but the head was lower down at each pain, the cervix being forcibly stretched over it.

At this period my friend, Dr. Samuel Edwards, saw her with me; there was some tenderness of the abdomen; skin was hot; pulse sharp and full, and about 100. At his suggestion she was again bled, and put under complete nausea with tartar emetic; afterwards a full dose of opium, and another emollient enema were given; the os uteri and cervix were freely smeared with extract of belladonna. The pulse fell to 90; the pains became suspended for many hours, during which time she occasionally slept, and felt comfortable and easy.

On Monday morning, June 6th, the pains (forcibly expulsive) again recurred. An examination, however, shewed no other change in the state of the os uteri, than that it was a little thinner; it was not more dilated, and still felt almost like a bony ring, and resisted, as it had all along done, any attempt at artificial dilatation. Towards night considerable constitutional disturbance set in; the pulse was 110; skin dry and hot; tongue rather brown; the abdomen tender; vagina hot and dry; and the system generally irritable.

It must be admitted that the state of the patient at this time was one calculated to excite considerable anxiety. She had been in labour for five days, but the state of the os uteri opposed completely, as it did in the first day of the labour, the possibility of the birth of the child. The usual remedies sedulously applied, and anxiously watched, had exercised no influence in overcoming the difficulty; and though till this time the constitutional symptoms had caused no uneasiness, still now they began to show themselves in such a form as to urge the necessity of the adoption of some measure by which the labour might be terminated; the pains too, were violent and forcing, and the head was so forcibly pressed against the thin and widely-stretched cervix, that I dreaded with each pain, some fearful laceration. At this time the child was living; but even had it been dead, to have practised embryotomy through such an undilated and undilatable os uteri would have been as difficult to the operator as dangerous to the mother.

It was in this state that Dr. Edwards proposed an incision of the edge of the os uteri, and though my own experience taught me nothing of the practice, my confidence in his judgment removed any doubts I may have entertained of its desirableness. The operation was performed in the manner detailed by Dr. Lever, in a similar case published by him. The knife used was a probe-pointed bistoury, and the two incisions were made each side the mouth of the womb. The patient complained of no pain; some bleeding followed the division. In two hours the constitutional symptoms were materially relieved; the pulse was at 90, and the skin cool; abdomen less tender, and irritability calmed.

An examination four hours after the operation showed but little change in the state of the os, but after a time it began slowly but certainly to dilate, and at eleven o'clock in the forenoon of Tuesday, (the seventh day of labour,) its disc was rather larger than half-a-crown. The corrugated state of the scalp, the

disappearance of the caput succedaneum, and the still more conclusive evidence afforded by the stethoscope, showed the death of the child, and we determined upon performing craniotomy. The os continued gradually to yield to the diminished bulk of the head, which each pain forced against it, and the remainder of the labour went on steadily progressing, the pains continuing regular and patient comfortable, till eleven o'clock p. m., when she gave birth to a female child of the average size. The placenta was expelled in about twenty minutes. No one single unfavourable symptom followed to interfere with her speedy and perfect recovery.

40, St. James's Square, Bath.

CASES FROM PRIVATE PRACTICE.

By JOHN RICHARD WARDELL, M.D., Edin.;

Late President of the Royal Physical and Hunterian Medical Societies, Assistant Pathologist in the Royal Infirmary, Edinburgh, &c. &c.

(Continued from page 661.)

The time intervening between the swallowing of the poison and its effects becoming apparent has been known to vary considerably, and very much depends upon whether a solid or a liquid have been taken, the former of course requiring a longer period than the latter, that is until the drug becomes reduced to a solvent state. Poisoning by laudanum is always more speedy than by opium. In this case it is seen the symptoms supervened in the course of a few minutes, which was unusually quick; in an instance which is now recollected that occurred in Edinburgh, the effect came on in from twenty minutes to half an hour. It is often from half an hour to an hour before very marked indications are present.

The period at which death generally takes place, differs under apparently like circumstances, but is most frequently from ten to twelve hours; in the case referred to in the northern metropolis, the patient, a woman, died in about four hours and a half, and there is every reason to suppose that the instance which has called forth these imperfect remarks, inferring from the fearful degree of collapse into which she was thrown, would, had not the proper expedients been had recourse to, have perished in a shorter time still. The poison always kills the young with more rapidity than the adult, owing to the greater sensibility of the sensorial functions, and the more speedy and grave manner in which a return is made upon the vital organs.

