CASE OF PLEUROPNEUMONIA FOLLOWED BY EMPHYEMA; TREATED FIRST BY PARACENTESIS, THEN BY INCISION OF THE CHEST: RECOVERY.

By C. S. TICEHURST, L.R.C.P. Lond., Bishop's Waltham.

A YOUNG lady, aged 28, with good family history, was seized with a most severe rigor on April 24th, 1875. She was seen by me eighteen hours afterwards, and at that time intense cutting pain was complained of under the left mamma. The breathing was hurried; there was constant cough, but no sputa; the countenance was anxious. The physical signs were dullness at the base of the left lung with slight egophony and diminished tactile vibration; higher up, there were bronchial breathing and bronchophony. No rub could be detected. Decubitus was dorsal. Pulse, 114; temperature, 104.4 deg.; respirations, 40. The contents of the right side of the thorax were apparently healthy.

April 26th. Some urine procured to-day was found to contain no trace of chlorides and no albumen.

April 28th. There were well marked rusty sputa. A red patch existed over each cheek-bone. The pain under the left breast was still intense. The temperature had fallen. No sleep was obtained, except with a sedative draught.

April 30th. The physical signs were as follows. The left side was universally dull, with absence of tactile vibration. Tubular breathing was heard anteriorly at quite the upper part of the chest, and, posteriorly, close to the spine, nearly to the base. Elsewhere, the breath-sounds were distant. There was a crop of herpes about the nose and mouth. The heart's impulse was diffused; on the right side, there was supplementary breathing.

May 3rd. The chlorides reappeared in the urine on the 1st instant. The temperature and respirations had fallen (see Chart). The general condition was fair. Iodide and acetate of potash were being given, with two grains of pilula hydrargyri, night and morning, and the affected side was painted with tincture of iodine.

May 9th. Anteriorly, the breath-sounds were heard to the nipple, and not so tubular in character; the percussion-note was not so dull; tactile vibration was also slightly felt in this region. Below the nipple and round in the axilla, the signs of effusion remained as before. Posteriorly, the breath-sounds were not so markedly tubular. The sputa were white and scanty; there was diarrhoea, and the mouth was slightly tender. The effusion seemed to have slightly decreased. The pills were stopped.

May 14th. The temperature had shown an upward tendency, the evening exacerbations alternating with considerable morning remissions. Nightly perspirations were complained of, also a feeling like that of cold water down the back. The physical signs had not much altered since the last report. Inspection of the chest showed that the left apex "lagged" behind the right during respiration. The pulse was fairly strong. Plenty of nourishment was taken. The diarrhoea had nearly ceased. There were no sputa and very little cough. The apex-beat was felt at the sternum. The patient read with pleasure, and was not at all distressed by the amount of fluid.

May 26th. The chills and soaking perspirations had continued. The heart was now considerably displaced over to the right; its impulse could not be felt at all on the left side, which was absolutely dull up to the clavicle, with absence of all tactile vibration. The breath-sounds were very distant; there was also oedema of that side. The temperature curve at this date will be best seen by reference to the chart. This morning, the temperature had fallen to below normal. There had been an alarming threatening of syncope; and there was lividity of the lips, with great anxiety of countenance. The pulse was weak. Under these circumstances, it was evidently dangerous to delay the operation of paracentesis, and Dr. Butler of Winchester kindly saw the patient with me, and, bringing an aspirator with him, tapped the chest in the axilla, between the fifth and sixth ribs. Five pints of pus were by this means withdrawn. Great relief, both to the breathing and also to the pain in the side, which had been persistent throughout, followed the operation. Resonance was much altered, and was perceptible anteriorly down to the third rib; below that line, there was dullness on percussion, but the note elicited was not so "dead" dull as before. Tactile vibration was again present, and the breath-sounds were mingled with superficial pleural rub. There was no material difference as regarded the heart's apex; it was still felt beating on the right of the sternum.

May 29th.—The chills and perspirations, which had entirely ceased

since the operation, were again beginning. The temperature was also rising.

June 3rd. The chest was refilling. Bed-sores were forming, and were only kept under by most excellent nursing. The temperature was still rising, with considerable morning remissions. The chills and perspirations continued, and great pain was complained of in the back and side. There was intense thirst and restlessness, and the tongue and mouth were in an aphthous condition.

