isted for a body of men fully competent to apply all the aids of the most recent and approved knowledge to the investigation of medico-legal cases surrounded with difficulty, occurring in the law-courts. Hence arose the foundation of a system by which "experts"—men of talent and special skill—were ever ready, upon occasion, to come, in case of difficulty, to the aid of the law. If some such plan were adopted here, the scandal arising from the present system of retaining medical men as witnesses at opposite sides in many trials would be got rid of. No imputation could rest upon the *expert*; he would have no client but truth—would never deliver his judgment until his conviction was complete, and would not be swayed by any consideration of the consequences which might flow from the expression of his skilled and conscientious opinion.

2. These "experts"—to whom would be remitted all inquiries into crimes connected with the death of persons, and who would be independent of both parties concerned—should be (a) physicians well acquainted with the science of physiology, and possessed of a knowledge of the causes of death, in trials where insanity is pleaded, and in all cases where special medical questions, such as life-assurance, etc., arise; (b) surgeons in all autopsies, and in the trials where accidents or injuries of any kind form the subject of inquiry; (c) accoucheurs where the question is one—such as legitimacy or divorce—arising in the science of obstetrics; (d) a scientific physician, associated with a chemist acquainted with physiology, in all cases of suspected poisoning.

3. In every instance, a written medico-legal report, upon which he may be subsequently examined, should be first presented to the legal authority by the "expert".

4. All the terms now used in medico-legal investigations should be clearly defined; and the administrators of the law, when referring, in legal inquiries, to matters appertaining to medical science, should use medical terms in their present accepted medical sense, instead of that invented by lawyers for conditions which may have no real natural existence.

5. As the failure of medical witnesses is most frequently manifested in trials concerning mental sanity, the study of mental disease should be inculcated and insisted upon by the several Colleges of Physicians and Surgeons, and form a part of the curriculum of medical education.

THE SUCCESSFUL USE OF ARSENIC IN CERTAIN KINDS OF GASTRIC PAIN.*

By ARTHUR LEARED, M.D., M.R.I.A.,
Senior Physician to the Great Northern Hospital, etc.

THESE cases represent three classes, apparently of very different nature, in which arsenic was curative. But a close connection may be traced between them. A peculiar state of a nerve, call it exaltation or depression according to the theory adopted, is the cause of pain. And when pain occurs spontaneously, without inflammation, and is sudden in its coming and its going, we term it neuralgia. These attributes of neuralgia were well marked in the two first cases. In this class, experience leads me to say that it will hardly ever fail.

In the case dependent upon marsh-poison, as traceable from the previous ague and the state of the spleen, the inscrutable connection between ague and neuralgia suggested itself. This connection led to the exhibition of a remedy of known power against both.

In the case of phthisis, it is worthy of note that the pain was induced by food. But the failure of ordinary remedies for pain after food, as well as analogy, led me to try arsenic. Neuralgia is often developed in parts at a distance from the irritation upon which it depends. Thus, a carious tooth will produce it in the upper part of the face; or a foreign body, as a bullet or a splinter, in one part of the tissues will cause it in another part. The late Dr. Brinton, speaking of the kind of pain at present under consideration, says: "These cases of gastric phthisis may thus be regarded as a kind of neuralgia of the pneumogastric and sympathetic nerves; certain thoracic segments of these conjoined nerves forming the starting point of an irritation and morbid action which is transferred to their abdominal connections." (*Diseases of the Stomach*, second edition, p. 350.)

The contact of food with the stomach in the foregoing case, was the exciting cause of pain. But the effect of treatment alone distinguishes it from ordinary gastrodynia, in which arsenic is always injurious. One of the main indications that the pain in the first class of cases was neuralgic was its great severity. But the probability that gastric pain of the same nature, but of lesser degree of severity, existed, soon occurred to me. Acting upon this, I have treated with success a

