According to Virchow\(^1\) the heart after death has usually been found enlarged and dilated, especially the left ventricle, even when the valves were healthy. Occasionally the aorta and larger vessels have been found atheromatous. Clinically, hypertrophy of the heart belongs almost exclusively to an advanced stage of the disease. The exophthalmos depends upon changes in the adipose and cellular tissue of the orbit, which sometimes is found hypertrophied, but for the most part merely swollen from hyperemia. With regard to the pathology of the thyroid gland in the disease, there do not seem to be any constant appearances found. It may be almost normal, or simply hypertrophied, or hypertrophied with large varicose vessels, or contain hydatid cysts.

The starting point of the disease is still unknown to us. That it is not situated in any of the three organs which are so prominently affected, is evident from the fact that the part which any one of these plays may be almost or completely wanting. That it is a disease of the blood is a theory which—while it affords an easy and favourite mode of escape from such difficulties—is not here capable of satisfactory proof. Experience, at least, does not teach us that the sufferers from exophthalmic goitre labour usually (although they doubtless sometimes do) under anemia or chlorosis; nor are they commonly the subjects of inherited or acquired syphilis; nor, so far as we are aware, of a strumous habit, or of tuberculosis. There seems to be a good deal of evidence in favour of the origin of the disease being situated in the nervous apparatus, especially in the sympathetic system. Thus, Drs. Cruise and Robert McDonnel, in a case examined by them,\(^2\) found the inferior cervical sympathetic ganglia almost obliterated and supplanted by cellular and adipose tissue. Some foreign investigators, too, including Recklinghausen,\(^3\) have observed a somewhat similar condition, while one or two have seen the cervical ganglia enlarged, and resembling lymphatic glands "in the first stage of tuberculosis."

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**MIDWIFERY AND GYNAECOLOGY.**

61. *Fortnightly Hemorrhage during Pregnancy.*—Dr. S. Haynes read the following case of this before the Worcester Med. Soc. II. H., cxt. 36, states that in all her pregnancies there has been a hemorrhagic uterine discharge, more profuse than her menses (which are of usual quantity and quality), but of exactly the same nature, every fortnight up to the sixth month, whence, until labour, there has been no loss. Each flux is preceded by a few days’ very severe headache, and is accompanied by much dorsal pain and very bad bearing-down sensations. She never has any leucorrhoea. When not pregnant, she has regular monthly catamenia; an abundant discharge every fortnight is therefore her test of pregnancy; this recurs fortnightly for four or five months after each labour; the menses then become natural. She has had seven children: all carried to full time, and born alive and perfect. When she was pregnant with her first, the hemorrhage was so copious that her medical attendant told her the pregnancy could not go on. It was not more abundant then than it has always been since. Treatment, position, and rest, had no influence; so she now takes no extra precautions during her pregnancies. She does not lose much after her confinements, and there are no ordinary indications of hemorrhagic diathesis. She is a stout plethoric woman, who says she "makes blood" very quickly, and that her mother used to be often bled with benefit, and died from apoplexy. I attended her in her last confinement, when I did not find anything unnatural. She objects to any local examination.—*Brit. Med. Journ.*, Nov. 29, 1873.

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1 Die Krankheiten Geschwulste, B. III. p. 76.
2 Vide a paper by Dr. W. Moore, in Dub. Quart. Journ., Nov., 1865.
3 Deutsche Klinik, 1863.
62. Obstinate Vomiting of Pregnancy, cured by Enemata of Bromide of Potassium.—Dr. Girabetti has successfully treated the obstinate vomitings of pregnancy by enemata of bromide of potassium given in increasing doses; commencing with 6 grammes (about 92 grains) the first day, 8 grammes the second, and 10 grammes the third; after which the dose is lessened in proportion to the effect produced. In one case the vomitings were arrested by this treatment in three days.—La Tribune Médicale, 23 Nov. 1873, from Rev. Méd.

