Edinburgh University
Medical Graduation Thesis
"Hydrophobia"
Ithaca Miller, Yorkshire
July, 1857.
Dissertation on Hydrophobia.

Introduction.

As the preface of a book has been declared by many writers to be more difficult in its composition than the body of the work succeeding it, so there is considerable difficulty in making those few preludatory remarks that are almost absolutely required, before the more direct and detailed consideration of the subject proposed in the main essay. The subject proposed in this essay is Hydrophobia, a subject whose investigation, though it has been long and not fully pursued, has yet proved to be set with difficulties that it has baffled all attempts at exploration to a greater or less degree according to the kind and amount of the principle of examination, powers of observation and application which have been brought to bear upon it, in the varying circumstances and different lights under which it has been viewed. It has been well said that 'he who improves a thing already known does more of good to man than he
who discovers a new thing, yet method, this does not hold good when he who does the one is fortunate enough to be able to do the other also. Thus Hydrophobia has long been known, but when it is acute—let us say, a specific or even quasi-specific remedy. Though the subject be no easy one the student should not therefore shrink from it and turn aside on that account to that of a more inviting aspect. A Disease that has reign'd and raged in the Earth so long, and yet mocks the patient pressing efforts of human skill & science for its conquest, shall it still be permitted to defy and dare us to the combat without exciting more than a cheerless shuddering or sympathetic tear? Surely not.

The Heaven born impulse in the mind of Man will ever urge him onwards to draw nearer to perfection and though we make but halting hesitating steps, almost a little stride, yet progress ever forwards, tending to the goal. In Medicine, which is a science so essential...
And which probably will be so, while men are constituted as they are; the passions and desires of human nature are unchanged, in Medical Science, I may say, progress is a necessity and though in some respects of human history it did seem to stagnate or stand still, there can forever, were not new then the gradual commencement of the ideas & improvements which only received their full development in succeeding years.

Let us not then despair but as before the student, taking a calm & careful survey of the field, brace up our spirits & manfully prepare for strife, boldly & yet prudently proceed to examine to its purest extent & to overcome every difficulty we may meet.
Hydrophobia into nature, may in its very name strike the mind as something dreadful and abnormal. A loathing rejected of Water, the literal meaning which has, to our ears also a typical signification applying to liquids generally of which Water may stand as the type, a dread of what all men most need for bodily supply, the element constituting the great part of the Human frame, that which forms the thirds of the surface of our Earth, without which we could not live, by means of which we enjoy many of our most gratifying pleasures and conveniences, in every shape, Water is in every shape of our lives, in other form a symbol of our Death and more as token of Sterility. Well might one look with feeling of suspicion & horror on a disease which as manifest in Man an apparent threat or loathing of Water, has long been recognized as one of the most prevalent Symptoms. The Nature is of no ordinary kind, for long as it has been known, many & bet
but we have from the contests and disputes
upon this important subject, as our opinion
to my knowledge, has as yet triumphed
decidedly over the rest but the man is
yet to be, who calling for means the true
and reliable from the false, and the false
will build a theory on a foundation of
fact and prove its truth by incontrovertible
evidence. The very fact of its present
existence or its having ever existed, has been
doubted and not a few able attempts have
been made to show that it has no clear
or distinct existence, but from the cases
recorded and the circumstances attending
them, the conclusion is at least reasonable
that such a disease does exist, as others
long existed, known by Man in a more
or less definite and recognised form,
that it is a physical and actual reality
and not as some assert a mere phantasm
or hallucination of the mind. Of reasons
for belief in its physical reality and
necessary, the following may suffice.

Many persons of nearly all races ages
have been affected with a disease which is characterized mainly by the symptoms generally seen in varying extent and degree in hydrophobic patients. We rarely if ever observe the same train of symptoms preceded by any other apparent cause than the bite of a rabid animal. Some of these persons were mere infants, and these can not be understood to be suffering under any marked mental impression; others again were identical in delirious, incapable of keeping steadily in view any source of mental terror. A large majority of patients whose cases have been recorded in medical annals are stated to have retained clearness of intellect to an advanced stage of the disease, some even till death issued. Many also have been, trembly, well-educated persons of particularly strong minds. Those who maintain that hydrophobia occurs in cases by fear or anger. Their mental emotion have not as yet been able to prove their assertions.
The wound in usually found to have a manifest relation to the characteristic symptoms as we will see when considering them.

