

Observations chiefly on pulmonary disease in India, and an essay on the use of the stethoscope / [William E.E. Conwell].

Contributors

Conwell, W. E. E. (William Eugène Edward), 1785-1836

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OBSERVATIONS
CHIEFLY
ON
PULMONARY DISEASE
IN
INDIA
AND
AN ESSAY ON THE USE OF THE STETHOSCOPE

BY
W. E. E. CONWELL. B. L.—B. S.—& D. M. P.

SURGEON ON THE MADRAS ESTABLISHMENT, AND MEMBER OF THE LONDON COLLEGE
 CORRESPONDING MEMBER OF THE LONDON MEDICO—BOTANICAL SOCIETY; AND OF THE
 IMPERIAL VACCINE INSTITUTION FOR

BRITISH INDIA.

*Principal Surgeon to the Hospital established at Wallahjahbad, for
 the native sick and wounded returned from the Burmese War.
 Subsequently, Surgeon of the General Hospital at Penang.
 Officiating staff Surgeon of the Madras Troops employed
 to the Eastward; and officiating superintending
 Surgeon of Prince of Wales's Island,
 Singapore and Malacca.*

MALACCA:
 PRINTED AT THE MISSION PRESS.

A. D. M.DCCCXXIX.

TO
THE MOST HONORABLE
THE MARQUESS OF LONDONDERRY

Sir,

I most respectfully dedicate this publication
to you in grateful and heartfelt acknowl-
edgment of the kind and liberal patronage
which your brother the late Marquis has pleas-
ed to honor me.



This humble offering is a tribute to
your benevolence and liberal spirit and liberality
towards equally to mark my gratitude for his kind-
ness - my esteem for his memory - and my respect
for the family you now represent.
I have the honor to subscribe myself

Sir,

Your most obedient and

very humble servant

W. E. E. CONWAY

1st JANUARY 1830

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I have the honor to subscribe myself,

SIR,

Your most obedient, and
very humble servant.

W. E. E. CONWELL.

MALACCA:

1ST. JANUARY, 1829.

PRELIMINARY OBSERVATIONS.

THE MALARIAL FEVER.

The first and second parts of this publication were sent to the press in October 1827. My object then, was to submit the cases, the diagnosis, and my notes on the symptoms, for the judgment of my colleagues in India. Now, ill health necessitates my return to Europe, and to extend the interest of this work, I added three cases of pulmonary affections, not fatal, of which two were associated with hepatic disease. By submitting to the Profession generally, detailed statements of pulmonary disease in India; I fulfil my promise to that effect, made at the request of my excellent and learned master, the late M. Laennec, of Paris. It is a generally received error, that pulmonary disease in India is rare; and readily cured. I participated in the misunderstanding; and entered a proposition to that effect in my thesis, published at Paris in 1824. Since my return to India, I held situations that offered a more extensive scope of observation, and I respectfully submit to the Profession, a concise view of my experience.

PRELIMINARY OBSERVATIONS.

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Since my return to India, I held situations that offered a more extensive scope of observation, and I respectfully submit to the Profession, a concise view of my experience.

The preliminary cases shew the facility with which pulmonary disease, effects an increased determination; either to the head, or, (to any of the abdominal viscera; more especially) the liver.

The symptoms of pulmonary engorgement, are readily reduced by treatment: the determination changes from that to some other viscus; and when that condition shall have been corrected, the original pulmonary engorgement will frequently become re-established.

In acute pneumonia, I have witnessed two cases, in which there was a violent metastasis to the right knee joint; after the thorax was filled by effusion. Both cases were mistaken—both fatal—and I could not in either obtain notes of the previous treatment; nor was I permitted to carry the dissection farther, than a demonstration of the cause of death.

A case of pneumonia terminated fatally under my care, by the continued exhalation of fluid into the thorax, and latterly into its external parietes; which thereby became extensively swollen, eighteen hours before death. Large flakes of gelatinised serum were blended with the fluid in the thorax; and a gelatinous substance of similar apparent characters, lay between the external thoracic cellular tissue, and the pectoral muscles, which produced the swelling noticed before death.

A Mr. S. of the firm, G. and Co. at Madras, recovered from a very severe attack of pneumonia, under my care, assisted in consultation by my colleague Mr. Annesley. Mr. S. went to Europe to re-establish his health; and on his return I supposed him labouring under hydro—pericardium. I have learn'd, that he died quite suddenly, some time after.

Another case of acute pneumonia in a young Gentleman *Ætat.* 13, was very similar to that of Mr. S. I had Mr. Annesley's assistance in consultation there also, and the patient recovered. In both those cases the frequency of pulse was distressing, and subdued by digitalis; being by its influence kept steadily under 70.

Spare diet, bleeding, general and local; blisters, sudorifics, diuretic purgatives, confinement to a close room, and the use of flannels; were the means used in addition to digitalis.

In reference to those cases noticed in the Rangoon Field Hospital,* I hope hereafter to state the

* To the present Lieutenant General Sir Thomas Bowser K. C. B. then commanding the Madras army in chief; I am indebted for nomination to charge of the Field Hospital, established at Wallahjhabad, for the sick and wounded returned from the Burmese war.

To his Excellency Lieutenant General Sir G. T. Walker, G. C. B. &c. &c. &c. now Commander in chief of the Madras army; I am indebted for the consideration and support, both in that station and subsequently, which he invariably bestows on all subjects, ei-

pathological facts and opinions they suggested; in giving a general view of the diseases, that peculiarly afflicted the native soldiery in that war.

In this place, I have only to remark, in reference to the treatment generally adopted.

1st. That the scorbutic habit was radically established, in almost every individual case; which led to the use of nutritious diet, and wines.

2dly. Limes and ripe fruit were furnished in abundance, daily: but never noticed in the journals; because the entry would have been waste of time, which the charge of several hundred sick at the same time, distinctly forbade. The notes of treatment, and progress of cases, are contracted.

This war was the first occasion, on which Natives were supplied with woollen great coats and pantaloons at the public expence; and they were not only extremely useful, but very acceptable to the Native Troops.

This feeling was strongly indicated by all ranks, whensoever Colonel Conway C. B. (adjutant General of the Madras army,) visited the Hospital: who was understood to have suggested that measure, amidst many others; which combine firmly, and promote equally, the public interests, with advantages to the native soldier.

ther interesting to humanity, or embracing the interests of individuals in the Army he commands.

The last case of pneumonia that occurs to my recollection, is that of a most valued and dear friend.*

He commanded the pioneers at the siege of Seringapatam and went, through the river, several times by night, to learn the exact trajet of the ford, by which his men should approach with scaling materials. Changing clothes for three entire days and nights was out of the question. He succeeded; pneumonia followed; the health broke up, and he returned sick to Europe: where spare regimen, and abstinence from stimuli, with the use of flannels, afforded partial recovery.

In 1812 and 1813 he commanded a complete field force, composed of several brigades, in the Mahratta country; and affected the contemplated objects; by great arrangement, without bloodshed. I urged his return to Europe, at the close of the service, on account of palpitations, œdema and general ill health; and I offered to accompany him—He declined it—I kept him under treatment calculated to diminish the volume of fluids, increase the absorbent powers and promote heal-

* The late Lieut. Colonel W. Dowse of the Madras establishment. His talents as a soldier, and qualifications as a Gentleman, were of the very highest order. This Gentleman formed the most prominent example I ever knew, of an individual whose head and heart were so singularly and equally assimilated, for feeling, thinking, and acting aright; that whilst he never obtruded phrase or form regarding moral duties, his entire life was a practical and beautiful illustration of their exercise.

thy functions. The œdema ceased--There was evidently improvement; still it was slow—I was requested, by his own desire, to leave him for a short period to try other medical care. I did so. A little wine and animal food were used; with treatment which I do not know: and a few short weeks removed him to the tomb--at Bangalore.

In the case of G. H. Esqr. I observed an instance, wherein very extensive and repeated loss of blood by Hæmorrhoids, suddenly induced very copious effusion into the thorax. On the first visit, I stated the necessity for a consultation, and very prompt measures. The late Dr. Harris and myself were to have met the following morning; but Mr. H. fell down dead, whilst walking across the room, on that evening. He would not admit that his chest could be affected. There were four pints of fluid in the right side of the chest, and 23 oz in the left.

After several years absence, I met P. B. Esqr. a civil servant of high rank, and far higher merits. He had become remarkably fat: the erect figure and firm step, had changed; the shoulders stooped forwards and downwards, the figure was contracted, and the step slow and heavy. He said he had suffered from constant rheumatism, and occasional palpitation. He consulted me. The pulse was irregularly but constantly intermittent; the column of blood heavy, and the arterial systole like the blow of a hammer. I stated that either fat or some other

derangement embarrassed the heart's functions; recommended depletion, regimen, and return to Europe. He called a consultation at which I was not present: and he told me afterwards, they decided very kindly, that he should drink his cool claret just as formerly--He did so poor fellow!--And some months after was found dead in his palenkeen, having expired suddenly. The prevalence of cholera at the time, supplied an imaginary name for the cause of death.

I have seen one other case very similar to P. B—s Captain R. in 1814 was a smart, tall, thin young officer. I saw him on my return to India in September 1824; just stooped forward and cumbrously loaded with fat like Mr. B—. I remarked to a professional friend, my fear that derangement about the heart, would speedily become serious. I never saw him again. He only lived a very few months; and I have no doubt, died from derangement of the heart.

Hepatic disease having engaged the talents of my industrious and experienced colleague Mr. Annesley: I will avail myself of the advantages his labors afford; and also of the opinions my professional brethren may offer on the matter and manner advanced in these pages: before I submit my own experience to the profession.

My notes on the stethoscope, were originally intended, only for the notice of my colleagues in India; and I hope they will prove useful there, in calling attention

more generally, to its utility, in the determination of Diagnosis.

Every work printed at a distance from its Author suffers disadvantages; in India greatly enhanced. I. L. Geddes Esqr. and T. Ward M. D. Asst. Surgeons,* kindly contributed their labors to the correction of the press, throughout; at different times: and they have my most sincere acknowledgements and thanks, for the attention and talent, they evinced in that task.

* Both of the Madras Establishment.

PRELIMINARY CASES.

On board the transport ship, *Alexander*, Commanded by the late Ronald MacDonald Esqr. from Madras to Penang.

PHTHISIS INCIPIENS

John Brown a Private in the Madras Artillery. *Ætat.* 21. 10 months in India. Stature small and delicate, complexion fair. Native of England, originally a labourer. Healthy at home.

1827. February 10th. Has been suffering from loss of appetite, constant cough and quick pulse, these last six weeks. Can give no statement of feelings or symptoms; and seems stupified, like a person a little intoxicated. Tunica conjunctiva red. Says he is very well, but cannot eat. The eyes sparkling. Head very hot, skin dry and hot, generally; but the head and thorax most so. Pulse 120 full, large, and hard at times. Tongue red, and has some remarkable large transverse sulci; otherwise natural. Urine rather scanty and red. Bowels as

usual, costive. Respiratory murmur imperfect, in the superior pulmonary lobes.

DIAGNOSIS.

Pulmonary engorgement threatening tubercles. Tubercles and inflammation of the intestinal mucous membrane. Capillary engorgement of the cerebrum from the preceding causes.

Arrowroot diet, and oz. 1 of wine daily.

V. S. ad. oz. xx.--Emplast: canthar: inter scapulas.

R. Ipecac: et pulv: antimon: āā gr. iij m ft in pilul: bis in die, jejuno ventriculo.

11th. Pulse, tongue, and skin improved, nearly natural; has much cough. The blister did not act well.

Rep^{tr}. Emplast: canthar: et med: Cont: dieta.

12th. Took his medicine and food. Bowels open. Urine natural. Pulse 100 soft. Skin, rather hot and dry. Tongue cleaning. Cough milder; has a little thirst.

Rep^{tr}. med: &c. aq: oryzæ, pro potu commune.

13th. Took his diet and medicine. Blister rose. Restless and dreaming all night. Bowels open. Urine dark and scanty. Bathed this morning and made a better breakfast, but cough, increased. Skin and tongue natural. Pulse large and soft, 90. Emplast: canthar: sterno:—Cont: med: dieta: &c,—

14th, Blister rose, took his medicine and diet. Very disturbed sleep. Cough continues; bowels open; urine dark. Much thirst. No appetite. Skin cool but dry. Pulse 90 soft and feeble. Tongue natural color, but tremulous; and he complains of great weakness.—Cont: Med: &c.

15th Not better, though the cough is less; he raves all

night. Pulse large, feeble, and undulating. Tongue nearly dry, and smooth, shining in parts, and marked with irregular sulci. Skin dry, harsh, hot; pupils dilated; anxious, restless, picking the clothes. Bowels open; urine scanty, dark: has no pain but great weakness. 'Tis clear from the stethoscope's indications; that the governing disease, is in the lungs.

R. Antimon: tart: gr. iss. in pil; bis die. Omitt^r. alia.

16th. Took his medicine; vomited much bile; urine yellow; purged and vomited much in the night. Pulse 134 soft, feeble. Tongue excited, disposed to dry; much thirst. Skin dry and rather hot.—solutio, supertart: pot: pro potu com: Rep^{tr}. Antimon: tart: ut heri.—Ripe fruit. Arrowroot. Soup.

17th. Took Medicine and diet; looks clear but ghastly, feels giddy, and the mind is cloudy. Purged 4 times; urine yellow. Pulse 150 large and soft. Tongue red at the tip, furred partly. Skin cool; no appetite. Cough as before.

Contr^r. ut heri

Vini albi. oz. ij. bis die.

Feby. 18th. Took medicine, diet, fruit &c. Slept better, bowels open. Not vomited by medicine; has eaten more than usual; Pulse 116 soft. Tongue and skin natural. Cough more loose. Contr. ut heri,

19th. Took medicine and diet. Sleep disturbed. Little appetite, some thirst. Coughs much, weak, ghastly; medicine excites very slight vomiting, bowels open, 3 dejections, pulse 140 soft, feeble. Tongue natural, skin moist, head giddy, hearing improved, limbs tremulous.

Cont^r. Vinum.—antimon. tartar.—Arrowroot. &c.—

20th. Took medicine and diet. 3 dejections, not vomited, looks more ghastly, slept, appetite better, cough as before and expectorates, viscid purulent fluid; (yellow.) lungs engorged. Not better, head hot and dry. Pulse 140 soft, feeble and large.

Cont: ut heri.

21st. Took medicine. 3 dejections. Skin of the natural temperature, urine natural in characters and quantity. Slept better, had a little pudding, fruit, and soup; very feeble and ghastly; he declines, but says he is better: lungs sound, as if loaded, in coughing. Stethoscope shews the lungs central lobes are engorged, and the superior lobes slightly tuberculated. He expectorates much muco-purulent fluid. He feels heaviness in the head, is giddy, but less hot; and the hearing is improved. Pulse 100, volume less, and soft. Tongue, and skin of extremities natural, Cont:

Emplast. Canthar: super 3^{am.} 4^{am.} and 5^{am.} Costarum.

22nd. Took his medicine, blister rose, appetite better, sleep disturbed by cough, dreaming, and the blister. Countenance more clear, but ghastly, and the cheeks flushed tho' naturally pale, bowels open, urine natural, expectorates as before, Some thirst: Pulse 110 large and feeble. Tongue and skin nearly natural. Cont: Med: &c.

23d. Took medicine, first dose vomited him much. The second very little. He slept, but was disturbed with cough, bowels loose, Urine yellow. Pulse, Tongue, and skin as before. Countenance more ghastly. Cont: Remedia, dieta &c

24th. Feby. Took medicine, and vomited, 6 dejections, bilious; slept: cough easier, pulse 108, smaller, feeble, soft. Skin and tongue natural, more ghastly, but says he is better; little thirst, urine yellow. Cont: Remedia.

25th. Took medicine, not vomited, purged several times; dejections copious, brown, no abdominal pain; urine yellow. Slept, cough and expectoration less, appetite better, thirst less; pulse 98 smaller, and firmer with some reaction. Tongue and skin natural, head not so hot or dry: the countenance less ghastly and clearer. Cont: Remedia.

Emplast: Canthar: Lat: Sinist. Thoracis.

26th. Feby. Took medicine not vomited, blister rose, passed 4 bilious dejections, urine yellow, cough easier, expectoration decreased. Some thirst, a little appetite, cheeks flushed, countenance ghastly. Pulse 98; tongue and skin natural: slept. Cont:

27th. Took medicine, not vomited, purged 4 times, dejections bilious, urine yellow: tongue and skin natural. Pulse 100, with reaction. some restlessness, cough loose, and he expectorates viscid yellow mucus; appetite better, feels weak, countenance ghastly. Cont:

March 1st. Took medicine, squeamish not vomited, purged 4 times: slept better, cough less, pulse, tongue and skin natural, urine yellow, some appetite, thirst less. Cont:

2nd. Took medicine, not vomited, squeamish, purged, 5 dejections. Slept. Urine yellow. Pulse tongue and skin natural, strength and appetite improve, thirst less. Cont:

3d. Took medicine, not vomited, passed 4 dejections: urine yellow, slept, less cough, head less full and easier; eyes less dull and more sparkling. Countenance improves: strength

and appetite better: pulse tongue and skin natural, thirst less. Cont:

4th. Took medicine, passed 4 dejections; urine natural, slept. No cough, feels languid but says he is better. Has some appetite, pulse 90 feeble; tongue and skin natural or rather improving. R: Ipecac gr. iij bis die.

5th. March. Took medicine, purged 3 times; countenance haggard, cheeks flushed: pulse small, 80, tongue and skin natural: urine yellow, slept: appetite and strength as before, Cont:

6th. March. Took medicine, feels better, three motions, urine yellow, slept, no cough. Pulse tongue and skin natural: cheeks flushed, but countenance still haggard.—Cont:

7th. March, Took medicine, not vomited; purged 6 times, dejections bilious: urine copious and yellow, slept: no cough. Pulse tongue and skin natural, strength and appetite better, countenance still haggard, mental faculties alert and clearer: pupils less dilated, countenance clearer. Cont:

8th. Took medicine, and felt squeamish, but not vomited; passed 4 dark motions, urine yellow, no cough: slept. Pulse harder, 100, tongue and skin natural, feels better. Cont:

9th. March. Took medicine, squeamish; passed 3 dejections, urine yellow: slept less, and not so well. Pulse small, 96, tongue and skin natural, no cough. Cont:

10th. Took medicine, vomited and passed 6 dark dejections: urine yellow; very emaciated. Says he is better, pulse 84 natural, tongue and skin natural. Cont:

11th Took medicine, not vomited, passed 4 brown dejections; urine yellow: slept little, yet feels better; mental faculties lighter; appearance improved. No cough. Ipecac: Pulv: Ser: i. bis die jejuno ventriculo.

12th. March. Took medicine, not vomited, passed 4 brown dejections; urine yellow, slept. No cough these 5 days; experiences occasional cramps in the calves of the legs, and soles of the feet; has some thirst, appetite improves. Head not dry, pulse tongue and skin natural.—Cont: ut antea.

* 13th. Took his medicine, passed several brown dejections; urine yellow: slept, appearance haggard, eyes dull; countenance clear. Pulse tongue and skin natural; no cough. Cont:

19th. March. Feels some relief; has been taking for the last few days, Ipecac: scr. i. bis die: greatly debilitated. A sense of fullness accompanied by hardness of the belly; sonorous on percussion.

Visit by another surgeon

R. Pulv: Jalap: scr. i. stat.

R. Calomel gr. iv.

Extract: Colocynth: gr. viij. m. ft. pil: stat:—Cont: Pulv: Ipecac: h. s. et mane.

20th. March. Feels better this morning; was freely purged. Rept^r. Ipecac.

21st. Took his medicine, not vomited, bowels regular, urine free. Countenance clear and improved: pulse tongue and skin natural. Cont:

22nd. Took medicine, bowels loose, dejections brown, yellow, countenance clear. Pulse 108 soft, feeble; tongue and skin natural: complains of clammy sweats at night. I fear a tubercle is formed; as there is tinkling in the left superior pulmonary lobe. Cont:

I resumed my Hospital duty

23d. March. Took medicine, purged yesterday; dejections brown and fæculent. Now he feels better and in good spirits.

* Landed at Penang this day—I was taken ill and confined to my bed several days.

Urine natural, pulse 88, tongue and skin natural. Cont:

24th. Took medicine, griped and purged, yellow; now easy, countenance clear, urine pale, pulse 88, tongue and skin natural. Cont:

25th. Took medicine, not vomited, 5 dejections; pulse tongue and skin natural. Cont:

26th. Took medicine, purged, yellow; pulse 100, natural volume. Tongue and skin natural, restless, urine clear. Cont:

27th. March. Dreamed all last night, does not feel so well, severe pains and cramps in the feet, during the night. Tongue and skin natural; pulse 90--3 brown evacuations. Cont:

28th. Took medicine, 3 dejections, feels better. Cont:

29th. No change—Pulse 88, tongue and skin natural—Cont:

30th. The same. Pulse tongue and skin natural. Cont:

31st. No better.—Cont:

April 1st. 2d 3th and 4th. No change. Cont:

5th. Took medicine, not vomited, pulse tongue and skin natural, 2 dejections, appetite natural, countenance clear, head perspires much. Numerous watery blebs on the hands and posteriors.—Cont:

8th. No change.—Cont:

9th. Improves, watery blebs come out freely on the hands and hips—Cont:

10th. Looks clear, feels well, no cough.—Cont:

April. 11th and 12th. No change. Cont:

13th. Countenance very clear, takes his medicine, which sometimes produces squeamishness, but does not vomit: occasional pains in the cœcum; 3 natural dejections daily. Urine yellow, pulse tongue and skin natural.—Cont: omn:

14th. Slight pain in the right side, on pressure; pulse tongue and skin natural: slept. Cont:

15th. Took medicine, bowels regular, pain easier, pulse 86 natural, tongue and skin natural; countenance clear. Cont:

16th. Took medicine, no change, large serous blebs constantly come out on the hands and posteriors; and having discharged their contents, they dry up and are followed by a succession of others. Cont:

17th. No change. Cont:

18th. Face flushed, pain in the head, pulse 110 firm; tongue rather furred; skin natural: bowels regular. Cont:

V. S. ad oz. xxvj.—The blood at the moment very thin and pale.

19th. Feels lighter, cheeks flushed, bowels freely open: pulse 92 large and feeble: tongue and skin natural; urine yellow; feels heaviness and heat in the shoulders—v. s. ad oz. xxvj.—Cont: med: the coagulum rapidly cupped.

20th. Better, pulse, 98 soft, tongue and skin natural, bowels regular; cannot sleep well; feels lighter. Cont: med:

21st. Pain in the right side of the head: pulse 88: tongue and skin natural; sleeps, but always dreams much, bowels regular—Cont: med:

22d. Slight psora observed,—Ungt. sulph:—Cont: med:

23d. Pain in the head from time to time, slept, face flushed, pulse 84 large, round, and too firm: tongue and skin natu-

ral, urine yellow, bowels regular. V. S. ad oz. xxvj.—Ipecac: scr. i. bis die in mel, jejuno ventriculo.

24th. Blood was taken from a large orifice, it cupped: countenance clear, cheeks flushed: pulse 72 soft, tongue and skin natural, pain a little easier. Cont: med:

25th. Better—Cont:

26th. Pulse tongue and skin natural, bowels regular, sleeps; appetite as usual, no cough.—Cont: med:

27th. April. No change, countenance clear—an opportunity offers of sending him to Madras, and I issued a sick certificate, accordingly. *Discharged by transfer.*

OBSERVATIONS.

This is a well marked case of pulmonary disease, producing partial meningeal, and strong cerebral engorgement, threatening effusion: which most probably, abandoned to its own course would have terminated in death. The practice was directed to, and effected, the removal of engorgement; and greatly ameliorated the pulmonary disease.

The ulterior engorgement serves to shew, the strong tendency there is in pulmonary diseases, to re-appear: or, they alternate with engorgement, of other parts.

ULCUS COMMUNE.

SUBSEQUENTLY HEPATITIS AND A PULMONARY AFFECTION.

JOHN COOPER, a private in the Madras artillery, *Ætat.* 25, full grown, fair, and clear complexion: healthy and lusty: 8 months in India, always healthy; a native of Devonshire, and originally a labourer.

1827. April. 20th. Had a small ulcer on the left ankle, which recently healed: now again open; the general health is good. *Ungt. Hydrarg: nit rub: ad curationem ulceris.* Bandages wet with *sol: mur: sod:* to be applied to the foot and leg. *Datur sulph: magnes: dr. ij in aq: oz. viij, omni mane.*

21st. to 26th. April. No change. *Cont:*

27th. Other parts become affected. *Cont: applicatio: et haust: salin:*

28th. and 29th. No change. *Cont:*

30th. No improvement. *Antimon: tart: gr. i. sulph: mag dr. ij m: ft: omni mane sumend: in oz. ij aq:*

May. 1st. to 9th. Improved progressively. *Cont:*

10th. Quite well. Discharged.

Re-admitted. 3d. June. Hepatitis and pulmonary affection. Pains at the lower part of the chest, which affect the breathing: lays easiest on the right side; has pain in the left leg, also a heavy pain in the loins: has had a cough for some time back, and there is a stiffness in the shoulders. On elevating the left arm, he has pain about the clavicle: elevating the right arm, there is pain at the lower angle of the scapula;

pulse 64, large and soft; tongue acquiring a short close fur; skin cool. The thorax is capacious, but deformed on both sides by increased convexity; from a previous attack of scurvy or pneumonia. Pain with puffiness, in the integuments over the left hypochondrium: and some enlargement of the left lobe of the liver, is distinctly traced, with the finger.

DIAGNOSIS.

The sequelæ of thoracic effusion, with enlargement and some inflammation in the liver; apparently not just now in an active state. *Admov: hirud: xvj p: dolent:—mur: ammon: et hydrarg. c: cret: āā. scr. ss. m: ft: detur in mel omni nocte et mane.*

June. 4th. Leeches bled freely; there is pain in the back of the neck, right shoulder, and stiffness of that arm: restless; pulse 78 large; empties, and then surges: tongue natural fur, skin cool. *Cont: med:—Ol: ricini oz. iss. mur: ammon: gr. vi. aq oz. ij. m: ft: stat: sumend:—vespere. v. s. ad lb. i.*

5th. Was bled, blood thick, light coloured and cupped; passed three dejections, two yesterday light grey, one this morning, dark bilious: slept better: pain now more distinct in the back and left side: less pain in the shoulders neck and head: urine dark red, and scanty: pulse 86 force and volume natural: tongue clean, skin cool. Disease of the liver is becoming more distinctly marked. Another general bleeding would now be ordered; then the treatment that follows: but the emptying pulse remains unexplained. *Calomel. scr. ss. h: s: emplast canthar: part: lat. dol: stat.*

6th. Had severe headache from 9, A. M. yesterday, till 3 this morning; six dejections, chiefly dark bile: urine very

scanty, and turbid like decoct: cinchon: * little sleep: stranguery: blister did not rise well. Pulse 112, round and firm: tongue natural, skin moist, temperature natural: the spleen is not materially enlarged.—V. S. statim ad lb. j.—Rep^{tr}. calomel scr. ss. die.

7th. Much better; the blood was dark, cupped and buffy: no dejections, slept four hours; the headach yesterday was very slight. Urine much more copious and paler, yet turbid: a sharp pain continues in the left side. Pulse 100, volume generally natural; occasionally, some systoles small, and others large, always soft: tongue short fur: skin cool: gums swollen, livid; interstitial projections and dental folds, ulcerating. Pulmonary effluvia is mercurialised, but there is no ptyalism.†

Pus formed in the liver; most probably in several tubercles: and, a fluctuating determination to the lungs.—Cont: med:

DIAGNOSIS

8th, June. Took medicine, passed 4 dejections, dark green and muculent: urine more copious, and lighter, yet still red-

* I have observed in numerous cases, that this indicates the presence of pus in the liver; and I now think it was the indication of that condition, in this case. The formation of pus, explains the emptying pulse already observed.

† The non-appearance of ptyalism, after the free use of mercury, is just what occurs in hepatic abscess,

Is mercurial treatment confined, or adopted, subsequent to the formation of pus in the liver? after that event as before, the object of treatment is, to conduct the case to a happy issue; and when symptoms indicate the continued existence of acute disease in the liver, even after suppuration; the depletive and mercurial treatment should be moderately adopted; to prevent the formation of additional pus; or other dangerous and peculiar sequelæ; as mortification, sloughing, hæmorrhage or effusion. On the contrary; when the inflammatory action is subdued by the formation of pus; mercurials are not indicated.

dish, and containing dark clouds; thirsty, pain in the back above the kidneys, some pain and heaviness in the left side: pain of the back originally corresponded with the site of the liver; now it is in the centre of the lumbar vertebræ: little sleep. Pulse 95 soft, tongue very moist fur, skin cool, gums very sore, no ptyalism.—Gargarism:—Cont:—Decoct: lini. lb. iv. pro potu commune in diem.—calomel gr. ij. in pil; Omni nocte h. s.

9th. June. Mouth very sore, no ptyalism, no dejections, urine red, scanty, and very opaque; yet no sediment. The usual mercurial pulmonary effluvia is present: only in very full breathing, or in quick turning, he feels severe pain in the left side and in the back: the pain of the back he thinks moves: very little or no sleep, the quantity of urine is much increased: some thirst: no appetite: does not perspire. Pulse 96 soft, volume natural, tongue has the fur usual in ptyalism: skin cool and soft.—Ol: ricini oz. iss statim.—Cont: pil:—Infus: sennæ cum--sal: cathartic: vel haust: salin: purg: cras mane; omni hora, donec alvus respond.

10th. June. Does not feel so ill, mouth very sore: no ptyalism: two dejections: has taken the saline purgative: urine scanty, red. Pain of the head and pain in the back continue: pain in the side only on very deep breathing: slept 4 hours, thirst less, perspired yesterday. Pulse 96 free, soft: tongue mercurial fur: skin cool and moist: gums and inside of lips excoriated and yellow, incipient ptyalism.—Cont: med:—Emplast: canthar: parti dorsal: dolenti.

11th. June. Feels easier than yesterday: took medicine, 3 dejections, brown and dark: urine lb. i. deep orange red, cloudy and turbid; the urine is decreasing: mouth getting better: slept ill or none from the blister. Pain of the head and back continue: the voice has been falling off into a treble, these last four

months: no appetite; thirst returning; blister rose well; pulse 90 soft: tongue mercurial fur: skin cool: had severe strangury. Mouth is very sore, little or no ptyalism.—Cont: med:

12th. June. Feels very unwell: took medicine, 5 dejections grey, dark or blueish; urine oz. 12 red orange. He only takes fluids, no appetite whatever; thirst constant; pain in the head and chest, but not so much in the side; pain of the back is continued: severe pain and soreness since yesterday, in calves of the legs; slept well 5 hours. Pulse 102 volume natural, a little hard; tongue mercurial fur; skin cool.—Ol: ricini oz. iss statim.—Cont: med:

13th. June. Took medicine, 2 dejections, yellow, fæculent, and natural; urine very scanty, about oz. 12, red orange: had rigors yesterday, with giddiness and cold sweats from 10 till 12. Did not sleep well, pain in the upper part of the chest, (right side.) which increases; but there is no dyspnœa: pain of the back and thighs with a constant sense of heaviness and stiffness: the countenance is collapsed and changed to death like: the nose contracted, and shrunk; the eyes glassy and retracted. He rouses with difficulty, feels and seems dull and sleepy, but he cannot sleep. Pulse 86 large and soft; yet there is a hardness in the first touch of each systole; tongue has the general mercurial fur: mouth very sore, gums and cheeks excoriated, very little ptyalism, skin moist, and above natural heat. Cont: ut antea.—V. S. oz. xx. statim. The blood cupped much immediately and formed a very strong jelly on the surface of the coagulum.—Vespere; calomel scr. ss. h. s.

14th. June. Took and retained medicine, had no evacuation; and has not even passed the oil taken yesterday morning:

urine very deep red, only passed oz. 12 since yesterday morning: Could not sleep, no rigors, pain now chiefly in the right side of the thorax; severe pain in the head: back has less pain: no pain in the left side: no appetite: thirst constant. Pulse 92, rather large, and a little hard: tongue mercurial fur; mouth very sore, perfect ptyalism: much sweating.—ol: ricini oz. iis statim; et 12^{ma}. hora; posteaque alternis horis si opus fuerit.—Calomel gr ij h. s.

15th. June. 6 A. M. Took oz. 7 of ol: ricini yesterday and oz iis this morning; no dejection. Enema purgans statim. 9 A. M.—5. dejections, black, tarry, and rather copious: urine less red, cloudy, 30 oz. slept well 5 hours: pain of the head less, most pain in the right side of the thorax superiorly: some pain in the middle of the back, mouth very sore, ptyalism severe; pulse 82 volume rather large, force natural and soft: tongue mercurial fur; skin quite natural.—Cont: remed: et gargarism:

16th. June. Took medicine, one natural yellow dejection this morning, urine very scanty, 12 oz. not so red: slept well 5 hours, no appetite, cannot eat, much thirst; breathing oppressed, pain and heaviness increase, in left side of the thorax, superiorly; pain of left side inferiorly, at pit of stomach and in the back, decrease. Mouth very sore, constant ptyalism; pulse 80, arterial coats as if thin and soft, but a hardness in the systole: tongue mercurial fur, skin natural. Stethoscope indicates the right lung traversed naturally: the left middle and superior portions afford tinkling. On examination over the hepatic region, there is pain corresponding with the site of this viscus, anteriorly, and laterally.

DIAGNOSIS.

Hepatitis and hepatic tubercles; pulmonary tubercle on the left, superiorly.

V. S. ad oz. xvj statim.—12^{ma}. hora admov^r. Hirud: No. xij. to the surface indicated * to be blistered.—Emplast: cantharid: parti dolenti h: s:—Cont: medicamina.

17th. June. Removed oz. xvj. of blood, which cupped firmly and was buffy: applied leeches; and the blister, which rose well. Took medicine, one dejection muco-bilious, and some scyballæ: urine only 18 oz. red orange, no deposit; little sleep; a little less pain, in the upper part of the left side of the chest; yet there is much pain remaining. He has a more distinct sense of pain in the hepatic region, now; than at any time previously. No appetite, thirst constant; the countenance more natural and clearer; pulse 96 rather large, vascular coats as if thin, systole soft, but too full: tongue less furred: skin natural: no cough. Rep^r.

V. S. ad oz. xx.—Ammon: muriat: gr. x, nit: potass: scr. i aq: oz. iss: m: bis die.—Calomel scr. ss. ut antea, h: s:—flannel jacket, and drawers.

18th. June. A. M. Little blood procured, (oz. xij:) cupped, buffy: took medicine, no dejection, urine increased to one quart, turbid red orange: little or no sleep: uneasy: very thirsty: pulse 136, natural volume, very feeble and soft: tongue mercurial fur: skin hot, and dry: feels at times fainting. Cont: haust: salin.

18th. P. M. Head had more pain yesterday, to day very little: constant pain increased on breathing, in superior part of right lung: no pain now in either side: some pain in the back, extending from side to side through the lumbar vertebræ: a fullness under the margins of right ribs, and pains are felt in that side, from

* The part to be blistered, was marked, by tracing a line of ink with the pen; which is the surest and shortest process.

the cœcum to the shoulder.—Ol: ricini oz. ij stat.—Admovr. hi
rud: xx. super region: hepat:—Cont: pil calomel ut heri, et
haust: salin.

19th. June. Took medicine and leeches applied: passed
a restless night; complains of having had a dry tickling cough
during the night, pain in right lung relieved. Pulse 130,
rather full and strong: tongue crusted yellow, with some mar-
ginal color: bowels twice open, dejections green, turning to yel-
low.—Cont: med:

20th. Feels better, no pain, no dejection during the night,
skin hot and dry; pulse full, 100; tongue furred of a brownish
color. Habt: ol: ricin oz. iss statim.—Cont:—med:

21st. June. Passed a comfortable night, says he has no
pain, some appetite, weakness, and there is some difficulty of
respiration: pulse 110, weak and thready on pressure tongue
covered with a yellow crust: skin natural; bowels opened; 3
fæculent dark dejections. Cont: med:

Vespere. He is costive and restless.—Ol: ricini oz. iss stat,
sumend:

22d. Complains of some headache; bowels once opened from
the medicine, dejection brown, fæculent, thin and natural: pulse
110, weak: tongue dry and furred; a yellowish brown.—Cont:

Visit by Mr.

assist: surgeon
Grant.

23d. Passed a good night, headache relieed, bowels once
opened, dark green evacuation: pulse 112 full, but weak: ptya-
lism has almost ceased.—R. pil: hydrarg: gr. xx. Extract: co-
locynth: comp: gr. xx, ms, et divid in pil :viij. sumat unam
h. s. Omni nocte.

