tube is considerably wider than that ordinarily employed. The same may be said of the long metal tube in the bottle to which the bellows tube is attached. Air passes through these, as in the ordinary apparatus, to the bottom of the bottle, and, when the bellows is working, bubbles up through the chloroform, as shown in Fig. 2. The arrows indicate the direction of the air-currents. The air, now laden with vapour, returns from the bottle by very much the same route as that by which it entered, but through tubes contained within those already described. *The efferent tube travels back—in fact, through the afferent tube, the space between the tubes serving for the afferent current.* The efferent system commences at a small orifice in the upper part of the long metal tube of the bottle. To the inner aspect of this orifice in the wall of the long tube is soldered one end of a short metal tube of such calibre as to be readily contained within the larger tube. This small metal tube quickly joins the indiarubber efferent tube, and thus allows of a communication between the latter and the interior of the chloroform bottle. The rubber efferent tube passes on and on through the larger afferent tube (as shown by the dotted lines) till it emerges from the hand-bellows. Arrows indicate the efferent current. By this plan there is no possibility of the mistake above alluded to being made; the inlet and outlet tubes of the bottle cannot have the wrong indiarubber tubes connected to them.

The modified inhaler is very conveniently worked, as shown in Fig. 3. The wide afferent tube, which contains

FIG. 3.

the efferent tube, is passed round the neck. Attached to the upper part of the bottle there is a short chain, at the free end of which there is a clip for grasping the afferent tube. In this way a kind of collar is formed, and the whole apparatus is rendered much less mobile than usual. The bottle is so high up that there is no likelihood of its getting tilted by the pillow, even though the anaesthetist be of short stature. In addition to these points, I have found that there is a great convenience in being able to work the inhaler without the two long flexible tubes ordinarily supplied with it. When space is limited, and when there are several assistants, as in protracted and difficult jaw and mouth cases, the long tubes of the ordinary inhaler are liable to become entangled, or kinked, or to get in the way of the operator.

I may say, in conclusion, that I have used this apparatus for the last nine months, and find that it answers my expectations in every respect. Messrs. Krohne and Sesemann, of Duke-street, Manchester-square, are the makers.

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THE TREATMENT OF THE PEDICLE IN OVARIOTOMY.

By SKENE KEITH, M.B., F.R.C.S. Ed.

WHEN we review the history of ovariectomy we find, in the treatment of the pedicle, a beautiful example of how our methods improve with increasing general knowledge; and how experience gained, perhaps in different branches of practice and of science, assists us in many ways. When we look back, with our increased knowledge and experience, and condemn some form of practice, we must not therefore judge and disparage those who adopted it; for although we now know that it is not desirable, yet at the time it may have been better than any other. It is easy to criticise the past by the knowledge of the present, and in doing so there is a proneness to forget that we also would, in all probability, have congratulated ourselves that we were doing the best for our patients had we followed a like practice. In the early days of ovariectomy it was evidently supposed that the distal end of the pedicle would, or might, slough, or that it would not be safe to leave a ligature in the abdominal cavity without having some means of exit kept open for its removal. The ligatures, therefore, were left long, and were brought outside at the lower angle of the wound. There was usually more or less suppuration, from which it was concluded probably that the distal portion of the pedicle became disintegrated. The ligatures loosened and came away easily, though at times their withdrawal was effected with much difficulty. Bearing in mind what was known of this subject thirty years ago, it was a great advance when, instead of allowing the pedicle to slough inside the abdominal cavity, as it was supposed to do, and sometimes undoubtedly did do, it was fixed by means of a clamp, so as to allow of its sloughing outside, and in a position of comparative safety. The results obtained by most surgeons with the clamp were not particularly brilliant, owing to want of knowledge and appliances. The results would have been not only successful, but brilliant, had it been recognised that septic formations about the clamp could have been prevented by the use of antiseptic dressings; or if formed, their access to the raw surface of the wound or passage into the peritoneal cavity averted. We have abundant evidence of this at the present day. Every now and again a woman, the subject of ovarian disease, presents herself for operation, who also suffers from prolapsus uteri. In those cases the womb must be fixed up by a clamp on the pedicle; and the patient recovers as easily and as well as when the pedicle is treated intra-peritoneally. A greater advance in every sense of the word was made when Baker Brown used the actual cautery. It must be remembered that no one at that time could explain why the short or long ligatures or the clamp seemed often to be responsible for the death of a patient. The value of rigid cleanliness—asepsis—was not thoroughly and generally understood, though it was evident that some surgeons did understand its value. It was not till Sir Joseph Lister insisted on the destruction of septic agents that there was any general and real advance in this direction; and it has since been found that they can be excluded or rendered harmless if everything be perfectly clean. Baker Brown did away with ligatures and with clamps; and by preventing bleeding from the pedicle by the hot iron, he eliminated one great source of danger and of death. The cautery gave unrivalled results, and its universal adoption in the treatment of the pedicle was, I believe, alone prevented by increase in our general knowledge, teaching us to have our ligatures in a condition of perfect cleanliness. The cautery has still advantages over the ligature, the chief one being that if there be bleeding it will occur at once, and not, as is the case with the ligature, some time after the abdomen has been closed. When the pedicle is specially broad the cautery does admirably. On the other hand, when thin and easily compressible, the ligature is as safe, and perhaps somewhat more easily applied. The method of use is simple; the pedicle is compressed by a clamp, and in spite of the numbers that have been made, that of Baker Brown remains the best. The blades are screwed together as tightly as possible, and a damp towel is placed below the clamp, to prevent burning of the skin. The cautery irons should be large, so as to give out great heat; and