3. Again, it is generally acknowledged that the bite of an affected animal (dog) produces a disease resembling or actually being Hydrophobia in animals of the same or other species. Magendie & Breschet even think that the Saliva of bite of Dog would have such effects on the animals.

4. We have the testimony of credible authority for perhaps 2000 years affirming that there has been known to exhibit an evident connection between the bite of a mad dog and symptoms of what is known as Hydrophobia.

5. The time when a knowledge of this disease was attained is worthy of remark, as having been the period between the time of Aristotle and the foundation of the great Medical School of Alexandria after Democritus and Hippocrates had freed the Science from its close connexion with Superstition.
Medical schools in Greece, Asia, Egypt & Sicily were flourishing, remarkable for progress not only in Medicine but also in Mental Philosophy and the higher branches of Science. The coincidence of belief so universal, could hardly be accidental and is a strong proof of the ancient knowledge of Hypochondria. As to the objection that we can not prove it to be caused by the bite of a rabid dog, because if all so bitten some escape, it is sufficiently refuted by the mere presentation of it in all its symptoms, for no cause of disease produces the same effects on all subjected to its influence. Many escape Hypochondria who have been bitten by mad dogs, perhaps from a change in their system, rendering them less susceptible to the action of this evil influence, or by some peculiarity protecting them from its operation. But as the nature of the Disease will be better considered along with the Symptoms, let me here proceed to that branch of the
the subject, consider for a little what is known of the history of this fearful disease.

And first as to the name, the term used by 
Hydropulbia as expressing the principal or 
very most apparent symptom seems quite appropriate, in the absence of 
positive & established knowledge of its real 
nature. Having been so long the name 
of common use, it will do still. Yet many authors have attempted to substitute 
new designations such as these, Parox 
Cana, Cygnipia, Phthisia, Phlegydia for the 
more ordinarily one here adopted at least 
open to objection. Polybus is describing 
their disease called it Phlegydia. 
Aurelianus following him uses the term 
Aquiifuga. Africanus & Aurelianus are said to have styled it simply Canis 
orvici morsus. The celebrated bread 
proposed the term Durkatalopsia or 
difficulty in swallowing Drink. 
D' Mason Good calls it Entasis lyser. 
Hydropulbia however is the term employed
by most writers who have treated of
the subject. Especially Galen. Boerhaave
and Sauvage, Dessault, Linnaeus, Vogel
Luller, and Wied. We should remember
that although there may be great discussion
about a name, it is our especial duty
to study the disease itself, to treat it &
the symptoms it manifests. We find
no apparent allusion to this disease in
Scripture and are hence led to infer that
leucine madness so intimately related to
it was unknown in Episc. Valentine
It appears to have been known to Homer
who uses it metaphorically in one of the
Sentences spoken by Ajax against Helen.
Yet Homer means it only as affecting
not Man but the lower animal or the dog.
Some authors have thought it probable from
the works of Hippocrates that he has
seen Hystaspitis, though considering it
not as a distinct disease but rather as
a variety of phrenitis or of mania, of
a peculiar nature. On the authority of Celcus
Amelius we learn that Democritus the
the contemporary & friend of Hippocrates, treated of Hydrophobia at some length in his work(s) on this subject at all. It is probable that Democritus acquired his knowledge of observation or otherwise while travelling in foreign lands. His opinion seems to have been disregarded or neglected for Aristotle about a century after is found asserting that it is not communicable to man as between dogs. Aristotle's view is that it is not known to all is by some supposed to have died not directly from the bite of his dog but by hydropho-
bia induced in that manner. The ancient as well as the moderns have been very much at variance as to the seat of the disease. Democritus refers the disease to the nerves (as the understand) while Asclepiades & most of his followers referred it to the membranes of the brain, which he said, being irritated were the chief agent in causing febrile diseases as flux.
Phrenitis, Lethargy, Epilepsy.
Some of his followers asserted that Hydro-
phobia chiefly affects the Diaphragm,
because of the pain usually felt there.
Artorius, one of his pupils, subsequently
the physician and friend of Augustus re-
ferred the disorder to the Stomach. Here
we find Aulus the pupil of Hermon, the
successor of Aesculapius, treating of the
subject and giving a distinct account of his
opinions as to the nature and proper
mode of treatment which he may think
under their respective heads. Disorders
of the first cause of the first who lays
claim to having seen and treated cases
of patients suffering from Hydrophobia,
and he deemed the disease once establish
incurable. His treatment resembles that
of Helius. Afterwards, Galen invented
an antidote said by him to be certain as a
preventive by the ashes of the liver crab.
He supported the reality of Spontaneous
Hydrophobia as occurring sometimes in race
to explain cases of it which no known facts
A history of one was attainable. He conceived the operation of the canine veins to be like that of slow poison. In more modern times we find it more dreaded than ever, and then arose the barbarous custom of torturing the unfortunate men who were attacked by it. Human beings as well as lower animals, it seems besides manifesting selfish cruelty, those who did so showed great lack of sense in thereby away in this manner all opportunities for investigation and inquiry. This treatment found a suitable parallel in the sentence usually given to so-called witches. Death by the stake or drowning, both equally cruel inhuman and useless.
Symptoms and Diagnosis.