24th. Passed a good night, no pain, skin moist, pulse, 100 soft, and weak: tongue cleaning.—Cont: med:—Ol, ricini oz. i stat:—Vespere.—Oil not operated.—Rep^{tr}. ol: ricini stat:—R. mur: ammon: gr. xv nitr. potass: scr. ij aquæ oz. iss ms. haust: bis die.—Hydrarg: submur gr. ij. pil i. h. s.—R. pil hydrarg: extract: colocynth: comp: āā scr. i m: ft. pil n^o. viij. two pills every night.

25th. June. Countenance very wan and contracted, but the voice firmer; he feels better, oil not operated, he slept well, no dejection, urine oz. xx. in 24 hours; a turbid muddy orange, with much sediment chiefly mucus, and a white powdery substance. Pulse 96 soft, force volume and rhythm natural: tongue anteriorly clean, posteriorly furred, skin cool, gums sore, dental margin ulcerated: little appetite, much thirst, but less than formerly. Now no cough, some pain in the head, that of the chest is chiefly in the superior part of left side.—No pain in back or thighs; on full breathing no pain in the hepatic region. Stethoscope indicates the left superior lobe traversed, with a slight ringing near its superior extremity; and air seems there, to rush through large cavities.—Cont. mur: ammon: &c. Rep^{tr}. pil ij h. s. Omni nocte:—Ol: ricini oz. iss stat: et p: r: n:

I returned to my duty, having been absent from illness.

26th. June. Took medicine, had 5 dejections, brown, urine not observed: did not sleep well, pain in the head and chest: pulse 84 soft, force and volume natural: tongue cleaner, skin natural. little appetite; some thirst—Cont: med:

27th. Took medicine, one dejection, brown; urine copious, turbid, like Decoct: Cinchon: and copious flaky sediment: when settled, supernatant fluid pale. Slept, some appetite, much thirst, pain of head, thorax, and a little in the right side continue: pulse 74. force and volume natural: tongue becomes

clean, skin natural—Cont: med:—Rep^{tr}. ol. ricin.

28th. Took medicine, and oil: had three dejections, dark brown; urine pale and copious: slept, but not well, some appetite and thirst. Pain in the head and chest continue, no pain in the side or back. Examination of the thorax by stethoscope, indicates the left lung imperfectly traversed; and the pain is actually found, under the site of the leech wounds, which I applied formerly on the left side of the thorax; yet the respiratory murmur is more general; those wounds have all festered, and are sore: pulse 74 soft, force and volume natural: tongue and skin nearly natural.—Emplast: canthar: p. d. thoracis.—Cont: med:

29th. Countenance fallen since yesterday, blister rose well, took medicine, no dejection, urine pale orange and copious; with free white muculent sediment. No sleep, a little appetite, some thirst, pulse 104 small, soft and weak; tongue rather pale, moist, and slight fur, skin natural—Ol. ricini oz. ij statim.—Cont: Haust: salin:—Omittr. pil: colocynth.—Calomel gr. ij omni nocte Vespere. Feverish, had no evacuation.—Ol. ricini oz. i. stat et Rep^{tr}. si opus fuerit.

30th. June. Took medicine, no dejections, urine copious, pale, turbid, like water and a little milk; slept better; little pain in the thorax or side, head less painful; some appetite, and thirst; pulse 86, large and soft; tongue short loose fur, skin natural.—Ol. ricini oz. i.—stat;—Cont; calomel et haust salin; ut heri.

Vespere—no dejection.—Ol. ricini oz. ii statim.

July. 1st. Took medicine, oppressed, no dejection (6 A. M.)—Ol. ricini oz. ij stat. 8. A. M. Has had 2 very copious feculent evacuations; and feels much relieved. No other change.—Con;

Vespere. No dejection since morning.--Ol: ricini oz. iss statim.

2d. Took oil, no dejection.--Ol: ricini oz. ij stat. et 12^{ma}. hora si opus fuerit. Urine pale, copious and turbid, head much less painful since yesterday. No pain in the back, but there is some at the pit of the stomach and in the chest, slept better, pulse 76 force natural, volume a little large and soft, rhythm natural; tongue semitendinous with a short close coarse fur; skin natural generally; countenance improved: feels a kind of burning internally in the right hepatic region, no cough, little appetite, little thirst.—Cont: medicamina. Vespere. Has had no dejection, but did not get the oil at 12 o' clock.—Ol. ricini oz. ij statim.

3rd. July. Took medicine, had two copious fæculent dejections, slept very little, from pain in the lower part of the chest; no cough, urine high coloured, turbid, copious sediment: difficulty of breathing; much less pain in the head since the feeling a few days back, of something in the head having moved from one part to another. Pulse 80 large, soft, force natural; tongue clean, skin natural.—Ol: ricini med: oz. ij. Statim—Cont: med:

4th. July. Took medicine, 3 copious fæculent dejections since yesterday morning; urine red orange oz. xxx. and turbid, much muculent puriform sediment: slept, some cough, pain in lower part of thorax on breathing. Last blister not yet healed, little appetite, some thirst; pulse 64 small and soft: tongue very slight fur, skin natural: the belly was swollen, until the dejections were passed yesterday evening; which relieved the abdominal fulness and uneasiness, also a pain of the head: this morning pain of the head returned. Ol. ricini oz. ij. stat: —Cont: mist: salia:—extract: colocynth: C. gr. iv. Calomel gr. iij. m: ft: omni nocte.

5th. July. Took medicine, 2 dejections, copious, fæculent; urine decreases, milky, and throws down a very copious white sediment: slept well, pain felt in the right side, and lower part of thorax on breathing. Reposes mostly on the left side, blister being on the right; a little dry cough, appetite better, pulse 68 force and volume natural; tongue clean, skin natural.—Cont:

6th. July. Took medicine, had no dejection; urine pale or milky, and very copious sediment; dry cough more frequent and prevented sleep: no pain except in breathing, which extends from the right side diagonally, to the throat on the left. Pulse 70 large and soft; tongue smooth, no fur, semitendinous: skin natural. Took Ol: ricini med: oz. ij. at 6 A. M.—sumat: oz. ij. Ol: ricini med: 9^{ma} hora si opus fuerit:—Cont:

7th. July. Took oz. ij. of Ol: ricini med: morning, noon, and night yesterday; in all oz. vj. no dejection during the day; three in the night; very copious, yellow and fæculent. Urine pale straw color, copious, slightly turbid; slept well, pain continues in right side of thorax, and some pain in posterior part of the left: occasional cough, very little expectoration, not very viscid. Some appetite; little thirst, blistered surface is healed: examination shews he has pain on pressure, over the right lobe of the liver, anteriorly and posteriorly: pulse 68 large and soft; tongue no fur, not very moist, semitendinous, a brown red, skin soft and natural.—Cont:—Ol. ricini oz. ij stat:—emplast: canthar. No. ij. one anteriorly, and one posteriorly, over the site of the liver, where pain is felt.

8th. July. Took medicine, blisters rose well, 6 copious feculent dejections, pale clay color; urine pale straw color, clear, no sediment; little sleep, little appetite, much thirst yes-

terday, a little in the night. Breathes easy, no pain of back or side on full inspiration; constant pain of the chest as before, on-breathing: pulse 76 volume large and soft; tongue no fur, not smooth, not very moist; skin natural.—Cont: Calomel: gr. ij. Omni nocte h. s.—Ol. ricini p. r. n.

9th July. Took medicine, two free dejections yesterday, forenoon.—At 1. P. M. He was suddenly seized with giddiness and sinking, became incoherent, and has been so mostly since, with great prostration of strength, and mental dejection. Countenance sunk and its characters lost: no particular pain, except in the lower part of the chest: no sleep, no stool since the change: did not vomit then. Urine like infus: cinchon: with slight puriform sediment, pulse 84 volume natural and very soft: tongue no fur, not smooth, moist: perspiration copious, skin rather wet.—Cont: ut heri.—statim. Ol. ricini oz. ij.—Since first entering the hospital, I observed him several times in the course of 4 hours.(during the visit) making efforts to vomit.

Vespere. No dejection: no change.—Ol. ricini med: oz. ij statim.

19th. July. Took medicine, two dejections, yellow, copious and feculent: urine copious, snow color or milk like; passes it constantly, with much mucus, and it has deposited much white puriform flaky matter: slept well 7 hours. Constant pain in the thorax, and at the pit of the stomach: now pain of blister felt more distinctly. Says he is much better, but cannot keep his feet and legs warm; they are cold and clammy: appetite better, much thirst. Pulse 68 volume natural, soft: tongue moist, no fur, skin natural, except the partial clamminess.—Ol. ricini oz. ij stat:—Cont: ut antea.

11th. July. Took medicine, one copious yellow feculent dejection, urine not scanty; opaque and turbid, with a very copious puriform sediment. No sleep, a little appetite, some thirst, no cough: pain only from the blister, none other felt. Pulse 72 rather large; and the artery as if tighter, or contracted; yet systole soft, and the contents as if thin: tongue slight granular fur, not white, moist, skin natural.—Reptr. omnia ut heri.

13th. July. Took medicine; and had ol. ricini oz. ij yesterday: no dejection since yesterday morning: urine spilled accidentally, copious: little sleep, some appetite, little thirst. Pulse 82 volume and force natural, tongue very slight fur, skin natural: a little pain in the thorax, but less severe no cough: some pain remains at the pit of the stomach; countenance rather improved: the parietes are tumid and swollen on the left Epigastric region; and pain there, is very sharp on pressure—Admovr. hirud. viij stat: p d:—et h. s. emplast: canthar:—Ol. ricini oz. ij stat: et repet: si opus fuerit.—Cont: alia ut antea.

14th. July. Took medicine, 3 operations, dark, yesterday; this morning, urine spilled and not observed; slept. No pain except from blisters: very little cough, some appetite, very little thirst, pulse 72 large and soft; tongue slight grey fur; skin warm and soft. Reptr. Ol. med: oz. ij. statim:—Cont. alia.

15th. Took medicine, and oil, 3 natural yellow dejections, urine decreased; slept, some appetite, no thirst, no cough; still pain under the site of the blisters. Pulse 86 large and soft, yet there is, as if some longitudinal fibres in parts of the coats, were tightened; whilst a far greater portion remained slack and unfelt. Tongue very slight fur, skin natural.—Coat: omnia medicamina.

16th. July. Took medicine, no oil yesterday, 2 dejections yellow. Urine copious, very milky, opaque and turbid; little sleep, some appetite, a little thirst: chief pain from the blisters; but also feels internal pain there, on breathing. No cough or pain in the shoulder; had severe pains in the limbs, but they are gone off. Pulse 72 volume natural soft; tongue slight fur, mouth not sore, skin natural.—Cont: medicamina.

17th. July. Took medicine, had ol: ricini med: oz. ij this morning; no dejection, urine pale, turbid, scanty: not much sleep, some appetite and thirst: pain in right side of thorax, but no cough; blisters sore, pulse 68 soft, volume natural, but irregular.—Cont: Omnia.

19th. Continued his medicine, 2 dejections, yellow fæculent; urine clear not copious: slept; appetite increases, some thirst, perspires. Occasional pain of the head; always pain in the chest; and some under the blistered surface, feels better: pulse 66, coats thin, natural force: tongue slight natural fur, skin clammy.—Cont: medicamina omnia.

20th. Took medicine: 1. free dejection, urine pale, copious: slept; some appetite, some cough, no expectoration: a little pain in both sides, corresponding with site of the liver: pulse 88 volume natural, soft: tongue quite clean, skin natural.—Cont:

21st. July. Took medicine, 1 dejection, brown, urine pale, straw color, rather turbid: slept: appetite improves, some thirst; some pain in left side of chest on breathing: sometimes a little cough; on breathing, pain always, and the catches are in the left side: thorax inferiorly, very much protruded on both sides, pain above the left nipple. Stethoscope indicates the left lung very imperfectly traversed. Pulse 108, volume and force

natural: tongue clean, skin natural.—Emplast: canthar: parti dolenti thoracis.—Cont: omnia ut antea.

22nd. July. Took medicine, no dejections, urine turbid, milky, pale and copious: slept little; some appetite and thirst: feels swollen in the belly and thorax; no pain except from blister: cough at times, short and dry; pain sometimes catches in the left side; and extends diagonally to the right shoulder. Pulse 83 force and volume natural: tongue clean; skin natural. Cont: omnia.—Ol: ricini oz. ij. statim et 11^{ma}. hora si opus fuerit.

24th. Took medicine, 3 dejections, brown, urine pale, copious, straw color: slept: appetite not bad, some thirst, only pain from blister; and in left side of thorax on breathing: no cough, heaviness of the body and limbs rather less. Pulse 78 force and volume natural: tongue clean, skin natural.—Cont: omnia.

25th. July. Better: took medicine, 3 dejections, brown, urine copious dark and turbid, but not milky or red, no sediment; slept little; some appetite, and thirst. Pulse 78 rather large, force natural; tongue clean, skin natural. Took oil this morning.—Cont:

27th. Continues improving.—Cont: ut antea.

29th. Continued his medicine. No oil yesterday, 2 dejections brown, urine like water; slept well; little appetite, some thirst; pulse 82 volume natural, soft, tongue clean, skin natural, no pain in the side: pain and heaviness in centre of thorax, inferiorly, aggravated in breathing.—Cont: medicamina.

31st July. Continued his medicines, 3 dejections, brown, urine like water, transparent: slept: some appetite. No thirst pulse 80 soft, and a little large, tongue clean, skin natural: a

little pain in the superior sternal part of thorax: voice has a sharp hoarseness; no cough.—Cont: omnia.

31. August. Continued the same treatment; feels worse: took medicine, 3 dejections brown, urine not free, very scanty, sometimes quite red, at others pale: no sleep, restless: appetite much less, great thirst. Pulse 124 a little large, and soft: tongue nearly natural, skin hot but moist: thoracic pain in breathing: always obliged to lay on right side, or he cannot breathe; he also gets a sharp pain in the small of the back, when any other position is attempted.—Cont: haust: salin; et ol: ricini: med:—Calomel gr. iv. h. s. o. n:

6th. August. Continued his medicines, 2 dejections daily, a dark brown, urine copious like decoct: cinchon: with much puriform sediment: slept well, some appetite and thirst: pulse 72, volume natural and soft: tongue clean, skin natural. Pain in the middle of the back, and left side, increased in breathing, pain felt in left side of thorax.—Cont: omnia.

7th. Took medicine, 2 dejections, brown, natural: urine pale, natural quantity, a little turbid; little sleep, some appetite and thirst: pulse 90 large, and a little too full: tongue clean, skin moist, and cool: gums a little sore. Pain constant in the thorax and small of the back.—Cont: medicamina.

8th. August. Took medicine, 2 dejections, brown; urine copious like decoct: cinchon, with large purulent deposit. Slept: some appetite and thirst; pulse 82 soft, tongue and skin natural, gums tender, very slight ptyalism, pain in small of the back, and left side of thorax, constant.—Cont:

9th. The same, 2 dejections, urine like decoct: cascarill.—Cont:

10th. Pain increased in the thorax; as before in the side

and back, urine slightly turbid, like decoct: cinchon.—Cont:

11th. Not so well, 2 dejections, urine not scanty, clear.—Calomel gr. viij. h. s.—Cont:

12th. Took medicine, two dejections, urine clear straw color; slept little, appetite bad, much thirst: pulse 96 soft, volume a little large: tongue evanescent semitendinous appearance: skin natural. Pain in the back and chest; sometimes in the head, and dimness of the eyes: his countenance has become languishing, collapsed and sunk.—Cont:

16th. Took medicine, 3 dejections brown. Urine 1 quart very little turbid: slept little, appetite bad, constant thirst. Pulse 102 soft, tongue clean, skin natural: pain constant in thorax, and low in the back; gums look tender.—Calomel gr. viij. Omni nocte h. s.—Cont:

18th. Took medicine. 3 dejections, the last black, urine 3 pints, a little green and turbid: cannot sleep naturally; gums not sore, pain constant in the left side of the thorax, and middle of the back.—Cont:

20th. Took medicine, 2 dejections, black: urine 1 quart; like decoct: Cinchon: but not quite so turbid: appetite bad, thirst continues, generally sleeps little: gums a little sore; pulse 97 force and volume natural; tongue and skin natural; countenance had improved, but now it is dull and sickly.—Cont;

21st. Took medicine, 2 dejections, dark; urine copious, 3 pints, clear like water when settled, when agitated it seems as if oz. ii of pus had been added to it; slept little, appetite bad, some thirst, pulse 92 force and volume natural, tongue clean, skin natural; pain in the back and left side.—Setacea dua intrat:—Cont:

23d. Continued medicine, 3 dejections dark, urine 1 quart

pale, free'y blended with pus, which renders it milky and opaque: slept little, appetite bad, thirst, pulse 94 volume natural, soft: tongue clean and smooth, skin natural; pain continues the same in site of the mediastinum, and in the small of the back. —Setaceum alternum intrato, super partem dolent.—Cont:

24th. Took medicine; 2 dejections, free, dark, urine deep straw color, a little turbid; slept better, appetite bad, some thirst, pulse 100, force and volume natural, tongue and skin natural: pain in the back the same; in the head less.—Cont:

27th. Took medicine, 2 dejections dark, urine 1 quart, like decoction of cinchona, and pus: quite opaque, very copious deposit; sleeps ill, bad, appetite thirst continues, pulse 78 of regular force, volume natural, soft, tongue and skin natural, pain in breathing referred to the thorax anteriorly, and posteriorly to the small of the back: weak.—Cont:

28th. Took medicine, 2 dejections, dark, urine 1 quart, straw color; nearly clear; sleeps badly, appetite, bad some thirst: pulse 13 force and volume natural: tongue and skin natural. Pain in the back, in both sides, and in the chest, continues.—Cont: med:

29th. Took medicine, 2 dejections dark, urine limpid, but when agitated becomes milky, nearly quite opaque, slept better, appetite bad, some thirst, pulse 76, force and volume natural; soft; tongue and skin natural; pain in the chest as before, no pain in the side except from setons, pain in the back continues.—Cont:

September. 3d. Took medicine, 2 dejections black, copious, urine 1 quart, a little milky, slept; appetite bad, thirst less, pulse 84 force and volume natural. Tongue and skin natural. Pain under sternal arch continues—Cont:—Emplastr; I being confined by ill health the subsequent treatment was

by Mr. I. L.
Geddes, as-
sistant sur-
geon.

canthar; p: d.

7th Continued his medicine, two dejections daily, black; urine 3 pints, like infus: cinchon: sleeps badly, little appetite: thirst less: pulse 78, force and volume natural, soft; tongue slight fur, skin cool, natural; still pain in the thorax: pain on the whole better: 2 setons discharge.—Cont:

14th. September. Took calomel last night, one dejection yesterday, took oil early this morning, which has not yet operated, urine about 2 pints, still turbid; tongue clean. Sleeps very badly, pulse 88, volume full, somewhat irritable: oppression of breathing, and pain of the side continue.—Cont: medicamenta.

15th. Took medicine, 3 dejections of green color, urine 4 pints, a light straw color and clear, tongue red and moist: pulse 84, volume rather full: pain of the side and chest continue, without much change.—Cont; medicamenta.

16th. Continued the calomel, two dark dejections, urine 2 pints during the night, light green color with a flaky sediment; tongue white, moist; skin cool and moist. Pulse 90, volume full, but sluggish; pain of the side, and oppressed breathing, rather abated. No sleep; appetite bad, thirst considerable: complains of a sensation of choking on swallowing, referred to the upper part of the sternum — Mistur: acid: nitric: oz. ij bis in die.—Cont: alia.

September. 17th. Took the medicine, two dark dejections, urine 2 pints turbid like decoct; cinchon: skin cool. Pulse 100 firm and elastic, bounding against the finger; tongue clean; says he feels altogether worse again to day, complains of general pains, headache, and pain across the loins increased; slept very little, breathing still oppressed: appearance debilitated, and countenance anxious.—Cont; omnia.

18th. Took his medicine, 2 dark colored dejections, with mucus; urine 2 pints, of a deep yellow color, skin cool. Pulse 84 small and firm, tongue clammy; slept better, side continues very painful; no pain of shoulder: perspires freely. Cough subsided, breathing still oppressed.—Cont: medicamenta.

19th. Took the medicine, two dark colored dejections; urine a pint and a half; clear, light yellow: tongue with a white coat, skin warm: pulse 96 volume full, and vibrating: sense of soreness extending from the umbilicus to the top of sternum: had a great deal of fulness about the epigastrium last night: during the existence of which, his breathing was much oppressed: occasionally troubled with frightful dreams.—O nittr. Calomel.—Sumat pil hydrarg—gr. x omn: nocte; et alia ut antea.

21st. Took his medicine, belly twice moved, evacuations very dark, black color: urine of a deep yellow color: tongue clean, skin cool, pulse 84. Pain of side; and dyspnœa continue: passed a bad night: from pains of head and small of the back.—Cont. medicamenta.

23d. Took his medicine, bowels open twice, urine 2 pints, light green color, skin cool, pulse 104, quick and small; tongue white and dry, pain of side continues as before, has a sensation in the right side occasionally, as if of something giving way, especially on making any sudden exertion: breathing rather less oppressed to day.—Cont: omnia:

25th. Took his medicine, bowels open thrice yesterday, of a less dark appearance; urine two pints, of a yellowish green * color, with a slight white sediment: tongue white, skin cool, pulse 84 sluggish; passed a bad night from difficulty in brea-

* Did not this appearance arise, from some of the biliary tubes, having poured their contents into the tubercle; and the bile thus becoming introduced with the pus, into the circulation?

thing and increased pain of side; with occasional cough.—Cont: medicamenta.

27th. Took oil yesterday morning, two more natural colored dejections; urine 2 pints, generally turbid, with a slight cloud; tongue white and dry, skin warm, pulse 96 volume firm. Says he feels better to day, than he has been for some time past; respiration free.—Cont: omnia.

October 21. Took medicine, yesterday, two natural evacuations; urine pale straw color, skin cool, pulse 84. volume soft, tongue brown. Says the pain in the breast is much abated within these two or three days: looks better.--Cont medicamenta.

4th. Took medicine, 2 natural evacuations, urine straw colored, tongue red and dry, skin warm, pulse 72, volume sluggish. Pain of side somewhat increased last night: looks, and says he feels better:--one seton has been removed.-Cont: medicamenta.

13th. Much the same.—Emplast lyttæ pectori.—Cont:

14th. Took no medicine yesterday, 9 or 10 dejections chiefly slimy, tongue white, skin warm, pulse 78, volume rather sluggish; pain of chest continues, he says severe; blister has, risen well, oppression of breathing relieved since its application; seton has again been inserted into the right side.—Pil hyd: gr. x. h. s.—habt. olei ricini oz. ii.—C. m.

16th Took the blue pill lastnight, no dejection for two days; has taken oil early this morning which has not yet operated; urine 2 pints, deep yellowish red colour, and turbid; tongue white and dry, skin cool; pulse 84 soft. Breathing much easier, pain and swelling of the side as before.—Cont: medicamenta.

17th. Took oil yesterday, 3 lead coloured evacuations, urine still high coloured, tongue white and dry, pulse 98, volume round and firm; hepatic symptoms continue.—Cont; medicamenta.

18th. Took no medicine yesterday, two dark colored dejections, their appearance not noted, urine a pint, of a turbid yellow color: tongue clammy, skin cool, pulse 72: cold sweats at night with occasional slight rigors; says he feels generally worse to day; hepatic symptoms continue.—Reptr. calomel gr. v. hora somni.

20th. Took oil in the morning and a pill last night, bowels open three times yesterday, dejections partly black bile, and partly muculent; urine deep straw color: skin warm, pulse 88, volume round, but soft; tongue clean. Complains much of his side and chest: cannot lay comfortably in any posture, setons discharge freely.—Cont: medicamenta.

21st. Took oil this morning, 2 dejections yesterday; dark coloured, with slime; tongue moist; urine turbid, yellow: pulse 74, volume sluggish. Pain and oppression about the chest continue.—medicament: ut heri.

22d. Took his medicine, bowels open twice during the night, oil did not operate, urine scanty, a turbid yellow color: tongue clammy, skin warm, pulse 96, volume round but soft. Pain in the breast with oppression; breathing affected more to day, in consequence of the rain.—Cont: medicamenta.

23th. Took his medicine, bowels generally regulated by medicine, dejections still muculent, skin warm, pulse 96, rather full. Dyspnoea, pain of the side and back continue, tongue white and dry.—Cont: medicamenta.

November. 3d Took his medicine, bowels regulated by medicine, dejections muculent, urine reported high colored; tongue white and dry, skin cool, pulse 88 volume round, a little hard. Hepatic symptoms continue unchanged; setons do not discharge so copiously;—Cont: medicamenta.

5th. Has taken his medicine regularly, bowels open usually by oil, evacuations dark green, urine high coloured and turbid; tongue clammy, face full, skin warm, pulse 80. Hepatic symptoms remain stationary.—Cont: medicamenta.

10th. Symptoms have been stationary. Complains rather more of his side again, skin warm, pulse 96, soft and quick: dejections generally muculent, urine clear and copious. Pain of shoulder recurs occasionally; rigors at night; setons discharge copiously.—Cont: medicament.

14th. No alteration for the better; takes his medicine, bowels open, dejections dark green and muculent, urine still high coloured: tongue cleaning, skin warm, pulse 72 calm: hepatic symptoms stationary.

DISCHARGED BY TRANSFER.

OBSERVATIONS.

This patient was transferred to a transport sailing for Madras, with a copy of his case: and as the change of climate, of scene, and circumstances, gave him numerous advantages; I trust that recovery ensued. This is a well marked case, of pulmonary and hepatic disease, associated together in their course. It appears to me, that on the 8th. of July.--At 1 P. M. a larger abscess of the liver, having eroded some of the venous trunks extended into its cyst, the pus was received into the circulation by the veins; and it was separated and thrown off by the kidneys.

in the urine. I believe, this termination of hepatic abscess, to be very frequent; and that it is announced by the urine changing from an appearance, like stale decoction of bark, to a milky appearance, with puriform deposit, more or less extensive. The symptoms also indicate; that about the 2d. of August, and again about the 12th. Sept. collections of pus from smaller tubercles, were poured into the veins; and turbid urine succeeded.

I originally assumed the entrance of the pus, from hepatic tuberculous caverns into the venous tubes; by having constantly discovered in my dissections; a large venous trunk, unvaryingly take its enlarged condition suddenly; in the corrugated site of an hepatic scar. It is also, mostly near the surface. Since the middle of 1827, I mentioned these facts to the medical officers employed at Penang with the Madras Troops; to several surgeons of H. M. Navy, and to those of the local establishment. I think, that future observation and experience will also confirm, the admission of the bile, occasionally; with the pus, into the circulation; and that its excretion with the urine, affords the green color remarked in these reports. I entertain no doubt of this fact.

PHTHISIS INC IPIENS.

BARTHOLOMEW SULLIVAN a private in the Madras artillery *Ætat.* 25.—five years in India, middle size, muscular, stout, healthy appearance, dark complexion; from Cork, Ireland; originally a carpenter. No illness except liver complaint, which came on since his arrival in India; believes several of his family died of pulmonary complaints. For this last month, he has felt a numbness in the left arm: and these last three weeks, there has been a sense of pricking in the left fingers, added to the numbness of that limb: had a cough (as he has now.) 15 months since at Rangoon; and for three months then, lost his voice with it. It now recommenced 20 days since: the lungs are embarrassed; he expectorates muco-purulent fluid; voice changed and very hoarse; face flushed, cough frequent and severe, no pain, bowels regular: appetite natural; feels weak: sleep disturbed by cough; urine deep straw color and flocculent: pulse 72 very variable in volume and force: tongue and skin natural. Stethoscope detects strong distinct egophonism over the left superior lobe: slight metallic tinkling in the right: both lungs are imperfectly traversed.

DIAGNOSIS.

Pulmonary tubercles situate in the superior lobes; and; partial engorgement.

May 31st. *Admoveantur* hirud: no xxx super part: dolent: i. e. in the triangle formed by the clavicle, trapezius and the neck.—*Mur:* ammon: gr. x. pulv: ipecac: et carb: ferri āā scr. i m. bis die in mel, *Jejuno ventriculo, sine bibendo.*

June 1st. Took medicine, and retained it, leeches bled freely, pulse 86, very large, round, full and strong: tongue and skin natural: slept well: voice much affected, coughs much, sputa consist of opaque viscid mucus.—V. S. ad deliquium, statim.—Rept^r hirud xxx. vespere.—Cont: med:—blood drawn oz. xxxij pleno rivo—cupped.

2d. June. Took and retained medicine, leeches bled freely: slept well, cough easier, expectorates less, medicine, remains on stomach, but occasions great squeamishness: pulse 78 volume diminished, yet strong: tongue and skin natural, urine clear.—Cont—Emplast canthar: ad partem superiorem thoracis, sinistræ.

3d. No sleep from blister, which rose well: cough as before, little change—Cont: medicamina.

4th. Voice rather better, slept; cough frequent: pulse 90, large strong and full; tongue and skin natural; no evacuation since 5 p. m. yesterday.—Cont: omnia.—Ol ricini oz. iss statim—V. S. ad lb j. vespere.—A flannel shirt, and $\frac{1}{2}$ a yard of flannel for the neck.

5th. June. Voice much better, nearly natural, no cough last night, slept; pulse 84 force and volume natural; tongue and skin natural.—Decoct: semi: lini: lb. iv. omni die pro potu commune, cum oz. i extract: glycyrrhizæ.

6th. No cough: feels much better, voice improves: slept. Pulse 72, volume small, force natural; but there seems, as if the tube was encircled deeply, with unusually firm tissue: tongue slight fur; skin cool; bowels open.—Cont: omnia.

7th. June. Feels quite well, slept well: no cough: wears flannel: took medicine, and retained it: bowels loose, urine pale; pulse 70 volume large; tongue and skin natural; no pain—Cont: medicamina.

8th. Feels well, no cough, voice still a little hoarse: took and retained medicine, slept well: 3 dejections natural, urine pale, no pain: pulse 70 large; tongue and skin natural.—Cont:

9th. June. Thinks himself well, and desires to be discharged. Stethoscope gives tinkling and sound of rattle, or *rale*, in left superior pulmonary lobe: there is much redness on the surface from leeches and blister. Took and retained medicine, 4 dejections, natural, urine pale and copious, appetite good, sleeps. Pulse 72 rather large and strong: tongue and skin natural, not constant cough, but occasionally; does not expectorate.—Admoveantur hirudines xxx super partem superiorem thoracis sinistrae.—Cont: medicamina.

10th. Took medicine, some cough not troublesome, no expectoration: slept well, leeches bled freely; pulse 72, large full and firm; tongue and skin natural.—Rept^r hirud: ut heri.—Cont: medicamina.

11th. June. Took and retained medicine, two dejections, natural, urine pale; occasional cough, no expectoration, slept well; leeches by mistake not applied, appetite good, no thirst: no dyspnœa: pulse 66 volume large and strong; tongue and skin natural.—Cont:—Rept^t hirud: vespere.

12th. Took and retained medicine, 3 dejections natural, urine pale, slept well, no cough; no pain: appetite natural, pulse 76 force and volume natural, tongue and skin natural: leeches bled freely. Stethoscope indicates the left superior lobe only, imperfectly traversed: there is no tinkling, ringing or sonorous *rale*.—Cont: medicamina.

13th. Took and retained medicine, 3 dejections, natural, yellow: slept well, urine copious, pale, cloudy, no cough. Pulse 62 volume and force natural, rhythm rather irregular; ton-

gue clean, skin natural, appetite good; there is still a slight hoarseness remaining.—Cont:

14th. June. Took and retained medicine, three dejections natural, urine pale, slept well: no cough, no thoracic pain or expectoration: pulse 72 force natural, volume large: tongue and skin natural, appetite good.—Continuentur remedia.

15th. Took and retained medicine, two dejections natural, urine pale; pulse 70, force and volume natural, tongue and skin natural, no cough, voice natural, no pain, slept well.—Cont:

16th. Took and retained medicine, two dejections, natural, urine pale: slept well, appetite good, no thirst, no cough. Stethoscope detects a sharp ringing sound, like that of croup, in the top of left lung: pulse 76 volume large, rather strong and firm: tongue and skin natural. He is more hoarse to day, from some exposure in the night.—Admovr. Hirud: xxij. in the triangular space bounded anteriorly by the left clavicle, posteriorly by the trapezius, the neck forming its base.

18th. June. Emplast: canthar: ad partem dolentem ubi hirud: fuerant. *

25th. June. Stethoscope now indicates left superior pulmonary lobe, naturally traversed. Tongue and skin natural; pulse 72 but large: at his own urgent request.—Discharged. He continued at duty until this day—Readmitted June 30th 1827.

General languor, and purging constantly; dejections of mucus with pain of the bowels: appetite natural, no thirst,

* I was unable to attend immediately, but the patient continued his medicine and hot seed tea.

sleeps: pain in left shoulder, pulse 94 large, full, a little hard; tongue and skin natural.—Pulv: ipecac scr. ss. bis die. Hirud vj. circum anum, statim.

July. 1st. Took medicine, threw up first dose; retained the others; had rigors yesterday at 11 A. M. then a feeling of cold, and the tremor went off with a cold sweat: he covered himself and was relieved by sleep: remained easy throughout the day; had a little appetite, no thirst, could not get sleep this morning. Cold sweat, fainting and constant faintness: face, wan: pulse 86 large, a little full, rhythm natural, tongue clean skin moist and cool, 6 thin watery dejections, urine scanty not observed; some cough with a wheezing sound: left superior pulmonary lobe, again imperfectly traversed.

DIAGNOSIS.

Pus formed either in the left lung, or in the liver; perhaps in both.

Cont: med.—Decoct: lini: lb. ij. in diem, pro potu commune.

2d. July. Took medicine, and lb. 3 of decoction; 5 dejections yellow, loose, urine pale, very copious with abundant flaky white puriform deposit: slept, weakness went off; no rigors or fever. Pulse 76 soft, as if coats thick; tongue clean, skin natural, some cough and muco-purulent expectoration.—Cont: med.

3d. Took medicine, and lb. iij of decoction; much purged yesterday; dejections yellow, and loose; urine throws down pink white sediment attached to the glass; fluid straw color: slept, no pain: cough, and slight expectoration; some appetite, no thirst; smokes tobacco; advised to discontinue it. Pulse 88 large and full: tongue and skin natural; feels weak, no rigors.—Cont: med.

4th. Took medicine, and lb. ij. of decoction; purged much this morning, yellow, watery, & 3 times; accompanied by faint-

ness; constant borborygmi; he feels an oppression, at the pit of the stomach, which makes him unable to speak distinctly. Urine natural: some cough, slept; pulse 86 large and strong, as if the arteries were thickly and firmly enveloped, (like Porter's a patient for hepatitis, whose pulse was peculiarly thickened.) tongue and skin natural.—Pulv: ipecac: scr. ss. zinci sulphat. gr. jii m. bis die.

5th. July. Took and retained medicine, no dejections, since yesterday noon, belly loaded: urine clear, slept, little cough, appetite not good, some thirst. Pulse 78 strong; volume natural; tongue and skin natural.—Cont; medicamina.—Ol; ricini med: oz. ij statim.

6th. Took medicine, oil purged well, urine natural; slept very little, cause unknown, is hoarse and has cough; but he does not complain of it, as he dislikes blisters. Pulse 70 large and soft; tongue and skin natural.—Cont: medicamina.

7th. Took medicine, 3 dejections, natural, urine natural: slept; appetite and digestion natural, some thirst, slight cough. Pulse 74 large and strong; tongue and skin natural.—Cont:

8th. Took medicine, purged much in the night; urine rather dark, pain in superior part of left lung in breathing. A pricking as if of pins in the tips of the left fingers; some cough, slight thick, lumpy, white expectoration. Stethoscope gives metallic ringing and pectoriloquism, under the centre of left clavicle; and the same is detected in a right line posteriorly. No sleep; cannot tell why: some appetite, much thirst: pulse 80, very large, rather soft; tongue and skin natural.—2 flannel Jackets.—Cont: medicamina.

9th. Took medicine, 5 dejections, yellow, urine clear, straw color; cannot sleep, but knows no cause: some cough, pulse 72.

very large and full, but not hard: tongue and skin natural. Severe pain in the left shoulder; with a sense of stiffness extending through that arm: also a general sense of soreness in the shoulder, when the hand is let down. Suspicions of a liver affection, being strongly excited: a more particular examination is made. There is considerable elevation of the parietes, on the right side over the site of the liver: pain on pressure over all parts occupied by the liver; which is apparently greatly enlarged: the scars of 70 leeches are observed there; which had been applied when formerly ill of liver: says he concealed all this, to avoid blisters and leeches.

DIAGNOSIS.

Pus formed both in the left lung and in the liver: the latter disposed to suppurate more largely.

Hirud: xl statim supra situm jecoris.—Emplast: canthar: ad eandem partem, h. s.—Calomel: scr. ss bis die.—Cont: decoct: lini.—The leeches bled freely.

10th. Took medicine, purged 6 times in the night; blister rose, strangury, no sleep: pulse 86 large, and softer: tongue clean, skin warm. Pain constant in both shoulders: pain in the side continues, and partially interrupts breathing.—Cont: calomel bis die.—Aquæ Hord: lb. jv.—Omittr. Decoct: Lini.

