

the only one tenable in view of these conditions, as conclusively testified to by the medical examiner and other competent medical witnesses. This absence of burned hair or staining was one of the first facts obtained by me in determining that it was a case of murder.

The records of the Surgeon-General's office and the experience of surgeons prove beyond a doubt that the usual result of a severe penetrating bullet-wound of the head is a certain amount of immediate unconsciousness, evidenced usually by a fall. The remarkable exceptions are not to be used as evidence to support the theory of suicide. As Prof. Bigelow has stated, the *burden* of proof rests with the advocates of the suicide theory. It is for them to prove suicide. The State should not be put on trial to defend a position so reasonable, but *the defense must prove* that the reception of a penetrating bullet-wound of the skull and contents is not necessarily followed by unconsciousness. The overwhelming evidence of the past fifty years of surgical history demonstrates to the unbiased observer that Mr. Burton could not have inflicted upon himself the wounds which destroyed his life. Such evidence cannot be gainsaid or resisted, and how it can be answered differently it is hard for me to understand.

In the case of Sergt. Rinn two shots were fired at the head, entering the scalp within two inches of each other. Is it probable that a suicide would select two places so near together? The bullets which struck Sergt. Rinn's head were large and came from a powerful British bull-dog pistol. These bullets must have struck the head with terrific violence, since when discovered by the knife at the post-mortem they were found to be flattened to a remarkable extent. Is it reasonable to suppose that after two such staggering blows this man could shoot himself in the head? Was not the placing of the hand mirror a mere subterfuge to suggest suicide and hide the murderer?

It was claimed by the defense that suicides very commonly select the head as a target for the suicidal shot. However much truth there may be in this statement, it must be equally true that when such a wound is inflicted powder stains or burning must necessarily follow; but the main objection to the argument in connection with the Burton case is, that *immediately* after accomplishing this penetrating pistol-ball wound of the brain the supposed suicide was able to accurately place, hold in position and discharge for the second time the pistol sending the ball into the heart. This is, in all human reason, an impossibility, and not *one case* can be brought forward to illustrate this extraordinary theory. The defense asks us to believe too much, forgetting that the burden of proof rests with them and *not* with the State. But when within a few moments of the murder it was discovered by at least one competent surgeon that no burning of the hair or staining of the flesh had taken place, and at the same time, if a case of *suicide*, the pistol was obtainable for inspection, then the suspicion of murder should have increased to such an extent as to lead to the immediate decision of a premeditated homicide, and should have demanded immediate action by the police authorities.

The question of the amount of *time* after the receipt of a wound in the brain, before unconsciousness would ensue, has provoked very much discussion. It seems to me that in ninety-nine cases in a hundred there is more or less immediate shock, varying all the way from slight bewilderment and loss of reasoning to absolute loss of sense. This is one of the most important questions connected with the case, and the plea of "possibility" is the plea only of *possible exception*, which in point of fact only proves the rule.

Considering the facts as stated, is not this very clearly and beyond doubt theoretically a *case of murder*? Practically it terminated as follows: Maria Dorsey, the elder daughter, completely broke down upon the evening following the expert testimony for the State. To a friend she said that the testimony of the five medical experts was more than she could endure, and so gave up a full confession. The senior counsel abandoned the case, the jury soon brought in a verdict of guilty for both Maria and her husband, Allen W. Dorsey, and they were promptly sentenced to State's Prison for life, the extreme penalty in Rhode Island. To complete the case, Dorsey himself confessed his awful crime, and so the famous case ended.

