a young man bleached to the last degree, and with the haggard expression of hemorrhage. He had laboured under necrosis of the left thigh bone for twelve years; many abscesses had formed and broken, and discharged yellow matter; these had left five openings, one internal, two external, and two in the popliteal space, all a short distance above the knee; the one on the inside was as large as a shilling, with livid, projecting granulations; the three lower fourths of the thigh were greatly swollen. From all the openings every now and then profuse hemorrhage would take place. While applying a warm stupe a week since, blood suddenly gushed out in a full stream from the large opening. He was evidently sinking fast, the pulse weak, rapid, and dicrotous; he would allow nothing to be done. He died three days after, rapid gangrene having seized the leg.

ART. IX.—*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, Queen's College, Galway, and Examiner in the Queen's University in Ireland, &c., &c.

AN individual having been found dead, and suspended by the neck, a medico-legal question has frequently arisen, as to whether the suspension of the body took place previous to or subsequent to death; and the determination of this point may constitute the important difference between an act of suicide or the perpetration of a murder. Suspicion might fall upon an individual known to be interested in the death of the deceased. The body may have been found under circumstances rendering self-destruction improbable; collateral circumstances may have strengthened suspicion, already strong against the accused; and at last the evidence may be so nicely balanced that the slightest additional testimony would be capable of turning the beam of justice in either direction.

A fearful responsibility might thus devolve upon the medical witness; his opinion would, of necessity, carry considerable weight, and he might be asked this important question, Could this individual have died by his own hands? Life or death may hang upon the answer; if it be erroneous, the guilty may escape from merited punishment; or, what is of still greater moment, and fearful to contemplate, an innocent life may be sacrificed,

and the earthly prospects of an entire family unjustly blasted. Considerations of this kind have induced me to lay before the profession the result of a careful examination of the body of a malefactor whose execution I lately witnessed.

The circumstances attending the murder may not be without interest to some of my readers. Last summer a young girl, who had been sent on a message to a distance of five or six miles, was found barbarously murdered at the margin of Dunsandle Wood. A deep wound in the throat appeared to have been the immediate cause of death. Suspicion fell upon a person of the name of Hurley; he had been a fellow-servant of the girl; he had been seen on the day of the murder in the vicinity of the place where the body was found, walking (apparently upon friendly terms) with the deceased.

Hurley's previous character was of an unsatisfactory nature: he never engaged in any regular occupation, but, on the contrary, led rather a wandering life, obtaining a livelihood as a messenger, and but seldom having or wishing for continuous employment; he was twenty-two years of age, about five feet seven inches in height, and weighed ten and a half stone, muscular, and athletic. Having been arrested, he contrived to effect his escape, which he accomplished by daring acts of agility. A large reward was offered for his apprehension, but for some weeks he contrived to elude justice; at last, worn out by fatigue and constant watching, he was apprehended while asleep in the open air. The evidence adduced at the trial, on the part of the Crown, established the culprit's guilt beyond reasonable doubt; he was consequently found guilty, and the 27th of August was fixed for his execution. The prisoner, upon being sentenced, declared his innocence, and cried for vengeance upon both judge and jury, either in this world, or in that to come.

On Saturday, the 27th of August, 1853, at twenty-five minutes past 6 o'clock in the evening, the extreme penalty of the law was carried into effect; the execution had been delayed by the under-sheriff until this late hour from humane motives; the arrival of a reprieve by the late mail (though not to be expected) was within the reach of possibility.

A special messenger having returned from the train, hope was at an end, and the melancholy procession from the chapel to the place of execution formed. The culprit maintained considerable fortitude, but the frequent drawn, deep inspirations, and faltering steps, bespoke the sufferings of the inward man. It was a beautiful autumnal evening; the sun, as if in mockery of

the solemn scene, danced upon the adjoining river, and illuminated a dense crowd of human beings, principally women and children, congregated to witness the dying struggles of a fellow creature. Their conduct, upon the whole, was not indecorous, but they evidently regarded the scene as a serious *amusement*.