In the consideration of the nature of the subject we may notice first the Disease as manifested in one or two of the lower animals. It is generally alleged that it arises spontaneously only in the dog or cat & allied animals as the fox itself. From there it is said to be easily communicable to others of their own kind or to horses, cows, sheep, or to human beings & there may spread the disease in a similar manner by biting or contact with their saliva. E.g. Mr. Youatt mentions that several grooms were bitten by a rabid horse to whose they were administering medicine; they all died of hydrophobia. Magendie and Breschet have taken the saliva of a man labouring under it and inoculated some healthy dogs with it, when they soon became rabid and spread the disease by biting other dogs. Though it loose the injection of water is to mark a feature of the case, we find this symptom more often wanting in the rabid dog or other animal.
for this said by that dogs are
famous to live freely. And sheep also in
this condition are not adverse to thinking.
It is a great mistake to suppose that
every sick dog must be feverish, for
the contrary, his faculties are not par-
ticularly disturbed; there is no want
of his usual sense kept there great and
terminating irritability. In the early stage
the dog will recognize his master and
obey his voice, though the disease is
generally manifested by a strange depar-
ture from accustomed habitual practice.
Eg some have shown an unusual and
special propensity for picking up
small objects or for licking other dogs
or any object in their proximity. As the
animal shows a strong antilatity to
strange dogs, as the disease advances, it
bites or attempts to bite the dog with
which it has been associated. The last
will bite any person near him, this last
however only in a moment of irritation.
During the progress of these symptoms the
the mace is much altered and finally
death, generally by the hand of man when
it is gone. In the case the following
symptoms have been observed. After being
bitten by a rabid animal, a horse may
soo be made apparently well, but soon he
stops, trembles, groans, stagers and falls. But
he rises again, goes onward and again falls.
Hence the progress of the Disease is rapid.
The animal strikes and plays in the most vi-
cious manner, often attempting to seize
and bite other horses and the attaq-
ual; dashes down everything before him,
himself sweats, seizes, snarling and showing
about the ruins. Here palsy of the hind-
legs is apt to supervene, thirst is intense
and the act of defecation difficult, at least
apparently so. The issue is usually
fatal within 3 or 4 days after the
symptoms declare themselves and on
Direction the lesions usually found
have been, Inflammation in the posterior
part of the mouth and more at the tip of
the windpipe, and the commencement
of the Special Cord.

