"Imperat, ecce, suis nova nostra Australia doctis,
Quod discis, comites, jussus ab arte, doce."

A RESUMÉ OF ONE HUNDRED AND TEN CASES
OF INTUSSUSCEPTION OCCURRING AT THE
CHILDREN'S HOSPITAL, MELBOURNE.

By F. Hobill Cole, M.D.
Hon. Medical Officer, Children's Hospital, Melbourne.

Of this large number of cases of intussusception in infants, 34
were under my own care, while the remainder were under treat-
ment by Doctors Snowball, C. Ryan, Bennie, Russell, A. J.
Wood, and Mackay. For the purposes of this paper I have
been most courteously granted permission to incorporate their
cases along with my own. The value of so large a series occur-
rning in the practice of one hospital is much greater than that of
cases collected far and wide, treated by different methods, under
varying conditions. The whole of these cases have occurred
during the past 18 years, 78 of them however within the last 6 years,
the proportion of intussusceptions to the total number of new
cases treated at the hospital during this latter period being as
high as 1 in 820. This increased frequency is almost certainly
due to more accurate diagnosis by medical practitioners, and the
forwarding on of the sufferers for hospital treatment. The pro-
portion of boys to girls was 2¾ to 1. Of the 110 children, 99
were under the age of one year. Seventeen were said to
have suffered from constipation; 11 had had diarrhoea; 66
were said to have been in good health, and were breast-fed.
Two were taken ill after falls. Of the remainder, no mention of
previous health was made.
This series presents not one case of chronic intussusception, which usually is due to some definite pathological condition of the intestinal walls, e.g., polypus, malignancy, etc., and is oftener found in adults. No case showing evidence of polypi or diverticula as the cause of invagination figures in this record; nor is there any instance in which gangrenous separation by sloughing, either lying loose or being evacuated through the anus, took place, nor was there in any case faecal extravasation, showing that the adhesions held firmly. One instance of retrograde intussusception was found on opening the abdomen for the relief of acute obstruction; it was in the immediate neighbourhood of a descending invagination, and was probably secondary to it, for it was certainly not obstructive as was the other. There was one instance of double intussusception, and it was reduced without great difficulty.

The Symptoms.

The symptoms of acute intussusception are so characteristic that I propose to refer only briefly to their special features as manifested in this series.

Vomiting was usually early; it is recorded as having been present in eighty-four cases, no mention having been made in the remaining twenty-six cases. In only one was it stated that it had not occurred. It was projectile in a few instances, and was aggravated when the children were offered nourishment. It appeared late in one case—at the end of the second day. I note that it was the more marked where the obstruction was greatest. No help was afforded by the vomiting as an indication of the position or variety of the intussusception, although some authorities state that the more violent it is the higher up is the obstruction.

Stercoraceous vomiting, which is named as a common symptom, is certainly rare in babyhood. It was present in only two cases, and appeared between the fourth and sixth days.

The passage of blood and slime by the bowels was found in every case but two. The amount varied, and was usually not large; but in two instances the amount stated was half a pint in a single stool. The shortest interval before its first appearance was a quarter of an hour, and the longest forty-eight hours. In
In ten cases it appeared under two hours; in eighteen cases between the second and fourth hours; and in thirty-six cases between the fourth and twelfth hours. The passage of blood soon after the onset would appear to indicate great traction on the mesentery, and resulting compression of the blood vessels. The prognosis in these cases is always considered bad, yet a number of the babies, in whom the bloody stools appeared early, did well under treatment, probably for the reason that the sight of blood frightened the mothers, causing them to seek early relief. The passage of mucus, according to D'Arcy Power, is due to irritation of the columnar cells lining the crypts of Lieberkuhn, transforming them into goblet cells, which discharge their mucinous contents into the bowels.

The passage of faeces is not usual after the inception of attack, but one or two faecal motions are sometimes passed shortly afterwards. These are simply the contents of the bowel below the obstruction.

Tenesmus was noted chiefly in those cases where the tumour could be felt in the rectum.

Tumour was present in all the cases except three. This percentage is much higher than in any other recorded large series of cases, which, as a rule, include adults as well as children. In infants, tympanites is rarely seen till very late, thus favouring the tumour being felt on palpation carefully carried out by the conjoined method of abdominal and rectal examination. I have twice observed it within one hour after inception of the attack.

The position occupied by the tumour was in the left half of the abdomen thirty-eight times, in the right half of the abdomen twenty times, transversely across the abdomen, above the umbilicus, twenty-two times, and across the abdomen, below the umbilicus, five times. In the remaining cases the position was not stated. It was rarely felt in the ileo-cecal region, for the reason that intussusception remaining in this region is small, is of the ileo-colic variety, and is that of a small gut inside a large one.

In twelve cases the tumour was felt within one and a half inches from the anus; in three cases it had protruded beyond the anus. Of these fifteen cases eleven died, so I have formed the opinion that the prognosis is very serious in anal cases. Koplik states

2p 2
that in one-third of cases the rectum shows the presence of the intussusception, while Holt claims that it appears in one-half of all cases. My experience is very different to theirs, as my series shows only one-seventh rectal cases. Either the colic and sigmoid varieties must have figured very largely in their statistics, or their cases were not seen till very late.

The time taken by the tumour to reach the anus varied considerably. In one instance it appeared in four and a half hours, in another six hours, in a third seven hours. These are the shortest periods I have seen recorded.

In my recent cases, note has been made of the presence of the "Signe de Dance," the depression or feeling of emptiness over the right iliac fossa. Treves and others have discounted the value of this sign, but it was found so usually present in the ileocecal variety that I consider it a useful aid to diagnosis, where the history of entero-colitis, and the possible, though improbable, absence of tumour tend to make the diagnosis of intussusception doubtful.

The abdomen is usually lax. The skin remains cool, the temperature being, as a rule, slightly subnormal, except in cases complicated by ileo-colitis. The pulse is usually rapid and weak. The whole condition is one of shock.

The diagnosis may, and should, be made early in all infants. From inspection alone those accustomed to see intussusception in babies can often make a tolerably accurate diagnosis. The patient is generally plump and breast-fed. Immediately after the onset the face becomes pale, the eyes are widely open and somewhat staring. During observation the features may become distorted, the child emitting a piercing scream, simultaneously drawing up the legs on the abdomen, as if in great pain. After a variable time, averaging from a few seconds to as many minutes, the attack passes off, only to be repeated with increased vigour and frequency. These symptoms occur before the passage of blood and mucus, and nothing gives the physician more satisfaction than in such a case to then feel, under chloroform, a small tumour, perhaps under the lower edge of the liver, his diagnosis having thus anticipated the further manifestation of one of the most important features of the illness.
The diagnosis is usually perfectly simple if the possibility of intussusception be always borne in mind. The sudden onset of paroxysmal pain, vomiting, shock, and bloody discharge, even in the absence of tumour, may be regarded as pathognomonic. But in infants, as I have shown, if anaesthesia be used, and a conjoined examination be made, a tumour is found in nearly every case. It is often tucked up under the ribs in either hypochondrium, in close proximity to the liver or spleen. In cases of enterocolitis, difficulty may occasionally arise, but a careful examination of the clinical history, with special attention to the character of the stools immediately preceding and following the onset, will quickly clear up any doubt. Treves suggests that all cases of paroxysmal colic should excite suspicion.

Difficulties of diagnosis are evidently greater in adults, in whom cases have been reported where appendicitis has been mistaken for intussusception. Again, the chronic cases seem always to occur in adults, and are generally complicated by other pathological conditions, as malignancy, and occasionally tuberculosis.

Spontaneous cure took place in two out of the 110 cases here recorded. This percentage agrees with that of Wiggins, and he states, truly, that ninety-eight per cent. of cases left to nature perish. In one of my cases cure took place one hour after onset, and in the other nine hours after. The former was interesting, in that the baby was brought for treatment fifty minutes after the attack commenced. On examination, the baby, seven months old, was found to be in intense pain, and was vomiting. A tumour, four inches in length, was easily felt on the right side, below the edge of the liver, and lying across the abdomen. The child was at once admitted, and put to bed. He was shortly afterwards examined again, and preparations made for distending the colon. The tumour was now found to have disappeared, and a pure blood motion was then passed, confirming the diagnosis. There was no recurrence, and the patient was discharged well next day. In the second case I saw the child, and was prepared to operate nine hours after the onset, when a fecal motion was passed. Operation was deferred, the child had no return of the symptoms, and was sent home well on the following day.
ETIOLOGICAL AND PATHOLOGICAL FACTORS.

Irregular action in the muscular wall of the intestine, due to disordered innervation, is, presumably, one of the chief causative factors in the production of intussusception. The oft-quoted, elaborate, and convincing experiments of Nothnagel, with the Faradic current, whereby artificial invaginations were formed in dogs, favor the view of disordered innervation as an exciting cause, but, unhappily, his experiments have not been corroborated. On the other hand, Doctors Hare and Martin, who worked on the lines laid down by Nothnagel, and under similar conditions, were never able to produce invaginations, as described by him. Still, there can be little doubt that irregular action in the muscular wall is brought about, and in the cases recorded in this paper, it was found that in about twenty-nine per cent. there was intestinal disorder immediately preceding the attack. In the majority of cases, however, there was no ascertainable cause. The statements of many authors, that the subjects of intussusception are usually in delicate health, are certainly not borne out in this record of 110 cases occurring in very young children. The presence of a faecal mass, or of irritant substances in the intestines, commonly sets up an unusually active, and often disordered, peristalsis, the irritating mass being pushed on, might easily be followed by the actively contracted portion of gut above into the distended adjoining portion below. However, it is quite unnecessary to enumerate all the so-called causes of intussusception given in text-books, but I shall direct attention to those which seem to have had most influence in the production of my own cases.

The relative frequency of intussusception in infants is overwhelming, and is supposed to be in part due to the greater sensiveness of the intestines of infants, and to the unusual anatomical conditions prevailing in the very early period of life. As to the former, I admit that the intestines of the majority of infants are more sensitive than those of adults, but that this has any important influence on the production of intussusception I am not inclined to believe, for the reason that most of the cases I have seen have been quite well immediately preceding the onset of the intussusception, have never been subject to intestinal troubles, and have
been breast-fed babies. Moreover, those children who are prone to diarrhoea, and in whom one would naturally expect intussusception to occur, are most frequently just those in whom its incidence is the exception; in fact, my experience shows that constipation precedes the onset of intussusception more often than diarrhoea.

With regard to the anatomical conditions prevailing in infancy, it has been proved that the cæcum and ascending colon are normally more freely movable at that period of life than in older children and adults, and that this is, in the main, due to two factors—(1) Greater relative length and calibre of the large intestine compared with the small; and (2) a more complete covering of peritoneum, almost constituting a mesentery. Treves has conclusively proved that the large intestine is relatively larger in the child than in the adult, and D’Arcy Power found that the diameter of the large intestine increased during the early months of life out of proportion to that of the small gut. Both of these conditions would, undoubtedly, exert a powerful predisposing influence in the production of intussusceptions. It is, however, to the second factor that I attach most importance.

