mastic, and haemostatic virtues, have already been signalized, and I need not again refer to them here.

I am specially anxious to insist on the action turpentine possesses on the nervous system, by which it is rendered a powerful remedy in fevers of the adynamic type, in neuralgia, and not unlikely also in certain cerebral affections, including those of an inflammatory character; also on its antiseptic action, as evidenced by its remarkable influence on pulmonary gangrene and bronchial abscess. It appears to me as not improbable that pyæmia may be favourably influenced by turpentine, and that in this way its action in some cases of puerperal fever may be explained.

I am sanguine enough to believe that, in some cases of diphtheria and of putrid sore throat, we possess an available remedy in turpentine; and already I have seen it employed in the former, not, however, under circumstances which would justify me in drawing at the present time any decided conclusions from its use.

Part Second.

REVIEWS.

Lectures on Surgery. Parts III. and IV. By James Spence, F.R.S.E., etc. Edinburgh: A. and C. Black.

The third and fourth parts of Professor Spence’s Lectures on Surgery have been published, so that the work is complete; and it gives us much pleasure to state, now that the whole scope of the undertaking can be reviewed, that our early favourable impressions, from perusal of the first two parts, have been confirmed, and our anticipations of still more valuable subject-matter being found in the remainder of the work, have been more than realized.

Parts III. and IV. are devoted entirely to the consideration of special operations and regional surgery; and here the learned Professor is manifestly not only at home, but seeming to revel in the practical magnitude of his theme.

It may be safely said, that though he has not rendered himself especially distinguished by devising any startling novelties in surgical practice, he has selected all that were useful from the teeming literature of past and present times, and modified and adapted them so as to bring them to perfection. The reasons for making such changes have been thoughtfully and philosophically argued, and leave a strong impression on the mind that, by follow-
ing out the courses indicated, it will be best for the patient and the credit of the surgeon.

Where all is good, it is not difficult to select for special illustration some of the leading subjects so admirably treated by Professor Spence, and we would draw particular attention to his observations on tracheotomy in croup. We fancy no surgeon of the present day has had such extensive experience of this disease; and if he always acted on the rules for operating which he lays down in his book, he has been peculiarly fortunate in saving the lives of about a third of those who underwent the operation. To have saved thirty out of ninety subjected to tracheotomy for impending suffocation in diphtheria and croup, is a result of which Mr Spence may well be deemed worthy of congratulation; and it is evident, from what he tells us of the symptoms of gradual and certain asphyxia which demand the operation, that those thirty lives were snatched from an inevitable and most painful death.

Numerous methods for amputating at the shoulder-joint have been devised, and we propose quoting from Part III., page 800, the favourite and original method of Professor Spence, as it will be an excellent exemplification of the ingenuity, assisted by great anatomical knowledge, with which he modifies so as to bring to perfection various operations. Having seen the excellent stumps which resulted from this plan of procedure, we are the more disposed to speak in its favour. He says, "Supposing the right arm to be the subject of amputation. The arm being slightly abducted, and the head of the humerus rotated outwards, with a broad strong bistoury I cut down upon the inner aspect of the head of the humerus, immediately external to the coracoid process, and carry the incision down through the clavicular fibres of the deltoid and pectoralis major muscles, till I reach the humeral attachment of the latter muscle, which I divide. I then with a gentle curve carry my incision across and fairly through the lower fibres of the deltoid towards, but not through, the posterior border of the axilla. Unless the textures be much torn, I next mark out the line of the lower part of the inner section by carrying an incision, through the skin and fat only, from the point where my straight incision terminated, across the inside of the arm, to meet the incision at the outer part. This ensures accuracy in the line of union, but is not essential.

"The advantages I claim for this plan are,—1st. The fulness and better form of the stump left after the healing, as shown in the results. 2d. The posterior circumflex artery is not divided except in its small terminal branches in front; whereas, both in the large deltoid flap and the double-flap methods, the trunk of the vessel is divided in the early steps of the operation, and, retracting, often gives rise to embarrassing haemorrhage. In the case of the deltoid single-flap method, the vitality of the flap must be seriously compromised, as it depends chiefly on that vessel for its arterial supply. 3d. The great ease with which disarticulation can be accomplished."
There is one desideratum which we would like to see rectified in subsequent editions of this excellent book; for though the objection may seem trivial, it is a source of much annoyance and irritation, not to find any description of the plates except what is at the beginning or end of the parts. The letterpress indeed seems to treat the plates with marked indifference. Throughout our reading we have rarely come upon any special allusion to the figures represented. This may not be particularly aggravating to the advanced surgeon, but to the student, who really requires his memory to be sharpened by sights of the various important structures he is reading about, it must be very embarrassing. We would suggest that in future editions either the plates themselves should have footnotes, or that an extra explanatory page be inserted opposite them.

