falls forward and droops, and the dorsal portion of the spine bends in a bow to accommodate these derangements. What follows will be seen in the following picture of one in the decline of life.

1. The head is bent, the neck approaches more and more towards the sternum, and the return of venous blood from the brain is thus hindered; therefore the individual becomes stupid, sleepy, and the memory is impaired, etc.

2. The chest falls in, and is contracted so that the base, the strongest part of the lungs, is compressed and prevented from taking its part in respiration, and the apices, or weakest portions, are chiefly used; the breathing is consequently impeded, and so old age is often attended by wheezing, coughing, expectoration, etc. The heart's action, too, is incommoded by the same contraction of the base of the thorax.

3. Without doing more than to allude to the increased weight brought to bear on the kidneys by the altered form, attention should be paid to what takes place in the pelvis. The natural consequence of this change of position is to render the pelvic basin more or less horizontal, instead of being oblique, and describing, as it should, with the spinal column, an angle of 140 degrees. The effect of this is to throw the weight of the abdominal viscera, etc., upon the bladder and rectum, and, what concerns us most, upon the uterus. In this way it is easy to explain the frequency of irritable bladder, piles, and prolapsus, which often make the latter period of human existence "but labour and sorrow".

Is it, however, presumptuous to ask if these evils can be averted? Can the decrepitude of old age be postponed? Dr. Protheroe Smith hoped experience would enable one to answer these questions in the affirmative.

Having referred at some length to the subject of positional treatment of uterine displacements, and having shown that prolapsus uteri is mainly caused by superincumbent pressure of the intestines, arising from the malposition of the plane of the pelvis, as proved by some experiments on the skeleton, Dr. Protheroe Smith pointed out the rational treatment for this deformity (*viz.*, loss of spino-pelvic curve, etc.) To render the utero-sacral ligaments tense, when relaxed by the abnormal position of the pelvis, he had now for some years employed an instrument (the pelvic band) to keep the pelvis in its position of health; and the striking success of such treatment had induced him to make known to the profession by what means he had happily attained this desirable end. He had collected particulars of about three hundred cases in which he and other members of the profession had used the pelvic band.

This instrument, unlike any before produced, firmly grasps the pelvis, of which it makes a fulcrum, so as to act upon the weight presented by the chest, through the medium of the levers at the back, which connect these two points. Having fully described in his lectures last year the pelvic band and its action, he would briefly mention the cases in which it had been found most successful. In many instances it had restored the normal lumbo-sacral bend and the spino-pelvic angle of 140 deg., when wanting, by tilting back the pelvis. It had removed spinal deformity, as lateral curvature, twisting of the pelvis, and irregular gait, pendulous and enlarged abdomen, and exomphalos, of which several extreme cases had been treated with as yet invariable success. Under its action he had records of its beneficial results in removing irritable bladder, various displacements of the womb, and the bearing down so frequently experienced, and in one instance incontinence of urine which had existed for seven years. In many cases, by supplying parietal support, when defective through loss of muscular power, constipation had yielded to it; abdominal hernia between the sheaths of the recti muscles had been greatly relieved; and in ordinary ruptures, from affording an immovable *point d'appui*, it had been found to act as an effectual truss. In some cases, during the last three months of utero-gestation, it had given great relief by affording parietal support and increased power for walking and other exertions. In one instance of unusually large abdomen in a primipara, it was found afterwards that the white lines (*lineæ albicantes*) which usually result after labour, under such conditions, were wholly wanting; so that, from the appearance of the skin, it was impossible to tell that she had ever borne a child. In many cases of delicate and contracted chest, it had so expanded it as to yield satisfactory evidence of its beneficial power, in the increased width of the thorax to the extent of several inches, as well as in the removal or relief of dyspnoea and chronic bronchitis. In one instance, a patient, who was supposed to be in consumption, and had hæmoptysis to the extent of half a pint of blood, was apparently well and strong after wearing the pelvic band for three years. It had been observed to relieve headaches when the head had been preternaturally bent on the chest. Indeed, so remarkable and satisfactory had been the effect of this instrument in many instances on the figure, and in restoring lost powers in the old and feeble, as also in the partially paralysed, that those employing the pelvic band had been often as much surprised as

