a vulnerability; *i.e.*, increasing the chances of having pneumonia, leaving out of sight—in fact, denying—what seems to be a much more reasonable explanation of the phenomena—viz., that the phthisis is only another manifestation of the same constitutional diseased condition; for we question that the great tendency to pulmonary disease exists more specially at puberty than during childhood. The age at which pulmonary phthisis is most prevalent and most fatal is certainly not the age at which patients are particularly liable to other morbid conditions of the lungs. It would be more in accordance with medical experience to say that childhood showed a greater liability to diseases of the lungs; and, if so, then, according to Niemeyer, the age most liable to pulmonary disease shows tuberculous disease in other parts of the body more frequently than in the lungs.

Take the case of gout. It is a fairly recognised fact that we may inherit gout—and not only so, but that we may inherit it from a grand-parent, although the parents may have shown no manifestation of it. But at what age does gout manifest itself? Certainly not, as a rule, at all ages of life; much more frequently at or after middle life. We do not say that such a person inherits a vulnerability; we say that he inherits a constitutional taint, that manifests itself most usually at late periods of life, probably because then the system is weaker, repair more difficult, the mode of life more conducive to that partial and insufficient metamorphosis which seems to act as the exciting cause of this disease. Is not the fact that phthisis often does not attack its victim until the age of puberty to be explained in a similar way? It is a matter of common observation that childhood is the age for general tuberculosis, tuberculous meningitis, and tubercle of the peritoneum; that puberty is the period most liable to tubercle associated with pneumonia; and that acute miliary tubercle of the lungs is about equally to be found at puberty and between the ages of twenty and forty. But that a constitutional taint should be inherited and manifest no special phenomena until the age of seventeen, and then attack the patient with all possible virulence, is only analogous to what we see in other diseases universally recognised as transmissible from parents to children.

Does clinical observation throw any light on this subject? Certainly the stethoscope does not help us. The physical signs, as gathered by auscultation and percussion, are pretty much the same in tuberculous and non-tuberculous phthisis; or at least, excluding acute tubercle (in which disease the physical signs are mainly negative), the breaking down of lung associated with tubercle, and a similar condition without tubercle, cannot be distinguished by means of the stethoscope. The flattening of the chest may exist with both; the emaciation, the rapid pulse, the hurried breathing, the perspiration, the curved nails, the dyspepsia, and the diarrhoea. Albuminuria, which is often found in acute tubercle, is absent in these other conditions, unless the patients have renal disease unconnected with the pulmonary mischief. The chlorides are never, or scarcely ever, diminished in either disease; indeed, although constantly examining this point, I never but once found any diminution of the chlorides in the urine, though possibly this experience may be due to the fact that the majority of cases come under notice long after their commencement.

Is there any help to be got from the thermometer? Wunderlich says that it is impossible by means of the thermometer to distinguish tuberculous from non-tuberculous phthisis, and it is not easy to express a different opinion, considering his long and careful observations upon temperature. Still, in the progress of these cases, there does seem to me to be a difference in temperature. In the chronic pneumonia of the non-tuberculous subject, the temperature will stand between 100 deg. and 103 deg. Fahr., not necessarily higher in the evening than the morning—indeed, not unfrequently higher in the morning than the evening, but keeping regularly about these points without sudden and irregular remissions. It may also, under suitable treatment, reach the normal point and remain quiet for a considerable time, or can be entirely recovered from any recurrence of the progress of the disease, however, being manifested by an exacerbation of temperature. But the case is somewhat different in tuberculous phthisis. Niemeyer says, "We have not yet arrived at definite conclusions in our investigation of the hectic fever of phthisical patients, especially concerning the causes by which its regular courses are disturbed. But we can already say this much, that in tubercular phthisis in the restricted sense, and when tuberculosis complicates a destructive pneumonia, the differences between morning and evening temperatures are as a rule much smaller. We give, therefore, *ceteris paribus*, a more favourable prognosis as long as the pyrexia has the character of a febris remittens, with almost intermittent type, than when it approaches to that of a febris continua."

