It is, of course, impossible to say how or why it is that the same urinary matters should become converted into different poisons in the blood in different diatheses; but, if we turn to non-vital chemistry, we find analogical results. The ferment present may differ, the fluids may vary in density or in temperature, and, in the one case, a poison may be produced capable of causing violent convulsion, and, in the other, a milder toxic agent may appear as a result, causing inflammation of venous capillaries and all the phenomena of acute gout.

In connection with this subject, I would wish to direct attention to the fact that a condition may be brought about by the gouty poison, which it is difficult to separate from ordinary pyæmia. I lately met with such a case in the person of a gentleman engaged in large practice, whose diathesis was decidedly gouty. The disease seized him in nearly every joint, and was treated at the onset with the ordinary approved remedies. After a few days had elapsed, he became anxious, and I was called to see him. I found both hands and feet swollen and tender. One knee was involved, and he complained a good deal of the back of his neck. His pulse was extremely weak, and so rapid that I counted it with difficulty. Notwithstanding this state of the circulation, his intellect was quite clear, but his respiration was rapid and his temperature 104 deg. My first idea was that the case was one of ordinary pyæmia; but from the history there could be little doubt that the disease commenced as gout. This gentleman recovered well under the free use of stimulants. During the progress of the case, there was a good deal of tenderness for two or three days over the saphena major vein, but the vessel did not become hardened or thickened. A pain occurred also over the hip during convalescence, and there was considerable tenderness over the part for a day or two. If the view I have here taken of the nature of gout be correct, it would appear that in treatment our object should be to exhibit some remedy capable of acting upon the poison and destroying its virulence. The power which colchicum evinces looks much like this, acting, as it often does, so very rapidly in removing gouty inflammation.

There are one or two points having reference to the treatment of this disease upon which I will venture to remark.

1. Too little attention seems to have been paid to the amount of solid food allowed to gouty patients. Most of them eat too much.

2. It is much the fashion to prescribe strongly alkaline waters in large quantity. This depresses the gouty, and tends to impair the digestive power of the stomach. In moderation, however, the milder alkaline waters are of value.

3. Though it is true in the general that alcoholic drinks in the form of spirits are better than wines, yet it often happens that these, after a time, become very objectionable to the patient, and prevent him eating his food with appetite. In this case, it is always better to allow wine, which should be always of the highest quality. From what I have observed, I am much inclined to believe that really good wines are generally used to advantage, and that the vegetable extractives of these mellowed specimens are easily digestible by the gouty stomach.

4. Much may be done by remedy to ward off the gouty seizure, and the patient generally receives a warning. When such symptoms arise, a combination of quina, colchicum, and colocynth, taken twice or three times a day, is an excellent medicine.

Some few years ago, I saw two gouty cases which much impressed me, and which showed how dangerous it is for gouty people to take quantities of cold water day by day, even though the quality of the fluid be of mild character. During a stay at Homburg, I was entreated to see an Englishman who was said to be in imminent peril. I found an inveterately gouty man with an immensely distended abdomen. The heart's action was thereby much impeded, and he was nearly pulseless. This was brought about by taking the waters in accordance with the generally prescribed rules. I saw a very similar case shortly afterwards. The treatment consisted in prescribing an opiate at night (for there had been great loss of sleep in both cases), and in administering alcoholic stimulus in the form of warm brandy and water. The patients recovered rapidly.

THE MEDICAL FACTS AND EVIDENCE IN THE CASE OF THE QUEEN *v.* TREADAWAY.

By A. HUGHES BENNETT, M.D., M.R.C.P.