63. On the Hemorrhage that occurs during the Continuance of Pregnancy in Cases of Placenta Prævia.—Dr. J. Matthews Duncan, in an interesting article (Edin. Med. Journ., Nov. 1873), maintains that the hemorrhages during pregnancy are accidental, not necessary, and that their occurrence is favored by the extraordinary anatomical conditions existing in placenta prævia, as well as by other circumstances, some of which are known, as the increased pressure of the blood above what it would be were the placenta inserted high on the uterine walls.

I believe much harm has arisen from the custom of authors to treat unavoidable as quite distinct from accidental hemorrhage; whereas their whole pathology, though not identical, is very nearly so; and the study of them is made easier by so regarding them.

64. On the Spontaneous Separation of the Placenta when Prævia.—Dr. Matthews Duncan, in a paper read before the Obstetrical Society of London, Oct. 1, pointed out that during labour every portion of surface of the body of the uterus underwent contraction, and that it was probably to the same extent over the whole of it. But the lower part of the body of the uterus was greatly expanded during labour, and contraction could there be only in the meridional or longitudinal direction. The contraction of the uterus in early-labour did not separate the placenta, wherever it might be inserted, whether prævia or not. A small amount of the whole expansion of the cervix, or an early stage of it, when there could be very little contraction, was sufficient to detach partially the placenta. He arrived at the conclusion that the placenta when prævia was separated by expansion, not by shrinking or contraction of the uterus. At present it was universally held to be separated by uterine contraction. The paramount errors of authors, such as Simpson and Barnes, were in supposing that the placenta might be attached to the cervix even near the external os, which it never was, and in not rightly apprehending the behaviour of the cervix during labour. The process of detachment by expansion will go on till the internal os is dilated to a diameter of about four inches, and this may occupy a great part of the whole duration of the labour. Study of the shape of the lower uterine hemispheroid showed that a meridian leaves the vertex or centre of the internal os uteri in a direction nearly at right angles to the uterine axis; and that, after it has described an arc of one and a half or two inches, it becomes nearly parallel to it. At about two inches and a half from the vertex the diameter of the uterine cavity is four inches. There is no need for any considerable expansion beyond a diameter of four inches, which is reached at a meridional distance of two and a half inches from the centre of the internal os uteri. Expansion beyond this would produce very slight extension of uterine surface, and consequently slight detaching power, which would probably be counterbalanced by placental expansibility. Dr. Matthews Duncan pointed out that this was the measure of the spontaneously detaching area, and criticized the various other measurements that authors had made. He showed that Barnes's estimate of three to four inches from the os uteri must be far too great. The circle of latitude, two inches and a half from the vertex, marking this limit was the line of insertion of the placenta within which constituted placenta prævia. Complete detachment of the placenta was to be explained by a study of the production of a caul, and of those cases in which the placenta was perforated by the advancing foetus. Finally, Dr. Duncan called attention to the analogous detachment of the decidua around the internal os, which had been described by Dr. Hanssman, of Berlin.

Dr. Barnes expressly denied that he was open to the charge of committing
the error imputed to him by Dr. Duncan of stating that the placenta was ever attached to the os uteri externum. He had taken special pains to insist that the cervical canal had nothing to do with gestation. He had even sent to Dr. Duncan years ago a tracing of a drawing made by himself from a pregnant uterus, showing the separate cavity of the cervix.

Dr. Aveling believed the Society was much indebted to Dr. Matthews Duncan for his accurate and scientific description of the spontaneous separation of the placenta when praevia. We could not be too minutely particular on a subject of such importance, and he believed, with the author, that there were many illustrations to be found in our midwifery works which gave the student an erroneous view of the relative conditions of the body and cervix of the uterus during pregnancy and parturition.—Lancet, Oct. 18, 1873.