Regarding the quantity requisite to destroy life, so far as my own researches have discovered from the various authorities on this subject, the dose taken by this girl, and by which there is every reason to suppose she would have been killed, if she had been left to the effects of the poison, is the smallest quantity to be followed by such grave results which I can find recorded. Certainly not more than one hundred drops had

been taken. The mistress of the house had the half-ounce vial in her possession, and, as stated in the case, not quite one half had disappeared; and when it is considered that a few drops had been used by herself for the tooth-ache, this would certainly be the utmost quantity. On calling for the bottle at the next visit, she had unfortunately destroyed it, which is the reason that the portion taken is not now exactly mentioned. "The smallest fatal dose of the tincture in an adult which I have found recorded," says Mr. Taylor, "is two drachms. This case is reported by Mr. Skae, in the *Edinburgh Medical and Surgical Journal*, for July, 1840. The patient was a robust man, aged fifty-six. He swallowed the tincture at ten in the evening, and died under the usual symptoms on the following morning, the case thus lasting only twelve hours."*

There are certain idiosyncracies which it is impossible for human wisdom to foretel, where death is produced with that which to another would be but an innocuous, or even an effectless dose; for instance, in the example of Martha C——, mentioned in the remarks on the two cases of spasma glottidis. That patient under spasmodic disease, took with impunity, or indeed without producing much impression of any description, a quantity of opiates under which this girl would inevitably have perished.

In this case, where vomiting supervened so immediately after the poison had been swallowed, the amount retained, and which was followed by such grave consequences, must needs have been very small indeed, and when reflected upon, in a medico-legal point of view, becomes of some interest. No other bottle could be found containing poison; and from enquiries made at the shops, it was pretty evident that she had not procured more than that in the aforesaid half-ounce vial; besides, in her subsequent confession, all other parts of her story were found to be correct. She stated that she had placed the vial in a glass on the shelf in the bar,—there the bottle was discovered; that she had taken it in rum,—the odour of that spirit had previously been distinctly recognized; other unimportant details were also substantiated, it is therefore fair to infer that the whole of her statements were true, and thus the conclusion, with regard to the quantity swallowed, is a correct one. There would have been no utility in, nor likelihood of, her telling one part of her tale truly, and the other false, and especially regarding to her, an unimportant particular. People when they equivocate, and speciously depose evidence, always have some ulterior object in view,—some point to be gained: here there could be none.

It may not perhaps here be considered out of place to give a few particulars relative to the case above alluded to, and that occurred in the north. It was in the person of a plethoric young woman, of apparently

five or six and twenty years of age. When brought into the waiting room of the hospital, she was deeply comatose, and though there were then no proofs beyond the symptoms, it was evident she was in a state of poisoning. It appeared from subsequent inquiries that she had gone into a dram-shop, called for some whisky, and unobservedly added the fatal potion. In no great length of time she dropped into a deep sleep, and then helplessly fell from her seat. The pupils were contracted, face livid, pulse slow, skin cool, breathing laborious and somewhat stertorous. On raising an arm or a leg it fell listlessly into its former position, in all the passiveness of unconscious prostration. Without loss of time I introduced the stomach-pump, and threw in most of a quart of tepid water, which was immediately pumped out again, and thus the process was repeated to the third time, by which means the organ was thoroughly laved out, and such noxious matters as remained extracted. She was then placed in a warmed bed, (being too much prostrated to be walked about,) and for three hours I tried every remedy that might be deemed of service, but without avail, as she died, as before stated, in about four hours and a half after having taken the mortal draught.

When making an examination of the body, I recollect that Dr. Craigie was standing by me in the pathological theatre, and he observed to me before removing the viscera, that but seldom were the morbid appearances in these cases of real importance, and it often happened that little or no diseased changes were manifest, at least such as seemed fully to account for the fatal termination. Dr. Craigie had witnessed the autopsies of many cases of poisoning by opiates, and such was the result of what he had noticed.

On removing the calvarium considerable vascular turgidity was most obviously apparent, the superficial vessels being dark, tortuous, and distended with venoid-looking blood. Exposing the centrum ovale, numerous bloody puncta were demonstrated, and in fine, the whole encephalic mass was considerably engorged. There was not much serum infiltrated into the ventricular cavities, which probably was dependent upon the short period in which death had been induced; in cases where they linger on from twelve to twenty hours, serous exudation is more commonly observed. The lungs were quite anormal in their characteristics, being intensely surcharged with dark venoid blood, and the right ventricle of the heart was loaded with a gory semifluid mass. The stomach presented no traces whatever of disease.