We would say, in conclusion, that the Lectures on Surgery by Professor Spence are the valuable contributions to a most important science and art of one who had a most extensive field for observation, and who has brought a natural shrewdness and wariness of perception, to act in conjunction with unrivalled anatomical knowledge, in the production of a complete work of sound surgical instruction.

---

The Cell Doctrine: Its History and Present State. For the Use of Students in Medicine and Dentistry. Also a Copious Bibliography of the Subject. By James Tyson, M.D., Lecturer on Microscopy in the University of Pennsylvania, and on Physiology in the Pennsylvania College of Dental Surgery, etc. With a coloured plate, and other Illustrations. Philadelphia: 1870.

This is a little book of 150 pages, of which 117 are taken up with a statement of the views of different microscopists on the cell theory, and the remainder with the bibliography of the subject. We do not know whether many more books or papers could be added, though some could be struck out. What is the use, for example, of swelling the list by the title of Cuvier's Leçons sur l'Anatomie Comparatíve, Paris, 1808? or Bichat's Anatomie Générale, Paris, 1801? Neither Cuvier nor Bichat expounded the cell theory in these famous works. One might just as well put in Lucretius de Rerum Natura, B.c. 60.

We have a very carefully prepared history of the growth of the cell theory, in which an attempt is made to discriminate the merits of Robert Brown, Schleiden, Schwann, and others.

The following passage may awaken some interest among our readers, referring to a man whose remarkable mental and moral endowments made so deep an impression on those who came in contact with him:—

"We think it proper, in a historical memoir of this kind, to refer to some severe critical remarks which appeared in the Edin-
Dr Tyson on the Cell Doctrine.

BRIGH Medical Journal of February and April 1869, in which Prof. Virchow is accused of appropriating the observations of Prof. Good sir as his own. That there are points in common will be recollected, and also that these are, first, the invariable origin of cells from previously existing cells; and, second, the division of the tissues into cell territories. Now, on the one hand, we deem that the dedication of Virchow's volume to Prof. Good sir is as handsome an accredit as could possibly be given for whatever of common there may be in the writings of the two authors; and, on the other hand, we have seen that Martin Barry is acknowledged even by Good sir to be the author of the 'first consistent account of the development of cells from a parent centre.' The idea of cell territories seems, however, to have originated with Good sir; nor do we believe, for the reason stated, that Virchow intended to usurp his prerogative. The merit of Virchow consists in his application by actual demonstration of the first of these points to so large a variety of physiological and pathological processes; to which is added original conception in the prominence given to the connective tissue corpuscle and the canalicular system, whatever may be the truth with regard to either.'

The author gives a clear and interesting account of the views of the German and French histologists, as of the English physicists like Huxley, Grove, and Tyndal. The author shows a great deal of reading, as well as a praiseworthy desire to do justice to the opinions he explains. The number of references is very large. The printer must have taken in a good stock of stars and daggers before he went to press.

Dr Tyson allows only ten pages to his own views, which in the main correspond with those of Dr Beale. He believes the cell to be the ultimate anatomical element of organization, and that it is composed of matter in two states. The one state is found in the centre, often grouped into an oval nucleus, and to it, with Dr Beale, he gives the name of germinal matter. This germinal matter may occur without taking the form of a nucleus, as in the "non-nucleated amoebe and protogones primordiales of Haeckel, the non-nucleated monads of Cienkowski, and in the leaf of Sphagnum, in such alge as Hydrodictyon, Vaucheria, and Caulerpa, and in young germinating ferns" (p. 115). This germinal matter is often structureless, but sometimes it is granular. The peripheral portion of the cell is called formed matter. It has not the property of multiplying itself. "It is, in fact, the portion of the cell in which alone function resides, since it is to the formed material of the muscle-cell that we owe the property of contractility; to the formed material of the nervous element that we are indebted for neurility; and to the formed material of the epithelial cell that we owe its protective qualities; while the secretion of all glands, whether they subserve ulterior purpose or not, is the formed material of the respective gland-cells." The reproductive power of the cell exists
in the germinal matter, the function in the formed material. Sometimes the formed material is structureless; sometimes, as in the striped sarcous matter of muscle, it has a well-marked structure. These two materials occur in varying proportion in different cells.

