstances of which the union is a mystery; he does not belong to himself; he is the playing of a force which is imminently capricious; on some days he would not touch a brush, he would not write a line for an empire. In the evening, when dreaming; in the morning when rising, in the midst of some joyous feast, it happens that a burning coal suddenly touches his brain, these hands, this tongue: a word awakens ideas that are born, grow, ferment. Such is the artist, the humble instrument of a despotic will; he obeys a master."

It is pathetic to note that many men of
genius have themselves recognised the fact that their creative work is the result of mental abnormality. A remarkable example of this is seen in the Journal and Letters of the brothers Édouard and Émile Zola, from which I have already quoted. Take, for instance, the following extract from Édouard's touching letter to Zola concerning the last illness and death of his brother Jules: "Consider", he writes, "that all our intellectual work owes its dearly paid originality to nervous malady, that those pictures of malady have been drawn from our own experience, and that, by incessant study and dissection in detail of our own individuality, we developed an ultra-sensibility which was wounded by infinitely small occurrences in every-day life. I say "we", for, when we write "Charles Demaillie", I was the worse of the two. Also, he overtook me in the race for death. "Charles Demaillie"! How singular to write one's own history fifteen years beforehand! A story which, however, was, thank God, less horrible than the fiction.
Jules never lost his reason; he suffered especially from a loss of the power of concentrating his attention; and also his being self seemed sunk in mysterious distances. He was with me, and yet I felt him absent. Not long ago I said to him, Jules, my friend, where are you? After a few moments of silence he answered me, "In space - empty space!" And yet in our walks, and even at the very moment of the final seizure, he found a picturesque expression apropos of a passing stranger, and an artistic word describing an effect of sky."

And, again, in the same "Journal" the brothers write, "After all, if we were different should we be capable of doing our present work? Was not our state of ill-health had a share in producing the special kind of work we are able to do?"

Gustave Flaubert, the author of "Madame Bovary," and a contemporary of the Be Goncourts, was an epileptic from about his 23rd year, and his nervous attacks rendered him more and more unsociable.
During the remainder of his life. Previous to his paroxysms, he was accustomed to say that he had a "flame" just in one eye than in the other, and that everything appeared to him under a yellow line. This he called his "golden vision". A year or two before the malady set in his intelligence and intellectual powers were observed to develop enormously, and Maxime Du Camp believes that it was during this exceptional period that he laid in his extraordinary stock of observations.

It is interesting to note that the writer from whom these biographical details have been collected remarks that, but for his nervous malady, Flaubert would have taken a higher place in literature than he did. According to the view I am trying to suggest we should say that it was on account of his nervous malady that the author of "Madame Bovary" was able to accomplish the work which established his great literary reputation.

The instinctiveness and unconsciousness of the creations of genius are very suggestive
of its resemblance to Epilepsy, as also is
the intermittence of its powers. We have
seen that Nietzsche wrote because he
must—to rid himself of his thoughts.
Napoleon and Alexander conquered, not only
from love of glory, but in obedience to a
dominating impulse. The great conceptions
of thought are, as it were, developed
by unconscious elaboration and suddenly
burst forth. Napoleon himself has said
that the fate of Battles was the result
of an instant, of a latent thought; the
decisive moment appeared, the spark
burst forth and one was victorious.