65. Anticipation of Post-partum Hemorrhage.—Dr. Ewing Whittle maintains (Brit. Med. Journ., Sept. 27, 1873) that post-partum hemorrhage may be diagnosed beforehand by the peculiar pains during parturition, and being diagnosed may be prevented. The peculiarity of these pains is that they are "strong and quick: they do not gradually culminate into a strong pain and subside again, but they are sharp, quick, and cease almost suddenly; and the intervals between the pains are long in proportion to the length of the pains. In an ordinary case, for one or two hours before the completion of labor, the intervals will average about three times the length of the pains; i.e., if the pains last each from fifty to sixty seconds, the intervals will average a little less than three minutes. Now, if the pains last each only from forty to fifty seconds, and are of the sharp character I have described, with intervals lasting five or six minutes, though the labour may proceed steadily and the head advance a little with every pain, you will be sure to have hemorrhage after delivery is completed, unless you anticipate it by altering the character of the pains, in making the pains longer and the intervals shorter. It is very easy to understand how this comes to be the case: the uterus is contracting sharply, and then becoming fully relaxed; after the child is born, a relaxation follows: one or two sharp pains expel the placenta with a gush of blood, and the uterus again relaxes, continuing the same tendency which existed before the delivery of the child."

In such cases Dr. W., as soon as the os is dilated, gives a full dose of ergot and if this does not improve the character of the pains at the end of an hour he repeats it. "In dealing with primipare, caution is required, first, not to administer ergot until the soft parts are pretty well dilated as well as the os uteri; and the drug should be administered in much smaller doses, as it sometimes acts with unusual energy in primipare. Generally, in about twenty minutes or half an hour after the ergot has been administered, the pains increase in length and frequency, and when the labour is over, the uterus maintains a good contraction. The ergot which I use is a liquid extract twice the strength of that of the Pharmacopeia, of which I give a teaspoonful when I think a full dose is indicated.

"I have pursued this practice now for more than twenty years. During this time I have attended 3750 labours, and among them I have had one case of post-partum hemorrhage; that case occurred about three o'clock one winter's morning, when I happened to have no ergot with me."

66. Case of Twins: one born at six weeks, the other at term.—Dr. Cairns communicated to the Obstetrical Society of Edinburgh the following case of this.

"A woman who had borne five children, and previously had never had an abortion, sent for me one night about 12½ P. M. Labour-pains were evident. The mammae were quite flaccid however, and no areola round the mammilla; 'she had altered' about six weeks previously. The urine, so far as I could judge, was quite normal. She had had no morning sickness, and felt no desire for any particular food, but simply complained of pain in the 'belly.'

"When I called on the following morning, I considered it to be my duty to make a vaginal examination. I did so, and found something protruding from the 'os.'"

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I immediately applied the dressing forceps, and removed what, on after-examination, turned out to be a fetus of about six weeks old.

Eight months after, I was called to the same patient, and delivered her of a fine healthy child.

Dr. Cairns said the case was of interest for two reasons. First, that it showed how one ovum might be thrown off at an early stage of pregnancy, while the other was retained till the full time. And, secondly, in a medico-legal point of view, it proved the difficulty of determining whether a child was legitimate or not, the husband being dead, and the wife having a live full-time child, after she had aborted.—*Edinburgh Med. Journ.*, July, 1873.

67. Digital Impression in the Cranium of a Fetus during Birth, producing Epileptiform Seizures, etc.—Dr. Matthews Duncan relates an instructive case of this. A lady who had married late in life, and whose first labour had been difficult, attended with extensive rupture of the perineum, on her second labour came under the care of Dr. D. "At the proper time labour came on, and advanced naturally and quickly till the head was arrested at the outlet of the bony pelvis. The vertex presented in the second position at the outlet, lying nearly transversely. The pains were powerful, and for about two hours did not move the head in the least from its position. Owing to the absence of perineal obstruction, the head was easily felt, and its condition examined. It was jammed in its position. Manipulation of it was easily effected; and I proceeded, in the absence of pains, to rectify its position by pressure on the left parietal bone in front of the parietal protuberance. The bone was felt to yield under the pressure, which had, however, some beneficial effect—the head rotating slightly, so as to bring the occipit more directly under the arch of the pubes. Repeated examination showed me at the time that a digital impression was produced and persisted; but for three days I took no further notice of it, not expecting any notable evil to arise from it. The child was born alive soon after the attempts at rectification, and did well. It is now alive, plump, and happy.