Dr Tyson does not wish to give up the old term, vital force. As Dr Alison used to say, "We know as much of vital forces as of any other." We talk of the forces of gravitation and electricity, nor can we prove that these are identical, and in the same way we have a right to speak of vitality. Prof. Huxley wants to call vital phenomena the properties of protoplasm, and the thoughts to which we give utterance, the expression of molecular changes in protoplasm. This is more easily assumed than proved. Huxley objects, that we have no more right to say that such changes take place through the guidance of a principle of vitality, any more than that the phenomena of water take place by aquosity. But then we can reduce the phenomena of water to certain properties shared in different degrees by the whole inanimate world. When we observe properties different from those of ordinary matter, we attribute them to a peculiar force, as long as we cannot resolve them into a general one. We say that sealing-wax when rubbed shows electrical forces or electricity, not cerous forces or cerosity. In the same way the living cell presents phenomena not shared by the inanimate world, and we have as much right to call these vital forces as Huxley has to call them molecular forces. When it is proved that all these are modifications of one force, that gravitation is but another form of electricity, and consciousness or reproduction due to the same force as gravitation or electricity, we shall perhaps adopt a more materialistic nomenclature. In the following passage this point is well stated:—"That there is something in this force or power, over and above the physical forces of nature, is most strikingly shown in the power, exhibited through its agency by germinal matter, of multiplying and producing new germinal matter out of pabulum unlike itself; for although a crystal may result from the re-arrangement of particles of a salt in solution, as sulphate of alumina, to an unlimited extent, there is no possibility, nor would any physicist contend, that it could produce crystals of its own composition out of carbonate of soda. Nor, as is justly contended by Dr Beale, should the cell be compared to a machine, unless that machine possess a power of producing new machines out of material unlike itself, and of endowing them with a similar power."

The Principles and Practice of Midwifery, with some of the Diseases of Women. By Alexander Milne, M.D., etc., etc. Livingstone, Edinburgh: 1871.

There have been many poets in the profession; but most, so far as we remember, have been exoteric. Among the esoteric medical
poets is the well-known Citoyen Sacombe, who in “an yii.” published “La Luciniade, Poëme en dix chants, sur l’Art des Accouche- mens.” Sacombe founded the anti-caesarean school of obstetrics, had a fierce quarrel with Dubois and Baudelocque, and altogether played a queer part in the political and scientific world of his day. He suffered imprisonment at the hands of Napoleon, got his freedom at the Restoration, and died in 1822, his works already almost forgotten.

Dr Milne’s work is remarkable for its literary peculiarities. He writes with an easy pen, intersperses his drier scientific matter with odd digressions, and also with snatches of poetry. Here, for instance, is a specimen of his verses, and also of a practice which is scarcely worthy of the intended honour:—

“If to the mother you the chlorate give,
The child more certainly will thrive and live.”

Here is a general principle of therapeutics:—

“Try first the mild, then the more potent plan;
Cure we may not, but oft appease we can.”

Here is the function of the Fallopian tube described in verse:—

“Like bird of rapine, ever on the watch,
Rarely it fails the ovulum to catch,
But if the little embryo it spills,
We have an extrauterine case, with its sad ills.”

Here he settles the great blood-letting question, in connexion with the treatment of puerperal peritonitis:—

“Our worthy sires bled rather fast,
And now we let the lancet rust;
But if to one extreme they ran,
Have we not to the other gone?”

We must rest satisfied with these quotations of our author’s poetry, and leave it to our readers to judge of their literary merits, having ourselves no skill in the poet’s art.

Dr Milne is evidently of the Edinburgh School, and we trust this will nowhere be held as to his discredit. Though this is his home, he dedicates his book to Scanzoni, and evinces, in a variety of places, some degree of acquaintance with the rich obstetric literature of Germany.

His book has a remarkable peculiarity, which is not convenient. It is his mixture of some of the diseases of women, or, in modern nomenclature, some parts of gynaecology, with obstetrics. This mixture appears very like confusion, for, in truth, the things do not amalgamate at all. Had he given all, or most of, the diseases of women, it would have been another matter.