they ought to be used as hot as possible, a white heat being better than a dull red one. At first sight the principle of this may appear to be wrong. It is, however, not so; because the cauterising action is chiefly gained through the blades of the clamp, which are to be made so hot that the finger can just touch them. The pedicle is to be burnt down flush with the clamp, and by the time this is done the clamp will usually be hot enough. The pedicle is grasped below the clamp by a pair of forceps, so that the stump may not slip into the abdomen suddenly when the clamp is removed. The removal is carefully managed, the compressed portion of the pedicle will, if all be satisfactory, have the appearance of a piece of horn, and the pedicle is then allowed to sink into the abdomen. With properly heated cauteries all this can be accomplished in three or four minutes. In cases of exceptionally broad and fleshy pedicles, in which it is not advisable to ligature in two parts only, the cautery is seen to most advantage. Bleeding never occurs after the abdomen has been closed, and to prevent it at the time of operation the two essential points are the screwing up tight and the heating of the blades of the clamp.

The common and, indeed, almost universal way of securing the pedicle is by means of a ligature. Of all the different materials of which ligatures can be made silk is the best and most convenient, although before the days of antiseptics Dr. Keith obtained excellent results by using fine iron wire. The ligature of silk ought to be just so thick as to withstand the strain the operator can put upon it; there is not any advantage in having it thicker. The silk must be chemically and not only apparently clean. This condition may be obtained in various ways. As simple and effective a way as any is to boil it and then keep in a 1 in 20 solution of carbolic acid. In this solution it may remain for many months without deteriorating in strength, and the quantity of carbolic acid which is introduced into the abdomen is so small that no possible harm can result. There are various ways of applying the ligatures; the pedicle must always be transfixed unless it is exceptionally thin. The method of tying commonly used is either the Staffordshire knot or tying each half separately, the loops being interlocked, and the whole afterwards included in a single ligature. A better plan is to transfix, and tie each half without interlocking the loops, so as not to run any risk of drawing on the knot of the first loop when the second is tied. The two double ends are tied together, and when this is done it is remarkable into what a small compass the pedicle is drawn. The single encircling ligature is dispensed with, and it is difficult to see of what advantage it can ever be. Mr. Syme knotted together the double ends in this way when tying piles.

For the treatment of the pedicle of ovarian tumours I have used the cautery 132 times, in fourteen both pedicles being secured from hæmorrhage in this way; and while my own experience in the use of the ligature is somewhat greater than with the cautery, I believe that as time goes on I shall tend to use the cautery more, employing the ligature only for slender pedicles, and also, of course, for cases requiring enucleation, in these latter it not being necessary to treat *en masse* large portions of tissue.

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THE INFLUENCE OF MENTAL DISTURBANCE IN PRODUCING ORGANIC DISEASE.

By H. GRABHAM LYS, M.D. LOND.

(Concluded from p. 905.)