In operating for intussusception of the ileo-caecal type, I have been often surprised at the facility with which the tumour could be delivered outside the abdomen—a facility incompatible with a normal anatomical arrangement of the parts. Careful observation of all cases during the past few years has convinced me that this mobility is almost entirely due to the presence of a complete meso-colon; and I have not seen an intussusception occur where this abnormal arrangement did not exist.

The post-mortem specimens, which I have in my possession, of those intussusceptions reduced during life, and in which death was due to subsequent shock, show, when split up, a well-marked pouting of the lips of the ileo-caecal valve. This appearance of telescoping of the ileum into the cæcum is considered by Cunningham to be normal, especially in the cæcum of the child; but this exaggeration of the normal was so marked in my cases that a striking analogy to prolapsus ani was suggested. It is interesting to note that in both conditions tenesmus is often a prominent feature.
TREATMENT.

The only methods of treatment adopted to secure reduction of the invaginations were those of rectal irrigation and of abdominal section. But it was usual to find that already many of the patients had received doses of purgative medicines, administered as often by direction of the medical attendant as on the mother's own initiative. These aggravated the vomiting, and must often have tended to the increase of the invagination by exciting peristaltic action.

Treatment by massage alone was never used. In conjunction with rectal irrigation it was practised, very gently, in a few instances, the operator endeavouring to grasp the tumour in its lower part and carefully squeeze it out. Massage may be condemned as a blind and unsafe proceeding.

IRRIGATION.

This method of treatment was well-known to the ancients, and adopted by them for the relief of obstruction of the bowels. But, unfortunately, there clings to it the old tradition that if enemata do no good, they do no harm. The fallacy of this is painfully evident to any student of the large number of reported cases in late years, for there remain after such treatment, shock, suffering, loss of valuable time, all producing profound deterioration in the strength and vitality of the patient—to say nothing of the ever-present danger of rupture of the colon, many instances of which have now been recorded.

Of the one hundred and ten cases here reported, twenty-eight were submitted to irrigation (inflation having been previously tried in two instances without success). Water was the liquid of choice in all but one, in which olive oil was used, according to the method of Clubbe. This baby had been ill only four hours, and the invagination (rectal) was easily reduced.

Of these twenty-eight cases, twelve were successfully treated, and sixteen unsuccessfully, death resulting in twelve of the infants. Of the twelve who died, two had been admitted in a state of collapse. Of the remaining ten, eight were subjected to laparotomy, after several efforts had been made by irrigation, and had
failed, owing either to irreducibility (five cases) and repeated recurrence (two cases). Irrigation was tried in thirteen cases, where the patients had been ill under twelve hours. Of these, only six were successful. Recovery took place in six other children, five having been ill between twenty-four and forty-eight hours, and one as long as three days. Of the sixteen unsuccessful cases, seven were irrigated within twelve hours of the onset of symptoms, seven within forty-eight hours, and two within seventy-two hours. The results in the early cases were most disappointing, for it was expected that within twelve hours reduction would be accomplished with comparatively little force, the colon being then readily distended. But it was found that in half these very early cases reduction was impracticable, owing to the great and rapid engorgement of the invaginated bowel and included mesentery.

The want of a successful result, in some of the very early cases, was due to the impaction being made tighter by the pressure of water.

In those cases where haemorrhage from the bowels is abundant, and occurs early, irrigation is not likely to prove successful, because of the great constriction of the veins in the mesentery, without total occlusion of the arteries. Such a condition is attended by extreme swelling and engorgement of the various coats of the intussusception, with free extravasation of blood from the mucous surface into the lumen.

Again, cases, seen early, where collapse is marked and haemorrhage absent, are unsuitable for treatment by irrigation. The explanation is that the arteries, as well as the veins, are occluded by tight impaction, producing profound shock to the nervous system, and anaemia of the intussusception, leading to early gangrene. Even if the reduction be accomplished, it would be impossible to be sure of the fact, owing to the inflamed and swollen parts resembling the tumour of an intussusception. In such cases the question of complete reduction must be decided, either by watching carefully the general symptoms, and so losing precious time, or by doing an immediate laparotomy.

Two such instances have come under my own notice. In one I waited, and then had to perform a late laparotomy. I found
an inch and a half intussusception, which, probably, had never been completely reduced. The child died—a sacrifice to delay. In the other case also, a marked swelling remained after irrigation, so abdominal section was performed by a colleague. No invagination was discovered. The wound was closed, and the babe recovered perfectly. The case was reported in *The Intercolonial Medical Journal*, March, 1902.

In those cases, termed, by some writers, hyperacute or ultra-acute, shock appears so rapidly and profoundly that the infant is almost moribund, even as early as eighteen or twenty-four hours. The invagination here is characterised by great oedema and constriction. Such cases are eminently unsuitable for irrigation. The course would be to first stimulate the infant by the usual methods, and, provided the baby responded and rallied, to at once perform laparotomy. If the baby were incapable of reacting to such stimulation, surgical measures would be obviously out of question.

Even many less acute cases are not likely to be benefited by irrigation, as adhesions take place, especially along the concave side of the intussusception. The rate at which lymph is effused differs greatly in different cases—in many of the cases, under twenty-four hours. In one, treated by abdominal section, firm adhesions were discovered at the end of twelve hours. Here in addition to the amount of tissue invaginated, were numerous lymphatic glands, which made reduction almost impossible. Considerable longitudinal cracking of the serous coat of the receiving layer resulted from the manipulations necessary to effect reduction. The peritoneal coat was repaired, and recovery took place.

Much curving and hardness of the tumour are also contra indications to the use of irrigations, for, in these cases, we may find that the traction of the mesentery into the narrow tube of the intussusception results in the axes of the intussusception and intussuscipiens not lying parallel, and the orifice then is opposed to the wall of the mesenteric side of the receiving layer. I have in my possession a typical specimen of this. The case was treated by irrigation, but the water could not press against the apex; it played on to the convexity of the intussusceptum, and
probably increased the constriction by pushing the different layers closer together. Rotch says the condition is common, and is a frequent reason of the failure of irrigation to reduce the tumour. These twistings are commonest in the ileo-caecal and ileo-colic varieties, but are never seen in the rectal.

In late cases, irrigation should never be practised, for the mechanical distension produced may be the means of perforating a commencing area of gangrene around the neck of the intussusception.

Intussusceptions occurring in the small intestine, and ileo-colic invaginations, cannot be benefited by irrigation.

The method of irrigation of the colon adopted was to use normal salt solution, at a temperature just above blood heat, and the ordinary syphon tube. One and a half to two pints will fill the average infant colon. The liquid must be used slowly, the operation lasting twenty minutes, the patient being always anaesthetised.

**Recurrence.**

Recurrence of the invagination is an established fact. It is said to occur oftener in intussusceptions of the ileum. Some surgeons have asserted that recurrences are merely instances of incomplete reduction, and that they are impossible after complete reduction, owing to the oedema and thickening of the tube which take place, especially at the apex of the intussusception. But I have seen three early cases where this oedema and thickening were practically absent—it is always present at later stages—and it is, no doubt, in such early cases that undoubted recurrences occur.

D'Arcy Power suggests, as the most likely cause of recurrence, the fact that, after reduction, in some instances, the gut immediately above the obstruction remains for a time small, collapsed and paralysed, and, therefore, ready to be swallowed again by the adjoining portion. I believe this condition, in the absence of oedema and swelling, would favor a return of the intussusception. Then, again, if irrigation have been performed, the colon must have been greatly distended, so that a third element in the causation of recurrence may come into force. As a fact, it is perfectly well known that recurrence is much more frequently found after
irrigation than after laparotomy. Many of the so-called recurrences, no doubt, have been cases of incomplete reduction.

Notwithstanding the tendency to recurrence, I advocate one, and only one, irrigation as suitable treatment, if not more than six hours have elapsed since the onset, and if the case be not very acute. If there were then evidences of recurrence, or of incomplete reduction, I should at once perform laparotomy. Abdominal section following one irrigation affords infinitely better chances for the infant than if two or more irrigations have been done, for repeated distension of the colon is attended by very considerable shock.

Recurrence after laparotomy is very rare. It happened in one of my series, being under the care of a colleague, and reported in The Intercolonial Medical Journal, August, 1902. A baby, aged seven months, was brought to hospital three and a half hours after onset. Pain, vomiting, bloody stools, tumour were all present. Laparotomy was performed half an hour later, and a four inch ileo-cæcal invagination very easily reduced. Recurrence of symptoms took place seventeen hours later. The abdomen was again opened, and a two inch intussusception, in the same situation and similar to the other, was found, and reduced. This time there was marked congestion and oedema present. The baby was greatly shocked, and gradually sank, dying forty-four hours after the first operation, and twenty-three hours after the second. At the necropsy nothing was discoverable except the congestion and swelling. Evidently the cause producing the first invagination was still in action, and as there was little or no oedema and thickening of the coats of the intussusceptum, the tendency to recurrence was not checked.

Before quitting the subject of recurrences, I would say it is important to remember that there is apt to be a deceptive holl of some hours after irrigation has been done, due to shock, anaesthesia, and want of food. The patient, therefore, must be very closely watched for any evidences of recurrence or incomplete reduction.

**Laparotomy.**

If a case of intussusception be submitted early for treatment by abdominal section, reduction, in most instances, is easily effected. But if operation be delayed, reduction may be so
difficult or impossible as to necessitate operations for resection, which, in nearly all cases, are attended in babies with fatal results.

A very few words will suffice to describe the operative procedure. I always use the median incision. Keeping to the left of the umbilicus, my incision extends one and a half inches above and below it. In only one case have I seen a ventral hernia follow, and that was very slight. Stout silk ligatures, as recommended by Mr. Russell, serve as excellent retractors, and are useful for lifting the abdominal walls during the return of the intestines. After bringing the invagination to the wound, reduction must be attempted by gentle, steady pressure backwards upon the apex of the intussusception, through the ensheathing bowel. Towards the end of this manipulation, a very slight traction may be applied in combination with the pressure movements.

Gentleness in the treatment of the intestines has rightly been emphasised as of the greatest importance in limiting the amount of post operative shock. And to this end it has been urged that where the invagination cannot easily be brought to the surface, as in cases where the tumour is curved and twisted, it is wise to introduce two fingers of each hand, attempts being made to reduce the invagination with one hand, while the point of entrance is held steadily by the other. This groping in the dark is unsatisfactory, for it will be as difficult to make sure that the last inch is reduced as in the cases where irrigation is used. In quite a number of instances I found that it involved but slight disturbance and little shock to draw out the intestines freely, in order to get at the invaginated bowel. After such evisceration and bringing up of the invagination, I return the unimplicated bowel before further manipulation. At the close of the operation the intussuscepted portion should lie handy and close to the parietal wall. To shorten the time of operation, the wound is closed by through and through sutures of silkworm gut, passing through all the tissues, and supplementary horsehair for the skin.

While it has been conclusively shown that infants bear this operation well, rapidity must be combined with gentleness. For this reason I never wait to shorten or fix the mesentery.