Now this is only very partially correct. The height to which the temperature ascends is often in excess of what is seen in chronic pneumonia; but, as has often been said, the temperature in tuberculous phthisis is as irregular as in typhoid fever it is regular. Any one who pays at-

tention to this point will find how often and yet how irregularly the temperature will fall from 104 deg. or 105 deg. Fahr.—five, six, and even eight degrees Fahr., to rise again in the course of a few hours. Except in certain examples of pyæmia, the intensity and irregularity of these remissions will be found in no other morbid conditions, and in certain cases of obscurity they will prove of diagnostic value. The marked difference between this irregularity of tubercle and the comparatively regular remissions of non-tuberculous phthisis will prove useful in the determination of the special form of disease we may have before us, and affords an illustration of the truth of an idea, sometimes lost sight of, that nosological distinctions must be drawn not only from minute microscopical alterations of structure, as seen *post mortem*, but from such appearances plus the clinical phenomena during the life of the patient.

We would sum up the basis for discussion thus.

1. There are several forms of disease included under the head of phthisis.
2. Tubercle, whether of the lungs or of other organs, is due to a constitutional disease; and this is shewn by death occurring without *post mortem* results sufficient to have caused it.
3. Tubercle often exists quite independently of caseous deposits or vomicae.
4. This morbid condition is inheritable, but may be developed *de novo* by debilitating influences.
5. Its possible manifestations at all ages, and its frequent non-manifestation until the age of puberty, is only analogous to what is seen in other constitutional and inheritable diseases.
6. Chronic pneumonia found associated with miliary tubercle is not connected with it as cause with effect. The tubercle only becomes developed in cases in which the patient has previously had the tuberculous taint of constitution.
7. Some fatal chronic pneumonias may owe their irremediable properties to the same constitutional weakness, even where no miliary tubercle is discovered after death.
8. In general, non-tuberculous phthisis can be distinguished from tuberculous by clinical phenomena, and especially by the use of the thermometer.

ON PUNCTURES OF THE COLON FOR THE RELIEF OF TYMPANITES.*

By J. HANCOCKE WATHEN, L.R.C.P.Ed., M.R.C.S.Eng., etc., Fishguard.

THE case which forms the basis of this paper has already been recorded in the columns of the *Practitioner* for October last. My object in again bringing it forward is to elicit an expression of opinion on the propriety of resorting to puncture in those distressing cases where other means have failed to relieve the tympanites. Having read in the *Practitioner* for February, 1869, the notes of a case of obstruction of the bowels under the care of Dr. Clifford Allbutt of Leeds, in which the distension was so great that Mr. Teale, whose assistance was obtained, punctured the colon, I determined to adopt such a procedure in the first suitable case that presented itself. Such an one came under treatment in a few days. On the 13th of the same month my father, Mr. Wathen, was requested to visit Mrs. G., aged 29, who had, half an hour previously, while engaged in some domestic duties, been suddenly seized with most severe lancinating pain in the lower part of the abdomen. She was cold and collapsed, presenting the appearance of one suffering from severe shock. The patient supposed herself to be about six weeks gone in pregnancy, and stated that in her previous pregnancies she had experienced pain and faintness about this period. Acute peritonites soon declared itself. This, under full and frequent doses of opium, turpentine stupes, etc., was considerably subdued; but the abdomen became intensely tympanitic. We failed to afford any relief, although free fecal evacuations were procured by turpentine and castor-oil enemata, administered by an O'Beirne's tube. The distension increased, causing great distress, accompanied by vomiting. I advocated puncture of the bowel, but could not obtain consent until the evening of the third day, when the patient earnestly requested relief by operation. After consulting with Mr. Brown of Haverfordwest and Mr. Wathen, I first plunged a small hydrocele trocar and cannula into the transverse colon, then into the descending, and lastly over the ascending, colon. As soon as the force of the current of gas lessened, the cannula was withdrawn and reintroduced, being guided by the most prominent portion of the colon. The first two punctures emitted gas with sufficient force to blow a candle out when held near the cannula;

* Read at the annual meeting of the South Wales and Monmouthshire Branch.

but, through the puncture over the ascending colon, no gas escaped—to be accounted for, I think, by the fact that the colon was emptied, and, not offering sufficient resistance to the trocar, was pushed in front of it. The abdomen was very considerably diminished in size; the patient expressed herself as being much relieved, and appeared grateful for this diminution of her sufferings. The immediate object—viz., relief—was obtained; and I think that, had this simple and painless operation been performed earlier, it would certainly not, to say the least, have had any prejudicial influence on the case. The patient became more exhausted, and sank next morning. No *post mortem* examination could be obtained.