considerable number of the more moderate kind by the same means. In proportion, however, as severity diminishes, difficulty of diagnosis increases, and here diagnosis is of the greatest importance. Care must be taken, lest the arsenic do harm instead of good. In the ordinary case of pain from intolerance of the mucous membrane of the stomach to the contact of food, arsenic acts as a direct irritant. The gastric pain, sense of heat, epigastric tenderness, and redness of the tip of the tongue, are speedily increased. In doubtful cases, the best rule is not to give arsenic until after due attention has been given to diet, and certain remedies have failed. Bismuth is one of the best known of these. But, if I may be allowed to speak here of another remedy of my own introduction into practice, I would add that the purified black oxide of manganese is superior to bismuth, except in cases to be presently mentioned. If the merits of both drugs were in other respects the same, manganese possesses one great advantage in not constipating the bowels, as bismuth almost invariably does. But, in a few cases, the irritability of the gastric mucous membrane is continued in that of the small intestine. The pain is then associated with a tendency to diarrhoea, and the astringency of bismuth becomes valuable. It is in such cases alone that I now employ it.

It will be well to set down here the cases of gastric pain, in order of frequency of occurrence, for which arsenic is unsuitable.

1. Unnatural sensibility of the stomach to the contact of food, except that which occurs in certain cases of phthisis.
2. Pyrosis, not of malarious origin.
3. Subacute gastritis.
4. Ulcer of the stomach.
5. Unnatural sensibility from gastric congestion, due to disease of the heart.*
6. Cancer.

All these may be readily discriminated by their proper symptoms. But there are other cases of pain in the gastric region which are more difficult to distinguish from those in which arsenic is curative. Such are:

1. *Aneurism of the Abdominal Aorta, or one of its Branches.*—Here I may take the opportunity of urging the necessity of a stethoscopic examination of the cardiac and epigastric regions in every instance of severe abdominal pain.

2. *Gall-stones.*—There is sometimes great difficulty in distinguishing between the pain of gall-stones and neuralgia of the stomach. The focus of pain is in the gastric region, and there is no pain in the course of the gall-ducts. When there is no jaundice or other hepatic symptom, the difficulty is much increased. The following case illustrates this difficulty. The wife of a clergyman came to town and placed herself under my care. She was 48 years of age, and of delicate habit. Twelve years previously, after having heard suddenly of the death of two friends, she was seized with a violent spasmodic pain in the stomach, succeeded by vomiting. She had been ever since subject, at uncertain intervals, to the same attacks. At length, they became so frequent that her general health had quite broken down. The pain commenced under the ensiform cartilage; and, although it extended over a great part of the abdomen, seemed to have no particular connexion with the hepatic region. The attacks lasted four or five hours. Fatigue, emotion, or indiscretion in diet would induce them. There was well marked spinal tenderness in the mid-dorsal region. She had been slightly jaundiced about a year previously; and gall-stones were noted as one possible cause of the disorder. But the temperament of the patient, the exciting causes of the attacks, and the long time over which they extended without any critical result, inclined me to the belief that this was a case of neuralgia. Arsenic was therefore given, but no good result followed; and my patient returned to the country, where her sufferings continued as before. Fourteen months from that time, she passed a gall-stone about the size of a filbert-kernel, which was sent me by the late Mr. Harrison of Baintree, her medical attendant. The attacks ceased from that time, and she recovered flesh and strength. In this case, the mere presence of a calculus in the gall-bladder seemed to have been a constant source of reflex irritation, ever ready to be developed into pain, when the nervous system was depressed by any cause. The treatment failed, because the diagnosis was incorrect.

In the selection of cases for treatment with arsenic, certain things must be kept well in view. It should be clearly ascertained whether the pain is induced by taking food or not. If the pain be violent, and if it come on generally when the stomach is empty, and be not dependent upon one of the causes specified as being beyond its reach, the remedy will almost to a certainty succeed. If the patient live in a district where ague prevails, and especially if he have had the disease, or if he have had neuralgia of the face or head, there are strong indications for the treatment. But if the papillæ of the tip of the tongue be red and

* Read in the Medical Section at the Annual Meeting of the British Medical Association in Dublin, August 1867. [Concluded from p. 468.]

* See my paper on this subject in the *Medical Times and Gazette*, June 22, 1867.

prominent, if the epigastrium be constantly tender on pressure, if the skin be hot and dry and the pulse quickened, the remedy will not succeed.

