give them all honour for their spirited conduct; but I do not see the bearing of the above history on the general question of the propriety of treating acute surgical cases in hospitals, which is the real question raised by the word "hospitalism". Every reader of Sir J. Simpson knows this; and it was in order to raise this question that the word was invented. If Mr. Erichsen mean to continue the use of the word in order to impress on the mind of the profession the important but surely familiar truth that care ought to be used in the construction and management of hospitals in which acute disease is treated, my only objection would be to the confusion thus inevitably produced in the public mind, and to the unfair prejudice so created against all hospitals, whether properly constructed or otherwise. The fact that many of our smaller and older country hospitals are not fitted for the reception of acute cases, at least in any considerable number, and that they are liable to be visited by fatal outbreaks of septic (or, as we then called them, "secondary") diseases, is fully dwelt on in the Report above alluded to (see p. 547 and other places). It used at that time to be very generally believed that such "septic" affections were confined, or almost entirely confined, to the hospitals of large cities. I hope the Report in question did something towards dispelling this delusion, which rested a good deal on hearsay, and a good deal on a misapprehension of the significance of death-rates. An attempt is now being made to enforce the doctrine that septic diseases are confined, or almost confined, to hospital practice. As this is notoriously untrue of erysipelas, which every one meets with in private practice, it is not likely to be true with respect to the closely allied disease, pyæmia. Mr. Prescott Hewett's paper at the Clinical Society was hardly required in order to show the fact that pyæmia is met with in private; but it raised the very interesting question, whether there is really much difference in the relative frequency of the occurrence, more than the difference in the proportion of cases likely to lead to pyæmia would account for.

Mr. Erichsen assumes with much confidence that pyæmia was absent from the town of Lincoln while the hospital was, as he terms it, "pyæmia-stricken"; but he adduces no proof of the fact. A casual observation even from so respectable an authority as one of the surgeons of the hospital, that "he had never met with a case", is surely no serious proof. Many deaths from pyæmia occur which are only recognisable as such on *post mortem* examination. I need hardly remind readers of this JOURNAL of the details of my late lamented colleague Dr. Fuller's death. Then, again, the number of deaths from pyæmia is but small absolutely; and, though such cases may not have occurred in one surgeon's practice, they may in another. In the Lincoln Hospital, I am not aware that the number of cases of pyæmia occurring in the recent outbreak has been given; but I find in my account of the hospital in 1863, that during the previous three years, out of a total of sixty-four deaths in the hospital, five only were attributed to pyæmia. How easily might not a corresponding number of deaths (not, I repeat, necessarily the same number, for the causes of pyæmia are more rare in hospitals) have occurred in private unobserved or unverified? Struck by the disastrous termination which pyæmia often produces, and that in cases to which they have given special attention, surgeons are rather apt to exaggerate its real frequency. We have shown in the Report above referred to (p. 554), that the total number of deaths from pyæmia in three large London hospitals—viz., Guy's, St. Thomas's, and St. George's—where, as a rule, every case is examined after death, and the *post mortem* examination is carefully reduced to writing, was, during a specified period, 0.115 per cent. of the cases admitted, or 1.23 per cent. of the total number of deaths; that the deaths from pyæmia, as compared to the deaths from all causes tabulated by us, were in London hospitals 1.7 per cent., and in country hospitals 3.4 per cent. And we have shown also that a certain (and not a very small) proportion of these deaths from pyæmia occur in persons who are admitted suffering from the disease. This was proved to be the case in six deaths out of fifty recorded in one table from metropolitan hospitals, and might very likely have been so in other cases as well. In fact, every one who has attended the medical and surgical practice of hospitals knows that cases are occasionally admitted with pyæmia from apparently trivial causes; and in private practice many such are, as I believe, vaguely diagnosed as "fever" or under some other designation, and are buried unexamined. Are we to believe with Mr. Erichsen that, although pyæmia occurs in private from the slightest and less probable causes, yet those operations which so much more commonly produce pyæmia in hospitals never do so in private practice? It would at least take somewhat more cogent proof than has yet been offered before we could accept so strange a doctrine.