#### A CASE OF EPILEPSY APPARENTLY CURED BY CORRECTION OF HYPERMETROPIA AND RELIEF OF CILIARY SPASMS.

*Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.*

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I am led to report the following case not for the purpose of advocating any theory, but by a sense of duty to record a fact that may add to the statistical data to which appeal must be made in settling the question as to how important a part, eye-strain plays in the etiology of nervous affections. This subject has been a mooted one for several years, by some condemned as of little importance, but by its originators and supporters pressed as one of the most important factors in the production of various nervous diseases, even as frequent cause in the production and maintenance of epilepsy and insanity, the most exalted manifestations of nervous disturbance, and the least curable by medication. Believing, with Hoffman, that there is no escape from the labyrinth of doubt created by controversy, except by carefully and diligently consulting the records of cases, I have concluded to contribute this mite to the great whole by which we can only settle this question. As it has been now more than three years since the last manifestation of disease, we may claim that the cure is permanent, whether or not it is due to the means that apparently effected it or not. The following is a brief account of the case:

An April 22, 1884, I was consulted by Miss E. J. L., aged 24, daughter of Rev. V. L. L., then residing in Ann Arbor, Mich. She came to consult me con-

cerning epileptic spasms with which she was afflicted, and also about some visual disturbances that had always given her trouble. Her father, who accompanied her, gave the following history of the case. She was an unusually healthy child until her eleventh year, when she was very suddenly attacked with a convulsion lasting about five minutes, after which she lay in a deep sleep for between one and two hours, from which she awoke apparently all right. The family physician thought the attack due to intestinal worms, and gave some remedies based upon this view. In about a month another spasm of the same kind occurred, and for sometime thereafter, they occurred monthly, or varying not more than one or two days from that period. This regularity in occurrence led the physician to believe that possibly it was a case of premature menses, and that some obstructions to the escape of the discharge caused the irritation that produced the spasms, which were all of an epileptic character. The limbs were drawn up, head bent backward, the teeth firmly set, the tongue often bitten, until, after awhile, the premonitory symptoms being recognized, a cork was inserted between the teeth and the injury to the tongue thus prevented. There was frothing at the mouth and general convulsive movements. The spasms were not preceded by an outcry, but in every instance there was, just before the convulsions, dizziness, color seeing and flickering before the eyes. If these symptoms continued more than a few minutes a spasm occurred. These symptoms occasionally appeared for a minute or so at a time without being followed by the epileptic spasms, but they always preceded the spasms, and a persistent attack of this kind was the means by which the patient was able to foretell a convulsion.

When the patient was about twelve years of age Dr. Lewis A. Sayre, of New York, was consulted. He examined the patient carefully, and concluded, that the spasms were due to some gastric derangement, or to some pre-catamenial derangement of the nervous system, and that they would probably disappear after a sufficient lapse of time. Bromide of potassium was prescribed and, after awhile, Brown-Séquard's method of treatment was adopted and faithfully carried out. The spasms could be controlled for a time, but, in a few months would return as before, and all remedies became ineffectual. After the brief respites afforded by remedies, the convulsions would recur with more violence than before. The bromides of potassium and sodiums were used until the nervous system became much depressed and the health and strength greatly impaired. The patient was not only weak and languid, but became greatly reduced in flesh.

When fourteen years of age Dr. Wm. A. Hammond was consulted, and after a critical examination, including an ophthalmoscopic examination, concluded that the trouble was due to congestion, or other disease, of the base of the brain. He gave an unfavorable prognosis, but recommended the use of nitrate of silver, which the parents objected to and it was never given.

From the age of fifteen to eighteen, the patient

was under the care of Dr. A. L. Turner, of Bloomsburg, Pa., who was able, by his remedies, to keep the spasms off longer than had been accomplished by any previous method, but did not effect a cure, while the bromides used by him, as a part of his treatment caused much depression and enfeeblement. She next came under the care of Dr. E. L. Dunster, of Ann Arbor, Mich., who omitted, for awhile, the depressing medicines and gave tonics. The spasms were even less frequent than before but still continued up to the time she consulted me, April 24, 1884. She was at that time spare and anæmic, with an anxious troubled expression of the countenance, and had the appearance of being older than she really was. The menses were regular and the convulsions seemed to have no connection with this function. There were occasional headaches, and symptoms of asthenopia, though not very severe. An examination of the eyes showed the vision of each eye normal ( $\frac{2}{3}$ ) and manifest hypermetropia varying from 0.50 to 0.75 D. in both eyes alike. There was no insufficiency of either the external or internal recti, or any abnormal relation existing between the external muscles that could be detected. An ophthalmoscopic examination showed a normal condition of each fundus, but a total H. much greater than shown by the subjective test. The patient accepted a + 1.50 D. S. for each eye in reading, and experienced a feeling of relief and comfort in using them.