Dogs are more susceptible of Wound than man. E.g. In one case our
where 13 dogs and 8 men were bitten by the
same dog in a rabid state, all the men
died, and none of the dogs. We may attribute
in a partial explanation of this case is
the fact that our clothes, by preventing them
paratively the passage of the Noxious Saliva
into the bite, serve as a material protection
in Man. The interval between the 'infection'
of the Wound and the invasion of the symp-
toim varis considerably. In Man and the
Horse the mean average is from
three to 8 weeks. We come now to consider
the Disease as manifested in Man and
may notice in the first instance the Descrip-
tion given by Celsius. He held
that it arose from the bite of a rabid
dog, the wound of which had either been
 neglected or not properly treated by
preventive measures. "The Sufferings are
terrible, the patient being tormented by
a desire and yet a desire for water."
Under these be gradually sicked with very little chance of Recovery. He says afterwards notice his method of treatment. The symptoms of Hydrophobia can not well be arranged according to the order in which they occur, as regards time, for this varies exceedingly; the period of latent presence perhaps lasting of the Virus varies especially in duration from hours and days to even months, or as some say years! The principal indications of the Disease are mainly three:

1. Depressed or Excited State of Mind and of the Nervous System, with sometimes more or less of tactile disturbance.

2. Difficulty of swallowing liquids, with convulsive motion or contraction of the Pharynx.

3. General or variable symptoms attending these. These are manifested in different degrees, during the progress of the disease and suggest a natural division of this part of the Subject into - A. The Latent Stage, or Delirium? B. The Active Manifestation, or Earl or Recurrence, and C. The Final Insanity.
A. The Latent Stage called by some Delicacy
In this Stage but little has been observed.
The wound whether slight or severe may heal up, leaving not more pain than it often followed the healing of ordinary
wounds. In some cases (recorded in the
Edinburgh Med. & Surgical Journal Vol. 70
p. 444.) slight fever came on very soon
after the occurrence of the accident and
was soon followed by other symptoms
of Hydrophobia which declared itself in
a few days. These cases have been no-
noticed by many writers says O'Barrsky,
some of whom have deferred the early
appearance of Hydrophobia to the so-
called non-viable theory. I supposed
to originate from some mechanical
irritation, because genuine Hydrophobia
is believed seldom to occur within
less than forty (40) days. But if
we consider these cases it appears quite a
reason to think that they were genuine, as
though it seldom occurs within the 40
days, the very one of the worst seldom
implies that it has been so and may be so again. Most if not all the cases recorded as those of genuine Hyper-
cephalics have been through this first stage within 2 years, though some attempt to establish connection between cause and effect.

between a一定的\* Symptoms of affection at periods far more distant than that.

In this Stage the consciousness becomes an anxious, sad or gloomy expression, arising perhaps from the State of the Mind or Nervous System generally, induced by a knowledge or fear of the probable result or perhaps less arising from direct action on the Nervous System from the load of evil.

B. Second Stage. Recrudescence

Here alarm is first caused in a marked and probably injurious manner & degree and now the aid of medical advice is sought so that the practitioner called to a case at this Stage has it to his
his power to watch the progress of
the evil and must do what he can
like to arrest that progress, to crush it
while it can yet be done, though too generally
his efforts are vain. Writler again the
honor of true Hydropathia license.
The first sign of evil is pain in the feeling
of pain and acting as the creature of
the wound or close by it. This may de-
generate into a kind of rigor, coldness,
and numbness accompanied by stiffness and charge
of the feet of pain. The wound if open,
til a red swollen & sometime, livid con-
dition emitting a peculiar discharge.
According to Dr. Marcus Baldwin on
the pain when they assume the feeling
character run along the course of the
nerve without causing apparently
irritation of the lymphatics and glands.
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Journal. Vol. V. Of a man who was bitten by the same fatal dog successively in the Scrotum, thigh and left hand, yet to whom the familiar sensations were produced in the arm alone though last bitten. These symptoms came on 4-5 days after the bite and 4 days before the disease declares itself. The peculiarity of this case is however explainable by the probability increases to a greater state of fever on the day when he inflicted the last bite, and more to the fact of that last bite being to the hand, which rested the protection of the clothes covering the other parts bitten.

Some conditions in this Horse of Vomorscum bear a marked resemblance to similar ones observed in many cases of Anthracnose. Possibly if the actual physical or perhaps even chemical relation of changes of the horse could be definitely established a better indication for treatment of the results is for its prevention might be arrived at, but as yet this is unsaid...
The nervous action here as in Harvard.
Setanus seems to require time to carry
amount of the maturation and de-
velopment before it proceeds to visible
manifestation of its harmful presence. If
if this process of maturation could be checked
the main object of treatment would be pain.
but as at present practice has been rather
empirical than scientific one be have
no basis on which to prove scientifically
theory of treatment. We must go on trying
until by rigorous scientific investigations
by happy accident we may attain to
a knowledge of the means of arresting the
progress of this horrid affection.
Third Stage.