11th Took medicine, easier, 6 dejections, yellow, urine quite pale, but turbid, slept better: some cough; pain in the side and body, on turning, continues; also pain in left shoulder; and pricking in tips of the left fingers: much thirst, little appetite. Pulse 103 large, generally soft; but there is a slight ray of hardness: tongue clean, skin natural:—Cont:

13th. July. Took medicine, three dejections, urine thick and turbid like Infus; cascarill: and some white puriform sediment; slept well, little appetite, some thirst. Pulse 94 large,

and soft; tongue moist, gums quite sore, incessant ptyalism, skin natural, pain of the side continues, very little cough; pain constant in left shoulder: pulse 86 force and volume natural; tongue thickened by mercurials, skin natural,—Cont; calomel gr. iij. bis die, cum haust: salin: Nitro-ammoniat.

14th. Took medicine, 5 dejections yellow, urine like infus: cinchon; copious and turbid; slept; little cough; pain constant in left shoulder. Pulse 86 force and volume natural, skin natural. —Cont: medicamina.

15th. July. Took medicine, 3 dejections yellow, urine pale, slept very little, no appetite, some thirst. Pulse 76 rather large, and full; tongue moist and clean; skin natural. Pain in left shoulder, little cough, mouth sore, ptyalism.—Cont:—Rept: Emplast; canthar ad regm. epigast; dextram.

16th. Took medicine, 3 dejections, loose and yellow, urine not preserved; slept; little appetite, much thirst, blisters very sore. Pulse 84, volume and force natural; tongue slight fur, skin natural, gums sore, ptyalism. Pain of side and shoulder easier; cough less —Cont:

17th. Took medicine, 1 dejection yesterday evening yellow, urine pale and copious, slept, appetite bad, much thirst. Pulse 90 soft; tongue clean, skin natural; has a tickling uneasiness in the back and limbs, and thinks he will have an intermittent paroxysm to day, feels a slight shivering. Pain in the side very severe all night; blistered surface very sore, the mouth is still sore, very little cough remains.—Calomel gr. xij omni nocte h. s.—sulph: cinch: gr. v statim.—Cont: haust: salin.

19th. July. Took the medicine, better, 3 dejections, dark, urine pale and copious, little sleep, some appetite and thirst, pulse 80 natural and small: tongue and skin natural: gums

getting more sore. Pain in right side, felt more in coughing or walking.—Cont: med.

20th. Continued his medicine, better. No cough, voice hoarse, pain of side better: pulse 86.—Cont.

21th. Took medicine, 4 dejections yellow; urine copious, pale, slept well; appetite improving, some thirst; pain continues in left shoulder and right side; a little cough. Pulse 88 large, and strong, tongue begins to swell, skin natural, gums swollen, no ptyalism.—Cont: medicamina.—Emplast: Canthar: ad lateris partem dolentem.

22d. Took medicine, three dejections, pale, urine straw color, clear, slept badly, some appetite and thirst; pain in right side and left shoulder; but less: no cough. Pulse 85, large and strong, tongue and skin natural, gums swollen.—Cont: medicamina.

24th. July. Continued his medicine, 3 dejections daily, pale yellow, urine straw color, copious, not clear, turbid: slept, some appetite, no thirst; pain in right side on getting up quick, turning, coughing or breathing hard: little or no cough. Pulse 86 force and volume natural, tongue clean, skin natural.—Cont: medicamina.

25th. July. Took medicine, 3 dejections, yellow, urine very dark, green, and turbid; slept: some appetite, thirsty. Pulse 86 force natural, volume large; tongue getting a granular moist fur; skin natural, gums swollen, pain easier in right side. Cont: remedia.

27 Continued his medicine, much purged, dejections green, urine straw color, clear, slept, a little appetite, little thirst, some nausea, a little pain in the side, on deep breathing, no cough; a little pain in left shoulder. Pulse 104 force and vo-

lume natural; tongue natural, slight ptyalism.—Cont; medica-
mina.

29th. July. Continued his medicine, 3 dejections, yellow, urine like water, slept, little appetite or thirst. Pulse 86, volume a little large and soft, Tongue and skin natural; a little pain in right side, left shoulder and in both legs; also cramps; they commence in the toes, and they run from these to the superior muscles, until they reach the ham, sometimes flexors, sometimes extensors are affected. Cold and rain seem to induce them more. Ptyalism is not severe.—Cont:

31st. July. Continued his medicine, 3 dejections, yellow, urine like water, slept, little appetite, some thirst. Pulse 94 large, not hard, but full; tongue clean, skin natural, ptyalism.—Reptr. Emplast: canthar: part: lateris dolenti—Cont.

August 1st. No change.—Cont.

3d. Continued his medicine, 3 dejections, dark, urine like water and copious, slept: appetite bad, some thirst, pulse 88 small, natural: tongue clean: skin natural, no cough: some pain in right and left shoulders, the latter came first. Pain in the right side; most felt, in walking.—Cont:

6th. Augt. Says he takes medicine,—I think not,—5 dejections dark: urine copious like decoct: cinchon: pale, with copious white purulent sediment: slept, no appetite, much thirst. Pulse 96 large, and surging a little: tongue clean, with chronic irregular sulci: skin natural. Pain constant in right hypochondrium, a little in the left, but more in the right shoulder; extending up along the neck, slight cough: a sense of something stopping the breath and speech in the throat.—Cont: aqua. hordeata et alia.

7th. August. Took medicine, 3 dejections, dark, urine co-

pious and resembles pus and water, slept little: no appetite, thirst constant: pulse 98 large and soft: tongue moist, slight fur: skin moist, natural temperature: mouth sore, not much ptyalism. Pain in right hypochondrium continues, and also that of the shoulders: 2 setons were introduced into the right side yesterday.—Calomel scr. ss. h. s.

8th. Augt. Took medicine, 3 dejections dark; urine not copious, but like pus and water; restless: no appetite, constant thirst. Pulse 120 large, soft, and very variable: subsultus tendinum: doubtless occasioned by mercury. I have noticed that in some habits it produces fluttering pulse; and subsultus tendinum very suddenly, with excessive prostration of strength.—Pain in the side and shoulders continues the same, gums very sore, ptyalism.—Cont: haust: salin.—Calomel gr. iij. h. s.

9th. August. Better, purged, urine like pus and water, spits freely.—Cont: ut heri.

10th. Doing well, urine copious, pale, mixed with pus.—Cont:

11th. Vomited much, urine 1 pint pale, mixed with pus freely; spits much—Cont:

12th. August. Took medicine, 4 dejections dark; urine more than two pints, pale, opaque like pus and water; slept: appetite increases; constant thirst.—Pulse 88 volume natural, soft: tongue clean: skin natural, gums sore, ptyalism.—Cont: —calomel gr. v. h. s.

16th. Took medicine, 2 dejections dark; urine copious, nearly clear: sleeps: appetite good: much thirst. Pulse 84 soft: tongue natural fur, skin cool: pain in calves of legs, which ascends from the toes: pain rather constant in the side, and right shoulder: feels easy when laying on the right side.—Cont.

18th. August. Took medicine, 3 dejections dark, urine like clear water, rendered turbid by a little pus; sleeps well: some appetite, some thirst; pulse 76 force and volume natural: tongue rather clean, skin natural: pain in right side and shoulder continues.—Cont: remedia.

August. 20th. Took medicine, had several dejections in the night, urine copious; like water but of dark greenish tint, slept very little, some appetite and thirst. Pulse 98, force and volume natural: tongue rather an excited, but slight fur; the under tissue very red; skin natural; pain of the side and shoulder as before.—Cont: medicamenta.

21st. Took medicine, purged three times in the night, dark; urine copious; when settled, the supernatant fluid resembles clear water; when agitated, the purulent deposit renders it quite opaque and milky. Cannot sleep, has some appetite and also thirst. Pulse 94 force and volume natural, tongue and skin natural: pain in the side increases.—Calomel gr. x omni nocte h. s. —Cont: *

23d. August. Continued medicine, 3 dejections dark, and vomited much in the night: urine 3 pints, like water, very slightly turbid, slept; appetite not good, some thirst. Pulse 86 force and volume natural, tongue clean, skin natural: gums very little affected.—Cont:

24th. Took medicine, 3 dejections, urine 1 pint, a greenish yellow opaque, milky; slept, little appetite, some thirst. Pulse 94 soft, natural; tongue and skin natural: pain in right side and shoulder continues.—Cont: mist: salin: nitro—ammon; bis die oz. ij. et calomel; h. s.

27th. August. Continued medicine, 4 dejections, urine 4 pints like water, very slightly turbid; slept; little appetite; thirst

continues. Pulse 92 large, full, a little soft; tongue and skin natural; 2 setons discharge, no cough, pain in hypochondrium continues.—Cont; med.

28th. Took medicine, 3 dejections, dark, urine 1 quart limpid, but when agitated quite milky and opaque; slept, appetite little; some thirst; pulse 98 large and soft; tongue and skin natural, throat a little sore.—Cont;

29th. Took medicine, 5 dejections, dark, urine 3 pints limpid, but agitated, it becomes milky, nearly quite opaque, slept; appetite little, some thirst. Pulse 94, dilated, soft, tongue clean, skin natural; pain in the right side and shoulder.—Cont;

3d. September. Took his medicine, 4 dejections dark, urine milky 3 quarts; no sleep; no appetite, thirst constant. Pulse 110 full and firm, yet it empties; tongue natural, skin rather warm and dry. Pain in the side continues; setons discharge.—Cont; haust salin, nitro; ammon; ter die.—Omittr. pil; calomel.—Cont: aqua; hord.

Reports by as- 7th. Continued his medicine, bowels open, urine straw-
sistant surgeon colour, copious; slept well; appetite good, pulse 96, volume a
I. L. Geddes. little large, force natural, soft, tongue and skin natural; pain
of side and shoulder less, setons run freely.—Cont:

14th. Complains more of pain of the side, extending up to shoulder; 3 or 4 dejections of a dark color. Tongue slightly coated, pulse 96 volume small, urine reported natural.—Sumat Pil hydrag gr. v h. s.—Ol, ricini c. m. sumend.

15th. September. Took his medicine, 3 dark colored evacuations, urine voided in large quantity, tongue red and furred; skin warm, pulse 90 soft. Pain of side and shoulder easier to day, a feeling of distension in the region of transverse colon.—Cont: medicamenta.—Ol: ricin cz. ii. stat.

16th. Took a dose of oil yesterday morning, which brought off several scanty slimy dejections; urine about 2 pints of a yellowish green color, with copious white sediment. Tongue almost clean, skin warm: pulse 86, volume full; sleeps badly, abdomen tumid throughout, no pain referred to any particular part.—*Pilul: rhæi, gr. x bis in die.—alia ut antea.*

17th. Took his pills last night, which purged him several times; dejections slimy, urine natural; distension he complained of in the abdomen, abated. Tongue white and dry; skin cool, pulse 84, volume full.—*Cont: medicament.*

19th. Took no medicine yesterday, 4 or 5 dejections of a dark appearance and watery; urine a pint and half, deep straw color, with copious white sediment. Tongue clean; skin warm, pulse 88 small, firm; pain of the side stationary.—*Cont: medicament.*

21st. Took his pills, bowels open 3 or 4 times, dejections of a dark green color, sero-muculent; urine of a grass green color, with flocculent flakes suspended in it. Tongue white, skin cool: pulse 84, soft, and natural, setons discharge copiously: pain of the side abating.—*Cont: medicament.—Let one of the setons be removed.*

23d. September. Took his medicine, two or three light yellow dejections; urine about two pints of a green color, with a white cloud. Pain of the side abated; the last seton has been removed; tongue white and dry.—*Cont: medicament.*

25th. Took his pills, bowels loose, natural evacuations; tongue white and dry; still complains of the pain in his side, but it is only occasionally: on the whole he is much better: general health improving.—*Cont: medicament.*

27th. Improving.—*Cont: medicament.*

30th. Convalescent.

October. 2d. Discharged by transfer.

OBSERVATIONS.

I conceive, that hepatic disease in this case, recalled the determination from the lungs: that pus was formed in the liver, passed into the veins, and was thrown off by the kidneys with the urinary excretion. This process advancing daily, the patient was in the same ratio in the course of recovery: and he was transferred convalescent to Madras, for the general advantages of the voyage: and change of air; from a humid to a dry climate.

The attendance of Mr. Geddes on this patient, commenced with my illness in September; and the discoloration of the urine (by pus and apparently by bile) is repeatedly noticed in our journal of treatment. I attribute those cases of death, that are stated to have followed, the injection of pus &c. into the veins; to its rapid, or too copious introduction. Cooper's case bears clearly on that point: and I have others; that appear equally distinct and instructive.

In reference to the large doses of ipecacuanha, my constant practice these last four years, has been in certain cases; to give scr. 3, or even 4, in honey: taking care that the patient uses neither food or drink; for three hours before, or for three

hours after. In this manner, I find, it remains on the stomach; and it is the most prompt remedy that I know, in dysenteric and intestinal diseases, where they do not depend on other derangements; which the stomach and intestinal tube cannot control.

In this manner, exhibited twice a day; in three or four days, under my own immediate observation; it has removed dysenteric affections, apparently the most severe: both conjointly with, and without leeches. On the contrary, I am informed from authority; that my colleagues report, that in their practice, it never remains on the stomach.—I know it will not; if any quantity of fluid is taken. The indications of its success, are; abatement of all morbid symptoms, followed by large and numerous dejections, of tarry, green, and viscid bile; similar to those observed, when the system has submitted to the mercurial influence, in this disease.

In June and July of 1827, I had at the same time under my care, nineteen * Europeans afflicted with hepatitis; which necessarily afforded a favorable opportunity, of noting the

* This was in the General Hospital at Penang; the medical charge having been confided to me, by his Excellency the Honorable R. Fullerton Esq. Governor of the incorporated settlements; who has done much to improve the efficiency of the medical department. My researches on the Penang fever, now in course of preparation for the press in Europe, were arranged at his suggestion, for the public good; that complaint having been very fatal at Pinang. The control of the local medical department, having been confided to me as senior medical officer, by his Excellency, in the end of that year; those extended duties, and ill health together, forced me then to relinquish the charge of the General Hospital; because the professional duties of that establishment alone, occupied two hours and a half in the morning, and one hour in the evening, daily; exclusive of the entire days labor, in dissection and pathological investigations, when the death of any patient took place. The duty could not be properly performed, in less time.

changes of all its symptoms and characters. My observations on the urine, were only noted down, when that excretion was kept in glass; because when it is kept in metal vessels; the characters will necessarily change, by chemical agency.

A few words may not be misplaced respecting the opinion I entertain, of the treatment adopted throughout, (by myself,) in those cases. I am far from presuming to think, it was the most judicious that could have been adopted, at all times; but the reports are copied strictly from the rough journals: and it is by the faithful narration of symptoms, treatment, consequences, and eventually the pathology, that medicine will daily become less doubtful; nay more—in time, I hope through these means, it will become, an *exact science*.

The nitro-ammoniated mixture, sometimes merely ordered, without stating its composition; is prepared as follows. R. nit; pot: scr. i: muriat: ammon: gr. xij. bene terentur simul et addentur aquæ oz. ij, datur bis die.--I used this on the recommendation of *Hillary* on diseases of the *West Indies*; and I can conscientiously add, my humble testimony, to substantiate the truth of its efficacy, in febrile cases.

With reference to the relative utility, of the nitro-ammoniated mixture, and that of large doses of ipecacuanha, forced downward through the gastro-intestinal tube, by strict abstinence;—The nitro ammoniated mixture has been more successful in my practice, where an acute irritation existed on the mucous surface, influencing a general febrile movement of the system; whereas, the large doses of ipecacuanha, have appeared infinitely more useful, in cases; where the affection of the mucous surface, was more especially limited, to a condition of local engorgement with less irritability, or to a torpid state without

engorgement; and the general system less influenced. Above all, ipecacuanha is useful in muco-intestinal ulcers; when they are foul, inactive, and not depending on hepatic disease; in the latter case; mercury must be employed, either with or without ipecacuanha.

In all those cases, leeches around the rectum, should be constantly used; until the abdominal circle shall have been effectually relieved, from the encreased sanguineous volume, with which it is in most cases engorged.

By ol: ricin: med: is meant, equal parts of ol: ricini and ol: terebinth:—This combination cleanses the gastro-intestinal mucous membrane, much more effectually than the former alone; but the effects of the two on that membrane, necessarily vary: hence, the latter is more especially applicable; when that surface is lined with a superabundant viscid mucus, its muscular system rather torpid, and its vascular system in a chronic, inactive morbid condition.

There is neither time, for arranging a prospectus of contents; or indicating the errata:—I must therefore solicit the readers indulgence, in these additional particulars.

PART FIRST.

CASES AND DISSECTIONS.

CASE I.

PULMONARY, MESENTERIC AND INTESTINAL TUBERCLES.

VEERUNNAH. *Ætatis* 28. Sepoy of the 30th Regiment. Admitted into the Hospital established for Rangoon sick and wounded, 6th september, 1825.

He was three months ill at Rangoon, of intermittent fever, followed by a diarrhoea, which became progressively more severe, until blood and mucus formed the evacuations. At the same time, and with the purging, a severe cough came on with very tough expectoration. General wasting of the body and strength, accompanied the progress of those affections. He is now very much emaciated. The feet œdematous. The thorax very much deformed, has scars of blisters on the thorax, coughs much. Expectorates from 4 to 6 ounces of white and yellow muco-purulent fluid in 24 hours. No appetite, or when he feels appetite, cannot eat; digests only very small quantities. The bowels regular. Pulse 96, very soft, rather large. Tongue furred posteriorly. Anteriorly natural. Skin dry and thick. Pain on pressure over the abdomen, more pronounced over the cœcum, colon, and sigmoid flexure. The lungs traversed: The top of the right lung gives the sound of air rushing into a cavern; not that of its natural distribution in this organ: all other points traversed without preternatural phenomena (yet I suspect tubercles). The heart's action nearly natural.

DIAGNOSIS. Humid catarrh, chronic disease of the digestive mucous membranes. Possibly deep seated pulmonary tubercles.

Pulv: Ipecac: gr. v. ter die in mel.

10th. R. Pulv: Ipecac: gr. v. Nitrat: Potassœ. dr. i. M. ter die in mel. sumend. Pil. Hydrarg. gr. v. h.s. omni nocte. Little change took place until the evening of the 16th. when a blood vessel ruptured in the lungs, and 8 oz. of arterial and frothy blood were thrown off. Vencœ sectio ad deliquium statim. oz. xvi. Appr. Vesicator: stern. Dullness, stupor and coma with sinking succeeded, and he expired at 4. P. M. 18th. september 1825.

AUTOPSY.

THORACIC CAVITY.

Removing the anterior sternal arch, the pulmonary pleura adhered to the costal pleura laterally and posteriorly; anteriorly the attachment was neither general nor firm. The lungs do not contract by atmospheric pressure. Their substance is agglutinated in most parts, from previous engorgement. The deep seated parts are thickly studded with small tubercles, each in its own proper cyst; their contents are too firm, generally, to be called purulent. There is one considerable tuberculous cavity in the superior part of the left lung; two in the superior part of the right lung, and its tissue generally is injected and loaded with blood. The pericardium adheres firmly to the heart, on all sides. The latter organ is diminished, and its parietes thin, corresponding to the patient's emaciation.

ABDOMINAL CAVITY.

The fat of the omentum absorbed. The intestines are generally pale. The mesentery throughout is studded with sebaceous tubercles from the size of a pigeon's egg to that of a very small pea. The former lodged posteriorly in its duplicature; The latter near the intestine. The liver is of a dark slate color; its peritoneal coat thickened, opaque and readily

separates from the liver. Two firm tubercles the size of peas are formed on the anterior edge of the left lobe. The gall bladder is large, and contains 2 ounces of dark thin bile. The spleen is diminished. The kidneys are natural. The intestinal tube laid open from the superior part of the oesophagus to the rectum inferiorly; several large living lumbrici are found in the oesophagus. The cuticular lining as usual terminates abruptly in the cardia. The mucous coat of the stomach is well corrugated; that of the duodenum and jejunum is also corrugated. A large firm semi-sebaceous tubercle is found in the mucous coat of the superior part of the ileum: several smaller and softer ones are found proceeding inferiorly. In some parts they are separate, in others clustered close together. Progressively downwards, having become softer, they have passed away and left deep ulcers with high margins, marking their original site: even that of each tubercle is apparent from the little cavity, or indentation left by each on its escape. Inferiorly, the membrane being more diseased, and thickened, so in proportion those ulcers become much deeper, their surface of a dark color, very uneven, and of a honey comb character. There is very violent inflammation and ulceration around the opening into the cœcum, which has completely destroyed the valve. The mucous membrane of the cœcum is much thickened, its lining membrane mostly removed, and the substance of the coat studded with small tubercles. The colon about 14 inches from the cœcum, has a very extensive ulcer, occupying its entire circle, and of the character mentioned. The mucous membrane of the rectum is thickened, dark, and fleshy, with various abrasions of the thin lining membrane, and several old scars of previous dysenteric ulceration.

Removing the skull cap, the surface of the cerebral hemispheres is preternaturally moist. The capillaries traversing the convolutions are injected. The tunica arachnoidea is

CRANIAL
CAVITY.

much thickened, and adhering in many parts firmly to the pia mater. The tunica arachnoidea of the cerebellum is equally thickened, and adherent. Its vessels are injected generally, and numerous opaque spots are scattered over it. The cerebral substance is soft. The cineritious substance is pale, but the quantity natural. Effusion of serum has taken place into both ventricles, chiefly found in the posterior cornua. The membranes at the base of the brain are much thickened, and generally injected. On removing the arachnoid from the superior part of the spinal marrow, the pia mater is of the dirty black colour frequently noted in cholera cases. The substance of the cerebellum is very soft. xii. dr. of effused fluid found at the base of the brain. The colour of the cerebral mass is natural; its consistence soft; and its vascular system is slightly engorged.

SPINAL
CANAL.

The cellular tissue external to the theca spinalis, is injected with gelatinised serum, from the third lumbar to the first dorsal vertebra. The tunica arachnoidea anteriorly, very generally adheres to the pia mater. The vessels anteriorly are not injected in the lumbar region; their contents are dark and more in quantity, than superiorly. Adhesions of the arachnoid and pia mater are more firm and distinctly marked superiorly; inferiorly they are much less firm. There is no distension or engorgement of the vessels, as in cholera cases. The black or dark color of the pia mater enveloping the spinal marrow superiorly, is continued downwards here but progressively lighter to the cauda equina. The injection of gelatinised serum into the loose tissue of the spinal canal, is confined to the posterior part of the canal; there is none anteriorly and but little if any laterally.

RESUME.

THORACIC
CAVITY.

Pulmonary tissue does not collapse; internally, studded with small tubercles over the superior part of the left, two in

the superior part of the right lung; the heart is diminished, thin, and the pericardium adherent on all sides.

Mesenteric tubercles. The liver dark, its peritoneum thickened. Tubercles in the mucous coat of the ileum, which inferiorly have occasioned ulcers; the coeco-iliac valve is destroyed by ulceration. Mucous coat of cœcum is tuberculated, in the arch it is ulcerated, and throughout the large intestine it is thickened, indurated and marked with scars.

ABDOMINAL
CAVITY.

Arachnoid preternaturally moist, milky. Cineritious tissue pale; medullary soft. Effusion into the ventricles. Capillaries of pia mater injected. Oz. iss. of fluid at the base of the brain. Cerebellic tissue soft. Pia mater of the medulla oblongata laterally is dark.

CRANIAL
CAVITY.

Has its loose tissue injected; arachnoid adherent. Color of pia mater over medulla oblongata is dark here only; progressively lighter to the equinal nerves.

SPINAL
CANAL

CASE. II.

PULMONARY TUBERCLES WITH ULCERS OF THE INTESTINAL MUCOUS MEMBRANE.

MAUREDAUS. *Ætatis* 36. Private of the 1st. Battalion Pioneers. Admitted into the Hospital established for Rangoon sick and wounded, 27th. March 1825.

He was two months ill at Rangoon. His illness originated in a fall whilst scaling a stockade; after which, scurvy supervened; with cough. Received into the Field Hospital with the sequelæ of those affections. He was treated with tonic stimulants and alteratives. He is now emaciated; pulse very quick, and full; tongue excited. Skin natural. Bowels regular. Sleep disturbed by cough. Shortness of breath and startings. Constant palpitations.

DIAGNOSIS. Visceral derangement, with the remains of effusion into the left thoracic cavity. R. Pulv. Ipecac. gr. iii. Pil. Hydrarg. gr. iss. Potass. Nitrat. scr. ij. M. bis die in mel. sumend.

August 19th. Re-examined. The left lung tuberculated. The

DIAGNOSIS. walls of the heart thin. Hydro-pericardium.

He was treated with Ipecacuanha, nitrate of Potassa and Pil. Hydrarg.

September 1st. Difficulty of breathing and debility are increased.

R. Antimon. Tart. gr. iij. bis die. Milk diet.

20th. Re-examined with the Stethoscope.

DIAGNOSIS. Tubercles in the top of the right and left lungs, and their substance elsewhere tuberculated.

R. Antimon. Tart. gr. ij. Aquæ puræ oz. i. Tinct. Opii dr. ss. 6ta. qq. hora sum.

September 30th. Pulv. Ipecac. gr. x. Tinct. opii gtt. x. M. in mel. ter die sumend. Ommr. Ant. Tart. &c.

October 1st. Antimon. Tart. gr. ij. Tinct. Opii. gtt. x. Aquæ puræ oz. i. M. 6ta. qq. hora sum.

He died suddenly at 12 A. M. 2nd. October.

AUTOPSY.

The body viewed before examination; it is very much emaciated. The blood is thin, dark, and does not coagulate.

THORACIC CAVITY.

The pulmonary pleura adheres to the costal pleura, anteriorly and posteriorly throughout its extent, by interposed false membranes. A thick layer of false membranes is dissected with ease from the pulmonary pleura, which is very generally studded with small tubercles throughout. The large pulmonary tubercles are situated in the superior lobes. There is a very large tubercle in the superior lobe of the left lung. The lining or cysts of the tubercles are so firm and closely studded together,

that cutting the substance of the lung, conveys the idea of its being a cartilaginous body. Both lungs are in such a state of consolidation from these semi-cartilaginous cysts, that they have not collapsed. There is little or no spumous effusion. There are about three ounces of serum in the pericardium. The heart is considerably enlarged; both the left and the right auricles are filled with coagulated blood. The right ventricle is half full of the same substance; the left ventricle contains at its apex, a thick layer of coagulated lymph.

The Omentum contains no fat. The stomach is contracted, and the coats of the small intestines apparently thickened. The small intestines are generally pale, but with a few patches having their vessels much injected. The cœcum is very much diminished, and the peritoneal vessels running over and posterior to its extremity, are injected with red blood. The colon is contracted throughout its extent. The mesenteric glands are enlarged. The liver is pale; sections of its tissue are of an orange color; the structure granular, and containing little or no blood. The gall bladder is diminished exceedingly, and contains two drachms of thick viscid orange colored bile. The spleen is of the natural size and pale; its structure natural, but rather fleshy; and it contains no blood. The surrounding cellular tissue is injected with gelatinised serum. The kidneys are natural. The mucous surface of the rectum is thickened, with several scars of former dysenteric ulceration; the rugæ however are re-established. In ascending, the ulcers become more distinct, and have not perfectly healed; patches of the thickened mucous membrane are altogether wanting. The internal surface of the cœcum is entirely ulcerated; but it does not appear to have recently been in a state of active disease. The surface of the ileum is well tinged with thick bile. Inferiorly there are no rugæ; they commence however about three feet from the cœcum, and they are regularly continued upwards. The inter-

ABDOMINAL
CAVITY.

nal coat of the stomach is velvety and thickened, with an appearance like Marseilles quilting, and the entire coat is readily removed by the finger. The cuticular lining of the œsophagus terminates as usual, abruptly in the cardiac orifice.

CRANIAL
CAVITY.

Removing the skull cap, the meningeal vessels are much distended with blood, and it exudes freely from the longitudinal sinus posteriorly. The surface of the cerebral hemispheres is extremely moist, with effused serum. There is about an ounce of colorless fluid at the base of the brain. The capillary vessels extending over the convolutions, are injected with red blood, especially posteriorly. The arachnoid, from the pons varolii to the decussations of the optic nerve, is milky. The arachnoid is generally thickened and milky. The pia mater of the medulla oblongata inferior to, and on the corpora pyramidalia is dark, as observed in some cases of Cholera. The cortical substance extends deeply into the centrum ovale, on which a few minute bleeding points are observed, and its substance generally is darker colored than usual.

SPINAL
CANAL.

The cellular lining tissue of the canal is injected with gelatinised serum, posteriorly and laterally, opposite the 7th. 8th. 9th. 10th. and 11th. dorsal vertebræ. There are slight adhesions between the arachnoid and the dura mater of the spinal cord, anteriorly. The arachnoid inferiorly is thickened. The main blood vessels inferiorly are enlarged, superiorly natural. Posteriorly some slight adhesions of the pia mater, arachnoid, and the dura mater are observed. Superiorly, the vessels are natural; inferiorly, they are tortuous and contain a little watery blood. The nerves of the cauda equina are very pale.

RESUME'.

THORACIC
CAVITY.

Pleuræ adhere from voluminous tuberculated false membrane. Pulmonary tissue tuberculated with cartilaginous cysts. Heart's cavities dilated.

Red patches over the ileum. The mesenteric glands are enlarged. Liver pale and granular. The spleen nearly natural. Mucous surface of the rectum thickened, with scars of ulceration; towards the cœcum they are not healed; the internal surface of the cœcum is ulcerated. Rugæ of the ileum commence three feet from the cœcum. Mucous coat of the stomach velvety, and it is readily removed.

ABDOMINAL
CAVITY.

Meninges gorged. Arachnoid preternaturally moist and milky. Oz. .i. of fluid at the base. Pia mater over corpora pyramidalia is dark.

CRANIAL
CAVITY.

The lining tissue is injected. Adhesions of the arachnoid. Equinal nerves are blanched.

SPINAL
CANAL.

CASE III.

PULMONARY TUBERCLES AND ULCERS OF THE INTESTINAL MUCOUS MEMBRANE.

ELLAPAH. *Ætatis* 25. Sepoy of the 43d. Regiment Native Infantry. Admitted into the Hospital established for Rangoon sick and wounded, 27th March, 1825.

He was twelve months ill at Rangoon, from the effects of a gun shot wound under the left knee, with pains in the chest and extremities. Received at Madras, emaciated. General health deranged. Treated with tonics and stimulants. He is now very thin and complains of constant pain in the site of the wound. The pulse is quick. The tongue much excited. The skin natural. The appetite good. Digestion imperfect; food giving pains in the belly. The bowels regular. Nights restless from pains in the cardiac portion of the thorax and in the extremities. The lungs are traversed imperfectly. The heart's action is deep, dull, large and powerful.

DIAGNOSIS.

Hydro-pericardium with pulmonary engorgement. *R. Pulv. Ipecac. gr. iij. Potass. nit. scr. i. M. ft. pulv. bis die sumend. R. Pil. Hydrarg. gr. iij. in pil. i. omni nocte hora somni sumend.* He continued progressively improving till the 16th August at 8 P. M. when he was suddenly seized with cholera. The pulse sank in a few minutes, partly from the effects of previous disease, and he died at 5 P. M. of the 17th. after the fruitless application of the most energetic and appropriate remedies.

AUTOPSY.

THORACIC
CAVITY.

Removing the parietes and anterior sternal arch, the costal and pulmonary pleuræ of the left lung adhere. The substance of the lung is much thickened and too firm to admit of collapse. Sections of its substance exposed some cheesy tubercles; and deep in its substance several caverns are found, partially filled with sero-purulent and sanguineo-purulent fluid. Each cavern has a thick firm lining peculiar to itself, like the inside of newly dressed shammy leather; and its transverse section has a ligamentous or striated appearance. In some parts these tubercles are very minute and clustered, and the section exhibits a honey-comb appearance from the closeness of the cysts. The superficial capillaries of the lungs are injected with blood; and posteriorly, there is some sanguineous engorgement of the tissue. There are two ounces of serum in the pericardium. The exterior of the heart is blanched. The right cavities contain grumous blood. The muscular structure is natural. The aorta and both the venæ cavæ contain pitchy black blood.

ABDOMINAL
CAVITY.

The liver is of the natural size; its surface has many pale spots. The spleen is natural; its coats thickened. The small and large curvatures of the stomach are much contracted to the pyloric orifice. The fat of the omentum is absorbed. The ge-

neral surface of the small intestines is vascular. The mesenteric glands are much thickened and enlarged. The cuticular lining of the œsophagus is silvery, and terminates as usual abruptly in the stomach. The rugæ of the stomach are very large, and in the great curvature of a purplish red color. No stricture or impediment to the egress of the bile. The mucous membrane of the duodenum is healthy, but not tinged with bile internally. Ten drachms of natural bile in the gall bladder. The jejunum is healthy. In the inferior part of the ileum, there are several irregular shaped ulcers and red patches, with a general blush over the mucous membrane. The colon is natural at first, but has a cordiform contraction and a blush of red, extending from the middle of its transverse arch to the anus.

Removing the skull cap, the dura mater adheres to the arachnoid over the hemispheres, and this latter membrane adheres to the pia mater; both are thickened; and the net work of the latter is much injected. The large external vessels are engorged. The conjoined substance of the cerebrum and cerebellum seemed too large for the cavity, which had the preceding moment contained them. The plexus choroides turgid and fleshy. About one ounce of serum in each of the ventricles. Cineritious substance diminished in quantity, with a tinge of red in it, and much lighter in color than the corpora striata.

Removing the anterior arch of the vertebral column, the vessels of the reticular substance of the vertebræ are gorged with dark blood which was copiously effused during the operation. A general blush observed on the outside and inside of the theca. Before its removal from the canal, serum is observed to be effused into the theca. Anteriorly, the arachnoid of the dura mater adheres to that of the cord; and there is effusion between that membrane and the pia mater. The anterior vessels are turgid; tortuous in the lumbar portion, and gorged with black

CRANIAL
CAVITY..

SPINAL.
CANAL..

blood. One of the equinal nerves is accompanied by a very large turgid vessel of black blood. Posteriorly, there are adhesions of the arachnoid tunic in the the cervical and dorsal portions, but none in the lumbar. From the superior dorsal portion inferiorly, the arachnoid is thickened and opaque. This appearance is more pronounced in the superior dorsal and first part of the lumbar; with an intervening portion between those two, in which it is much less distinctly marked; and below the latter part, it decreases. The spinal vessels on this surface throughout, are tortuous, enlarged, and gorged with black blood, especially in the inferior dorsal and lumbar portions. No slaty or dark color on the pia mater, extending from the superior part of the spinal marrow, as observed in several cases. The structure and tissue of the cord are apparently natural.

RESUME'.

THORACIC CAVITY.

Left pleura adheres. Pulmonary tissue thickened. No collapse. Tubercles from caseous to sanguineo-purulent, with semi-cartilaginous cysts. The capillaries injected. Oz. ii. of serum in the pericardium. The heart blanched; right cavities contain grumous blood, left empty. Aorta and venæ cavae contain pitchy black blood.

ABDOMINAL CAVITY.

Liver of the natural size with pale spots. Spleen's coats thickened, tissue natural. External intestinal surface vascular. Mesenteric glands enlarged. Rugæ of the stomach large; in the great curvature, red. Ileum inferiorly has numerous irregular ulcers, red patches or a blush. Colon and rectum contracted, and the mucous membrane has a continuous blush.

CRANIAL CAVITY.

Cerebral arachnoid adheres to the dura mater. Vascular engorgement. Hypertrophia of the cerebral mass. Cortical substance pale, red and diminished. Fluid in the ventricles.

SPINAL CANAL.

Theca has a general blush; and serum is effused into it. Arachnoid adheres partially anteriorly and posteriorly, and the vessels are gorged.

CASE. IV.

PULMONARY TUBERCLES WITH EFFUSION INTO

THE CAVITIES AND INTESTINAL ULCERS.

PEER KHAN. *Ætatis* 39. Sepoy of the 9th Regiment Native Infantry, admitted into the Hospital established for Rangoon sick and wounded, 6th September 1825.

He was six months ill at Rangoon with watery purging; and he is now emaciated. The thorax deformed by increased convexity on both sides. The appetite and digestion are improving. The bowels are regular. He sleeps well. Pulse 68 hard. Tongue pale. Skin natural. Lower extremities oedematous. The heart's action obscure and extensive. The right lung inferiorly, traversed: superiorly, natural. The left lung superiorly, puerile and tinkling; slight crepitus only audible. The thorax sounds well.

Pulmonary tubercles and engorgement with hydro-thorax and hydro-pericardium.

DIAGNOSIS.

Employed tonic stimulants and alteratives, but the patient committed some apparent excesses and errors in diet * &c. and he retrograded.

20th September. The extremities are oedematous. Heart's action very extensive and soft.