These are, I believe, the most frequent morbid appearances, and sometimes sanguineous extravasation is found, resulting, of course, from the encephalic vascular obstruction which is induced. "The principal morbid appearances," says Dr. Traill, "are great turgescence of the vessels of the brain, and sometimes serous effusion between its membranes, or in its ventricles; but sometimes no morbid appearance can be detected in

* Taylor's "Manual of Medical Jurisprudence," page 221.

the head; the lungs are gorged with blood; the stomach rarely appears inflamed; the blood is found fluid in the heart, and the body runs rapidly to decay."* "The stomach and intestines," says Mr. A. S. Taylor, "present no unnatural changes. There is greater or less fulness of the cerebral vessels, but even this is often so slight as to escape notice unless attention be particularly directed to the brain."† Again, that author says, "In a case which proved fatal in fifteen hours, examined at Guy's Hospital, a few years since, the vessels of the head were found unusually turgid throughout; on the surface of the anterior part of the left hemisphere there was an ecchymosis, apparently produced by the effusion of a few drops of blood; there were numerous bloody points on the cut surface of the brain; there was no serum collected in the ventricles; the stomach was quite healthy. This may be taken as a fair example of the *post-mortem* appearances in poisoning by opium."‡

Comparing the accounts given by these authors, as to the lesions discoverable in poisoning by narcotics, with the particulars respecting the inspection made by myself, the reader at once perceives that they very much resemble each other, and doubtless the conclusions arrived at by these two eminent medico-legalists, are mainly right, and as a general view, are in accordance with facts. It seems rather surprising that the latter should have passed over a condition which is perhaps quite as often present as the vascularity of the brain,—viz., the pulmonary engorgement which is there so frequently detected. Dr. Traill very properly notices this lesion in his enumeration of the chief appearances.

Returning to the case of Ann H——, so sudden was the operation of the poison, that when I saw her, certainly not more than half an hour afterwards, she was so prostrated that it would have been quite impossible to make her walk about; and Mr. Cole, who saw the patient a few minutes before, affirmed the same, on which account the remedial measure of constantly keeping the body in action was not attempted. The line of treatment, it will be seen, was such as is generally had recourse to in these instances, consisting in keeping up, as much as possible, the circulation, and never allowing the patient to sink into repose. For some time the efforts threatened to be inoperative, but ultimately the lividity became less apparent, the surface warmer, the countenance more natural, when incoherent murmurs were elicited, and at the expiration of two or three hours she was considered beyond danger.

As all rational systems of treatment should as much as possible be founded upon the observation of, and the inferences deduced from, demonstrative facts, a review of the morbid appearances discovered in the case which occurred in the north, may perhaps tend to

confirm us in our decision in what such most properly consist, and especially if some of those late physiological discoveries which have been made are at the same time remembered. If we are to regard the nervous system as having three distinct functions, or as being divisible into three other systems,—the vital, sensorial, and muscular, properly so called,—we can then more correctly account for the manner in which death is proximately induced, and decide better as to the way in which the fatal termination is most likely to be averted. The sensorial functions being affected, whatever impressions are made upon these, are in an exact ratio to the sum of such impressions transmitted to the other two functions,—viz., the muscular and vital; when, therefore, from whatever cause, the sensorium is rendered unequal to the due exercise of its functions, as by a direct loss of sensorial power, which an agent like the one now spoken of is capable of producing, the two other functions are not efficiently performed—are carried on anomalously, and their action, through such morbid impression, deteriorated by the agent in question, may be entirely suspended, and of course, death ensue. Eminent physiologists in this and other countries have shewn that respiration is caused by, and under the immediate influence of, three distinct functions,—the sensorial, vital, and muscular functions: that it is a compound and voluntary action. Now, when the sensorium is affected, sensibility diminished or destroyed, the function of respiration becomes commensurately disordered or wholly ceases, because this action cannot be carried on without the stimulus of the sensorial functions, the respiratory muscles otherwise cease to act, and the vital functions, properly so called, also cease. Respiration being a voluntary act, the loss of sensation is also followed by the loss of pain, and when the sensation of pain no longer obtains in our bodies, the respiratory muscles, as said, no longer are urged to their natural exercise; hence congestion in the vital organs, and if continued, death. The brain, spinal marrow, and lungs especially, become overloaded, and thus they then also superadd to the deleterious states already noxiously existent in the system. The capillaries fail to normally propel their contents unless stimulated by arterial fluid, which appears from the philosophical investigations of M. le Gallois, Wilson Philip, and certain other experimentalists, to be their proper and only stimulus; therefore when the blood is no longer duly arterialized, congestion must result in the vital organs, from the cause now given. The nervous influence so necessary to all the vital processes of our bodies, and which is the proper and indispensable stimulant of the vital organs, properly so called, cannot be generated by, or eliminated from, the central organs of the nervous system, unless these organs are unaffected in their functions; but when they receive a morbid impression from the operation of some noxious agent, as a

* Traill's "Medical Jurisprudence," p. 132.