As far as I can ascertain, abdominal puncture for the relief of tympanites has been performed in five other cases, to which I would briefly draw your attention. The first case is the one already referred to, which occurred in the Leeds Infirmary. Mr. Teale punctured the colon in the transverse and descending portions with the best results as regards the intestinal mischief; the obstruction being completely overcome, and the patient, who had not passed either flatus or motion for many days, freely voided both. Unfortunately, the patient was also suffering from secondary double pneumonia, to which he eventually succumbed. At the autopsy, “no traces of the punctures could be detected, except upon the outside of the body; no air had escaped into the peritoneal cavity”. The second case is one recorded by Dr. Davey of Northwoods, Bristol, in the *JOURNAL* for August 21st, 1870. The patient was a little girl aged nine years, whose abdomen was punctured by Mr. Salmon of Thornbury, for an intense tympanites, accompanying tubercular peritonitis. The patient lived twelve days after the puncture, which, Mr. Salmon states, “gave great relief, and tended much to mitigate her sufferings, previously to which the difficulty of breathing had been most distressing.” The *post mortem* examination showed that the puncture had in no way hastened the end.

Dr. Davey refers to two cases of intestinal puncture performed under the advice of Dr. Fossagrives of Toulouse. In the first case, the patient “was perfectly cyanosed and suffocating; an exploring trocar was inserted into the most distended part of the lower umbilical region. Two fresh punctures were made next day, and gave so much relief that the patient’s life was prolonged four days”. In the second case, six punctures were successively made and the patient cured.

The last case to which I have to refer is one that occurred in the practice of my friend, Staff-Surgeon J. R. Thomas, while on the West Coast of Africa. The patient, an American, was suffering from chronic dysentery, accompanied with gradually increasing tympanites, until he became so much distended as to implore for relief by any means possible. Puncture of the transverse and ascending colon was practised with the best result; but, unfortunately, a few days afterwards the patient, who had been up and about, went in for a heavy debauch, had a relapse, and eventually succumbed.

You are all no doubt well aware that puncture of the intestine has long been practised on the lower animals. The manner in which the operation is usually demanded is thus. A herd of cattle is turned into rich clover or grass; some of them, unless great care be taken, become gorged on the luscious vegetation; rapid fermentation takes place, which results in great distension by gas; the animal drops, and, unless relief be promptly afforded, soon dies.

The treatment is simple, and well known to most graziers. A puncture is made into the most prominent point in the flank with any sharp instrument at hand—generally a pocket-penknife. I have just been informed by a most intelligent farmer that he has repeatedly performed the operation, always with the best results, never having lost a case. In the case of one calf he has punctured as many as twelve or fourteen times, and has occasionally done it with an ordinary butcher’s-knife.

I must confess that the results obtained in the lower animals are more favourable than those in the six cases I have quoted as happening in the human subject; but one must recollect that puncture has only been resorted to after all other means have failed, thereby losing much valuable time, and generally in those cases having a fatal tendency. On reviewing the evidence afforded by *post mortem* examination, I cannot conceive any real objection that can be urged against the operation, as not a trace even of the punctures could be detected in some of the cases, and in none had there been anything found which would contraindicate it. When I picture to myself the immense distress and suffering present in an intensely tympanitic patient, whatever may be its cause, and then recall to mind the ease and quiet, if not anything more, which we are enabled to afford our patient by what I am bound to describe as a simple, harmless, and painless operation, I feel drawn to the conclusion that it is a proceeding not only justifiable, but urgently demanded at our hands.

If this paper be the means of obtaining a more extended trial of the operation, my object in reading it will be entirely gained.

CASE OF HÆMORRHAGIC SMALL-POX: WITH CLINICAL REMARKS.