Digestion.—I pass on to the relation between digestion and mind. No function is more closely related to mind than digestion; disorder of either will worry its fellow; irritability of temper may be attributed to indigestion on pretty ordinary principles; there is more difficulty in assigning the principles on which indigestion follows mental disturbance; but there can be no question of the fact. Maybe it checks secretion of the gastric juice. Physiologists do not indeed question a nervous influence on secretion and nutrition apart from vaso-motor change, though the question of separate trophic nerves may still be an open one. Mr. Hutchinson, at a meeting of the London Hospital Medical Society in

1888, dwelt on the influence of emotion on some of the secretions, and more especially instanced cases of persistent dry mouth following some mental shock. In the opposite direction, the lacrymal secretion affords a striking example. In a case of gastric fistula in man, Beaumont directly observed the arrest of the gastric secretions by anger and other severe emotions. Probably also movements of the stomach may be inhibited by emotion; irritability or sluggishness of bowels doubtless is often referable to mental disturbance according to its kind; the latter disorder reaches its climax in the extreme constipation of melancholia.

Jaundice.—Dyspepsia, however, can hardly be termed an organic disease, and I do not propose that it definitely leads to any organic disease of stomach, but it leads me on naturally to the subject of jaundice. Now, it is doubtless familiar to many of us that simple jaundice often directly follows some mental emotion. I might quote the well-known instance of Sir Thomas Watson's, where an unmarried woman rapidly became yellow on its being disclosed that she had borne children. But, indeed, I think a short experience is sufficient to convince one on this point. Two cases impressed themselves on my memory during my house physiciancy: one was a youth who was intensely disappointed at being discharged from the service of the Post Office because he had not grown tall enough; and the other was that of a girl whose *fiancé* was killed in a railway accident. In each case the jaundice followed very shortly upon the mental shock, and in neither was there any reason to suspect catarrhal or epidemic influence. I take this opportunity of endorsing the protest against the generic term "catarrhal jaundice" on these grounds. The question, how is jaundice caused by mental disturbance, is one which, so far as I know, has received no explanation. I do not see how it can be referred to any vaso-motor disturbance; still less to any obstruction in the ducts or any alteration of the proportion of bile reabsorbed; one can only say that it must be due to some influence on the hepatic cells, which, while leaving them competent in some degree to complete the formation of bile pigment, interferes with the excretion of it. But I have not yet done with jaundice; if I had to leave it there, I should not be able to claim in it, as I do, a most interesting example of the passage of functional disorder into definite organic disease, and the inference which may be drawn from the nature of that organic disease as to the pathology of the minor disorder. It is perfectly well known, not only that acute yellow atrophy often follows immediately mental shock and runs its course rapidly, but also that it often supersedes simple jaundice of weeks' duration. In acute yellow atrophy there is a definite disorganisation of liver cells, and I need not, I think, say more as to the direction in which these facts point in the pathology of simple jaundice.

Diabetes.—Next, diabetes, both mellitus and insipidus, is acknowledged by all authors to follow as a direct result of mental anxiety or shock. Fagge quotes from Dr. Herman Weber the case of a gentleman who became diabetic on two separate occasions, at an interval of nine years, under the pressure of intense anxiety from impending commercial ruin, recovering on each occasion at a turn in his circumstances. I think that cases of diabetes mellitus are rare without some history of mental disturbance more or less striking immediately preceding the attack. Diabetes insipidus is a much rarer disease, but mental shock and emotion are mentioned among its causes. The pathology of both forms is readily referable to vaso-motor dilatation. I have already dwelt on vaso-motor changes from mental disturbance, and the only difficulty in this case is its apparent limitation. In diabetes insipidus there would appear to be vaso-motor dilatation only in the renal circulation, while in diabetes mellitus, in addition to the renal, the hepatic circulation, or, if we follow Pavy's views, the whole splanchnic area becomes dilated. There is no cause to assume, as in the case of jaundice, any nerve influence on the gland cells; it seems to receive a ready explanation in mere vaso-motor change.

Cirrhosis of kidneys.—Granular kidney has from time to time been attributed to mental anxiety. Dr. Clifford Allbutt, writing in the *British and Foreign Medico-Chirurgical Review* in 1877, while refraining from any explanation, asserted as an undoubted clinical fact that granular kidney was very often caused by prolonged mental anxiety; he suggested that the change might be such derangement of the nutrition of the kidney as occurs in the liver in diabetes; but it is difficult to see how such derangement could cause granular kidney. Dr. George Johnson, writing later, says that the explanation of this view is that mental anxiety is