"On the third day after the child's birth, the monthly nurse attracted my attention to twitchings of the face and superior extremities. She had then noticed them for the first time; and for about three weeks they grew gradually worse, occurring frequently during night and day, but not greatly interfering with efficient sucking, and little with sleep. The nurse alleges that the spasms at first affected the right side only. After three weeks or thereabout, the twitchings were not so severe, but they continued distinctly till the child was six weeks old; they then gradually disappeared, and now the child, being four and a half months old, has only some occasional awkward movements of the upper limbs, as already said. Bromide of potassium was given irregularly, four grains being generally administered during the day. The irregularities in its administration led to the mother and nurse observing a coincidence of lessened severity and frequency of the fits and the regular use of the medicine, as well as the reverse. The child is now perfectly well.

"At the end of a fortnight after birth the impression had distinctly flattened out; and it rapidly became less and less marked till about six weeks after birth, when its previous site could no longer be made out."

Dr. D. remarks: "Many individual observations and the researches of Dr. Arthur Mitchell have shown that difficult labour, and especially operative interference, is occasionally the cause of insanity in various forms. Injuries of the physical frame of the child during labour may lead to permanent corporeal disabilities, as is well known; but it should not be forgotten that the soft and rapidly growing head of the child may be the subject of injury producing irreparable and awful results, even when the child is born alive and apparently in good health, without visible injury; and even although it may for many months appear to be in every way a proper child. The delicate brain may sustain irreparable damage even from the compression and shearing it undergoes, in what would be called a common moderately severe labour which terminates spontaneously. Paralysis, epilepsy, imbecility, insanity, may thus be produced; and there can be no doubt that more definite physical injury by instruments is still more likely to have such baneful consequences."

"It may, indeed, be difficult in many cases to bring these ulterior results in
surviving children home to their real cause; but the subject is still novel, and very much may be expected from continued careful investigation of the matter.

"It is plain that all these results to which we have referred subtract from the reputed success of operations and interferences; and that, in future, they cannot with propriety be neglected in forming judgments as to the value of them—inquiring in which the present race of obstetricians are warmly interested and actively engaged."—Brit. Med. Journ., October 18, 1873.

68. Injuries of the Fetus by the Accoucheur.—Dr. Cieslewicz, in an inaugural dissertation, has collected from literature and from the records of the hospital at Halle forty cases of fracture, fissure, contusions of nerves, lacerations of muscles, separation of epiphyses, etc., occurring to the fetus as the result of interference in labour. Among the cases, are two of rupture of the longitudinal sinus. In the first, the delivery was effected easily by the forceps; in the other, the child was born after a labour of twenty-four hours’ duration, without instrumental aid. In both cases, the middle and posterior cranial fossae were covered with a membranous layer of blood, which partly covered also the hemispheres. The hemorrhage was traced to openings in the superior longitudinal sinus. In one, there was a single small aperture; while in the other there were several of various sizes.—Brit. Med. Journ., Nov. 8, 1873, from Centralblatt fur die Medicin. Wissensch., July 12, 1873.

69. Spontaneous Reduction of an Inverted Uterus.—In our preceding No. (p. 574-5) will be found a case of this rare occurrence, communicated by Dr. Hunt, of Beloit, Wisconsin. Another case of the same has been recently recorded (Archiv für Gynäkologie, vol. v, part 1) by Dr. Spiegelberg. The subject of it was a pt. 40, in her twelfth labour, in whom inversion of the uterus followed the attempts of the midwife to hasten delivery by pulling on the body and umbilical cord of the child. Replacement of the organ was immediately attempted by the midwife; but, after a few fruitless trials, was given up. At the end of six weeks, a rather copious hemorrhage occurred; the uterus was found to be still inverted, and could not be replaced. Two and a half weeks afterwards, the patient came into hospital. The inverted portion was closely embraced by the os uteri; the part which was not inverted measured scarcely one and a half centimetre (about three-fifths of an inch). As the woman had a severe attack of diarrhoea soon after her admission, a fortnight elapsed before a second examination was made, with a view to reduction. Now, however, the uterus was found to be completely reduced. According to the explanation offered by Schatz, with which Dr. Spiegelberg agrees, the uterus was raised by the continued lying in bed, the round and broad ligaments accommodating themselves to the new position; and, during the diarrheal evacuations, the vagina, with the vaginal portion of the uterus, was pressed down, while, the ligaments being unable to follow this movement, the fundus was raised.