After the first and second stages have manifested themselves, the third usually follows and the patient passes into a state of truly alarming and fearful hydro-phobic symptoms. This stage shows its marked and characteristic indications which differ so strongly in degree from the previous stages of the disorder, that they commonly have been considered, as what is meant when we use the term Hydrophobia. To speak correctly, however, it is only a part of its course, capable of being resolved into its component parts and further symptoms some of which also occur in some other diseases, and as during the progress of the previous stages the patient may have been quiet & composed, so late, here in the midst of his sufferings or perhaps just before death releases him, there may be a remission of the terrors which are alike so distressing to the spectator and to overwhelming to the ill-fated sufferer. Writers have differed
widely in their manner of accounting for and explaining the modes of cause by which the life of a living animal causes such fatal results. Consequently it is reasonable to infer that some of them are incorrect. I am inclined mainly to agree with those who assert, the moral action which often lies underlying in perhaps a partially developed condition in the system, for such varying periods of time, to the effects of a morbid virus implanted by direct or indirect absolute physical communication from an animal more or less affected with the disorder and in which the virus is the result of influenza or similar action, as generally found in the air or to an extent caused by damaged nutrition, traumatic or idiosyncratic. This virus may be mixed with the saliva, producing the fatal effects described, by its own inherent powers, only combining with the Salivary Secretion obtaining thus increased of destructive poisonous tendency. In this stage the patient is anxious, restless, etc.
and depressed, the eyes are contracted, the face transilluminated, there is headache with fever. In some cases there are preceded by a sense of general chilliness. The unpleasant symptoms increase, rigors, transient flushes, fever, and sometimes while symptoms ensue, the patient labors first when, not before but after it arises, it, when removed. Some have at this stage felt the pain said to be seated at the diaphragm connected with a desire to vomit. Convulsive contractions of the pharynx may come on, permitting solid, to pass without much difficulty but refusing everything of a fluid nature, which by some has been described as the cause by others as the effect of a fear of swallowing liquids, which may degenerate into a morbid fear of the liquids themselves. Perhaps the patient by endeavoring to avoid the recurrence of this difficulty may often originate the very motions providing it, as the parts concerned are not wholly or even partly under the control of the will, for we hear well that when the fever is high no series of motions will enable us to swallow.
This symptom may also be partly produced by the fact that the mind is occupied too often with just fear of the results or otherwise. Again, the act of drinking urine, the absolute closure of all orifices in that region but that leading to the stomach, and thus respiration is for the time in abeyance of which the part, conceives may be mortally intolerable. The effect of all this is to depress the functions of those normal per.

Moreover, respiration is necessary. This is seen from the long deep respiratory action induced by a long thought, and the objection to it must be very much greater in hystero-
plastic when the difficulty of respiration and irritation of the jouses are already present to a serious extent. The sense of a
fall in the throat (like flatus irrtinent) with
burning thirst & great pain, with heat along the spinal column are now felt. The saliva is much increased in quantity either from
movements around the fluid as loss due
to health or from some specific action of the
virus on their secretory function. The
The desire of honor shown at first the utmost height of liquids seems to be generally considered by the best authorities as resulting from a gradual process carried to that height by the continual, actual, recurrence of the suffering caused by an attempt to digest. For many of the most credible patients have attested that they had no fear of liquid at first but desired them, especially water, to overcome the repugnance they felt on trying to drink. This symptom seems to depend as a moral state upon cerebral reflex action of the nerves concerned.

