

blood-vessels of the frog's web, in those which I have instituted, after taking the precaution already mentioned of dividing the integument of the leg, the result was simply negative—i.e., there was no contraction of the blood-vessels. Thus, in the web experimented upon after the method of Mr. Jones, there was a contraction of the vessel measured, on the application of belladonna, from a diameter of $\frac{1}{1200}$ to $\frac{1}{1600}$ part of an inch, as determined with my micrometer;* whilst the web of the opposite foot, treated in a similar manner after complete division of the integument of the leg, exhibited no contraction whatever.

It is clear, therefore, that belladonna acts, not as a direct, but as a reflex stimulant of non-striated muscle; and that, in the case of the iris, the media of conduction centripetally are the sentient filaments of the fifth pair distributed to the conjunctiva and surrounding integument.

Dr. Charles Lee proposes the administration of opium in poisoning by belladonna, and holds that these agents may be regarded as reciprocal antidotes—an opinion probably deduced from the opposite states of the pupil under their operation. We are here presented with a forcible illustration of the error of treating symptoms without reference to causes. Had Dr. Lee adverted to the fact that belladonna dilates the pupil by inducing a state of active contraction of its dilator muscle through the sympathetic, and that opium causes its contraction by stimulating its constrictor muscle through the third or *motor oculi* nerve, he would not have concluded that a myostic must of necessity be a corrective of a mydriastic, and proposed opium as an antidote for belladonna.

ART. III.—*Further Observations on Death by Hanging; with an Account of the Execution of a Murderer, and the subsequent Examination of the Body.* By CHARLES CROKER KING, M.D., M.R.I.A., F.R.C.S.I.; Professor of Anatomy and Physiology, and Dean of the Medical Faculty, Queen's College, Galway.

ON Tuesday, the 11th of May, 1858, Patrick Lydon underwent the extreme penalty of the law, in front of the County Galway

* See Dublin Quarterly Journal of Medicine, Feb., 1855.

Gaol. He was executed for the murder of his wife. The particulars of his case are as follows:—

Previous to the Spring Assizes of 1856, Lydon, who occupied the position of a comfortable farmer, was committed to bridewell, charged with having violated the person of his servant, Margaret Conneely. Lydon constantly affirmed that he was innocent of the crime of which he was accused; he became nervous, and apprehensive as to the result of his trial, and in an evil hour he consented to become the husband of Margaret Conneely, and the fatal marriage, which has ended in the death of both parties, was solemnized.

On Lydon's discharge from custody he refused to live with his wife, and they separated. Margaret Conneely demanded that she should be taken home, and treated in every respect as his lawful wife; but Lydon's family regarded her with contempt, and constantly impressed upon Lydon the social position he would sacrifice if he attempted to introduce a person of her low birth and moral character within their family circle. On one side were the constant importunities of a wife he hated, demanding rights which the law, if appealed to, would accord her; on the other side, family influences, which (if he complied with his wife's demand) would be equivalent to a sentence on him of social banishment—for the relatives declared they would never consent to associate with this woman. Swayed by these two impulses, the unfortunate fellow was driven almost mad.

The importunities of his wife were unceasing; and at last, on the 17th of August, 1856, Lydon yielded, and consented to take her to his own home. His residence was some miles distant from that of his wife's; he called for her at night, and they left the house together. She was not heard of for some time, and it was supposed by her friends that she was living with her husband. Eventually, her body was discovered, buried in the sand, in a lonely part of the county, on the borders of Lough Mask. Suspicion naturally fell upon Lydon; he was the last person seen in her company, and they were then going in the direction of the place where her body was found. Lydon, on being questioned, did not give a satisfactory account of their last interview; he stated that, having quarrelled on the way, they parted company. He was arrested and thrown into gaol.