The domination of genius by the unconscious
is well illustrated by the following story
of Berlioz, France's greatest musician,
which appeared over the signature of
M. Charles Joly in "Les Annales" of Sep. 1903.
Berlioz had just returned to Paris after
a long absence and started out to go and
see his friend Gine. As he was walking
towards Montmartre, he met some soldiers
marching to barracks. Instantly he was
inspired to a sudden burst of composition.
Engrossed in this abrupt new theme, a student song for his opera, "The Damnation of Faust," he walked on rapidly, following quite mechanically the crowd ahead of him, and having entirely forgotten the original motive of his outing. Presently, he found himself at the railway station. One of the porters, seeing him apparently in a hurry, pointed to the ticket office and remarked: "You had better be quick; the train starts in a few minutes." Berlioz obeyed. The people ahead of him were opening their purses, so he did the same. The others asked for a second-class ticket, so he asked for one also. In handing him one the man repeated the customary formula: "One second-class for Engleheim?" "Oh! is it for Engleheim?" asked Berlioz, indifferently, still in the grip of his new melody. "Yes, isn't that where you want to go?" asked the official, who had taken him for one of a party. "Well, it's quite possible. It seems, in fact, that it must be so, as I am going there. Let us go to Engleheim." And, still murmuring snatches of the music
which enthralled him, he got into the train with the rest, and was carried out into the country. As he travelled he wrote. Then, having finished, with a sudden sigh of relief and bewilderment, he went to sleep. He woke with a start at Enghien, and tried to recall the composition that had kept into life at the sight of the marching soldiers. It had utterly gone out of his mind.

Would not the 20th century almost describe this occurrence as an instance of 'masked epilepsy', and class it with the case of Miss Hickman, whose mysterious disappearance filled so many columns of the newspapers during the Spring of 1902?

The epilepsy of Napoleon Bonaparte will probably always remain a subject of dispute. It was frequently reported during his lifetime that he suffered from this disease, but Bouvierne declares that during the eleven years he was with him he never observed an attack. At the same time his biographer relates that he frequently gave an involuntary shiver of his right shoulder.
which he elevated a little, at the same time moving his mouth from the left towards the right. "And Meneval tells us that while dictating Napoleon exhibited a sort of tic, consisting in a movement of the right arm which he twisted, while pulling with his hand the lining of his coat." (41)

These facts certainly show that Napoleon suffered from "habit spasm," a nervous condition which is due to morbid excitability of the motor centres, and is allied to Epilepsy. It is equally certain he was the victim of another epileptoid phenomenon, viz, maladie de l'idée fixe. This is proved by the frequent reference to his "guiding star," which all his biographers have agreed in confirming. This star Napoleon was wont to say always accompanied him; he saw it on all great occasions, and he considered it a constant sign of good fortune. It is related, for example, how, during the Russian campaign, on one occasion Cardinal Fesch was entreating him to desist from his futile warfare, when the Emperor took him by the hand, led him to the window,
opened it and said, "Do you see that star?" "No sir," replied the Cardinal; "Look again," insisted the Emperor; "Sir, there is no star visible" was the answer; to which Napoleon replied, "See it!" Whereupon, we are told, the astonished Cardinal lapsed into silence, imagining that Napoleon intended to convey that his ambition extended even to the heavens.

The series of epileptic fits which brought to a close the meteoric career of Lord Byron have been minutely described by J.C. Jefferson, but the whole life of this extraordinary man is eminently suggestive of psychic epilepsy. His irritability and childish petulance, his paroxysms of rage, alternating with paroxysms of tenderness, his wild excesses and the morbid misery of much of his poetry all point to a mind diseased. From maniac laughter to piercing lamentation, wrote Lord Macaulay, "there was not a single note of human anguish of which he was not master" and this unhealthy misanthropy and despair form the keynote of much of his writing. Byron died at the age
of 36, and his friend Col. Stenhouse has left us a pen-picture which throws a vivid light on the nature of the poet's mental disorder. "The mind of Ed. Byron," he writes, "was like a volcano, full of fire and wealth, sometimes calm, often dazzling and playful but ever threatening. It ran swift as the lightening from one subject to another, and occasionally burst forth in passionate throes of intellect nearly allied to madness. A striking instance of this sort of eruption I shall mention. Lord Byron's apartments were immediately over mine at Missolonghi. In the dead of night I was frequently startled from my sleep by the thunder of his lordship's voice, either raging with anger or roaring with laughter, and arouses friends, servants, and, indeed, all the inmates of the dwelling from their repose." Byron developed actual epilepsy during the last year of his life and he had 5 fits within three days. He died two months later.