The pulse may be from 100 to 150. This is lost. The eyes sparkle. The angles of the mouth are retracted and cause the appearance of the writhing of the brain, Pandemonium, refers to the connection sympathetically between the Diencephalon and Hypothalamus. The mind is often quite clear to the last, with a morbid susceptibility to impression. The language described in older cases may well be explained by the patients fear of being touched or other wise cruelly treated. The liquation shows...
in this stage may be caused by their nervous excitement induced by their strange and unusual situation or circumstances. The sound of thunder as resembling a dog barking is simply produced by efforts to spit out the thick viscid saliva which gets stuck to the glottis through suffocation. The above evacuation firstly when extended in many cases becomes natural or nearly so. In their passage however considerable difficulty is experienced probably from the general or partial sympathetic spasm of the muscles concerned as explained by the doctrine of reflex action. This spasm from slight cause or injury is best seen in cases of Tabes or tabes cornuata. The function of the spasm of Sense often seem perfectly retarded. One of Mason's patients though deaf & dumb from birth upwards, is said to have heard distinctly during the paroxysm. This however is at best doubtful. Pain & susceptibility to pain increases till they lead to paralysis & anaesthesia, insensibility, being overcome by successive doses of the powers of vitality are gradually restored.
till life departs in a fever. Sometimes it may be in a tranquil interval like a dying taper light of pitchers and jars. After a view of such a course of symptoms as this, it is refreshing to find that this disease is comparatively rare in this county as well as in England and Ireland. Perhaps this is in great measure due to the vigilance exercised for the preservation by fire by officials of the disease, by confining or killing animals suspected of madness. Confiscation should always be prompt lest certainty is attained or dealt with tardily.

Having now considered though very imperfectly the nature & symptoms of the disease we may talk for a little to the causes which are reported to be active in its production or induction. Examination of mad horses after death has thrown but little light on the head only revealing in most cases, uniform inflammation of the throat & in some addiction of the spinal cord at its upper part also.
We might consider the cause as either exciting or predisposing cause.
Among the predisposing causes we may include nervousness, settle habit of body, melancholy, with which the spasmodic irritable to\nDeputation afflicts seems to be connected, though indeed it does occur in some of robustly healthy\nConstitution; also the legacy of the wound or\nPerhaps some peculiar susceptibility liability.
Thus, the fluid not the only exciting cause seems to be the bite of a dog or other animal, allowing\nto a certain form of madness, followed in\nBrain is fatigue, by the symptoms described\navove & to other species of the lower animal\na disease strongly analogous to Mephitism.
Many important questions arise here as to the manner in which the Disease is actually\nProduced and as to what are the immediate active agents in its productions. To consider\nall of these were here equally impossible to impracticable for lack of pursued by experi-\nment and observation Investigation would ground\nMaterial for a separate Essay. On we might\nSpeculate as will widely on these questions and
Balance arguments for and against the idea that this cause by fear rather than by the fright of the animal, or prehistoric of the prehistoric. Real, prejudice of the present in all these.

Dr. Bawley in his recent article on this subject gives a statement of these questions which may have little effect, pretending to answer them here.

1. Is it unjust to the result of laborating studies, as in Italy, the limitation from the lower parts to the most susceptible part of the system?
2. If so, can we consider it as a mere form of Italy?
3. Or a different disease arising from a parallel cause?
4. Would these the same given part of the animal cause?
5. Is the disease communicated by a virus or poison?
6. Is it due to come from the tooth or saliva or both?
7. Is it absorbed into the system?
8. If absorbed doesn't modify the blood, all the reactions or only that of the saliva. If the bile then become capable in place of the particles it? q. If not absorbed, how in a similar virus form to distant parts causing real violent fatal action?
9. How long may it remain latent?
10. How does the change in passing into the body?
State of consciousness in fever state?

