Surely, then, we must look for some subtle mode of communication from person to person to account for the wide and general diffusion of this malady; for its especial prevalence when masses of human beings are crowded together in towns, in workshops, in prisons, barracks, and convents, and in overpopulated dwellings; conditions and modes of life which directly favour the spread of disease by communication; while it is absent or rare wherever the population is sparse and scattered, and where extension by communication would be difficult.

The appeal to clinical evidence, in the present state of our knowledge of the nature of pulmonary consumption, can only furnish proof of the degree of communicability, and the laws which govern it; and, were it only one tithe of what it is, it would be sufficient to support the fact of communication. For it is now almost universally admitted that the exciting cause of phthisis is in most cases inoperative unless it encounters certain predisposing causes.

Let us take Dr. Andrew's own facts from the City of London Hospital for Diseases of the Chest.

Of 12 resident medical officers, 1 died of very rapid phthisis, before he had been in the hospital a year. From what local "independent" non-parasitic source did he, I would ask Dr. Andrew, acquire the bacillus? If there existed such a source in the hospital itself, surely it was a most unfit place for pulmonary invalids.

Of 3 secretaries, one was "delicate" at the time he took office, and "eventually died of some chest-disease."

Of 255 nurses, sisters, and female servants, one nurse died in the hospital of phthisis, and 33—about 13 per cent.—left on account of illness. "Some, but certainly not all, were phthisical."

A porter and a dispenser died of phthisis.

Of 51 clinical assistants, "I know," writes the secretary, "that 2 or 3 have become phthisical, but I have not been able to learn the history of a sufficient number to draw any conclusion."

Surely these facts are perfectly consistent with the view that phthisis is spread by communication. I must again insist that it is not necessary to discuss the question whether phthisis is highly contagious under ordinary conditions of life, in this country; we know that it is not.

But the question which presses for decision in the etiology of phthisis is this: is not phthisis always spread by communication, direct or indirect, from person to person; if it be not so spread, how is it spread? Dr. Andrew has been driven to imagine an independently existing bacillus of non-parasitic origin, of the presence of which amongst us there is not a shadow of proof.

It has been said that, even if phthisis be spread by communication, we ought to conceal the fact from the public, and that it would be calamitous if it were to become generally known. I cannot admit the justness or propriety of this view. What has been the action of the medical profession towards the public, of late years, in regard to preventable and communicable diseases? Have we not been doing everything that was in our power to rouse and alarm them out of their indifference? and shall we hesitate now to declare what we may discover to be the truth with respect to a disease which kills one-half of those who die in this country between 25 and 35 years of age? With regard to the cause of this wholesale destruction of life at its very prime; I cannot believe that this would be either sound morality, sound charity, or sound sense.

In conclusion, let me call your attention to one aspect, and that a practical one, of this argument. If tubercular consumption is always spread by communication from person to person, directly or indirectly, this fact brings this fearfully fatal malady more completely within the class of preventable diseases, and therefore more thoroughly within the scope of preventive medicine. So far, then, from being a depressing view, it is the most hopeful that can be taken of pulmonary consumption; and with this remark I must bring this fragmentary paper to a close. I have only been able, as I said at the commencement, to touch on a few points in the etiology of phthisis; and my chief object has been to induce you to think over the subject of the communicability of phthisis, without prejudice, from the new points of view, which our new knowledge as to the nature of the disease affords.

I have not been able, I regret to say, altogether to avoid a tone which, I am afraid, may have appeared somewhat controversial and a little personal. But it was impossible to quote recent arguments without mentioning their authors; and as I believed some of them to be erroneous, and as standing in the way of sound views as to the etiology of phthisis, I have thought it best to say so frankly and openly.

I am sure those gentlemen whose opinions and arguments I have endeavoured to controvert will accept my criticisms in good part, and will be as glad as I shall be if, by any chance, they lead us any nearer the truth.