The evidence which could be obtained against Lydon was altogether of a circumstantial nature; no eye had witnessed the foul deed. The Crown prosecutors were of opinion that there was not

sufficient evidence to sustain a conviction, although they had no doubt of his guilt. Consequently, assizes after assizes were held, the trial being each time postponed in the expectation of some additional evidence being obtained; and, at last, having been nearly two years in gaol, he was put on his trial. After a patient consideration of the case, and a prolonged trial, Lydon was found guilty, and the 11th of May, 1858, named for his execution.

There was nothing repulsive in the expression of Lydon's countenance. His head did not exhibit any great mental development; nor did it, on the contrary, show any remarkable deficiency; his forehead was low, but this was not the result of deficient cranial development, but was caused by his hair growing down low, and encroaching on his forehead. A careful examination of the skull did not give any support whatever to the system of phrenology.

During this man's confinement he conducted himself with the greatest propriety; was docile, gentle, and obedient to orders. After his conviction he appeared to be most penitent; and on the drop acknowledged that he was guilty of the murder, but protested, in the most solemn manner that he was perfectly innocent of the crime with which he was originally charged. Having made this dying declaration, he submitted to his fate with a firmness worthy of a better cause.

Lydon was a small man, only 5 feet 5 inches in height; skin and complexion rather delicate; muscular system moderately developed. The diameter of the rope was 10 lines; his weight $9\frac{1}{2}$ stone; the space through which he fell 11 feet. The loop of the rope ran in an oblique direction from the side of the neck upwards towards the left ear, immediately below which the knot was placed. The fall was considerable; but, with the exception of the effect of the recoil of the rope, the body was motionless. Death seemed to be instantaneous; not the slightest motion of the body, or even quiver of the limbs, could be observed. Life having been pronounced to be extinct, the body was not left suspended for more than a few minutes.

The following examination was made immediately afterwards:—Face (with the exception of a very slight, scarcely perceptible, light violet hue) not congested; expression calm; eyes nearly closed, conjunctiva not suffused; mouth closed; tongue neither protruded nor congested; fingers gently flexed; general surface of body pale; no effusion of blood from nose, mouth, or ears; penis flaccid, no discharge of semen or urine; abrasion of the epidermis corresponding to the right half of the rope's track.

The further examination of the neck was conducted in the following manner:—Two incisions, parallel to each other, were made, one above, the other below, the track of the rope, and the included flap of skin was dissected up. The areolar tissue did not present a silvery appearance; but several ecchymosed spots were observed in the substance of the skin, in the subcutaneous areolar tissue, and in the substance of the superficial muscles. The left wing of the thyroid cartilage was driven in and fractured in a vertical direction. The thyro-hyoid muscle and membrane were ruptured, and the stalk of the epiglottis and the aryteno-epiglottidean folds of membrane completely torn across. The mucous membrane of the larynx was not congested. That portion of the anterior common ligament of the spine which passes from the body of the second to that of the third cervical vertebra, was ruptured, so that the left half of the bodies of the above-mentioned vertebræ were separated from each other by an interval of one-eighth of an inch; but there was no displacement, with the exception of in a slightly angular direction towards the right side, which the above separation permitted. Both membrana tympani were examined; they had not sustained any injury.

On the completion of the above examination the body was buried, so that an opportunity was not afforded of examining the brain or the contents of the thorax. The result of the examination of the body in the present case is interesting when contrasted with the one published by me in the thirty-fifth number of this Journal.

Both criminals were executed with the same rope, and there was not much difference in their weights; but the length of fall was decidedly greater in the present than in the former instance. Still, making every allowance for these circumstances, the results were remarkably different.*

In the case of the criminal Hurley, although the body fell with a tremendous jerk, there was a singular absence of those appearances generally regarded as necessary accompaniments of hanging during life, or even of those slight evidences enumerated by many authors as constant attendants upon death, the result of simple suspension. For example, the site of the rope was scarcely perceptible; there was not the slightest extravasation of blood either into or beneath the skin, or even the silvery appearance of the areolar tissue, or injury of any kind done to the muscles, blood vessels, nerves,

*The momentum acquired by a man of $9\frac{1}{2}$ stone falling through 11 feet is to the momentum acquired by a man of $10\frac{1}{2}$ stone falling through $7\frac{1}{2}$ feet, nearly as 11 to 10.

bones, or ligaments. Whereas in the present case there was abrasion of the epidermis, rupture of muscles and ligaments, and fracture of the thyroid cartilage, and great violence done to the epiglottis and aryteno-epiglottidean folds.