Hydro-thorax; hydro-pericardium; and pulmonary engorgement.

DIAGNOSIS.

The case was considered hopeless. Stimulants, tonics, diuretics, alteratives, frictions, flannel, soups, wine &c. inefficaciously used. He expired 14th October 2 A. M.

* Under the body was found a tin box containing 2. oz. of good Opium.

AUTOPSY.

Previous to examination, the body is viewed. Subject is 5 feet 11 inches, and extremely emaciated. The dorsal surface of the penis is covered with warty excrescences.

THORACIC
CAVITY

Contained about 50 ounces of yellow colored fluid distributed on both sides. The lungs collapsed freely on the left side; not so on the right. The superior lobe of the left lung contains a few minute tubercles. The tissue doughy and contains very little blood. The usual black spots are very numerous and large. The right lung in it's superior extremity contains a cavernous tubercle, equal to the size of a large hazel-nut, and around this, the pulmonary substance is thickly studded with small semi-cartilaginous bodies or tubercles. To the touch, the entire part containing these bodies is very firm, hard, and uneven, and this amounts to one half of the upper lobe. The inferior lobes of both lungs are gorged with spumous fluid. The pericardium contained four ounces of serous fluid. The heart is much reduced in size, corresponding with the patient's emaciation; it's muscular parietes are pale.

ABDOMINAL
CAVITY

Contained about five pints of pale straw colored serous fluid. The coats of the small intestines are all thickened, and they apparently contain a quantity of pultaceous feculent matter. The cœcum is very much diminished, situated higher than usual and its coats are very firm. The ascending colon is contracted. The transverse or arch of the colon, on the omentum being turned upwards, presented five black spots, looking downwards and forwards, the coats being apparently mortified in those parts. The fat of the omentum is absorbed. The mesenteric glands are slightly enlarged. The polished healthy appearance of the peritoneum is not observed in any part. A conical hydatid of considerable magnitude is found attached to the spermatic cord, external to the right ring. The liver is natural

in size; rather firm. Its sections have a granular appearance i. e. small minute dark bodies are thickly studded in a lighter colored substance. The gall bladder contains the usual quantity of viscid bile, of a light straw color. There is very little blood in either the large or small vessels of the liver. The spleen is very small; externally of the usual appearance; internally of a rich puce color. It does not tear or break so readily as usual, and has more the feel and appearance of muscular tissue. The kidneys are much paler than natural, yet shewing the minute ramifications of their vessels in many parts gorged with blood. Sections shew the cortical substance much paler than natural; whilst the parts converging to form the urinary processes, are of a deep dark color. Both kidneys are in appearance similar. The cuticular lining of the œsophagus is dull yet shining. The rugæ of the stomach are well developed; its mucous coat thick and pale. The rugæ of the duodenum are natural around the pylorus; and extending three inches from it, the mucous membrane is dark and thickened; the surface then becomes pale for five or six inches, and again dark and thickened. The rugæ are very strongly developed, and the mucous coat prodigiously thickened, so that closing the empty intestine, it feels large in the hand as if it contained a quantity of soft matter. The mucous coat is very easily removed in any part with the handle of a scalpel. About four feet from the cœcum, the mucous coat having continued alternately pale and red colored to this part, it suddenly becomes thin with very minute irregular rugæ, and alternately in patches pale and dark colored. Two feet from the cœcum there is a honey comb colorless ulcer one inch and a half long; it extends longitudinally, and the mucous coat is distinctly observed terminating at its extremities on all sides, and there forming on its limits. The surface of the ulcer is uneven, indented with minute excavations close to one another, honey-comb like. Placed before the light, those excavations appear

much thinner, and consequently lighter than the other parts. Close to the cœcum, there is one large and irregular shaped ulcer of the same kind. The iliac valve is entirely destroyed and its site occupied by a pale ulcer of the character described. The coats of the cœcum are very much thickened and its mucous coat has a very large ulcer extending nearly over its whole surface, of a dark color, with ragged margins and surface, the limits of which by a well marked dark line, shew that sphacelus had taken place before death. The colon from this part to its termination in the rectum, is one continued surface of disease. Several honeycomb like, ragged ulcers, which partially terminated in sphacelus, are observed in the arch of the colon. In the descending colon, the site of many former ulcers is covered over with a thick cluster of minute excrescences, similar to that observed on the top of a wart. On some of those clusters being removed, the ulcer in some parts is found imperfectly healed; many others are healed. Around the rectum those warty excrescences cover a considerable portion of the mucous surface and they have precisely the characters of the clustered elevations observed on warts.

CRANIAL CAVITY.

On removing the skull cap, the dura mater is discovered to have been wounded in several little points in the course of the operation, and serous fluid escapes freely from the wounds on both sides. On removing the dura mater, effusion over the surface of the brain is found, very considerable superiorly, and extending posteriorly over both hemispheres. Semi-gelatinised serum is largely effused, and occupying the depressions between the cerebral convolutions, under the arachnoid membrane, which is milky. The pia mater is pale. The cerebral mass is generally pale. About four ounces of serous fluid are considered to have escaped from within the dura mater, which had been effused over the cerebral mass. Drawing the anterior

and middle lobes of the brain, upwards and backwards, and looking down to the corpora pyramidalia over the pons varolii, water is observed to fill up the cavity of the theca spinalis. The arachnoid is generally milky. The pia mater enveloping the superior part of the spinal marrow, is of a dark dirty grey color. The vessels on the base of the brain are nearly empty. The blood vessels ramifying in the pia mater, between the anterior and middle lobes of the brain, are apparently enlarged, but not gorged. A few bleeding points are observed in the centrum ovale on the right side; none on the left, except a few posteriorly. The cortical substance is extremely diminished. A little water is observed in the ventricles. The plexus choroides examined on both sides, and in the posterior cornua of each, there are hydatids, of which there is a large one in each ventricle; the form is precisely conical, the base pointing downwards, the apex upwards and forwards. They are two thirds of an inch in length. At the base their thickness nearly equals that of the little finger. The surfaces of these hydatids have numerous minute white hard bodies scattered over them. The cortical substance of the brain is extremely pale. The pineal gland was attached in a remarkably firm manner in the sella turcica. The cerebellum is by no means so soft as in cholera cases; its condition is apparently natural.

The sinuses between the lumbar vertebræ are anteriorly gorged with blood. A thick layer of gelatinised serum is injected into the loose lining tissue of the canal, from the sacrum to the 1st dorsal vertebra. The dura mater of the medulla spinalis is very pale, and serous fluid is observed within it. The minute vessels of the medulla spinalis opposite the inferior dorsal and 1st lumbar vertebræ anteriorly, are gorged; but the larger vessels not so. Superiorly, the dark color of the pia mater noticed in the superior part of the medulla spinalis, is observed.

SPINAL
CANAL.

extending downwards. On the posterior surface of the medulla spinalis, between the origin of the nerves, extending 5 inches above the cauda equina, numerous minute tortuous vessels have a slight appearance of engorgement, but there is no larger vessel observed. The vessels accompanying the equinal nerves on the right side superiorly, are very large; there are only two large vessels on the left side, and the vessels of all the inferior nerves are very minute. The spinal cord inferiorly, is natural and firm; superiorly, soft and pulpy.

RESUME'.

THORACIC CAVITY

Contained 5 oz. of fluid. Left lung collapsed; not so the right; both superiorly contain small tubercles; the right one a large cavern. Inferior lobes are gorged with spumous fluid. Pericardium had 4 oz. of fluid; the heart diminished; its tissue pale.

ABDOMINAL CAVITY

Contained 5 pints of serum. The intestinal coats swollen. Arch of the colon presents five spots of mortification. Mesenteric glands enlarged. The liver firm, granular. The spleen small, tissue pale color. The kidneys pale. The rugæ of the stomach and small intestines greatly thickened and swollen, easily removed, alternately pale and red until the inferior 5th of the ileum where the coat becomes thin. Honeycomb ulcers near the cæcum. Cæco-iliac valve is destroyed by ulceration. Interior of the cæcum nearly occupied by ulceration. The surface of the colon and rectum diseased and ulcerated throughout; inferiorly warty-like excrescences.

CRANIAL CAVITY

Contained 4 oz. of fluid effused over the hemispheres at the base and between the convolutions. The arachnoid milky. Pia mater pale, laterally; over the medulla oblongata it is slaty. Cortical substance diminished and pale. Fluid and hydatids in the ventricles.

Its lining tissue injected, theca pale and contains fluid. Vessels of the cord inferiorly are injected. Cord's substance superiorly soft; inferiorly natural.

SPINAL
CANAL.

CASE V.

DILATATION AND RUPTURE OF THE HEART.

YENKIAH. *Ætatis* 28. Sepoy of the 43d. Regiment Native Infantry. Admitted into the Hospital established for Rangoon sick and wounded, 20th October, 1825.

He was three months ill at Prome of severe rheumatism, followed by intermittent fever, diarrhœa, general wasting of body and strength, burning sensation on the surface of the extremities, loss of appetite and impaired digestion. Since his arrival at Madras anasarca supervened. Received here in a very exhausted state. General œdema; difficult, oppressed, and painful breathing. Says he feels great oppression and sense of weight over the epigastric region; with restless nights, lax bowels and anorexia. P. 100, large and full, yet soft and emptying rapidly. Tongue white, excited fur. Skin thick. Thorax deformed by excessive convexity. The lungs not traversed. The heart's action very large, soft, extremely extensive, dull. No abdominal pain on pressure.

Hydro-thorax and hydro-pericardium.

DIAGNOSIS.

Treated with alterative doses of the submuriate of mercury, combined with the pulv. Scillæ and occasional doses of saline purgatives. Wines, soup, flannels &c. were likewise employed, without any material improvement.

5th November. The œdema, and difficult and oppressed breathing continued increasing, with a quickly emptying rapid and intermittent pulse. He expired at 4 P. M. this day.

AUTOPSY.

THORACIC
CAVITY.

On removing the sternal arch of the thorax a large body presented itself rising in the centre of the chest, and filling it from side to side, exposing only a little of the right lung immediately below the clavicle, but covering all the rest of it; and all the left lung. This was found to be the pericardium, which was removed entire containing the heart. The form of this mass is oblong; its larger extremity lodged on the left side, that on the right being only a little smaller. Its circumference measured horizontally 26 inches; vertical circumference 21. On opening this sac it was found to contain thin dark blood, to the extent of eighty ounces. The heart is found curiously enveloped by a false membrane of a flocculent character, and red color, adhering round its base in varied forms similar to the columnæ carneæ of the heart. Their surfaces slightly but unvaryingly flocculent. It is not regularly extended over the surface of the heart, but extends in the character of a cordiform network, from the apex to the base, in the manner and the form of carneæ columnæ and cordæ tendineæ. Some of these cordiform processes are much stronger and firmer than others and probably have been longer formed. The right auricle of the heart was tremendously dilated and very thin. The right ventricle also greatly dilated and its walls thin. The left auricle and ventricle are dilated but not to the same extent. The substance of the heart is pale. The blood escaped from a small opening in the right auricle. The lungs are collapsed and very small in consequence of the previous constant pressure on their tissue.

ABDOMINAL
CAVITY.

The liver is of the usual size, but very fleshy and firmer than usual: it contains a great deal of blood. The bile in the gall bladder is quite black, and thick. The spleen is small; very firm; and its sections resemble muscular tissue. There is consi-

derable serous effusion, between the laminæ of the peritoneum, enveloping the ascending colon. The mesentery is healthy. The mucous membrane of the stomach is lax, not corrugated; that of the duodenum, jejunum and superior part of the ileum also lax, and easily removed by slight scraping. Nearly three feet down the ileum, the mucous coat becomes suddenly and circumscribedly thickened; then, in the centre of this thickened part, which extends about an inch and a half there is a deep seated ulcer the size of a six pence. A little below this, the membranes are healthy. The kidneys laid open, the mammillary processes are rather red, the rest of its internal substance seems natural. The mucous coat of the urinary bladder is pale, and it contained a few ounces of straw colored urine.

In opening the head, the saw having sunk too deep, wounded the dura mater and several ounces of fluid passed out. On removing the skull cap fluid was observed between the dura mater and arachnoid, dark colored patches are observed in the pia mater as if the blood had been too thin for its natural conduits, and that partial ecchymosis had taken place. The cerebral surface and substance is generally bloodless and pale. The substance of the brain is firmer than usual. Both the lateral ventricles contain thin dark colored serum. The right contained eight limpid hydatids attached to the choroid plexus, each about the size of middle sized shot. The left contained four larger than the above. The arachnoid membrane is generally milky. The Pia Mater enveloping the Medulla oblongata anteriorly and laterally is dark.

The spinal cord is small and pale; its tissue rather soft superiorly, and firm inferiorly; its vessels very little marked. There has been some effusion in the spinal theca, which escaped through the foramen magnum when the head was recumbent in

CRANIAL
CAVITY.

SPINAL
CANAL.

opening the spine. The equinal nerves have quite lost their color and are all blanched, as if from immersion in fluid.

RESUME'.

THORACIC CAVITY.

The pericardium greatly thickened and white; presented itself filling up the cavity and hiding the lungs. The transverse circumference 26 inches, vertical circumference 21 inches. The sac contained 80 oz. of dark blood. Heart's cavities especially the right greatly dilated. The blood escaped from a small opening in the right auricle. Exterior of the heart covered with false membranes which assumed the appearances of the interior of the ventricles.

ABDOMINAL CAVITY.

Liver fleshy and firm. The spleen is small. Serous effusion between the peritoneal laminae, none in the cavity. Ulcers in the ileum.

CRANIAL CAVITY.

Serous effusion. Dark patches on dura mater. Arachnoid milky. Pia mater of medulla oblongata slaty. Cerebral tissue firm, pale, bloodless.

SPINAL CANAL.

Effusion into the theca. Cord small pale and soft superiorly, inferiorly firm. Equinal nerves are blanched.

CASE. VI.

PULMONARY AND MESENTERIC TUBERCLES, WITH INTESTINAL ULCERS.

GOORAYASSOO. *Ætatis* 29. Sepoy of the 12th Regiment Native Infantry, admitted into the Hospital established for Rangoon sick and wounded, 20th October 1825.

He was two months ill at Rangoon of diarrhoea, succeeded by pains and general debility with emaciation. Now he complains of pains, shortness of breath, anorexia, bad digestion,

five or six sero-muculent stools daily. Pulse 108, very small and feeble. Tongue very much irritated; fur excited; margins red. Skin thick. Thorax much deformed by excessive convexity on both sides. The lungs are not well traversed. The heart's action is natural, but rapid. Pain on pressure over the cæcum and sigmoid flexure.

Pulmonary engorgement. Debility and emaciation with visceral disease. Thickening with chronic affection of the intestinal mucous membrane.

He was treated with small doses of calomel combined with ipecacuanha; moderate quantities of wine, sugée and soup, without advantage. He expired at 11 P. M. on the 29th. September.

DIAGNOSIS.

AUTOPSY.

The lungs are much engorged with blood; the substance of the right lung is studded with minute tubercles; one however is the size of a hazelnut and contains thick pus. The structure of the lung in its centre, is nearly of a cartilaginous consistence, and it has entirely lost its natural organization from innumerable minute tubercles in cartilaginous cysts. The left lung is quite healthy except the engorgement. The pericardium contained four ounces of serum. The parietes of the heart are extremely thin and pale, and the organ itself diminished in a manner corresponding with the general emaciation of the body.

THORACIC
CAVITY.

The liver is considerably diminished and extremely pale, internally granular, otherwise healthy and natural. The gall-bladder contains six drachms of very thick viscid bile. The spleen is diminished, its structure firm, fleshy, and of a fleshy red color. The kidneys have their minute blood vessels strongly injected, their structure throughout firmer than natural. The mesentery is studded with tubercles, from the size of a walnut

ABDOMINAL
CAVITY.

downwards; their contents resemble the yolk of an egg hard boiled; but they are of the dark greenish color, peculiar to some kinds of pus especially that of gonorrhœa. The cuticular lining of the œsophagus is abraded in some parts of the passage, and it terminates irregularly before its arrival at the cardia. The mucous membrane of the stomach is corrugated, pale, extremely soft, easily and perfectly removed with the end of the finger. The first five inches of the duodenum have it's mucous membrane pale and a little corrugated, then it becomes extremely red, all its vessels are highly injected, and the rugæ strongly developed. The mucous membrane of the jejunum is pale, its rugæ little developed. In the ileum the rugæ become more marked with patches of inflammation, and some points of ecchymosis in which the effused blood has been lodged in the mucous coat: the lower fourth of the ileum contains scarcely any rugæ; close to the cæco iliac valve, within the ileum there is a large honey comb ulcer, with high edges and surface pale. Rugæ are not marked in the first part of the colon, but alternate patches of pale and red are observed. The inferior part of the colon is deeply marked with scars of old dysenteric ulcers. The urinary bladder contained a few ounces of urine, its mucous lining pale.

CRANIAL
CAVITY.

The dura mater was thickened and adhered very firmly to the parietal bones. The arachnoid membrane thickened and generally milky. There is considerable serous effusion between the arachnoid and pia mater. All the cerebral veins are generally gorged, and the capillary vessels ramifying over the convolutions of the brain are gorged with red blood. The substance of the cerebrum and cerebellum are unusually soft. The cortical substance is pale and in small quantity; very few bleeding points are observed in the centrum ovale. The plexus choroides is blanched on both sides. The cortical substance of the cerebellum is reduced to a muco-gelatinous state and the vessels of

it's pia mater, still more injected than those in that of the cerebrum.

There is no effusion of blood from the vertebral bodies contrary to that usually observed in cholera. The vessels ramifying in the lining tissue of the spinal canal, are minutely injected. The dura mater of the spinal marrow generally is thickened. The vessels on its posterior surface are injected; anteriorly they are natural. The substance of the spinal cord is large and soft. The pia mater enveloping it superiorly is dark colored, as often observed in cholera cases.

SPINAL
CANAL.

RESUME'.

Lungs engorged, otherwise the left healthy; the right minutely studded with hard small tubercles. The heart small pale and thin.

THORACIC
CAVITY.

The liver is diminished, pale and granular. Spleen diminished and fleshy. Kidneys' capillaries injected. Mesentery tuberculated, the size of walnuts resembling hard boiled yolk of egg. Mucous membrane of the stomach pale, corrugated and easily removed, that of the intestines had red patches; honey-comb ulcer near the cæcum, scars of dysenteric ulcers in the inferior part of the colon. Mucous lining of the urinary bladder pale.

ABDOMINAL
CAVITY.

Arachnoid milky, serous effusion, vascular engorgement, cerebral tissue soft. Cortical substance pale and diminished, that of the cerebellum is muco-gelatinous.

CRANIAL
CAVITY.

External tissue injected. Dura mater thickened, cord's vessels posteriorly are injected. Its substance large and soft, pia mater of medulla oblongata slaty.

SPINAL
CANAL.

CASE VII.

PULMONARY TUBERCLES AND INTESTINAL ULCERS.

SHAİK DAVOOD. *Ætatis* 24. Sepoy of the 26th. Regiment Native Infantry. Admitted into the Hospital established for Rangoon sick and wounded, 20th October, 1825.

He was five months ill at Rangoon, three of dysentery, which then changed to diarrhœa, and reduced him to the extremity of emaciation. Now, the inferior extremities are benumbed to the loins. The appetite and digestion much impaired. He has two or three light colored stools daily; urine red. Cannot sleep more than an hour or two in the night. The pulse 156, soft and feeble. The tongue pale. The skin thick and dry. The thorax is deformed by increased convexity on both sides; it sounds natural. The lungs are traversed, but a peculiar ringing sound indicates tubercles in the inner edge of the right lung. The heart's action is very rapid. The blood is returned too quick for its motions, notwithstanding. Hence once or twice in a minute, there is a struggle, which I conclude to be two systoles [without any period of repose] in direct succession. There is no abdominal pain on pressure.

DIAGNOSIS.

Pulmonary engorgement with tubercles. R. pulv. ipecac. gr. iij. pulv. antimon. gr. v. hydrarg. submur. gr. $\frac{1}{4}$ M. bis in die sumend. Vini albi oz. iv. omni die. Sago diet. He continued in a low sinking state. Wine, cordials and nourishment in varied forms were administered without benefit. He was suddenly attacked with shortness and difficulty of breathing at 11 A. M. of the 5th. December and expired in two hours.

AUTOPSY.

The pulmonary pleura on both sides is adhering in many points to the pleura costalis. The pulmonary substance is firm and tuberculated. The right lung has one large cavern in the upper part of the superior lobe, which contains a little grumous blood: The remainder of this lung has a great number of small tubercles, scattered through its substance, and containing cheesy matter, either white or greenish yellow. The left lobe contains a great number of incipient tubercles, and one cavern of very considerable magnitude, situated at the inner margin, and surrounded by an immense number of small incipient tubercles; in fact the pulmonary tissue throughout is entirely tuberculated. The pericardium contained four ounces of serum. Patient very much emaciated. The heart is extremely small, but its organization natural.

THORACIC
CAVITY.

The liver is rather enlarged and of a greyish appearance, its structure granular, and consistence natural. The spleen is diminished considerably, its substance very pale, and structure fleshy. The kidneys are diminished very much in size, and the tissue injected with blood. The cuticular lining of the oesophagus terminates irregularly in the cardia. The mucous coat of the stomach appears natural, well corrugated in the large curvature, and slightly in the small curvature. The commencement of the duodenum has longitudinal folds until the entrance of the ductus communis, then the corrugations become transverse, and are well developed. A little below the middle of the ileum, there is some congestion in the vessels of the mucous membrane, and further down there are several deep irregular ulcers, with thick inflamed margins, and the vessels of the mucous membrane become greatly engorged and inflamed. The ulcers increase in number and size, in approaching towards the cæcum. At the ileo-cæcal valve, one entire ulcer pervades the intestinal surface,

ABDOMINAL
CAVITY.

and there are several large deep ulcers in the cæcum. The rugæ are well developed in the first part of the colon, inferiorly there are several very extensive scars of recent ulceration, with slight remains of a few ulcers low down in the rectum. The urinary bladder contained four ounces of straw colored urine, its mucous lining is pale.

CRANIAL CAVITY.

On removing the skull cap, the dura mater is found thickened; on cutting through it about five ounces of serous fluid situated between the arachnoid membrane and dura mater issued forth. The arachnoid throughout is milky. Some semigelatinized serous fluid is interposed, between the arachnoid and pia mater over both hemispheres, near the course of the sagittal suture. Water is freely effused into both ventricles of the brain, and the continuation of the plexus choroides, extending over the corpora quadrigemina and thence to the cerebellum, has its vessels very highly injected with blood. The cortical substance is well marked but darker in color on the right side than on the left. On removing the cerebral mass and lowering the base of the head and the neck, two ounces of fluid escaped from the theca spinalis.

SPINAL CANAL.

Some semi-gelatinised serous fluid is observed, injected into the loose cellular tissue, external to the spinal theca in the lumbar region of the canal. Opposite the heart it was greatly increased, and gave the idea of its having made pressure; above this it ceased. On laying open the dura mater of the spinal cord anteriorly and posteriorly, there is no turgescence found in its vessels on either surface, and no remarkable appearance, except the dull blue color of the equinal nerves as if resulting from their immersion in a fluid.

RESUME'.

THORACIC CAVITY.

Pleura adherent; pulmonary tissue throughout is tuberculated. Pericardium contained iv oz. of serum; the heart small.

Liver enlarged, grey and granular. Spleen diminished, fleshy and pale. Kidneys small and vascular. Below the arch of the ileum, the mucous coat becomes vascular and inferiorly there are deep irregular ulcers increasing to the cæcum, where one pervades the entire surface. Extensive scars of recent ulceration in the colon with slight remains of a few ulcers.

ABDOMINAL
CAVITY.

Oz. v. of serous fluid escaped from the dura mater. Arachnoid milky. Cortical substance darker on the right than the left. Semigelatinised fluid contained within the arachnoid; fluid in the ventricles, and 2 oz. escaped from the theca spinalis on depressing the head.

CRANIAL
CAVITY.

Semigelatinous fluid injected largely into the tissue. General appearance of the cord and nerves blanched.

SPINAL
CANAL.

CASE. VIII.

RIGHT CAVITIES OF THE HEART AND LEFT AURICLE DILATED. PULMONARY TUBERCLES AND GANGRENE. INTESTINAL ULCERS, TUBERCLES AND GANGRENE. EXTENSIVE CEREBRAL EFFUSION.

JUGGIAH. *Ætatis* 29. Sepoy of the 9th. Regiment Native Infantry. Admitted into the Infantry recruiting depot Hospital, 26th. October 1825.

He complains of pain in his bowels and fever these last three days: pulse full: skin hot and dry: tongue clean: bowels open: no appetite. Prostration of strength. R. Ant. tart. gr. iij. Aquæ oz. i. ss. M. statim sum. R. Pulv. jalap. comp. dr. i cras mane. 27th. Better. 28th. No fever, but complains of weakness and want of appetite. R. Pulv. ipecac. gr. iij bis in die. 29th. March. The same. Cont. 30th. Weakness only. Cont. 31st. Convalescent. November 1st. Discharged.

Re-admitted November 11th. He has complained of cough these seven days. He is very weak, much reduced and emaciated. No fever or purging : pulse quick and soft. Skin cool. Tongue clean. Bowels open. No pain in the chest.

R. Pulv. ipecac. comp. gr. x. hor. som. sumend. 12th. No sleep during the night from cough, which is unattended with expectoration. Debility. He cannot retain food on his stomach.

R. Mist. Amygdal. oz. i. Tinct. opii gtt. x. Tinct. scillæ gtt. x ij M. fiat haust. tertia quaque hora sumend. Sago and wine oz. iv twice a day. Died at 3 P. M.

AUTOPSY.

THORACIC CAVITY.

On removing the anterior sternal arch, the pulmonary and costal pleuræ adhered by several laminæ of thick false membranes. The lungs are obviously engorged, and do not collapse. The lobes adhere firmly to one another. Innumerable minute hard tubercles are felt, on forcing the finger between these membranes. One hydatid the size of a small grape, and quite clear, is found between the laminæ of false membranes on the left side. On removing the left lung, a false membrane is found extended from the base of the lung to the diaphragm, which connects them, and a quantity of semi-gelatinised fluid is interposed between the lung and the diaphragm. The substance of the lungs is studded with small firm white tubercles. The inferior anterior margin of the right lung, close to the diaphragm, is in a gangrenous condition. There are several small cavities in this lobe, but no pus apparent: All is confounded under the dark color of gangrene. The pericardium is thickened and contains six ounces of fluid. The parietes of the left ventricle are thinner than natural, but not much dilated. The right ventricle is much dilated and extremely thin. The right auricle also is both dilated and thin. The left auricle is in the same state.

ABDOMINAL.
CAVITY.

On opening the abdomen, the external integuments were removed with difficulty, from a false membrane which enveloped the intestines and stomach, extending from the anterior margin of the pubis upwards, and its prolongations dipping between the stomach and liver, and intestinal convolutions; in effect running backward to the spine it occupies the entire presenting surface of the peritoneum. The surface and substance of this false membrane, are studded with minute hard tubercles. That surface of the stomach in contact with the liver and gall bladder, adheres to them throughout by means of this false membrane; and in short the stomach adheres firmly on all sides to the surrounding parts. There is a layer of false membrane extended over the transverse colon, half an inch in thickness, and adhering firmly to it. This new substance feels as if formed of a congeries of small hard globular bodies. One tubercular body the size of a swan shot, was readily turned out from its investing membrane for examination. In substance it was not so firm as cheese, and it was rather fibrous. About twenty ounces of serum were floating loose in the abdomen. In attempting to separate the convolutions of the intestines from one another, the false membrane is found too firmly and completely attaching itself to the peritoneum and mesentery, agglutinating each particular part intimately, to that immediately corresponding to it. *

The coats of the intestines are found very thin in all parts, and wheresoever separation is attempted, even in the

* A correct idea of this case is easily to be formed, by clearly conceiving what actually happened. When excessive action of the peritoneal exhalants had poured forth, and this membrane had collected, this sero-fibrinous fluid, it necessarily insinuated itself between the viscera and intestinal tortuosities, always attaching itself to the peritoneum, and in this position it became organized; and in all probability from languid action, it became tuberculated.

gentlest manner, the coats of the intestine lacerate first. The false membrane extended over the anterior surface of the intestines, has three perforations, each capable of admitting the tip of the finger, and they open separately into the inflexions of the colon. A little excrement had passed from one of them. This membrane terminates inferiorly by dipping down to the fundus of the bladder and from this point its two laminæ run upwards each about two lines in thickness; one is connected with the peritoneum of the muscles, the other forming one great cover over the intestinal peritoneum, sends prolongations between the convolutions in all parts, thus enveloping minutely the abdominal viscera, by its complete extension over the peritoneum, and agglutinating the parts to one another. Its character throughout is a congeries of small hard bodies. The liver is of the natural size, its texture coarse and granular. The spleen is of the natural size, and of a fine puce color. The kidneys were rather small and soft, their vessels contain more blood than usual, and they are much gorged. The lining membrane of the œsophagus is seen distinctly terminating in the cardia, the mucous membrane of the stomach pale, thin, and corrugated: The muscular coat also thin. Several living lumbrici are found in the stomach. The coats of the intestine throughout are extremely thin and in parts tearing off the false membrane from the intestine, the peritoneal covering is completely detached with the false membrane, leaving the most beautiful view imaginable, of the divided intestinal muscular fibre. The mucous coat appears to be nearly disorganized and removed. The adhesions were so firm that it was found impossible to detach the intestines throughout their extent; but at those three parts corresponding to the perforations through the false membrane, the mucous surface near them is much ulcerated, inflamed, discolored and black. They all lead into inflexions of the descending colon. The capillar-

ies on the mucous coat of the urinary bladder are very slightly injected in some points. Five ounces of high colored urine were removed from its cavity.

On opening the head and dura mater oz. xvj. of sero-sanguineous fluid escaped. The capillary vessels of the pia mater running over the cerebrum and cerebellum are rather gorged with blood, and between the convolutions they are equally or more so. About the centre of the left hemispheres superiorly, the arachnoid and pia mater adhered firmly together to the extent of an inch in length and two lines in breadth, and the pia mater adhered firmly to the cerebral substance. From the centre posteriorly the arachnoid was milky, and attempting to pinch or fold it up, it was firm and resisting. The arachnoid membrane extending from one lobe of the cerebellum to the other, immediately posterior to the medulla oblongata is quite milky, and this milkeness is general. The cerebral substance generally is soft. The cortical substance pale. There are no bleeding points in the centrum ovale. The plexus choroides is blanched in both ventricles. Half an ounce of serum is effused into the left lateral ventricle. There is very little in the right. That part of the membrane extended over the corpora quadrigemina has its vessels considerably engorged.

CRANIAL
CAVITY.

Removing the anterior arch of the vertebral column there is considerable effusion of semi-gelatinised serous fluid into the loose lining cellular tissue, external to the theca extending from the sacrum to the inferior cervical vertebra. On laying open the theca anteriorly, the pia mater superiorly is found of the dark color noticed in several cholera cases. There are sundry adhesions between the arachnoid of the dura mater and that of the pia mater. The cauda equina is very pale. A few nerves are

SPINAL
CANAL.

accompanied by large engorged vessels. There is some slight engorgement in the tortuous vessels on the posterior surface of the cord, but not to any great extent.

RESUME'.

THORACIC CAVITY.

Pleuræ adhere by voluminous false membranes; lungs not collapsed. Semi-gelatinised serous fluid interposed between the base of the left lung and the diaphragm; small white firm tubercles scattered in the pulmonary tissue. Inferior anterior margin of the right lung is sphacelated. Pericardium thicken'd and contain'd oz. j of fluid. Right ventricle and auricle of the heart are dilated and thin, also the left auricle.

ABDOMINAL CAVITY.

Fluid had been effused into this cavity, which having assumed the condition of false membrane in every part, and adhered on all sides, so by this means all the viscera became united in one general mass, and this new substance had innumerable small hard tubercles. Three sphacelated openings into the colon. Liver coarse and granular. Mucous intestinal coat nearly disorganised, ulcerated or inflamed.

CRANIAL CAVITY.

Dura mater contained x. oz. of sero-sanguineous fluid. Capillaries engorged. Arachnoid milky. Cerebral tissue soft; cortical pale. Fluid in the ventricles. Plexus choroides blanched.

SPINAL CANAL.

External tissue of the theca is injected with semi-gelatinised serous fluid. Pia mater of medulla oblongata slaty; and sundry adhesions between the arachnoid and pia mater of the cord anteriorly; posteriorly the tortuous vessels inferiorly are a little gorged. Equinal nerves pale.

CASE IX.

PULMONARY TUBERCLES AND INTESTINAL ULCERS. CEREBRAL EFFUSION. INTERIOR OF THE AORTA STREAKED RED.

YENKANAH. *Ætatis* 29. Sepoy of the 22d. Regiment Native Infantry. Admitted into the Hospital established for Rangoon sick and wounded, 20th October, 1825.

He was six months ill at Donabew and Rangoon, of diarrhoea and difficulty of breathing; general bad health and debility succeeded. Admitted in a very debilitated state, much emaciation and general exhaustion. Hearing and breathing much impaired. He has some appetite, but the digestion is bad. Four loose stools daily. The urine natural. Cannot sleep. Pulse 94 soft and feeble. Tongue semi-tendinous, smooth and irritated. Skin thick. Thorax deformed by increased convexity on both sides; it sounds natural but imperfectly traversed. There is slight dull pain over the cæcum and course of the colon.

General debility. Nervous derangement with chronic disease of the intestinal mucous membrane. Pulmonary engorgement.

DIAGNOSIS.

R. Pulv. ipecac. gr. iij. Hydrarg. submur. gr. $\frac{1}{3}$. Opii. gr. i.
M. bis terve die sumend.

Habeat vini rub. oz. iv. ter in die. Soup and jelly twice a day.

November, 15th. No improvement since admission. He appears retrograding.

November. 16th. Expired at 2 A. M.

AUTOPSY.

THORACIC
CAVITY.

Removing the anterior sternal arch, the pericardium contained three ounces of fluid. The exterior of the heart is blanched and the organ diminished in proportion to the general emaciation. The internal surface of the aorta, from its arch to where it passes posterior to the diaphragm, is rough generally, of a reddish tint, with a streak of deep red in the line which gives off the left intercostal arteries. The left lung has many minute tubercles, one cavern equal to the size of a walnut, and several small thickened masses, which threatened to become the seat of tubercles. The mucous membrane lining the air passages is pale, and these contain much spumous fluid; the right lung is collapsed naturally and its tissue healthy.

ABDOMINAL
CAVITY.

The liver is of the natural size, rather pale yellow, and its structure granular. One ounce of dark viscid bile is contained in the gall bladder. The spleen is diminished in size, and of a lighter color than usual. The kidneys are diminished in size, the structure more dull, the cortical substance pale, but the mammary processes from base to extremity are very vascular. The stomach and intestinal canal were much meteorized. The cuticular lining of the œsophagus mostly decomposed and removed. The mucous coat of the stomach at the great curvature is flaccid and pale, with a few dark streaks pointing out the passage of large vessels. The mucous coat at the centre of the stomach appears healthy and natural, but approaching the pylorus it is thickened and has a dark speckled appearance. The first inch of the duodenum external to the pylorus has the mucous coat smooth, but colored and very vascular. Rugæ here commence, they are well developed, and uniformly marked with traces of greatly increased vascular action. The ileum has its mucous coat thicker in some parts than others, with sundry longi-

itudinal honeycomb ulcers. There are traces of violent inflammation, and to these succeed deep ulcers with high irregular edges, extending rather transversely and resembling deep fissures. The rugæ where they do exist are longitudinal. A large ulcer has destroyed the cæco-iliac valve and occupies still its site. The internal surface of the large intestines is smooth and dark colored throughout. The muscular coat of the large intestines is much thickened and has a cartilaginous appearance, consistency and structure, from the termination of the ileum to the extremity of the rectum; and it is one-sixth of an inch in thickness in the latter mentioned part. The urinary bladder contained four ounces of straw colored fluid; its internal surface is pale.

Removing the skull cap, the dura mater was thicken'd and adhered very firmly to the cranium in the course of the sagittal suture. The arachnoid membrane is thickened and milky. Two ounces of fluid are effused between the arachnoid and pia mater. No venous engorgement on the surface of the brain, but the minute net work of the pia mater is very vascular over the convolutions, and dipping between them. The substance of the cerebrum and cerebellum is very soft. Bleeding points of the centrum ovale are very large. The cortical substance is pale. The plexus choroides is blanched and contains a few minute hydatids. The substance of the cerebellum is extremely soft. The pia mater covering the optic nerves, has the dark color noticed frequently in the envelope of the medulla oblongata.

External to the theca, the cellular tissue of the inferior and central part of this canal is injected with semi-gelatinous fluid. The spinal theca laid open anteriorly, the pia mater enveloping the medulla oblongata, extending to the inferior part of the cauda equina and even prolonged over the nerves, is

CRANIAL
CAVITY.