REMARKS ON THE TREATMENT OF STRANGULATED HERNIA, FOUNDED ON TWO CASES OF FALSE ANUS AFTER HERNIOTOMY, IN WHICH THE "SPUR" WAS REMOVED BY DUPUYTREN'S ENTEROTOME, AND THE OPENING CLOSED BY SUTURE.

By HOWARD MARSH, F.R.C.S.,
Senior Assistant-Surgeon to St. Bartholomew's Hospital.

CASE I.—Last summer, John R., aged 33, was admitted into St. Bartholomew's Hospital with a large strangulated inguinal hernia. As taxis failed, and I was unable otherwise to return the intestine, I opened the sac. The gut was nearly black, and the different coils were adherent, and formed a large globular mass, which I was afraid to unravel. I therefore stitched the bowel to the margins of the wound, and opened it. The patient quickly recovered; but, two months later, the opening showed no tendency to close, and no feces were passed *per anum*. The upper and lower ends of the gut could be easily made out. Dupuytren's enterotome was readily applied, and the blades were partially closed, so that the spur was compressed, but not crushed. Subsequently, the screw was turned a little each day, till on the fourth day the blades were in contact. The instrument spontaneously slipped out of the fistula on the sixth day. Four days later, the spur was found to be much reduced, but still to form a considerable projection into the interior of the gut. Later, the enterotome was again applied, and screwed up more tightly than on the previous occasion. During the night, the patient felt sick, and complained of considerable abdominal pain, and next day the abdomen was slightly tympanitic. These symptoms, however, subsided, and the enterotome fell off in four days. The spur could now no longer be felt. In the next month, although the external wound contracted, no feces were passed *per anum*. I therefore determined to close the fistula. The patient was placed on low diet, and fed almost entirely by enemata for four days. On proceeding to operate, I found the intestine adherent merely to the edges of the external wound, so that, when this connection was separated, the gut was quite free within the sac. The intestinal fistula was closed by Lembert's method, the bowel returned into the abdominal cavity, and the edges of the external wound were brought together. The patient recovered without any drawback.

CASE II.—Mr. Savory operated on Emma C., aged 54, in February 1884, for femoral hernia. Finding the intestine gangrenous, he opened it *in situ*. As, four months later, all the feces escaped through the fistula, and as a prominent "spur" could be felt between the upper and lower ends of the gut, Mr. Savory arranged to apply a modified form of Dupuytren's enterotome, but on going out of town, in vacation time, he left the case in my hands. I applied the enterotome just firmly enough to have a secure hold of the spur, and gradually tightened it. The instrument came away on the fifth day, bringing with it the sphacelated remains of the spur between its blades. Ten days later, as some of the spur could be still felt, the enterotome was again put on. It came away on the seventh day. No spur could now be detected. Two months later, though the external opening had contracted, no feces passed *per anum*. I therefore proceeded to close the fistula. Finding the intestine extensively adherent within the sac, I detached only so much as enabled me to bring its edges together. When this had been done, the external wound was closed. Three days later, fecal discharge occurred through the wound; but this, which was never large in amount, gradually diminished, and ceased in about a month. The patient left the hospital wearing a truss, to prevent bulging to the scar. Her bowels acted without trouble after the operation.

REMARKS.—The progress of surgery has been great in the last twenty years, but it has been irregular. In some directions there has been a rapid advance; in others, matters have been at a comparative standstill. The difference has been due, among other causes, to the fact that, where the ground has been new, as in some of the special branches, the course has been open, while along the old lines of practice the tyranny of tradition and routine can only be slowly shaken off. This is well seen in abdominal surgery. In ovariectomy, during which the abdomen is opened, adhesions are broken down, the viscera handled, perhaps a hole accidentally made in the intestine is sewn up, and the peritoneum is thoroughly sponged out, several

operators have reduced the mortality to about six or seven per cent. ; while among patients with hernia, which consists in the mere slipping of a piece of intestine through some opening in the abdominal wall, the events that follow strangulation are, attended with a death-rate that often reaches twenty or thirty per cent. Whence, in the present state of surgery, and out of an accident so trivial at the outset, does such a fatality arise?