The epilepsy of Mahomet has been the
subject of much learned inquiry and comment.

It is denied by Gibbon, who speaks of the

tradition as "an absurd calumny of the

Greeks," but D. W.W. Ireland has collected

a mass of evidence which appears conclusive

against the opinion of the great historian.

According to the generally accepted tradition

Mahomet was an epileptic from the age

of 40, and the fits, associated with hal-

lucinations of various kinds, continued all

his life. It is said that during the attacks

the prophet's face turned white and that he

moved his lips as if speaking; while an-

other tradition relates that when the pro-

phet had a revelation he fell into a coma

as if he were drunk. As a rule the par-

oxysms appear to have been slight, but

occasionally they were of a very severe

type as when the prophet fell heavily to

the ground and moaned like a camel.

When questioned as to the manner of his

inspiration Mahomet is said to have replied

"Inspiration descendeth upon me in one of

two ways. Sometimes the aged Gabriel com-

eth and communicateth the revelation unto
me, as one man to another, and this is easy: at other times it affliceth me like the ringing of a bell, penetrating my very heart, and rending me as it were in pieces; and this it is which grievously affliceth me.” (52.)

The exaggerated development of the religious sentiment in epileptics has been often remarked on by writers on nervous disease, and hallucinations of a religious nature are so common amongst them that Mahomet's words are extremely suggestive of this disorder, quite apart from the traditions on the subject. One must remember too the halo of reverence which in ancient times surrounded the epileptic, and this, added to intellectual powers of a very high order, will go far to explain the extraordinary successes which attended Mahomet's mission.

I have already referred incidentally to some of the minor manifestations of the epileptic neurosis commonly found associated with genius, such as that loss of the sense of personality which Lord Beaconsfield has described. It is well known too that Scott
and Dickens and E.G. Rossetti suffered from vertigo, and that their deaths were attributable to mental disease. The life of the poet Coleridge appears to have been a continuous alternation between ordinary lucidity and the dreamy mental state, and one of his masterpieces—"Kubla Khan"—was actually composed during a period of semi-unconsciousness. Again, Sir James Crichton-Browne notes that there is an interesting study of a very similar pathological condition which blighted by its malign influence the life of the late J.A. Symonds. The "fixed idea" of Napoleon, already remarked upon, is another instance in point. And many further examples will suggest themselves from what I have already written in this connection.

But there is one other aspect of the subject which demands consideration before it can be said to have been at all adequately discussed, and that is the analogy between Genius and Epilepsy in the matter of moral perseverance.

"Everything," wrote Benvenuto Cellini in his
"Memoirs", "is permitted to men of genius"; and the concession they have laid claim to has been granted them, more or less unwilling it is true, by the rest of mankind. It is quite a commonplace of the biographer that the conduct of a genius must not be submitted to the same canons of morality as those which apply to ordinary men. And so, the mild dissipation of a Byron, the perfidies of a Machiavelli, or the illicit loves of a Shelley, are accepted almost without reproof by their lenient critics.

As in epileptics, the vicious conduct of men of genius is often associated with morbid religiosity — on one page of his interesting "Memoirs" Cellini describes, with the utmost nonchalance, how he has fomented an enemy in the streets of Rome, or relates the course of his amours with Beatrice and Angiella and other frail ladies of his acquaintance. On another he writes, - "Left Florence incessantly by singing psalms and saying prayers to the honour and glory of God, during the whole journey." Whenever, during the course of his adventurous career, his life becomes en-
dangered he invariably makes a long and fervent prayer to the Almighty. And almost every page of his autobiography is strewn with pious exhortations and saint-like ejaculations on the greatness and goodness of God.

It is but a short step from Epilepsy to actual insanity, and this pathway is one, unfortunately, which the epileptic is very prone to take. The two diseases are, indeed, closely akin; and it is not uncommon to find epilepsy and insanity side by side in the same family. Dr. Mercier has even met with a case of twin sisters, one of whom was insane and the other epileptic.