It is not my intention at present to discuss the propriety of *public* executions; I shall content myself by mentioning a fact which has a tendency to support the views of those who doubt the value of such exhibitions as terrible examples, calculated to deter others from the commission of crime; it is as follows. The excellent and humane governor of the county gaol mentioned to me that, some years ago, a convicted criminal admitted to him, that he had witnessed every execution that had taken place for years in front of the very gaol in which he was at that time confined. We learn from this circumstance, at all events, that in this particular case the examples fell valueless, for this man lay under sentence of death for murder.

The criminal, having been placed on the drop, in a firm voice acknowledged his guilt, the justice of the sentence, and expressed regret for the language he had used towards the judge and jury. The fatal bolt was withdrawn, and he fell through a space of seven feet and a half. The rope used was ten lines in diameter; the knot was large, formed of three turns of the rope; and on the noose being tightened by the executioner corresponded to the occipital protuberance. The body fell with a tremendous jerk, and oscillated for a few minutes; the arms and legs became rigid; the forearms flexed on the arms, the fingers flexed into the palms of the hands, and the thighs abducted and slightly drawn up towards the abdomen; the sternomastoid muscles were affected with spasms, and the hands became livid. After a short time the limbs relaxed; the legs approached each other, the toes pointing downwards; the hands became pale, fell down by the side, and the fingers became relaxed. The body, having been suspended for forty-five minutes, was cut down, and the cord removed from the neck.

There was *not* any protrusion, or unnatural suffusion of the eyes; the upper and lower teeth were half an inch apart, and the tongue was indented by them, the lips were rather livid, and the face *pale*; a *slight* depression marked the position of the rope; there was not any discoloration of the integuments of the neck, breast, or shoulders; the thumbs and fingers were flaccid; the ring and little fingers were flexed into the palms of the hands,

but could be easily extended; the cap in which the head had been enveloped was slightly stained by bloody mucus, which had flowed from the mouth and nose; the bladder was empty, the criminal having made water a few minutes before his execution; the penis appeared as if it had been recently erect; it lay upwards against the abdomen, and a thin transparent fluid had stained the shirt; this fluid being thin and transparent, its source was suggested as the prostate gland; however, I removed a drop between two portions of glass, and on placing it in the field of a microscope, numerous spermatozoa were detected. No further examination of the body could be made this evening, but in the morning, eighteen hours after death, the body in the interim having *lain on its back*, the following additional observations were made:—Cadaveric stiffening of the body; lividity of the face; lips and ears purple, integuments of the shoulders and of the upper and *front* part of the chest, now livid; the site of the rope was *scarcely perceptible*; and, if attention were not particularly directed to it, it would in all probability escape observation; in one place, for about the extent of a quarter of an inch, there was a *slight* parchment discoloration of the skin. An incision was made one inch above, and a second one inch below, the former position of the rope, and the integuments were raised with great care; there was not the *slightest* extravasation of blood, nor did the areolar tissue present any peculiar silvery or white appearance; the thyroid cartilage was, perhaps, slightly flattened, but not broken; none of the bloodvessels or muscles were injured in the slightest degree (the lining membrane of the carotids was carefully examined); the mucous membrane of the larynx was of a bright red colour; both the tongue and brain were in a high state of congestion,—the ventricles of the latter contained about two ounces of serum; the posterior inferior lobes of the lungs were also congested; the right cavities of the heart were full of dark-coloured fluid blood; the left side of the heart was empty; there was no dislocation or fracture of the vertebral column, or injury of the ligaments or of the spinal cord.

