Deduction.—The atrophic forms of Bright's disease are one-third less likely to be complicated with pulmonary tubercle than those where a rapid copious deposit of the peculiar matter takes place, and these latter are about on a par with those free from renal degeneration.

The explanation of this is, not that Bright's disease confers any mysterious immunity from Tuberculosis, but simply, that the second-class kidneys are found generally at the same junior periods which are subject to tubercle; while the third class, like all atrophies, abounds in the later periods, which are also the least liable to the said pulmonary disease.

With Vomicæ.—In the 32 cases of pulmonary tubercle in the second class, 20, or 62·5 per cent., had vomicæ.
In the 52 cases in the third class, 31, or 59·6 per cent., had vomicæ.
In the 417 cases without Bright's disease, 289, or 69·3 per cent., had vomicæ.

Deduction.—The liability of tubercle to run into vomicæ is probably somewhat diminished by Bright's disease.

Art. II.

On the Mortality arising from the Use of the Forceps in Tedious Labours.

By G. Hamilton, M.D., Falkirk.

About twenty years ago, immediately before settling in this locality, I received some practical instructions in the use of the forceps in protracted labours from Dr. Reid, of Edinburgh, who was known to the profession as an experienced and extremely dexterous manipulator in such cases; and I remember one of his remarks to have been, that, in a general practice, instrumental assistance might, he thought, be given with advantage much oftener than was then usual, especially when a certain amount of dexterity in the use of the forceps had been acquired. After entering upon the duties of the profession, I became convinced that Dr. Reid's views were correct; and upon talking over the subject with some intelligent medical friends, who had had a large amount of experience as accoucheurs, I found them much inclined to favour the same opinion. From that time until the present, my feeling has been, that similar views had gradually been gaining ground among intelligent general practitioners. Such being my impression, I was somewhat disappointed, in reading a review of Dr. Murphy's 'Principles and Practice of Midwifery,' in the 'British and Foreign Medico-Chirurgical Review' for last October, to find that a line of practice very different in this respect from what I have now for many years been accustomed to pursue, is still advocated. The fallacies of the statistics there employed to show the dangers connected with the use of the forceps, seem to me so obvious, and just views on the subject must possess so much interest for all who devote themselves to this branch of the profession, that I resolved to note the results of my own practice, in the last three hundred

labour-cases attended by me, in order that the two series might be compared. I now furnish the data for instituting a comparison; and I shall give the means also, not only of comparing the two as a whole statistically, but in such detail as will enable a judgment to be formed of the *circumstances under which the results have been obtained;* for it appears to me, that the gross want of attention which we see paid to this element in such inquiries as the present, often renders these statistics not only worthless, but dangerous.

The question to be discussed is presented to us in a condensed form at page 422 of the 'Review' referred to, the general conclusions deducible from the statistical facts collected by Dr. Murphy being—1st. That in the forceps deliveries occurring in 78,892 midwifery cases, in the hands of British, French, and German practitioners, nearly 1 in every 4 of the children was still-born. 2nd. That, in protracted labours, "so far as the children are concerned, the proportion still-born is very much the same, whether the forceps be employed or not; the difference, if any, being in favour of leaving these cases to nature." 3rd. "That the use of instruments is to be discountenanced in all but exceptional cases of this kind, in which the habit of the patient is too feeble to admit of her enduring a protracted labour without risk of exhaustion." 4th. That Ramsbotham employed the forceps once in 729 cases, Joseph Clarke once in 742, Collins once in 684, Kilian once in 78, Carus once in 14, Siebold once in 9; and "Dr. Murphy's recommendation is to employ them only in cases of positive arrest," unless dangerous constitutional symptoms are present.

For comparison with the above, I shall now give the results obtained, both to mother and child, in my own 300 cases; and I may mention, that the few deductions I shall afterwards make on this subject are supported by a similar practice extending to at least a thousand cases. I have limited myself to the former number only because my notes regarding the earlier cases are less complete than I could wish. The numbers thus presented for statistical comparison, though limited, possess the obvious advantage over those collected from a variety of sources and attended by a variety of parties, that they were all, from the commencement, under my own guidance, in the same locality, and were all subjected to similar treatment. The population among whom I practise is generally robust and healthy, and is composed partly of the upper and middle classes, and partly of the working agricultural and manufacturing classes.