The above considerations express, as well as I can put them in a brief space, my reasons for dissenting strongly from the introduction into our surgical literature of the new term "hospitalism", and for protesting still more strongly against the doctrine which that new term is intended to

convey—namely, that there is a specific unhealthiness generated in hospitals from which cases in private practice are exempt. Whenever this doctrine has been advanced, and has been challenged, its defenders have always resorted to the same line of argument as that to which Mr. Erichsen has recently been driven; *i.e.*, they have spoken vaguely about the prevalence of secondary or septic diseases in hospitals, have adduced the example of some hospital or hospitals in which definite errors of construction or of management have led to definite bad results, have assumed that nothing of the sort takes place in private practice, and then have triumphantly asked whether their case is not proved. We reply, undoubtedly not; because, if the argument were reduced to a syllogistic form, it would be found that the minor proposition is a pure assumption. Every one knows that pyæmia is unhappily prevalent in hospitals, though every one does not know how small the proportion of cases really is. Every one also is now beginning to know that pyæmia occurs moderately frequently in private, although the cases which we usually see accompanied by pyæmia in hospital practice are much more rare in private. But no one knows, even approximately, in what proportion of cases pyæmia occurs in private—and until that is known it is not right to argue, as Mr. Erichsen does, as if pyæmia had been proved to be absent from private practice. On the contrary, the more alive we are to the symptoms, and the more we know of the history of cases in private, the more frequent do we find this disease to be.

I am very sorry to trespass so much on the space of the JOURNAL, and still more sorry to challenge the teaching of so eminent a surgeon as Mr. Erichsen; but the matter is a very important one, and, when we hear a hospital-surgeon speaking of stamping out pyæmia by applying the pickaxe to our hospitals, as the cattle-plague was stamped out by using the poleaxe on the infected beasts, I think other hospital-surgeons may be excused for saying that nothing in their experience, and nothing which has been published in the experience of others, justifies language so calculated to mislead the public as to the condition of the hospitals in which we practise, and as to the results of the treatment of cases in them at the present day.

ON THE GRAPHICAL REPRESENTATION OF THE MOVEMENTS OF THE CHEST-WALL IN RESPIRATION.*

BY ARTHUR RANSOME, M.D., M.A., Manchester.

A STETHOGRAPH has been constructed which gives an accurate tracing of the course described by any point on the chest-wall, in the forward and upward directions—*i.e.*, in the vertical plane at right angles to the anterior surface of the chest. With this instrument, many tracings have been made both in health and disease. The following, chiefly from the anterior ends of the third ribs, are selected as specimens of the results obtained, and to illustrate the conclusions drawn from them. It has been observed:

1. That the anterior end of the rib takes a different course in its ascent from that of its expiratory descent (Figs. 1 and 2).

2. That in most cases the uppermost line is that of inspiration.
3. That this course is liable to variation in consequence of the action of the will (Figs. 3 and 4).
4. That in the action of coughing, after the inspiratory stroke, there is a slight forward bulging of the rib, perhaps from the compression of the air in the lungs by the action of the diaphragm, then a downward fall for a space of about 0.2 inch, and afterwards an almost horizontal in-drawing of the rib (Fig. 6), quite unlike anything that could be produced by the simple angular movement of the rib.
5. That in sneezing, the course of the rib is similar to that taken in the act of coughing, except that there is no forward bulging at the commencement of expiration (Fig. 7); and in the latter part of its course the rib only drops about 0.15 inch for 0.8 inch of in-drawing.

* Read before the Manchester Literary and Philosophical Society.

6. That in the dead subject, the movement of the end of the ribs, when simply raised and depressed (Fig. 5), approximates to a segment of a circle.

7. That as age advances, there is an approach to the form of curve

traced by the unyielding rib, and the upward and downward strokes are more nearly alike.

From the above facts, it follows that the horizontal in-drawing of the

rib, in the spasmodic actions of coughing and sneezing, is impossible without an inbending of the rib itself, and that the variations in healthy breathing are chiefly to be ascribed to the influence of the muscles of forced expiration, which produce more or less bending of the rib during their action.

In disease, a comparative feebleness of the respiratory track is to be noticed; and the want of elasticity of the chest is evidenced by the tendency to similarity in the upward and downward course of the ribs.

In acute phthisis there is a degree of tremulousness in the tracings, and in pleurisy is seen the effect of adhesions in the very small extent of forward push on the affected side.

The tracing of the cough of phthisis is, however, similar in its form to that of the healthy chest (Fig. 5), though much smaller and more feeble.

OBSTETRIC MEMORANDA.

TREATMENT OF POST PARTUM HÆMORRHAGE.

VIII.

ADDITIONAL interest is gathered to this important subject as the numbers of the JOURNAL roll on. The varied details of treatment brought to bear upon this class of cases cannot fail to give a sum total of experience which may be referred to with mingled feelings of confidence in the resources of our art, and estimation of the willingness of Nature to respond to treatment diversified and various in individual hands.

I will first briefly allude to the *post partum* form of hæmorrhage, and add my appreciation of the valuable and definite paper of Dr. Braxton Hicks. The patients of lying-in charities he states to be most exposed to the dangers of *post partum* hæmorrhage—I think certainly most liable to *fatal* hæmorrhage—since illicit pregnancies, depression of mind, and badly nourished conditions, decidedly conduce in a great measure to this state. I have found, however, that, in point of frequency, hæmorrhage is more prone to occur in superior ranks, in those who have led lives of indolence and luxury—pampered; and that it is often met with in those susceptible to the influence of pain, and nervously irritable and excitable.