† Taylor's "Manual," p. 43.

‡ *Ibid*, p. 220.

narcotic poison for instance, the results as above enumerated ensue, and this agent, it is quite possible, may primarily act upon the vital and muscular, as we know it does upon the sensorial system.

From what has been advanced then, it is quite obvious that our endeavours should be zealously directed towards the maintenance of the sensorial functions, because we know of no antidote to this poison, and because the legitimate inferences of the views now stated, seem to demand such conclusions. The patient, whose body I examined in Edinburgh, undoubtedly died in part as from asphyxia, because it was related that the lungs were intensely congested, and there was præternatural vascularity and obstruction in the other vital organs. It has been ascertained by certain experimentalists, both in this and other countries, that the nervous influence is, in all its appreciable qualities, identical with, and its phenomena similar to, an agent in inanimate nature—viz., electricity; and that this agent, when applied to those organs whose office is the transmission of the nervous influence from the central organs of the nervous system, has the power of stimulating to their normal action those organs upon which life immediately depends, commonly called the vital organs, even when the sensorial functions are very evidently impaired; this, therefore, seems a proper remedial measure to be employed in cases like to this now particularly considered. A powerful narcotic, as observed, makes such a morbid impression upon the whole of the organs, constituting the nervous system, that their proper functions are gravely altered, and that stimulus—the nervous influence—is no longer secreted by, if such term may here be used, nor consequently transmitted for, the carrying on of the vital processes. If then, the heart and lungs can for a time be artificially carried on, or materially assisted by this agent from inanimate nature, that is, until the poison ceases to exert its pernicious effects, and the circulation thus continued, great hopes of recovery might thus be entertained, and doubtless some fatal terminations averted. The circulation might also be considerably assisted at the same time by means of artificial inspiration, and thus aiding the due aëration of the blood, when the capillaries would receive a greater quantity of their proper stimulus, and free the vital organs in their action. I am fully aware that both the former and the latter have been recommended, nor is there anything new in these remarks; the only design in making the previous desultory observations, is to shew that such remedial measures are founded more upon a rational basis than may be generally admitted, and if possible, where these cases occur, to strenuously recommend their adoption. In the Edinburgh hospital I remember an instance in which voltaic electricity was eminently serviceable. [Since this case was sent to the press, an excellent illustration that the correct-

ness of the above-maintained doctrine is borne out by practice, is given in the number of this Journal for November 3rd, and which is quoted from the *Lancet*. On referring to this example, which occurred in the Middlesex hospital, the reader must be further convinced of the beneficial effects which in these instances result from the agent in question.]

In conclusion, relative to the case now given, the following facts may be reiterated:—1st. The symptoms supervened with unwonted suddenness. 2ndly. The quantity of laudanum really retained must have been very inconsiderable, rendering it surprising that such fearful symptoms should follow so small a portion of the poison. 3rdly. The spirit in which it was taken did not appear to exert the retarding influence ascribed to it by Christison and others. Lastly. The pupils were dilated, one more so than the other, which is contrary to what is by far most usually the case,—viz., their contraction.

(To be continued.)

PROVINCIAL
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In our last number we introduced a proposal by Mr. Hunt, of Herne Bay, under the sanction of the Council of the Provincial Medical and Surgical Association, for an investigation into the "Medicinal Action and Effects of Arsenic." We now beg to invite the attention of the members of the Association to the inquiry proposed by Mr. Crompton, of Manchester. The notice to members in some late numbers of the Journal has already made the subject of this investigation—a Report on Burns and Scalds—intrusted by the Council to Mr. Crompton, sufficiently known. We proceed to insert a letter, addressed to the President, and the President of the Council of the Association, which contains a full exposition of the views of Mr. Crompton. This letter concludes with a series of questions, to which it is hoped that the members of the Association will severally return such answers as their knowledge and experience may enable them to do.