1st. There were 305 children, 5 of the labours having yielded twins.

Of these 305 children, 8 were dead at birth; 5 being putrid when born, and 1 having been destroyed at the commencement of labour, in a case of placental presentation. Of the other 2, 1 almost certainly died before the labour began. The remaining case formed a breech-presentation, in which considerable force was required to deliver the head. Setting aside, therefore, as seems fair, the first 7 cases, the mortality to the children at birth, from the labour process, was 1 in 298.

2nd. In the 300 cases the forceps were used 41 times—rather less than 1 in 7; and all the children were born alive.

3rd. Of the whole children born alive, 10 died within about a week; 6 having been delivered naturally and easily, and 4 with forceps. Of the former, 2 were certain to have died, of the latter 1, from being premature.

We have thus, of children that might have lived, 4 in 256, or 1 in 64, dead within a week, where the labour was natural; and 3 in 41, or about 1 in 14, where the forceps were used.

4th. The forceps were applied chiefly in first labours, and in females who had a particular form of pelvis. Thus, 10 primiparæ were so delivered; and among 7 other females they were used 17 times during the period included in the enumeration. If these 27 are deducted, we have the forceps used, in the remainder, in 1 in 21.

5th. The labour-process proved fatal to 3 mothers, or to 1 in 100, in all. Of these, 1 had a natural labour, and the other 2 were delivered with forceps. The mortality to mothers was thus 1 in 259 where labour was natural, and about 1 in 20 where the forceps were used.

6th. In none of the cases did any local injury to the parts occur from the use of the forceps.

The mortality to the children, from the labour-process, we thus find to be, under the treatment pursued by me, 1 in 298; while Dr. Clay gives the mortality to the children in the Dublin Lying-in Hospital, in 156,100 cases, as 1 in 17; Dr. Simpson, in the Edinburgh Maternity Hospital, as 64 in 1417, or 1 in 22; Dr. Lawrence, of Montrose, in a practice probably similar to my own, as 1 in 46.* We find, also, that the difference of mortality where the forceps were used is very great. In the article referred to, in the 'British and Foreign Medico-Chir. Review,' it ranges about 1 in 4 or 5; and Professor Simpson, in the Report of the Edinburgh Maternity Hospital referred to, states that he lost 2 in 3; while, in my practice, 41 consecutive forceps cases occur without one death. At the same time, we see that the mortality to the mothers has been very small. In only a few of the tables which I have consulted have I found it so low as in my practice—viz. 1 per cent. There must certainly, therefore, have been something very different from what usually occurs, either in the circumstances of the subjects of these cases, in the treatment employed, or in both. Perhaps the last supposition is the correct one; for—1st. Instead of the crowded, debilitated, and often rickety populations of large towns, from which these statistics are mostly drawn, I have stated that in the district in which I practise, the population is generally robust and healthy, while at the same time no puerperal epidemic prevailed in the neighbourhood during the period in which the cases occurred. 2nd. How far the treatment I have employed influenced the results, may be judged of from the following short sketch of the plan I usually pursue, in ordinary cases of cranial presentation.

Labour is usually divided into three stages. For the sake of convenience, however, in speaking of my practice, I shall divide it into two portions, the first terminating when the os uteri has been dilated to about double the size of a crown-piece.

I have for many years been in the habit, as a general rule, to which, however, a few exceptions have occurred, of interfering very little with the first half of the labour process. In protracted cases of this kind, should the pains not be very urgent, I quietly allow nature to take its course, for twelve, twenty-four, or even more hours, contenting myself with, in some cases, giving an opiate, and especially abstaining from all forcing measures.

* Edinburgh Monthly Medical Journal, Nos. 23, 29, 32.

I have not found, in my practice, the rule laid down by the late Professor Hamilton, that the first stage of labour should not be allowed to exceed twelve or fourteen hours, so urgent as was insisted on by him. With the precautions, which I shall afterwards mention, I have generally found that little more than annoyance to the mother results from a considerable extension of this rule. And here, I may remark, that it is of great consequence to keep in view, that delay in the first half of labour is by no means so dangerous as in the latter half; and hence, that an important exception must be taken to Dr. Simpson's statistical deduction, of the ratio of mortality increasing with the length of labour. *Cœteris paribus,* I have little doubt this rule would be found correct, were a sufficient number of cases accurately collated; but where cases are compared, in some of which the first half of labour was protracted, and the second short, while in others the reverse of this obtained, then the rule, it appears to me, is not correct, and is apt to mislead.