A review of the subject may be brief, for the main facts are familiar to all.

1. In some cases, much time is lost before the surgeon is called in, during which not only is the mischief done by strangulation hourly increasing, but the patient, thinking he is only "bilious," is taking dose after dose of aperient medicine; or, if he know he is ruptured, is making violent and ill-directed attempts to force the gut back. In many such cases, the die is cast before the surgeon is sent for.

2. The fatal issue sometimes arises from the practice of allowing treatment to precede diagnosis, and of giving aperients and waiting for a day or two, instead of at once fully examining the different hernial apertures as soon as those three symptoms, sickness, abdominal pain, and constipation, like the little cloud no bigger than a man's hand, appear upon the scene.

3. The fault in other cases lies in our failure to urge that, as soon as symptoms of obstruction are developed, any irreducible hernial protrusion should be at once explored, even though it be no larger than usual, and be neither painful nor tender on pressure.

4. Another error is that of the too long use of the taxis, which is sometimes continued for half or even three-quarters of an hour. It is hard to lay down any precise rule; but, in the majority of cases, unless the taxis succeed, when carefully and steadily tried, while the patient is under an anæsthetic, in five minutes, it should be given up, and the operation should be at once performed; for the operation is much less dangerous than the prolonged use of the taxis.

5. Next, as to the opening of the sac. When we were in bondage to the peritoneum, it was thought that the main danger of the operation for strangulated hernia lay in opening the sac; and, when a patient died after the sac had been opened, the result was ascribed to peritonitis arising out of this proceeding. There is, however, a growing impression, with which I most fully agree, that the sac ought to be much more generally opened than has hitherto been the case; first, because, when this is done, important, though unsuspected, conditions of the gut may be disclosed; secondly, because, when the sac is not opened, the highly septic fluid which it often contains is returned with the gut into the abdomen, where it may very likely produce fatal peritonitis. What ovariologist would venture to leave two or three ounces, or even two or three drachms, of septic fluid in the abdominal cavity? Is not the present success of abdominal surgery largely due to the practice of thoroughly cleansing the peritoneum by any requisite amount of sponging? I believe that, whenever a hernia has been sharply strangulated for even six or eight hours, the sac should be opened, and well washed out before the stricture is divided.

6. When a patient dies after an operation for strangulated hernia, with sickness and abdominal distension, death is usually ascribed to peritonitis. This view, however, though often correct, is also often erroneous. In many of these cases, death ensues in the following way. As the result of constriction, the piece of intestine that has been strangulated is reduced to a condition of paralysis, from which it either will not recover at all, or will recover only very slowly; and the result is that fecal material passed into it from above, lacking propulsion, lodges, and plugs the gut, and so produces obstruction. I have seen many examples of this occurrence in which all goes well for some hours, or even for a day or two, after the operation; but then symptoms, really due to this form of obstruction, but ascribed to peritonitis, set in. Two illustrations will suffice. Two years ago, I operated on a young man for strangulated congenital hernia. The gut, which was deeply congested, was returned. All went on well, and the temperature had fallen to 99.6°, when, on the third day, he was sick, and the abdomen became tympanitic. These symptoms persisted, and four days later he died. On examination, there was no trace of peritonitis, but the intestines were much distended down to the part nipped, and entirely empty below. In another, as sickness and distension persisted after a hernia had been reduced by taxis, and as it was suspected that some strangulation still remained, the abdomen was opened. Neither strangulation nor peritonitis, however, was present, but the portion of the gut that had been nipped was collapsed and flaccid, and the intestine above was distended with liquid feces; that below was empty and contracted. In some, at least, of the cases in which what is regarded as peritonitis subsides under opium and feeding by the rectum, the true explanation is that the intestine has been able to recover itself just in time, so that fatal

obstruction has been averted. If, after operation, the symptoms continue, especially if vomiting be persistent, a small opening should be made in the middle line, and the first piece of distended intestine that presents itself should be drawn out, stitched to the wound, and opened. The value of this proceeding of drawing out and opening a loop of distended intestine as a means of saving life in otherwise desperate cases of obstruction, has only recently forced itself on our attention.