June 6th.—The temperature since the last report had gradually fallen; it was 98.8 deg., with pulse 97 and respirations 32. The whole of the left side of the thorax was now "dead" dull again, except immediately under the clavicle, where the percussion-note was somewhat "boxy" in character; tactile vibration was lost; the breath-sounds were heard, but appeared remote. The pleural sounds had disappeared, and the heart was much displaced over to the right. The intercostal spaces, instead of being hollow, were on a level with the ribs throughout. The left half of the thorax did not move during respiration. The base of the right lung, on examination, showed signs of cedema. The patient, especially since the tapping, had wasted very rapidly, and was now extremely emaciated; her general condition was very bad, and it was evident that she was in a very dangerous state. Dr. Butler again saw the patient with me. We had resolved, at our previous consultation, that, should interference again become necessary, we would open the pleura, according to the plan recommended by Dr. Bowditch of Philadelphia. Accordingly, I made an incision between two and three inches in length, between the ninth and tenth ribs, in a line with the inferior angle of the scapula down to the pleura, on opening which over six pints of inodorous pus escaped. A piece of lint was placed in the wound, and a large linseed-meal poultice applied over it, into which the pus drained, and which had to be frequently changed. The relief to all the urgent symptoms was at once apparent. It was noticed, as after the tapping, that the heart, although, to a certain extent, it was freed from its unnatural position, was not back in its place. A capital night was passed after the operation; and on the following morning all pain had gone, and the chills and perspirations had also ceased. The temperature (as will be seen) was 98.1 deg., the pulse was 97, and the respirations were 24.

June 8th. The discharge had become very offensive. The cavity was washed out with Condy's fluid and water. There was already a considerable improvement in the patient's condition.

From the day of opening the chest, the patient slowly, but surely, progressed towards recovery. The bed-sores disappeared, as also the aphthous condition of the mouth. Flesh was gained, and it soon became difficult to satisfy the craving for food. The local treatment adopted was to wash out the cavity every other day with Condy's fluid; but, as its deodorising effect did not last long, tincture of iodine (one part to twenty parts of water) was soon substituted, from the time of using which not the slightest unpleasantness was perceptible either in the room or on dressing the wound, although a quantity of pus was continually discharging. Nothing could have been more satisfactory. This plan of treatment was continued for six weeks, and then there was evidence of iodine absorption in a severe rigor, high temperature (103.7 deg.), and sickness, which soon, however, passed off. For a time or two, water alone was used, and the washings out were finally discontinued the fourth week in July, at which period not more than a drachm of thin sero-purulent fluid was discharged during the twenty-four hours. On August 14th, in the tenth week after the operation, the wound was allowed to heal up, there having been no discharge for some days, whilst the temperature had been normal for a fortnight.

At this time, the left side was markedly distorted, the ribs touching one another all the way down. There was still dullness, commencing from below mamma and passing round into the axilla, which was probably due to a layer of lymph lining the chest-wall. Air could be heard entering the lung to a fair amount. Strength was soon gained, and the patient went away to the sea-side. On her return, a few weeks later, the improvement was great in every respect, especially in the gaining of weight; for, at my request, she had been weighed every week.

In November, the distortion, which was so noticeable in August, had gone. Instead of the ribs lying in contact, as above described, the intercostal spaces were well marked, and the side moved fairly well during respiration. The dullness remained about the same, and on auscultation plenty of breath-sounds were heard over the lung, which were slightly harsher than those on the right side. The general health was excellent; walks of some length were taken without much fatigue being induced, and scarcely a trace was shown of the severe ordeal through which the patient had passed.

REMARKS.—The temperature was taken night and morning from the commencement of the illness to convalescence, a period of four months,

Day of Dis..	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	
Pulse {	M.	106	110	112	110	110	113	110	104	102	103	100	93	107	102	109	109	105	102	109	110	114	105	108	109	93	96	109	104	92	113	100	105	97	107	96	93	99
	E..	100	106	110	112	120	112	104	107	107	100	97	96	100	109	111	104	110	111	110	109	112	112	110	113	103	105	105	106	110	114	106	101	93	104	103	107	112
Resp. {	M..	40	32	42	36	42	36	32	32	28	24	28	38	30	28	22	26	30	29	33	24	24	31	35	22	31	24	23	36	35	22	29	23	24	25	23	26	21
	E..		36	44	40	44	32	28	28	29	29	27	34	31	34	28	29	36	32	38	28	36	33	35	31	33	23	31	35	41	36	31	31	25	27	27	30	29

Day of Dis..	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76
Pulse { M..	97	99	102	102	104	97	94	96	95	91	92	89	97	86	86	85	96	88	101	85	85	90	93	90	91	83	94	90	92	93	102	86	90	80	99	92	93	89
E..	112	112	109	110	109	106	104	104	99	100	106	109	98	104	106	108	105	101	99	95	100	93	93	93	102	96	108	96	100	95	112	90	96	105	93	96	100	107
Resp. { M..	26	26	31	32	34	32	22	24	26	23	30	24	26	22	21	22	19	21	20	18	20	21	19	23	17	24	23	22	27	17	19	20	21	14	23	19	24	21
E..	44	32	32	35	31	25	36	32	31	26	30	23	32	26	27	30	30	26	25	25	26	29	27	25	25	25	28	27	23	24	20	21	20	16	20	21	22	22