70. Diagnosis of Subacute Ovaritis.—Dr. Tilt read a paper on this subject before the Obstetrical Society of London, Oct. 1, 1873. He suggested that the undervaluing of the part played by subacute ovaritis, as a source of disease in women, partly depended on the lamentable facility with which many practitioners, wherever there was pain in the ovarian region, inferred the existence of ovaritis, partly on account of the real difficulties of diagnosis, of which he gave some remarkable instances. He intimated that another reason might, however, be found in the difficulty of making examinations in young unmarried women. He had found that the most frequent sexual diseases during this period of life (between fifteen and twenty-five) were subacute ovaritis and inflammation of the neck of the womb. When the disorders of menstruation resisted good hygienic and medical treatment, he believed they were generally due to subacute ovaritis and cervicitis. The symptoms of cervicitis he described to be the habitual painless passing of a moderate amount of muco-purulent vaginal discharge, with habitual pain in the back; those of subacute ovaritis were constant dull pain deep in the ovarian region, much increased by firm pressure, and extending to the thigh and leg, mammary symptoms, disturbed menstruation, and hysterical phenomena. The positive sign of subacute ovaritis was
the finding of an ovoid, smooth, or slightly indented lump beside the womb, or in Douglass's pouch, pressure upon which, caused by the practitioner's finger, or during coitus, caused an overpowering and sickening sensation of pain and debility. It might be necessary to confirm this diagnosis by a rectal or recto-vaginal examination. The author expressly stated that it would sometimes occur to a practitioner making a first vaginal examination that, instead of finding any ovarian disease, as he expected, he would detect cervical disease, and in other cases subacute ovaritis would be found when the symptoms would lead him to expect cervical inflammation. He concluded by describing the line of conduct to be adopted by the surgeon for the management of each of the three classes, and sketched the treatment most likely to cure them.

Dr. Barnes thought that many ovarian symptoms had their origin in uterine displacement.

Dr. Wynn Williams concurred in Dr. Barnes's opinion. He had rarely met with a case of ovaritis without some uterine complication, unless caused by direct violence. He believed the uterine mischief preceded the ovarian, and his experience taught him that on the removal of the uterine ailment the ovarian soon subsided. The same remarks applied to the ovaries as to the testicles. Orchitis was seldom met with without previous inflammation of the urethra. He had frequently relieved ovarian symptoms by introducing a stem into the uterus, and he had under his care several unmarried females wearing stems and shields who could not be persuaded to have them removed, dreading a return of their sufferings.

Dr. J. J. Phillips said that his experience was that so-called subacute ovaritis was a very frequent cause of dysmenorrhoea, and he believed that this ovaritis frequently existed independently of any uterine flexion or peculiar conformation of the cervix uteri. It was very common to find a swollen, hyperaemic, probably inflamed ovary as the only evidence of disease in cases of dysmenorrhoea. The fact stated by Dr. Barnes, however, could not be controverted, that in a large class of cases dysmenorrhoea was due to uterine flexion or some uterine abnormality, and by appropriate treatment not only was the pain relieved, but also the congested state of the uterine appendages. A suitable selection of cases was, however, important, for some of the most troublesome cases of ovaritis had their origin in mechanical interference with the neck of the uterus by incision or dilatation.

71. New Operation for Contraction of the Vaginal Orifice of the Neck of the Uterus.—Dr. V. Saboya records (Revista Medico Rio de Janeiro, Aug. 10, 1873) the following case. Having found by experience that in incisions of the neck of the womb, whether performed with the bistoury, the scissors, or Greenhalgh's hysterotome, it was sometimes difficult to preserve the desired degree of dilatation even when the cone of sponge was introduced after the method of Dr. Marion Sims, and that further, when the incisions were extensive and deep, serious hemorrhage might occur, he was induced, in a recent case, to modify the operation in the following manner.