7. Hitherto it has been the custom to replace the intestine, as a matter of course, unless it have shown signs of the approach of gangrene. This is often a fatal mistake. A number of cases of severe strangulation are now lost, which would, I believe, recover if the gut, instead of being returned, were opened *in situ*. In the cases to which I allude, death is sometimes due to the rupture of the gut at the moment of reduction, or after its return: in some instances the intestine, though seemingly not much damaged, becomes gangrenous after its return; in some, the septic discharge poured out by the inflamed intestine produces peritonitis; and in some, again, the strangulated loop never recovers its peristalsis, and leads to obstruction. The more general recognition of the efficacy of opening the gut as a means of saving life in far-gone cases of obstruction, a fact long since recognised and applied in the operation of colotomy, is one of the most important advances lately made in abdominal surgery. Some time ago, I met with the following striking example. In a woman aged 54, much exhausted by sickness and distension of a week's duration, apparently of mechanical origin, I opened the abdomen, and found malignant disease of the large intestine. The gut above the stricture was stitched to the external wound, and opened. All the urgent symptoms were immediately relieved, and in a month she left the hospital. Unfortunately, I heard no more of her. The extension of this practice to cases of long continued strangulation due to hernia, would have the effect of saving many patients whose lives are now lost.

But, supposing that a false anus has been established, what probability is there that it can be closed? In the first place, it is to be remembered that many fecal fistulæ, after hernia, spontaneously close, some rapidly, some only after the lapse of several weeks, or even months.

The prospect of closure largely depends on the amount of the intestinal wall that has been lost. When merely a linear incision has been made, closure is much more probable than when a loop has sloughed, so that the continuity of the gut has been destroyed. Hence the instances in which the bowel has been merely incised are those most favourable for spontaneous closure.

The immediate cause of non-closure is, no doubt, the "éperon," or "spur," so well described by Dupuytren. What, then, are the chances that this may be safely dealt with? Dupuytren tells us that the well known enterotome which he invented for destroying the spur was used in his day in forty-one cases, in twenty-one by himself, and in twenty by other surgeons. Of these, only three, it is said, were fatal; of the remainder, twenty-nine are reported to have been completely cured in from two to six months, while, in nine, fecal fistulæ remained. The instrument, however, subsequently fell into disuse, mainly, it seems, because Jobert and others met not only with dangerous symptoms, but with fatal peritonitis from its use. Many instances might be given in which a good thing has been hastily condemned, only to regain its just credit after many years have passed. From recent reports, it seems that the true estimate of the enterotome is that which Dupuytren himself formed of it, rather than that according to which Jobert and others considered its use as unsafe. Doubtless, it demands exemplary care; but this is true of every surgical proceeding.

In the two cases, the notes of which I have related, no difficulty was experienced in the use of the instrument, while its safety and efficacy seem to be indicated by the fact that, of eighty-four cases collected by Heimann (*London Medical Record*, May 1883), the mortality directly due to the enterotome was less than 2 per cent.; while, in 60.2 per cent. the false anus entirely closed, and, in 31 per cent. only a small fecal fistula remained. The chief points in using the enterotome appear to be that its blades should be closed upon the spur very gradually, and that, if the spur be very prominent, it should not be destroyed all at once, but by two, or even three, operations. Should it be necessary to enlarge the external wound, when it has partially closed, in order to secure room for the safe introduction of the blades of the enterotome, to which the finger, passed into the gut, must serve as a guide, this may be done efficiently, and without causing pain, by the use of sponge-tents. If these be employed, the danger attending any cutting operations, by which the peritoneal cavity might be opened, may be entirely avoided.