To be continued.
EARLY ECTOPIC PREGNANCY.

By G. ROTHWELL ADAM, M.D.

Lecturer on Obstetrics and Gynaecology in the University of Melbourne.

Hon. Surgeon, Women's Hospital, Melbourne.

Although less than a quarter of a century has elapsed since the late Mr. Lawson Tait demonstrated to the medical world the feasibility of saving life by ligating the ovarian artery, for haemorrhage due to the rupture of a tubal pregnancy, much knowledge has accumulated concerning the clinical aspects of ectopic gestation. Such terms as intra-peritoneal pelvic haematoma, idiopathic peritonitis, and certain mystical theories concerning the regurgitation of menstrual fluid through the Fallopian tubes have almost, if not entirely, disappeared from medical literature, to be replaced by a correct understanding of what the older terms merely represented as prominent symptoms. In other words, the clinical observations were accurate, the pathological interpretation wrong. Now, we can truly say that the bedside manifestations indicate to the observer, if he will but observe, as on a chart, what is going on within the pelvis. As evidence of this, mention may be made of the frequency with which the abdomen is deliberately opened for the removal of a gravid tube.

The classical description of a ruptured tubal pregnancy given by the late Mr. Lawson Tait is so well known, and is as accurate to-day as when published in 1881, that repetition is uncalled for. The object of this paper is to direct attention to a common, but perhaps less generally recognised variety of tubal gestation, in which the symptoms are obscure, and in consequence the treatment uncertain. For of ectopic gestation it may be said with truth, that the diagnosis is the thing, and once established, its treatment follows upon sound and well-established lines.

In order to gain a clear conception of the subject, it will be necessary to recapitulate certain well-known anatomical and physiological facts.

The older view, that normal fertilisation of the ovum was only possible after it had entered the uterine cavity, has given way to a belief that the conjunction of spermatozoon and ovum may be satisfactorily accomplished in any portion of the upper genital tract, from ovary to uterine cavity.
The direct cause of ectopic gestation may be briefly stated as being anything that retards the onward passage of the fertilised ovum, until it attains a size too great to pass through the narrowest part of the Fallopian tube and neck of the uterine cavity. The view so strongly insisted upon by the late Mr. Lawson Tait, that the fecundated ovum could only attach itself to a mucous surface that had been denuded of its epithelium, is now generally abandoned, and for all practical purposes, at all events, it may be assumed that the ovum will attach itself to the mucous membrane of the tube should delay occur in its transit.

Much dispute exists regarding the formation of decidua in the Fallopian tube, but it is certain that the mucous membrane, at the point of attachment, undergoes considerable change. It becomes more vascular, thicker, and is penetrated by the chorionic villi, so that it forms the maternal, if a rudimentary, portion of the placenta.

It is important to bear in mind the incomplete development of the placenta in ectopic gestation, for it is probable that owing to this, the early interruption of pregnancy so frequently observed may in a measure be attributed.

As the gestation progresses, the rudimentary decidua serotina cannot keep pace with the chorionic villi, and in consequence gives way, whereby the ovum is flooded with effused blood. It is upon the behaviour of this haemorrhage that the whole aspect of affairs depends.

If the pregnancy has advanced so far as to cause thinning of the tube wall, the tension caused by the haemorrhage will lead to rupture of the tube with its classical signs of shock and acute anæmia. On the other hand, should the bleeding be slighter, it may merely cause the death of the ovum, with the formation of a mole, or the ovum may become partially or completely separated and extruded from the tube. In this manner, the ovum acts somewhat as a foreign body in the tube, and efforts are made to dislodge it, with the result that blood is effused into the peritoneal cavity in greater or less quantity, and at repeated intervals, providing the haemorrhage occurs before the abdominal opening of the tube has closed, that is to say, prior to the eighth week of gestation. The whole ovum may be washed out of the tube, constituting a complete abortion, or possibly it is only the foetus that escapes into the peritoneum—incomplete abortion.

It is quite conceivable that a complete abortion may be attended with comparatively few symptoms, and the patient recover without a
distinct diagnosis of tubal pregnancy being made, but it must be confessed that while theoretically possible, as a matter of practice such cases seldom come under notice.

With regard to the frequency with which these three varieties are met with in practice, I should put the formation of a mole with intra-peritoneal hæmorrhage first, incomplete tubal abortion second, and rupture of tube third. The order would be different if the gestation extended over the eighth week, rupture of the tube would then be the only possible termination.

Of considerable interest to the practitioner is the consideration of what happens to the blood effused into the peritoneal cavity. As having an important bearing on this point, it must be remembered that, although it is the custom to speak of a peritoneal cavity, it is only so potentially. The abdominal and the pelvic contents are packed together so as to obliterate all space under a variable amount of tension.

In cases where rupture of a tube occurs, the hæmorrhage usually has sufficient force to overcome the tension, and is diffused over a greater or less area, according to the quantity lost. But, where the blood is slowly effused as from the abdominal opening of the tube, in, say a case of a mole formation, the intra-abdominal tension is sufficient to localise it, and a clot forms. The peritoneum now reacts to the irritation, and throws out lymph which surrounds the blood-clot, except of course where it may adhere to the ostium of the tube. With further hæmorrhages, the process may be repeated, so that it is not infrequent to find the blood-clot laminated. Of course, it is not uncommon to find a combination in varying degrees of diffused and localised hæmorrhage, the latter constituting the intra-peritoneal pelvic hæmatocele of older writers.

In the diffuse variety, provided the bleeding ceases and the patient survives the shock and acute anæmia, the blood will in time clot and form a hæmatocele, so that the real difference between the two conditions is the force with which the hæmorrhage takes place.

Brief mention must be made of the decidua which forms within the uterus under the influence of pregnancy, whether tubal or uterine. It is still a matter of controversy whether the arrest of tubal gestation is always followed by the casting off of the uterine decidua. Be that as it may, it is a practical aid to diagnosis to note the almost invariable occurrence of vaginal hæmorrhage, which accompanies any accident to such pregnancy.
It may be almost conclusively said, that the blood does not travel through the proximal portion of the tube to the uterus, so that the inference is that it is indicative of separation of the decidua. Only once have I failed to notice a vaginal discharge, and in that case, the patient died while preparations were being made to open the abdomen. It is quite possible, had she lived a little longer, the usual discharge would have occurred.

**Signs and Symptoms.**

From what has already been said, it will be obvious that the cardinal symptoms will be that of haemorrhage into the peritoneal cavity. Doubt will arise in those cases where the bleeding is small in quantity and localised as a haematocele. The signs of a diffuse haemorrhage, such as usually accompanies the rupture of a gravid tube, are familiar to most practitioners. The sudden onset, rapidly increasing anaemia, the intense peritoneal shock, rigidity of the abdominal wall in the hypogastric region, and the profound gravity of the case as a whole, bear marked evidence to the giving way of some viscus, and the escape of blood into the abdominal cavity.

On vaginal examination, a sense of fulness—it may be a definite swelling—can be made out, accompanied by, in most cases, pain in Douglas' pouch, with perhaps discharge from the uterus. The evidence is now presumptive of the rupture having occurred within the pelvis.

But the difficulties of diagnosis arise where the symptoms are not so profound, and the haemorrhage is arrested by the formation of a haematocele. The fact that the condition of the patient is not grave is apt to throw the practitioner off his guard, and should the idea of tubal gestation flit through his mind, it is dismissed as improbable, for his attention is fixed on the more urgent forms with diffuse haemorrhage.

In considering the signs and symptoms of the less serious varieties of ectopic gestation, two phenomena stand out prominently—repeated attacks of more or less acute pelvic pain, and irregular vaginal haemorrhages, usually of a dark character. The pain may be referred to one or other iliac region, or not uncommonly to the whole hypogastric area; the onset is sudden, the pain gradually lessens, until a sensation of soreness merely is felt. Between the attacks, a sense of resistance will be observed on palpating over the affected area, and in most instances deep pressure will elicit definite pain.
The attacks will recur at irregular periods, and vary greatly in intensity.

It is of considerable interest to note the character of the vaginal discharge, for I am sure there are few practitioners who have not been deluded, some time or another, into the belief by its occurrence that they are dealing with an ordinary abortion, and have promptly proceeded to clear the uterus of its supposed contents. Usually, the amount lost is small, and ceases or diminishes to a mere stain after a day or so, only to recur either as an accompaniment of an attack of pain or alone. It is not clotted, but may contain varying sized shreds, sometimes described by the patient as like red grape skins, which, under the microscope, are recognised as pieces of decidua. In rare instances, the whole decidua may be expelled entirely in the form of a cast of the uterine cavity. There seems to be little doubt that the haemorrhagic discharge is due to the separation of the decidua, and as it is a gradual process, the flow is irregularly intermittent.

It has been frequently stated that an enquiry into the signs of early pregnancy will assist in forming a diagnosis. These signs are rarely present, and if they were at any time existent, have in all probability vanished before the case comes under observation, owing to the death of the ovum. The only indication of pregnancy that has any significance is the alteration in the menstrual rhythm that, in the majority of cases, can be noted. The history that a woman within the reproductive period of life has gone past her usual period for menstruating, and then has an irregular flow, accompanied by repeated attacks of abdominal pain is, to say the least, suggestive of tubal gestation. And, if to this is added a quickened pulse and some degree of anaemia, the significance of the train of symptoms is increased. Increase of the pulse-rate, with some hardening, is a time-honoured indication of peritoneal irritation, and has lost none of its importance amid more recent additions to our knowledge in the diagnosis of pelvic disorders. A fall in temperature is not uncommonly supposed to follow a haemorrhage. It may do so while the bleeding is going on, but by the time the practitioner sees the case a reaction has set in, and a slight rise will occur, though rarely above 100° F., which gradually subsides as the pain and tenderness disappear.

Vaginal signs, as elicited by examination, are of prime importance. It must not be supposed that the early indications of pregnancy are
commonly present; on the contrary, discoloration of the vaginal mucous membrane may be so faint as to be quite unnoticed, and softening of the cervix so indefinite, as to be of no practical diagnostic aid. Then again, the size and shape of the uterine body may be altered from the non-pregnant state; but the alteration can quite reasonably be supposed to be due to an ordinary intra-uterine gestation, which is about to abort. It is in the region of the Fallopian tubes that the more suggestive indications will be found. The older description of a "spindle-shaped swelling" or a "sausage-like tumour" in the tubal area do not accurately represent the conditions found on examination. So far as I am aware, there is no distinguishing mark differentiating a tube enlarged by pregnancy from any other cause of enlargement, except it be a somewhat peculiar sensation of pain on bi-manual pressure. The diagnosis must be based on the evidence adduced by the history and physical examination, forming a chain of unbroken links.

Notwithstanding the frequency with which the variety of tubal gestation under discussion occurs, its recognition is often a matter of difficulty. Therefore, it may be permissible to recapitulate what seems to me to be some of the more salient diagnostic points. In order of merit, or rather as important links in the chain of evidence, I would put—repeated attacks of pelvic pain, of varying degree, associated with irregular vaginal haemorrhages; definite rigidity of the abdominal wall over the site of the Fallopian tube on palpation, and on vaginal examination, a tender swelling, often of an ill-defined shape, in the corresponding portion of the pelvis. If to these can be added a history of a delayed menstrual period, it may reasonably be assumed there is strong presumptive evidence of a tubal gestation. It is sometimes astonishing how patients will recover from the immediate symptoms and be able to go about, if not to follow their usual occupations.