pleased at the result. In one case it was employed in which there was total paralysis of the lower extremities from disease of the dorsal vertebrae, in a young lady aged 18, suffering from uterine displacement. She is now well; and she informed Dr. Protheroe Smith a short time since that she had recently walked fourteen miles without sustaining any fatigue. In another case of partial paralysis in an officer in the army, aged 49, who could scarcely support his own weight, and was generally deranged in health and depressed in spirits, in whom there was yielding backwards of the lumbar vertebrae, the pelvic band in about three months, the lecturer had been credibly informed by the patient's medical attendant, had relieved the general symptoms, and he was able to walk two or three miles, whereas before he could scarcely walk from his door to his carriage. Another common result of the use of the pelvic band is the addition to the height of from one to one and a half inches or more, by allowing of the expansion of the intra-vertebral substances, by which also the spinal nerves and cord are relieved of undue pressure and consequent irritation.

These instances of successful treatment were given with no boastful desire; on the contrary, notwithstanding the great boon it had proved to suffering humanity, and the extent and variety of the benefits gained, the lecturer would have shrunk from enumerating them, lest his statements should appear overdrawn, had he not felt that it would be culpable to withhold facts as, he believed, of such vital importance.

In conclusion, Dr. Protheroe Smith expressed a hope that the plan which he had suggested might at least be regarded as an additional means for remedying the distressing and frequent displacements which had formed the subject of his lectures; and he confidently looked to the profession to prove, by future experience, that the views he had advocated were able to stand the test of the axiom with which he commenced his lectures—*viz.*, "That it is a law of ethics, to which there is no exception, that a proposition is valueless in proportion as it deviates from truth, and can only legitimately become a rule of action when it has truth for its foundation."

ON PREMATURE RUPTURE OF THE MEMBRANES.

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AN illness of several months' duration has prevented me from the regular perusal of the BRITISH MEDICAL JOURNAL; but I have from time to time seen many of the communications on the subject of premature rupture of the membranes which followed the publication of a case by Mr. Bradley. Is such rupture compatible with any considerable prolongation of gestation? The question has been answered in the affirmative and in the negative, the latter strongly preponderating. Having been too ill to answer Mr. Bradley's courteous letter of inquiry on the subject previously to the publication of his paper, I may perhaps be privileged to return to it now, as it is certainly one that ought not to be left in a state of dubiety. Those cases where there exists an accumulation of extra-amniotic fluid, must be put aside. They have no positive bearing on the question, except as introducing an element of difficulty in the diagnosis of certain alleged instances of genuine rupture of the membranes. That such extra-amniotic accumulations do occasionally occur, is well known to all obstetricians; and my surprise is great that so many gentlemen have taken the pains to inform us of the fact. The question as to whether the true amniotic fluid may largely escape, and yet gestation be continued for any considerable time, is not one of opinion but of fact. No consideration of probabilities can materially affect it; and I submit, also, that no amount of negative experience can do more than increase the negative probabilities, while any authoritative statement of indisputable facts in the affirmative is conclusive. Such facts have occurred to me, and I believe that a careful search would elicit numerous others detailed by authors of much higher weight than myself. I turn to the only obstetrical work at the moment within my reach—Elliot's admirable *Obstetric Clinic**—and I find at page 179 a case of induction of premature labour where, after the rupture of the membranes, gestation continued for twelve days in spite of the constant use of the douche, sponge-tent, galvanism, catheter-introduction for fifteen hours, etc. Further on he mentions a case where the amniotic fluid dribbled for seven weeks; and at page 193 he states that he has occasionally met with this gradual discharge continuing for one, two, and three months, although he, of course, admits that it is a general law that uterine contractions supervene upon even the partial escape of the waters. Those who can persuade themselves that such an acute observer as Dr. Elliot could be deceived as to the phenomena which he has witnessed, will probably attach but little

* *Obstetric Clinic*. By George T. Elliot, jun. New York: 1868.

importance to my relation of facts; but, as sceptics of the kind must be rare, I proceed to narrate very briefly three cases bearing on the question at issue.