From an attentive perusal of the post-mortem examination, above detailed, it will be evident that, in this particular case, there was a singular absence of those appearances generally regarded as necessary accompaniments of hanging during life; and the case reaches its maximum interest in legal medicine when we consider that, in this instance, death, from hanging had occurred in its *most violent form*, and still was unattended

even with those slight evidences which are enumerated by many authors as constant attendants upon death the result of simple suspension.

It need not, I think, be regarded as a fanciful conception, to imagine the possibility of a case occurring in which, if death were suicidal, the body must have fallen from a height; and if those appearances, which might be expected to be of necessity present, were, as in the above case, completely absent, an erroneous conclusion might be arrived at. I, therefore, place this case of violent death, that was witnessed, and about which there can be no possible mistake, on record, in order that a disproportionate value may not be placed on negative results in cases involved in much obscurity.

In conclusion, I would say a word or two on the configuration of this man's head in connexion with the system of phrenology^a. The organs denominated "benevolence," "love of approbation," "concentrativeness," and "adhesiveness," were all well developed. If phrenology be true, benevolence should have deterred this man from imbruing his hands in blood. Death upon the scaffold ill accords with love of approbation. Concentrativeness should have attached him to some locality, whereas he was a notorious wanderer. The organ of "alimentiveness" was small, notwithstanding which, from the day of his committal until the hour of his execution, he constantly applied for an increased quantity and an improved quality of food. The organs of "destructiveness," "adhesiveness," and "acquisitiveness," were exceedingly small in their development, and, nevertheless, for the sake of a few pounds (of which he robbed his victim) he deliberately planned and perpetrated the murder of an innocent, unoffending girl, his friend and former fellow-servant.

I am well aware how difficult it is to produce any facts, no matter how apparently opposed to the system of phrenology, that its supporters will not endeavour to reconcile to their peculiar views. So carefully do they shelter themselves by such ingenious evasions as peculiarities of temperament, increased and diminished energy, and compensating action of organs, &c., &c., but by such subterfuges they abandon the fundamen-

^a The cranium was measured with a pair of phrenological callipers, and the development of the organs compared with a collection of crania in the Anatomical Museum, by which means the absolute as well as the relative size of the organs was obtained.

tal principle of phrenology, which makes size the measure of power.

In these observations I do not wish to be understood as undervaluing general cranial development; I recognise the *brain* as the seat of intellect, and consider that an imperfect development of it is incompatible with high mental acquirements; but such a view is perfectly distinct from the theory of the *localization of organs*,—from the mapping out of the head into distinct compartments, and assigning to each place a particular mental quality.

ART. X.—*Percussor Stethoscope*. By B. WILLS RICHARDSON,
F. R. C. S. I.

IN the twenty-sixth volume of the Dublin Medical Press, 1851, page 382, I described a form of stethoscope which admitted of being used as a substitute for Dr. Winterich's copper hammer. I considered that an instrument combining both the stethoscope and percussor in one, might be received with favour^a.

The description was not accompanied by an illustration; but as this form of instrument was subsequently approved of and adopted by some of our most practised stethoscopists, I have been induced to publish the annexed drawing of it.

The ear-piece, I am now of opinion, should be made of ivory, from about two-eighths to three-eighths of an inch thick. Into its outer edge a small nipple of the same material, and similar in form and size to Fig. 2, should be screwed and properly cemented. A piece of vulcanized Indian-rubber, of about an eighth of an inch in thickness, and of the same diameter as that of the percussing end of the nipple, should next be glued to this end, and then another piece be drawn tightly over the nipple, and tied securely round its neck. Fig. 1 shows the instrument complete.

Some makers, instead of the nipple, have substituted that part of Dr. Winterich's hammer which contains the Indian-rubber; but I prefer the former, as it may be used with either the pleximeter or naked finger.

It is almost superfluous to say, that the stethoscope should

^a Sir Henry Marsh was the first to introduce a stethoscope with this combination. His instrument consists of an ear-piece grooved on its outer edge, into which there is inserted a solid vulcanized India-rubber ring; the shank is made of wood.