any of the three above mentioned. They do not present the usual signs of inflammation; that is to say, the part infected is not red, hot, swollen, or painful, unless, indeed, it becomes so from subsequent accidental complications. The patient's attention is first attracted by a small pimple, or a crack, or a slight abrasion, around which a slight thickening takes place, with a well defined outline. This may remain not greater in extent than a layer of parchment, or may extend to the thickness of two or three lines. The secretion from the surface consists of a kind of lymph, which contains globules of various sizes, and generally of smooth outline. Sometimes, after the first few days, there is no secretion at all from the surface of the infected part. The diseased action is in these cases indicated only by the presence of the thickening above mentioned, covered, like the surrounding parts, with epithelium. These characteristics, upon which I might enlarge, indicate that the true infecting process is going on; but, as the title of my paper was upon the non-mercurial treatment of certain forms of syphilis, I will not enter farther at present upon the consideration of that class which does require to be treated by mercury.

SINGULAR DISEASE OF THE FEMALE GENITAL ORGANS.

By JAMES HAKES, Esq., Junior Surgeon to the Liverpool Northern Hospital.

MRS. W. consulted me in November 1853, in great alarm because her medical attendant had pronounced her incurable. She was about 35 years of age, the mother of three children, the youngest about thirteen years old. For some years she had not lived with her husband, and denied ever having had illicit intercourse. About three years ago, long after her husband left her, she began to feel uneasiness about the vulva, and became subject to a purulent discharge: these have steadily increased to the present time, notwithstanding all the remedies that have been tried. When I saw her, she complained of a burning pain about the vulva, varying in intensity at different times, accompanied by a good deal of bearing down and aching about the hips, groins, and back: these were aggravated by exercise, and at the monthly periods. But what caused her the greatest distress was an inability to retain her urine while moving about; the urine itself was clear, and there was no irritability of the bladder.

I proceeded to examine her. There was so copious a discharge of matter that, till it was washed away, nothing could be seen: then the following condition of parts was noticed. External labia, nymphæ, clitoris, and prepuce, natural. When the vulva was well separated, the interval between the clitoris and orifice of vagina appeared much increased; and the mucous membrane over the greater part of this space was replaced by a cicatrix, having two or three caruncles on its surface. There was nothing like a natural urethral orifice to be seen, its situation appearing to be occupied by a mass of florid granulations, which, with one or two fleshy bodies behind it, filled up the ostium vaginae. By introducing two fingers into the vagina, its anterior wall could be easily examined; and the red mass, which was about an inch long, was seen to extend backwards, lying against the symphysis pubis. Through half its extent it was quite exposed, but the remainder was enveloped by a sheath, composed in front by the pubes, and behind by soft tissues, which separated it from the vagina. It was free throughout its extent, except posteriorly, where it was attached all round to the inside of the sheath, so that a probe was arrested at all points of its circumference, after it had passed between it and the sheath for about half an inch. It presented a smooth glistening appearance, except at its extremity, where it was slightly granular; and here was the orifice of a canal passing through its whole length, and along which a catheter passed into the bladder: there was no other channel to that viscus. When a finger was passed

into the vagina, and drawn forwards, the neck of the bladder and commencement of the urethra felt natural; but soon the finger sank into a fissure on the right side, in which the red body could be felt, proving that the sheath extended most forward on the left side.

Mrs. W., saving mental uneasiness, was in good health, and was and always had been free from any secondary syphilitic symptoms.

The appearances I have just described convinced me that this was not a case of vascular growth from the urethra, though this sometimes assumes a tubular form; and, I believed, could only be accounted for on the supposition that the ulceration, which had commenced near the clitoris, having reached the urethra, then separated the spongy portion of this canal from its other coverings, and was spreading backwards towards the bladder, the soft parts between it and the vagina having also been partly destroyed. I have known a similar result to occur in the male, ulceration commencing around the corona glandis, extending backwards so as to leave the glans, corpus spongiosum urethrae, and corpora cavernosa, completely detached from the surrounding skin of the penis. It is not improbable, therefore, however rare such an effect of ulceration may be, that the same thing may occur in the female.