CASE I.—In 1856, I attended a lady in her seventh confinement. Labour formerly had been always quick and easy: so it was in this case up to the completion of the first stage. The os was well dilated, the membranes were ruptured, and the hairy scalp presented. There the matter ended, however. I had prophesied a speedy termination, and, not being then so well acquainted with the difference between meddling and muddling as I now hope I am, I waited till tired nature could endure no longer, and went home to bed. Next day, and the next, and the next, matters were unchanged. The patient got up and moved about her room, although it seemed as if one good expulsive pain might complete the process. Not until the tenth day was there any recurrence of pain, when a living child was born, before even a messenger could be despatched for me. Every other point was normal.

CASE II was of a precisely similar character. It occurred six years later, and the patient was, oddly enough, also in her seventh labour. Here I allowed matters to go on naturally with my eyes open, and as a matter of scientific curiosity. The result was absolutely similar, with the exception that in this case twelve days intervened between the full completion of the first stage and the sudden delivery of a living child. I have not met with another case where nature has attempted this freak, and if I did, I should probably not fall in with her dilatory proceedings.

CASE III was of quite a different kind. In June 1868, I was asked to see a lady in the end of the seventh month of her first pregnancy. She suffered so much from sickness and consequent exhaustion, that I felt compelled to recommend the induction of premature labour. This I endeavoured to bring on by the introduction of a catheter between the uterus and membranes. In attempting to do so, I accidentally ruptured the membranes a few inches above the os uteri. A very large quantity of fluid escaped, and the uterus, which had formerly been large for the period, collapsed and hardened. From that time the sickness ceased, and, though there was frequent dribbling of fluid, there were no other signs of labour. The patient went on for six weeks, and was then easily and rather quickly delivered of a living child, which, however, survived only a few hours. From its appearance, I fancied that the date of pregnancy had been somewhat miscalculated. From the time of the rupture of the membranes and cessation of sickness, I made no further attempt to follow up the induction of labour.

These three cases alone seem to me to settle positively and affirmatively the question at issue. They prove indisputably that, after the escape of all or nearly all the liquor amnii, and the actual uncovering of the lower segment of the foetus, labour may be delayed for at least twelve days without injury to mother or child. Can any one affirm that twelve days is the physiological limit? They also prove that the membranes may be even artificially ruptured, a very large quantity of fluid escape, and labour not supervene for six weeks, the phenomena being highly advantageous to the mother, and apparently not detrimental to the child. No one can dispute that the general law is otherwise, and the rarity of such exceptions as I have narrated only tends to further its proof.

THE EFFECTS OF A BELLADONNA PLASTER.

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BELLADONNA plasters are found in so many instances to be the means of affording relief in painful nervous affections of a local kind, that they are doubtless very largely employed. It will be interesting, then, to relate a case in which the poisonous effects of belladonna were fairly attributable to the use of one of these plasters.

On November 17th, 1871, I was called to see a lady who was taken very ill on her return from Bury, a town in the neighbourhood of Manchester. She was in a state of great confusion of mind, and appeared in many respects like a person under the effect of intoxicating liquor. Her speech was altered; and her ideas were so far distracted that she had the most strange fancies, imagining that the pictures on the walls were moving, and that a medallion profile which hung before her was continually opening its mouth. As much scarlet fever was prevailing in the neighbourhood, I naturally supposed that she was about to suffer from the same complaint, and gave my opinion accordingly, recommending that an able nurse should at once be procured. It was

stated that, when the lady reached Manchester, she felt so confused that she was scarcely able to direct the cabman where to drive her, and did not, in fact, know at what place she had arrived.

On visiting her the next morning, she complained of a soreness and dryness of the throat; and I noticed that the fauces were unnaturally red. A rash subsequently showed itself on the body; so that I concluded that she was suffering from the scarlet fever.