ON February 8th, 1877, at the Old Bailey, Frederick Treadaway was sentenced to execution for the wilful murder of John Collins, and was also found guilty of an attempt to take the life of Mrs. Collins. As the defence was in great part of a medical character, and the case a very peculiar one, it may be interesting to the profession to learn the medical facts of the trial. This appears to be all the more necessary

as the reports of the evidence as given in the daily newspapers were very imperfect and inaccurate, and, in some of the leading articles, even strictures were passed on the nature of the defence. Lastly, in the BRITISH MEDICAL JOURNAL of February 17th, there is a letter criticising the medical evidence. This contains certain inaccuracies, and the conclusions are sometimes arrived at from erroneous premises, not due so much to the inexactitude of the author as to the imperfect data from which, I presume, his facts were collected. It is not my intention to enter into legal questions, to discuss the general evidence, or to question the decision of the jury; I propose only to record the medical history and condition of Treadaway and the professional evidence given in his defence.

On December 23rd, 1876, I was requested by the prisoner's solicitor to investigate his mental and bodily condition, and, after five prolonged interviews with him, the following are the results of my inquiries.

Frederick Treadaway, aged 20, a Hosier's Assistant.—Family History.

—According to the report handed to me by the solicitor, and to inquiries made by myself, Treadaway is the eldest of nine children. His eldest sister suffered from "brain fever" when a child; she had delirium and convulsions, and was subsequently paralysed for six months. His father is a man of depressed and melancholic temperament. His aunt died during an epileptic fit at the age of 22, having suffered from that disease all her life. Both his grandparents were persons of depressed and nervous habit, his grandmother being described as incompetent and requiring a companion to be constantly with her. One granduncle died imbecile, a second granduncle committed suicide, and a third granduncle died in a "fit". A grandaunt is described as a woman of "strange behaviour". His great grandmother was imbecile; one great granduncle was imbecile; and another was an inmate of St. Luke's Asylum. The daughter of a great grandaunt was an inmate of Hanwell Asylum. On the mother's side, two granduncles were insane.

Personal History.—Treadaway states that he was quite healthy till about two years ago. For twelve months prior to this, he had indulged in great sexual and alcoholic excesses. With this exception, he had before and has since led a steady and temperate life. Shortly after this, he became very subject to frequent and severe headaches of a stabbing and throbbing character, which symptom has lasted to the present time. During the last two years, he has had six or eight seizures of unconsciousness, or, as he calls them, "fainting fits". All these have been of similar character, some of them, however, being more prolonged and severe than others. He described these as follows. While in ordinary good health, without apparent cause, he suddenly experienced a severe shooting pain and throbbing in his head, followed by a giddy sensation, in which everything seemed to turn round. He staggered and had to lay hold of something for support. He had the sensation of a "black cloud" coming over him, and then he lost consciousness. On recovering his senses (he thinks in a few minutes), he suffered from headache and felt confused in his ideas. In a short time, the latter passed off, and he was able to walk on, and in an hour or so he was again quite well. During the last two years, and only since then, he has been subject to occasional involuntary micturition during sleep. This occurred every month or two, and without apparent cause. He has also since that time complained of various pains, sometimes in the branches of the fifth nerve, but more especially in the cardiac region, where he describes a severe pain and the sensation as if a cord was being tightly pulled round his chest. About the middle of August last, he was out of employment, and had in consequence to live at home. Although he was supported by his family, and received every kindness at their hands, he gradually became depressed and despondent. He brooded over his "misery", and finally became so melancholic (apparently without cause), that he several times contemplated "putting an end to himself" by suicide. Several methods suggested themselves to his mind, such as drowning, but he finally decided to shoot himself, as being, he thought, the most expeditious method; hence the purchase of a revolver. On the morning of December 15th (the day of the crime), Treadaway says he awoke with a severe headache and felt generally unwell. While sitting talking with Collins on different subjects, he experienced a sudden throbbing in his head, followed by giddiness and the sensation of a black cloud and darkness coming over him. From that moment, he remembers nothing till he found himself in the street. For the remainder of the day, he felt dazed and confused, and it was not till the following morning that he thoroughly realised his position. With the above exceptions, he has always considered himself a perfectly healthy person.

Present Condition.—Treadaway is a youth of fair complexion, somewhat short stature, well-built, and healthy looking. His forehead is low and his head small. There is nothing abnormal about his appear-

ance; on the contrary, his countenance is frank and open, and decidedly pleasing. His statements are perfectly consistent. He makes no attempt to conceal anything connected with himself or the crime of which he is accused, but explains it as above mentioned, and expresses the greatest sorrow and horror at its results. Altogether, his conduct and conversation impressed me favourably. On physical examination, all his organs were found healthy.