The last case of tubal gestation I operated on in the Women's Hospital travelled a hundred miles by rail, and had been curetted about a month previously. On opening the abdomen, a mass of laminated clot, about the size of a fist, was found lying close to the fimbriated end of the tube, encapsuled by a thin layer of lymph.

Numerous similar cases might be cited, where the urgent symptoms subside, but irregular haemorrhages, and attacks of abdominal pain recur to remind the patient she is not well. The question may be asked—will not these cases recover without operation? There
can be no doubt that many do. Pelvic haematocoele is no new disease; it is only the recognition of its cause that is new, and the history of the past is definite in its teaching that, under rest and an expectant treatment, some cases recovered completely, others are condemned to a more or less invalid life.

The dangers to which the untreated cases are liable may be few, but of grave import. The haematocoele is easily inflected from the intestine by the bacillus coli communis, with the sequence of a spreading peritonitis, and the formation of pus accumulations, or, if they escape this, the blood-clot will organise and form adhesions with adjacent structures. Moreover, it is not to be forgotten that it is impossible in any given case to say what is going to happen—either the urgency of the case deepens, and the favourable moment for interference passes, and operation is undertaken as a dernier ressort with small hope of success, or the patient runs the risks already mentioned.

Two cases recur to my mind—one was operated on nine months after the date of the urgent symptoms. The affected side of the pelvis was filled with dense adhesions, necessitating a prolonged and extensive operation. The other, after a quiescent period of four or five months, developed urgent pelvic symptoms. On opening the abdomen, numerous accumulations of pus were found in a dense mass of adherent intestine, and pelvic organs.

The comparative safety of removing the gravid tube, when compared with the uncertainty of an expectant mode of dealing with these cases, will always render operation the method of choice.

THE TREATMENT OF TYPHOID.


At the commencement of the annual epidemic it may be not inappropriate to summarize the results of seventeen years' hospital experience in some thousand cases of a disease which demands, to a unique degree, the combination of breadth of outlook and mastery of detail.

Diagnosis—Febris Enterica.—Although there is apparently nothing pathognomonic in typhoid, except the "spots" (which are not always present) and the Wunderlich rise of temperature (which we do not see until a relapse), we are almost always able
to exclude appendicitis, enteritis, entero-colitis, influenza, acute tuberculosis, and continued fevers of obscure origin. Going further, we seek to discriminate not only the typical typhoid due to the bacillus of Eberth, but variants due to paratyphoid, pseudotyphoid germs, pathogenic colons, and other less known organisms (References 1, 2, 4, 5, 6). Clinically, however, we still group all under the generic name of Febris Enterica, though in practice we already find that certain clinical differences suggest important therapeutic modifications. We subdivide cases into (a) slight, in which the fever subsides within a fortnight or so, and intestinal ulceration is practically absent; (b) severe, where the fever runs up to the typical four weeks’ course, and ulceration is probably marked; and (c) complicated, when there is superadded haemorrhage, perforation, pneumonia, mixed infection, or other serious complication. We also differentiate recrudescences from true relapses, and, as will be shown later on, we regard a number of symptoms as accidents due to neglect or improper treatment. Further, our cases present the following peculiarities:—They are rarely seen before the 9th day of the disease; they have often travelled far, even from West Australia and, in one case, England; many have been walking about and on solid food right up to admission; and not a few are sent in by outside practitioners in a critical or almost moribund condition.

TREATMENT.

(a) Preventative.—I believe that unrecognised slight attacks, during childhood and early youth, are a frequent cause of subsequent immunity. I have no personal experience of preventative inoculation. We use heat and carbolic acid to disinfect discharges and clothing; and I know of no case in which another patient in the same ward has become infected.

(b) Abortive and Modifying.—Though calomel may abort during the incubation period, I know of no actual case, and I have never seen any undoubted success from its administration during the first week of an actual attack. No intestinal antiseptic has proved reliable in converting a severe into a slight attack, and though several undoubtedly counteract intestinal fermentation, they are not used by us, since our dietary does not permit such accidents. I have attempted to affect the typhoid germ by acidifying the intestinal contents with yeast, which con-
tinuously secretes a limited amount of acid, but the experiment was inconclusive. I have fed hundreds of patients on a sterilized food, in which the germ cannot live, but without any apparent effect on the severity or the duration of the disease. I have even fed three patients on such a food containing a pure culture of the bacillus acidi lactici longissimus, which, in a test tube, simply "chaws up" the typhoid, with the only result that each patient had a relapse. Clinical results are thus not always in accord with laboratory promise, and the clinician, not the experimentalist, must have the last word on the situation.

(c) General.—For the present, therefore, we accept typhoid as a disease that will run a definite course regardless of treatment, but one that, though self limiting, often kills during its progress. Like the master of a ship, we accordingly prepare a chart of the voyage, become acquainted with the track, plot our reckoning, and make ready for serious dangers. I hand round for your inspection examples of such charts in daily use in my wards. You will observe that they record not only the daily variations of temperature, pulse, and respiratory rate, but the all-important day of the disease, the amount of sleep, the number and characters of the stools, the main remedial procedure adopted, and other information of an important nature. Read daily, as they are, in the light of the patient's actual aspect, condition of tongue, pulse, abdomen, etc., and supplemented, in special cases, by the further evidence contained in the sisters' ward chart, they give such a survey of the case as reduces medical interference to the minimum, makes it available at the earliest opportunity, and secures, as far as possible, success in critical times. And as one of the peculiarities of severe typhoid is that prognosis is never certain until the attack is over, there is a special value in such a careful charting of the course.

(d) Nursing.—But such a record demands what is indeed the acme of medical nursing. It secures for the patient perfect rest (local as well as general), the maximum of quietness, and cool, pure air; special attention to mouth, skin, bedding, decubitus, faeces, and urine; and sympathetic touches, constant and innumerable. It necessitates at least two highly trained nurses, and conveniences often found only in a hospital. Hence the increasing frequency with which cases of typhoid are being
treated in hospital rather than in private, and the absurdity of officialdom in denying to typhoid patients the entree to private hospitals, whilst permitting them to be received into the general wards of public hospitals.

(c) Dietetic.—Even more important, however, is the question of diet. The almost universal rule now is to give the average typhoid patient some 3 or 4 pints of liquid food (½ milk, and ½ broth or other proteid) in the 24 hours, in divided doses every 2 or 3 hours whilst awake, varying the frequency, the amount, and the ingredients according to well recognised indications. In so far, however, as the main ingredient—milk—is concerned, I have now, for ten years, practiced a notable departure in substituting the sterilised hopped malt extract originally prepared for me by M. de Bavay (Reference 2). This food has about the same nutritive value as milk, but more carbohydrate (in the form of maltose dextrose, and laevulose), less proteid (in the form of peptones para-peptones, and amides), and no fat. It is thus a better fever food. Further, it is sterilised, and inimical to the typhoid germ; it does not ferment, or form curds; it is acid in reaction, absorbed from stomach and intestine, apparently without inducing peristalsis, and somewhat sedative from the lupuline (8 grains in 3 pints), which is allied to morphine. With it there are no curds, no “pea soup” stools (simply dark fluid motions), no distension, and, on the whole, better sleep, and better convalescence. After use in hundreds of cases I have found it a sufficient as well as a satisfactory food, and for years past I have put my bad cases, my cases with curds and distension, and all cases with haemorrhage, on it. At first, I added boracic acid, but for the past year or two I have given it alone, in 5 oz. doses every 2 hours. Its only drawback is its mawkish malt taste, which is not thoroughly disguised even with lemon and other fruit juices. I have every confidence, therefore, in recommending it as superior to milk in all cases of the above character. Later on in the disease we add to the foregoing dietary strained coffee and cocoa, bovril, plasmon, liquid peptonoids, and similar meat infusions, and when the pyrexia is over, proceed through the semi-solid jelly and junket to the usual fish, custard, meat, etc. In our slight cases we begin this advance almost as soon as the temperature has fallen to normal; but in other cases we follow, as
(f) *Stimulants.*—The question of *stimulants,* though a very important one, need not detain us long. Stimulants are like spurs or whips, they elicit effort, but, except in so far as they are foods, they add no force. The basis of their action is first, the patient's reactive power, and, afterwards, his capacity to assimilate food. Our slight cases of typhoid are given no stimulant whatever; even severe and complicated cases rarely receive any until the third week or later, and then only if sufficient food is not being assimilated, and the recognised indications in nervous, cardiac, digestive, and other systems are present. In such cases we give brandy (or champagne or effervescent wine in emergencies), generally below four, rarely above six, ounces in the 24 hours, in divided doses, with or separate from food, according to circumstances, and meet any further demand, not so much by an increase in the amount of alcohol as by extra stimulation in the form of ether, ammonia, and strychnine, with strophanthin instead of digitalis, where continued use might lead to cumulative action. Similarly, our cases rarely receive stimulants during convalescence—if given, a red wine is usually selected.

(g) *Symptomatic.—(1)* The *pyrexia of typhoid* is primarily a result, not a cause, and Nature's main index to the stage and severity of the attack. Still, its secondary effect on function and well-being is often so serious that a safe and efficient antipyretic is frequently called for. Slight cases can scarcely be said to come within such category; yet mild sponging 3 or 4 times a day is of service on general grounds. The free internal administration of water, as cracked ice, acidulated drinks, etc., is always similarly beneficial and grateful. But in almost all severe cases some reduction of the temperature is more or less imperative. The only antipyretic that I use is hydrotherapy, and I suit the mode, frequency, and temperature to the individual case. Borderland cases are generally well served by thorough sponging every few hours whenever the temperature is above 102.5°. Sponging, however, is a very relative term, and the usual application is very far from being efficient; indeed, in my opinion, it is largely because it is so slight and perfunctory that those who so misuse it take refuge in the other extreme of "the cold bath
treatment." Severe cases, however, especially if seen during the first week, are frequently more effectively dealt with by "the wet pack," or "the gutter bath." The latter is the method that I practice and advocate whenever the temperature is insufficiently reduced by free sponging, or the case itself calls for more energetic measures. In it a "half bath" is built up round the patient in a large mackintosh sheet, with pillows at head and foot, and bolsters laterally, the patient being freely bathed or irrigated, and the surplus running off into a bucket at the foot of the bed. There remain a few exceptional cases in which the pressure and sustained effect of "the full bath" seem desirable, and then we resort to that somewhat cumbersome procedure. But, in the generality of cases, the "gutter bath" is, at least, equally effective, it is certainly much easier of application for both nurse and patient; it is readily available in private houses; and it has none of the disadvantages and objections that, in certain cases, and conditions attach to the portable bath. To claim, as some enthusiasts do, that such a procedure as the latter must be put in practice in all cases of typhoid—slight and severe, late and early—is about as justifiable as to say that every time you wish to crush a nut you must use a Nasmyth hammer.