SPINAL
CANAL.

particularly dark and very unusually vascular; its vessels being distinctly apparent to the naked eye: the vessels accompanying the nerves on each side, and those of the cauda equina are all enlarged, injected with red blood. The posterior surface of the spinal cord is equally dark as the anterior; there is no engorgement of the large, but the small vessels of this surface are multiplied, gorged and injected throughout.

RESUME.

THORACIC CAVITY.

Oz. iij. of fluid in the pericardium. A streak of red in the aorta, through which the left intercostals pass. Left lung tuberculated.

ABDOMINAL CAVITY.

Liver pale yellow, natural, granular. Spleen lighter colour'd than usual. Kidneys' cortical tissue pale; mammary process vascular. Lining tissue of œsophagus and stomach diseased. Mucous lining of the duodenum, jejunum and superior portion of the ileum have patches of vascular engorgement; here honey-comb ulcers commence, then traces of violent inflammation succeeded by deep ulcers with high irregular margins like deep transverse fissures. Cæco-iliac valve destroyed by ulceration. Muscular coat of large intestine thickened, semi-cartilaginous; the internal surface dark and smooth.

CRANIAL CAVITY.

The arachnoid thickened and milky; no venous, but some capillary injection of the pia mater. Cerebral tissue soft. Bleeding points large. Cortical substance pale. Plexus blanched. Pia mater of the optic nerves slaty.

SPINAL CANAL.

Lining tissue injected with semi-gelatinised serous fluid. Pia mater of the cord slaty and vascular. The capillaries of the cord generally are gorged.

CASE. X.

PULMONARY TUBERCLES. INTESTINAL ULCERS, TUBERCLES AND GANGRENE. EXTENSIVE CEREBRAL EFFUSION INTO THE CAVITIES.

SEETHAPAH. *Ætatis* 48. Sepoy of the 9th. Regiment Native Infantry. Admitted into the Hospital, established for Rangoon sick and wounded, 6th. September 1825.

He was three Months ill at Rangoon of intermittent fever succeeded by watery purging and received into this Hospital greatly emaciated. The thorax is very much deformed, protruding laterally, especially to the right. No appetite; digestion bad. Bowels open; urine natural. Pulse 120 soft. Skin and tongue natural. The lungs are only very partially traversed. Heart's action sharp and deep.

Pulmonary tubercles and engorgement; hydro-pericardium and hydro-thorax with visceral derangement.

DIAGNOSIS.

Pulv. ipecac. gr. iij. bis die. Infric. ungt. Hydrag. fort. scr. j inter lumbos omni die. Habeat vin. mad. oz. iv. in diem.

1st. December. He complains of pains in the upper and lower extremities. The face is puffed. He suffers irregular attacks of intermittent. There is great emaciation and debility. Skin thick and dry. Pulse feeble. Omittr. pulv. et unguentum.

R. Decoct. cinchonæ oz. ij. Tinct. ejusdem dr. iij. acid. muriat. q. s. misce, bis die sumend. Vini mad. oz. vj in diem.

1st. January, 1825. He is still emaciated and very weakly. Effusion has taken place largely into the cavities. Cont. decoct. cinchonæ, tinct. et acid. ut antea. Cont. vin. Expired 7 A. M. 15th. January 1826.

AUTOPSY.

THORACIC
CAVITY.

Twenty two ounces of serous fluid are removed from the left cavity of the thorax, and fifty ounces from the right cavity. Sundry congeries of false membranes are interposed between the pulmonary and costal pleuræ. Masses of apparently curdiform purulent matter are floating in the fluid of both sides. The lungs are rather gorged with blood. The superior lobe of the right lung is tuberculated, and the tubercles contain pus. The left lobe is very much engorged: incipient tubercles on the top of the superior lobe. The mucous membrane of the trachea is pale, that of the ramifications of the air tubes is also pale: yet the parenchyma of the lungs is very much injected with blood. Between the bifurcation of the trachea, adhering to both branches, and to the pericardium are several black bodies—enlarged pulmonary glands—some the size of a walnut, but otherwise exactly similar to those usually met with in the lungs. The pericardium contained five ounces of fluid, the surface of the heart is blanched, its volume diminished, the tissue pale and flaccid.

ABDOMINAL
CAVITY

Contains fifty ounces of serous fluid. The liver is generally pale, but on a closer view it is mottled, dark and pale; internally examined by sections its structure is granular, it tears readily, and the color is a pale yellow. The gall bladder contains four drachms of very thick viscid bile. The spleen is diminished, weighing only three ounces, it cuts fleshy, its color pale purple. The kidneys are diminished, externally pale, their internal structure natural. The cuticular lining of the œsophagus is dull. The mucous coat of the stomach is pale but well corrugated. Mucous coat of the duodenum pale and well corrugated, but the rugæ are agglutinated strongly with viscid mucus that lines the tube. The jejunum has its mucous coat pale,

and corrugated, with a thick covering of viscid mucus. The ileum superiorly, is similar to the duodenum and jejunum; inferiorly, the rugæ disappear, the coat becomes very smooth, and close to the cæcum are several honey comb ulcers. The mucous coat of the large intestines generally is pale, though red in some points and superabundantly covered with viscid mucus. The urinary bladder contained a pint of orange coloured urine. It's internal surface is pale.

Removing the scull cap and turning the dura mater backward, aqueous effusion is abundant over the cerebral hemispheres. The arachnoid membrane is thickened and milky. A considerable quantity of semi-gelatinised serous fluid is interposed between the arachnoid and pia mater, over the superior central and posterior surface of the cerebral hemispheres. Fluid is freely effused at the base of the brain, and the spinal theca is literally filled. The cerebral surface is pale, and the veins of the surface are empty. The vessels of the pia mater lining the convolutions are rather gorged. Water is effused into both ventricles, and there are hydatids in the choroid plexus on both sides. The cerebral substance and that of the cerebellum also is soft.

CRANIAL
CAVITY.

The pia mater of the medulla oblongata anteriorly and laterally is of a dark color, the spinal theca filled with fluid, it's dura mater laterally very red on both sides. The vessels empty. The cord has it's pia mater blanched. Original thickness of the cord apparently diminished. Inferiorly there is a little semi-gelatinous serous fluid interposed, between the arachnoid of the cord, and that of the pia mater.

SPINAL
CANAL.

RESUME'.

Oz. 22 of fluid removed from the left and oz. 59 from the

THORACIC

CAVITY.

right cavity with sundry congeries of false membranes and masses of curdiform pus floating in it. Lungs gorged and tuberculated; pulmonary glands enlarged. Pericardium contained oz. v. of fluid.

ABDOMINAL
CAVITY

Contained oz. 50. of fluid. Liver pale, mottled and granular. Spleen diminished. Kidneys natural. Viscid mucus agglutinates the rugæ of the intestinal tube. Near the cæco-iliac valve, rugæ disappear and there are several honey comb ulcers. Vascular patches in the large intestines.

CRANIAL
CAVITY.

Abundant effusion. Arachnoid milky. Large vessels empty. Pia mater between the convolutions vascular. Cerebral tissue soft. Hydatids in the plexus.

SPINAL
CANAL.

Pia mater superiorly, anteriorly and laterally slaty. Theca filled with fluid. Dura mater red. Cord diminished, and inferiorly some semi-gelatinised fluid between the arachnoid of cord and pia mater.

CASE XI.

PULMONARY ENGORGEMENT, INTESTINAL ULCERS AND
EFFUSION INTO THE CAVITIES.

NARROYDOO. *Ætatis* 34. Sepoy of the 34th. Regiment. Admitted into the Hospital established for the Rangoon sick and wounded, 28th January, 1826.

He was two months ill at Rangoon, with symptoms which supervened in the following order. 1. Difficulty of breathing. 2. Swelling of abdomen. 3. Pains and stiffness of the muscles of the limbs. 4. Intermittent. 5. General debility. 6. Œdema, which in the course of last night has become quite general and very extensive. The head, trunk, and extremities are all greatly swollen. Now there is no appetite; digestion is bad, and there

is constant thirst. Bowels open. Urine very scanty and red. He cannot sleep from pains, flushings and soreness of the body. Pulse 100 small and feeble. Tongue pale, with large sulci and black spots. Thorax deformed and sounds rather dull. Lungs imperfectly traversed. Heart's action dull and bounding. No abdominal pain on pressure.

Hydro-pericardium and hydro-thorax. Pulmonary engorgement and visceral derangement.

DIAGNOSIS.

Venæ sectio ad deliquium oz. xvij. Vespere 3. tia. hora. Pulv. Jalap. Scr. i. Cras mané descendat in balneum calidum.

February, 1st. Improves rather, though the swelling still continues. R. Hydrarg. Submur. gr. viij. Pulv. Antimon. gr. yj. 10. ma. hora omni die sumend. Vespere pulv. Jalap. dr. ss. 3. tia hora

3d. and 5th. No alteration. Cont. Med. u. a.

7th. Rather better and lighter. Repetatur venæ sectio si opus fuerit. Sol. acid. Mur. oz. iv. 3 tia. qua-que hora sumend. Vini rub. oz. viij. in diem. Soup; sago; animal jelly.

8th. Swelling decreasing. Cont. Med. ut heri.

12th. Thorax dull, obviously filling up with fluid. Patient sinking.

February, 14th. Expired at 6 A. M.

AUTOPSY.

The thoracic cavities contained four pints of straw colored fluid. The external appearance of the right lung is brown, with spots varying from a dark to a light purple. Cutting the parenchyma, it appears darker colored and more consolidated. The

THORACIC
CAVITY.

left lung adheres very firmly to the pleura costalis, by layers of false membrane; it's external appearance differs from that of the right, only by it's being more regularly of a dark or purple color, and the parenchymatous substance is more engorged. Both lungs collapsed. The pericardium is much distended and contains twelve ounces of light colored fluid. The heart is very much dilated. The walls of the right auricle are thin, dilated and contain a small clot of blood: the right ventricle is dilated also and its walls thin: the left auricle and ventricle are likewise dilated, but not to the same extent. The substance of the heart is pale and flaccid.

ABDOMINAL CAVITY

Contains about five pints of straw colored fluid. The liver is natural in size, its convex surface pale, shrivelled and irregular; sections of its tissue are firm and granular. The gall bladder contained six ounces of dark viscid bile. The spleen externally has the usual appearance, internally it is of a rich puce color. The kidneys externally are paler than natural: sections shew the cortical substance very pale, but the mammillary processes are of a deep red color. The cuticular lining of the œsophagus is pale and smooth: from within three inches of its termination in the cardiac orifice it is very vascular and it terminates abruptly. The mucous coat of the stomach is thick, soft and velvety with extensive marks of vascular action. From the pylorus the mucous coat extending downwards into the duodenum and jejunum is healthy, and the rugæ well developed. A little below the middle of the ileum there is some congestion in the vessels of the mucous membrane, and farther down there are several deep longitudinal honey comb ulcers with inflamed margins. The ulcers increase in number and size approaching the cæcum. The rugæ are well developed in the first part of the colon; at its transverse arch there is an extensive scar of recent ulceration,

with the slight remains of a few ulcers low down in the rectum. The urinary bladder contains a few ounces of fluid, and its internal surface generally is pale.

On removing the skull cap, the dura mater was yellow, with slight engorgement of its vessels. A small quantity of fluid was found between it and the arachnoid membrane, but none between the latter and the pia mater. The vessels of the pia mater engorged with red blood. A considerable quantity of fluid was found in the lateral ventricles. The cortical substance is natural. The medullary substance in the centrum ovale is studded with numerous bleeding points. The cerebellum is natural throughout. Immediately over the corpora quadrigemina two small bony concretions were found, each about the size of a millet seed. The pia mater of the medulla oblongata superiorly is in a similar state to that of the brain. Inferiorly the black color of the pia mater is observed as in many cholera cases.

CRANIAL
CAVITY.

Some semi-gelatinous fluid is injected into the loose cellular tissue external to the spinal theca, from the cervical vertebra to the sacrum. The theca contains a considerable quantity of serous fluid. On laying it open anteriorly and posteriorly, there is no turgescence found in the vessels on either surface. The substance of the spinal cord is large and soft.

SPINAL
CANAL.

RESUME.

Contained in all 4 pints of fluid. Lungs dark, spotted, collapsed, partially adherent. Pericardium contained oz. xij of fluid. Heart's cavities dilated; walls thin, especially on the right side.

THORACIC
CAVITY.

Contained 5 pints of fluid. Liver of the natural size; its exterior pale, shrivelled and irregular. Kidneys' cortical tissue pale,

ABDOMINAL
CAVITY.

that of mammillary processes red. Mucous coat of stomach velvety and partly vascular: vascular congestion occurs at the centre of the ileum, succeeded by honey comb ulcers with inflamed margins increasing to the caecum. Scars and remains of healing ulcers in the large intestines.

**CRANIAL
CAVITY.**

Slight effusion. Cerebral pia mater vascular, that of medulla oblongata slaty; fluid in the ventricles; cerebral tissue natural.

**SPINAL
CANAL.**

It's tissue injected with semi-gelatinised fluid in the theca; no engorgement; tissue of the cord large and soft.

CASE. XII.

**HEPATISED LUNG WITH CASEO-PURULENT TUBERCLES:
HYDRO-THORAX: INTESTINAL MUCOUS INFLAMMATION.**

VENKETSAMY. *Ætatis* 28. Sepoy of the 32d. Regiment Native Infantry. Admitted into the infantry recruiting depot Hospital, 23d February 1825.

He was eight months ill with intermittent fever at Rangoon, which returned at irregular intervals. The pulse and skin are natural; tongue red; bowels open. He is very weak, but does not complain of pain. R. Hydrarg. Submur. gr. ij. Pulv. Rhei gr. iv. m. ft. Pil. hora som. sumend.

24th. Better.

25th. Fever at noon. Cont. Pil.

26th. Spontaneous hæmorrhage from the nose. Pulse quick subsequently but not full. Bowels open. R. sulph. mag. oz. ss. Inf. Ros. lb. i. Acid. Sulph. dil. q. s. sum. oz. iss. 2 da. q. qua. hora.

27th. No pain in the head, but a sensation of weight and heaviness. R. Hyd. Submur. gr. ij. Pulv. Rhei gr. iv. M. ft. Pil. hor. som. sumend.

28th. Feb. Better. Cont. Pil. Rhei h. s.

1st. March. Skin feels hot. Three natural stools. Cont. Pil. h. s.

2d. Low delirium: pain in the head. Admr. Vesicat. inter scapulas.

4th. Sinking. Expired at 9 A. M.

AUTOPSY.

On removing the sternal arch, a considerable quantity of serous fluid with curdiform masses of pus floating in it occupied both cavities. The superior and posterior part of the pulmonary pleura on both sides, adheres firmly to the costal pleura. The mucous membrane of the trachea is natural, that of the pulmonary tube appeared much engorged, and the superior lobe of the right lung is one consolidated mass, from effusion into its cells. It appears, on cutting into it, to possess the solidity of an indurated liver, with caseo-purulent bodies—tubercles—interspersed throughout its substance. The inferior lobe of the same lung was excessively engorged. The left lung appeared in every respect natural, with the exception of partial sanguineous engorgement. The pericardium is somewhat thickened and adhered firmly to the heart, except towards the apex, where it contained an ounce of serum mixed with curdiform pus. The left ventricle is empty; the auricle contains a small coagulum of blood; the right ventricle is full of dark coagulated blood and the auricle is empty.

THORACIC
CAVITY.

The liver is much enlarged and exceedingly engorged with blood. Its structure otherwise is apparently healthy. The gall bladder contains three drachms of dark green bile. The spleen is very much enlarged and gorged. Both kidneys are enlarged and highly vascular. The cuticular lining of the oesophagus is inflamed and livid. The stomach is contracted and its mucous

ABDOMINAL
CAVITY.

coat inflamed, except towards the pyloric portion where it is smooth and velvety, without corrugations. The mucons membrane of the duodenum is highly inflamed, as is likewise that of the jejunum, ileum, colon and rectum, yet their rugæ are well marked throughout. The urinary bladder contains five ounces of straw colored fluid; its mucous lining is pale.

CRANIAL CAVITY.

Removing the calvarium, one pound of blood escaped from the wounded meningeal vessels. Laying open the dura mater, the ramifying blood vessels on the surface were exceedingly turgid. The dura mater is inflamed and highly vascular; the pia mater is also thickened, and in several points opaque. Numerous bleeding points are observed in the centrum ovale. The substance of the brain is very firm. A little effusion is found in the ventricles; the plexus choroides are rather engorged and studded with small hydatids, one or two of which are as large as garden peas, the others equal millet seeds. The blood vessels on the base of the brain are exceedingly engorged. The cerebellum is very firm and highly vascular. The pia mater of the medulla oblongata is of a dark brown color.

SPINAL CANAL.

On laying open the spinal theca an ounce of sero-sanguineous fluid escaped. The theca is not thickened. The blood vessels both anteriorly and posteriorly are much engorged. The substance, internal color, and organisation of the cord are natural.

RESUME.

THORACIC CAVITY

Contains fluid with masses of curdiform pus. Pleuræ adhered. Mucous membrane of air tubes vascular; right superior lobe consolidated or hepatised and interspersed with caseo-purulent tubercles; inferior lobe greatly engorged. Pericardium adhered to the heart, except at the apex, where serum with curdiform pus

is interposed, right ventricle full of dark blood, the other cavities nearly empty.

Liver enlarged, gorged, otherwise natural. Spleen enlarged and gorged. Kidneys enlarged and vascular. Cuticular lining of œsophagus and mucous coat throughout marked by vascular engorgement. Lining of urinary bladder is pale.

General sanguineous engorgement; cerebral tissue firm; effusion into the ventricles. Pia mater of medulla oblongata slaty.

Theca contained sero-sanguineous fluid; general sanguineous engorgement.

ABDOMINAL
CAVITY.

CRANIAL
CAVITY.

SPINAL
CANAL.

CASE XIII.

PULMONARY AND MESENTERIC TUBERCLES. INTESTINAL
ULCERS. HYDRO-PERICARDIUM.

RAMASAWMY. *Ætatis* 25. Sepoy of the 34th. Regiment Chicacole light infantry. Admitted into the Hospital established for Rangoon sick and wounded, 6th March, 1826.

He was three months ill at Rangoon: the symptoms occurred in the following order. 1. Ulcer on the left foot. 2. it sloughed. 3. Diarrhœa supervened. 4. This assumed the form of dysentery. 5. To this succeeded pains. 6. Heaviness of the body and limbs. 7. Stiffness. 8. Burning of the palms and soles. 9. Numbness of the extremities generally. Now he complains of emaciation, debility, œdema of lower extremities, burning of palms and soles, numbness of the external surface, pains of the limbs and body, and appetite and digestion very bad. Ten thin serous stools daily. Urine scanty and a brown red. Pulse 106, soft and feeble. Tongue very pale and smooth, no fur. Skin thick and dry. Thorax deformed by additional lateral convexity, sounds

dull inferiorly, and there is no respiratory murmur in that part. Superiorly the lungs are traversed. The right less audibly. The heart's action is extensive, dull and obscure. There is no abdominal pain on pressure, but slight fluctuation of fluid. The cellular tissue of the scrotum and penis is distended with effusion.

DIAGNOSIS.

Effusion into the pericardium, thorax, abdomen, and cellular tissue. Functional and nervous derangement. Fluids vitiated. Pulmonary engorgement and incipient tubercles.

R. Pulv. ipecac. Flor. Sulph. āā. gr. v. Nit. Pot. gr. x. Hyd. sub. gr. $\frac{z}{2}$. M. in mel. cum. tinct. digitalis. gt. xv. bis in die sum. Vini Rub. oz. vi. in diem.

10th. There is no improvement in this case, hence I fear the disease has advanced beyond curative means. Cont. med. et. Vinum.

15th. My opinion of this case is unchanged: no improvement. Cont. med. et vin.

20th. No change. Cont. med. et vin.

23d. In the morning found dead in his bed: there was no peculiar change last evening to indicate this event.

AUTOPSY.

THORACIC CAVITY.

Removing the anterior sternal arch, the lungs are but very partially collapsed. The glands near the trachea are enlarged and indurated. The mucous membrane of the larynx and trachea is slightly inflamed and red, which extends over the lining membrane of the air tubes. A considerable quantity of bloody serum is effused into the air cells. Both lungs are enlarged, irregular on their external surfaces and varied in their color. The lower part of the right lung and especially its margin is of a dark purple, with a number of small white hard bodies closely

studded in its substance. In cutting into the substance of the lower part of this lung, a tuberculous cavity is opened, one inch and half by one in breadth, but the pus which it had contained has been expectorated or absorbed, leaving a firm lining, nearly of a cartilaginous consistence, and a light yellow or greenish color. The parenchymatous substance in this part of the lung is closely studded with numerous small hard white tubercles. Sections into the superior lobe of the right lung, discover the parenchyma to be indurated and the air passages partially obliterated; when squeezed it emits freely sanguineous spumous fluid. The entire left lung is in this state, except at its lower margin, which is indurated and of a dark purple color without tubercles. The pericardium contains five ounces of fluid. The heart is of the natural size, its external surface of a light bluish color, with the veins enlarged and turgid. The parietes of the left auricle and ventricle are thickened and contain a little florid blood. Parietes of the right auricle and ventricle are thin and filled with dark uncoagulated blood. The lining membrane of the aorta is natural.

The liver is enlarged, its convex surface smooth, regular, and it has a pale granulated appearance. The inferior surface is similar. The internal structure of the right lobe is firm, granular, and of a yellowish color, except towards its lower margin, where it is of a redder appearance, and breaks down more readily under the fingers. The internal structure of the left lobe is similar to the upper part of the right lobe in appearance. The gall bladder is distended and contains ten drachms of dark viscid bile. The spleen is of the natural size, light colored, and its internal structure natural. The kidneys are of the natural size, their internal structure duller than usual. The mesenteric glands are exceedingly enlarged and indurated and on being cut

**ABDOMINAL
CAVITY.**

into were found to contain cheesy substance either of a light yellow or greenish color like the yolk of a hard boiled egg, slightly moistened. The cuticular lining of the oesophagus is slightly tinged red, and this redness is extended past the cardiac orifice. The muscular coat of the stomach is thickened and contracted. The rugæ are well pronounced, their margins red and inflamed. The superior part of the duodenum has its mucous membrane slightly tinged red. The rugæ are regular and prominent. About eighteen inches from the pyloric orifice, a series of ulcers commence, and extend over the succeeding surface of the intestines, down to the rectum. Some are close together, and no two farther distant than eight or nine inches. The mucous membrane of the duodenum is generally pale without any appearance of inflammation, its rugæ are very prominent but irregular, and the muscular coat of this intestine is thinner than natural: about the commencement of the ileum, the coats of the intestine become thinner, the rugæ indistinct and in some places altogether wanting. At the junction of the ileum, cæcum, and colon, the entire surface of the intestine is ulcerated. The cæcum is thickened and inflamed; then for twelve or eighteen inches downward the intestine is thin, pale, and without rugæ; again it becomes suddenly thickened and inflamed, its rugæ agglutinated by viscid mucus, and irregular, with numerous ulcerations, and diseased points apparently extending to its peritoneal membrane. This appearance is continued down to the anus. The ulcers vary in size, some of them not larger than a pea, while others are two inches in diameter. All of these ulcers have a red granulated appearance and a firm consistence. The urinary bladder contains only a few ounces of straw colored fluid, and its mucous lining is pale.

On removing the scull cap, the dura mater is found thickened, and it adheres extensively to the cerebral hemispheres laterally along the sagittal suture. On cutting it backwards, several ounces of fluid escaped, and fluid is freely interposed between the arachnoid and the pia mater. The minute capillary vessels of the pia mater extended over the convolutions, and dipping down between them, are strongly injected with red blood. There are sundry adhesions between the arachnoid membrane and the pia mater over the corpus callosum, which is covered with small white bodies resembling curdled milk. Water is freely effused into both lateral ventricles. The choroid plexus on both sides is blanched and contains several small hydatids, from the size of a mustard seed downwards. The cortical substance is rather pale; the medullary natural. There are a few minute bleeding points in the centrum ovale. The consistence of the cerebrum and cerebellum is natural. The vessels of the pia mater extending over the medulla oblongata are enlarged, and injected with dark blood. The pia mater enveloping the medulla oblongata superiorly, is of the dirty dark color frequently observed in cases of exhaustion and cholera.

CRANIAL
CANAL.

On removing the anterior arch of the vertebral column and also the spinal cord in its theca, a considerable quantity of gelatinized serum is observed injected into the loose cellular tissue external to the spinal theca, from the sacrum to the 1st. cervical vertebra. There is a slight effusion of serum into the spinal theca. The dura mater of the cord is elastic and internally of a silvery white color. On laying it open anteriorly and posteriorly, the vessels on the cord's anterior surface are quite empty; but on the posterior surface, the vessels accompanying the nerves of the cauda equina are slightly injected with red blood. The substance of the chord superiorly is firm; inferiorly soft and pulpy.

SPINAL
CAVITY.

RESUME.

THORACIC
CAVITY.

Lungs partially collapsed: their glands enlarged; mucons lining vascular; contain fluid; right inferiorly, and the left generally tuberculated. Oz. v. of fluid in the pericardium. Left cavities of the heart contain florid blood; parietes thickened; right thin and contain uncoagulated blood. Interior of aorta natural.

ABDOMINAL
CAVITY.

The liver enlarged and pale, mesenteric glands greatly enlarged and transformed into caseous tubercles. Cuticular and mucous lining of digestive surface vascular; and very extensive ulceration.

CRANIAL
CAVITY.

Dura mater thickened, adherent. Effusion. Capillary engorgement. Arachnoid opaque, adherent. Hydatids in the ventricles. Pia mater of medulla oblongata slaty.

SPINAL
CANAL.

The lining tissue injected with semi-gelatinised fluid. Effusion into the theca. Equinal vessels slightly injected. Cord superiorly firm; inferiorly soft.

CASE. XIV.

PNEUMO-THORAX; HYDRO-THORAX, WITH PULMONARY TUBERCLES. HEPATISED LUNG; AND HONEY COMB INTESTINAL ULCERS.

SUNNASSEE. *Ætatis* 22. Sepoy of the 9th. Regiment Native Infantry. Admitted into the Hospital, established for the Rangoon sick and wounded. 6th. September 1825.

He was nine months ill at Rangoon with a burning sensation in the feet. Now he is emaciated and complains of debility—burning from the knee downward—pulse quick and full—

tongue excited—skin natural—appetite and digestion imperfect—bowels regular—restlessness without any apparent cause—thorax deformed. Lungs imperfectly traversed—heart's action extensive, dull, and powerful. No abdominal pain on pressure.

Pulmonary tubercles and engorgement, with hydro-thorax and hydro-pericardium.

DIAGNOSIS.

R. Pulv. Ipecac. gr. iij. bis in die. Infricr. super lumbos ungt. Hydrarg. Fort. Scr. i. omni die.

1st. December. He complains still of a burning sensation in the lower extremities; dyspepsia; irregular accessions of remittent; emaciation; numbness of the lower extremities. Skin is tuberculated. Cont. Pulv. Ipecac. Ungt. Sulph. p. a.

1st. January 1826. Still emaciated, very weak. Cont. med. Vin. Rub. oz. vj. in die.

1st. February. Extreme emaciation; cough; debility; face puffed. Cont. Vir. rub. Pulv. Antiscorb. Alter. bis in die. Flannels.

1st March. Debility; Pains; cough; retrograding.

Pulmonary tubercles, and mesenteric obstructions.

DIAGNOSIS.

Cont. Pulv. Semel in die.

20th. No improvement: retrogrades: refuses wine, which, he says, heats his body; hence it is discontinued Cont. Pulv.

25th. Still retrogrades. Cont. med.

28th. Expired at 5 P. M.

AUTOPSY.

The sternal part of the ribs, and sternum were removed with difficulty, owing to very firm adhesions, formed by the

THORACIC
CAVITY.

right pleura; and in their removal, a large volume of air, extricated into the right thoracic cavity, escaped. Three pints of serous fluid were removed from this cavity, and ten ounces from the left. The serous effusion and extrication of air into the right thoracic cavity forced the liver partially from the right towards the left side of the abdomen. The sternal arch has inferiorly on the right, a mass of false membranes adherent, which connected it with the lung. The right lung does not collapse; it is of a dull pale color, regular and firm. The left lung does not collapse; it is extremely large, and its vessels engorged with blood; it is lumpy or knotty, and, like the right, tuberculated; but the tubercles are not so large. This lung is extremely heavy, indicating œdema. Laying open the trachea arteria, the mucous membrane lining the canal superiorly is pale, but descending, it's vessels become much injected with blood. The mucous lining of the air tubes on the right, is of a dull pale color, and not injected with blood. The ramifications of the bronchial tubes are filled with spumous fluid on the left side. A transverse section of the superior left lobe exposes the parenchymatous substance hepatised, of the consistence and color of the liver, studded with tubercles of a purulent white color, and varying in consistence. Superiorly there are some small cavities, with distinct white lining. The superior lobe of the right lung is one entire mass of tubercular disease. Inferiorly the parenchymatous substance is entirely hepatised, and small white tubercles are scattered throughout its extent. Three ounces of fluid in the pericardium. The heart is diminished, corresponding with the general emaciation: its parietes pale and lax, its exterior surface blanched.

ABDOMINAL CAVITY

Contained one quart of serous fluid. The liver is of the natural size, rather flaccid. Structural appearance granular. About six drachms of dark viscid bile in the gall bladder. Volume of the spleen diminished, very flaccid, and of a pale dirty

slate color. Volume of the kidneys diminished, substance flaccid, internal color dark. Cuticular lining of the œsophagus, until within an inch of its termination natural and silvery: here a great number of minute vessels are injected with blood, which, though external to this membrane, give it the appearance of being quite red. This red color is easily chased by pressure from one part to another. Within this inflamed part, there are great numbers of little enlarged glands or tubercles, the size of millet seeds. The stomach is contracted; rugæ of the mucous membrane well pronounced and pale. The mucous membrane after passing the pylorus is of a dirty color, thin, and there are no rugæ until some inches below the opening of the ductus communis. A little superior to their commencement there are transverse, irregular, dull red streaks, which are continued throughout the extent of the duodenum. The mucous membrane of the jejunum is thin, with some red streaks, inferiorly of a dirty dark color. That of the ileum superiorly is very thin and of a dark color, whilst inferiorly it is also thin, with minute rugæ, of a dark or dull pale red, and several honey comb ulcers. Some parts have scarcely any rugæ, some none. Close to the cæcum there is a very large longitudinal honey comb ulcer. The cæcum is very much contracted. The lining of the colon is very thin, in parts quite pale, in others the venous trunks and capillaries are both injected. The urinary bladder is nearly empty; its lining membrane pale.

On removing the calvarium, the vessels ramifying over and between the convolutions are injected. On drawing the brain upwards and backwards and looking into the foramen magnum, over the pons varolii, the spinal theca is seen filled with fluid, and the black or dark color frequently noticed on the anterior and lateral surfaces of the pia mater enveloping the medulla

CRANIAL
CAVITY.

oblongata, is here observed. Transverse sections of the hemispheres shew the cortical substance well marked. Blood presented itself in points of the centrum ovale, unusually watery. Slight effusion into the posterior cornua of both lateral ventricles: one large hydatid in each, and numerous small ones. The membrane extended posteriorly over the corpora quadrigemina has its vessels extremely injected with blood. The envelope of the cerebellum, like that of the cerebrum, has its vessels also greatly engorged.

SPINAL
CANAL.

A little gelatinised serum is effused into the cellular tissue posteriorly through the course of the lumbar vertebræ external to the theca. Laying open the theca, the vessels on the posterior surface of the cord are unusually small. The Pia mater extended over the cord, opposite the 10th and 11th dorsal vertebræ, has a dark dull appearance. On removing this membrane, the cord is found in part unusually soft and disorganized, which is not the case in other points. One large vessel is observed accompanying the superior fasciculus of the sacral nerves on the right side. Anteriorly there is no remarkable appearance, except the dark color of the pia mater, on the superior part of the cord, which is especially limited to the left side. The equinal nerves have generally a dull bluish blanched appearance.

RESUME'.

THORACIC
CAVITY.

Firm adhesion of the pleura, which separated on the right. Gas escaped largely. 3 pints of fluid in the right, oz. x. in the left cavity. Lungs firm, irregular, not collapsed, tuberculated, left œdematous and partially hepatised. Oz. ij of fluid in the pericardium.

ABDOMINAL
CAVITY

Contained oz. xxxij. of fluid. Liver flaccid. Spleen diminished and pale. Kidneys diminished and dark. Cuticular and mu-

cous lining of œsophagus irregularly marked by traces of preternatural vascularity and honey comb ulcers.

Capillary injection. Effusion. Pia mater of medulla oblongata slaty. Cortical tissue well marked; and hydatids in the ventricles.

CRANIAL
CAVITY.

Lining tissue injected with semi-gelatinised fluid. Pia mater at the 10th. and 11th. vertebra dark on the left side, and the cord here partially soft. Equinal nerves blanched.

SPINAL
CANAL.

CASE XV.

PULMONARY TUBERCLES, INTESTINAL ULCERS, AND EFFUSION INTO THE CAVITIES

MAHOMED ISSOPH. *Ætatis* 46. Subadar of the 26th. Regiment Native Infantry. Admitted into the Hospital established for Rangoon sick and wounded, 28th. January 1826.

He was five months ill at Rangoon: his complaints occurred in the following order. 1. Dysentery. 2. Swelling of the lower extremities and body. 3. Pains of the joints and limbs. 4. Burning sensation. 5. Dyspnœa. 6. General wasting and debility. Now he complains of emaciation—debility—œdema—dyspnœa—burning pains. Partial paralysis of the lower extremities. Appetite and digestion bad. Bowels open. Urine natural. Cannot sleep. Pulse 60—volume natural. Tongue natural, slight fur. Skin affected with dark spots. Thorax deformed, especially to the left, sounds well. Right lung very feebly and imperfectly traversed. Left inferiorly feebly traversed. Heart's action dull. Pain on pressure over the ascending and descending colon.

Pulmonary engorgement, tubercles and remains of hydro-pericardium: chronic disease of intestinal mucous membrane.

DIAGNOSIS.

Sumat. Pulv. antiscorb. alterat. bis in die. Vin. Rub. oz. vj. per diem.

1st. February. No improvement. Cont. med.

15th. Much the same; œdema dyspnœa &c. stationary. Cont. Pulv. et. vin.

1st. March. Belly swells. Debility. Cont. med.

15th. Do. the same. Cont. Med.

1st. April. No change. Cont. Med.

15th. Do. No improvement. Cont. Pulv. et vin.

1st. May. The same. Cont. Med. 15th. Cont. Med.

1st. June. No improvement. From 15 to 20 sero-sanguineous evacuations in the 24 hours, occasional griping pains above the umbilicus. Extreme emaciation and debility. Pulse 100 small. Tongue scarlet red with scars and sulci. Skin warm. Constant thirst. Omitt. Vinum et med. Habt. Pulv. Ipecac dr. j. hora somni omni nocte in mel. Jejuno ventriculo. Strict abstinence from solid food. Sugar and warm water, for common drink gum or toast and water. No solid food.

5th. Pain abated. Stools less frequent. Evacuations fœco-muculent; abdomen tumid, but fluctuation of fluid. The legs and feet œdematous; emaciation and debility continue. Thirst abated. Cont. med,

15th. Debility increased; extremities more œdematous. Bowels still loose, five or six sero-fœculent dejections daily. Pulse scarcely cognizable at the wrist. Tongue red with white fur posteriorly. Skin cold. Pulv. Ipecac. gr. vj. ter in die. Vini Rub. oz. vj. per diem.

16th. Debility continues increasing. Bowels the same as last reported, Pulse not cognizable, Cont. Pulv. Vini rub. oz. viij. in diem. 17th. Much the same as yesterday. Cont. Med.

18th. Obviously sinking. Cont. Med.

Expired at 2 A. M.

AUTOPSY.

Removing the anterior sternal arch, effused serum is found in both lateral cavities. The right contained twelve ounces and the left ten. The lungs are partially collapsed. The right lung is engorged, with minute tubercles in many parts of the superior lobe giving its substance a knotty or lumpy feel. The tubercular cells, mostly contain semi-cartilaginous substance. The left lung is not tuberculated, except at the extremity of the superior lobe, where the size of a walnut is engorged and tuberculated; one of those tubercles contained a substance nearly dry, resembling yellowish chalk or old cheese. The mucous membrane of the larynx is pale, and continues so through the trachea and bronchial tubes, as far as they can be traced. Very little blood in the lungs. The pericardium contained five ounces of fluid. The heart is very much diminished, corresponding with the general emaciation. Structure of its parietes pale and soft. The left auricle contained a small clot, the size of a hazel-nut. The right cavities are empty.

THORAGIC
CAVITY.