The cases I have related illustrate the three points to which I am anxious to direct attention.

1. The majority of, even the worst cases of strangulated hernia may be saved by opening the gut *en situ*.
2. The spur, the main obstacle to the closure of the resulting fistula, may be safely destroyed by Dupuytren's enterotome.
3. The fistula, if it do not spontaneously close when the spur has been removed, may be readily obliterated by operation: the gut, after closure, being either returned into the abdomen, or (if adherent) left in the sac, and the edges of the external wound being brought together over it.

When these facts are generally accepted as the basis of our rules of practice, and when the points mentioned in the early part of the paper secure the attention they deserve, the mortality after operations for strangulated hernia, I believe, will fall from the present excessive figure to something considerably under 10 per cent.

NOTES ON THREE CASES OF TUBAL PREGNANCY SUCCESSFULLY OPERATED UPON AT THE PERIOD OF RUPTURE.

By LAWSON TAIT, F.R.C.S.

Surgeon to the Birmingham and Midland Hospital for Women.

THESE cases are the seventh, eighth, and ninth of their kind which have occurred in my practice; and all of the nine save the first have recovered and continue, up to the time of writing, in good health. Such a series, though not a large one, is sufficient to prove that these cases may be treated with perfect success under the improved and bolder proceedings adopted in abdominal surgery within the last six years. In fact, they are almost of themselves sufficient, when taken with the established fact that the great bulk of such cases have a fatal termination when left alone, to determine the propriety of immediate operation in all such cases. They also confirm the views which I have already expressed, that cases of extra-uterine pregnancy are all tubal in origin, arising from a ruptured tube about the tenth or twelfth week of pregnancy, at a point which is determined by the site of the placenta. This explains the extreme fatality of the rupture. As not a single instance of extra-uterine pregnancy at the time of rupture has been discovered other than of tubal origin, we are absolutely wanting in evidence that there is any other origin for this displacement.

CASE VII.—E. D. H., aged 36, under the care of Mr. Wren, was admitted to hospital on November 24th. She had not menstruated for nearly four months, and had never had a child, although she had been married twelve years. She was seized, some time early in November, with a violent attack of abdominal pain, for which she kept her bed and was under treatment. When I saw her the uterus was fixed and a tender mass existed on the right side. I recognised this as possibly a ruptured tubal pregnancy. I operated on November 28th, and found the abdomen full of bloody serum and loose clots. The left Fallopian tube had ruptured to the extent of nearly three inches; it was adherent, and required considerable care in its removal, hæmorrhage being very free. The pedicle was tied by the Staffordshire knot, and the pelvis drained. The patient made a very rapid recovery, and went home on January 5th. The fetus in this case was not found; but the placenta occupied the dilated tube, and the rupture had taken place quite at its edge.

CASE VIII.—S. B., aged 41, married at 17, had eight children, the last being ten years old. She had what was supposed to be a miscarriage in May last. The catamenia again ceased in November, 1884. She was sent to me by Mr. Scott of Wolverhampton early in February, and I found everything in the pelvis fixed, with symptoms of acute pelvic peritonitis. I opened the abdomen on the 9th, and found a large quantity of serum and clot in the pelvis. I found the fetus lying loose, close to the ruptured right Fallopian tube, from which the placenta was extruding. The diseased organ was removed with difficulty, and the pelvis drained. The patient made an easy recovery, and returned home on March 5th.

CASE IX.—A. S., aged 26, under the care of Dr. Malins, had been married nine years, and had had four children, youngest child being 17 months old. After this confinement, she had a long and serious illness. The period again became arrested just before Christmas. About the middle of February, she was attacked by violent pelvic pain. On the 23rd, I found all the pelvic contents fixed. I opened the abdomen, and found, as usual, loose clots, bloody serum, and a largely distended and ruptured left Fallopian tube, in which there was a placenta. The fetus was not found. The Fallopian tube was removed with very great difficulty, the hæmorrhage, during the operation and after it, being very alarming. The pelvis was drained. The patient made a very admirable recovery, and left the hospital on March 11th.