Commentary.—In my report to the solicitor, I concluded the enumeration of the above statements by saying: "If the preceding assertions can be established, the following conclusions might be deduced.

"1. That, as insanity or some form of nervous disease has existed in the families of both the parents of Treadaway for several generations, to a large extent on the male and to an appreciable degree on the female side, there is a strong presumption that Treadaway inherits a predisposition to nervous disease.

"2. That, although the health of Treadaway is apparently normal at the present date, still, from the description that is given of the various symptoms from which he has suffered during the last two years, there is a strong probability that he has been affected with epilepsy.

"3. That, although since August last he has been in bad circumstances and has had certain vexations and troubles, he has greatly exaggerated their importance, and has been unusually depressed in mind, and has several times contemplated suicide. These are indications of mental weakness.

"4. That Treadaway committed the crime of which he is accused during an epileptic seizure. In such a condition an individual is unconscious, and not responsible for any act which he may perpetrate.

"5. That, considering the consistent statements of Treadaway, and his accurate description of a complaint which is little known to the public, there is every probability that his assertions are in the main truthful.

"6. That, looking to his naturally kind and amiable disposition, his temperate habits, his making no attempt at concealment, his apparent want of motive, his inability to remember the details of his act, and all the general circumstances of the case, the homicide would appear to be rather the result of disease than of malice or intended robbery."

Proofs.—During his first examination at the Westminster Police Court, the prisoner had two "fits". No medical man was present, so that their nature remains uncertain.

During the trial at the Old Bailey, the prisoner had a "fit". He suddenly uttered a smothered cry, and fell down. When I reached the dock, perhaps a minute later, I found him lying on his side held down by two or three warders, his body writhing and his limbs being moved about in every direction. The face was slightly flushed, the eyes were widely open and staring, but the conjunctivæ were sensitive to the touch. The prisoner was immediately removed to the cell below the court. His condition then, that is perhaps two or three minutes after the seizure commenced, was as follows. He was lying on his back on the floor. At intervals, there were powerful convulsive movements of all the muscles. The whole body, and especially the limbs, were thrown into such violent movements, that it required two or three men to keep him from injuring himself or others. The head was thrown somewhat backwards, and there was slight tendency to arching of the back. The muscles of the face were contracted, although the countenance was not actually distorted. There was no evidence of the tongue having been bitten. Some of the movements seemed to be of a tonic, and others of a clonic, character. The movements of the muscles were such, that the body was pushed hither and thither as it lay on the floor. The face was paler than at first. The eyelids when opened remained so, leaving the eyes partially exposed. The eyes were fixed and staring; the conjunctivæ were perfectly insensible to even the roughest touch; the pupils were widely dilated, and insensible to the stimulus of light. The patient was perfectly insensible. I placed a large pinch of snuff in a quill which I had in my pocket, and blew it up his nostrils; there was no sign of sneezing or reflex action. The lips were covered with frothy saliva, but no appearance of blood. The respiration was impeded, and at intervals a quick inspiration was taken. The pulse was small, weak, and rapid. The arteries of the neck throbbled strongly. In what appeared to be about five minutes, Treadaway drew a long sighing inspiration, after which the movements of the body almost stopped, and he at once began to sneeze. The conjunctivæ were then found to be sensible to the touch, and the pupils had contracted and acted on the stimulus of light. He remained in a drowsy and soporose condition, and did not speak. When asked repeatedly if he felt any pain, he never took any notice, but once he put his hand to his head. This condition remained for perhaps fifteen minutes longer, when it was seen that he would not be able to appear

in court again that day. Half an hour later, when I saw him at Newgate, he had somewhat recovered, but was still in the same soporose condition. The muscles were relaxed, interrupted only by occasional slight twitchings of the limbs. He could not speak, but on one occasion, when asked if he had pain, pointed to his head, and said "knife". He also placed his hand over his heart, as if there were pain there. In this condition I left him. Next morning, when I saw him before the trial, he was quite well, and had passed a fair night, but had not his accustomed appetite for breakfast. Mr. Gibson informed me that he had this morning given the prisoner a pinch of the same snuff that had been used without effect on the preceding day; now it caused him to sneeze with great violence.