On opening the abdominal cavity the intestinal peritoneum is dull, milky, and thickened. The fat of the omentum absorbed. General appearance of the intestines pale, and about twenty ounces of serous fluid lay between their convolutions. In removing the abdominal viscera, some semi-gelatinous serum is found attached to the peritoneum in different parts, especially over the psoas muscles. Their structural tissue was pale and readily tore with the finger, or it was removed by the handle of a scalpel, as in cases of muscular tissue partially destroyed by sloughing. The liver is of the natural size, its external surface is a dark red, but its internal structure rather pale, otherwise apparently natural. The gall bladder contained six drachms of light green viscid bile. The spleen is diminished, corresponding with the general emaciation, its internal structure granular, tears in

ABDOMINAL
CAVITY.

the usual manner, and is of a purple color. The kidneys are of the usual size, their structure throughout pale. Cuticular lining of the œsophagus has lost it's smooth silvery appearance, and is a dark yellow: terminates as usual abruptly in the cardiac orifice. The mucous membrane of the stomach is rather more vascular than natural in the small curvature, where the rugæ are well developed, and this membrane throughout has a decided yellow color; indicating that bile had constantly regurgitated and lay in the stomach. The mucous membrane of the duodenum superiorly, is thin and strongly tinged with bile for an inch above and below the opening of the ducts. The rugæ then commence, well developed and generally pale, with an occasional slight blush. In the ileum the rugæ commence to be irregular, and honey comb ulcers appear. The surface however is pale till about the middle, where a blush is frequently observed. The mucous membrane becomes more thin, the rugæ still less regular and smaller: honey comb ulcers are more frequent, and their edges more elevated. Approaching the cæcum, the surface becomes generally of a dark red, with one large honey comb ulcer, the surface of which is white. The entire internal surface of the cæcum is one continuous ulcer. Proceeding along the course of the ascending colon and the arch, the same ulcerated appearance continues. The descending colon and sigmoid flexure appear to have been equally diseased with the parts before mentioned, but have partly healed. A semi-cartilaginous coat is interposed between the mucous muscular coats. This thickened condition of the intestinal tube, accounts for the hollow noise heard, in the evacuation of wind and fæces, in this and similar cases as if they passed (and which they really do,) through, and from a tube, too large and firm to aid in their expulsion by pressure, which only takes place in a

more natural state. The lining of the urinary bladder pale.

In this case, the two great cavities and the spinal canal were examined before the heart was opened.

On removing the skull cap and dura mater, there is a general pale appearance of the cerebral hemispheres. The tunica arachnoidea has lost it's smooth polished appearance, and in most parts is very milky. The vessels ramifying over the convolutions generally empty. General appearance at the base of the brain is pale and blanched. The blood vessels are empty. The pia mater on the external surface of the cerebrum and cerebellum is pale, but that which dips down between the anterior and middle lobes, and between the convolutions is pale on the left side, but injected on the right: probably owing to gravitation. The nerves generally are extremely small. The pia mater covering the superior part of the junction of the optic nerves, is darker than that of the anterior and lateral parts of the cord. Horizontal section of the hemispheres, shews the cortical substance pale and diminished: very few bleeding points in the centrum ovale. The medullary substance is comparatively very white and soft. The cineritious substance of the corpora striata pale. The choroid plexus on both sides, blanched, and contains sundry hydatids, distended by clear colorless fluid. The cerebellum is found extremely soft.

CRANIAL
CAVITY.

On removing the cord, enveloped with its theca, a quantity of fluid is observed fluctuating in the latter, and external to it, false membranes of loose or semi-gelatinous texture, are connected with the theca in all directions, and with the surrounding tissue of the cavity. On elevating the head to open the cranium, after having removed the spinal cord, eight ounces of serous fluid escaped through the foramen magnum into the spinal canal, and serous fluid had previously been observed,

SPINAL
CANAL.

traversing the theca, and passing by the foramen magnum into the head. Laying open the spinal dura mater on the anterior surface, there is a general blanched appearance. There are some slight adhesions of the dura mater to the tunica arachnoidea; of the vascular system, a few capillaries only are observable, transmitted with the inferior dorsal and superior lumbar nerves. The capillaries accompanying the equinal nerves are well marked and large. The dirty dark color of the pia mater, noticed on the lateral and anterior parts of the medulla oblongata, in cases of cholera and others of extreme debility, is here well pronounced; progressively decending to the cervical nerves, it becomes lighter, and continues so to the second dorsal, where it again becomes progressively dark to the first lumbar: and at this part it is equally dark with the superior portion, and continues so till it's extremity. But the pia mater sent off with the nerves is not so discolored, and the pia mater of that part of the cord progressively decreasing in the formation of equinal nerves, and enveloped by those ramifications, is only discolored in a slight degree. Laying open the spinal dura mater posteriorly, there are some adhesions between the arachnoid tunic and theca of the cord. The surface generally has a blanched appearance. The dark color of the pia mater is very slight. The capillary vessels are very minute superiorly, but from the superior dorsal nerves the vessels begin to enlarge, and continue progressively increasing to the extremity of the cord. The tunica arachnoidea is inferiorly considerably thickened by false membrane. The theca throughout is pale, except at the exits of the equinal nerves, which are marked each by a circular blush. No unusual appearance is observed in the structure, consistence or color of the cordiform mass.

RESUME'.

Right contained oz. xii of fluid the left oz. x. Right lung contains semi-cartilaginous tubercles; left much less so. Pericardium contained oz. v. of fluid.

THORACIC
CAVITY

Contained oz. xx. of fluid and several flakes of coagulated serum like jelly or amber. Peritoneum milky, organization of psoas mucle destroyed, liver externally dark red, internally pale, size natural; spleen diminished, natural. Kidnies pale. Cuticular lining of œsophagus and superior part of the digestive mucous lining are stained yellow; the latter is vascular, in part there are honey comb ulcers, and progressively, increased traces of inflammation with greatly aggravated ulceration.

ABDOMINAL
CAVITY

Arachnoid milky, pia mater over the convolutions pale, between them on the right, vascular. Effusion. Pia mater of optic nerves and medulla oblongata slaty. Cortical tissue diminished and pale, medullary soft and white. Corpora striata pale, chorioid plexus blanched and contains hydatids.

CRANIAL
CAVITY.

Semi-gelatinous fluid injected into the loose tissue, forming false membranes external to the theca. Effusion into it. Pia mater blanched superiorly, and inferiorly slaty. Arachnoid adhered, milky. Equinal nerves blanched and vascular.

SPINAL
CANAL.

CASE XVI.

EFFUSION INTO THE CAVITIES. PULMONARY TUBERCLES,
AND INTESTINAL ULCERS,

SHAIK MAHOMED. *Ætatis* 30. Sepoy of the 8th. Regiment Native Infantry. Admitted into the Hospital established for the Rangoon sick and wounded, 3d. May 1826.

He was eight months ill at Prome; his complaint succeeded

in the following order. 1. Dysentery followed by burning. 2 Stiffness. 3. Heaviness. 4. Numbness. 5. Eruptions 6 Anorexia. Now he complains of 1. 2. 3. 4. 5. There is great emaciation and debility. Appetite and digestion bad. Bowels regular. Urine scanty and red, cannot sleep. Pulse 120, soft and feeble. Tongue slight fur and marginal sulci. Skin studded with eruptions and speckled. Thorax deformed, sounds well. Lungs imperfectly traversed on the right. Heart's action too large and dull. No abdominal pain on pressure.

DIAGNOSIS

Pulmonary tubercles and engorgement, vitiated fluids. Deranged capillary action and digestion.

R. Pulv. ipecac. flor sulphur āā gr. v bis in die. Habeat vini. rub. oz. vi in diem. No change till the 8th. June, dysenteric symptoms returned, five or six sero-muculent dejections daily: œdema of the legs and feet, soon became general. He continued taking air and exercise until the 4th of June. Alteratives, diuretics, stimulants, flannels, port wine, soup and sago, were of no advantage. The pulmonary disease became aggravated. Diarrhœa and exhaustion ushered in death, and he expired at 1. P. M. 23d. June.

AUTOPSY.

THORACIC CAVITY.

Removing the sternal arch was found difficult, from extensive adhesions, and strongly connected false membranes on both sides, with semi-gelatinised serous fluid interspersed, and these extended to the posterior surface. Eight ounces of colorless fluid was found in the right thoracic cavity. The Lungs were too much engorged, and consolidated by tuberculation to admit of collapse. The right lung especially was one congeries of cavernous substance, with great and small tubercles, largely and intimately interspersed through it's tissue. Their contents are a sanguineo purulent fluid, with irregular masses of a dull white

substance, in consistence and texture, slightly more firm than the yolk of a roasted egg. The irregular masses projected into cavities, or depressions on the inner surface of each tuberculous cavity. This lung throughout it's extent has no healthy part. The anterior portion of the left lung, is very extensively and minutely studded with small yellow cordiform tubercles. It's posterior surface alone had served the purposes of respiration. Mucous membrane lining the trachea pale, and this pale color is continued through it's ramifications, as far as they can be traced. The pericardium contained seven ounces of fluid. Heart diminished, corresponding with the emaciation of the subject. Both auricles are filled with coagulated blood. Both ventricles empty. Parietes pale and flaccid. Internal color of the aorta natural.

Laid open. The fat of the omentum absorbed. Intestinal surface generally pale, and the tube contracted throughout its whole extent. On the lower part of the ileum several spots appeared of an oval shape $\frac{3}{4}$ of an inch in length. The surface slightly raised, and dotted with red and white points; some rather large. The cæcum very much contracted, not larger than a hen's egg, and the large intestines cordiform. About a pint of colorless serum lay between the intestinal convolutions. The urinary bladder is empty. Liver of the natural size, the right lobe adhered very extensively to the diaphragm, it's structure appears natural, yellow and granular, and it contains little blood. The gall bladder contains three drachms of dark viscid bile. The spleen is diminished, of the usual dark dull purple color: containing tubercles, one in it's superior, and one in it's inferior extremity; each has a distinct, well organized, semi-cartilaginous envelope, and contents resemble prepared chalk, moistened

ABDOMINAL
CAVITY

with very little water, or arid cerebral medullary substance. The envelopes are removed with difficulty from the surrounding tuberculous mass: many vessels apparently running into the substance. The kidneys are greatly diminished, their substance pale throughout. The mesenteric glands are enlarged; they are easily removed from their envelopes, and still preserve their glandular appearance. The cuticular lining of the oesophagus is of a dull pale color, and terminates abruptly at the cardiac orifice. Mucous membrane of the large curvature of the stomach well corrugated, with a slight blush. That of the small curvature pale and nearly smooth. Rugæ of the duodenum well marked, and towards its termination some ulcers running transversely, with irritable margins are observed. The surface of the jejunum is a dark pale, rugæ well developed with a few ulcers similar to those mentioned; at the commencement of the ileum, another regular ulcer is found very deep, with thick elevated margins. Externally and corresponding with the internal ulcer, the external surface has a number of minute red and white elevated points. These ulcers progressively increase in number and extent. The external surface uniformly exhibiting the appearance of elevations, generally white but sometimes red and they form the spots mentioned on the external intestinal surface; approaching the cæcum, the frequency and extent of these ulcers, become greatly increased. The cæco-ileac valve, appears situated in the centre of one enormous ulcer. The ascending colon, the arch, the descending colon and the rectum, all contained many of these ulcerations, apparently declining in severity towards the rectum, and hence, the cæcum here, was the centre of ulcerative disease. A semi-cartilaginous coat is here interposed, between the mucous and muscular membranes of the rectum, but much

more slender than observed in many other cases. Internal surface of the urinary bladder is pale.

The body was placed in a horizontal position, and the calvarium removed, in which operation the dura mater was wounded near the temples. Ten drachms of colorless serous fluid flowed from these wounds. The dura mater removed superiorly from the hemispheres, serous fluid escaped very freely. The tunica arachnoidea extended over the hemispheres contained a very considerable quantity of serous fluid, which elevated this membrane considerably above the cerebral convolutions. In those parts where the quantity of effused fluid was greatest, a bluish appearance was presented, and this appearance was more especially confined to the superior longitudinal margin of both hemispheres; and progressively decreasing on the lateral portions of the cerebral mass, and there, the pia mater was blanched and pale. On drawing upward and backward the anterior and middle cerebral lobes, for the removal of the mass, and looking downwards into the foramen magnum over the pons varolii, serous fluid was observed filling the spinal theca. On removal of the cerebral mass, three ounces of fluid was removed from the base of the cranium. Six ounces of serous fluid, was collected in this operation. Placing the cerebral mass on a table, the fluid confined between the tunica arachnoidea and pia mater, disappeared in ten minutes, but on pressing the brain, the fluid immediately rises from between the convolutions, and again elevates the arachnoid membrane. The substance of the cerebral mass is firm. Sections through the centrum ovale, shew the cineritious substance well marked, the sulci between the convolutions enter deeply. Bleeding points in the centrum ovale are rather minute. Plexus choroides on both sides, extremely blan-

CRANIAL
CAVITY.

ched, pale, and their vessels contracted. The pia mater extended posteriorly over the corpora quadrigemina, crura cerebri and cerebelli is pale. The substance of the cerebellum is very soft; an unusual number of minute foraminæ appeared passing into the pons varolii and crura cerebri. On examination of the skull cap, a small part at the superior angle of the occipital bone, also the superior posterior angles of each parietal bone, extending in the course of the longitudinal sinus, and the frontal bone, at the anterior part of each temporal angle internally, had lost their smooth uniform surface and become spongy and reticulated.

SPINAL CANAL.

Laying open the spinal canal, the bodies of the vertebra are extremely spongy, and readily broke, which made the operation more tedious. Considerable quantities of false membrane, dirty colored fat, and semi-gelatinous serous fluid, are interposed between the theca and it's surrounding canal. The remains of serous fluid within the theca, is observed, previous to its removal from the canal. Laying open the spinal dura mater posteriorly. The pia mater is dark superiorly as in cases of cholera or great exhaustion. From the first to the last dorsal vertebra it becomes rather lighter; and thence till it sinks partially enveloped by its equinal ramifications, it becomes equally dark as at its superior portion. The anterior and lateral surfaces are very dark superiorly, becoming lighter progressively downward; but they do not regain the natural color. The vessels on both surfaces are small and pale, excepting those accompanying the equinal nerves, which are well marked. There is a general blanched appearance of the membranes of the spinal cord and nerves, and an unusual quantity of fluid between the equinal nerves. The organization, color, and consistence of the cord appear natural.

RESUME'.

Pleura adhered by voluminous false membranes, and semi-gelatinous fluid. Oz. viij. of serum in the right cavity. Lungs tuberculated not collapsed. Mucous membrane pale. Pericardium contained oz. viij. of fluid; both auricles filled with coagulated blood; both ventricles empty.

THORACIC
CAVITY.

Peritoneum pale, Intestinal tube contracted, some spots on the ileum. Oz. xvj. of colorless fluid in the general cavity. Liver natural size, adhered, yellow, granular, spleen diminished and tuberculated. Kidneys diminished and pale. Mesenteric glands enlarged. Traces of inflammation in the cuticular lining and the intestinal mucous membrane, the latter very extensively ulcerated.

ABDOMINAL
CAVITY.

Effusion oz. vj. Arachnoid milky. Cerebral tissue firm. Cortical well marked; choroid plexus blanched; cerebellum soft.

CRANIAL
CAVITY.

Contains much false membrane and semi-gelatinous fluid in the theca. Pia mater slaty; surfaces and equinal nerves blanched.

SPINAL
CANAL

CASE XVII.

PULMONARY TUBERCLES, AND RUPTURE. INTESTINAL
TUBERCLES AND ULCERS. EFFUSION INTO THE
CAVITIES.

SHAIK EBRAM. Sepoy *Ætatis* 25. of the 22nd. Regiment Native Infantry. Admitted into the Hospital established for the Rangoon sick and wounded, 14th. January 1826.

He was five months ill at Rangoon, the symptoms succeeded in the following order 1. Slight wounds produced slough-

ing ulcers. 2. Spike wound increased the ulcers of left foot greatly, now, the ulcer is extensive but healing. There is great emaciation, debility, burning sensation of the surface on the extremities. Appetite and digestion bad. Bowels regular. Urine natural. Cannot sleep from burning sensation and restlessness. Pulse 150 small and feeble. Tongue clean and rather pale, with deep irregular sulci. Skin very generally affected with eruptions and dark colored spots; thorax much deformed on both sides, sounds well. Right side traversed with tinkling, left imperfectly traversed. Heart's action too extensive and strong, from irritation and pressure. No abdominal pain on pressure.

DIAGNOSIS

Pulmonary engorgement; right contains or is threatened with tubercles. Nervous derangement.

Ungt. sulph p. a. app. Pulv. ipecac. gr. iij. 3 tia. q. q. hora. There was no improvement in his general health, yet the ulcer healed on the 30th. June. Diarrhœa supervened on the 15th. passing 7. or 8. muculent dejections daily with tenesmus and griping pains about the umbilicus. Nocturnal hectic, severe cough and copious muco-purulent expectoration succeeded. Alteratives. Expectorants. Stimulants. Vescicants. Port wine. Soup, Sago, and animal Jelly were used, but were of no advantage. Effusion took place into the thoracic cavities, the pulmonic disease increased, and he Expired at 1 A. M. 3d. July 1826.

AUTOPSY.

THORACIC CAVITY.

The right cavity contained a quart of sero-purulent fluids, with abundant false membranes and agglutinated flakes of purulent substance between the costal and pulmonic pleura. The

lung is extremely diminished, its inferior lobe entirely hepatized, and connected with the superior by a thick purulent false membrane. The superior lobe is chiefly excavated by one immense tubercle, which had ruptured anteriorly. This excavation appears by healing to have acquired a kind of mucous surface or lining to its interior, of fleshy or red color and quite smooth. Smaller tubercles however are found inferiorly, having their cavities lined with a yellow flocculent adherent membrane. The left thoracic cavity contained a pint of serous fluid; its superior pulmonary lobe is extremely engorged, firm, and tuberculated. One excavation in the superior angle contains four ounces of dirty, dark colored, purulent fluid. The inferior lobe is too much engorged to admit of collapse; yet it gives crepitus to the fingers. The mucous membrane of the trachea is pale, and so is that of its ramifications as far as they can be traced. There is a small quantity of fluid in the pericardium. The external surface of the heart is blanched; its volume diminished, corresponding with the general emaciation. A little dark colored blood in the right auricle, attached to a serous coagulation of the right ventricle. A little dark colored blood filled up the left ventricle. The left auricle empty. Parietes of the heart pale and flaccid.

One quart of serous fluid was removed from the abdominal cavity, and a little remained between the intestinal convolutions. The general appearance of the intestines is pale. Oval, elevated, colorless spots, about the size of a bean, observed on the intestinal peritoneum, with minutely red and white elevated points on their surface. The Liver is rather enlarged and feels particularly soft, giving the idea of its containing ulcerated cavities in its substance; but its sections are light yellow and granular, throughout very spongy, but no abscess or other indica-

ABDOMINAL
CAVITY.

tion of previous disease. The spleen is natural in size, its structure and organization are also natural, the color much lighter than usual, sections of both kidneys are extremely vascular. The cuticular lining of the oesophagus is natural, terminating abruptly at the cardiac orifice. The mucous coat of the stomach is well corrugated and healthy. The rugæ of the duodenum are pale and well developed. In the jejunum they are less strongly marked; progressively, the mucous coat becomes much thinner and in the ileum rugæ are irregular; pale, colorless patches are found superiorly, the surrounding mucous membrane having a general blush. Descending, extensive honey comb ulcers are also found, and the mucous coat becomes much engorged in some parts, and pale in others. The mucous membrane in some spots of an oblong form, an inch in length by half an inch in breadth, becomes very much thickened, and in the centre of this patch, three or four deep ulcers are situated. The thickened part already spoken of, is very vascular, and on examination the small deep ulcers are found extending down to the muscular coat: some tubercles about the size of a pin's head are found in the mucous coat, containing a thick purulent substance. Progressively, the morbid thickening with small deep ulcers, increases in extent and frequency. The rugæ cease, and the mucous coat becomes partly disorganised. The thickened patches giving place to ulceration become very large, extending to four inches by three-quarters of an inch, the entire surface of which is in an ill conditioned, inactive, chronic stage of ulceration. The surface of the ulcer is generally pale, although there is a considerably increased vascular condition of the thickened patch. On the peritoneal surface of the intestine corresponding with the patches, there are frequently but not invariably, some mi-

nute acuminate elevations. Small deepened ulcers have been mentioned, as situate in the surface of the large ulcer, which covers the extent of the thickened patch, and tubercles have also been noticed as situate in the mucous membrane, containing a thick purulent mass. These tubercles become progressively more numerous, and some of the thickened patches in which the disease appears less advanced, contain some tubercles of the same description, but considerably larger; and hence it is clear, that the small deep cavernous ulcers, situated within the larger ulcerated patches, mark the site of previous tubercles. The severity and frequency of the ulcers progressively increase towards the cæcum, and also the frequency and size of the tubercles, without any other change of character, than that of the ulcerated surfaces assimilating more distinctly with the character of an ill conditioned, irregular, venereal, honey comb ulcer, on the external surface of the body. Close to the cæco-ileac valve, there is an immense ulcer of this character, and many deep scars are visible in the internal surface of the cæcum, which has a general blush over its interior, that extends till near the arch of the colon; thence till its extremity, the mucous membrane is pale, but throughout its extent it is closely studded with deep and extensive scars. The apparent interposition of a semi-cartilaginous coat, between the mucous and muscular coats, is in this instance extremely well marked. The urinary bladder is nearly empty and its lining tissue pale, except at the opening of the ureters which are marked by a circular blush.

Removing the skull cap without wounding the dura mater, and having opened anteriorly the spinal canal, serum is seen distending the theca largely. The ramifications of the equinal nerves are distinctly observed through the theca, surrounded

CRANIAL
CAVITY.

by fluid. Removing the cerebral dura mater, the arachnoid membrane is elevated in many points by air bubbles, some of which are in fine transparent vessels, others merely confined under the arachnoid; but the surface does not appear moist in excess, as if effusion had prevailed in this part. Drawing the anterior and middle lobes upwards and backwards for the removal of the brain, fluid is observed largely (looking over the pons varolii) in the spinal theca, and which begins to pass over the tentorium. The cerebral hemispheres exteriorly, have not the pale appearance indicating the presence of previous effusion, but the quantity of air confined under the arachnoid membrane, is sufficient to give crepitus on drawing the fingers over them. The vascular system of the pia mater, over the hemispheres and the base of the brain is natural; horizontal sections of the hemispheres parallel with the corpus callosum, shew very few bleeding points in the centrum ovale posteriorly. Anteriorly, they are still more minute and less numerous. Serous effusion into both lateral ventricles. The choroid plexus on both sides blanched and pale, its substance studded with minute hydatids, and the central vessels of each plexus very much enlarged. The pia mater extended over the corpora quadrigemina and crura cerebri is unusually thickened and indurated. The cortical substance of the cerebrum is well marked, but both cortical and medullary substance of cerebrum and cerebellum are extremely soft, particularly the latter, which is perfectly pulpy and its cineritious substance gelatinous. The envelope of the medulla oblongata anteriorly and laterally, is of a dirty dark color, as observed in cases of great exhaustion. The vascular appearances at the base of the brain, correspond with the superior surface.

External to the theca posteriorly, false membranes and semi-gelatinous fluid are freely interposed between the theca and canal, adhering on all sides. Fluid removed from the spinal theca, amounts to two ounces. Laying open the spinal theca anteriorly, the interior surfaces are blanched and pale, two very large blood vessels accompany the first, and one the second fasciculus of right equinal nerves, and one very large blood vessel accompanies the last fasciculus of left lumbar nerves; these vessels are all singularly large. The pia mater or envelop of the cord, superiorly, laterally, and anteriorly, is of a dirty dark color, corresponding with that of the medulla oblongata; but this appearance terminates in the extent of two inches. Laying open the theca posteriorly, superiorly, the surfaces have a blanched appearance; inferiorly, all the tortuous vessels are engorged, and one remarkably large branch runs out, accompanying the first fasciculus of right equinal nerves. The vessels on this surface inferiorly, are so numerous, large and engorged, that the last six inches of its length, have the appearance of being covered over with their dark tortuous convolutions. The consistence, color, and organization of the cord are apparently natural. The dark color mentioned on its superior part, is as distinctly observed on its inferior portion.

SPINAL
CANAL.

RESUME.

The right contained a quart of sero-purulent fluid, with false membranes and purulent flakes; that lung diminished, hepatised and excavated. Left cavity contained a pint of serous fluid. The lung engorged, firm and tuberculated. Dark blood in right auricle attached to a fibrinous coagulum in the right ventricle. Dark blood filling left ventricle, left auricle empty.

THORACIC
CAVITY

Contained one quart of serous fluid; peritoneum pale except some spots on the intestinal covering. Liver enlarged and very

ABDOMINAL
CAVITY

soft; surfaces of its sections a light yellow, its tissue spongy. Spleen light colored. Kidneys very vascular. Intestinal mucous membrane had patches of inflammation, and numerous severe, tuberculated, honey comb ulcers, resembling syphilitic sores, aggravated in extent and severity approaching the cæcum.

**CRANIAL
CAVITY.**

Air bubbles under the arachnoid; effusion at the base and in the ventricles; plexus blanched. Their central vessel enlarged; and they contain hydatids. Cortical tissue well marked, but soft, especially that of cerebellum. Pia mater of medulla oblongata slaty.

**SPINAL
CANAL.**

External to the theca, false membranes, and semi-gelatinised fluid. oz. ij. of fluid in the theca; surfaces blanched; pia mater slaty; vessels inferiorly gorged on both sides.

CASE XVIII.

**THORACIC AND ABDOMINAL EFFUSION. FALSE MEMBRANES
AND TUBERCLES. INTESTINAL ULCERS.**

CEREBRAL EFFUSION.

NUNTHOO. *Ætatis* 50. Sepoy of the 26th. Regiment Native Infantry. Admitted 6th. July 1826. into the Hospital established for the Rangoon sick and wounded.

Six months since. He was taken ill of dysentery at Prome, symptoms then supervened in the following order. 1. Dyspnoea. 2. Thoracic pains. 3. Gums became sore. Teeth loose. 4. *Ædema*. Pustular eruptions, especially on the extremities. 5. Pains. 6. Heaviness and 7. numbness. He complains now of extreme emaciation. Anasarca. No appetite. Digestion bad: Thirst. Five

dejections, watery and yellow colored, daily. Urine red, copious: cannot sleep. Pulse 140 large, soft, and feeble. Tongue livid, slight fur, semitendinous, slight longitudinal sulci. Skin dry, corrugated and hard, affected generally with eruptions. Thorax deformed on both sides, sounds dull in many parts. Superior left lobe traversed, with tinkling. Heart's action dull, heavy, and undulating. An enlargement painful to the touch, corresponding with the transverse arch of the colon. There is abdominal fluctuation, but no pain on pressure except that already mentioned.

Pulmonary engorgement, left superior lobe tuberculated, hydro-pericardium, ascites, and chronic intestinal disease. Vitiating fluids; nervous, capillary, and digestive derangement.

DIAGNOSIS.

Pulv ipecac oz. 2 dr. quaque nocte. in mel. jejuno ventriculo. R. Pil: hydrarg. gr. iij. pulv. ipecac. carb. ferri: aa gr. v. m. bis in die sumend. vin. rubri. oz. viij in diem. Sago, soup, jelly.

Very little improvement since admission; ipecacuanah removed the purging, but anasarca gradually increased, diarrhoea returned on the 28th. October.

Alteratives, diuretics, opiates, stimulants, stomachics, tonics, port wine, soup, sago, animal jelly &c &c were of no advantage. Abdominal effusion, and thoracic disease became much aggravated, and he expired at 1 A. M. 9th November 1826.

The body inspected for examination seven hours after death, it is extremely anasarcaous, the external cellular tissue being considerably distended with effusion.

Removing the sternal arch became very difficult, from firm adhesion, by false membranes, interposed between the pulmonary and costal pleura; hence the operation was effected partly by dissection, and partly by violence. The lungs presented, very little collapsed, their tissue exceedingly firm, and en-

THORACIC
CAVITY.

gorged. The right lung only on the anterior part of its centre, was free from engorgement: all other parts of both lungs in sections, presented the appearance of a dark liver; yet spumous fluid was thrown out from the incised surfaces. A few minute tubercles, and one, the size of an hazel nut, were observed in the superior part of the left lung. Laying open the trachea arteria and bronchial tubes, the mucous membrane lining the surface is of a dark, dull, dirty brown color from its commencement, and this is continued with increasing darkness through the pulmonary tissue. The tubes are very much dilated. Semi-gelatinised serous fluid is freely effused into the tissue, attached exteriorly to the pericardium, which at the base of the heart is extremely thick, and has thus become firm as cartilage: the interior surface of the pericardium, adheres with such firmness to its inner fold covering the heart, that it is quite impossible to separate the pericardium, in the usual manner, or even by dissection. Clots of lymph or fibrine are found extending into the aorta, and they are of a much darker yellow, than usual. The muscular substance of the heart is dull, pale and livid; its size diminished, corresponding with the emaciation of the subject.

ABDOMINAL CAVITY.

Laying open the abdominal cavity, the parietal peritoneum is observed thickened, to the extent of $\frac{1}{8}$ of an inch, of a red or rose color, with very numerous little white, hard bodies, elevating its surface, each about the size of a large pin's head; passing the finger over them, the unevenness of the surfaces is felt distinctly on those indurated bodies. The same red color, and thickened condition, with small white tubercular bodies elevating the surface, is observed on the intestinal and mesenteric peritoneum. The stomach exteriorly is of the same reddish color, and greatly meteorized. The parietal peritoneum extending down-

wards over the liver and stomach, had adhered firmly to both in passing over them, and the stomach at its small curvature, had adhered very firmly to the liver. The fat of the omentum is absorbed; its vessels red and irritated. Four quarts of fluid are found in this cavity. The liver is enlarged; its substance in parts firmer, and in parts softer than natural; its surface irregular, presenting a continued series of elevations and depressions, more especially, at the lateral termination of the left lobe; where it is contracted up, irregularly, and presents a series, of little acuminate, or mammiform processes. Sections of its substance shew a dark ground, in which are situate innumerable yellow irregular points, lines, and striæ. The external coats being removed, that covered the substance of the liver, the unevenness of the surface is found to proceed, by these bodies, separating from each other, for a greater or less distance into the substance: and they are readily parted in a manner similar to the convolutions of the brain. The gall bladder contains five drachms of thick green bile. The spleen is of the natural size, and apparently healthy. The pancreas is longer and thinner than usual, and copiously covered with false membranes. The kidneys have their minute vessels so much injected, that their sections resemble that of dark, dull red, muscular tissue. The mammillary processes are like red berries; the urinary bladder is empty. The œsophagus laid open; its silvery appearance of health is wanting, it is of a dull, pale, livid color, to the cardiac orifice, which a red circle marks. The mucous coat of the stomach is thickened and corrugated. A general blush pervades its surface. The mucous coat of the duodenum is corrugated, thickened, and a deep blush, or rather a rosy red pervades the surface, and this appearance is continued for some feet into the ileum: then honey comb ulcers com-

mence, and patches of a pale surface, are succeeded by deeper red. Progressively, the mucous membrane throughout is thickened, and the rugæ agglutinated together by a pultaceous, gelatinous, viscid substance. In the inferior portion of the ileum, the red color becomes deeper, the mucous coat thinner, and the honey-comb ulcers more extensive and irregular in form. The cæcum is very much contracted; mucous coat of the ascending colon very red, with the cicatrix of an ulcer elevated and in a very irritable state. The tranverse colon hath its rugæ almost alternately red and white: just at the angle, where the intestine turns downward, to form the descending colon, there is an ill conditioned ulcer with high irregular margins, one inch in diameter. With reference to the white tubercular bodies elevating the surface of the intestinal peritoneum, they are also very numerous on the anterior surface of the stomach, on the entire surface of the duodenum, jejunum and ileum, but less so on the colon and rectum. These small white bodies are easily removed, by cutting the external membrane which confines them, thence they appear situated on the muscular coat, or in the thickened peritoneum. They are extremely firm, white and shining, but on being pressed, they appear to give out a fluid, and then shrinking, they become quite soft. The interior of the urinary bladder was pale, except a slight blush at the opening of the ureters.

CRANIAL CAVITY.

Removing the calvarium, and making a section of the dura mater, three ounces of straw colored fluid escaped. The capillary vessels of the pia mater, ramifying over and between the convolutions, and over the base of the brain, are enlarged and injected. The pia mater enveloping the medulla oblongata, is dark, as in cases of cholera and exhaustion. Semi-gelatinised serous fluid is very freely effused, between the arachnoid and

pia mater. Removing the cerebral mass and looking into the foramen magnum, fluid is observed filling the theca. The cerebral mass is particularly soft. Horizontal sections of the hemispheres shew the centrum ovale, with numerous bleeding points in it. Posteriorly, the cortical substance appears natural. The lateral ventricles contain very little fluid. The choroid plexus on both sides, blanched, and studded with hydatids. The capillary vessels, extended over the posterior cornua of the fornix, are very much enlarged. The substance of the cerebellum is also particularly soft and pulpy. The capillary vessels running through the odontoid process on both sides, are much enlarged. The surfaces of all the ventricles, and the superior part of the medulla oblongata are softened, and have the appearances usually resulting, from immersion in fluid.

Removing the anterior vertebral arch of the spinal column, and subsequently the cord in its theca, semi-gelatinised serum is found injected, into the cellular tissue lining the canal, and fluid is observed freely effused into the theca. Laying it open anteriorly, the dark appearance originally noticed on the medulla oblongata, extends to the cauda equina, but it is lighter in the centre than at either extremity. The equinal nerves, appear to have been immersed in fluid a considerable time. The central vessel on this surface is very large, and some of those accompanying the equinal nerves, are particularly so; but the capillary vessels are not enlarged or injected. The cord in its cervical and lumbar portions, is considerably swollen and very soft. Laying open the theca posteriorly, the dark color and blanched appearance extends to the right dorsal vertebra: and thence to the cauda equina, the surface of the cord is covered with an effused

SPINAL
CANAL.

fluid, resembling red currant jelly; removing this with the handle of a scalpel, the tortuous vessels beneath, then became visible: they are not numerous, dilated, or injected, and there is the same appearance of immersion on this surface of the cord, and equinal nerves.

RESUME'.

THORACIC CAVITY.

General adhesion of the pleura by voluminous false membranes. Œdema and tubercles of the lungs. The pulmonary mucous membrane mostly dark. The cellular tissue at the base of the heart, contains coagulated and condensed fibrin: the pericardium adheres to the heart.

ABDOMINAL CAVITY.

Fibrinous fluid in the abdomen, interposed between every folding and viscus, formed into a voluminous false membrane, with innumerable small tubercles, partially agglutinating the abdominal contents. The liver schirrous, with marks of preceeding disease. The kidneys injected. The mucous membrane of the stomach inflamed, which re-occurs in the intestines with tubercles, honey comb ulcers, and irregular shaped deep ulcers with high edges, in the large intestines.

CRANIAL CAVITY.

Cerebral effusion. The cerebral tissue soft. Hydatids in the choroid plexus. Pia mater of the medulla oblongata dark.

SPINAL CANAL

Effusion into the spinal theca. The pia mater of cord mostly dark; its posterior surface from the 8th dorsal vertebra to its termination, covered with a fluid like red currant jelly. The equinal nerves blanched.

CASE XIX.

PULMONARY TUBERCLES AND ŒDEMA. INTESTINAL

ULCERS. CEREBRAL EFFUSION.

MAHOMED HUSSAIN. *Ætatis* 26. Sepoy of the 36th. Regiment Native Infantry. Admitted into the Hospital established for the Rangoon sick and wounded. 5th. November 1826.

He was ill six months at Rangoon, from the use of bad and wetted rice. His complaints came in the following order. He was seized with diarrhœa. 2 Pains succeeded. 3 Anorexia, general debility. 4 Extreme emaciation. Now he complains of 1, 2, 3, 4. Appetite and digestion bad. Bowels loose. 5 or 6 sero muculent dejections daily. Urine natural. Sleeps. Pulse 96, soft and feeble. The tongue pale livid, slight fur. Skin thick and cool. Face slightly puffed. Thorax deformed; on the right, sounds well: on the left, inferiorly traversed with Egophonism: the right superiorly with tinkling. Heart's action strong, and large. No abdominal pain on pressure.

Vitiated fluids. Pulmonary engorgement. The right superior lobe tuberculated. Nervous, digestive and capillary derangement. Chronic disease of the intestinal mucous membrane.

DIAGNOSIS.

R. Pulv. ipecac. gr. v. hydrarg. Sub. Mur. gr. $\frac{1}{4}$. Nit. Pot. ss. m. ter in die sumend. Vini. Rub. oz. viij. in diem.

No improvement since admission: diarrhœa, emaciation and debility had much increased on the 18th. Opiates, stimulants,

tonics, port wine, soup, sago, and animal jelly were of no advantage. The pulmonic disease became aggravated. Exhaustion and sinking preceded death, and he expired at 2 A. M. 22d. November 1826.