I recommended the use of astringent injections and lotion, which latter was to be applied on lint, inserted between the red body and sheath; and, internally, iodide of potassium and sarsaparilla. Considerable improvement followed this treatment; the discharge of pus almost ceased; her pains were very much diminished; she could hold her water rather better; and some union appeared to have taken place to the sheath, as a probe could not be passed so far between it and the red body. After about a month's improvement, however, things remained in *statu quo*; and I determined to remove the mass by ligature. Accordingly, on the 25th of January, 1854, a thread was placed round it, so as not to close its canal. The thread became loose before the part sloughed; the separation was therefore completed with scissors. By this means, it was cut away to about a line from its origin from the sheath. The raw surface soon healed, the portion of the red mass that was left dwindling away as cicatrisation progressed. The result of this treatment was entirely satisfactory.

The following August, seven months after the operation, I called upon her, and took notes of her state as follows.

August 1855. Mrs. W. feels perfectly well; is quite free from pain and discharge; can hold her water perfectly, and pass it without any difficulty; and, as far as her feelings go, she would not know that she had ever had anything the matter with her. She permitted me, however, to examine her. I found the clitoris, prepuce, and nymphæ, natural, and a cicatrix extending between them and the orifice of the urethra, which was retracted a good deal within the vagina. Instead of a trumpet-shaped orifice, there was only a transverse fissure, caused by the vaginal coverings of the urethra, which had previously assisted in forming what I have called a sheath, being closely applied against the pubes. When this fissure was opened, at its bottom was seen a red orifice, about as large as a grain of pearl barley, which was the mucous membrane of the urethra: there was no growth of any kind from it.

PARACENTESIS THORACIS: WHEN IS IT JUSTIFIABLE?

By DANIEL H. TUKE, M.D., Visiting Medical Officer to the York Retreat, Physician to the York Dispensary.

[Read before the York Medical Society, Feb. 10th, 1855.]

My attention was strongly directed, some time ago, to the subject of paracentesis thoracis, from the circumstance of being called to a little girl, for whose relief it appeared necessary to resort to the operation. Since then, I have had several opportunities of following out some interesting

cases, similar in their nature, in which an operation was performed, and have analysed a considerable number of authentic cases occurring in the practice of various medical men. I propose, therefore, to consider how far the evidence of these cases determines the question on which I desire to ask the opinion of the members of the medical society, viz., in what stage (or under what circumstances) of effusion into the pleura ought we to resort to paracentesis? briefly relating, at the same time, three out of the cases which have fallen under my own observation, and which illustrate the three principal terminations of the disease after operation, viz.,—1. Perfect recovery of health and lung; 2. Recovery of health with a contracted chest; 3. Temporary relief, but subsequent death.

It is necessary here to remark on the two meanings attached by various writers to the term *empyema*. By many, including Dr. Townsend in his article "*Empyema*" in the *Cyclopædia of Practical Medicine*, it is employed to signify any effusion into the pleural sac, whether serous, sanguineous, or purulent. By others the term is restricted to pus in the pleura, and in this restricted sense it is employed whenever the word is made use of in this paper.

As, however, practically it is often impossible to determine the nature of the fluid before operation, the inquiry now made is intended to include effusions into the pleura of both a serous and purulent character.

The first case I will refer to is that of Rebecca French, aged 4 years, whom I first saw November 15th, 1850. She had then been ill three weeks with cough, some expectoration, and great dyspnoea, the latter of which was much increasing. Physical examination proved that the left chest was filled with fluid up to the second intercostal space, and the heart displaced over to the right of the sternum.

I need not detail the treatment further than to state that diuretics, mercurials, and counter-irritation, were employed for a week, at the expiration of which period the dyspnoea had become so urgent that it did not appear warrantable to delay the operation of paracentesis. I accordingly introduced, first, a grooved needle, and then a trocar, below the inferior angle of the left scapula, when some ounces of pus escaped, with immediate relief to the patient.

On the following day, the canula was re-introduced, and a much larger quantity evacuated. From this date all depressing and absorbent remedies were laid aside, and liquor cinchonæ, with nutritious diet, prescribed. The wound was allowed to heal; no air had entered, the opening in the skin having been valvular; but it reopened spontaneously on the 27th, and on again introducing the canula, about eight ounces more of pus were drawn off. From the last date, the sinus was allowed to remain open, until after the lapse of six months it finally closed. The discharge, at first copious, gradually diminished, and for several months previous to its cessation had been very small in quantity. The child continued the bark, and took, in addition, the cod-liver oil. Her general health improved, and she was soon able to go to school and play about as usual. I had an opportunity of examining her chest a year after her illness; the lung had then perfectly recovered itself, and there was very little, if any, contraction of the chest.