Day of Dis..	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113
Pulse { M..	31	83	95	82	87	86	85	82	89	83	86	103	18	87	98	83	80	71	71	73	75	91	83	63	74	65	63	61	62	59	64	65	62	61	60	58	76
E..	93	95	104	97	90	91	94	101	89	91	97	108	96	100	93	92	94	82	91	92	96	84	88	87	83	69	73	75	74	69	80	77	64	72	75	73	79
Resp. { M..	20	19	22	16	19	17	18	13	21	13	21	24	21	20	23	16	16	16	17	16	24	17	17	13	16	15	14	17	19	13	15	20	15	15	16	17	16
E..	21	18	24	19	17	19	19	21	22	19	18	26	20	22	19	23	22	18	16	(?)	20	18	18	17	16	17	13	19	15	17	17	15	16	16	18	19	17

a. Paracentesis. b. Incision of chest. c. Cavity washed out on alternate days. d. Patient sitting up a short time. e. Bilious attack. f. Iodine absorption. g. Washing out of cavity omitted. h. Cavity washed with water. i. Patient left the house for the first time. k. Wound allowed to heal.

and the chart, on which its variations are depicted, will be found interesting. When the chest was full of fluid, the temperature was low; after the tapping, it rose again, with considerable morning remissions; and, as the cavity refilled, it went down gradually to normal, still with from two degrees and a half to three degrees of difference between the morning and evening temperatures. After the incision into the chest, anything like regularity in the chart-tracing was lost; but the morning temperature was frequently below normal, and twice was even down to 97.1 deg. Any little excitement or exertion during convalescence sufficed to send the temperature up. The heart did not return to its normal position for several days after the operation; it came back gradually, being evidently bound down by adhesions. There was at no time total absence of breath-sounds, but they were distant. The position of the wound was found to be no bar to the pleura being easily washed out, and naturally any accumulation of pus could not take place. A piece of lint inserted in the incision was sufficient to keep it open; after a time, a silver tube was worn, through which the discharge escaped.

It is only by experience that the best way of treating empyema can be satisfactorily determined, and the collection of individual cases must help to ripen that experience. In the case above related, it is eminently satisfactory to notice that, in the tenth week after opening the chest, the discharge had ceased entirely, the wound being then allowed to heal, and that recovery took place with no visible distortion of the affected side. The courage and patience exhibited by the patient throughout were beyond praise, and materially assisted, in my opinion, the happy termination of her trying illness.

ABSTRACT OF A CASE OF EMPYEMA.

By J. C. HORNBY WRIGHT, L.K.Q.C.P., Surgeon-Major.

A MAN, aged 22, came under my care on December 7th, 1874, with pleural effusion on the left side. After a very short course of constitutional treatment, it was resolved to remove the fluid by means of Dieulafoy's aspirator. His condition before operation was as follows. The chest-measurement was, on the right side, 16½ inches; on the left, or affected side, 17¼ inches. The lung on the right side was healthy—perhaps a little loud, and rough as regarded the murmur. The heart pulsated 1½ inches to the right of the sternum. There was complete dulness over the whole of the left side; no vascular murmur, but bronchial breathing posteriorly and over the lower part of the lung. The intercostal spaces were obliterated; pulse 112; respirations 22; decubitus on the back. The operation was performed in the eighth intercostal space, with a medium-sized trochar and cannula, and 136 ounces of apparently healthy pus were removed. The pulse increased in volume, but fell in the number of beats to 98. The respirations rose from 22 to 40, probably from exhaustion. There was but little change in the chest-measurement. He progressed well until December 28th, when there were feverish symptoms with considerable reaccumulation of fluid. The operation was again performed with satisfactory results; 71 ounces of pus were removed.

On January 7th, 1875. There was no material change in the patient's condition, but, on this date, again a large amount of fluid was removed, viz., 50 ounces. On January 10th, 40 ounces were removed; and, on the 23rd, 37 ounces.

On the 30th, it was found that the fluid had accumulated rapidly. The dulness on percussion extended over to the whole side and up to the clavicle. The operation was repeated, and 120 ounces were removed in the same spot and with the usual relief. During the whole time since the first operation, the patient was holding his ground as regarded strength and weight; he was able to take and to digest a very large amount of most nutritive diet. It was now determined to establish a sinus, and with this view a catheter was introduced and allowed for the present to remain in the opening.