April 26, the accommodation was paralyzed and a total hypermetropia of 2 D. was found to exist in each eye. The corresponding glasses were prescribed, the atropine continued, with directions to omit it after two weeks, and after another two weeks to gradually resume the use of the eyes by Dyer's method. The period of rest was, however, inadequate, for on June 9 the patient returned and I found the manifest hypermetropia varying between 0.75 D. and 2 D., which latter was the total amount. There had been no return of the epileptic convulsions since the first examination, and the patient was feeling some better. I directed a more prolonged use of the atropia, reduced the strength of the glasses to + 1.50 D. and directed a return to the use of atropia whenever these should blur distant vision. I also gave the usual directions for easy use of eyes.

I did not see the patient again as she went East, and I did not hear anything more of the case until Nov. 26, 1886, when the father wrote me from Bloomfield, N. J., his present home, as follows: "I am prompted to write you a few lines about our daughter Emily, which I thought might be of some interest to you professionally. You will recall that for years she was troubled with spasms, preceded by color seeing, flickerings and dizziness. We tried many physicians both East and West, among them were Dr. Lewis A. Sayre, and Dr. Wm. A. Hammond, of New York. The relief was only partial and temporary, meantime by the use of bromide of potassium, and like sedatives and antispasmodics, she was constantly feeble. Dr. Dunster prescribed for her as well as yourself, but you said that some claimed that these troubles originated in, or were continued and aggravated by certain abnormal conditions of

the eyes, and you made an examination and advised the immediate and constant use of glasses, and a discontinuance of the bromides of potassium, sodium, etc. Well, before we left Ann Arbor, a marked improvement was observed—strength returned, she gained in flesh, and was in every way better, and now, during some two and a half years, she has never had a spasm, the color seeing is *very* seldom, and she is so fleshy and well you would hardly know her. She has taken no medicine in two years. Now I am inclined to think the glasses were the remedy, and I thought it might confirm your judgment in such cases, and be gratifying professionally, to know the result."

On Feb. 12, 1887, in answer to some inquiries, I heard from this patient, and the improvement had still continued as at the date of the letter above quoted. Considering this lapse of time, we are justified in regarding this case as apparently cured, and from the history it would seem that the cure was effected by the correction of an existing hypermetropia. I have not been investigating in this direction, and had it not been for the thoughtfulness of the father of this patient I should never have known the result.

It is several years since the attention of the profession was called to the connection which some claimed to exist between errors of refraction and nervous diseases, such as chorea, epilepsy, etc. The views promulgated by some of the early writers on the subject were generally rejected as extreme, and this has been my own view in regard to them. The possibility that they may have been *too lightly* estimated, is sufficient excuse for continued agitation of the subject, and for the collection of *every* fact that may tend to aid in its investigation and settlement.

On March 1 of the present year Dr. Geo. T. Stevens read, before the New York Neurological Society, a paper entitled "Irritation Arising from the Visual Apparatus Considered as Elements in the Genesis of Neuroses." He reported a series of most remarkable cases, in which the correction of slight errors of refraction, or the relief of insufficiency of some of the recti muscles, had caused immediate improvement in patients demented by epilepsy, which had resulted, as he believed, from the eye strain. He cites cases of insane patients at the Willard Asylum, who were considered incurable, that were apparently benefited by this method of treatment. Fourteen patients were treated by him. Ten of these were insane and demented epileptics. These patients were found to be suffering from insufficiency of one or the other of the recti muscles, and were operated on by him for its relief. During the month preceding the operations these patients, collectively, had 170 convulsions. During the month following the operations these patients, collectively, had only about 40 attacks, and this, notwithstanding the withholding of bromides. Such facts should at least command attention, and did receive due consideration by the distinguished gentlemen present. None of those who participated in the discussion, except one, could cite personal experience corresponding with that quoted by the author of the paper, and many were

inclined to combat the extreme views advocated therein. All agreed, however, that a complete examination of the eyes, including their refraction and the condition of the external muscles, should be made in all nervous affections.