He was called to a well-formed lady aged 24, who had been married two years, had never conceived, but whose family were prolific, and her husband had children by a former wife. She menstruated regularly, though the discharge was scanty and accompanied with intense lumbar and pelvic pains, with prostration, nausea, and headache. She had a rather abundant leucorrhoeal discharge.

'On examining the uterus by the touch, Dr. S. found the vaginal part considerably elongated, having a length of about one and a half inch, conical in form, of normal consistence, and with the lips so placed that between them there was scarcely perceived a point in which the want of resistance showed that there was an external or vaginal orifice of the conical canal.

Combining the touch with pressure, he did not find any increase of volume in the organ, and the sound introduced with care penetrated three and a half inches without impediment, and without showing that there was any uterine deviation.

On using the speculum of Sims, he found the vagina of a well-defined red colour, bathed with a cream-like liquid, somewhat abundant, and of a sickening smell. The neck presented in the most prominent part a small circular orifice one-fifth of an inch in diameter, the circumference of which appeared slightly
excoriated. This orifice was full of a glutinous transparent mucus, that with difficulty could be drawn from the cervical opening, and which was renewed as fast as removed. The causes of sterility, Dr. S. remarks, are undoubtedly numerous, and the obstruction of the orifices of the cervical canal cannot be considered as an especial mechanical condition of this abnormal state; but he has observed, that when to this there is united considerable elongation of the neck, with an increased secretion of the glands of Naboth, or of the glutinous liquid that constantly obliterates the cervical canal, barrenness infallibly occurs; and thus, while the spermatozoa encounter difficulty in entering the neck of the womb, the menstrual blood accumulates in the uterus, distending the organ, causing painful contractions, with indications of reflex phenomena in various organs. The pains radiate from the womb to the neighbouring parts.

In any event to promote, at least, the sanguineous flow during menstruation, and to impede the accumulation of the liquid secreted by the glandular follicles of the uterus, any means tending to destroy the structure of the external orifice should be seized upon.

To effect this object hysterotomy had disadvantages in the tendency to cicatrization at the angles of the incision, and it occurred to him that if there could be first formed on each side of the external orifice, and at a small distance from it, two fistulous tracts, which should start from that point, and extend to the cervical canal, whose walls should be covered again with a cicatrized membrane, and without any tendency ultimately to union, the tissues included between the two fistulous tracts, and the orifice at the outlet of the cervical canal, might be afterwards cut on each side, without apprehension that union would occur in the angles of the incision.

To establish these fistulous tracts he availed himself of a tubular needle armed with metallic thread, and carried it at the distance of one-fifth of an inch from the small cervical orifice, and made the point pass out at an equal distance on the other side of the cervical orifice. After the metallic thread passed out, he seized the extremity of it with nippers and withdrew immediately the tubular needle. He then made a loop on each side to confine the thread while the fistulous tracts might be formed; and then availed himself ultimately of them to promote a division of the tissues, which they embraced, without danger of any hemorrhage. Then, having passed the wire, he carried the nippers into the cervical canal, and, seizing the middle part of the same wire, brought it out and cut it, remaining thus on each side of the cervical canal. After the metallic thread had passed through the fistulous tracts, the ends of which were slightly twisted, and there left until the tracts where they had passed should take the character of fistulous tracts.

Though using Sims's speculum, and although the neck of the womb was very accessible and held by a small hook towards the vaginal opening, nevertheless the passage of the wire was not very easy, on account of the great curvature that the needle had to make to pass from one side to the other of the neck, at a small distance from the external orifice. There was only an insignificant hemorrhage, and the wires that ought to remain for the space of fifteen or twenty days, have not in one week produced any inconvenience.

In a note from the author, forwarded by Dr. J. MoF. Gaston, to whom we are indebted for the translation of this case, dated Rio de Janeiro, July 30, 1873, Dr. S. states:

"My anticipations were completely realized. Without the slightest accident, the two loops were retained a month, during which, every eight days, they were twisted a little, until finding that the walls of the canal through which they passed were so constituted as not to unite, these were removed, cutting at the same time the remaining tissues with a long and narrow bistoury guided by a director. I thus established the continuation of the fissure of the neck of the womb, this having an extension of half an inch.