The next case* I had an opportunity of observing was under the care of Dr. Bennett, and is an example of favourable progress after the operation, but of contracted chest, and the continued discharge of pus through a fistulous opening.

Adam Hartman, aged 6 years, a fair complexioned German boy, was first seen August 9th, 1852. He was extremely emaciated and pale, and had been ill with pain in the left side, cough, and dyspnoea, for nine months. An examination of the chest discovered dulness on percussion throughout the left side, extending to the right of the sternum for at least an inch. The heart beat under the

right nipple, or even nearer the axilla. A fortnight afterwards, the operation of paracentesis was decided upon, and a very small trocar was introduced between the eighth and ninth ribs, in the middle of the side. Rather more than four pints of thick creamy pus, of a slightly foetid odour, escaped, and the stream having ceased to flow, the wound was closed, no air having entered. The breathing was much relieved by the operation. The heart still beat nearly in the same place as before. The fluid gradually re-accumulated, and in six weeks the operation was again performed; the former wound had quite closed, and the trocar was now inserted near the original spot. After about two pints of pus had escaped, a violent fit of coughing occurred, and appeared to have been caused by irritation to the upper surface of the diaphragm (which had now risen into its place) by the end of the canula, and air several times rushed into the chest. No symptoms, however, excepting those of relief, followed the operation. In about three weeks a fluctuating swelling formed below the fifth rib, in a line with the nipple; this was punctured, and matter spurted out in a large stream across the room; and within half an hour, at least five or six pints had flowed, to the great relief of the patient.

From this time (October 1852), up to January 1854, he made slow, but steady progress, the discharge continuing, and the chest contracting. I have recently heard that he is living; and although pale and delicate, is able to run about. There is still a slight discharge. The lung has, of course, only very partially recovered.

In the third case, the termination was fatal, but much temporary relief was afforded to the patient. It occurred in the practice of Dr. Williams, of this city, to whom I am indebted for being able to witness the inspection after death.

The patient's age was 12. He was attacked with acute pleurisy, May 26th, 1854. Under the treatment pursued, the febrile symptoms abated, but left the patient in an extremely reduced state, and with the left pleural sac nearly full of fluid, the heart being pushed to the right side. The dyspnoea was very great, and the sense of suffocation was frequently very urgent, threatening the patient's life. The affected side became much bulged, and a fluctuating tumour presented itself at its lower part about seven weeks after the invasion of the disease. This was punctured, and about a pint of pus escaped, to the marked relief of the patient's breathing; who, although extremely weak at the time of the operation, was not affected prejudicially by it. For some weeks the patient's condition improved; but the fluid re-accumulating, the trocar and canula had to be very frequently introduced for its removal. Benefit was derived from taking the cod-liver oil, and from change of air. A tumour, however, appeared near the original puncture in the side, which spontaneously opened, and another swelling formed a little to the left of the upper part of the sternum, which was shortly converted into an opening larger in size than a crown piece. The system was unable to support such constant and profuse suppuration, and the patient died hectic, and emaciated to the last degree, November 25th, 1854, six months after the attack, and seventeen weeks after the first operation.

Post mortem examination. General condition, extreme emaciation. Considerable contraction of the affected side. A large fistulous opening was apparent to the left of the upper part of the sternum, the cartilages of the first and second ribs having been destroyed by ulceration; the edges blackened by gaseous exhalations. On removing the sternum, the heart and pericardium were found immediately beneath, and adherent to it. On the left side, the pleura was observed to be much thickened throughout, ulcerated in several parts, and presented the appearance of a large granulating surface. Several pints of foetid purulent fluid lay in the dependent portion of the pleural sac. The lung was completely collapsed upon its root, was not more than one-fifth its natural size, and was adherent to the spine. It was devoid of air, its tissue leathery, and it sunk in water; presenting such appearances as simple long continued compression was sufficient to account for. The

* Vide "*Medical Times and Gazette*", Jan. 28th, 1854, of which report the above is an abstract. An admirable series of cases of *empyema* will be found in that and other numbers of the above journal, carefully prepared by the same indefatigable reporter.

right pleura was congested, and its cavity contained a little serous fluid. The lung was congested, exuding, on pressure, much frothy serum; and embedded in its tissue were a few small miliary tubercles. The other organs examined were healthy.