By ROBERT GRIEVE, M.D., Medical Superintendent of the Hampstead Hospital.

THE following notes of the case were made by Mr. Bland, Assistant Medical Officer.

T. I., aged 27, a cabman, was admitted to the Hospital late on the evening of the 9th of October. He had two vaccination-marks. He had been ill for six days. The eruption was copious and in the papular stage, and of a dark purple hue.

October 10th. In the morning, he had severe epistaxis and hæmoptysis. His tongue was dry and brown; his bowels were confined. He had passed a good night. He took very little food. Pulse 120; temp. 105 deg. He was ordered to have ten minims of tincture of sesquichloride of iron in half-an-ounce of water every four hours; with ice, beef-tea, and milk *ad libitum*.

October 11th. He had now epistaxis, hæmoptysis, melæna, and hæmaturia. There was great ecchymosis of the eyelids and effusion of dark-coloured blood beneath the ocular conjunctiva. He took food more freely. His breathing was laboured. Pulse 130; temp. 105 deg.; respirations 28.

October 12th. The hæmorrhages continued. There was ecchymosis of the whole of the skin. The patient was much worse. Pulse 128; temp. 105 degs.; respirations 28.

October 13th. He had had slight delirium all night. He took large quantities of milk and beef-tea. Pulse 104; temp. 104 degs.; respiration feeble. At 3 P.M. he became quite unconscious, and continued in this state until his death, which took place at 9.20 A.M. on the 14th.

Post mortem examination thirty hours after death. The body was well developed and nourished. Rigor mortis was well marked. The eruption was confluent on the face, copious on the trunk and extremities. It was in the vesicular stage; the contents of the vesicles on the abdomen and lower extremities were purple, the areola not fading on pressure. The left pleura was adherent throughout with old adhesions; the right was much injected and ecchymosed, but there was no lymph or effusion. The right lung was dark and heavy, breaking down easily. Much black blood could be squeezed out, but there was no consolidation. Through the substance of the left lung were scattered masses varying in size from a bean to a walnut, which were red, solid, and granular, and sank in water. This lung was otherwise in the same state as the right. The left ventricle was moderately firmly contracted. The valves and orifices were healthy. The pericardium had a few spots of ecchymosis. The liver was softer and paler than natural. The spleen was dark and moderately firm. The kidneys had slight venous congestion.

One of the most noteworthy features in connection with the small-pox epidemic of 1870 and 1871 has been the large proportion of cases of the hæmorrhagic type which have occurred. In the Hampstead Hospital alone, over 400 instances of this form of the disease have been under notice since the 1st of December, 1870. Unfortunately, recovery from variola hæmorrhagica when well marked is rare indeed, and a specific for this terrible disorder has still to be found. Vaccination does not prove a preventive; the majority of the cases here had marks of some kind of previous vaccination. Certain occupations predispose to this type of the disease; thus, amongst males, engine-drivers and stokers, and in females, cooks and kitchenmaids, and others exposed to great heats, suffer severely. Above all these causes is to be placed a dissipated or irregular mode of life. Hæmorrhagic small-pox is very rare in childhood; but occasional instances are to be met with.

There is great variety both in the extent of the subcuticular effusions and also in the amount or seat of the active hæmorrhages. Sometimes the effusions are limited to small purpuric spots situated principally on the trunk and lower extremities; sometimes there are huge patches of ecchymosis here and there over the entire surface, as in the case of T. I.; but one symptom, which is almost constant enough to be called invariable, is the effusion under the conjunctiva, which is sometimes so great as to cause the membranes to bulge out, making the cornea seem a depression instead of an elevation, and giving a peculiar and characteristic look to the patient. Among the hæmorrhages, bleeding from the buccal mucous membrane is the most constant, except in women, when vaginal hæmorrhage is invariable. Then comes epistaxis; much more rarely hæmaturia; and, most rare of all, bleeding from the bowels. The case narrated above presents the peculiarity of having concurrently all these forms of hæmorrhage. The eruption appears and goes through the different stages more slowly than in ordinary small-pox. It rarely reaches the pustular form, and the vesicles are filled with bloody serum in place of the usual secretion. It is very