The usual precaution of giving arsenic soon after a meal should be practised, and it is always proper to begin tentatively. If the drug do not disagree, the dose should be gradually increased. When large doses are reached, a few drops of tincture of opium may be desirable to prevent purging. The constitutional effect of arsenic must, of course, be attended to, as warnings to diminish or to omit its use.

This is not a therapeutic age. Such, indeed, is the prevalent scepticism about the action of remedies, that the term cure is by many objected to as unphilosophical. As a firm believer in the efficacy of medicine, I protest against this. We are, happily, in possession of some agents, and, should, therefore, be hopeful not only of obtaining new ones, but of extending the application of the old, by which disease can be stopped in full career. Arsenic, when rightly employed, has this power in cases differing so widely as ague, certain headaches, and diseases of the skin. The present communication professes to add another triumph to the list. But, in order to establish a new treatment, help and co-operation are needed. Now, it seems to me that one of the great advantages of such a powerful Association as ours is that the truth of a clinical observation by any one of its members can be quickly tested by others. It will be a source of pleasure to me if, in due time, the results of any trials of arsenic in diseases of the stomach as recommended in this paper, are either communicated through the medium of our excellent JOURNAL or to myself personally.

CASE OF "LE PETIT MAL":

WITH SOME OBSERVATIONS ON THE RESPONSIBILITY OF EPILEPTICS,

By J. THOMPSON DICKSON, B.A. CANTAB., ETC.

THE vast importance of responsibility is more than an inducement for studying carefully the varying phases of the mind, particularly in connection with disease; and there certainly is no doubt that *le petit mal* plays a very important—perhaps the most important—part in the development of those nerve-changes which precede, and are essentially associated with phenomena such as we see exhibited in temporary exacerbation, occasional over-excitation, and exaltation; in a word, transient insanity and transitory conditions of mental inaction and depression.

The exaltation of ideas, and the violent and destructive forms of mania attendant upon *le haut mal*, admit of no question. The subject has been ably illustrated and commented upon by M. Jules Falaret; and his Memoirs, "*De l'état Mental des Epileptiques*," in *Archives Générales de Médecine*, 1860 and 1861, are deserving of the most careful study, although his general proposition of the irresponsibility of epileptics, is only true within certain limitations; but the intimate association of transient insanity with that very slight expression of epilepsy, to which the term *petit mal* is given, has been but little considered till recently. Much attention has, however, been lately drawn to it; especially by the great and illustrious Trousseau, whose loss the medical profession throughout Europe is lamenting at the present time. This association is highly important, and it is as marked as it is important; while every additional case is of value, augmenting, as it does, the accumulated evidence we have of the imperfection of our legal definition of responsibility—a definition vague and untenable, and leaving hopelessly in gross darkness that inextricable question upon which too often the criminality and the life of a poor and innocent accused are made to hang, whilst the slander still adheres, though unjustly, to the medical profession that they are incapable of defining responsibility more comprehensively than the lawyers; and certain trials in our criminal courts seem to appear a mockery of justice.

There are not, perhaps, on record many more striking cases of *le petit mal*, followed by transient disturbances of the mental faculties, than those given by Trousseau in his *Clinical Lectures*; they present extraordinary perversion of mind, indicated by extraordinary actions and following slight epileptic seizures—sometimes as slight as a passing momentary vertigo in persons of otherwise sound and vigorous intellect. Such strange and antagonistic phenomena at first beset our inquiries with the greatest possible difficulties, especially as the seizure may, from its slowness, pass unobserved; but, at length, directing our attention to the very intimate relation between mind and matter, these very extraordinary antagonisms furnish us with the strongest evidence we can wish for in our consideration; and, I think, lead us, at all events, one step nearer a clear understanding of mental phenomena, both in health and disease.

Responsible actions are under the control of the will; but this ever versatile and capricious will of man would be but little amenable to re-

sponsibility were it not one of the dependents of reason; but reason is a faculty which is in abeyance in the absence of thought, and in the absence of healthy, or normal, thought, the inferences of reason will be as imperfect, or erroneous, as inferences deduced from false premises; whilst healthy, or normal, thought is dependent upon the perfect tone and harmonious operation of the cerebral cells.