(2) As regards nervous symptoms, headache and hebetude are the effects of the toxin, whilst insomnia and delirium come with the continuance of fever. All that is usually required is a small dose of antipyrin or phenacetin at the outset, with quietness, darkness, cold to the head, suitable food, and hydrotherapy. If properly treated, only an uncertain proportion proceed to insomnia, then freer hydrotherapy, especially at night, suggestion, a "night cap" of brandy, or a mild opiate, usually produce sleep. My usual opiate is nepenthe, mxv., with a second half dose later on if necessary. It is rarely that, under the foregoing treatment, we have any delirium; when it does occur we pay special attention to quietness, food, and hydrotherapy, and, if these fail, give a suitable dose of a stimulant or opiate, or, if there is muscular restlessness, a hypodermic of hyoscine.

(3) Turning to the chest, the characteristic rhonchus is disregarded; the onset of pneumonia (which may be told by the respirations and temperature before it appears from the physical signs), is met by quinine, ammonia, ether, strychnine, and per-
haps brandy; whilst basal congestions suggest the addition of digitalis. Similarly, an unduly weak first sound, irregularity or intermittence of the heart, marked dicrotism of the pulse, or a frequency above 110, without complication, point to the advisability of some form of cardiac stimulant.

(4) It is the abdomen, however, that contains the secrets of the disease, and is the fundamental therapeutic concern. Attention to the bladder generally prevents overdistension, and subsequent retention of urine. A daily evacuation of the bowels is secured by a small enema of glycerine or soap and water. After the first week there is danger in giving oil or salts by the mouth, and I have seen two deaths from mag. sulph. during the fever. If there are more than three motions a day, we place the patient on the malt, and, if the diarrhoea continues, give an enema of starch and opium, an injection of hamamelis, or a mild opiate. If there are curds or slime in the stools, we peptonize the milk, or put the patient on the malt. If the patient is admitted with abdominal distension, we place him on the malt, apply a turpentine stupe, and, if necessary, pass the rectal tube, or give a turpentine enema. If he distends on a milk diet, we replace it by the malt. Otherwise, distension occurs with us only either from paresis of the bowel, due to profound toxæmia, and calling for strychnine and alcohol, or from perforation, which is met by immediate operation. Of perforation we recognise two forms—one during the acute stage, frequently associated with haemorrhage, and generally fatal, even after operation with the minimum interference, and a fistulous opening; and the other later on, with more favorable bowel conditions, and often saved by operation even more radical. In case of doubt, we would rather open the abdomen unnecessarily than delay and leave the case to nature.

Haemorrhage.—A slight bleeding may occur even in severe cases, and require only observant neglect, slight abstinence from food, a mild opiate, or, if rectal, an injection of hamamelis. But we always regard severe cases as possibly haemorrhagic, and watch them constantly after the second week. A severe haemorrhage is undoubtedly the gravest complication that can occur. But, as showing that prompt and bold treatment may save even the most desperate, permit me to add to the 13 cases reported
in the "Intercolonial Medical Journal" for October, 1901, the following, which was the worst that I have ever seen. The patient, a woman aged 28, about the 23rd day of her attack, had three haemorrhages in three and a half hours, losing, in all, some eight pints of blood. She was quite collapsed, in blood up to her neck, and, except to place a mackintosh under her at first, she lay without stirring for three days. Immediately after the third haemorrhage, three pints of normal saline were injected into her right median basilic vein, and the following:

24th.—7 a.m. (after first haemorrhage of 22 oz.)—Starch and opium (m. xv) enema, and hypodermic of morphine, gr. ¼. io a.m. and 12 a.m.—Hypodermics of morphine, gr. ½, atropine 1/60, strychnine, gr. ¼. 1 p.m., 3 p.m., and 6 p.m.—Hypodermics of ergot, gr. 1/60. 11 p.m.—Nepenthe (by the mouth), m. x.

25th.—8 a.m.—Morphine, ½. 4 p.m.—Morphine, atropine, and strychnine. 10 p.m.—Morphine, gr. ¼.

26th.—8 p.m.—Morphine, atropine, and strychnine.

27th.—9 p.m.—Nepenthe, m. xv.

28th.—Bowels slightly open at 6 a.m. 8 p.m.—Nepenthe, m. xv.

29th.—6 a.m.—Passed remains of old haemorrhage.

Immediately after the third haemorrhage, patient was put on the sterilised malt, ½, and brandy, ½, every quarter of an hour for two hours, then every half hour for two hours, then malt, ½, and brandy, ½, every half hour for eighteen hours, then malt, ½, and brandy, ½, every hour for six hours, thence onwards, malt, ½, and brandy, ½, every three hours.

Her bowels were, in all, locked up for five days, when they opened naturally. She lived three days afterwards, and then died, most unfortunately, of a double pneumonia, the post mortem showing that all danger from the bowel was quite over. This case shows conclusively that it is possible successfully to stop peristalsis for days, to give a food such as the malt immediately, to use ergot without apparent harm, to stimulate, by alcohol and strychnine without producing fresh bleeding, and to replace loss with the normal saline, even under the most serious local conditions. It proves that, though we may fail in an individual case, no case is necessarily fatal, and even the worst may be saved.
In hæmorrhage with distension, which practically occurs with us only in freshly admitted cases, I administer turpentine internally as a hæmostatic.

(4) *Anomalous.*—The thrombosis, periosteitis, neuritis, etc., which at times occur, require no special therapeutic measures. The otitis, occasionally present in children, is always a source of possible brain implication, and should receive early expert attention, both preventatively and operatively. The rigors that accompany mixed infection have usually no serious import, and may be disregarded. The crops of boils that characterize some epidemics are not within the reach of any special treatment. The mania that complicates some nervous and exhausted cases may require nasal feeding and bromides; whilst the hysteroid condition that may be present later on calls simply for observant neglect. In cases with early and marked pulmonary symptoms it may be difficult, if not impossible, to decide forthwith whether or not pneumonia is a complication of a true typhoid attack, or simply one with "typhoidal" symptoms; but the former possibility should always be borne in mind during the typhoid season. Where there are marked gastro-intestinal symptoms at the outset, the attention may similarly be drawn away from the true nature of the attack. Where there is a suspicion of a mixed typhoid and appendical attack, or even good grounds for believing there is appendicitis, with or without typhoid, it is wiser to operate for appendical abscess, even though typhoid is also strongly indicated. Thus, a recent case, though sent in as typhoid, had symptoms of undoubted appendicitis. These disappeared, the blood gave a specially good Widal reaction, but a blood count of 20,000 leucocytes, mainly polynuclear. The abdomen presented typical spots, but no marked splenic enlargement; the stools were said to be "typically typhoid;" there was unusual gastric irritability, and difficulty with food, a chart quite like a severe typhoid, but coming down with rigors, and unusual daily variations. Then severe pain developed in unusual positions, with symptoms of indefinite peritonitis; finally, there was pointing over the region of the liver, and free evacuation of pus after aspiration and operation. The *post mortem* disclosed an appendical abscess that had spread behind the peritoneum upwards into the liver, with a certain amount of enteritis, but no
characteristic typhoid. An early operation would have saved
the patient.

(h) There still remains the treatment of recrudescences, relapses, and convalescence. In addition to transitory post-pyrexial rises of temperature, due to constipation, excitement, and change of diet, we recognise a smouldering slight pyrexia, due to slow or interrupted healing of the bowel. Such is often best treated, not by a return to fluid diet and enemata, but by castor oil, an advance to semi-solid diet, removal to the verandah, and gradual uprising. A relapse always shows the Wunderlich rise and the characteristic fall, and only very rarely the sustained temperature between. It thus resembles a slight, non-ulcerating attack, and should be similarly treated. It is practically never fatal, unless from the late perforation of a primary unhealed ulcer, or from aggravated asthenia. As regards convalescence, our dietetic treatment of the slight, as contrasted with the severe cases, has been already referred to. In addition, we usually put convalescents on small doses of quinine as a general tonic, reserving iron for cases with marked anaemia. After gradually sitting up and getting about, the majority of our cases are sent to the Convalescent Home for a fortnight or so, with a further change for a month or so, if possible, and are always advised not to attempt any strain, mental or physical, for some months afterwards.

Results.—The death rate is by no means a reliable index of the value of treatment, since it varies, also, with the epidemic, the hospital, and a number of other circumstances. The charts and summaries which I hand round, give the details of the pertinent facts of my last three years' cases. They comprise 75 male patients, with 9 deaths (three moribund on admission, and one death by misadventure), and 57 female patients, with four deaths (one from purulent meningitis, due to otitis). Total, 132 cases, with 13 deaths, with five of which our treatment had nothing to do.

Such, with, I hope, permissible omissions, is a summary of our treatment of typhoid fever. In the absence of any recognised specific, it is expectant, in the full sense of the term, and independent of any routine use of antiseptics, antipyretics, drugs, or stimulants. It is based upon a visualisation of the natural history of the disease, a scientific support of the system from start to finish, constant watching against complications and abnor-
malities, the prompt and approved treatment of unavoidable dangers, and the consideration of every case as potentially dangerous until convalescence has been established. Then there is the satisfaction of knowing that, unlike influenza, the constitution is generally none the worse, and a second attack a negligible quantity.

**PREVIOUS PAPERS.**

1. Transactions Intercolonial Medical Congress.

---

**NOTES ON NASAL TREATMENT OF ASTHMA.**

**By W. Kent Hughes, M.B. Lond.**

Aural Surgeon, Melbourne Hospital.

The nose has, from the time of Hippocrates, been associated with asthma, but no definite advance was made till Voltolini, in 1871, cured several patients by removal of nasal polypi. Instances were multiplied till every case of asthma was accredited to one form or other of nasal trouble. This brought nasal treatment into disrepute, as many cases with marked nasal trouble were not benefited, and many others had no obvious pathological condition of the nose.

Physicians, for the most part, were content to treat the symptom “dyspnoea.” Strümpell, with others, however, is insistent that we should examine the nose in every case, since numerous observations have recently shown that a previously existing asthma may permanently disappear after treatment of some nasal disease which may be present.”

The category of nasal diseases that may be associated with asthma is fairly long, but, shortly put, includes all congestive conditions and mucous polypi. There are also occasionally found in the nose, especially on the septum, spots that, when touched, bring on immediately an attack of asthma, or paroxysmal sneezing, or cough, or merely a feeling of oppression. I suppose that such cases must occur to almost every rhinologist, and up to recently I have been quite content to attack any pathological nasal condition or hyperesthetic spot.

When I was in Brisbane in 1898, Dr. Francis told me that he had accidently discovered that, by cauterising the septum in asthma,
Nasal Treatment of Asthma.

great relief and many cures resulted. At that time, I understood that he was in favour of treating thoroughly any pathological condition, and also of cauterising any asthma spots on the septum or turbinates; that is the practice I have followed out since, with more or less satisfactory results.