NOTE ON THE USE OF PERMANGANATE OF POTASH IN CASES OF INSANITY ASSOCIATED WITH AMENORRHOEA.

Read before the South-Western Branch.

By P. MAURY DEAS, M.B., Wonford House, Exeter.

It was, I think, Dr. Sydney Ringer who, two or three years ago, first drew attention to the fact that permanganate of potash, hitherto chiefly known as a powerful oxidiser and disinfectant, had a decided effect on the uterine function, and could be used with advantage as an emmenagogue.

As I am inclined to think that this use of the drug in question has not been followed up so much as it deserves, I am anxious to lay before you a few notes as to the results of my experience of its utility.

I have chiefly employed it in obstinate cases of amenorrhœa, associated with mental derangement, either as the cause of the latter, or as a coexisting condition, both depending on a common cause, such as sudden shock, fright, etc.

The first case in which I tried the permanganate was that of a young woman, who had broken down in health from the effects of prolonged nursing of a sick relative, and the anxiety connected therewith. The catamenia were suppressed, and the patient fell into a state of general bad health. After a time, mental symptoms supervened, of the nature of melancholia, with stupor. When, after some months, she came under my care, the catamenia had been suppressed for about a year, and the general health was much below par, with constipation, anæmia, and general want of tone; the mental symptoms being obstinate taciturnity (never speaking a word), volitional power almost entirely in abeyance, and a tendency to the cataleptic condition.

Various remedies had already been tried for the amenorrhœa. She was treated on general principles for two or three months, with no change beyond some little improvement in her general health. Permanganate of potash was then prescribed in pills of one grain, one three times a day, and increased after a time to two grains three times a day. After taking them for about two months, the catamenia appeared, and almost simultaneously a rapid improvement set in in her mental condition and general health. She was watched carefully at the next period; the pills were renewed for a week before, and hot hip-baths administered. The catamenia appeared, and from that time the patient made a rapid and uninterrupted recovery.

I subsequently employed it, with equal success, in several other cases of a somewhat similar type. One important point is, not to be discouraged too soon. You may have to persevere with the remedy for months and months, though, in some ordinary cases of chlorotic amenorrhœa, uncomplicated with insanity, I have found the desired effect produced very rapidly. In cases where I have prolonged the use of the drug for a long time without the catamenia being restored, there has still been a marked improvement in the general mental and bodily condition. The permanganate, indeed, seems to act as a general and nervine tonic, assimilation being greatly promoted, and the anæmic condition improved.

Recently I have had a remarkable example both of this and of the restoration of the menstrual function after prolonged suppression. This is a young lady who has been under my care for the last seven months. When I first saw her, her general condition, both bodily and mental, was very miserable; and she had the look of confirmed amenorrhœa, from which she had suffered for a considerable period; the exact time was not known. She was given the permanganate, the use of which was continued, without apparent effect beyond a gradual but very decided improvement in her general bodily condition, until I was considering if it were worth while to continue it any longer, when, a fortnight ago, after fully six months' perseverance in the remedy, the catamenia appeared. Mentally, there is considerable improvement in the case; but it is fluctuating and uncertain. The mental derangement had, however, existed for more than eighteen months before the special treatment was begun.

I should be glad to have my experience of the permanganate as an emmenagogue checked by that of others; but at present I feel inclined to draw the following conclusions.

1. Permanganate of potash is an useful and safe emmenagogue, and free from the disadvantages which attend some other remedies of this class.

2. Its use may be continued for months without any bad effects, and success need not be despaired of even after many months.

3. Even when it fails as an emmenagogue, it acts beneficially as a general and nervine tonic.