We ardently wish that we could foresee a time when obstetrics might be taught in verse. The science must wait long before it can be set to music. There are too many discords, too many gaps, in the obstetrical scale at present. Obstetricians only waste time when
they try to write a Luciniade. Laborious, often painful and long-
continued observations, and then other means of philosophizing, are
the true occupation of those who wish to advance this study. Above
all things, they must not set out in search of practical results.
They must remember that it is necessary to know, before it is
possible satisfactorily to treat. Exactness of knowledge, then, must
precede satisfactoriness of treatment. And we may ask our
brethren, Where, in midwifery, can we even now say we have exact-
ess of knowledge? We are accumulating stores, however, and
Dr Milne has, in this work, made some contributions to them.

On the Pathology of Club-Foot and other Allied Affections. By
James Hardie, M.D., Surgeon to the Clinical Hospital, Man-
chester.

We have studied with much interest this suggestive essay, and
consider it to be a valuable addition to the pathology of Club-foot.

The author's observations are founded on the examination and
dissection of a curious malformation affecting both the upper and
lower extremities of an infant. Having described this case, and
referred to the theories which have been given to explain the cause
of congenital club-foot, Dr Hardie advances "arrest of development"
as the most probable source of such deformities. In order to explain
the author's use of this term, we quote the following passage:—

"By 'arrest of development,' I do not mean that the muscles and other struc-
tures on the contracted side of the joints have at some period ceased to grow,
and have remained of a lower grade of development, or have possibly undergone
a degeneration of structure. Dissection of the parts sufficiently disproves any such hypothesis. We find the muscles, ligaments, and surrounding tissue ex-
actly of the same structure as in the normal condition. The only difference
that can be perceived is that they are formed on a smaller scale than they should have been, and if, by the term 'arrest of development' some have understood
the former condition as existing, I can at once agree with Adams and others in
regarding it as a myth. But if, by the term, we signify only what every one
admits—structural shortening—and then go back and substitute one kind of
nervous influence for another as the cause of this,—the influence, namely, of some peculiar perversion of the excito-nutrient system of the mother for some pe-
culiar irritation of the nervous centres of the foetus, as is the supposition neces-
sary in the former theory,—then I see nothing in the anatomy of the parts nor
in the reasoning to warrant the complete rejection of this theory, which it has
of late years received."

The author supports his views by reference to the association of
club-foot with other deformities, to the occasional hereditary nature
of club-foot, and to what, in our opinion, is the most valuable, the
important investigations of Eschricht and Volckmann in regard to
the development of the foetus. In connexion with the practical
bearing of these observations on the treatment of club-foot, Dr
Hardie remarks:—
The bearing of this explanation of the cause of club-foot on its treatment is sufficiently obvious. Admitting its correctness, it is evident that not the muscles only, but the bones and ligaments are also involved in the abnormal condition from the first. Too much reliance, therefore, must not be placed on the efficiency of tenotomy. Surgeons believing in the muscles as the original cause of the mischief, and trusting too much to the relieving of the tension they exhibit, are sure of disappointment. We may infer, in a most intelligible manner, that tenotomy should only be regarded as a preliminary to treatment that has for its object the retaining of the joints in their normal position, for a period sufficiently long to allow of the bones and other structures growing into the shape that this encourages. In many cases this period must necessarily be very protracted, but considerable time may also often be saved by extending the use of the tenotome as much as possible to all the contracted tissues.

Chloroform Deaths. By W. W. Dawson, M.D., Surgeon to Cincinnati Hospital.

This little pamphlet, which contains the history of twelve hitherto unpublished cases of death from chloroform, is tolerably exhaustive of the subject, so far as it is yet known. It compares chloroform with other anaesthetics, and discusses the rate and cause of death, with the best modes of administration, and the best means of resuscitation. Quoting from an anonymous paper in the Richmond and Louisville Medical Journal, the author gives the following table, exhibiting the relative dangers from anaesthesia by chloroform, ether, etc., from the statistics of 208,893 cases:

| Anaesthetic           | Deaths | Administrations |
|-----------------------|--------|-----------------|
| Sulphuric ether       | 1      | 23,204          |
| Chloroform            | 1      | 2,723           |
| Mixed chloroform and ether | 1   | 6,588           |
| Bichloride of methylene | 1    | 7,000           |
| Nitrous oxide gas     |        | No deaths in 75,000 |