The three cases I have now detailed, added to those of which I have obtained the results (so far as the mortality is concerned), make a total of 246 on whom the operation was performed. In attempting to determine the success of the operation from the published cases, we are exposed, I am fully aware, to one source of fallacy, and that is, our ignorance, in a large number of instances, of the after history of the patient. For instance, it is impossible to discover how many of these patients were living a year after the operation, yet this is surely a very important point in making any inquiry into its success, and our knowledge of it would, no doubt, add very much to our estimate of the mortality of the cases operated upon.

The 246 cases alluded to have been collected from the practice of well known medical men, as Dr. Hughes, Physician to Guy's Hospital; Dr. Hamilton Roe, Senior Physician to the Hospital for Consumption; Dr. Watson; Mr. Benjamin Phillips, and others.

The following table will shew the number of cases operated upon, and the proportion fatal under each; there being a total of 100 cases of genuine empyema, and 146 of serous effusion; the mortality of the former being 26, and the latter 33·7 per cent.; that is, a mortality of 7·7 more than that which occurred in the cases of genuine empyema.

TABLE shewing the results of Operative Interference in 246 cases.*

By whom observed or reported.	Fluid effused: purulent.	Mortality.	Recovered.	Fluid effused: serous.	Mortality.	Recovered.
Dr. H. Roe (collected by him)	20	6	14	19	5	14
Dr. H. Roe (observed by him)	10	2	8	14	4	10
Mr. Phillips	31	5	26	91	29	62
Dr. Hughes	10	2	8	19	10	9
Dr. T. Davies	10	2	8	—	—	—
Dr. Watson	6	3	3	—	—	—
"Med. Times and Gazette"	9	4	5	1	1	—
Dr. Paley (Peterborough)	1	1	—	2	—	2
Dr. Theoph. Thompson 1)						
The late Mr. Hey of Leeds	3	1	2	—	—	—
Dr. Williams of York 1)						
Total	100	26	74	146	49	97

SUMMARY.—Total number of deaths..... 75
 Mortality per cent. in genuine empyema 26
 " " in serous effusion .. 33·7
 " " in all cases 30·4
 Total recovered (more or less completely).... 171
 Grand Total 246

I imagine the explanation of this is partly to be found in the fact that the cases of serous effusion were more frequently associated with fatal diseases. This remark would apply especially to cases of mechanical hydrothorax. I believe also that a large proportion of cases of phthisis will be found among the examples of serous effusion operated upon.

With regard to the real subsequent condition of the patient in those cases in which death did not occur, I find that, of 44 cases in which I have been able to determine this point, 33 appear to have recovered their health perfectly,

and in 13 of these, the lung re-expanding, no contraction of the chest followed; 5 cases were progressing favourably when last seen, and 6 were not likely ultimately to recover: total, 44.

Out of the 29 cases reported by Dr. Hughes, 14 recovered so far as regards the effusion; 2 may be justly mentioned as having at least partially recovered; one of these had, after seven years, a fistulous opening into the pleura, and the other had still some, though comparatively a very small quantity, of fluid in the right pleura (but so much better as to be in search of employment), when the cases were reported; 1 remained under treatment. Twelve have ultimately died of other diseases, generally connected with that for which the operation was performed, but entirely independent of its performance. Of these 12 fatal cases, 6 have died of phthisis; 2 of malignant disease of the lung; 1 rather suddenly with hydrothorax of the other pleura; 1 of gangrenous pulmonary abscess of the opposite side; 1 died of chronic pneumonia; and 1 (a case of pneumothorax, with effusion) of pneumonia and pericarditis.