It was a proverb in Israel that when the Salters have eaten sour grapes the children's teeth shall be set on edge. And this power of hereditary influence, more or less clearly recognised in all ages, is nowhere more clearly manifested than in the nervous system. Just as a child bears on its face an imprint of
the parental features, so with its mental organization. And the close relationship of the two diseases I am considering is illustrated by the well-known fact that the descendant of an epileptic parent is almost, if not quite, as likely to become insane as to become epileptic.

Apart, however, from these general considerations, the insanity of epileptics presents two distinct symptom groups, the nature of which depends upon whether the insane attacks precede or follow the epileptic convolution.

1. The "paroxysmal" symptoms are chiefly in the direction of moral derangement. The disposition and conduct of the patient undergo a sudden change, and from being industrious and docile he becomes lazy, discontented and irritable, with a tendency to sudden outbursts of passion, or of actual violence, upon the slightest provocation. This change in the patient's character, occurring as a prelude to convulsions, is frequently noticed in asylum cases, and is of the greatest importance, because it frequently develops into a dangerous homicidal outbreak. When, in due course,
The fit occurs, the patient at once becomes calm, his excitement and irritability cease, his violence subsides, and, after a short period of mental confusion, he is once more his ordinary self; and remains so, till a similar change of symptoms heralds the approach of another convulsion.

Manderson says that epileptic insanity manifests itself in attacks of moral prostracy of this sort may occur periodically for months or even years before the epileptic fits declare themselves; and it is only on the appearance of convulsions that the true nature of these paroxysms of mental derangement becomes apparent. It is interesting to note here again the element of unconsciousness, to which I have so often drawn attention in the previous pages as characteristic of the epileptic phenomena. After recovery from the attack these patients are as ignorant of what has occurred as was Trousseau's Parisian architect a minute or two after he had been, under the influence of epileptic vertigo, rushing about the scaffolding of some building shouting out his own name.
2. The insanity which follows an epileptic fit is a far more dangerous condition than the mania which precedes the convulsion. In the so-called "post-epileptic" phase the patient exhibits more cunning and less blind fury. His actions are more systematic and his mental derangement is therefore less apparent to any one but a skilled observer. But that he must be regarded, for the time being, as possibly a homicidal lunatic of the most dangerous type has, unfortunately, been proved over and over again. It appears that at these times the sufferer becomes the victim of a definite delusion, and he sets about obtaining reparation for an imaginary wrong or offense in some other wise the promptings of his delusion with diabolical skill and very often deadly effect. In the case of Sörgel which I shall proceed to relate the unfortunate lad had the delusion that if he drank a fellow's blood it would cure his epilepsy; and the case is quoted because it is typical of the severe form of post-epileptic insanity.

Sörgel in his ordinary health was an
innocent industrious youth, but after his epileptic
convulsions, which were usually very severe,
he was subject to delusious and ungovernable
criminal propensities. On one occasion, after
a fit, he murdered an old woodcutter in
a forest, chopping off his head and both
his feet with one of his own axes. Return-
ing from the forest he told several people
what he had done. He said that he had
drunk a felon's blood and was now quite
well, as a felon's blood was supposed to
be a cure for the falling sickness. The
next day Soigel was examined by the crimi-
nal court, and repeated the same story;
he was taken to see the body, and recog-
nised it without the slightest degree of
embarrassment or remorse. As an excuse for
the murder he repeatedly said that he killed
the man in order to drink his blood and
be cured by it. This state of consciousness
lasted for a week. He then returned spou-
taneously to his natural state. On Sept. 15th
the judge found him quiet; his conversation
was coherent; his appearance and manner
totally changed. He did not remember any-
thing about the murder, but supposed he must have committed it since everyone told him he had. Nor did he remember having confessed to the crime, or having been shown his victim's body. He admitted having heard that the blood of a felon was a cure for the falling sickness, but observed that the man he killed was no felon. Examined again, Sep 28th, the axe was laid before him; he did not know it. Nothing new could be elicited. Of the period between Sep 7th and 15th he only knew that "his head was very confused, and that he dreamt all manner of nonsense." He was acquitted of the crime, as not being responsible for his action at the time, and died a few months later in a lunatic asylum.