These startling figures he believes to be too favourable for ether and nitrous oxide, while he thinks they hardly sufficiently present the fatality of chloroform. We certainly agree with the first part of this statement, but we as certainly demur to the last. One firm alone (Messrs Duncan, Flockhart, and Co., of Edinburgh) manufacture 1700 fluid ounces of chloroform daily. Now, setting aside one half for external use—surely an ample allowance—and allowing two fluid ounces as an average individual dose, which we think is fair, taking dentistry at one end of the scale and midwifery at the other, then we have this one firm manufacturing 425 doses daily; and taking 300 days as a working year, which of course is below the reality, we have them making 127,500 doses annually; and taking only one death in 3000, which, according to Dr Dawson, is far below the actual fatality from chloroform, then we have the chloroform produced by this one firm alone responsible for no fewer than 42 deaths annually. But chloroform is produced by other manufacturers in
large quantities—80,000 lbs. annually in America alone; and though all chloroform deaths may not be recorded, yet, from the circumstances in which they usually happen, and their appalling character, but few can escape altogether unnoted; and yet, all told, do they amount to anything like 50 annually? It is quite true that Dr. Richardson tells us that certain hospitals lose 1 case out of 2633 cases; so much the worse for those hospitals, say we; how much the worse may be learned from the fact that he tells us, that in certain other hospitals the deaths during the first few years amounted to the mere nominal mortality of 1 in 17,000 administrations, but that during the last few years the mortality in the same hospitals had increased to 1 in 1250 administrations. Suppose, in drawing lottery tickets, 17,000 blanks were drawn to one prize, and afterwards one prize to every 1250 blanks, would the public be satisfied that all was fair, and had been properly managed? Now, suppose they discovered that the one who drew the tickets had a number of prizes in his coat-sleeve, would they not insist that, whether wilfully or not, he had latterly been dropping his prize tickets into the bag out of his sleeve, and thus had increased their number greatly beyond the original intentions of the holders of the lottery? Events are always dependent on the causes which produce them, and chance, or accident, is but another name for our ignorance of those causes. A particle of dust floats at hazard, as we say, and yet La Place has shown that the curve described by it is regulated with as much certainty as the orbits of the planets themselves; and nothing but wilful ignorance could ever induce the members of a profession, which, by skill and care, has reduced the deaths from ovariotomy to about 1 in 30, instead of an almost invariable fatality, to assume that chance, accident, or any similar inscrutable umbra, should be responsible for so fearful an increase of mortality from chloroform as from 1 in 17,000 to 1 in 1250.1

Demurring to the larger number of deaths as certainly far in excess of what ought to result from the careful administration of chloroform, we may add that, even of the mere nominal mortality of 1 in 17,000, it is at least probable that all was not due to chloroform, for we know that sudden deaths during, or immediately after, operations were by no means unknown before the days of chloroform; and although it is probably impossible now to collect adequate data to fix their probable frequency, yet some approximation may be

1 The feeling that there is something to blame is not lessened when we reflect that in the French Eastern campaign, chloroform was administered 30,000 times, or more, without an accident; that in the English Eastern campaign, there were but two deaths, in an unknown, but much larger, number of administrations; and that, during the late American war, no accident occurred in 22,000 administrations of good English chloroform; subsequently, however, when the same surgeons were supplied with chloroform made from methylated spirit, several accidents occurred, although the same care and skill were employed. Vide New York Medical Journal, April 1871, pp. 407, 408.
gained when we learn that during the first seven years after the introduction of chloroform, no fewer than five such deaths came under the immediate cognisance of Sir James Simpson himself.