With the second half of labour I think commences the great danger from delay, and I therefore endeavour to shorten it as much as possible. My first efforts, in order to accomplish this, are directed towards clearing the head of the uterus. For this purpose, I rupture the membranes, if this has not already occurred, and support the anterior and lateral portions of the os uteri with my two fore-fingers during the pains, which are thus undoubtedly considerably increased in force and efficiency, until the uterus slips over the head. Where this cannot be easily effected with two fingers, I occasionally introduce the whole hand into the vagina, and push up the uterus all round the head. In two or three of the forceps cases I have given, I did not succeed in this procedure, although the head had got pretty well down in the pelvis; and in these I applied the instruments within the neck of the uterus, using the two fore-fingers of my left hand for pressing the uterus upwards as the forceps brought the head down.

The uterus having slipped over the head, my attention is next directed to the precise position which the ear next the symphysis pubis then occupies in relation to it. If the ear is exactly opposite the symphysis, or slightly to either side in the wrong direction for making the turn into the hollow of the sacrum, I rarely put off much time before applying the forceps, provided little or no alteration is taking place *in the position of the ear.* Under these circumstances, I do not allow myself to be deceived by the advance, or rather elongation and only apparent advance, of the head. When the ear does not indicate a revolution of the head, I feel assured that the labour will be a tedious and hazardous one, and generally within an hour, an hour and a half, or two hours, according as the severity of the pains and the nature of the case may seem to require it, I finish the labour by applying the forceps. Where the broad transverse form of the pelvis is decided, as in flat or squat-made females, where the ear is on the *wrong side* of the symphysis, where the pains are severe, but no progress is made, where the mother is a primipara, or where the first half of labour has been tedious, I feel that it is generally useless, and always hazardous, to lose much time, and I usually interfere at an early period. It will be observed that seven females furnish seventeen cases of application of the forceps. Now, all these have the broad, flat pelvis; and it is a common circumstance for such patients, who are aware, from previous experience, of the

ease with which they can be relieved, to request that the forceps should be applied early, their own feelings making them sensible that no progress is taking place in the labour. In such cases, the pelves are often otherwise sufficiently roomy; and I have frequently little more to do than turn the head gently round, when the pains themselves effect the delivery in a few minutes. Some authors advise, when the head is placed transversely, that the fingers or hand should be used for the purpose of endeavouring to turn it round. In a very few such cases, since I have been in practice, where the pelves have been exceedingly large, or the children small, I have succeeded in doing this; but very generally I have found that no good can be effected with the mere fingers or hand in giving the head the proper turn, and I therefore never lose time in persevering in such attempts.

My endeavour, when using the forceps, always is, not simply to draw the head forwards, but also to make it perform the necessary revolution at the same time. Of the forty-one forceps deliveries which I have mentioned, speaking from recollection, I should say, that in at least eight-tenths the head was in the transverse position, or only slightly deviated from it. The rectification of this unfavourable position, therefore, I have found the most important point to which I have had to direct my attention in midwifery practice. When the child, even in an easy labour, is allowed to remain in this position above two hours, the danger to its life becomes imminent.

The remainder of the forceps cases was mostly of a more favourable character as to position, but required assistance, in consequence of the size of the child having been greater, or the pelvis less, than usual, or from the pains having been deficient in strength. The rapid deliveries which have been effected in this manner have almost removed, in my practice, one of the great sources of danger to the child, and of difficulty to the operator in applying the forceps. It is now several years since I have met with, among my own patients, a case of impaction from delay in delivery; and, except where there is a manifest disproportion between the size of the child and that of the pelvis, I seldom take this into account as one of the difficulties I have to contend with.

It has been stated, that this practice has yielded as its result 41 consecutive forceps deliveries without one still-born child; and, principally as a consequence of its application, there is presented the extraordinary circumstance, of no case of cranial presentation having been lost by the labour process in 298 consecutive births. Even this statement, however, does not give the full success which has attended it. I go back to my 318th labour, and 44th forceps case, before I meet with a still-born child; and again, even this does not give the risk to the child as a consequence of the application of the forceps, for the head, in the instance referred to, was so enormous that I never could get them fairly applied. I therefore turned the child, and tried, ineffectually, to deliver in this way. To accomplish delivery the perforator had to be used.