On February 4th, it being found that the fluid had ceased to flow by the catheter, the latter was removed, and a silver probe, curved into the shape of a hook, was introduced, with the object of establishing the opening. At this time, about 55 ounces of fluid escaped by the side of the probe; and, from this date, until February 13th, there was a constant draining of healthy-looking pus, which at the lowest computation may be put down at 12 ounces *per diem*: amounting, in the interval between the 4th and 13th of the month, to 103 ounces.

From February 13th to March 13th, the same treatment was followed, and the cavity was washed out and injected several times with a solution of nitrate of silver. During that time, the amount of fluid which escaped amounted to 360 ounces.

On March 13th, 20 ounces of purulent secretion were removed by means of a silver catheter attached to the exhausting apparatus of Dieulafoy's instrument. The latter expedient was adopted, owing to the impossibility of the cavity being completely emptied without means to reach its lowest level. The patient's breath was improving, but still there was no evidence of expansion of the lung.

On March 19th, 60 ounces of fluid were removed.

On March 24th, 53 ounces were removed. On this occasion, the operation was performed by Dr. Frazer of the Cavalry Dépôt. I find on this date a note by that gentleman: "Aspiration again resorted to and 53 ounces of pus removed. Patient feels very well, and no cough to speak of; functions normal; sleeps well. Temperature rises slightly in the evening, but is normal in the morning."

On March 27th, 10 ounces were removed. On April 4th, 70 ounces of fluid were removed, and a stimulating injection was resorted to. On April 15th, 50 more ounces were removed; on April 23rd, 80 ounces; on the 26th, 70 ounces; on the 28th, 30 ounces; on the 30th, 50 ounces; on May 3rd, 30 ounces; on the 5th, 4 ounces; on the 8th, 45 ounces; on the 10th, 12 ounces; on the 11th, 10 ounces; on the 15th, 20 ounces; on the 16th, 60 ounces; on the 18th, 10 ounces; on the 20th, 30 ounces; on the 23rd, 24 ounces; on the 26th, 10 ounces; on the 28th, 34 ounces; on the 30th, 24 ounces; on June 1st, 20 ounces; on the 3rd, 16 ounces.

From June 3rd to July 3rd, when the patient was removed to Shorncliff for change, the gross amount of fluid removed from this man's pleural cavity was 202 ounces. After removal to Shorncliff, the patient came under the care of Surgeon-Major T. R. Wilson, through whose kindness I am enabled to furnish the following notes.

The patient's aspect was pallid and cachectic. His weight was 8 stones 2 pounds. He was suffering from chronic empyema of the left side, from which about 15 to 20 ounces of pus were withdrawn every second or third day, from an opening beneath the eighth rib, by means of a catheter and tube. From this date, every second or third day, 10 to 18 ounces of pus were removed, which was at first foetid and turbid. The orifice used to close between these operations, and required dilatation before any matter could escape. His temperature was normal in the morning, but at night rose 2 or 3 degrees. He was treated by quinine successfully.

On August 11th, he had sharp fever; pulse 108; temperature 102.2 degs. Quinine was again successful.

On August 29th, I considered that an entire change of treatment was desirable, and on this date I injected an ounce of tincture of iodine with 6 ounces of water, and allowed the injection to remain in. The injection was performed by means of an ordinary enema-syringe, to which I attached India-rubber tubing and a silver catheter—taking care that the tube was full before introduction into the chest. Slight fever followed the operation, and iodine was detected in the urine. On the 31st, the pus removed was also discoloured with urine (8 ounces removed).

On September 2nd, 6 ounces of clear sero-pus were removed; and, until the 8th, no fluid whatever escaped by the catheter, and then there was only slight oozing.

On September 12th, I determined, as the matter was again being reproduced, to endeavour to convert the abscess as far as possible into an open one, and not having any drainage-tube available, I tried a small piece of gum-elastic catheter; but he was only able to wear this for two or three hours daily, as it caused much irritation. However, the desired effect of converting the fistula into an open one was produced, and with marked benefit to his general health.

On October 12th, I introduced a piece of drainage-tube, knotting it to prevent it from slipping in too far, and he is now (November 12th), I may say, quite convalescent. His breathing is easy and unembarrassed, and though there is necessarily some collapse of a portion of the lung, this is not material. He weighs 10 stone, and has thus gained very nearly 2 stones while under my treatment. Altogether, the case has been one of extreme interest, and in some respects almost unique. The chest walls have fallen in to the extent of 2 inches.

The following is a *résumé* of the amount of fluid removed.

	Ounces.
From December 7th, 1874, to April 23rd, 1875	1240
„ April 23rd to June 3rd	579
„ June 3rd to July 3rd	202
Total	2021
At Shorncliff. — Fifty-six days at an average of 12 ounces <i>per diem</i>	672
Total	2693