It is somewhat remarkable that almost all the deaths from chloroform, so far as we know, have occurred when it was administered for some surgical operation, and that no deaths have been recorded as resulting from its legitimate use in midwifery. Yet the parturient state itself presents no insuperable obstacle to chloroform-poisoning, for cases are known in which women have been poisoned while in labour by chloroform administered to them by non-professional parties, and the great reason of its safety under ordinary circumstances would seem to be that we have, in the action of chloroform on the uterine pains, a most efficient test of the saturation of the patient's system; for, as the heart's action remains unaffected long after the suspension of the uterine pains by anaesthetics, and as the slightest interference with these pains is the signal for the withdrawal of the chloroform, we have thereby established an almost complete immunity from sudden death from chloroform during labour. Could we discover some similar and equally efficient physiological test which could be employed during operations, a great step would be made to securing the safe administration of chloroform. Crying out, not conscious speaking, but mere crying, might be tried as such a test, for consciousness we know to be abolished long before the reflex act of crying ceases—a rabbit continuing to cry when pinched after its cerebrum has been entirely removed. Safety to our patients would be cheaply purchased by a little more noise in our operating theatres, in which the desire to keep the patients quiet and motionless has only too often resulted in their eternal rest. And yet there might be risk even in this test; because, unfortunately, screaming is not confined merely to the borderland immediately beyond unconsciousness, and we know that many distressing deaths have occurred apparently from the patient not having been sufficiently anaesthetized, probably from reflex spasm of the heart, as was pointed out long ago by Mr Bickersteth. A very remarkable instance of this is related by Dr Dawson. The patient was a lady aged thirty-nine, the mother of eight or nine children, who had taken chloroform in all her labours, and in her first had been under its positive influence for twelve hours; she had also frequently taken it for the extraction of teeth; and yet at last she died in the act of getting a tooth extracted, while only partially under the influence of chloroform, of which she had only inhaled about one drachm.

In spite of the risk involved in the use of chloroform, its great potency, prompt action, and the ease with which anaesthesia can be kept up by its aid for hours, will always constitute it the great favourite with the majority of the profession; indeed, in these re-

1 Forty thousand such cases without a death have been recorded in London alone.
pects, it has no rival but sulphuric ether, to which there are many objections, while there is every reason to fear that, were it equally freely and carelessly administered as chloroform, the deaths from the one would not be much, if any, behind those of the other. In 1867, a death from ether occurred at Lyons, and on discussing this death at the Academy of Medicine there, it was found that in the short period—a few months—during which the medical men of Lyons had given up chloroform and employed ether, no fewer than seven deaths had occurred, while the same figure expressed the total number of deaths from chloroform in Paris during fourteen years. Our author relates several other cases of death from ether, and holds out no very flattering inducements to return to ether.

Nitrous oxide, of course, is only admissible for short operations, such as tooth extraction; but for these it seems to be by far the safest agent, though by no means perfectly innocuous, at least one death being already on record.

Mixtures of chloroform and ether are vaunted by some as more free from danger than chloroform alone, but as they are mere mechanical mixtures, it would seem to be more rational to give them separately, producing the anaesthesia by ether, and keeping it up by chloroform, if there is any safety in the use of two distinct anaesthetics, which seems at least doubtful.

The other anaesthetics have been comparatively but rarely tried, but the only death as yet recorded from the bichloride of methylene was a man of forty, and in vigorous health.

Dr. Dawson includes all deaths from chloroform under the three heads of sudden, gradual, and secondary. The first category comprises, of course, by far the larger proportion—those who have a fair pulse and steady respiration up to the very instant that both cease. The second includes those few cases in which the heart and lungs show feebleness of action, then cease to act and again resume, arrest and resumption of these vital functions alternating sometimes for minutes and sometimes for hours before the patient's death. While, as an example of what he terms secondary death from chloroform, he gives the case of a patient who, when roused from the complete anaesthesia, "at once resumed the vomiting which had been inaugurated by the first inhalation of the vapour, and which terminated her life on the sixth day;" this case being precisely one of those which would come under the category of chronic chloroform-poisoning, in which Casper includes all those who die apparently from the effects of chloroform after the lapse of hours, days, or weeks. As to the cause of death, the author recognises the heart as the organ most frequently smitten; in the vast majority of cases the heart is fatally paralyzed; but in some, of which he gives one remarkable instance, and mentions others, the heart seems stimulated to a fatal unrelenting contraction. In the case narrated the heart was empty, firmly contracted, and fatty; the patient (Bridget Henry) had gone easily over, and had been fully anaesthetized for
one minute and a half before she died; only 75 minims of chloroform were used.

The lungs are the organs next in frequency fatally impressed, the poison acting directly on the pneumogastric nerves, and paralyzing them. In these cases the respiration ceases primarily, the heart continuing its action for a limited time. This form of disturbance in a minor degree is not unfrequently observed and rallied from by artificial respiration. The stomach, in some few cases, seems to be fatally affected, vomiting and retching ceasing only with the life of the patient; this is a common enough form of derangement after the administration of chloroform, but it only very rarely proves fatal. Dr Dawson also refers to the falling back of the tongue, favoured by the supine posture, as a source of death from apnoea; nothing but the grossest carelessness could account for this, and such deaths must be extremely rare. He also mentions death from coma, from an over-dose; such a mode of death must also be rare, and actual death probably occurs from a combination of various causes. No instances are given either of this or the preceding form of chloroform-poisoning.