12. Does it act by intubation or mere absorption?

13. Is it communicable by from to others?

Some of these questions have already been answered partially at least, some others we may touch upon. As to the duration of the period of latency, it may be remarked that it will depend very much on the condition of the animal, the stage of its disease, and the state of constitution of the person bitten. The fever once a rise, appears rather acute—soon to the more of action of drugs following itself a subject of discussion. In respect to these experiments of Magnus's Breslau's Earle have lent to the inference that the bite of Plague if man may cause the disease in the lower animals or men. Dr. Carpenter in treating of the nervous system writes thus: The condition termed hydrophobia is nearly allied to that of Pneumonic Inflammation, differing chiefly in the nerve in which the cranial- spinal axis is affected. The irrational state of the nervous centres obviously results from the introduction of a poison into the blood, and
hence the Early removal of the wound, part to very desirable as a means of fire-arrangement, although when the poison has once begun to operate on the central circles of no use. The muscles of Respiration and Deglutition are as in Schwan; there is no anatomically affected in the first instance but there is this curious difference in the times in which they are excited to action, that whilst in Fetalus the stimulus operates through the Spinal Cord (either centrally or by being conveyed from the periphery), in Hypophonic it is often transmitted from the ganglia of Special sense or even from the Cerebrum; so that the Efferent sensory fluids or even the idea of them, occasion equally with their contact or with that of a current of air—the most exciting circumstance. While the former phenomena of Hys-teria at times accumulate time of Hypophonic Chorea, Delirium or Diablepsy they are dis-ferent to being evidently dependent on a state of the system of much less abnormal character.
Treatment: Palliative attempts are made. In the instances of hydrophobia in dogs, which have occurred and been recorded, no cure has been obtained, but decided palliation of the symptoms has followed the application of medicinal means, such as washing of brains, venesection, and excision of the part done when too late for prevention. Also a soothing and partially curative effect has been produced by means of collodion in the nasal state made to mix with the atmosphere breathed by the animal. Magendie studied the influence of strongly substantiating salts on heat in the circulatory system. He tried an experiment on a mad dog in a paroxysm, injecting a quantity of water into its veins. The animal instantly became tranquil and continued so for 5 hours. Magendie also tried the effects of injection of tepid water into the veins in man with similar palliative results in many cases. In no positive case, the man given being highly rabid, became tranquil and his pulse fell from 150 to 50, the blood being prejudiced motion.
Closed, he drank water without difficulty, and improved till the 5th day when death supervened. In another instance the patient lived 9 days after the injection. Before examining some of the circumstances connected with this case we may consider the mode of treatment recommended by Lellouc. He says that the only known remedy is to throw the patient on a bed and if he cannot sustain life swallow sufficient water to his struggles but if he struggles and vomits the end is to be attained by assistants dripping hot water down the patient again. In this way thirst and thirst of water are both removed. There is some danger however lest the delirious patient be carried off by convulsions or convulsions caused by the hot water, to avoid which he is immersed to the feet in hot water oil.

Free doses of spirits with aromatics and aromatic medicines may be given either as a poultice or remedies but if the disease has already supervened they should be given in the form of pills rather than in a fluid state.
If the Dog is mad that bit the person, the virus is to be extracted from the wound by Cupping. The Immediacy of the Cauterizes unless to nerves or muscular parts. Bleeding will be useful. But if after the cautery is to be drenched with the usual irritants, but if the cautery has not been applied, more powerful irrigations must be used and the wound heals up. Instantly after the bite some send the patient to the bath where he is made to sweat freely, and lay the wound open by incision so that the poison may escape in greater quantity and follow up this with a liberal allowance of the strongest Wine, which is an antidote to all poisons.

In account for the precision and description here displayed he finds that Phenomen, the teacher of Celsus, most of his contemporaries, had been once infected with a kind of hydrophobia & narrowly escaped. It has been proposed that Hydrophobic patients should use volatile ingredients.
generations in their persons as they are
found to be useful to nervous diseases.

The Osseous Medicine taken in doses
had a great reputation & was supposed
to be specific or almost specific. According
to Murray its composition of Calcium, Phos-
phorus & Bismuth & iron was costly.

No day is long passes as a species which
prit cures now of pelman declared her
phobia. This also recommends the
use of the plant Rhizos loricani &
Cyclus with the latter of which he is
said to have cured several cases.

Among the class of medicines which may
justly be considered as incapable of pro-
ducing their asserted curative effect,
there are some as abject as inefficient:
the powder of calcius, poppy shells, opium,
phth, malthadiis, urine of the animal, with
or without its dried blood. But a list of the
termites which have been tried & will not
be very profitable unless they are evermore
effective than they have yet proved. These
however which seem to have had some
good effect are, Aural or cold bathing
bath, solution of, for dilution of chloroform
absence, bleeding to lymphope & injection
of tepid water or opium into the vein.
the American Malaria & Unpaid of Balsam
In Portugal, Salt is often given
to dogs & as it is said with good effect
as a preventive of Rabies & they seem
have had a reasonable hypothermic.
A suggestive analogy be drawn from the four
less Enicès by the Buffalos, deer in
their natural state for salt. Wise salt Water
and Soap & Balsam have been recommended.