To determine the value of operative interference in cases of pleural effusion, it would be important to ascertain whether the mortality per cent. is greater when such cases are not so interfered with. In the *Medical Times and Gazette* last year, 38 cases of pleuritic effusion are carefully reported, none of which were operated upon, 6 of whom, or about 16 per cent., died. To make such a comparison, however, is obviously extremely difficult; but, in the majority of cases to which I have referred, in which the operation was performed, the symptoms were so urgent that death appeared almost inevitable, if the case were left longer to only medical treatment. If this be true, there can be little need of further proof of the propriety of the operation in such urgent cases—cases of life and death. But the question of saving life is not the only one, in cases of pleural effusion. We have also to consider whether we run an unwarrantable risk of allowing the lung to be irretrievably damaged by deferring the operation of paracentesis beyond a certain period. But what is that period? How long can the lung be compressed by a large amount of fluid, whether purulent or serous, without suffering such irreparable injury as to prevent its re-expansion? I think it will be found impossible to answer this question definitely. We may perhaps form some idea of what is the general rule by referring to the changes found after death in cases where the period of effusion can be pretty nearly ascertained; as also by an observation in the living subject of the period during which a lung may bear with impunity a large effusion of fluid. I desire, then, to ask the members of the Society, as an important element in determining the main question, How long they have known the lung compressed with copious effusion, whether serous or purulent, and yet re-expand?

The result of the *post mortems* to which I have referred shows that, in a case where the lung had been compressed for one year by serous fluid, it was found to be solid and impervious, extending from the apex to the fourth rib. Inflation proved that the central portion of this collapsed lung would expand, but not further than three-quarters of an inch of the circumference.

In another case, where the lung was compressed for seven months, it was found collapsed upon its root to the size of a fist, dry, and slightly crepitant throughout.

In another case of the same duration (seven months), occurring to Dr. H. Roe, the lung was completely collapsed; it adhered to the upper part of the mediastinum, and was about four inches long and two broad, and weighed about three ounces; its outer surface was covered with adhesive matter.

The next case in order of duration, of which I have a record, is an instance of five months occurring between the attack and the time when the lung was relieved by operation; here the lung was compressed to the size of a small cocoa-nut.

Next in order are two cases, each of three months' duration; in the one, all that I can learn is, that the lung was

* Vide Med. Chir. Trans., 1844; Guy's Hosp. Reports, 1844; Medical Gazette, 1847, etc.; Med. Times and Gazette, 1854; ASSOCIATION MEDICAL JOURNAL, January 5th, 1855; Hey's Surgery; Dr. Watson's Principles and Practice of Physic, etc.

collapsed and solid; in the other, the affected lung was reduced in size, was of a very dark colour, generally carnified, containing no air except at its apex, and covered at its lower three-fourths by false membrane, which was remarkably tough, of a white colour, and nearly a quarter of an inch thick in some parts. The lung was attached to the pleura costalis by long adhesive bands of considerable strength.

The next case is one a little *under* three months. The healthy lung was found to weigh 2 lb. 4 oz. 2 dchms.; the affected lung, 10 oz. 7 dchms., and was adherent behind through its whole length, and below to the diaphragm; a small portion of its anterior tissue was pervious to air, and crepitant; but the remainder was a mass of tough, nearly homogeneous dark coloured tissue, except the bronchial tubes, the larger of which were still pervious, although much lessened in diameter: the greater number of the smaller tubes were obliterated. The whole of the pleura on this side was coated with a false membrane, nearly half an inch thick, and of a cartilaginous firmness.

The next case in order of time, which I am able to refer to, is one in which *one month and nineteen days* elapsed between the attack and the period when the lung was released from the pressure of fluid; here the lung was reduced to a size little more than that of a closed hand, and was found adherent posteriorly. On introducing the nozzle of a pair of bellows into the left bronchus, the lung was found permeable to air, and could be dilated to about three-fourths of its usual healthy size; it was congested with blood, and firm on pressure.

The fatal case which I have detailed this evening was one in which almost precisely the same period elapsed between the attack and the operation. In this case, it will be remembered, the lung was reduced to one-fifth of its natural size, and, from the condition of its tissue and the adhesions which bound it down, could never have re-expanded.

Lastly, in a case which was of *one month's* duration, the lung floated in a quantity of clear serum, the lower portions being compressed and sodden.