In answer to the inquiry, What can be done to prevent these deaths? the author goes on to show that, from so many chloroform post-mortems having revealed fatty degeneration of the cardiac muscle, all authors on the subject exclude persons with a fatty heart, nevertheless, he adds, practitioners give them chloroform. For who can diagnose a fatty heart? Bridget Henry was plump, and had fat in abundance; she had a regular pulse, of fair force and volume, and a normal cardiac impulse; yet the post-mortem showed a fatty heart, which had not even been suspected, though carefully looked for. Moreover, we have considerable doubts whether all the chloroform hearts, said to have been fatty, have been so in an actually morbid degree; anxiety to shield themselves from the charge of carelessness, even more perhaps than their desire to defend the use of the drug, has led those who have been unfortunate to seek an excuse for the death in pathological alterations. Such an excuse seems to us problematical in the extreme; hundreds of hearts far more fatty, far more diseased in every way than those of the few unfortunates, have borne with impunity a moderate and even a considerable infusion of chloroform vapour. For the relief of cardiac pain, so common in heart disease, especially in aortic regurgitation, the inhalation of chloroform is a readily available form of relief, preferred by some to the nitrate of amyl or the subcutaneous injection of morphia, and it is not found to be a bit more dangerous or injurious than they are. In cardiac asthma, chloroform often rallies the apparently dying patient; and in the last case of angina pectoris we have seen, the only relief from pain the patient had for weeks before her death was got from chloroform inhalations, supplemented by hypodermic morphia injections. She died worn out at last at about eighty years of age, and at her
post-mortem the orifice of the middle coronary artery—there were three in her heart—was found almost entirely blocked up by atheromatous deposit, and her heart not only thin-walled and somewhat dilated, but of a pale, almost yellowish tint, soft, and thoroughly fatty—no heart could be more so; yet chloroform produced in her no dangerous symptoms, and, far from shortening her days, certainly prolonged them.