The importance of this form of epileptic mania from a medico-legal point of view has been insisted on by Dr. Maudsley in his work on "Responsibility in Mental Disease," and it is evident that, were a man to commit homicide during his first attack of epileptic insanity, it would go hard with him, in the absence of expert medical evidence, when
put on his trial charged with murder. Manderly remarks that the features most commonly observed in a case of this sort are "an absence of intelligible motive, an absence of premeditation, great determination and ferocity in execution, much more violence than necessary being used, an absence of secrecy in the execution or of concealment afterwards, a great indifference and absence of remorse, and an incomplete and fragmentary remembrance of all the circumstances, if not a complete forgetfulness of them." (63)

The symptoms of insanity exhibited by epileptics subsequent to a convulsion are fortunately not always of a homicidal character. Frequently patients of this class present only an obstinate contrariness which is irritating rather than dangerous. Dr. Robt. Jones has described a good example of this form of post-epileptic perverseness in the case of a woman who, after a fit, "refuses to sit at table, preferring to lie under it. She refuses to eat from the proper side of the plate and will only eat off the back of it. She will not sit with others unless with her back to them; she refuses to be in bed preferring to squat at the foot instead..."
of the head; and elects to cover herself entirely with the bedclothes rather than to sleep in the ordinary way.” (67)

But by far the most curious variety of these post-epileptic phenomena is the condition variously known as "masked epilepsy", "double consciousness", "post-epileptic automatism", etc. In this state the patient's consciousness is partially suspended, all his organic functions are performed in the ordinary way, but he is oblivious to his surroundings, and all his movements are performed, as it were, unconsciously. The condition very closely resembles somnambulism, during which, as is well known, the 'sleep-walker' can perform the most complicated actions unconsciously. And, as after somnambulism, so with one suffering from masked epilepsy, on recovery from the attack, the patient has not the slightest recollection of what has been happening.

Maudsley says that this transitory state of unconsciousness occurs to epileptics in lieu of convulsions, but more recent observers incline to the opinion that a slight fit always precedes the unconscious state and that the condition is essentially postparoxysmal.
It has been said that the art of writing fiction depends on the possession of a genius for observing and describing human nature, and so, a great novelist can picture to us both normal and abnormal human beings with a vividness that the ordinary pen cannot aspire to.

I was much struck recently, when reading George Sand's "Corinthe", with that gifted authoress' portrayal of the mental condition of her hero, who, without doubt, was a sufferer from "masked" epilepsy. Count Albert Rudolstadt appears to have inherited an unstable mental organization from his mother, who herself died young from some obscure mental malady. From his earliest infancy he exhibited visual hallucinations, and when he was four years of age he frequently fancied he saw his mother beside his cradle, although she was dead, and he had seen her buried. During his boyhood he continually alarmed his relatives by extraordinary paroxysms of grief, the cause of which it was impossible to foresee or arrest; and at times he would fall into convulsions for hours together. As he grew up he displayed a noble disposition and a generous heart, along with much intelligence, a good
memory and a taste for fine arts. But his strange illusions and eccentricities were so embarrassing to all around him that his father adopted the device of sending him to travel, in the hope that when he should come to mix with men and observe the fundamental laws which govern civilised society, he would become habituated to live like other people. For eight years he travelled all over Europe, but during that period the story does not allow much scope for watching the progress of his mental affliction.

When he returns home, however, the Count, with the heroine - the beautiful singer, Consuelo - becomes the central figure in the story. From the 25th chapter to the end of the book the medical reader will fully appreciate the skill with which the writer describes the psychology of the epileptic temperament, though to one who is not an expert the hero may only appeal as a fascinating but somewhat mystical and eccentric personage.