"The operation was performed in February of the current year, and within a few days, having examined this lady, she informs us that she does not suffer any more from the troubles that formerly afflicted her, and that her menstruation comes regularly.

"I availed myself some two months ago of this same method of operating upon a woman that suffered from contraction of the neck of the womb, that had been operated upon by me some four years since by means of the in-
cision with the hysterotome of Greenhalgh, and in which, after some time, the contraction of the neck was reproduced in an aggravated form; and up to the present time the result promises to be favourable as in the first upon which I operated.”

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

72. Strychnia Poisoning cured by Atropia.—Mr. S. Buckley relates (Edin. Med. Journ., Sept. 1873) an interesting case of this in a woman aged 28, who had taken, at 4 P.M., strychnia, how much could not be ascertained, with a view to suicide. When brought to the Manchester Royal Infirmary, at 4.30 P.M., she was in a state of perfect opisthotonos, spasms painful and severe, and intervals short. The stomach was well washed out with the stomach-pump, and warmth applied to the body and feet. Chloroform was administered to relieve the pain of the spasms. As an antidote, 20 minims of liquor atropis, equal to ½ grain of atropia, were injected three times at intervals of ten minutes. “Under this treatment a semi-comatose condition supervened, and after each injection the spasms were observed to become milder in character. At this period the heart’s action was impetuous and irregular, the impulse extending over a large area; no bruit was heard; the pulse was 130, and fluttering in character. Respiration was hurried and slightly stertorous. The pupils were widely dilated; the eyes had a peculiar fixed and bright appearance; the face was flushed, and during the earlier paroxysms the risus sardonicus was well marked, but had not disappeared, the features being natural but immovably fixed. The patient appearing to be well under the influence of the atropia, it was given more cautiously and at longer intervals in doses of ¼ gr. The spasms, however, increased in severity whenever the injections were long omitted. Chloroform was also discontinued during the intervals, which now lasted about twenty minutes, and given only during the attacks, which had become much lessened in intensity, the opisthotonos having entirely disappeared. The last severe spasm was at 8.30, after which there appeared to be more co-ordination in the muscular movements. Slight spasms, however, came on if the patient was touched or moved in the least, and a rather severe one was induced about 9.30 by the nurse changing the hot-water bottle. At 12.30 A.M. she began to show signs of returning consciousness. The pulse was 90, full and regular; respirations easy, and 22 per minute. She was with difficulty roused, and answered questions loudly spoken in a vague and muttering manner. After a time she swallowed a cupful of hot strong coffee, deglutition appearing painful. She fell asleep at 1.30, and shortly after was left to the care of the nurse. At 9 A.M. she suffered no inconvenience, beyond a feeling of uneasiness about the throat. The day following she complained of stiffness and pains in the joints. The urine was loaded with lithates for three days, and then became clear. She left the hospital completely recovered from the effects of the poison.

“This case is interesting, in the first place, on account of the well-marked antagonizing effects of atropia over the tetanic spasms produced by strychnia; in the second, that the large doses of so poisonous an alkaloid produced no ill effects, it being remarkable that no less than ¼ grain of atropia (140 min. of the liquor atropii B. P.) was given during the case, and that ¼ of a grain is known to have proved fatal in a case of poisoning by atropia. That the favourable results now related were due to the atropia solely, was evident by the immediate diminution in the number, duration, and intensity of the spasms following each injection, gradually regaining their strength after the lapse of a certain interval, each interval becoming longer as the case progressed. Although the chloroform was almost continuously administered during the earlier paroxysms, the mitigation of the symptoms only showed itself upon the injection of the atropia.

“The state of the patient on admission being apparently hopeless to all who saw her, the atropia was boldly pushed, and might perhaps have been considered to an unjustifiable extent, had the case terminated fatally; but the effects in counteracting the symptoms being so marked, and seemingly within control, its continuance was deemed perfectly warrantable, and met with the happy result here detailed.”