If these cases may be taken as fair examples of the changes which take place in the lung when subjected to the pressure of fluid, it would appear probable that it is somewhere between the second and third month that such extreme changes take place in the texture of the lung and pleura, that we cannot expect the re-expansion of the former when we are called to a case in which the patient has had a considerable amount of fluid in his pleura, whether it be serous or purulent, for such a period. We have seen that, in the case of one month nineteen days, great morbid changes had taken place, but that the lung could be inflated to three-fourths of its healthy size; while, in a case of not quite three months' duration, the affected lung only weighed 10 oz. 7 dchms., and was completely bound down by adhesions. It is very undesirable, however, that the lung should be allowed to become so altered as it was when only subjected to pressure during one month nineteen days, if this could be prevented by operative interference; for, before inflation, it was only the size of a closed hand, and was quite bound down posteriorly by adhesions; and in this case, as in all the other cases, we cannot ascertain precisely the duration of the effusion; we only know the period which elapsed between the pleuritic attack and the release of the lung from the pressure of fluid: we always, therefore, give rather a longer period than is actually the case; and one cannot but think it probable that, in not a few cases, irremediable organic changes take place, as in the third case reported in this paper, even at a period of effusion of only between one and two months. Dr. H. Roe fixes three weeks as the *earliest* date after effusion has taken place at which irremediable organic changes have prevented an operation from being so completely successful as to leave the lung expanded to its full size after the removal of the fluid; and he says no case has occurred in his practice in which, after the lapse of five or six weeks from the commencement of the effusion, a patient was

perfectly cured. The patient either died, or recovered with considerable loss of lung-power. "If I were", he adds, "the subject of empyema or hydrothorax, I should not wish the operation to be deferred to any later period than three weeks; indeed, I can see no good reason for wishing to postpone the operation as long as possible. It is a perfectly safe one, and the pain is very trifling: it is therefore better for a patient that it should be performed too soon, or even unnecessarily, than that he should be exposed to the risk of having his disease rendered incurable by delay."

Few, we think, will be disposed to go quite so far as Dr. Roe in his opinion of the necessity of so early a recourse to an operation, or in his estimate of the amount of danger attendant upon it: he indeed considers that the admission of air into the pleura is not of any consequence. Not a few cases, however, could be adduced, I think, to show the contrary of this proposition—a proposition which is denied by many warm supporters of the operation, including Dr. Hughes and Mr. Cock. If we allow air to enter the pleural cavity, we only substitute one fluid for another; and, although it is argued that air, under such circumstances, is rapidly absorbed, its effects in converting serous fluid into pus, and inodorous pus into foetid, could be proved by not a few cases, notwithstanding some very remarkable exceptions have occurred.

[To be continued.]

REMARKS ON A CASE OF "BLACK CATARACT".

By H. HAYNES WALTON, F.R.C.S., Surgeon to the Central London Ophthalmic Hospital; Assistant Surgeon to St. Mary's Hospital; and Lecturer on Anatomy.

[Read before the Royal Medical and Chirurgical Society.]

THE short communication which I venture to bring before the fellows of the society is, I believe, interesting pathologically and surgically. Moreover, it treats of something which is rare in ophthalmology, viz., the detection of what may be called—at least, in a practical sense—a black cataract.

I was sent for in October of the present year, to see a gentleman, aged 75 years, who had lost the sight of both eyes for several years, and whose symptoms, objective and subjective, were as follows:—

The cornea and sclerotics were healthy; the irides bright, and in their natural planes. The pupils were of ordinary size, and acted but slightly, even when submitted to a bright light. The anterior chambers were large.

In the left eye there was an ordinary amber-coloured cataract of advanced life, not, however, very opaque, and which it is unnecessary for me further to describe. With this eye he could see the outline of his hand, or any large body.

In the right eye the pupil was not apparently clouded by any opacity, but was quite black; and when the left eye was shut, he could but just discern light from darkness.

The history adds value to the case. In the commencement of the year 1849, he was much troubled with muscæ, and sight began to fail, the right eye being first affected. On the 15th of September he felt a very decided impairment of vision; and on the 18th he could not read. He was seen by a surgeon, who, after a few visits, called in Mr. Dalrymple, and the united opinion was to the effect, that incipient cataract existed. At present he can see better with his left eye than when visited by Mr. Dalrymple.

It appeared to me that there was a greater defect of sight in the left eye (that with the visible cataract) than the degree of opacity of the lens would account for; and this, together with the inactive pupil, and the very decided declaration of the patient, that he saw rather better at present than a year or two ago, induced me to suspect