AUTOPSY

The body is extremely emaciated, the thighs not thicker than the wrist when in health. Face and feet are cedematous.

THORACIC CAVITY.

On removing the anterior sternal arch, the lungs present, not collapsed, but firmly engorged, of a greenish color, and somewhat cedematous, with slight crepitus. Removing and examining the lungs; the right lung posteriorly, from its superior margin to its inferior extremity (but without including the middle lobe) is one series of extensive honey-comb tubercles, whose interior surfaces are of a livid dull color. Sections of the superior lobe of this lung, shew its substance partly hepatised, and studded with small tubercles, containing purulent fluid. The middle lobe is nearly healthy. The inferior lobe is engorged, partly hepatised, and contains a few small tubercles filled with purulent fluid. The left lung is much engorged throughout, partly hepatised, and extremely cedematous. The mucous membrane lining the trachea, is pale, which color is continued throughout its ramifications as far as they can be traced. The air tubes and trachea are filled with spumous fluid. The pericardium contained four ounces of deep straw colored fluid. The heart is diminished, corresponding with the emaciation of the body. Its exterior surface is blanched, and its cellular tissue at the base, formerly containing fatty matter, is distended with straw colored, gelatinised serous fluid. The right ventricle of the heart empty, left ventricle also empty, as are the right and left auricles. The muscular tissue is pale, flaccid and bloodless. The internal surface of the aorta is natural.

ABDOMINAL
CAVITY.

Laying open the abdominal cavity. The fat of the omentum is absorbed, there is general paleness, but no effusion. The intestinal tube and stomach are meteorized. The liver is dark colored, diminished in size, with small yellow tortuous lines, minutely and irregularly drawn, through a dark red ground. This same appearance is preserved on the surfaces of its sections. The consistence is natural. The gall bladder contains seven drachms of dark viscid bile. The general tissue of the kidneys is pale; but the mammillary processes are very vascular. The spleen is diminished, firmer than natural, with the color and consistence of muscular tissue. The pancreas is apparently natural, excepting, that its tissue is darker than usual. The cuticular lining of the œsophagus is dull, darker and more rough than in health. The mucous coat of the stomach is corrugated and natural. Mucous coat of the duodenum hath its rugæ well developed and pale: that of the jejunum, also well developed and pale. In the ileum, the mucous coat continues well developed, but there are a number of irregular ulcers; and on minute inspection, this coat is found disorganized and easily removed with the tip of the finger in all parts, as if it remained merely in the condition of a thick coating of starch, and the larger vessels are left exposed to the naked eye, and may thus be elevated on a probe: progressively, even the appearance of the mucous coat ceases, and there are small deep ulcers with thick high edges, and dark or red surfaces, in an ulcerated and irritable state. On the muscular coat near the cæcum, those ulcers become very numerous and extensive, resembling tetter of the external surface, in an irritable state. In the cæcum, one half of its surface is irregularly occupied with those ulcers, and the mucous membrane having

recommenced at the cæco ileac valve, irregularly, but distinctly occupies a portion equal to the other half. The mucous membrane of the ascending colon and large intestines is thickened, irregularly corrugated, with a great number of cicatrices, and innumerable small ulcers, in an irritated active condition; but they apparently have been healing. The inferior portion of the sigmoid flexure, is smooth, thickened and black, as if sloughing: mucous coat of the urinary bladder is pale.

CRANIAL CAVITY.

Removing the calvarium, two ounces of serous fluid escaped through the openings of the dura mater, ruptured in the course of the sagittal suture. Effusion is observed freely between the arachnoid and pia mater, over the hemispheres of the brain. The surface generally is pale. Drawing the anterior and central lobes upwards and backwards, the spinal theca is observed filled with fluid; and the vessels ramified over the pons varolii are injected. The substance of the brain is of the natural consistence. Sections through the centrum ovale, shew the cortical substance well marked. Serous fluid is largely effused into both lateral ventricles. The choroid plexus on both sides is blanched. The substance of the cerebellum in color, consistence and appearance, is natural.

SPINAL CANAL.

Removing the anterior arch of the vertebral column, and removing the spinal cord in its theca, the loose cellular tissue lining the canal, is injected with semi-gelatinous serum; laying open the spinal theca posteriorly, there is a yellow blanched appearance of the surface. The arachnoid of the cord and dura mater, have numerous adhesions, and the capillaries, both on the superior and inferior portions are engorged. The Equinal nerves have the dull appearance, that results from immersion in fluid. Laying open the theca anteriorly, there is the same general blanched ap-

pearance of the surfaces. The central vessel throughout is enlarged and engorged. The equinal nerves are dull, as if from immersion. The cord in its cervical portion is of the natural size and very soft; but inferiorly it becomes very much diminished and extremely firm. The inferior portion of the cord, especially on its anterior surface, is extremely dark, as is that of the inferior portion of the medulla oblongata. The texture of the cord inferiorly is unusually firm and dry; superiorly, dry, but soft not firm.

RESUME.

Lungs not collapsed. Their tissue hepatized in some parts, in other parts tuberculated, œdematous, engorged. Heart's cavities empty, tissue pale; aorta of the natural color.

THORACIC
CAVITY.

The liver diminished, dark with minute tortuous lines or striæ; consistence natural. Kidneys pale; mammillary processes injected. Spleen diminished and firm. Pancreas dark. Mucous coat of the ileum disorganised in parts; irregular ulcers on others, and near the cæcum, the mucous coat ceases, and tetter-like ulcers abound. Ulcers continued in the cæcum and large intestines.

ABDOMINAL
CAVITY.

Cerebral effusion extensive. Pia mater pale. Fluid in the ventricles.

CRANIAL
CAVITY.

Spinal theca contains fluid. Tissue lining the canal injected with semigelatinous fluid. Vascular system superiorly and inferiorly gorged; central third empty. Adhesions of arachnoid. Anteriorly, superiorly and inferiorly, pia mater very dark. Equinal nerves dull and blanched.

SPINAL
CANAL.

CASE XX

PULMONARY AND MESENTERIC TUBERCLES. INTES-
TINAL ULCERS. CEREBRAL EFFUSION.

SONDRA RAMDOO. *Ætatis* 28. Sepoy of the 34th. Regiment. Chicacole Light Infantry. Admitted into the Hospital established for the Rangoon sick and wounded, 28th. January 1826.

He was three Months ill in the field. Fell in a rapid charge on the *Enemy* and received a bruise under the right breast, followed by severe pain and fever, which were removed by venesection and blisters. Symptoms succeeded in the following order 1 Burning. 2 Numbness. 3 Impaired day vision. 4 anorexia. 5. Belly swelled. 6. General wasting. Now he complains of emaciation. Debility. Burning. Numbness. Impaired day vision. Appetite and digestion bad. Belly swells. Bowels retentive. Urine natural. Cannot sleep. Pulse 150 fleeting, soft, feeble, and irregular. Tongue livid, furred, pale, enlarged papillæ. Skin spotted. Thorax deformed, sounds dull on the right, and there, traversed only by stronger respiratory exertions, which produce a heavy snoring noise. The heart's action is too strong. No abdominal pain on pressure.

DIAGNOSIS,

The right lung irregularly condensed, and its tubes rigid. Local nervous irritability. Vitiated fluids.

R. Pulv. Ipecac. gr. iv bis in die. vin. Rub. oz. ij. ter. die.

1st. March. No improvement since admission. Emaciation and debility continue increasing.

1st. June DIAGNOSIS. The lungs have become more engorged and tuberculated.

1st. July. Diarrhœa has supervened. Exhaustion and sinking preceded death: and he expired 7. A. M. 4. December 1826.

AUTOPSY

Removing the sternal arch was found difficult from strong adhesions, between the costal and pulmonary pleura. The lungs presented, not collapsed, and they adhered very firmly posteriorly. The external appearance of the lungs when removed, resembled a cast of the interior of the chest; they are not collapsed, but large and firm, particularly the right, which to the touch resembles muscular tissue, and on both sides they are tuberculated. Both lungs with the exception of the sulcus on the left side, form each one compact body, adhesion having obliterated their division into lobes. The pleura pulmonalis of the right side is much thickened, and so strong that it can scarcely be torn by the fingers. Laying open the trachea, six separate small ulcers are observed on the anterior inferior margin of the cricoid cartilage, and inferiorly, there are several small pustules, some inflamed, others appear matured, and some nearly healed. A little above the bifurcation, the mucous membrane is observed generally red, whereas superiorly (with the exception of the pustules) it is pale. The pulmonary veins on both sides are very large, the left contains a coagulum, and the vessel is so firm, that it nearly resembles bone; the parenchyma is generally of a fleshy appearance. At the extremities of this lung it is rather of a dark claret color, with numerous tubercles. These tubercles are of various sizes and contain hard cartilaginous bodies, some of which can be squeezed out entire; others are irregular,

THORACIC
CAVITY.

granular, and semi-transparent, and cannot with facility be removed entire. The central part of the lung near the pulmonary vein, contains numerous tubercles, all of which are dark colored; each consists of a dark pulpy substance. On pressure, sections emit a considerable quantity of thick spumous bloody fluid. A section of the right lung, shews the parenchyma completely disorganised by numerous tubercles and extensive ulceration; it breaks under the finger like liver, and emits also bloody spumous fluid copiously. The limit of the superior and middle lobes, is marked by a white cartilaginous line. There are no caverns of magnitude, but the tubercles are exceedingly numerous; and observing the surfaces of the sections, the whole appears like a suppurating surface, the tubercles are so closely scattered through this tissue. The superior lobe only, contains three excavations equal to admit the tip of the finger; these do not contain matter but a claret colored gelatinous substance. The pulmonic pleura is very much thickened and semi-cartilaginous. The pericardium contained one ounce of serous fluid. The fatty substance of the heart is absorbed; both ventricles are empty. Both auricles contain coagula. Parieties of the left side are firm, muscular and considerably thickened. The right side thin, relaxed, and dilated.

ABDOMINAL CAVITY.

The liver is of the usual size; externally pale, except on the right margin, where it is mottled and of a darker color. Internal structure granular and its appearance resembles that given externally, its substance is very soft and crumbles readily under the fingers. No abscess or other disease observed. The gall bladder contains about three drachms of thick dark colored bile. The pancreas is very small but firm. Spleen of the natural size, pale blue externally and of a dark fleshy appear-

ance internally, its texture firm. The kidneys appear healthy. The mesenteric glands are all enlarged, and contain pale yellow thick pus. The œsophagus is pale and dull. The mucous membrane is abraded, or irritated at the cardiac orifice. The coats of the stomach are thickened, relaxed, and pale; the rugæ well marked in the inferior portion. The pyloric orifice is healthy; immediately below this two or three small ulcers are observed; the mucous surface of the upper part of the duodenum is irregular, of a mottled appearance, but no decided marks of ulceration, except at the entrance of the ductus communis, slightly. Inferiorly the rugæ become more numerous, and the intestine is thin, inflamed, and two small ulcers are observed, each the size of a split pea. About the middle of the jejunum, the rugæ are less prominent, and the inflammation not so general, but in patches, and each of these patches at the distance of five or six inches, contains one or two ulcers as above mentioned. About the middle of the ileum, these ulcers are more numerous and extensive, some of them from $\frac{1}{2}$ to one inch in diameter. Thirty inches from the cœcum, the ileum becomes thickened, and generally red, with numerous ulcers. These near the cœcum are more than two inches in diameter. The whole interior of the cœcum is in a state of ulceration, and in some parts extending to the peritoneal coat, but in no part entirely through. Where the ulceration is most extensive, the surface appears to have been in a state of recovery. From that part to the sigmoid flexures of the colon, the intestine is thin and inflamed, with a few indistinct rugæ, and only one ulcer, about the size of the tip of the finger. At the lower part of the colon, the mucous membrane is thickened, the inflammation continues, and two ulcers are observed similar to those last mentioned. The rectum is also inflamed, and in parts

has the rugæ numerous and prominent, with one large honey-comb ulcer. The inferior portion is extremely smooth, without rugæ, and very little appearance of inflammation. The mucous membrane of the urinary bladder is pale.

CRANIAL CAVITY.

The cranium having been separated, the dura mater is observed pale, blanched and distended with fluid, which oozed out at different lacerations caused by the separation of the skull cap; within the dura mater a considerable quantity of serum is found; it is also observed confined by the tentorium, and in the upper part of the spinal canal. External appearance of the brain is pale and blanched. The blood vessels empty. The Tunica arachnoidea is elevated by fluid, lodged between it and the pia mater. Horizontal sections shewed the centrum ovale a pure white, with very few bleeding points. The cortical substance is diminished and paler than natural. The lateral ventricles contain fluid. Septum Lucidum is particularly strong and thickened. Choroid plexus pale and blanched. Venæ Galeni small and empty. The third ventricle contains fluid. Fourth empty. Corpora striata of the usual dusky appearance. Medullary substance of the cerebellum a pure white, similar to the centrum ovale. The cortical substance of the left side is of a natural appearance, and that of the right side is very pale. The substance of this mass, as well as the cerebrum is softer than natural. The pia mater enveloping the medulla oblongata, is of the dark dirty color observed in cases of extreme exhaustion.

SPINAL CANAL.

Laying open the spinal canal, in the lumbar portion there is a small quantity of orange colored gelatinous fluid; in the dorsal portion some of the same consistence, but resembling milk curd. Fluid is observed in the theca. The cervical portion of the pia mater, is of the dark color already observed on the

medulla oblongata. The dorsal part of the cord is of a natural light appearance; the lumbar part is dark as the cervical. The blood vessels on the superior portion of the cord are small and empty, about the middle they concentrate and form two large vessels; the one passing out almost immediately with the third lumbar nerve on the left side; the other, the larger of the two, passes down to the cauda equina, and supplies the whole fasciculus of those nerves, with minute vessels. The inner surface of the sheath is pale except in the dorsal portion: anteriorly and superiorly the theca is strongly connected with the cord by false membranes; the pia mater is of a dark color, but not so much as it is posteriorly; from the commencement of the dorsal vertebræ downward, it is dull and dusky, but neither so dark as the cervical portion, nor so light as the dorsal portion on the posterior surface of the cord. The blood vessels of this surface are more numerous and contorted superiorly, but they do not form any particularly large vessels until they reach the third lumbar nerve, where they unite, and form a vessel, which immediately divides, the one branch passing out with the 5th. lumbar nerve on the right side, and the other traversing the cord, divides and forms a net work of blood vessels distributed to the sacral nerves. One large vessel, passes out with the third sacral, on the right side. The sheath covering this surface, is of an uniform thickness throughout, and pale. The substance of the cord externally is of a pearly white, and firm.

RESUME'

False membranes in the cavities; adhesion; pulmonary tissue tuberculated and infiltrated with fibrin. Ulcers of tracheal mucous membrane. Heart's ventricles empty; the auricles contain coagula.

THORACIC
CAVITY.

ABDOMINAL
CAVITY.

Liver the natural size, mottled, granular and soft. Spleen and kidneys natural. Mesenteric glands have suppurated. Mucous coat of the stomach flaccid; in its course inferiorly, numerous ulcers and patches of inflammation and disorganisation.

CRANIAL
CAVITY.

Effusion. Pia mater pale. Cortical cerebral tissue diminished and pale; that of the cerebellum has the left side natural, the right side very pale; pia mater of medulla oblongata slaty.

SPINAL
CANAL.

Gelatinous and coagulated fibrin in the canal. Pia mater slaty superiorly and inferiorly. Adhesions of the arachnoid, and effusion into the theca.

CASE XXI

ROWLAND HERVEY ESQUIRE. CHIEF OFFICER

OF THE SHIP-----.

Ætatis. 32. Short, muscular, native of London. Brought up to the sea from 12 Years of Age. Originally served in the West Indies and Mediterranean. Served in India the last 10 Years. Had fever in the West Indies, but usually healthy. On the 17th. April, 1827. Was suddenly attacked with vomiting of blood, and for some days previously had some thoracic pains, chiefly under the sternum and right shoulder. Blood thin, came up with coughing, through the mouth and nose; it was not frothy. He is subject to bleeding piles, but they stopped when the thoracic pains began. Since the vomiting blood, has occasionally blood in the stools. The urine pale, but pain as the current ceases. He did not observe any constant cough before that attack; since it, he has not slept well. He had an attack of this kind in January at Calcutta after

great exposure to the night dews on the shore. Appetite bad, pulse 120 soft. Tongue moist, slight fur; expectorates mucosanguineous fluid. The stethoscope detects egophonism and gurgling rattle in the right lung, tinkling in the left and obscure gurgling.

Mature tubercles in the right lung. Left also tuberculated, but more perfectly traversed than the right. Ipecac. Pulv. dr. ij bis die sumend ss. v.

DIAGNOSIS.

April, 25th. Took medicine and had not drank for two hours before. $\frac{1}{4}$ of an hour after, he vomited bile, several times. He took the medicine this morning, had not drank all night, and vomited several times soon after. Sputa slightly tinged with blood. No evacuation yet. P. 116, small, soft. Tongue slight fur. Skin natural. No sleep from burning of the thorax where the blistered surface is not healed. Cont:

26th. The medicine from mistake has not been taken. He rested ill; sputa colored by blood; cough rather frequent: an unpleasantness in the back under the right shoulder. Bowels open this morning, dejection natural. Urine red. Pulse 140, small and soft. Tongue and skin natural. Cont: P. Ipecac. et appr. Emp. Canth. p. d, statim.

27th. He took medicine yesterday and vomited two hours after, but did not drink; the evening dose vomited half an hour after. Took medicine this morning and vomited a quarter of an hour after. The medicine however was mixed in water, not honey or syrup as ordered. Sputa discolored with blood. Bowels not open. Pulse 90 soft, and small. Tongue furred slightly. Skin moist. Cont. Ipecac. Pulv. Rhei. dr. ij 12 hora hodie.

28th. Yesterday morning vomited much after the medicine, and threw up oz. vj of blood from the lungs. Three eva-

cuations, black and copious from the Rhubarb: urine red, and passed with pain. Night restless. Thirst. Pulse 140, small, soft. Tongue natural, Skin moist and cool. Took Rhubarb this morning. V. S. ad deliquium. Tinct. Digit. gtt. vj. 2d. quaque hora. Fainted when oz. 10 flowed. The blood cupped and is sisy.

29th. Four dejections very black. No blood vomited, but expectorated sputa colored with it. He had more sleep, but accompanied with short starts. He is rather restless. Pulse 82 soft. Tongue slight fur. Skin natural and cool. Urine red orange, natural quantity, and pain as it is ceasing to flow, occasionally. The dejections very offensive, deep orange bilio and moco-fœculent, with small indurations. Cont. Digit. Ext. Colocynth. Comp. ss. Calomel gr. iij. Ms. Statim sumend. Vespere. feels easy; no particular change.

30th. Night restless. Slight tenesmus, no free stools. Urine deep colored. Sputa half blood. Cough not frequent. Regimen confined to tea and sago. Pulse 90 small and soft. Tongue slight fur. Skin natural. No pain even on coughing, no pressing thirst. Mistura purgans oz. ij 2d. hora donec alvus laxatur.

May 1st. Pulse 90 small feeble. Tongue rather excited fur. Skin natural. Sputa very little colored. Pain in the right side and oppression. Several free watery dejections. Urine colored by sanguineous flocculi, and deposits a red sediment. No thirst, very little sleep. Cannot breathe freely. Blistered surface on the chest not healed. Cont. Tinct. digit. gtt. viij 2d. quaque hora. Tinct. opii. Camph: oz. ss h. s. s. in aqua oz. i. mistura purgans oz. iss cras mane.

2d. Rather improved. Bowels open from medicines. Pulse 100 small. Tongue cleaning. Skin moist. Cont. Tinct. Digitalis gtt. viij. Cont. Haust opiat. H. S. et haust purg, mane.

3th. Slept a little; the purging mixture sickened him. Bowels regular. Urine deep colored: no blood in the sputa. Only occasional pains in the chest. Pulse 100 small. Tongue cleaning. Skin moist. Cont. Tinct: digit. gtt. viij. Cont. Haust h. s. et mane.

4th. Little sleep. Pulse. 100 soft. Tongue cleaner. Skin moist. Three dejections, brown. Urine high colored. Little thirst. Cough decreased, sometimes not for two hours. Sputa not discolored with blood. Cont.

5th. Two dejections since yesterday morning almost pure bile. Urine as before. No sleep. Much pain in the right side of the thorax-therefore could not cough easily. Sputa viscid, mucous not discolored. Pulse 90. Small, soft. Tongue cleaner. Skin moist. The head perspires much. Cont. Tinct digit. gtt. ix 2d. qua que hora. Pil ex alcæ c. myrrhæ gr. viij. Pil hydrarg: gr. v. ms. in Pil ij. Omni nocte h. s. s. Decoct. Sem. Lini. lb. iij. O. die.

6th. Slept little. Weak. Pulse 84. Tongue natural. Skin moist and cool: two dejections, dark, bilio-fœculent. Urine pale. Coughs less and feebly. No blood in the sputa. Cont. ut heri.

7th. Pulse 92 soft. Tongue clean. Skin moist, sputa viscid opaque mucus, no blood; could not take pills. Took two ounces mist, purg. salin, this morning. Urine copious, high colored with copious white sediment. One good coffee colored bilio-fœculent tenacious dejection. In the night had some dozing sleep. Cough frequent except when laying on the back. Very frequent

pains flying about the thorax when coughing. The stethoscope indicates gurgling in the left superior lobe; right not traversed. Cont. Tinct. digit. gtt. x 2d. qua que hora. Pulv. Rhei dr. i Omni nocte in aqua menthæ ppt. The pills disagree with the stomach. He will not take the ipecacuanah. Vespere. The heart's action very feeble, systole frequently not cognisable at the wrist. Pulse small, tongue and skin as before; no blood in the sputa.

8th. He rested badly in the night. The urine almost blood red, scanty, white powdery sediment: muco-bilious dejections with floating serous coagula either red, brown coffee colored, or black; indicating an affection of the intestinal mucous membrane, and similar to that observed in dysentery. Gripping and abdominal pains. Pulse 88. Small and regular. Tongue clean. Skin natural.

DIAGNOSIS

Left superior pulmonary lobe excavated; right engorged not traversed, and inferiorly tuberculated. The intestinal mucous membrane inflamed and ulcerated.

Cont. Tinct digit. gr. x in mistura. Salin. c. Sulph. Pot. 2d. qua que hora. Decoct. semi lini. lb. iv omni die. Tea. Sago. He is chiefly relieved from cough by laying on the left side.

9th. Pulse 120, soft and small. Tongue moist. Skin cool. Some sleep. Coughed much this morning; seems strong. One dejection dark bilio-fœculent. Urine not observed. No blood in the sputa. He has pain down the right side on coughing, but not so much in the chest. Cont. ut heri.

10th. He passed one very good dark brown evacuation, fœculent. Sitting up since 2 A. M. from oppressed breathing, but he slept, and had not much cough. Pulse 84 small, round, feeble. Copious perspiration. Urine as before. Tongue clean: no blood in the sputa, which is viscid mucus. Thoracic pains less. Cont omnia ut heri.

11th. He was restless and slept little in the night; now sitting up; very sick, and even vomited congee this morning. Passed one good bilio-fœculent evacuation colored with extract of liquorice; the urine more copious, less red, copious white powdery sediment precipitated; which incrustates the glass: then, a copious flocculent sediment over the powdery. Pulse 66, soft, irregular, obviously from digitalis; has taken five doses of digitalis in 24 hours which make in all only 50 drops. He is very weak. The tongue a little furred. Ideas incoherent, unable to express himself clearly. The muscles of voice, are partially paralysed, or affected with spasm. Cont. Decoct. Tea. Sago. Omr. Tinct. hodie.

Vespere. Had one bilio-fœculent dejection. A pint of urine quite or nearly pale, no sediment whatever. Not incoherent: ideas not now disturbed. He speaks distinctly, and is stronger. Pulse 115 soft. Cont. Tinct. ut antea.

12th. Pulse 84, soft. Tongue and skin natural. Urine a clear fiery orange. Dark brown bilio-fœculent dejections; rested rather better. Coughed and spat, but had no pain except a little in the right side. Head aches constantly and severely. Cont. Omnia ut heri.

13th. Rested better, coughed a good deal; sputa opaque mucus. One dark natural evacuation. Urine light orange, cloudy, white powdery sediment. Perspires very much. Pulse sitting up 120, soft and small. Tongue clean. Skin natural. Feels weak, little or no pain. Cont. Omnia ut heri. There are round blotches on the skin over the thorax and abdomen, that throw off a succession of heavy scabs, some of them the size of a shilling and others, progressively, less.

14th. He had no sleep. Pulse 74 soft, feeble and irregular. Coughed a good deal. No dejection this morning. The urine not kept. Tongue natural. Skin perspiring. No appetite. Cont. Decoct. Semi. Lini. Tea. Sago. and Tinct. Digit.

15th. Had no sleep. Three dejections dark bilio-fœculent, urine scanty, red, with a white powdery sediment. Pulse 102 small, soft. Tongue slight fur. Skin perspiring rather constantly; sputa viscid mucus, not discolored; begs to have an opiate. Cont. Tea. Sago. Decoct. Semi. Lini. and Tinct. Digit. Muriat. Ammon. Nit. Potass and Pulv Rheí áá gr. xv. bis die in aqua menth ppt. Haust. Nocte. cum. Tinct opii. gtt. L

16th. He rested very much better, and feels stronger. No evacuation this morning nor last evening. The urine of a fiery orange, clear, no sediment. Pulse 104, sitting up. The tongue and skin natural. No thoracic pains, feels easier. Cough less and more easy; brings up more sputa at a time, and the opaque mucus now seems mixed with some yellow purulent fluid, whereby it is less tenacious and comes up more easily. Cont. omnia ut heri.

17th. Sleeping when visited and therefore he was not disturbed. Cont. Omnia ut antea.

18th. The stomach became irritable yesterday and all medicines, even lint seed decoction, were rejected. Now there is extreme prostration of strength. He cannot speak well. Pulse 118 full, not firm. The skin hot and dry. Breathing short, hurried. Countenance fallen. Nearly comatose. No stool. No cough in the night. Cont. Decoct. Semi. Lini. Vespere. He has been comatose all day. No medicine.

19th. 7. A. M. Expired.

AUTOPSY

The Body inspected before examination, is much emaciated. It lays horizontally, and is examined in that position at 11 A. M. 19th. May 1827: being four hours after death.

Removing the anterior sternal arch. The pleura of the right lung adheres to the costal. The right lung is firm and uncollapsed; its surface very unequal; from very numerous small indurated tubercles, from the size of a millet seed to that of a small nutmeg; their contents vary much. Some are cheesy or curdiform, and from this they vary through the different intermediate states, to thin purulent fluid. Two large tubercles are opened in detaching the lungs from the spinal column; situate about the centre of the lung. Sections of the pulmonary tissue, shew excessive sanguineous engorgement throughout this lung, closely interspersed with tubercles, varying as already stated. The left lung is partially collapsed, but it contains several small tubercles; of its general tissue much however is healthy. Mucous membrane of the trachea and its extension throughout the air tubes of this lung, is pale. The mucous membrane lining the air tubes of the right lung, is covered with sputum deeply colored with blood. Some parts of this left lung are hepatized, near its inferior and external margin, and no part whatever is in a healthy state. The pericardium contained very little fluid. The Heart is of the natural size and its parietes flaccid. The right ventricle contained a firm, bifurcated coagulum; one part which is smaller, running into the pulmonary artery, the other extended into the right auricle. The left ventricle empty. The semilunar valves of the aorta are natural. The muscular tissue of the heart is pale and bloodless, of a

THORACIC
CAVITY.

greyish color. The internal surface of the aorta at its commencement, is of nearly a natural color, but progressively, it becomes of a fleshy tint and a deeper blush as it extends further down. This redness however is not extended into the cæliac artery. At the bifurcation of the common iliacs, the arterial coats become thin and soft. The iliacs internally, continue dark and thin, denuded of their internal natural membrane, and marked with minute transverse sulci or rugæ, very apparent to the naked eye, and frequently observed in sloughing cases.

ABDOMINAL CAVITY.

On removing the abdominal parietes, the stomach was observed filling up a great part of the cavity, apparently containing three pints of fluid, and extended diagonally from the spleen into the right ileum. The fat of the omentum is absorbed, and its vessels engorged with blood. The intestines especially the large, have their calibre contracted. The liver is of the natural size, its internal structure firmer than usual, its sections natural, exhibiting dark points in a dirty yellow ground. The gall bladder contains nine drachms of dark orange green bile, not very viscid, and rather granular. The spleen is of the natural size, its texture remarkably soft, of a dark fleshy color, and breaks immediately between the fingers. The pancreas is small, diminished in proportion to existing emaciation, very soft, and of the usual pale color. Kidneys are large, with the capillary vessels of their tissue, considerably engorged. The urinary bladder is contracted, and contained very little fluid. The stomach contained 24 ounces of dark green viscid fluid. The cuticular lining of the œsophagus is pale superiorly, inferiorly tinged yellow, and terminates abruptly at the cardiac orifice. Mucous membrane of the stomach is

flaccid, pale, and covered with a very viscid adherent mucus, which when removed, shews the mucous coat quite flaccid and pale, with a few minute red points. Mucous membrane of the duodenum, from the pylorus to the entry of the ductus communis, is traversed with numerous irregular sulci, and some small ulcers. After the intestine has received this duct, the mucous membrane becomes a little thickened, not corrugated regularly, and its surface is studded with small, white, firm, elevated, granular bodies. In the jejunum, the mucous membrane is more regularly corrugated; the small granular bodies disappear, and there is a tendency to a blush on the surface. In the ilium, folds of many of the corrugations are distinctly, and much inflamed; progressively, this inflammation greatly increases, becomes constant, and the rugæ are firmly agglutinated to the surface, as already observed. Approaching the cæcum, the surface is strongly stained with bile, and some bilio-fæculent fluid, is lodged in the cæcum; its internal surface has a dark or blackish appearance, which when extended becomes lighter, and appears like large black points in a light ground. The mucous membrane of the ascending colon is very dark, that of the transverse colon more pale, which is continued to the extremity of the rectum. The large intestine is slightly corrugated, and there is no ulceration. Mucous lining of the urinary bladder pale, excepting a circular blush at the entrance of the meatus.

Removing the skull cap, clear colorless fluid is freely effused, through the openings of the ruptured vessels in the course of the sagittal suture. The dura mater is presented in loose folds over the anterior cerebral lobes; posteriorly, it obviously contains much serous fluid. Removing the dura mater from the superior surfaces of the hemispheres, fluid is freely effused. The

CRANIAL
CAVITY.

vessels ramified over the convolutions of both hemispheres, especially those of the posterior part, are very much enlarged, and engorged with blood. The arachnoid tunic is generally milky, more especially, in the vicinity of the Pacchionian glands, and contains fluid between the convolutions. Drawing the anterior and middle cerebral lobes, upward and backwards, serous fluid is observed largely effused under the base of the brain, and extending into, and filling the spinal theca. The capillary vessels on the base of the brain are injected; the arachnoid is milky. The vessels ramified over the interior surfaces of the convolutions, are enlarged and injected. Horizontal sections of the cerebral hemispheres, shew the bleeding points in the centrum ovale, larger than usual. The cortical substance is well marked. Both lateral ventricles are filled with colorless serum: the vessels ramified over their interior surfaces, are enlarged and injected. The Plexus choroides on both sides blanched, and they contain a few small clear hydatids. The pia mater extended posteriorly over the corpora quadrigemina, has its vessels much injected, as are those, generally, dipping between the cerebral convolutions. The cerebellum is of the natural color, consistence and structure. The odontoid process of the right cerebral hemisphere, contains a singularly large blood vessel, throwing out black blood. Vessels in the left odontoid process are large, but not similar to that on the right. The pia mater of the corpora olivaria, is rather dark. The pia mater is detached from the surfaces, between the cerebral convolutions, with singular facility.

SPINAL
CANAL.

The cord removed in its theca, and the posterior surface of its dura mater laid open, there is a blush generally extended over the internal surface of the theca. There are a few adhesions

of the arachnoid coats in the superior cervical portion, and inferiorly, there is a considerable excess of fluid. The capillary vessels in the cervical portion are engorged, those in the dorsal and lumbar portions are much enlarged, and one very large vessel accompanies the second equinal fasciculus of nerves, on the left side. The equinal nerves are very wet and rather dull. The anterior surface of the theca laid open, there is a very distinct blush; on its interior surface no vascular engorgement. The equinal nerves very wet and dull colored, as if they had been macerated.

Present at this dissection. Mr. Assistant Surgeon Geddes.

RESUME

False membrane and adhesion. Right lung not collapsed, firm, tuberculated from caseous to thin purulent; parenchyma engorged with, and the mucous lining stained with blood. Left lung partially collapsed, it is on the whole much less diseased, yet it is partly hepatised and tuberculated. Right ventricle contained a coagulum; the left empty; the interior of the descending aorta had a blush.

THORACIC
CAVITY.

Stomach contained much fluid. Liver the natural size and firm. Spleen small and very soft. Pancreas small and soft. Kidneys large and vascular. Mucous membrane of the stomach and intestinal tube irregularly affected, with soft and pale patches and tubercles, succeeded by others with a blush, varying to inflammation near the cecum.

ABDOMINAL
CAVITY.

Cerebral effusion; arachnoid milky. Pia mater vascular, over the hemispheres and between the convolutions; ventricles contain fluid and hydatids. Cerebral tissue natural.

CRANIAL
CAVITY.

SPINAL
CANAL.

The theca has a general blush. Effused surfaces blanched. Adhesions of the arachnoid. Vascular engorgement. The equinal nerves blanched.

CASE XXII.

PULMONARY EFFUSION, AND TUBERCLES. SCHIRROUS LIVER.
INTESTINAL ULCERS. AND TUBERCLES. ARTERIES DIS-
EASED. EFFUSION AND SOFTENING OF THE BRAIN.

BAKER ALLY. Mussulman. Bengal golundauze. *Ætatis* 29. full sized, thin, delicate. Admitted into the Hospital 24th. April 1827. complains of frequent cough and muco-purulent expectoration. Has fever every night with profuse perspiration. Great prostration of strength. Loss of appetite. Pains in the chest and belly. Bowels regular, sometimes costive, at others much purged, and he passes blood. Pulse 94 soft, volume large. Tongue clean. Skin moist, rather cold. Urine scanty and high colored; sleep little, from cough, fever and restlessness.

Stethoscope. Indicates tubercles of the right lung superiorly and inferiorly; the left traversed with tinkling, superiorly traversed.

R. Antimon tart gr. iv. Aqua oz. ms. Statim. R. Pil. Hydrarg gr. vj. h. s. Decoct. Semin lini lbijj omni die. Arrow root. Milk diet.

May, 1st. The above treatment has been continued with regularity, but without any improvement. The patient continues precisely under the same symptoms, a little advanced.

Cont. omnia ut antea. Omni die.

3d. He passes frequent muco sanguineous evacuations. All the other symptoms are continued as before.

Ol. Ricini oz ss statim et pro re nata rep. Cont. omnia ut antea.

10th. All the remedies are continued. The pulmonary disease also continues advancing, and breathing is progressively more difficult. All the symptoms are aggravated. Cont. ut antea. Opii. gr. iss. Ipecac. gr. v. ms. h. s. s.

15th. No improvement. Cont.

20th. No change. Cont.

24th. He expired at 5. A. M. Coma having supervened last evening.

AUTOPSY

The body inspected at 12 a. m. 7 hours after death. It lays in a horizontal position: there is considerable emaciation, and very slight cedema about the ankles, especially the left.

Removing the anterior sternal arch, the lungs are observed darker than natural, engorged, and they do not collapse. Crepitus is only produced in parts. Firm internal indurations, and tubercles, convey the sense of an unequal surface to the touch. Forty-two ounces of serous fluid of a dark greenish color was removed from the right thoracic cavity. The right lung having quitted the mediastinum, and falling laterally backward, does not adhere to the costal pleura, for two inches of its anterior longitudinal extent: all other parts of its pulmonary pleura, are thickly and firmly invested with false membranes, and adhering in sundry parts to the costal pleura. The entire superior lobe of this lung is tuberculated, and the superior part of it, to the touch, resembles an orange, the contents of which, have

THORACIC
CAVITY.

been removed through a small opening, leaving the rind elastic and empty; the superior part of this lobe is precisely in that condition. Laying open this large cavity it appears capable of containing a middle sized orange; it contains a little pus, and its surface is coated with indurated flakes of the same fluid; those flakes being removed, there is a smooth, flesh colored surface presenting, which examined with a glass, resembles other clean smooth ulcerated surfaces, or rather what is called proud flesh: a very large conduit capable of receiving the finger, opens into the inferior and posterior part of this cavern, and leads into that of a second large abscess, situate in the superior part of the inferior lobe, which contains pus more flaky and whiter, than that of the former abscess. In sundry parts, portions of the pulmonary parietes, traverse the immense cavity of these abscesses, from one side to the other; many parts of this connected general cavity, seem to have healed, and are there quite smooth, and red; all that part of this lung which is not tuberculated, is completely hepatized, the false membrane investing it is extremely firm, its sections present nearly a cartilaginous appearance, and they are one-eighth of an inch in thickness. The left lung presents crepitus in the upper part of its superior lobe, its anterior thin margin extended over the pericardium, and part of its inferior lobe, especially that close to the spinal column. The other parts of this lung are engorged, hepatized and tuberculated; the bronchial glands are all enlarged. Laying open the trachea arteria, its mucous membrane continues pale, from the glottis till midway towards the bifurcation, there, it assumes a striated red color, which is continued generally over the surface of those tubes, leading to the parts affected with tubercles. Those ramifications extended

through the more healthy parts, have their mucous membrane pale. The heart is small, its right cavities flaccid, a fibrinous coagulum is attached to the chordæ tendiniæ and extends through the right auricle, into the pulmonary artery. The left ventricle contains a little dark blood. The internal surface of the ascending aorta and of the pulmonary artery, are of the natural color. A little below the arch of the aorta, there is one inch in length by one-fifth in breadth, extended obliquely downwards, the surface of which is uneven to the touch, as if intersected with elevations, and viewed through the glass, those apparently elevated tendinous bands, are extremely distinct, and to the naked eye, they are whiter than other parts of the surface. After the cæliac artery has been given off, the surface becomes darker than natural, which is continued until the bifurcation into iliacs; here, the internal coat presents, radiated, longitudinal lines, and after the bifurcation into external and internal iliacs, the coats of these vessels present transverse lines.