The necessary inference which must, I think, be drawn from what I have stated, is, not "that it may be laid down as a rule that nearly one-fourth of the children delivered by the forceps are lost," but rather, that, when applied in sufficient time, the increase in the amount of mortality caused by their use is very small indeed. I think it clearly follows

from the statements made, that it is, in such instances as have been referred to, the delay in the second half of labour, and not the application of the forceps, which is usually fatal to the child. A mere inspection of the figures showing the ratio of cases in which the forceps have been used will demonstrate that very different results might be expected. We see them used in the ratio of 1 in 120 by Dr. Lawrence, Montrose; 1 in 472 by Simpson; 1 in 617 by Collins; 1 in 553 by Ramsbotham,* with very nearly the same ratio of mortality—viz., 1 in 4 or 5; while I have used them in 1 in 7 with no mortality, in 43 cases. We see, also, the result to the children upon the whole. Dr. Clay states Collins' mortality over all as 1 in 16; Dr. Simpson's, in the Report of the Edinburgh Maternity Hospital, is stated at 1 in 22; Dr. Lawrence gives 8 in 368, or 1 in 46; while I have 1 in 298. The favourable results obtained by me, I have already said, appear to me to have arisen from the second half of labour having been shortened; and my inference again therefore is, not that "the use of instruments is to be discouraged in all but exceptional cases;" but rather, that they should be used sooner and much oftener than is generally done.

That such should be the case is also supported by another and instructive view of this subject. During the period embraced by the 318 cases enumerated, I had occasion to use the forceps for a midwife twice, and for another party once, and the remarkable fact is brought out, that, when thus called to use them, my success was no better than that of others, for two out of the four children were still-born, and one was a case of impaction. The difference in result, however, is easily explained, when we examine into the attendant circumstances. The labour managed by the midwife commenced about 9 or 10 P.M; she was sent for about 5 A.M., and the woman continued from that time till noon in severe labour, when I was sent for, and found the head transverse. I delivered in a few minutes, and with the greatest ease, and yet the child was dead. In all probability had this case from the first been under my own care, I should have shortened the labour three or four hours. The other case was nearly similar. I have delivered with the forceps for this midwife, in all 14 times, and two of the children were still-born, and one of the mothers also died. I have noticed exactly the same circumstance in the practice of my assistants (who resided at a distance of several miles from me), when labours were allowed to be improperly protracted. Still-born children were constantly occurring; and the contrast with those labours which were entirely under my own care was so great as to have many years ago forced itself upon my attention.

I may observe, also, that it is certainly rather a startling circumstance to find in Professor Simpson's tables, constructed from Collins' practice, in 16,654 deliveries, only 24 forceps cases, while there are 74 perforations of the head.

It removes an important element of error in such inquiries as the present, that no supposable difference of dexterity in manipulation could, in my practice, have influenced the results.

* Edinburgh Monthly Medical Journal, Nos. 29 & 32. Dr. Lawrence does not state the forceps mortality, but only the general result. I have here quoted from Dr. Simpson's table, as I find the mortality given. In the extract from the British and Foreign Medical Review, however, Dr. Ramsbotham is stated to have used the forceps once in 729 cases, and Collins once in 684.

The mortality in my cases to the children born alive, but which died within a week after birth, was, of those born naturally, 6; and of these, 3 were premature. Of those delivered with the forceps, the mortality was 5; and of these, 1 was premature. Excluding the premature children, which could not have survived under any circumstances, the mortality was thus: in those born naturally, 1 in 86; in those delivered with instruments, 1 in 10. As the forceps deliveries were also, of course, those in which the labours were the most severe or protracted, the influence of the forceps in increasing the mortality was probably here, likewise, very small.

In 6 of the forceps cases chloroform was given. In 5 of these the deliveries were easy; and in all the recoveries were excellent. In 1 of the cases, however, the use of the chloroform was found to be objectionable, in consequence of its decreasing the strength of the pains. The position of the head barely allowed the forceps to obtain a proper hold when energetic pains occurred; and this could not be done when their force was somewhat lessened by the use of the chloroform. The chloroform was, in consequence, discontinued, strong pains returned, and the delivery was, with some difficulty, effected.