At the trial, the following facts were established by witnesses: 1. The hereditary history of insanity and epilepsy in the family; 2. The headaches; 3. Having had at least two fits, one two years ago, and one last July; 4. The wetting of his bed during sleep; 5. His great depression and melancholia since August last; 6. His having suggested before more than one person ideas of suicide; 7. His appearing unwell on the morning of the crime; 8. The epileptic seizure of the preceding day; and 9. The naturally amiable and affectionate disposition of the prisoner.

Medical Evidence.—In the public newspapers, this was imperfect and on many points erroneous. I now endeavour to give the evidence *in extenso*. It was to the following effect.

Dr. HUGHES BENNETT.—Although sane at the present time, it does not follow that the prisoner was conscious of his actions at the commission of the crime of which he is accused. According to all the circumstances of the case, the facts proved, and if the statements of the prisoner be correct, there is every probability that he is an epileptic. There are several forms of epilepsy. The popular idea of the fit is that which is accompanied with convulsions. There need not necessarily be convulsions, but only loss of consciousness. This latter has been called epileptic vertigo. These two forms may alternate with one another. Owing chiefly to the writings of Hughlings Jackson, Maudsley, Russell Reynolds, Hammond, Trousseau, Falret, Esquirol, and others, epileptic vertigo is a recognised disease. There is abundant testimony to show that, during such seizures, persons may perform actions and even speak and answer questions automatically. There are numerous examples in the works of the above authors proving that, in an unconscious condition, persons can perform odd or eccentric actions or deeds of violence, suicide, or murder—being unable to remember the circumstances afterwards, and therefore irresponsible for their actions. Dr. Bennett quoted instances in his own experience, more especially two cases. The first was that of a gentleman of the highest education and integrity. He was officer in a Peninsular and Oriental steamship in which he (Dr. Bennett) happened to be travelling. Various statements were from time to time made, and amply witnessed, of odd things this gentleman had done, and of which he had always denied any knowledge. During Dr. Bennett's personal knowledge of him, he had several times attempted to commit suicide in different ways. He was prevented from doing so by others; and in a few minutes afterwards, when he came to himself, he was totally unconscious of having made any such attempt. He fancied he was being made the subject of a hoax. He several times tried to throw himself overboard. He on one occasion attempted to poison himself, but drank by mistake an innocuous fluid. These attacks came on about once a month. During the intervals, he was perfectly sensible and intelligent, and could not imagine what had induced him to do what he did. Finally, one day Dr. Bennett found him looking ill. He was asked what was the matter. He replied, he felt very unwell, but did not know why. Opium-poisoning was suspected, and subsequently about a pint of laudanum was extracted from his stomach with a stomach-pump. He had taken it out of the surgery, and was afterwards quite ignorant of the fact. On account of these seizures, he was dismissed from the service, which ruined his career in life. Another case was cited, where a respectable married man had sudden temporary fits of unconsciousness. While they lasted, he assaulted his wife, children, the other patients in the ward, or any one who was beside him; although, when in his senses, he was a most affectionate husband and father. He was perfectly ignorant of what he was doing, and was deeply distressed at the results of his violence. A person might suffer from epileptic vertigo without knowing it. Epilepsy in all its forms is hereditary. There is a certain affinity between insanity and epilepsy, in so far that insane parents may beget epileptic children, and *vice versa*. The prisoner's family was strongly tainted with insanity and epilepsy, and therefore it is probable that he inherits a predisposition to nervous disease. Dr. Bennett stated in detail the symptoms described to him by the prisoner. Sexual and alcoholic excesses are considered by many to be an exciting cause of epilepsy. This occur-