Dr. Stevens declared in his paper that, as a result of an analysis of over 5,000 cases of nervous diseases occurring in his private practice, besides a considerable number in public institutions, he had come to the conclusion that "difficulties attending the function of accommodation, and of adjusting the eyes in the act of vision, or irritation arising from the nerves involved in these processes, are among the most prolific sources of nervous disturbances, and, more frequently than other conditions, constitute a neuro-pathic tendency." Granting that his experience is exceptional, and his views extreme, may there not be more in this theory than is generally believed, even by oculists. Neurotic patients generally come under the care of those who give their attention to general practice, or who confine their practice to nervous diseases, and by them the condition of refraction and the relation of the external muscles are often too lightly investigated. By many it seems to be ignored, and the paper of Dr. Stevens, above referred to, has been characterized editorially in a leading journal as a "narrow specialism;" and not long since, when a case was reported in one of the medical societies of some nervous disease cured by properly fitted spectacles, the editor of the journal containing the report volunteered the remark that "no well educated physician of the present day would make such a claim."

Peripheral irritation, as from tapeworm, etc., has long been recognized as a cause of epilepsy, but it has generally been held that when the *status epilepticus* has once become established by any of these peripheral causes, the removal of the cause does not cure the malady. Numerous cases can, however, be found in modern medical literature that tend to discredit this view. Epilepsy has been observed to disappear after the removal of various sources of eccentric irritation, such as the removal of a diseased knee-joint;<sup>1</sup> the relief of preputial irritation;<sup>2</sup> the restoration of a prolapsed rectum;<sup>3</sup> the restoration of a retroverted uterus;<sup>4</sup> the removal of carious teeth;<sup>5</sup> and by the enucleation of a diseased eye.<sup>6</sup> We can hardly consider these cures of epilepsy, which had existed for ten years in some of these cases, as the mere result of the traumatism inflicted by the operative procedure, as was suggested by Dr. Seguin in discussing Dr. Stevens's paper,<sup>7</sup> but it must be regarded as due to the removal of a source of eccentric irritation, which in some cases is the exciting cause of the epileptic spasms. This peripheral irritation may exist in any part of the body, but we can readily conceive that excitement, strain or irritation

<sup>1</sup> Med. and Surg. Reporter, 1883, No. 48, p. 26.

<sup>2</sup> Mississippi Valley Medical Monthly, 1883, vol. iii, p. 120. Also see case, Phila. Med. Times, February 19, 1887, p. 342.

<sup>3</sup> Medical Record, March 22, 1884; from London Med. Record, January 15, 1883.

<sup>4</sup> Medical Record, September 3, 1881, p. 22.

<sup>5</sup> Am. Jour. Med. Sciences, January, 1870.

<sup>6</sup> Medical Record, vol. xx, p. 722; from Chicago Medical Examiner.

<sup>7</sup> New York Med. Journal, April 16, 1887, p. 443.

in *some parts* may more readily produce these derangements than excitement or irritation in some other portions of the body, just as excitement or irritation of the parts supplied by the glosso-pharyngeal nerve more readily excites the vomiting centre than irritation in other parts, though several portions of the body seem quite intimately connected with this centre. Has the eye a similar connection with the coördinating and motor centres? and is eye strain, as claimed by some, "among the most prolific sources of nervous disturbance, and, more frequently than other conditions, constitute a neuropathic tendency?"<sup>8</sup> This is a question worthy of investigation and answer.

Dr. Chas. A. Oliver recently published an analysis of the ocular symptoms obtainable in epilepsy in the male adult.<sup>9</sup> He based his conclusions upon the examinations of fifty male adults, of American stock, inmates of the State Hospital for Insane at Norristown, Pennsylvania. All were epileptics. In his ninth conclusion he says: "The presence of insufficiency of the interni in the majority of cases is readily explained by association with existing H + Ah, and probably has no relation with the epileptic condition." In the light of the report made by Dr. Wise, of the Willard Asylum, to Dr. Stevens, as to the apparent benefit following his operations in similar cases, are we prepared to accept Dr. Oliver's conclusion, above quoted, without further investigation?