The following case lately came under my notice. It is, in the highest degree, important as a medico-legal question; whilst, as a psychological study, the case is unique and pregnant with interest.

Amelia M., aged 18 years, was admitted into Guy's Hospital, June 5th, 1867, under the care of Mr. Poland, with a cut throat. The incision was not large, and she made a good recovery; but the wound was self-inflicted. She is a slightly-made girl, has a fair delicate skin, dark hair and eyes; the lower lip is long and slightly projecting, and her general expression is intelligent, though the lower lip gives the unmistakable impression of epilepsy. Her mother stated that while she was pregnant with this girl she was several times frightened by an epileptic—an apprentice of her husband, who was a tailor. Her family history, on the father's side, was good, and there was no evidence of epilepsy or insanity; and on the mother's side it was equally good. A nurse girl was employed to take charge of this child while an infant; and it appears that on one occasion she let her fall, when the back of her head was struck violently. The mother remarked that from two up to about nine years of age, the child was stout and well nourished, but that she often fell and frequently struck her head. On one occasion she was playing with some other children in Clerkenwell, when she fell on a door-step, and cut the back of her head open. Once, when about two years old, she was very ill; the symptoms were evidently cephalic, but the mother cannot give any satisfactory information on this point. From nine up to the age of puberty she was more or less delicate, and complained from time to time of giddiness and strange sensations in her head. She is of an amiable and happy disposition, and her mother says she is nice tempered, and a great favourite with all who know her. In ordinary health she is lively, and at times excitable. About the beginning of May, 1866, when nearly seventeen, she commenced to menstruate; but about six weeks previously she was, for the first time, attacked with a seizure which was supposed by her mother to be a faint. She has had several such seizures since. A very slight aura, which she very indefinitely terms "a strange sensation," always gives warning of the invasion. Usually she sits down, becomes deadly pale, and almost instantly loses all consciousness. She has some amount of tonic spasm, mostly confined to the hands and jaws; but the whole of the left side is partially affected, and a slight amount of left hemiplegia always remains for a day or two after the fit. Clonic spasm is not well expressed; a slight flush comes over the face, after which she remains in a profound stupor for an hour or an hour and a-half. On one occasion, the coma continued for two hours and a-quarter. As this coma passes away, the eyelids open, and the eyes appear rolling, bright, and wild. She will then speak, answer questions, and walk; afterwards she invariably sleeps for a considerable time. She has never been noticed to micturate during a fit. She never screams at the onset, neither has the attack ever been so sudden that she could not sit down in time to save herself from falling. She had never before exhibited any inclination to violence on recovery; and her memory of the events which follow a fit is so defective, that she cannot describe what her feelings have been, and although, after apparent recovery, she will speak, answer questions, and walk with the semblance of rational demeanour, she is forgetful, and I should, perhaps, say absolutely ignorant, of everything that has occurred from the time of an aura to the time of waking from the after-sleep. These fits have occurred about the menstrual period; but that function has always been irregular, sometimes recurring in three, sometimes in six, weeks; always deficient in quantity and colour. After a fit, and the phenomena immediately attending it, have passed away, she usually complains of strange feelings in her head; and for a day or two is more or less low-spirited and melancholy. Two or three times she has had a nocturnal seizure. She is always aware when a fit has occurred from the feeling of stiffness on the left side, and the general languor and depression she experiences. A week before cutting her throat she had a seizure, and remained in the stupor for two hours and a-quarter; for several days after this she felt very greatly depressed, and says she became low-spirited because she was not allowed to go to her business; but the idea of self-destruction had never struck her—in fact, it was farthest from her thoughts. She appeared quite to comprehend the enormity of such a deed; but, apart from all moral consideration of the matter, which could hardly be expected in one so young, her whole desire is to live—not to die. She has not the slightest recollection of the circumstance; she knows nothing of going up-stairs—of taking one of her father's razors—of lying down on her mother's bed—of cutting her throat—or of hiding the razor under the sheet,—all of which she appears to have done; and she