ring shortly after puberty, with a predisposition to disease, might cause nervous affections to manifest themselves. The description the prisoner gives of his "fainting fits" is quite consistent with epileptic vertigo. Frequent throbbing in the head, without apparent cause, in a young healthy man, is consistent with epilepsy and is a common symptom of that disease. Involuntary micturition during sleep without cause was also met with in such cases, indicating an attack during the night. The neuralgic pains, especially the angina pectoris, sometimes accompanied epilepsy. The attacks the prisoner described must be one of two things, either epilepsy or ordinary fainting. From any single attack, it would be difficult from description to distinguish between the two. Assuming the statements of the prisoner to be correct, and taking the family history and the other nervous symptoms into consideration, the evidence appears to be in favour of epilepsy. It is quite possible that a crime might be done during an epileptic seizure. The fact that the prisoner was depressed and melancholic without sufficient cause, and his constant statements that he was miserable and anxious to "put an end to himself", indicated, in Dr. Bennett's opinion, an abnormal mental condition. The fit the prisoner had in court yesterday was, in Dr. Bennett's opinion, somewhat an anomalous one, but was of an epileptic character, indicated chiefly by the total unconsciousness and the dilated and insensible pupils.

Cross-examined.—In the ordinary acceptance of the term, the prisoner could not be said to be insane. While in a state of epileptic unconsciousness, a person might commit almost any act without knowing it. The attack itself did not generally last more than three or four minutes, but the effects of it might last several hours. Taking the attack which occurred last July alone, there would be nothing from the description inconsistent with an ordinary fainting fit. Epilepsy is a disease of the brain.

Dr. RHYS WILLIAMS, Superintendent of the Bethlehem Royal Hospital, had seen many cases of epileptic vertigo, and he corroborated the evidence of the last witness that this was an acknowledged form of disease. He described a case in which a gentleman, while sitting at breakfast, had assaulted his wife with a table-knife, and afterwards was not able to give any explanation for his conduct. He was subsequently under medical treatment for fourteen months with epileptic vertigo. Everything done by persons while suffering under attacks of epileptic vertigo was automatic; they were then mere machines, and would afterwards have no knowledge of anything that occurred during the attack. When he recovered, a patient might feel that he had done something, but he would not know what. The longest instance of unconsciousness of this kind he was acquainted with was one hour. The witness stated that all the symptoms that had been described in this case with regard to the prisoner were consistent with the idea that he was suffering from epileptic vertigo. He had seen the prisoner on the previous day in the cell below the court, and he found him perfectly unconscious, and the pupils of his eyes were dilated. He had no doubt that it was an epileptic fit combined with hysterical symptoms. He regarded epileptic lunatics as the most dangerous of all those afflicted with insanity; and such persons were most likely to commit acts of violence.

Mr. RICHARDS, Superintendent of Hanwell Asylum, had great experience in epilepsy; himself treating, on an average, one hundred and fifteen cases *per annum*. He had seen several cases of epileptic vertigo. He agreed in the opinion expressed by the two previous witnesses with regard to the nature of that disease. He had been several times attacked by patients suffering from epileptic vertigo. On one occasion, an epileptic patient was talking pleasantly to him when, suddenly, her eyes became vacant, and she hit out at him. She appeared to recover immediately, and he asked her why she had struck at him, and she said she did not know that she had done so, and appeared quite unconscious of what had taken place. A few days later, this patient had a violent attack of epilepsy. He saw the prisoner yesterday, when he was unconscious, and he was of opinion that it was an epileptic fit, with modified symptoms.

Dr. SMILES, Surgeon to the House of Detention, said the prisoner was under his care from December 18th to January 15th. During that time he was in good health, and never on any occasion exhibited any appearances of epilepsy. With regard to the attack of the previous day, he was of opinion that there was a good deal of hysteria mixed up with it. He heard a young woman, who had been examined as a witness, utter an exclamation, which evidently affected the prisoner and brought on the attack. He had no opportunity of seeing the prisoner, except from the court, and he did not go into the gaol. [It is to be observed that this witness was on the bench. The prisoner's attack took place on the floor of the dock, and chiefly in the cell below the court.]