Ferrier, in the second edition of his great work on "The Functions of the Brain," issued last year, discards his former view, which located the visual centre in the angular gyrus, and he now locates it in the occipito-angular region. He declares that, though the cerebellum is not essential to sight, it has intimate relation not only with the optic, but also with the oculo-motor nerves, as is shown by the importance of visual impressions on the mechanism of equilibration, and by the relation between oculo-motor and general motor adjustments, demonstrated by experiments. The superior cerebellar peduncle is suggested as the probable medium of communication of optical impressions with the centres of equilibration.<sup>10</sup>

The hope that the report of the above case might excite some discussion, and lead to the relation of experience and expression of the views entertained on this subject by the members of the Society, is the excuse for its presentation here.

### CONSERVATIVE DENTISTRY.

*Read in the Section on Dental and Oral Surgery, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887,*

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I have chosen for the subject of my brief paper "Conservative" or "Preservative Dentistry," and my only apology for presenting such a paper as this, is the hope that it may draw out some discussion, and

do something toward clearing the minds of many general practitioners of medicine from fallacies, inherent from a lack of a proper appreciation of this subject and a prejudice which many of them must have obtained from the constant rantings and railings about the lamentable ignorance of the Doctor of Medicine, by some of the would-be lights of the dental specialty. I will be excused in the light of the above in making this paper deal largely in generalities; thinking by thus doing that the mind of the general practitioner may enlarge upon these generalities, and through them we may hope to enlighten the laity, who are, as a rule, willing to do anything which their physician recommends or which they can believe is for their good, especially in regard to their physical condition.

I think I am not stating it in too strong language when I say, that if there is one factor more than another that brings the people to the physician it is the troubles arising from indigestion. It assumes a variety of forms, and is almost always largely owing to the condition of the teeth.

This matter is fully as important in the child as in the adult (and to my mind much more so). Take the child, for instance, from four to twelve years of age, growing rapidly; the amount of nutrition furnished must be largely in excess of that necessary (in proportion to size) for the adult, for they have not only to assimilate a sufficient quantity to make up for the waste, but also for the great development and growth in, and of the tissues. How often do we see the child with decayed teeth, nearly or quite exposed or dead pulps, and these unattended to, makes him very careful of masticating food: the consequence is the food is imperfectly commingled with the saliva, and goes into the stomach in a solid instead of a pulverized condition; the stomach is overworked, the system is underfed, and these things tend to develop a nervous, hypersensitive condition of the organisms of the body, and especially of the nervous system, and we see them illy nourished, thin, nervous and weak, and with that worst of all habits formed for life, of never using the teeth save to get the food in a condition to be swallowed. And then oftentimes when the child's tooth gives him a little trouble, the parent takes him to the family physician who extracts the abused tooth and thus paves the way for irregularities of the permanent teeth, instead of explaining what is necessary, *i. e.*, to take him to the family dentist and have the tooth or teeth put in good repair, to require at least semi-annual visits that they may be kept in such a condition that mastication can be performed painlessly, and the space occupied by the temporary teeth maintained until the eruption of the permanent tooth to take its place—for should it be extracted, it is a well-known fact that the remaining teeth tend to close the space occupied by the tooth, and thus the permanent tooth must be erupted in an abnormal position. Should the above be carefully followed, I think much of the decay and suffering from the teeth later in life would be obviated, and the system kept better nourished, the stomach not overworked and the general condition much improved.

<sup>8</sup> Geo. T. Stevens, M.D., N. Y. Med. Jour., April 16, 1887, p. 422.

<sup>9</sup> See Philadelphia Med. Times, February 5, 1887, p. 306.

<sup>10</sup> Ophthalmic Review, April, 1887, p. 124.