He will observe that he is subject to long fits of sleep, which might be termed trances. He hears voices, he suffers from hallucinations of the colour-sense - as when he horrifies...
his fiancée, Amelia, by describing a beautiful blue dress she happened to be wearing as being a "blood red". But most interesting of all are his frequent disappearances from home, which plunged his family in gloom till he returned, quite unconscious of anything unusual having happened and full of astonishment at the consternation and unhappiness of the whole household. One occasion, he returned suddenly after one of these mysterious absences and is amazed at his Aunt’s rushing up to him with an expression of surprise, "What ails you, my dear Aunt?" said he, kissing her hand, "one would suppose you had not seen me in the last century."

"Unhappy boy," she answered, "it is seven days since you have left us; seven days of anguish, seven nights of horror, that we have sought you, except you, prayed for you!"

"Seven days," cried Albert, gazing at her in wonder; "seven hours you mean, I fancy; for I went out this morning to take a walk, and here I am home in time to sup with you. How then can I have alarmed you by so short an absence?"
And do you not feel ill?"

"Not a particle."

"Nor fatigued? I doubt not you have walked far and climbed the hills—such walks are very toilsome. Where have you been?"

About covered his eyes with his hand, as if he were anxious to recollect himself, but he could tell nothing.

"I suppose I walked," he said at length, "as I did when I was a child, without seeing anything, for I must admit that I know nothing about it. I suppose I was very absent. You know I have never had the power of giving you the facts when you questioned me."

At times he has fits of lethargy, which keep him confined to his chamber for whole days, and during which extraordinary things seem to pass through his mind, but no sound nor outward agitation betrays them, and it is from his conversation alone that their character is learnt. When he recovers, he is calmer and more reasonable for a few days, but by degrees his agitation returns, and goes on increasing till the recurrence of his seizure.
As his malady progresses, the sufferer becomes more completely the victim of "fixed ideas" and hallucinations. He develops extraordinary powers of "second sight," and his disappearances from home are more prolonged and more distressing to his relatives. Finally, he becomes insane. Immediately before his death, he falls into a cataleptic condition, during which, for a period of 30 days, he swallows no food of any sort. But he recovers consciousness sufficiently to carry out the dream of his life—the consummation of his marriage with Consuelo. A few minutes after the conclusion of this strange ceremony, his tortured soul is at rest and kindly Death puts an end to his sufferings.

The brief sketch I have made of the career of Count Albert Rudolstadt cannot expect to convey to the reader any idea of the power and charm of one of the most fascinating romances in French literature, but it may serve to depict in outline the life—history of a sufferer from a rare but interesting form of Epilepsy.

Though the extreme form of automatism,
which I have been describing under the name of ‘masked epilepsy’, is not frequently met with; slighter manifestations of the condition are far from uncommon in sufferers from petit mal who show no signs of developing insanity. And it may not be out of place to describe here a case of this sort which I met with recently in my own practice.

Mr. C. C. had suffered from grand mal for many years, but, as the result of taking Bromide of Potassium regularly for 18 months, the attacks have disappeared, leaving in their place a form of minor seizure, during which he ‘loses himself’ temporarily, and on returning to consciousness discovers that he has taken off his boots or a part of his clothes. These attacks generally occur in his office but can be stopped by one of his fellow clerks who is able to anticipate them by noticing certain changes in the patient’s face. He at once speaks to the patient sharply, telling him not to undress, etc.; and in this way the seizure is prevented.

On one occasion Mr. C. C. was going to his
Club, and, just before losing consciousness, it had occurred to him that he would stop at a public urinal on the way for the purpose of emptying his bladder. Subsequently, he found himself seated in an armchair at the smoking-room of the Club with a newspaper in his hand, but all recollection of how he had got there and of the occurrences of the previous half-hour had vanished from his mind. He found that his trousers were unfastened and wet with urine. There can be no doubt that Mr C. was unconscious during the last part of his walk, and had carried out automatically (though not very satisfactorily as to visiting the urinal), the intention he had previously formed in his mind.