Dr. Francis, in his book just published, emphasises the importance of cauterising an area on the septum in all cases of asthma, and he rather prefers those cases in which the nose is apparently free from any pathological condition. The area is opposite to the anterior third of the middle turbinate, and proceeding downwards and forwards. His point is that, by cauterising this area, he renders an unstable respiratory centre stable permanently, which is the chief object to be attained. The removal of one apparently exciting sensory irritation is not enough, as a variety of irritations, nasal or otherwise, can produce an asthmatic paroxysm, but no amount of such irritation can have this effect when the respiratory centre is in its normal state.

That asthma depends upon an unstable condition of the respiratory centre seems to be universally held by all writers, though perhaps such a statement may not bring us very far on the road to truth.

Brügelmann, with an experience of over 2000 cases, says that one great principle, firmly established, is that only through irritation of a central organ can asthma come into being.

Three factors are laid down at present in all asthmatics—First, predisposition; secondly, deviation from perfect integrity of structure in some parts of air passage—some undue excitability of mucous membrane; thirdly, a distant irritant, which is reflected to and again from the respiratory centre.

The dyspncea of asthma has been variously interpreted. Francis agrees with those who hold that it is caused by a spasm of the muscles of the bronchioles.

Hare, in his admirable papers written to Australasian Medical Gazette last year, agrees with those who hold that vaso-dilation is at the root of the collapse of the air vesicles.

Several experimenters have discovered that stimulation of the mucosa of the nasal septum, especially in its upper and posterior part, produces spasm of the bronchial muscles.

Hare certainly makes out a strong case for vaso-dilation, and says, "on the hypothesis that swelling of the mucous membrane and
vaso-dilation, correlative of vaso-constriction elsewhere, is the proximate cause of the dyspnœa, we can explain most of the observations which have been made considering asthma," and he proceeds to show how we can reconcile many of the numerous and apparently antagonistic remedies that have from time to time been suggested. If stimulation of the mucous membrane of the nose also overcomes the vaso-dilation, we can reconcile Francis' successful practice of cauterisation with Hare's theory.

I think that as regards Francis' treatment he has gone too far away from the undoubtedly beneficial treatment of recognisable pathological conditions. In his Presidential Address before the Queensland British Medical Association in 1900, he states that he has known three cases of asthma to be cured in children by removal of post-nasals, so that up to four years ago he was certainly in favour of treating all pathological conditions first, and I think that such is the rational treatment.

In some of my cases marked improvement has followed treatment of pathological conditions, whether directed to the turbinates, to adenoids, or to polypi, and occasionally cure; but in several instances I have had to resort to cauterisation of the septum, as Francis advises. I have had but few cases without any nose trouble, as till lately I have been sceptical. However, it would be foolish to overlook Francis' wonderful success—a success absolutely without parallel—over 75 per cent. of cures in over four hundred cases of asthma. A success that induced a number of patients to leave England for the purpose of undergoing treatment at his hands before he took up his residence in London. Many of his cases have remained cures for six years and more, so the treatment has stood the test of time, and we ought to give it an extended trial, especially if we consider that otherwise we have to rely on the treatment of a symptom, and consequently have numerous quack remedies and empirical methods in the market. You may not approve of Francis' explanation that cauterisation of a part of the nasal septum renders an unstable respiratory centre stable, I do not know that I do myself, but I am quite ready to back up his statements as to its efficacy, though my experience I must allow has not been large.

If Francis' statement in explanation is to be credited, why does he not get an even better percentage of cures, for everyone ought to have his unstable respiratory centre controlled. Perhaps it may be that some of us have no controlling spot at all. The reflex arc may
be broken somewhere; or perhaps it is situated in a hitherto undiscovered spot. However, we must also take into consideration the probability that asthma is capable of several subdivisions, and possibly certain of them may not be affected by a controlling reflex.

In McBride's third edition, he has to some extent anticipated Francis by suggesting that, as irritation of the nasal mucous membrane may change a nerve centre from stability to instability, there is no reason why the converse should not happen.

If we cannot satisfy ourselves that the treatment is rational, and has a strict scientific basis, what alternative are we going to adopt? To quote from Allbutt's *System of Medicine*—"If the patient be a child, it is probably kept indoors, except in the finest of summer weather; yet, nevertheless, the history too often is that it has caught another cold, but no one can say how at first. Perhaps the child has a whole house to roam in, but as the colds recur, it is confined to a room with a sunny aspect; and yet things do not mend. So the doors of the room are carefully screened, the windows pasted up, and still the success being not all that can be desired, extra clothing may be piled on. Ultimately, the doctor finds somewhere hidden under this heap of precautions, a pale, moist, flabby, steaming thing, with big eyes, thin cheeks, protruding ribs, and a more or less general bronchitis—a case of successful management because no attack has occurred for some weeks!" This is an extreme picture, but still it is possible. Then, again, if an attack occurs, which of the numerous remedies are we going to employ, and then we only treat the symptom; or shall we try change of climate, it is sometimes successful certainly, but it is hard to find any climate that always suits one patient, and we may find many that suit none.

We are dealing with a neurosis, which is another name, I suppose, for something uncanny; something the explosion of which is not altogether understood by us; and it may seem disheartening to attempt to treat a disease that at one time yields to dietetic treatment, another time to amyl nitrites or chloroform, and yet another time to a sudden and powerful mental stimulus; at one time is cured by a change from country to town, and again by a change from town to country.

We know, however, by direct experiment that stimulation of an area of the nasal mucosa has a definite result upon the vasomotor system of the alveoli. We know from Francis' work that, by cauterising such area, we can effect a very large number of cures.
therefore, without perhaps being altogether converted, let us try and work out the why and wherefore, but let us give our patients in the meantime the benefit of the treatment, even if it appears a little empirical.

---

**Notes and Comments.**

**Intussusception.**

Dr. Hobill Cole publishes elsewhere in the present number some observations upon a very remarkable series of cases of intussusception in infants. His own experience of thirty-three cases would entitle him to speak with authority, but he has been able to base his conclusions upon like records of no less than seventy-six additional instances which have been placed at his disposal by his hospital colleagues. One cheerful fact is the certainty that, with early operation, the prospect of a successful result is almost assured. Another satisfactory feature is the evidence that the practitioners who see such cases in the first instance, are on the alert to recognise them and secure operative measures without delay. For the rest, Dr. Cole's experience confirms the opinion of authorities elsewhere, that nothing short of laparotomy can be relied upon; that the sooner it is performed the better; and that the danger to life increases with every hour of delay, until operation on the third or fourth day becomes almost hopeless. Where the intussusception is irreducible, the prospect appears invariably bad. It is not merely that the excision of the affected intestine involves intense shock to the infant economy, but that the nervous centres are usually profoundly depressed by toxic absorption before the operation can be undertaken.

[The second portion of Dr. Cole's paper, dealing with the complications of intussusception, will appear in our next issue.]

---

**The Uses of Drugs.**

If Professor Laveran's statement that he has discovered a cure for the sleeping sickness by means of "ordinary medicaments," should prove to be well founded, it will do much to rehabilitate the treatment of disease processes by drugs. Since Lister actually led the way into the surgical promised land, which the countless generations of surgeons who preceded him had but dimly discerned, operative surgery has
come to occupy the most considerable place in both public and professional estimation. With the sudden and occasionally sensational advances of bacteriology, it seemed for a time that the physician was about to lag altogether superfluous, and the apothecary to be reduced in actuality to a beggarly array of empty boxes. It would appear, in the fuller light of experience, that to discard all the remedies employed by them of old time is neither good sense nor good science, even though the employment of most of them be still entirely empirical.

Notwithstanding all the microscopical revelations as to the cause and spread of malaria, quinine as a remedy still holds the place it occupied when the etiology was vaguely classed as an emanation from the soil. Notwithstanding that bacteriology has so far entirely failed to indicate anything definite as to the origin of syphilis, there is probably no disease which the medical profession of to-day feels more confident in attacking by means of drugs. With the single exception of diphtheria, the treatment of acute toxic conditions by the injection of antitoxic, or anti-bacterial, sera, has proved a disappointment; while in the more chronic processes of tubercle, and lepra, the result has been absolute failure.

More Use
Drugs.

It is scarcely possible, even were it sought, to take exception to the contention of bacteriologists, that the question is mainly one of dosage, but the argument would apply with equal force to the employment of drugs; and where any particular drug can be shown to have a specific effect, its employment is an infinitely simpler and more manageable method of treatment. The moral is not far to seek, and it is that the diligent study of Materia Medica and Pharmacy is as important, or even more so, to-day, as in the days when little was known of aseptic surgery, and nothing at all of the life-history of the organisms which give rise to disease. There is great reason to hope that the physician may re-assert his priority of claim in some of the fields which to-day appear exclusively the property of the operating surgeon. Though it is ill work to prophesy, each new discovery renders it probable that the "cure" for cancer, if it be discovered, will almost certainly be some drug, singly or in combination. To hope that the day may come soon in which treatment by drugs shall regain a scientific ascendancy, is neither to belittle the patient labour of the bacteriologist, nor to detract from the admira-
tion which the achievements of modern surgery compel, and to which they are justly entitled. We have been too apt to assume of late, however, that bacteriology can have nothing in common with pharmacology, and that such surgical procedures, as, for instance, the removal of an inflamed appendix, are matters for complete congratulation as regards scientific treatment.

Artificial Restriction.

The Government Statist has forwarded a detailed statement of the replies received to a series of questions formulated, at the suggestion of the Medical Society of Victoria, by Dr. J. W. Barrett. Of 973 medical men addressed, only 214 replied, and of these, 15 pleaded lack of experience. The first query, "Is it your opinion, based on personal knowledge, that the practice of preventing conception in married life is followed," was answered by a practically unanimous affirmative. The second, "Can you form any estimate of the extent to which the practice is adopted," was, in 53 replies asserted to be very prevalent, while 74 declared themselves unable to express any opinion. The remainder were clearly guesses. To the third question, "Can you form any estimate of the date at which such practices were introduced," an unhesitating negative was supplied in 150 instances. The remaining estimates were again obviously speculative. The fourth query was somewhat involved, but its purport was to ask whether modern methods of prevention differed from those in use prior to the year 1881. Upon this, 154 declined to express an opinion, while the other answers showed that the appliances and usages of to-day are the same as those of all civilization in all ages.

Obituary.

PATRICK MOLONEY, M.B.

In the latter end of September a cablegram was received announcing the death of Dr. Patrick Moloney at Ulverstone, in England. It was not unexpected, as his relatives had for some time been aware of his failing health—of which ascites was one of the most obvious indications.

Born at Hawthorn (Victoria) in 1843, Dr. Moloney was in his 61st year at the time of his death. He was educated at St. Patrick's
College, one of his confrères being the present Chief Justice, Sir John Madden. He matriculated at the end of 1861, with credit, the record (so different from nowadays) showing that eleven passed, two with credit.