There is one condition of hæmorrhage not previously alluded to which I have at times met with—namely, the escape of a colourless discharge, more or less profuse, and extremely apt to pass unnoticed. The feel of this discharge to the fingers is soft and velvety—very different from that of water or urine; it is insidious in its appearance, but inevitably leads to the same results as those of the loss of pure blood. In these instances I have always found small clots in the uterine cavity, generally closely connected with the surface from which the placenta is detached. The relations of the maternal parts of the placenta have been larger than usual, and the blood appears to be strained through the meshes of this

part, allowing the extruded portion to be devoid of colour. This may go on with the uterus apparently contracted, and is often unattended to until it produces symptoms, particularly in those cases left to the observation of the nurse instead of the practitioner.

The alternate relaxation and contraction of the uterus without loss of bulk appears to me to be associated more frequently than any other condition with *post partum* hæmorrhage—not profuse, but protracted, and requiring the most anxious supervision and attention. I have seen four deaths from hæmorrhage shortly after delivery; in two there had been placenta prævia, in one firmly adherent placenta, in the remaining one persistent inertia. I am impressed with the force of Dr. Hicks's observation, that "it is generally those who never faint that die"—a fact I have witnessed on repeated occasions, for in none of the above-mentioned four instances did the patient faint; indeed, I have been accustomed to look upon fainting as an indication favourable than otherwise in extreme cases, and have resisted the assiduity of friends to arouse the patient by too vigorous and excited means.

I cannot substantiate from my own practice the opinions strongly expressed by Dr. Gream, as to the free and unlimited use of brandy in *post partum* hæmorrhage: it is a popular remedy, but inconsistent with modern teaching as to its action and value. Large quantities, I am assured, deaden sensibility, and therefore lessen the irritability we are desirous of producing to ensure contraction. In other cases, by increasing the rapidity of the circulation, it tends to keep up the flow of blood through the uterus; and though in some instances it may apparently tide over a danger, yet in the majority, when pushed to such an extent, it does more harm than good. The confusion of intellect, the loss of sensibility, mask the signs we should be most anxious to distinguish; and the incapability of such large quantities being assimilated is shown by the stomach not tolerating it when conscious of its presence, or, as Dr. Gream says, the "moment vitality is restored". It is true that, under these conditions, large quantities may be borne with impunity, but smaller doses are, I think, more calculated to do good, since there must be a limit to the quantity passing into the system, which can hardly be gauged by cramming into the stomach so much as it will hold. The very aversion to it by the stomach and its rejection is a means of good, and has been acted upon by the proposal of some to treat hæmorrhage of this nature by ipecacuanha and emetics.

Next to the complete emptying of the uterus, I am inclined to place reliance upon the combined pressure of the hands from within and without. Mere irritation will not always suffice; but the internal hand closed, and the external one expanded firmly over it, give a greater degree of command in urgent cases than any other method I know. Ice is not always to be obtained, but cold water injected into the uterus I resort to as the next plan. The subcutaneous injection of a watery solution of ergot, according to the formulae of Beaujean or Sividski, is worthy of trial, and may readily be included in the small armamentarium necessary.

The preparatory full dose of the liquid extract or infusion of ergot I have always given in suspicious cases, marked by irregular action, laxity of tissues, and enfeeblement of general powers, especially avoiding the too rapid emptying of the uterus, taking care not to leave it for an instant with my hand. Sir James Simpson used to mention a custom among some savage tribes—whether founded on fact or not I cannot tell—where, on the approach of labour, a stake was driven into the ground and a long rope attached to it; the distal end of this rope was wound round the patient's body, and she herself gradually turned round so as to be brought nearer to the stake as the labour progressed, thus ensuring an efficient following up of the uterus upon the descending child. The hand, or firm even binder, may be used with advantage for this purpose, as the pains become more developed in lingering cases; but the trusting to the bandage after labour is completed is a fallacious and delusive method of reliance against hæmorrhage.

The anticipation during pregnancy of after-hæmorrhage is best effected by diverting the attention from it in the mind of the patient, by correcting deviations of health and spanæmic conditions of blood, and attending to hygienic and sanitary surroundings. I advise sleeping on a mattress, daily affusion with cold water, avoidance of fatigue, and, above all, the preservation of an equal and undisturbed mental equilibrium.

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IX.

I have used the perchloride of iron by injection, in about half-a-dozen cases out of a total of more than 900, and have had no ill effects from its use, but, on the contrary, I am convinced that it has been the means of saving life; I dare not go to a case without it.

I am sure Dr. Dabbs will allow me to correct him in his statement in the JOURNAL of February 14th, that drawing out the nipples in *post par-*