It may be noted, by the way, that the action of taking off the clothes, referred to in Mr C.'s case, is not uncommon; and Sir W. Gowers relates the case of a music master who had to give up his profession, so far as teaching young ladies was concerned, on account of his liability to this very embarrassing proceeding.
I have now paused to review a few of what I might call the side-issues of the epileptic nervous; and if I have lingered unduly over its relationship to insanity, it is because a recognition of this connection is of utmost importance both to the patient and those surrounding him.

Nothing remains but to conclude with a brief glance at the final stages of the disease. It happens occasionally, that the convulsive and other symptoms cease spontaneously; but this fortunate termination is so rare that the probability of its occurrence can hardly be taken into serious consideration. Why they should so cease is inexplicable, for the essential tendency of the disease is to perpetuate itself, and for the attacks to become more frequent and more severe. Careful and prolonged administration of bromides generally effects marked amelioration of the sufferer's condition, and sometimes results in cure.

But not infrequently treatment appears to be of no avail. Left to himself the epileptic invariably goes from bad to worse, and, even if he escape insanity, sooner or later his mind...
becomes enfeebled and dementia ensues. First, his moral instinct becomes impaired, and finally, both moral and intellectual faculties are involved in a common ruin. The appearance of these dement suggest a dull and listless absence of intelligence. They have lost all regard for personal appearance, and their faces frequently show the marks of injuries they have received as the result of falls. Occasionally, they are inclined to be irritable and querulous, but most commonly they sink gradually into a state of absolute mental and physical apathy; and, when at length death overtakes them, it comes as a welcome relief to the patient’s friends rather than to the patient himself, for he has long since ceased to be aware of his sufferings.

And so, I have reached the conclusion of my task. But even as I gather together these pages of this dissertation the melancholy reflection thrusts itself on me that, in spite of all that has been written on the subject of Epilepsy, and in spite of the
years of patient research that have been devoted to it by hundreds of workers in the field of mental science, the true pathology and successful treatment of the disease still remain shrouded in mystery.

It is true that the 19th Century has witnessed wonderful advances in this, as in every other branch of medical knowledge—then one recollects that a hundred years ago the medieval ideas of "possession"—divine or diabolical, as the case might be—had hardly yet been uprooted from the minds of educated men, we cannot but rejoice at the altered attitude of mankind to a large proportion of suffering humanity.

The empirical discovery that Bromide exerted a retarding influence on the progress of the convulsions has, no doubt, been an immense boon to innumerable epileptics, but not yet do we understand in what way these salts act. It was, certainly, an important step in the right direction when it became an established fact of pathology that the manifestations of this disease result directly from derange-
ment of the cerebral cortex, which allows of abnormal discharges of nerve energy, and that the gray matter of the cortex is the part deranged; but, so far, the true nature of nerve energy appears to have eluded our perceptions, and all explanations of the nature of these discharges must be considered purely speculative. Still, such a commentary as this applies more or less to the whole realm of science. On every side the pathway of the observer is beset by doubts and darkness, and each new discovery raises up fresh problems to beckon us on to further investigation. In every direction we seem to advance but a short way before we are brought to a standstill; and this way and that way and that we are baffled by difficulties which appear insurmountable.

But is not difficulty the modern miracle worker? And is it not to this struggle against difficulty that we owe the knowledge handed down to us by our predecessors? Why, therefore, should one be discouraged from trying to add his small mite to
the sum of human endeavours? And when
you should one not work on with the hope
that, though our generation cannot expect
to see the day when all things shall be
known, still one may succeed in adding
some tiny fragment to the aggregate of know-
ledge, and so contribute, however infinitesi-
mally, to the realisation of that
"far off divine event

To which the whole creation moves"?