Mr. GIBSON, Surgeon to Newgate, said the prisoner had been under

his charge since January 15th. While under his observation, he had been in perfect health. Although the chief symptoms of yesterday's attack were those referring to a hysterical condition, the graver of them were of an epileptic character. There might be a distinct convulsive attack in those cases, without any premonitory symptoms. Strong efforts had been made to restore him after he was taken from the dock, and a quantity of snuff was blown up his nose, but was not followed by any effect. This morning, he had given the prisoner a pinch of the same snuff, and it caused him to sneeze violently.

The jury were asked to decide whether, at the time the prisoner fired the revolver, he was conscious and knew the nature of his act. They answered in the affirmative, and found him guilty. He was accordingly sentenced to death.

Such are the medical facts and evidence in this remarkable case. The jury have found Treadaway guilty; nor am I prepared in any way to question their decision. There was no defence whatever, except the question as to whether, as the prisoner stated, he was unconscious of his act. The judge admitted that no proof whatever could be obtained of any motive for the crime. In the interests of justice and humanity, it was, therefore, incumbent on those intrusted with the task to carefully collect all the statements and facts connected with the prisoner's health, and, in laying them before the authorities, it was their duty conscientiously to draw from them such inferences concerning the prisoner's condition as would assist the jury in the performance of their most responsible duty.

LARGE WOUND OF SCLEROTIC, THREE-QUARTERS OF AN INCH IN LENGTH, TREATED BY SUTURE: RECOVERY OF SIGHT.

By SIMEON SNELL,

Ophthalmic Surgeon to the Sheffield General Infirmary.

THOMAS W. PARKIN, aged 16, whilst at work on September 6th, 1876, was engaged cutting a piece of scrap iron with shears, when the portion he was cutting off, about two inches long, flew up and struck his left eye. Within an hour of the accident, he was brought to me. The eyeball was then collapsed and soft, and the aqueous chamber filled with blood. Just below the cornea, at its middle, commenced a clean cut wound, running obliquely outwards and downwards, and measuring not less than three-quarters of an inch in length. It involved the deeper tunics, was wide and gaping, so that a finger could easily have been thrust into it. A large quantity of vitreous had evidently escaped. The lower lid was slightly cut towards the outer commissure. Vision was reduced to perception of light.

As there was no evidence of any foreign body being in the eye, although apparently with little prospect of restoring useful vision, it seemed to me well to close the wound by a suture, and thus, at all events, attempt to leave the organ as little unsightly as possible. This was accordingly done at once by means of a single loop of very fine platinum-wire, uniting the edges of the wound at about its centre. On placing the speculum beneath the lids to introduce the suture, the wound gaped so widely that it seemed as if the eye would be turned inside out. A pad of lint, wetted, was applied by means of a bandage, and a two-grain solution of atropine in an ounce of water ordered to be dropped into the eye three or four times daily. It was directed, also, that the lint be kept constantly wet with cold water. The day following, the eye had resumed its normal shape; the edges of the wound were in good apposition, and apparently closed. There had been very little pain.

September 8th. The suture, after having been in thirty-six hours, was removed. The wound was quite closed; the tension of the eyeball nearly normal. There was some little œdema of the conjunctiva, but no pain. He saw fingers indistinctly; no reflex was yet obtainable with the mirror.

September 11th. The blood in the eye had cleared up considerably, some films floating in the vitreous body, but the fundus could be seen with the ophthalmoscope. He now read 16 Jäger.

The next day he resumed his usual employment.

Since this time, there has been further improvement in vision, and he reads with greater facility. The wound is now represented by a faintly greyish line, and, beyond a little dropping of the lower margin of the pupil, the eye does not differ in outward appearance from its fellow.

This lad's case shows how readily, under favourable circumstances, a very extensive sclerotic wound may unite, even though the vitreous body be largely involved. Two points, no doubt, contributed very materially to the good result obtained in this instance, which was