transparent degree of redness, and then adding a drop of an alkaline solution. The sulphocyanate immediately is bleached to a dead pale white,* while the meconate becomes turbid, and deepens in its tint. Again, the colour of the sulphocyanate may be restored by the cautious addition of a solution of *chlorine*, while the meconate does not resume its redness under the same treatment. To these experiments, however, I do not attach much practical importance, as, in the first place, they require extreme attention to the quantity of the permuriate of iron employed in striking the original red colour, as a minute excess of the salt of iron completely obscures the distinguishing characters thus described. In the second place, various animal fluids interfere with the actions to a very troublesome degree.

In conclusion, I may observe, that my aim in the preceding observations, has rather been to collect together some isolated and scattered chemical facts, and to apply them to the purposes of this particular branch of analysis, than to advance any novel or peculiar opinions. At any rate, attention to these facts and explanations may contribute in some degree to prevent the confusion which might be occasioned on a cross-examination, by interrogatories respecting the fallacies attributed to the agency of the sulphocyanic acid.

23, Hadlow Street, London.

27th September, 1830.

ON THE HEART.

By WM. DOBSON, Surgeon.

SINCE the time of Harvey, the action of the heart has been founded on sensibility. Though this organ is supplied with nerves which endow it with the power of involuntary motion, yet it is conceived requisite that some stimulus should be applied to bring it into play; and however paradoxical it may appear, it is nevertheless true, that the heart will continue its action when removed from the body.

The motions of the heart are conceived to result from the agency of the blood in its cavities, acting either by some inherent stimulus in the blood, or by distending the walls of the organ. For a considerable period I have been engaged in examining the nature of the circulation, but other necessary engagements have prevented me giving publicity to my observations; and I

should not, at the present, have intruded into the pages of *THE LANCET*, but for the notice of two theories on the heart's motion, by Drs. Corrigan and Hope; hoping, however, by the promulgation of my observations, to assist in solving that important problem, "*the cause of the heart's stroke on the chest.*"

When opposite opinions are entertained by eminent individuals, we necessarily presume either that the question is so abstruse as to elude demonstration, or that their theories are deduced from false data. The latter conjecture I shall endeavour to prove is the case. It is imagined, then, that the heart requires some stimulus to excite it to motion. Not a more erroneous notion ever prevailed! It originated in the dawn of science, when the physiology of the nervous system was as imperfect as its anatomy was unknown. Such is the influence of the *nervi sympathetici* on the organ it supplies, that it not only endows them with the power of moving independent of the will, but it enables them to perform continuous alternate contractions and dilatations quite independent of *every other material agency*. I have alluded to a fact, that the heart will contract after its removal from the body; and I may adduce another equally valid in support of my position. Having introduced my hand into the thorax of a dog, I grasped the two *venæ cavæ*, so as to preclude the entrance of blood into the heart. What was the effect? Why the action of the heart was still maintained! Though somewhat enfeebled, it continued to dilate and contract alternately and regularly. The circumstance, which seemed remarkably peculiar, was, the *diastole*, both of the auricles and ventricles, was apparently more energetic than the *systole*. In this experiment I witnessed the following phenomena:—

1. That, during the *diastole* of the ventricles, the heart was visibly augmented in size; and that, during the *diastole*, it was when the stroke against the side of the thorax occurred, not only the apex, but the anterior surface of the heart, impinged against the thoracic wall.

2. During the *systole* of the ventricles, the heart diminished in size, and receded into the thorax.

Remembering that, as taught in the schools, this stroke of the heart against the chest resulted from the aorta endeavouring to straighten itself, when blood was thrown in, tilting the apex against the chest. To obviate this effect I grasped the *venæ cavæ*, and thus removed that attributed cause, but the phenomena occurred as before.

These experiments and observations were made at the least twelve months ago; con-

* I may remark here, that so great is the influence of alkaline or earthy carbonates over the colour of the sulphocyanate of iron, that the addition of Thames water, in an equal volume, will decolorize a deep red solution of that salt.

sequently, previous to the publication of Dr. Corrigan's interesting essay.