In 1862, he proceeded to the University, and became one of the trio of pioneer students of the recently founded Medical School. His two contemporaries, Messrs. Rees and Mackie, as well as the whole of the original teaching staff, with the exception of Dr. Neild, have long since predeceased him. At school, Moloney had evinced a keen interest in classical literature, and in his first year he won the classical exhibition, as well as first honours in medicine. In his third and fourth years he also obtained first-class honours. In 1866, he carried off the Vice-Chancellor’s prize for the best English essay. In 1867, W. Carey Rees and himself were the first Melbourne students to receive the degree of M.B. He soon after became one of the Resident Medical Staff of the Melbourne Hospital. After four years there, he went into private practice in Lonsdale Street, and later on, in Collins Street. He became one of the Honorary Physicians to the Melbourne Hospital in 1875, and soon had a very large and lucrative practice. In 1885, he was President of the Medical Society of Victoria. In 1897, he went to England, and soon afterwards resigned his position on the Melbourne Hospital Staff. During the latter years of his life, he returned to his first love—literature—and was a frequent contributor to the London press. In the early seventies, he married Miss Quirk, of Carlton. Their only child was a daughter, now married to an English barrister, Mr. Boland.

Apart altogether from the fact that his life history and that of the Melbourne Medical School in its early days were so inextricably associated, the personality of Moloney was such as to keep his memory green in the minds of the older medical graduates of our Alma Mater. Fortune smiled on him early in life, and as he was not under the bitter necessity of doing thoroughly, not altogether congenial work, he never developed into a really high-class consulting physician. In the early seventies, he was probably the most picturesque and masterful of a band of literary Bohemians, of whom the late Marcus Clarke is best known to fame. In the composition of graceful verse, he could hold his own with any of them, as one can see after perusing his sonnets. His reading seemed to take him into all sorts of out-of-the-way places, and his auditors,
whether students at the bedside or contemporaries at a social gathering, got the full benefit of it when he let himself go. The quaint, the fantastic, and the eerie, had a peculiar fascination for him, and out of the most flimsy material he used to spin amazing webs. His students used to hear a good deal about the physiognomy of disease, dreams, and a good many other things on the borderland between the explicable and the—at least apparently—inexplicable, and they always came away from a walk round the wards with him, feeling that they had had an extremely interesting morning. Withal he was of a genial, kindly, impulsive nature, without a shade of malice or envy in his composition. No wonder that he had hosts of admiring friends, who feel that, take him for all in all, they ne'er shall look upon his like again.

Medical Society of Victoria.

Ordinary Monthly Meeting.

Wednesday, November 9, 1904.

(Hall of the Society, 8 p.m.)

The President (Dr. Howard) occupied the chair. There were 36 members and one visitor present.

The minutes of the last meeting were read and confirmed.

The President stated that a clock, which had been placed in the Hall, had been presented to the Society in memory of the late Dr. W. Butler Walsh—one of the Vice-Presidents at the time of his death—by a few friends of Dr. Walsh. He (Dr. Howard), as President, had much pleasure in accepting the gift to the Society in memory of so worthy a man.

Dr. Stirling showed and read short notes on a case of Cholecystenterostomy.

Dr. Moore stated that it would be of great interest to follow up this case. He had done a similar operation over six years ago. He had not seen the patient recently, but a short time ago he had met the father, who reported that the patient was quite well, except that he occasionally suffered from some obscure liver condition, which had existed prior to, and was not diagnosed at, the operation. He had found some obstructive condition,
but had been unable to locate the cause. He attached the gall-
bladder to the colon.

Another of his cases was gall-stones. The wound closed, but
long afterwards a biliary fistula appeared, and he attached the
gall-bladder to the intestine. He had lost sight of the patient,
who was, however, quite well long after the operation. One of
his cases in which he performed the operation appeared to be
due to an acute pancreatitis. This one did well. It was his
practice always to attach the gall-bladder to the colon. There
seemed to him considerable risk in attaching it to the duodenum,
on account of the adhesions which were always present, and it:
was doubtful whether there was any advantage in letting the bile
drain into the duodenum, instead of into the colon. Patients
sometimes lived for months, or years, with bile escaping exter-
nally by a fistula. If so, there surely could be no objection to
attaching the gall-bladder to the colon. With regard to the
method employed, he always used Murphy's button. Even
Mayo Robson preferred the button, and those who did not use
it in other intestinal operations had no objections to using it in
this. A small button always sufficed, and there was never any
difficulty in its passing into the large intestine.

Mr. R. HAMILTON RUSSELL said that it was comforting to
know that these cases presented difficulties in diagnosis. Dr.
Stirling had first removed the appendix. He had had a similar
case some time ago, in which he had explored and found an
inflamed appendix. But he was not satisfied that that was the
sole cause of the symptoms, so he decided to explore the gall-
bladder region, and found the gall-bladder gangrenous. With
reference to the rival methods, primâ facie, he agreed with Dr.
Moore. This was the one kind of operation in which Murphy's
button was superior to the other methods. He hoped that the
subsequent history of these cases, in which the bile was allowed
to drain directly into the large intestine, would be accurately
kept, with especial reference as to whether they suffered subse-
quently from obscure symptoms, generally attributable to intes-
tinal indigestion. They might possibly show symptoms analo-
gous to those seen in the intestinal indigestion of children.

Dr. STIRLING, in reply, said that in his opinion no man who
undertook intestinal surgery should use more extrinsic weapons
than were necessary. In other intestinal cases he did not use Murphy's button; but the case described by him was the only class of case in which its use was advisable. He was under the impression that Mayo Robson had given it up. The advantage of suture as against the button was that the material was always at hand, and that there was less likelihood of leakage. If leakage did occur, the most favourable direction in which it could flow was into the right renal fossa.

Mr. W. Kent Hughes read a paper on "The Nasal Treatment of Asthma." (See p. 570.)

Dr. Nihill thanked Mr. Hughes for bringing before the Society the treatment—especially the nasal treatment—of asthma. The public seemed to have a notion that the profession was more or less powerless in the treatment of this disease, and if Mr. Hughes could dissipate this notion, he would have achieved much. Even before Francis had described his method, he (Dr. Nihill) had got some measure of success by the cauterisation of certain areas of the nasal mucous membrane which appeared to be quite normal. He found that it often did good.

Dr. Stirling asked what the novelty of Francis' operation was. The method of cauterisation was no new one. Did the novelty consist in defining the precise area to be cauterised?

The President stated that a new method of treatment, ushered in by such an array of statistics, was worthy of respect. He had seen beneficial results follow cauterisation of part of the mucous membrane of the septum. Nasal troubles were often, but not invariably, associated with asthma. The Society was indebted to Mr. Hughes for pointing out the importance of the nasal treatment of asthma.

Mr. Hughes, in reply, said that the essence of Francis' treatment was the cauterisation of a particular and definite area whether it looked diseased or not. Visceral cases of asthma were the most hopeful. The theory that the cause was spasm of the bronchial muscles seemed now obsolete.

Dr. Springthorpe read a paper on "The Treatment of Typhoid Fever." (See p. 560.)

Dr. Stirling stated that the only cases of non-success with which he was acquainted were those which perforated. If he
might be allowed to make a surgical suggestion, he would endorse Kocher's remark—that, experimentally, bismuth made the best intestinal antiseptic. In the United States perforation was responsible for a third of the deaths. In the Johns Hopkins Hospital typhoid patients, during the 2nd and 3rd weeks, were constantly watched by special nurses; while the operating theatre was ready for immediate use in case of a perforation occurring. He had had one successful result after laparotomy for perforation. In that case he happened to be in the building, and so there was no delay in getting the operation started. The perforation occurred in a case of ambulatory typhoid, in the 2nd week. Although pulseless when removed from the table, he rallied, and ultimately completely recovered. In one unsuccessful case he had found it necessary to resect two feet of ileum, so the chances were against recovery.

Dr. A. V. M. Anderson stated that Dr. Springthorpe's paper bristled with interesting points. There was the question of preventive treatment, with which was associated the disinfection of the urine. In about 25% of the cases the bacilli appeared in the urine. While steps were usually taken to disinfect the stools, similar steps in regard to the urine were frequently allowed to go by default. The best results in typhoid were obtained by treating the patients in tents widely open to the air; convalescence was more quickly established, and there was less liability to complications. With regard to specific treatment, he had seen everything, from 12 grains of carbolic acid every 3 or 4 hours—advocated by one man—to acetozone. Except calomel in the early stages, he put his trust in none. On the question of antipyretics, he was an advocate of the cold bath. The gutter bath got over the difficulties associated with the use of the ordinary full bath. He had occasionally used very large doses of quinine—20 to 50 grains once a day—which had a great effect in reducing temperature. Liebermeister, who was a strong advocate of the cold bath, was so fully impressed with the advantages of quinine that he preferred to give up the bath rather than the quinine. His (Dr. Anderson's) experience at the Alfred Hospital had been fortunate in the cases of perforation. Five out of 6 perforations recovered, and of these no case was operated on
before nine hours had elapsed since the perforation. One of the cases had perforated 20 hours previously. He attributed his success largely to the services of a particularly good resident. Delirium and restlessness were, at times, quite relieved by emptying the bladder. In his opinion there was a greater risk in a typhoid patient catching pneumonia from a pneumonic patient than a pneumonic patient catching typhoid from a typhoid patient. He thought it advisable to keep the two apart, if practicable. He had found a leucocyte count a help in diagnosing appendicitis from typhoid. In typhoid, even in an early perforation, there was seldom a leucocytosis. He would not discuss at that time other interesting points in Dr. Springthorpe’s paper.

Dr. Nihill stated that Dr. Springthorpe’s results justified his methods of treatment. Was there a specific treatment for typhoid? It had been contended that the bath was a specific treatment. It was held that, by its employment, the death rate had been reduced by about 6%. If this was the case, there rested a great responsibility on those who refused to use the bath. He was in favour of the bath as against the expectant treatment. As to details, he had adopted the methods of Osler. In using the bath he aimed at more than a reduction of temperature, and so he preferred to adapt the bath treatment to the individual case, as regards temperature, duration, and frequency of the bath. If the patient’s temperature rose above 102.5°, he ordered a bath at 85° for 10 to 15 minutes. If this had no good effect, then he prolonged the duration of the bath, or reduced the temperature, or, if necessary, prolonged the duration of the bath with a reduction in temperature. He noticed, as the chief result of the bath, the sedative effect it had on the patient. He had, in occasional cases, seen it followed by collapse. He was certainly in favour of the rational use of the bath—not necessarily cold. With regard to diet, he again followed the methods employed in the Johns Hopkins Hospital—milk, with lime water or bicarbonate of soda. If this disagreed, he gave albumen water—the whites of one or two eggs in two or three ounces of water; later, he added whey. He was in favour of giving very large quantities of water. If there were contra-indications to the bath, and it
was desirable to reduce the temperature, he employed tepid sponging, ice-cold sponging, or the ice-pack. He was against the use of opium in haemorrhage. It was just in these cases that perforation was liable to occur, and, if it did, the symptoms were masked by the opium. Therefore, there was always a good deal of anxiety in giving opium in these cases. Calcium chloride had been suggested. He advocated the use of ergot.