In the second volume of *A Hand-Book of Forensic Medicine*, by Casper, translated by Dr. Balfour, for the New Sydenham Society, at page 161, we find the following observations:—"How often do we read, in purely theoretical authors, of the violet, bluish-red, swollen countenance of those strangled! Nothing, however, is so erroneous as to suppose that every one hanged has such an appearance. Haller, long ago, published descriptions of persons hanged, who had a pale and sunken countenance; and numerous later observations of a similar character have been made. My own experience, however, has taught me that by far the greatest number of persons strangled have neither a turgid nor a livid countenance, but one simply like that of *any other corpse*."

In corroboration of the above observations, I would recall attention to the appearances presented in the two cases detailed by me. In the former case, when the body was cut down, after having been suspended for 45 minutes, the face was pale. In the latter case the expression was calm, and the face not congested, with the exception of a very slight, scarcely perceptible, light violet hue. It is worthy of remark that in the case of the man Hurley, although immediately after the execution, the face was pale, and there was not any discolouration of the integuments of the neck, breast, or shoulders; yet, on the following day, 18 hours after death, the body, in the interval, having *lain on its back*, the face was livid, the lips and ears purple, and the integuments of the shoulders and of the upper and *front* of the chest of a bluish colour. These appearances are quite in corroboration of the case quoted by Esquirol.

Dr. Wilde, in his able *Treatise on Aural Surgery*, p. 326, mentions the case of a female who had strangled herself by twisting a ribbon round her neck, and in whom, on *post mortem* examination, Professor Geoghegan had discovered a rupture of the membrane of the tympanum. He concludes his comments on the case by observing that the only two cases on record, in which there had been a careful examination of the parts, is one mentioned by Littré, and the foregoing. It was, consequently, determined in this instance that the condition of both membranes should be examined. On a most careful examination, it was found that neither of the membranes had sustained the slightest injury.

In the case of Lydon there was not any erection of the penis, or any discharge from the urethra. Casper considers the source of the urethral discharge as the prostate gland; but in the case of Hurley the penis was semi-erect, and the urethral fluid, when submitted to microscopic examination, was found to contain numerous spermatozoa.

ART. IV.—*Remarks on the Hemostatic Treatment of Cholera, Hemorrhage, Exhaustion, &c.* By THOMAS A. WISE, M.D., F.R.C.P. & F.R.S. Ed.

WHEN the Spanish pilot smiled on the late Dr. Kelly, shivering under the influence of a cold fit of ague, and pointed out how easily it might be removed by the application of a garter to stop the blood of one or two of his limbs, he suggested a plan of treatment which has long appeared to me worthy of more attention than it has received. When in India I had, on one occasion, a regiment prostrated with fever unexpectedly placed under my charge; and, as I had but a small supply of quinine, and could not obtain more, I employed tourniquets to intercept the blood in the extremities, and with a degree of success that induced me to publish the result in *M^r Clelland's Journal of Natural History, Calcutta*. I have not the journal by me; but the result was so favourable that I frequently employed it in the cure of intermittent fevers; and I afterwards extended the application of this powerful remedy to other diseases, and propose again to bring the subject under the notice of the profession.

The great discovery of Harvey determined the principle that we had, by means of the tourniquet, the complete command of the arterial circulation of a limb, and could, by means of a tight bandage, retard the return of a considerable quantity of blood from the extremity. Modern physiologists inform us that the quantity of blood in the whole body is about 28 lbs.; and that in ordinary health there is about two pounds weight in each of the four extremities. The numbers will, perhaps, be allowed to be nearly correct, although the absolute quantity will vary in different individuals, and in different parts and conditions of the body. For instance, a person during active exercise will have the distribution of the blood all over the body considerably different from an