One consequence of pursuing the line of practice described has been, that, *for the accomplishment of labour*, I have latterly rarely used the secale cornutum. In these 300 cases I did not use it more than three or four times. In the first half of labour I have considered its use to be generally improper, having, as has been stated, usually left my patients at this period very much to themselves; and I have already remarked, that, with the precautions taken, I had seen no bad consequences follow. I do not, however, feel quite certain that this would have been the case had the ergot, or other means, been employed to force the uterus into premature action. In the latter half of labour I have also rarely had occasion to call in its assistance. In almost every instance where the ear has been placed opposite or near the symphysis pubis (and which I have said constituted about eight-tenths of the forceps cases), I have omitted its use, considering that the forceps supplied more certain and safe means of delivery. I am now, indeed, in the habit of using it almost solely either in the first portion of the second half of labour, where the case has been very protracted and the pains have become inefficient, or in cases where the head cannot easily be reached by the forceps.

The forceps I have for many years used are those invented by Dr. Zeigler, of Edinburgh, of the dimensions usually made by Young, of Edinburgh—viz., thirteen inches in length, over all. The ease and certainty with which these forceps lock, their workman-like proportions, and their straight blades (preventing, a good deal, I think, the risk of injury to the mother), all seem to me to render them the best instruments for short-forceps purposes which I have seen. I have used these, also, as long forceps, both with the blades equal and with a shorter blade; but in such cases I think they are barely of sufficient length, and the straight blades seem to me to have a disadvantage, from a high position of the head generally requiring a curved instrument to lay firm hold of it.

In my cases the maternal mortality was 1 per cent. in all, and 1 in 20 where the forceps were used. There can be no doubt that the abstract rule, that the mortality to the mother will be in the ratio of the severity of the labour, is to a great extent correct. The dangerous and uncertain develop-

ment of the morbid puerperal diathesis, and the occurrence of puerperal epidemics, however, form such important elements in any calculations that can be made on this point, as to detract materially from the value of statistics. The safety of the child, it appears to me, is a far safer guide in forming an estimate of the comparative success of different modes of practice; and I think it may almost be adopted as an axiom, that, under similar circumstances, where many children are saved, comparatively few mothers will die.

In conclusion, I may remark, that the rules for my practical guidance in the management of labour which I have followed, are compounded of a limited application of two principles adopted by different authorities. With certain practitioners, I have, under ordinary circumstances, left the first half of labour very much to nature; while, to the latter half, I decidedly object to the application of this rule: on the contrary, in the treatment of this portion of labour I adopt the principle applied by Professor Simpson to labour as a whole, that the mortality will generally be in the ratio of the time it lasts; and I therefore adopt means for the purpose, as much as possible, of shortening it. The lives saved in my practice, compared with other mortalities which I have given, vary from nearly 2 to about $5\frac{1}{2}$ per cent. Anything approaching to this, even in a moderate private practice, would amount, in a series of years, to a large total; to the bulk of the population of a country the increase would be enormous.* The importance of the subject, therefore, can hardly be overrated. It is to be remembered, also, that the lives saved by our interference in this instance, unlike what is effected by medicine in many other cases, are mostly the best of the progeny; for it is generally the largest and most robust children that present the greatest difficulty in parturition.

If the line of practice which I have advocated recommend itself otherwise to the profession, it will not, I think, be esteemed a disadvantage that it greatly lessens the tædium of attendance to the practitioner.

Art. III.

On the Seat of Pulmonary Tubercle. By Edward H. Sieveking, M.D., F.R.C.P., Assistant-Physician to St. Mary's Hospital.

Morbid anatomists have hitherto failed in demonstrating with certainty the exact seat of pulmonary tubercle; and the statements of various observers with regard to the intra-vesicular or interstitial character of the deposit have been made more according to the theoretical bias by which they were influenced, than from actual observation. So close and accurate a pathologist as Hasse† admits that the exact seat of tubercles within the lungs has not yet been determined, in spite of the numerous researches hitherto made. Those in any way acquainted with the difficulties that interfere with the microscopic examination of the pulmonary parenchyma in its normal or morbid condition, will understand the cause of this. In health the amount of air-bubbles obscures our view, and the manipulation

* Taking the saving of life at 3 per cent., the numbers would have been, in the 156,000 in the Dublin Tables, 4680.

† Pathological Anatomy, Sydenham Society's edition, p. 328.