Many other phenomena were also noticed. At some future period I hope to lay before your numerous readers a more detailed statement. Should these few remarks, however, be deemed of value, I shall feel obliged by their early insertion.

14, Arabella Row, Pimlico.

OBSERVATIONS
ON
SYMPTOMS ATTRIBUTED TO
CEREBRAL DISEASE.

By FORBES WINSLOW, Surgeon.

WERE the attention of medical men, says Sydenham, directed as much to the prevention as to the cure of disease, many of those deviations from the healthy condition now considered as the opprobria of our art would be prevented. Few in the present day question the truth of this observation. It is generally believed by those engaged in medical practice, that by a judicious management of the health of those constitutionally predisposed to particular maladies, the development of many of the diseases considered as incurable *by the profession* might be prevented. The practitioner, by *anticipating* disease, is thus enabled to prevent many of those organic affections, which when, developed, resist the united skill of the physician, surgeon, and apothecary. It is well known that consumption may be *prevented* by removing a patient phthisically predisposed, to a mild climate. The development of insanity may also often be prevented, by paying great attention to the moral and physical treatment of those who are hereditarily predisposed to this distressing disease.

The medical profession are much indebted to the late Dr. Gooch for his able disquisition "on the symptoms in children erroneously attributed to congestion of the brain." Dr. Gooch united with a profound knowledge of every branch of his profession great professional tact, which enabled him to discover with uncommon nicety, the legitimate causes of morbid action. Very few works communicate so much sound practical information as Dr. Gooch's last work on "Diseases of Females."

In the essay above alluded to, Dr. Gooch has endeavoured to prove that many of those diseases commonly attributed to cerebral congestion, arise from a deficiency of nervous power, and require for their removal not depletion but support. Consequently bleeding tends greatly to aggravate the affection and hasten the fatal tendency.

That great sanguineous depletion is not only injurious to young children, but very frequently the cause of an accumulation of water in the head, cannot be for a moment questioned. This *fact* is of great importance to the profession, for it is only from facts that we are enabled to deduce right conclusions.

By a series of experiments made by Drs. Saunders and Seeds of Edinburgh, they have found more or less of serous effusion within the brains of animals who have been bled to death, either from arteries or veins; and Dr. Kelly says, "Were it possible by profuse hemorrhages, to drain the brain of a sensible portion of its red blood, the place of this spoliation would be supplied by extra and intra vascular serum, and that *watery effusion within the head is a constant concomitant, or consequence, of great sanguineous depletion.*"* I am indebted for the account of the following cases to a medical friend, Mr. Simmons, and as they prove the correctness of Dr. Saunders' experiment, I shall briefly narrate them.

CASE 1.—Susan A. ætat. 5, of a delicate constitution, laboured under the following symptoms:—Great languor, unwillingness to move her head, to which she was constantly applying her hands, as if in great pain; the vision was indistinct, the pulse quick, but feeble, the bowels irregular. The medical gentlemen, judging from the symptoms that inflammatory action was going on, applied eight leeches to the temples, and ordered her bowels to be emptied by a cathartic composed of calomel and jalap. The following day the child was worse, the leeches having failed to relieve the supposed inflammatory symptoms. On the second day four more leeches were applied to the temples, and a blister to the nape of the neck, notwithstanding which, the child gradually grew worse, and on the sixth day died. Towards the latter part of her illness, she showed every indication of the existence of water in the head. On the post-mortem examination, a large quantity of serum was found in the ventricles. There was no appearance in the brain which would lead a person to believe that inflammation had at all existed previous to the child's death. The vessels of the brain were found unusually empty.†

CASE 2. This case, which was attended by the same medical man, resembled the above, both as regards the symptoms and the results, with the exception of a less quantity of serum being discovered after death in the brain.

* Pathology of the Brain.

† This accords exactly with what Dr. M. Hall represents himself to have seen in the examination of those who have died under similar circumstances.—*On loss of Blood, Med. Essays.*