The President referred to the folly of debarring typhoid cases from private hospitals, while they were still being treated in the general wards of the public hospitals. He had not seen his way to adopt extract of malt in every case, but used it in cases which showed persistent curding of the stools. As a general rule, he employed milk diluted with lime water. He did not care for soda water, because of the gas which was given off. He had no objection to weak tea, coffee, or cocoa. He did not particularly like broths and beef tea, but had no great objection to them. He could not see his way to give solid or substantial food. Distension was due to fermentation, as a result of excessive or unsuitable food, or else it indicated an oncoming perforation. He treated distension by reducing the excessive or unsuitable food, and, if necessary, by giving turpentine stupes and enemata. Strychnine also helped. He made use of stimulants very seldom, and never as a routine. In the treatment of pyrexia he made no frantic efforts to reduce the temperature, but was quite satisfied if hydrotherapy reduced it a degree or a degree and a half. If the temperature kept under 102°, he adopted slight sponging twice a day. If it rose above 102.5°, he ordered a full bath at 85° for 10 minutes, prolonging the bath to 15 or 20 minutes if necessary. He never ordered the bath at a lower temperature than 85°. Sometimes, if there were persistent shivering, he used it at 90° or 95°. In use, the full bath was not ideal, but was better, he considered, than the gutter bath, which latter, however, was certainly very convenient. The reduction of temperature was the least advantage in the use of the bath. The best effect was on the nervous system, and hypnotics were practically never ordered by him in these cases. A bath was often followed, almost immediately, by sleep in restless patients. Haemorrhage was always serious, and wanted watching in the most trivial cases.
If the quantity was up to 4 or 8 ounces, he gave a hypodermic injection of morphia. In severe cases he gave salines in the axillae or into the veins. He very seldom was troubled with cases of persistent diarrhœa. If so, he altered the diet, if necessary, and gave bismuth. Drugs were not of much use once thrombosis had set in. It had been said that it was not so liable to occur if citric acid was given. Hence it might be wise to give citric acid if the early pain of threatened thrombosis appeared. It was necessary to remember the possibility of the occasional presence of both typhoid and appendicitis. Dr. Springthorpe's death rate of 10% was less than the average for some years in the Melbourne Hospital.

Dr. Springthorpe, in reply, said that he thought some cases of perforation that were extremely bad might be saved if, instead of resecting the bowel, the bowel was simply brought up to and attached to the abdominal wall, and a fistulous opening allowed. In his opinion, bismuth acted only mechanically, and was liable to precipitate a perforation in an ulcer which had nearly perforated. He held the same opinion of carbolic acid. He had found it free in the peritoneal cavity. He agreed with Dr. Anderson that typhoid was best treated in the open air. Intestinal antiseptics were disappointing. They could have no effect on the mesenteric glands and other structures involved, which were outside the intestinal tract. He had used quinine, but had given it up. He agreed with Dr. Anderson, too, that delirium was often relieved by the emptying of the bladder. Distension of the bladder so easily came about, owing to the patient's mental dulness, and once there was any neglect in this way, the difficulty in micturition was apt to continue for some time. He did not think these patients developed pneumonia owing to infection from other patients. He thought the organism was always present, and that the depression in the patient gave the organism a chance to develop with greater virulence. He should be exceedingly sorry to have to give up opium in cases of haemorrhage for the fear of its obscuring a possible perforation. He had given calcium chloride, adrenalin, etc., but pinned his faith on paralysing peristalsis with opium, and then giving ergot. It was known that ergot would blanch the intestines. On the all-
important subject of diet, he wished it to be distinctly understood that he did not give the malt in every case. It was dearer than milk, but cheaper than peptonised milk. Its nasty, mawkish taste was its only real disadvantage. He had never been an advocate of the routine use of stimulants. He considered the gutter bath quite as useful as, and very much more convenient than, the full bath. He had never had shivering for half an hour after a gutter bath.

Extracts from Foreign Current Medical Literature.

On the Proportion of Leucocytes Present in Gynecological Affections and During the Puerperium (Pankow, Archiv. f. Gynäk., LXXIII., 2).

The amount of leucocytosis, in regard to the diagnosis of suppuration, is of considerable importance, and this article is, therefore, of interest.

First of all, it must be noted that, for the same person, the numbers may show considerable variation, according as the count is made sooner or later after the withdrawal of the blood. The longer the delay, the more the numbers vary, so much so that, after a few hours, owing to the formation of granular masses in the preparation, it is very difficult to make a count. Under such circumstances, the variations may be from 1000 to 2500 per c.m. In one and the same person, and placed under the same conditions, one may find at an interval of two or three days differences amounting to 2000 leucocytes. But in spite of these variations, a count of leucocytes generally furnishes important diagnostic indications. Certain accepted ideas must, however, be modified. In adnexal inflammations, for instance, it is generally believed that suppuration may be excluded if the count does not exceed 16,000. Pankow's observations, however, show that suppuration is quite as frequent in patients having 10,000 to 16,000 leucocytes as in those in whom the number exceeds 16,000. The minimum limit for these cases should, therefore, be placed at 10,000.
The feeble degree of leucocytosis, in cases of suppurative salpingitis, as compared with other internal suppurations (e.g., appendicitis), must be attributed to the encapsulating of the pus, by which pyemic absorption, and, consequently, chemiotaxic afflux of the leucocytes is diminished.

Fibromata, except when complicated by suppuration, do not determine leucocytosis. The same remark applies to cancer of the uterus. When leucocytosis is observed in these cases, it is caused by suppuration of the growth, or by septic absorption from its surface; but it is clinically impossible to distinguish cases of cancer which absorb from those which do not. One thing is, however, certain, viz., leucocytosis is absolutely independent of the extension of the growth.

Abdominal operations, even in the absence of any haemorrhage or purulent effusion into the serous cavity, are always followed by marked leucocytosis, and this is in nowise due to the anaesthesia, for this by itself does not cause any significant increase in the number of the white cells. Pankow, therefore, thinks that it is due either to a mild infection—which even the most perfect asepsis is not quite able to prevent—or to the absorption of wounded and necrosed tissue elements caused by the incisions, the contact of instruments, or hands.

During pregnancy the number of leucocytes is not increased, except towards the end, when there may be a slight increase. During labour, however, the number rises rapidly to 15,000, 20,000, or 22,000 per c.m., to sink again almost as rapidly when labour is over. In every instance the number has reached the normal by the 3rd or 4th day.


Burkhardt's experiments had the object of determining in how far necrosed tissues, produced during aseptic operations, cause disturbances in primary union, and to what degree inflammatory symptoms occur during the absorption of such necrosed tissues. For this purpose he took crushed or burnt pieces of fresh muscle, and transplanted them under aseptic precautions into the
muscles of rabbits, and watched the subsequent phenomena carefully.

The first thing that occurred was a free inflammatory exudation of leucocytes and fibrin, which occasionally led to a purulent deposit around the necrosed tissue; but an actual abscess never occurred unless the part had been infected. It is, therefore, very probable that such necrosed tissues, even during an aseptic course, may interfere with primary union, inasmuch as they produce a locus minoris resistentiae, and complicate and delay the healing process.

As soon as the exudation comes to a standstill, absorption of the necrotic tissue begins, and a firm scar results, consisting of fibrillar connective tissue, poor in nuclei. Resorption is carried out by the granulation tissue, large numbers of giant cells being formed. These giant cells originate from the confluence of simple cells, and may eventually, when the process of absorption is finished, become simple cells again, and contribute to the formation of connective tissue. The leucocytes take no part in the process of resorption, but perish, and are absorbed by the granulation tissue.

A piece of necrotic tissue, of the size of a bean, is not absorbed before the lapse of two months. Resorption begins, on the average, about six days after inoculation. The intensity of the inflammatory reaction depends, to some extent, on the size of piece of necrotic tissue. Any purulent exudation which may occur is always of benign character, and is absorbed spontaneously.

**Double Aortic Arch.**

At a meeting of the Physiological Society, Kiel, A. Heller showed the above specimen, which belonged to a woman, æt. 54. The aorta divided 7·5 c.m. above the valves into a right and left branch. The right was 3·5 c.m. in circumference and 7 c.m. long, and the left 4 c.m. in circumference and 5 c.m. long. The right arch rose about 1 c.m. higher than the left. The length of the slit formed by the two arches measured 3 c.m. in length and 2 c.m. in width at its widest part, and through it passed the trachea and the æsophagus. The right arch gave origin near the bifurcation to the right carotid, and a little higher up to the
right subclavian, and the left, at a little distance from the point of bifurcation, to the left carotid, and about 1 c.m. higher to the left subclavian. Each arch passed over the respective bronchus. The right recurrent nerve passed over the right arch, the left had been accidentally cut, but it probably passed over the left arch.

Heller also showed, at the same meeting, a case of Absence of the Inferior Vena Cava, found in a man, æt. 62. The right auricle received, instead of the lower vena cava, a common stem of the hepatic veins. The vena iliæ ran a normal course, and united in the usual manner, forming the lower part of the inferior vena cava, which received, about 7 c.m. above the junction the right renal vein. It then passed beneath the aorta, where it received the left renal vein. It now pierced the diaphragm towards the right, and passed (being now of about the thickness of a finger) upwards over the right bronchus to join the superior vena cava. In other words, the upper part of the vessel consisted of the vena azygos major. Both spermatic veins opened about 1½ c.m. from the vena cava into the respective renal veins.


The patient was 27 years of age, and pregnant for the fourth time. Rupture of the uterus occurred quite spontaneously at a period of very active foetal movements. Both foetus and placenta escaped into the abdominal cavity through a transverse rent 5 c.m. long. The clinical symptoms were, at first, vague. The patient died during the operation. The microscope showed considerable changes in the muscular tissue of the uterus. In parts the fibres had completely disappeared. Meyer considered that the uterus was, to a certain extent, in an infantile condition.

C. A. Altmann.

We have received from Messrs. Burroughs, Wellcome and Co., samples of the following:—"Tabloid" Hemisine, 0'003 gm., for internal use; "Tabloid" Ophthalmic Hemisine, 0'0006 gm., for ocular use; "Soloid" Hemisine, 0'005 gm., and 0'0012 gm., for external use; also "Enule" Hemisine, 0'001 gm., for rectal use.
Library Digitised Collections

Title:
Intercolonial Medical Journal of Australasia 1904

Date:
1904

Persistent Link:
http://hdl.handle.net/11343/23170

File Description:
IMJA, November 1904

Terms and Conditions:
Articles from the Australian Medical Journal have been made available as permitted under the Copyright Act 1968. Any further reuse or reproduction is subject to the following:

Terms and Conditions:
Copyright has expired: Where the author of an article died before 1 January 1955, copyright has expired under Australian copyright law and the material has passed into the public domain. Please note that this may not be the case in other jurisdictions, and it may be necessary to refer to the copyright law in your region when using this material.

Terms and Conditions:
Articles still subject to copyright: Where the article is still protected by copyright, articles have been made available as permitted under section 200AB of the Copyright Act 1968. This material is subject to copyright and any further reproduction, communication, publication, performance, or adaptation is only permitted subject to copyright legislation in your jurisdiction.