After a careful inquiry into all the cases in which chloroform is said to be contraindicated, our author concludes that we can only decline persons labouring under a dilated right heart, and those ill of delirium tremens; but a dilated right heart being probably quite as difficult to diagnose as a fatty one, practically only those labouring under delirium tremens are to be excluded from the benefits of chloroform. The author also very properly adds, that much may be done to secure the safety of the patient by placing him in the recumbent position, by never giving the chloroform except on an empty stomach, three to four hours after a meal, by attending to the temperature of the room, and the proper administration of the vapour. He approves of giving spirits before the administration of chloroform in every case, as it encourages the strong and strengthens the weak; but he does not approve of employing subcutaneous injections of morphia, as recommended by Claude Bernard, to be employed in those having feeble hearts and in the habitually intemperate; and he does so mainly because, on the faith of one or two fatal cases reported, he regards it as almost equally potent for evil with the chloroform. This argument is not likely to have much weight. Hypodermic injections of morphia have also been recommended as preventive of sickness; but unless from some homoeopathic principle, we cannot see how, as so used, morphia is perhaps even more frequently followed by sickness than chloroform. In regard to the manner in which chloroform should be administered, Dr Dawson remarks "that, although for the last few years the tendency has been to great dilution of the vapour by the means of apparatus, as essential to safety, yet the deaths seem to have been on the increase, and I doubt whether there is advantage in any of these appliances. It appears folly to talk about the positive safety of dilution when a vapour of from 3 to 4 per cent. kills, and kills in the same manner that chloroform pure, unmixed with air, does. Mrs Simmons, the second victim of chloroform (Cincinnati, 23d February 1848), who inhaled pure chloroform from Morton's inhaler, seems to have died in precisely the same way as did those who have perished under Snow's apparatus." The old-fashioned towel method, as employed in the United States army, has, he states, out of 80,000 administrations, been credited with only eight deaths. On the whole, however, the only point which he seems disposed thoroughly to insist on, is, that the anaesthesia should be produced slowly; he seems to think that all observers are agreed on this—most are; but the present Professor Simpson of Edinburgh, and Dr Murray of Newcastle, seem to think that the patient can scarcely
be brought too rapidly under the influence of chloroform; and our impression is that the late Sir James Simpson held similar views. In regard to the question, How far may the chloroform narcosis be carried?—by which he evidently means how long may it safely be kept up—he says that this is a most difficult question, as some die in an instant, while others sleep quietly for hours, and awake refreshed, and that it is not easy to get rid of the idea that there are some persons, and some states of the system, iminical to anaesthetics, else why should healthy, and comparatively healthy, persons die, and die under apparently the most careful and skilful administration? As to the means of resuscitation, the author declares artificial respiration to be the only reliable means; and in so saying he shuts out as hopeless all those whose hearts are primarily paralyzed. Of course he very wisely scouts the idea of stimulants applied to the face, skin, or rectum being useful where the knife and the cautery are unfelt; though such means may be useful when dangerous symptoms exhibit themselves while anaesthesia has scarcely commenced. As to the employment of electricity, he says that the statements of Onimus and Legros as to the employment of the continuous current, and the inutility of the interrupted current, are directly contradicted by the experiments of the Royal Medical and Chirurgical Society, and of Dr H. Culbertson, Ohio, who found the interrupted current perfectly efficient in restoring animation after anaesthetic suspension of the heart’s action; so that the question of interrupted versus continuous current would seem to be admod sub judice. In conclusion, if we learn nothing else from this pamphlet, we learn this, that the most careful observers have had their reasoning faculties so paralyzed by contact with this subject as to believe that a rise of mortality from 1 in 17,000 to 1 in 1250 in a matter which depends so much on care and skill, may yet be due to some inscrutable idiosyncrasy, revealed by no external symptoms, and frequently associated with the highest health. It is as reasonable to suppose that arsenic or prussic acid kill only when their use is coincident with an idiosyncrasy. And the first step in the right direction will be to ignore the compassionate verdicts of ignorant juries, which invariably declare the administration to have been faultless, and to state boldly, with Mr Lister, that “just as railway accidents are generally occasioned by culpable mismanagement, so death from chloroform is almost invariably due to faulty administration.” We have already, from the statistics of our great Scotch manufacturers, shown the high improbability that the deaths in Britain generally amount to so many as 1 to every 3000 administrations. And Dr Squibb, in the May number of the New York Medical Journal, corroborates this, for he says that, in the United States, he finds last year only 17 deaths reported to 208,000 adm-
istrations, or 1 in 11,764; these administrations he calculates from the 80,000 lbs. of chloroform annually manufactured, by taking one-third as used for inhalation, and one ounce and a half for a dose. Possibly enough his calculations, as well as our own, may be erroneous; but coupled with the statistics of Dr Richardson, already referred to, they go to confirm the deliberate statement of Mr Lister, just quoted,—a statement which we must however supplement by another, and that is, that we do not—and we are also certain that Mr Lister does not—by “faulty,” mean “culpable.”

Report of the Vaccination Committee—Illuminated. By William Hume-Rotheby.

We have read this Illuminated Report, and wishing to let the public and the author know our opinion of it, and, at the same time, to keep clear as far as possible of all disagreeeables, we think it wise merely to say that the author is an anti-vaccinator, and in regard to all such we quite agree with the following quotation from the Spectator:—“A rough remark in our last issue has brought down on our heads a storm of objurgations. We said that vaccination was decried by two or three scoundrels and a good many fools, whereupon we are asked whether we class Mr Newman among the scoundrels, or the late Dr Bedford among the fools; what we mean by publishing such falsehoods; why we are deluding the people; and all manner of amenities. The letters we could stand up against, but the deluge of tracts is too much; and so we give in, the more readily because the expression was inartistic. We beg, therefore, to declare that people who denounce vaccination in order to sell nostrums are not scoundrels, but only persons who risk human lives for gain; and that people who denounce vaccination from philanthropic motives are not fools, but only persons devoid of the faculty of weighing evidence.”

Patents and Patentees: Victoria. Vol. I., from 1854 to 1866. Vol. II., 1867. Vol. III., 1868.
Abstracts of Specification of Patents applied for from 1854 to 1866: Victoria. Ac to Ba.
Abstracts of English and Colonial Patent Specifications relating to the Preservation of Food, etc. By William Henry Archer, Registrar-General of Victoria. Melbourne: 1870.

These interesting records are of course insusceptible of being reviewed in the short space we could allow, and we merely mention their titles to say that they have been placed in the library of the Royal College of Physicians, where those interested may consult them.