Lodges. M. Rolliet advises immediate
bathing of the part. So this an objection,
may be raised that the Water if it does
not carry off all the virus, will reduce
what remains though a little more dil-
uted yet more easily absorbed.

The most Effective mode of treatment
is excision of the part, carefully and
thoroughly performed whenever the position
of the wound is such as to admit of the
practice of this remedial measure.
The accompaniments, local heating and cauterization are always useful generally, essentially necessary for our success in prevention. Cauterizing is a very excellent method of destroying the part of virus or at least of lessening or pre- venting the absorption of the virus.

Suction of the wound has been proposed but seldom if ever tried. Though some cases have occurred in which hydro- phobia was produced by the contact of the fluid with the saliva of a rabid ani- mal yet this generally believed that ani- mal poison is harmless if later evacuated.

The Hottentots and Bush- men of South Africa are accustomed to swallow the fangs of snakes as a protection or charm against the effects of subsequent bite, without suffering any ill consequences from this apparent temerity. The natives of Paraguay use a wound inflicted by snakes & apply a biphate, adding tobacco leaves to the surface of the wound, being also some...
Plants of Crude and Insoluble Salts. Crude Potash and the cauterizing seem to be too superficial in their action as to be inflammatory affections which is to be treated & shifted but as actual's active virus to be removed or decomposed. Chloric, nitric, muriatic, and hydrochloric acid have been prepared because of their disinfectant powers by experimentation upon, with the results that the latter substances have rendered the infected clothes of plague patients quiet innocuous & tone have by treating various matter by chlorine deprived of its peculiar action. Sulphuric acid by means of fluid 'syringe the mucous (watery?) extract of opium into the saphena and cephalic veins to the amount of 2 grains in the former & 4 grains in the latter, obtained for one patient three hours tranquility. 2? Bottles of Perchajid then prepared to improve such a result by using rather the essence of Morphine for injection along with distilled water because the properties of Alicate of Morphia
are one type, sedative and digestive, combining with it the virtues of all in action. 2. Consider of fever in the case states that he injected of this into the vein 5 times at intervals of some months 1/2 ounce consisting of a mixture of crude opium dissolved in an ounce of distilled water. The less which was one of great internal excitement from the bite of a dog with marked quittletown had an unerufvful termination. Bleeding to cleanse has proved in some instances of great benefit while the others it has had an evil effect and the latter have suggested the idea of forming trassusion by which to slowly by new healthy blood the place of the poisonous putrid drains away. In Italy at Paris and Milan, Vinygas and Chlorine solutions have been apparent cases. The Tongue were introduced by the use of a compound of native Sulphur, Mercury & Civic. 2 parts of each added to 16 parts of Swedish orange twice in a tablespoon of water to be repeated at the end of 20 days, with pil
A dose is given just after the bite, if disease is evident the 2nd dose must come soon after the first. The Opisobryon Perclavatum is an antidote to the poison of the bite of the Cobra di Capelli might prove useful. Ambui is found effective in cases of snake bite at Belvoir, the horses of Farnese. It forms part of the Tropicus pill used in snake bite, successfully in India. It has been proposed to inject Chlorate of Potash with Tefrion Water with some probability of benefit, there is however no cure as yet for Ophidias.

The principle might suggest the use of Mercurius with Plumbis Prospect. The necessity of the Chemical Decomposition of the Virus seems to me the most palpable and a strong argument for the use of Chlorine in some form or combination. In the present age when Chlorine is found so useful an agent in hygiene & sanitation, perhaps in some other forms of fever, as scarlet fever, it may prove useful and may possibly help to remove...
Medical science the discovery of continual & repeated failure in the treatment of this fearful disease let us work on with steady & constant perseverance and the who discovers the remedy for this disease who succeed in baffling it or destroying flowers will earn for himself a name which will be handed down from generation to generation with grateful remembrance & honour manifold.