Still there were some circumstances, which have now escaped my recollection, that made me rather hesitate in my opinion; and I felt somewhat embarrassed in making up my mind as to the nature of the case. In the course of inquiry, however, it came out that the lady some little time previously had put a large belladonna plaster over her back, and that this plaster had occasioned so much irritation that she had been obliged to remove it. The removal, nevertheless, had not been effected without considerable abrasion of the cuticle. Notwithstanding this lacerated state of the skin, it appears that the plaster had been reapplied before her journey to Bury. A ray of light now seemed to dawn upon me, and I began to suspect that the case was one of belladonna-poisoning. In corroboration of this view, I found that the pupils of the eyes were inordinately dilated. I then directed that every trace of belladonna should be carefully removed from the skin.

I need not go into further details. Suffice it to say, that in a short time she began, though slowly, to recover, without the rash being followed by any desquamation of the cuticle, or any affection of the kidneys.

The daughter of my patient, an intelligent young lady, at my request drew up the following brief narrative.

"Dear Dr. Harrison,—My mother was comparatively well on the morning of Thursday, November 16th, and went out of town to visit some friends. She complained, it is true, during the day, of some giddiness; but this was not so great as to be noticed by her friends. On her return home, however, she became suddenly confused in her mind—so much so that she was unable to tell where she was on reaching Manchester, and with considerable difficulty was capable of directing a cabman to drive her home. On reaching home, her family noticed a complete change in her manner. Her speech was affected, and she was unable to walk steadily. She fancied the pictures on the walls were moving and speaking, and that people were passing in and out of the room in the most singular manner. She thought that she saw insects on the bed, and sometimes butterflies with beautiful wings. She afterwards complained of soreness and dryness of the throat; and a rash showed itself on the body. The delirium continued, with the exception of a lucid interval of about two hours, from Thursday until Saturday morning, when it suddenly disappeared. The rash also soon declined, together with the soreness of her throat. At this period, you began to suspect that a belladonna plaster, applied to an abraded surface, had been the cause of her malady; and, after its complete removal, the health slowly recovered. My mother being, however, of a delicate constitution, was a considerable time before she regained her usual health.

"Believe me, dear Dr. H., yours sincerely,

"JANE —."

In the *BRITISH MEDICAL JOURNAL* for Jan. 27th, 1872, there is a lecture on Disease of the Valves of the Heart by Dr. George Johnson, in which he remarks (p. 93): "A belladonna plaster worn over the heart often proves an efficient local anodyne. Belladonna, remember, cannot be applied to an *abraded surface* without risk of absorption and alarming symptoms of poisoning." In the *ASSOCIATION MEDICAL JOURNAL* (Sept. 16th, 1853, p. 818) will be found the report of a case in which all the symptoms of poisoning by belladonna arose from the application of a weak solution of atropia in water to the conjunctiva.

Some interesting cases of belladonna poisoning, from its external application, are related by Mr. Wm. F. Morgan in the *BRITISH MEDICAL JOURNAL* for December 1st, 1866. "I was sent for," he says, "in haste, a few years ago, to see a gentleman who was supposed to have impending some serious affection of the brain. I found him in a state of mental confusion bordering on delirium, with his lower extremities semi-paralysed, his pupils widely dilated, and vision much impaired. The pulse was very frequent; the skin hot and dry, and covered with a *scarlet rash*, which occasioned intolerable itching. The rash extended throughout the fauces and throat, accompanied with a feeling of great dryness and constriction and intense thirst. I was told he had been suffering from lumbago, and of his own accord applied a large belladonna plaster to his loins. This being removed (it was at least a foot square), he speedily recovered."

"The other case was the mother of a medical friend, who had some painful affection of her leg, for which he strapped it with belladonna plaster. He came to me soon after, in much alarm, requesting me to see his mother immediately, as he feared she was threatened with apoplexy. Her symptoms were those of belladonna poisoning, in a less