Laying open the abdominal cavity, the fat of the omentum is absorbed; the intestinal peritoneum had a general blush. The liver is not diminished in proportion to the emaciation, and is of a darker color than natural; sections of its substance however, are apparently healthy, the structure appearing striated, and granular as usual; dark points are scattered through a lighter colored general substance. The hepatic tissue tears rather more easily than usual, and the peritoneal coat is readily detached, with the fingers. The gall bladder is small, contains five drachms of dark orange colored, viscid bile. The spleen smaller than usual, lobulated; its internal tissue rather firm, contains very little blood, and its sections pale. The kidneys are small, not flaccid; sections of their tissue, shew great san-

ABDOMINAL
CAVITY.

guineous engorgement, and this appearance is common to both sides; the mammella however are pale. The urinary bladder is not much distended, and contains a little turbid urine; its internal surface is corrugated, its capillaries injected, and there is a little capillary engorgement, around the caput galinaginis. The pancreas is small and dark. The mesenteric glands are enlarged. The cuticular lining of the œsophagus, has lost its shining appearance and is abraded in points. The mucous membrane lining of the stomach, is corrugated, generally thick and swollen; its capillaries are engorged, giving a general appearance of inflammation to that surface of the stomach (the posterior) on which the contained substances rested, when the patient lay on his back. This surface also is covered with purulent fluid, strongly adhering to it, and on its removal, the mucous coat is observed in parts, abraded and ulcerated. The mucous coat of the anterior portion of the stomach, is corrugated and pale, the mucous membrane having passed the pylorus is pale, and smooth for two inches; here, the transverse rugæ, commence, which are very irregular, There is a longitudinal fold, half an inch in depth, and an inch and a half in length, into which the ductus communis opens, this fold resembles a cocks comb. The mucous coat is thickened and swollen, the rugæ well developed but irregular, their surfaces agglutinated strongly by viscid mucus, and a general blush heightened in some patches by stronger capillary engorgement, and in those parts, the engorged capillaries of each rugæ, are beautifully distinct. Purulent fluid, most probably from the lungs, is blended with the intestinal contents, and attached to the mucous membrane in many parts; progressively, the mucous coat becoming more thin, ulceration is observed

corresponding with tubercles, situate in the intestinal coat. Those ulcers are more formidable in descending; the edges and the ulcerated surfaces are red; turning and extending the exterior surface of the intestine with the finger, the tubercles are then protruded strongly, and cutting the peritoneal tunic on one side of a tubercle, and scratching its elevation off, the tubercle is then observed very distinctly, either with the unassisted eye or with the glass, embedded in the transverse fibres of the intestinal muscular tissue: then cutting on the tubercle, either one or more small yellow, or white bodies, may be removed from the investing tissue. There is a dark point in the centre of these bodies, and they are at first shining, rather opaque and firm, but they almost immediately become flaccid, their fluid contents oozing out. The ulcers are progressively larger, as are the tubercles corresponding, and the mucous coat is thinner; interspersed however with a small pale patch occasionally in parts, until near the cæcum, where the ulceration becomes quite general. The cæco iliac valve is destroyed by ulceration, and there are several deep red ulcers, in the cæcum, which is much inflamed throughout. The mucous coat of the large intestines, is corrugated irregularly, and has a general blush over all its surface. The rugæ are adhering firmly to one another, by false membranes, and the large intestines are contracted throughout their extent.

Removing the skull cap, which adhered very firmly, the meningeal vessels are observed engorged, and there is considerable effusion of serous fluid, from vessels ruptured in the right of the sagittal suture. Removing the dura mater from the cerebral hemispheres, the arachnoid membrane is observed, generally elevated with serous fluid, and the vessels ramified over

CRANIAL
CAVITY,

the convolutions, are all engorged. The arachnoid tunic is milky. On drawing the anterior and middle lobes of the brain upwards and backwards, and looking over the pons varolii, into the foramen magnum, it is observed filled with fluid. Removing the cerebral mass, three ounces of serous fluid are collected, and when the head is pulled a little downward, serous fluid drains from the foramen magnum. The cerebral substance is rather soft. Horizontal sections through the cerebral hemispheres, shew the centrum ovale, with its bleeding points as usual. The cortical substance is well marked. Both lateral ventricles, are perfectly filled with serous fluid. The plexus choroides on both sides blanched. The vessels ramified on the interior surfaces of both cavities, are much enlarged. The membrane extending backward, from the centre of the plexus choroides, over the corpora quadragemina, is extremely firm and thickened; and following this part posteriorly, about the size of a hazel nut, of that part of the cerebellum close to the corpora quadragemina, is found quite soft, and converted into a pasty fluid substance, resembling pus. The pia mater extended between the convolutions is strongly injected, and very easily detached. The pores remaining on the cerebral surface, which had either received or given vessels, from or to the pia mater, are very distinct to the naked eye; wiping the external cerebral surface, and making pressure, sanguineous fluid again presents from those pores, and this experiment was several times repeated. The cerebellum is generally soft, but more especially in the part already stated. The odontoid process is very large. The pia mater enveloping the corpora pyramidalia, and superior part of the spinal cord, is very dark, as observed in cases of cholera and extreme exhaustion. The

pons varolii is extremely soft, but otherwise the appearances of its tissue are natural.

Removing the anterior arch of the spinal column, the dura mater of the cord is observed amply distended with fluid. The loose cellular tissue lining the spinal canal, is freely injected with semi-gelatinized serum. This fluid in the two last dorsal and first lumbar vertebra is of a reddish color. The same is observed, but not so deeply colored, corresponding with the site of the heart. In the neck the anterior surface of the cord is pale. Laying open the dura mater of the cord anteriorly, there is a slight general blush, especially in those parts corresponding with the last dorsal and first lumbar vertebra, and in the vicinity of the heart. There are a few adhesions of the arachnoid tunic of the theca to that of the cord. The pia mater of the first three inches of this cord is very dark, the vessels of this surface are not engorged. The posterior surface of the dura mater of the cord laid open, it is found extremely thickened, superiorly. Adhesions of the pia mater and arachnoid superiorly, are very general; inferiorly the vessels of the cord are considerably injected. One of the equinal vessels is extremely enlarged, which passes out with the second lumbar fasciculus on the right side; and one vessel is very much enlarged, which passes out with the eleventh dorsal fasciculus on the right side. The equinal nerves generally are blanched, as if they had been macerated. The spinal cord is generally soft and flaccid, but the colors of its tissue are natural.

SPINAL
CANAL.

RESUME

Lungs dark, engorged, not collapsed, adhere by false membranes. Effusion; extensive tubercles especially in the right. Left lung partially hepatised and tuberculated.

THORACIC
CAVITY.

ABDOMINAL
CAVITY.

Intestinal peritoneum has a blush. Liver continues large. Spleen diminished. Kidneys small and vascular. Capillaries of the inner coat of the bladder injected. The pancreas small and dark. Mesenteric glands enlarged; mucous coat of the stomach and intestinal tube swollen, partially inflamed, tuberculated and ulcerated.

CRANIAL
CAVITY.

Meningeal engorgement. Arachnoid milky, effusion: cerebral tissue soft, and the vessels enlarged; ventricles filled with fluid; plexus blanched; softening of part of the cerebellum and pons varolii; pia mater of medulla oblongata slaty.

SPINAL
CANAL.

The theca distended with fluid. Loose tissue external to it, injected with semi-gelatinous fluid. Anteriorly a blush of theca; adhesions of arachnoid; pia mater superiorly dark, posteriorly, adhesions of arachnoid, inferiorly, vascular engorgement; equinal nerves blanched, cord's tissue soft.

CASE XXIII.

CEREBRAL EFFUSION AND SOFTENING WITH THICKENING
OF THE PARIETAL AND FRONTAL BONES. PULMONARY
HEPATISATION, TUBERCLES AND GANGRENE. DISEASE
OF THE ARTERIES. INTESTINAL ULCERS.

AUMEENA. FEMALE, *Ætatis* 30. Pauper from the police. Admitted into the Penang general Hospital on the 12th. January 1821. with ulcers on both legs and general bad health. The constitution having sunk under long repeated courses of mercury, the ossa nasi and ossa palati are partially destroyed by venereal disease. The patient continued bed-ridden from the period of reception till her death; underwent various courses of treatment, and experienced, sundry changes; with occasional cough; but using very little food or drink. The 22d July 1827 death terminated her long sufferings.

AUTOPSY

The body is laid out horizontally for examination $\frac{4}{2}$ past 12 A. M. 10 hours after death. It is extremely emaciated; there is a sinus burrowing into the left ankle joint, under the malleolus externus, and another sinus opening, external to the tuberosity of the right tibia; the probe passed into it, traverses the reticulated substance of this bone, and nearly enters the cavity of the knee joint, close to the external margin of the internal condyle, of the right femur.

Removing the anterior sternal arch, the lungs are observed partially collapsed and rather engorged, especially the inferior lobes; laying open the trachea, its mucous membrane is pale. Laying open the ramifications of the left pulmonary tube, the mucous membrane inferiorly, in its minute ramifications, has its capillaries engorged. There is considerable pulmonary engorgement in the inferior lobe, and very little crepitus; sections of its tissue throw out spumous fluid largely. About the size of a walnut of the pulmonary tissue, posteriorly, near its inferior margin, is black, decomposed, and sloughed: and the limits of this part are distinctly marked by lighter colored surrounding tissue; there are several very minute tubercles, scattered through the tissue of this lobe. The superior lobe affords crepitus, and is of the natural color and appearance. The artery and vein of this lung are laid open, and both found darker colored than natural, and the artery contains a considerable coagulum of black blood. The right lung has the coats of its vein extremely thin, and empty. The artery laid open, its coats are thin, dark colored, and it is empty. The pulmonary tubes are laid open, and they contain large quantities of dark muco-

THORACIC
CAVITY.

purulent fluid, their mucous membrane coat in many parts, is abraded, and instead of healthy mucous membrane, a suppurating surface is presented. The superior lobe is flaccid and affords crepitus. The middle lobe is firmly engorged, almost throughout, and its tissue studded with very minute yellow tubercles, so that sections of its tissue, present a yellow appearance, the surface becoming immediately covered with mucopurulent fluid. The inferior lobe also contains, numerous minute tubercles, filled with soft, yellow, thin pus: but the lobe generally is soft, whereas the centre lobe is condensed into a firm hepatised mass. The pericardium laid open; it contains very little fluid. The heart is diminished, corresponding with the extreme emaciation of the subject. The right cavities of the heart laid open; they contain only a little black blood. The left cavities laid open, are also found nearly empty. The aorta laid open, a small fibrinous coagulum, is found in its arch. Several thickened, elevated, irregular white spots, are observed on the interior surface of the arch of the aorta, and especially, at the commencement of the arteria inominata, and of the carotid and subclavian arteries; their structure appears to be stratum superposed on stratum, and their effect on the circulation was, apparently, to prevent the natural quantity of blood, passing through those arteries to the head. Four inches above the origin of the cæliac artery, a red streak commences, between the intercostal arteries, and extends diagonally down to the cæliac; from the cæliac downwards, the internal coat is much darker; leading to the emulgent arteries, and immediately above them, there is an elevation, with an abrupt base towards those arteries, which would prevent the current of blood, to a certain extent, entering into them. Below these arteries, transverse rugæ commence, the surface becomes very dark and the coats thin.

ABDOMINAL
CAVITY.

The parietes laid open, the viscera are all contracted and diminished. The liver is of the natural color, diminished in proportion to the general emaciation; sections of its tissue are of a coarse granular appearance, but the color is natural, and it freely emits blood. The gall bladder contains six drachms of a very yellow, green, ropy bile. The spleen is very much diminished, its rounded peritoneal surface having attached to it, innumerable firm, white excrescences, which are in color and consistence similar to *cera alba*; they are readily scraped off, and then found to be within an extra membrane, which can be detached, leaving the proper membrane of the spleen entire. The internal splenic tissue readily breaks, and throws out a moist, pultaceous, puce colored fluid. The kidneys are diminished, and their tissue is pale on both sides. The pancreas is extremely diminished; its tissue soft and dark colored. The *æso*phagus laid open from its commencement; the cuticular lining presents the usual healthy appearance, till its abrupt termination in the cardiac orifice. The mucous coat of the stomach has the longitudinal rugæ well developed. The cardiac orifice, and the posterior and inferior surface in the large curvature, have some slight vascular engorgement. The small curvature has the mucous coat pale, which is continued the first three inches into the duodenum. From the perforation of the ductus communis, the rugæ are well developed, and considerably stained with bile. The mucous coat of the jejunum is pale, and its rugæ well developed. In the commencement of the ilium, five inches of the mucous coat, have the capillaries much engorged. About the centre of the ileum, the mucous coat becomes irregularly thin, in parts, the rugæ irregular in form, position and size; the tube itself greatly contracted, still the mucous membrane is general-

ly quite pale; the last five inches of the tube have no rugæ, the surface is quite smooth, and there is a honey comb ulcer traversing this longitudinal extent, one third of an inch in breadth. The cæcum is very much contracted, and its mucous membrane stained with bile. The ascending colon has some small transverse rugæ, and no indication of disease. The descending colon, sigmoid flexure and the rectum, are all very much contracted; they have little or no rugæ, and the surface is pale throughout. The urinary bladder is contracted: contains very little fluid, and has its internal surface crossed in various directions, with the columnar elevations noticed by Bichat.*

CRANIAL CAVITY.

Removing the skull cap, the frontal, parietal, and occipital bones are found thrice the usual thickness, owing to increased depth of reticulated structure, interposed between the external and internal tables. A little serous fluid oozed from the lacerated vessels, on the surface of the dura mater, and laying this membrane open, it is found very much thickened, and serous fluid escaped freely, which had been largely effused over the cerebral hemispheres. Turning the dura mater backward, semi-gelatinized fluid is observed largely effused, within the arachnoid membrane. The arachnoid is milky throughout. The fluid effused between the arachnoid and pia mater, elevates the arachnoid considerably over the convolutions, more especially posteriorly. The capillaries of the pia mater throughout, are injected. Drawing the anterior and central cerebral lobes upwards and backwards, fluid is observed freely effused at the base of the brain. Looking over the pons varolii into the

* This individual consumed a singularly small quantity of food and drink, from the period of admission into Hospital. But a daily register was not kept.

foramen magnum, it is observed also filled with fluid. In all oz. iiss. are removed from the base of the brain. The capillary vessels on the base of the brain are injected. The anterior lobes of the brain, and the central lobes at their anterior external angles, have all become quite soft and pulpy, but they continue to retain their form. The right lobe of the cerebellum, at its inferior posterior internal angle, has the size of a pea, of its substance quite soft, and does not retain its form. The cerebral mass, generally, is softer than natural. Fluid is freely effused into both lateral ventricles. The plexus choroides on both sides, blanched. The vessels ramified on the surface of the ventricles, are dilated and engorged. The cortical substance generally, is well marked; that of the external surface is very soft, and semi-transparent: whilst that of the thalami nervorum opticorum, is of the natural structure, consistence and appearance. The cerebellum is generally soft, in other respects, its appearance is natural, excepting, that the odontoid process of the left side, is much larger than that of the right. The pia mater covering the cerebellum, hath its capillaries generally engorged.

Removing the anterior vertebral column, the theca is observed to contain some fluid. Removing the cord in its theca, the loose lining tissue inferiorly, is slightly injected with semi-gelatinous fluid. Laying open the dura mater of the cord anteriorly, the vessels corresponding to the 4th, 5th, and 6th dorsal vertebræ are injected; inferior to this, the tissue of the cord on its anterior surface, is extremely soft for two inches. The equinal nerves externally are generally blanched. Laying open the dura mater of the cord posteriorly, the vessels are considerably engorged: and the surfaces of the cord, theca, and e-

SPINAL
CANAL.

equinal nerves are all blanched. One of the vessels passing out with the first fasciculus of the right equinal nerves, is very much dilated and engorged. The structure, consistence, and appearance of the cord, with the exceptions mentioned, are apparently natural.

RESUME'

THORACIC CAVITY.

Lungs partially collapsed; some engorgement and injection of mucous membrane; size of a walnut of posterior surface of left inferior lobe, sloughed, and minute tubercles scattered through that lobe. Muco-purulent fluid in the right air tubes, and the lining membrane presents a suppurating surface. Centre and inferior right lobes engorged, and closely studded with tubercles. Heart's cavities nearly empty; thickened elevations on the interior of the aorta, calculated to diminish the volume of blood sent, to the head and to the kidneys.

ABDOMINAL CAVITY.

Volume of the viscera diminished greatly. The liver contains blood, color natural, tissue coarse and granular; peritoneal covering of the spleen, has numerous little masses adhering to it, like flattened drops of white wax. Kidneys pale. Pancreas soft and dark. Capillary engorgement of the mucous membrane, commences in the ilium, and there is a large ulcer near the cæcum.

CRANIAL CAVITY.

The cranial bones extremely thickened. Dura mater thickened; serous effusion. Arachnoid milky. The pia mater vascular; tissue of anterior and central lobes at their external anterior angles, softened; right lobe of cerebellum at its inferior posterior internal angle, softened. Cerebral tissue softer than natural; fluid in the ventricles; plexus blanched; cortical substance well marked, but soft and semi-transparent.

Theca contains fluid; external lining tissue injected with semi-gelatinous fluid; partial engorgement and softening of the cord anteriorly; engorgement posteriorly, and the surfaces on both sides are blanched.

SPINAL
CANAL.

CASE XXIV.

CEREBRAL EFFUSION. LEFT PECTORALIS MAJOR LACERATED, 3D. 4TH. AND 5TH. RIBS FRACTURED, SLOUGHING OF THE PARIETES. PULMONARY ENGORGEMENT AND GANGRENE. GREAT ARTERIAL COATS THIN AND DARK; ILIACS WITH TRANSVERSE RUGÆ. INTESTINAL INFLAMMATION AND ULCERS.

HOUSSAIN. a sea Lascar, Admitted into the Penang general Hospital 3d July 1827. Aged 31, tall and muscular. The left pectoralis major and external integuments sever'd, by the explosion of a gun cartridge. The hemorrhage was very considerable. The wound had been superficially dressed, and the bleeding ceased, before his removal to the general Hospital. Camphorated oil was poured over and into the dressings. Venesections, antimonials and severe regimen were employed; but the pleuro-pulmonary affection (announced with the stethoscope, in part by the sharp hard rattle, for the first four days, succeeded by loss of respiratory murmur in the part, with continued fever and cough,) terminated in death on the night of the 18th.

Examination of the body was made at 11 A. M. on the 19th. July, 12 hours after death. The body lays horizontally, the head elevated on the usual triangle for examination; there is not much emaciation.

WOUND.

Examination of the external wound, shews all its surfaces sloughed. The 3d. 4th. and 5th. ribs are fractured two inches from the sternal articulation, and a free opening exists at this spot, into the left thoracic cavity. A dark foetid sanies or ichor appears in the cavity, which seems to run out, as the body is moved from its parallel.

AUTOPSY.

THORACIC
CAVITY.

Removing the anterior sternal arch, the 3d. 4th. and 5th. ribs, are found to have been fractured, and free opening made into the thorax, either by the original wound or sloughing. Inflammation of the pulmonary pleura had taken place opposite the wound, and subsequently, sloughing of it and the pulmonary tissue. In a line parallel with the lowest part of the wound, in a horizontal posture, firm adhesion has taken place, between the pulmonary and costal pleura, which prevents the fluid produced in the wound, from gaining farther access into the thoracic cavity. A considerable quantity of gunpowder is found, on the surface of the lung corresponding with the wound. Removing the heart from the pericardium, two ounces of straw colored fluid are found in this cavity. The right ventricle and auricle laid open, a large fibrinous coagulum is found, partially filling up both cavities. The foramen ovale is found imperfectly closed, a quill passing readily from the right to the left auricle, on elevating a small extension of membrane, which acts over this opening, as a valve. The fluid found in these cavities is small in quantity, thin, and filled with minute air bubbles. A very firm fibrinous coagulum, is found in the left cavity, attached to the chordæ tendineæ. The muscular tissue of the heart is flac-

cid and pale. The inner surface of the aorta, superiorly, is darker than natural; the semi-lunar valves are natural. The pulmonary artery at its commencement, is darker than natural and its coats are thin. The aorta laid open to its termination, is found darker than natural throughout. The coats of the iliacs are extremely thin, and transverse rugæ are observed on their internal surface. The trachea laid open, shews its mucous tissue pale, for the first two inches, then it becomes extremely red between the cartilaginous rings; at its division, the sanguineous injection of capillary vessels, gives a general scarlet color to the surface. The ramifications of the pulmonary tubes laid open, throughout the tissue of the left lung; they contain dark ichor, mingled with minute air bubbles, and the surface throughout is red from capillary engorgement. The pulmonary tissue in all parts of the superior lobe affords crepitus. The inferior lobe is considerably engorged with blood, and only affords crepitus in parts. The ramification of the pulmonary artery laid open, its surface as also that of the vein, is darker than natural. The ramifications of the air tubes laid open, shew the capillaries of their surface considerably injected.

The liver is larger than natural, its substance pale and it contains very little blood. The gall bladder is distended with 12 drams of tarry granular bile, slowly miscible with water. The spleen is rather enlarged; its internal tissue a pale flesh color, is soft and nearly decomposed. The pancreas is found of the usual consistence and structure, but darker than natural. The kidneys are of the usual consistence and appearance on both sides, but their tissue is extremely pale and bloodless. The cuticular lining of the œsophagus is pale and terminates abruptly in the cardiac orifice. The mucous membrane of the stomach in the

ABDOMINAL
CAVITY.

large curvature has sundry red patches, resembling minute points of extravasated blood, in that part which had been undermost, in the horizontal posture; all other parts of the stomach have its mucous membrane pale, and the rugæ well developed. Passing the pylorus, the mucous membrane is at first pale, the rugæ well developed. The mucous membrane of the jejunum is pale, and rugæ well developed. The superior part of the ileum has its mucous membrane becoming thin, rugæ contorted, irregular, small, rounded and firm, with patches of engorgement; fourteen living lumbrici are removed from the ileum. About the centre of the intestine, sixteen inches of inflamed surface is observed, having a honey comb ulcer six inches in length extended through its centre; inferior to this, the mucous membrane becomes more thin, the rugæ more irregular, and the surface in many parts is quite dark from engorgement. Towards the termination of the ileum, the rugæ cease, the surface becomes dark, and very extensive honey comb ulcers appear (of which one is nine inches in length,) and nearly occupying the entire surface of the intestine leading into the cæcum. The interior surface of the cæcum is of a grey blue or livid color, from engorgement. The ascending colon has its mucous membrane of a dark livid color, with its vessels also engorged. The transverse colon has its mucous membrane of a dark pale color, but not engorged. The ascending colon has the vessels of its mucous membrane inferiorly, rather engorged. The rugæ throughout the large intestine are small, irregular and thin, or, they are altogether wanting. The urinary bladder contains seven ounces of straw color'd fluid; and columnar elevations are observed on its surface, under the mucous coat which is pale.

Removing the skull cap, the meningeal vessels on the surface of the dura mater, are very slightly engorged. The dura mater is thickened generally, and with the cerebral mass, obviously contains an effused fluid. Removing the dura mater which covered the hemispheres superiorly, serous fluid freely oozes out from beneath the arachnoid membrane, and air bubbles appear in the vessels ramified over the convolutions. Semi-gelatinized fluid is observed between the arachnoid membrane and the pia mater, which partly sinks between the convolutions, and in part elevates the arachnoid, which is milky throughout. The cerebral veins and arteries ramified over the convolutions posteriorly, are all engorged. Drawing the anterior and middle cerebral lobes upwards and backwards, the vessels of the pia mater, on the base of the brain, are extremely engorged; serous fluid is observed filling up the spinal theca, and also largely effused, and filling up the cavities occupied by the posterior cerebral lobes, and by the cerebellum. When the cerebral mass was removed, the fluid collected here amounts to two ounces. The cerebral mass is rather firm; horizontal sections of the hemispheres, through the centrum ovale, shew numerous bleeding points, and the effused fluid very rapidly spreads. The cortical substance is well marked. Laying open the lateral ventricles, and turning the fornix backward, the anterior cornua on both sides, are filled with sero-sanguineous fluid. The vessels of the choroid plexus on both sides are engorged, the large trunks more especially so. The continuation of vessels extending posteriorly over the corpora quadrigemina, are also engorged. The fourth ventricle is filled with sero-sanguineous fluid. The structure, color and consistence of the cerebellum appear natural.

SPINAL
CANAL.

Removing the anterior arch of the vertebral column, fluid is observed in the spinal theca. Having removed the cord in its theca from the spinal canal, the veins ramified on the posterior surface of this cavity, in its dorsal portion, are all very much dilated and engorged with black blood. The spinal theca laid open anteriorly, numerous adhesions are found, connecting the arachnoid of the cord, to that of the theca. The pia mater covering the entire surface of the cord, is very dark, and the equinal nerves have the blanched appearance, that would result from maceration. There is no vascular engorgement on this surface. Theca of the cord laid open posteriorly; there are no adhesions, no vascular engorgement; the pia mater throughout is dark, and the equinal nerves have the dull appearance observed on the anterior surface. The consistence of the cord is soft; the color and structure of its tissue natural. A few vessels accompanying some of the equinal nerves, are observed dilated and engorged with black blood.

RESUME

THORACIC
CAVITY.

3d. 4th. and 5th. left ribs broken, and the parietes and pectoral muscle partially removed, in part by the explosion and sloughing; thin sanies discolored by gun powder, oozes from the opening, which has its marginal costal pleura adhering to the pulmonary. Mucous lining of trachea vascular; pulmonary air tubes contain ichor, their surfaces dark or vascular; sloughing of pulmonary tissue opposite the wound. Fibrinous coagula in the right and left cavities of the heart, with minute air bubbles on the left; interior of arteries and veins dark.

Liver large, pale, and contains little blood. Spleen enlarged and pale. Pancreas preternaturally dark. Kidneys pale; mucous membrane of the stomach shews ecchymosed points; partial inflammation of the intestinal surface and honey comb ulcers.

ABDOMINAL
CAVITY.

Dura mater thickened; effusion; arachnoid milky; air bubbles in the vessels of pia mater; large vascular trunks engorged; cerebral mass firm; cortical substance well marked; centrum ovale shews the points throwing out very aqueous blood in the ventricles.

CRANIAL
CAVITY.

Vessels of the canal engorged; fluid in the theca; anteriorly, adhesions of arachnoid; pia mater slaty, surfaces blanched; posteriorly, pia mater slaty, a few of the equinal vessels gorged.

SPINAL
CANAL.

CASE XXV.

SLOUGHING OF THE LUNGS AND OF THE STUMP OF THE LEFT THIGH AFTER AMPUTATION. THE LIVER YELLOW AND COARSE. GALL STONES. BONES DISEASED. CEREBRAL EFFUSION.

ANTECEDENT DISEASES.

Diseased liver; dysenteric ulcers, and sloughing ulcers of the lower extremities. 24th. August 1827.

PHILIP JOANEY. Admitted into the Penang General Hospital 15th. March 1826. *Ætatis* 30. Middle sized, thin delicate and unhealthy; affected with severe ulcers on the inferior extremities, of long standing. Mr. Surgeon Henderson amputated the right leg below the knee on this account in 1825.

which healed, forming a good stump; subsequently, ulcers and sloughing attacked the left leg, which was amputated above the knee. 13th. July 1827. In the course of this operation, the femur was discovered to be diseased, its surface rough, and it was cut through by a very few strokes of the saw, its substance being quite soft, spongy and calcareous like wet chalk. A good stump was formed, after having been washed with a solution of muriate of soda, in the hope of exciting adhesive inflammation; but healthy action and adhesion did not take place, notwithstanding the free use of nutritious diet and wine with other auxiliaries. Sloughing re-occurred, and he finally died at 6. A. M. 25th. August 1827.

The body was laid out for inspection $\frac{1}{4}$ past 3. P. M. 9. hours after death. The subject is extremely emaciated, and the femur presents through the parietes at the line of amputation, the circumjacent tissue, having sloughed away.

AUTOPSY.

THORACIC CAVITY.

Laying open the anterior parietes of the trunk from the chin to the os pubis, and removing the anterior sternal arch, the lungs, generally, present collapsed, especially on the left side. The inferior lobe of the right lung is firm not collapsed, and apparently its parenchyma is tuberculated. Laying open the trachea arteria posteriorly, its surface is covered with spumous brown mucus, but its tissue is pale. The mucous lining of the air tubes extended through the left lung, is pale; that of the right is mostly dark colored. Sections of the inferior lobe of the right lung (which feels firm and indurated (pre-

sent an appearance of greatly increased closeness of texture. Externally, a white membranous line marks the limit of this congested part, within which, the color is very much darker. Supposing this part carneous, pressure is made, which forces out very minutely spumous fluid copiously, and the part then becomes quite soft and breaks as the decomposed tissue, shewing that it had sloughed. The internal surfaces of the pulmonary veins and arteries, except in this diseased part and its vicinity, are healthy. Laying open the pericardium, the heart is found diminished, corresponding with the general emaciation. There is very little fluid found in the pericardium. The external surface of the heart is blanched and pale; laying open its right cavities, a small coagulum is found in the ventricle. Laying open the left cavities, a small coagulum of blood is found in the left ventricle, and a fibrinous coagulum in the auricle attached to the natural valves. The interior of the aorta is natural.

Laying open the abdominal parietes, the fat of the omentum is absorbed. Stomach and intestinal tube are distended with gas, and the peritoneal surface generally quite pale. The stomach is bent inward and backward on itself. The liver is a very pale yellow, especially the left lobe; viewed through a glass, the appearance is exactly like a yellow white marble, with reddish brown striæ. The left lobe however has these striæ so extremely pale, as to require minute examination to detect them. Sections of the liver are firm; it tears readily, presenting a very ragged coarse granular appearance. The gall bladder contains six drachms of straw colored bile and three gall stones; each resembling a cluster of small round agglutinated bodies. The spleen is diminished in size, of a red slate color; its sections rather firm, and of the same color observed externally.

ABDOMINAL
CAVITY.

The kidneys are small, flaccid, and their tissue pale; but the mucous lining of the basin of the left kidney has its capillaries injected. The Urinary bladder is rather contracted; it contains five ounces of straw colored urine; the capillaries of its mucous surface, excepting immediately at the fundus, are all minutely injected; columnar elevations are observed on this surface. The pancreas is not so small as the general emaciation would indicate; its tissue is firm and dark. The mesenteric glands are not enlarged. The œsophagus laid open; its cuticular lining is pale and terminates abruptly in the cardiac orifice. The mucous membrane of the stomach is quite pale, partially corrugated, and at the inferior part of its large curvature, there is a spot equal to the palm of the hand, which has that peculiar appearance resembling Marseilles quilting. The mucous membrane from the pylorus to the entry of the ductus communis, is corrugated longitudinally; from thence the rugæ are well developed and pale for five feet; then a small patch of engorgement occurs progressively; this surface is generally quite pale, but the mucous membrane becomes thinner, the rugæ less marked, and the coats altogether are extremely thin. In the inferior part of the ileum, the mucous membrane seems not to exist; the surface is quite smooth, and the capillary vessels are injected. The cæcum is contracted, its mucous coat of a pale bluish color. The mucous coat of the ascending and transverse colon is of the same character; that of the descending colon, sigmoid flexure and rectum, are progressively more thickened, have their vessels more injected, and they present numerous scars of preceding extensive dysenteric ulceration.

CRANIAL
CAVITY.

The head is elevated on a triangle. Laying open the scalp and removing the skull cap, the dura mater externally is pale

Laying the dura mater open anteriorly and laterally, the general surface of the cerebral hemispheres is pale. The arachnoid milky. Fluid is freely effused between the arachnoid and pia mater. Air bubbles are observed under the arachnoid and also within the transparent vessels ramified between the convolutions. The effused fluid has gravitated to the posterior part of the head, and is there more largely collected. Elevating the anterior and central cerebral lobes, and drawing them upwards and backwards, fluid is observed largely effused at the base of the brain. Dividing the tentorium at its junction with the petrous ridge of the temporal bone, and drawing the cerebral mass backward, and looking over the pons varolii into the foramen magnum, it is observed filled with fluid. Removing the cerebral mass, the arachnoid over its base is milky, the vessels are not engorged excepting the capillaries of the pia mater, which are so. Horizontal sections through the centrum ovale shew the usual bleeding points. The cortical substance is rather pale, and there is very little of it. The lateral ventricles laid open; both contain effused fluid. Plexus choroides on both sides blanched, and their tissue contains a few tubercles. The pia mater of the cerebellum has its vessels rather injected, and the cortical tissue of the cerebellum, laying over the corpora quadrigemina, is extremely soft. Colorless fluid removed from the base of the brain and lateral ventricles, amounts to two ounces.

Removing the anterior arch of the vertebral column, the spinal cord presents in its theca, additionally distended with fluid. Removing the cord in its theca, the loose cellular lining of the canal is injected with semigelatinized fluid, from the 5th. dorsal to the 3d. lumbar vertebra. Laying open the dura mater

SPINAL
CANAL.

of the cord posteriorly, the small vessels ramined over the surface of the cord, between the origin of the nerves are all engorged, but no large vessel is observed. The surfaces are very wet and blanched, and the equinal nerves have lost their natural lustre. Laying open the dura mater of the cord anteriorly, the surfaces are very wet and blanched. The equinal nerves have lost their lustre. There are some adhesions of the arachnoid of the theca to that of the cord, and a few of the minute capillaries are irregularly injected. The tissue of the cord is soft, especially its superior portion; its structure and appearances otherwise than as expressed, are natural.

RESUME

THORACIC CAVITY.

Mucous lining of the left lung pale, that of the right mostly dark, and part of its inferior lobe sloughed; a small coagulum in the right ventricle, a small sanguineous coagulum in the auricle; interior of aorta natural.

ABDOMINAL CAVITY.

Peritoneal surface pale; liver pale yellow and coarse texture; gall concretions. Spleen rather firm. Kidneys pale; urinary bladder internally injected. Pancreas large, firm and dark; mesenteric glands not enlarged. Mucous membrane of the stomach partially softened, pale, and small squares observed on its surface; inferiorly, vascular patches; near the cæcum it apparently ceases and in the large intestines scars of preceding ulceration.

CRANIAL CAVITY.

Arachnoid milky; effusion; pia mater pale; air bubbles under the arachnoid and within the transparent vessels. Cortical tissue diminished and pale; ventricles contain fluid; plexus blanched; cerebellum over corpora quadrigemina soft.

SPINAL

Loose lining tissue contains semigelatinized fluid; pos-

teriorly, cords capillaries injected; anteriorly, capillaries irregularly injected; adhesions of arachnoid; both surfaces blanched and wet; cords tissue especially superiorly, soft.

CANAL,

END OF THE
CASES AND DISSECTIONS.

PART SECOND.

ESSAY ON THE USES OF THE STETHOSCOPE.

The stethoscope enables those familiar with its use, to detect variations of the voice indicating disease, also those produced, by respiration, including the rattle occasioned by mucus, the gurgling of confined fluids, or the absence of sound. It affords an accurate knowledge of the heart's pulsations, detects disease of that organ or the large blood vessels, and it indicates the existing condition of the disease.

The stethoscope is applied with the funnel shaped plug infixed, in exploring the signs obtained thro' the medium of the voice, and the action of the heart; with the stopper removed for examining the sounds communicated by respiration, including the rattle from adherent mucus, or sounds occasioned by secreted or effused fluids.

In examining the patient, if in bed, he should lie on his back, and at both sides of the bed successively while we examine the anterior parts of the chest; examining the lateral parts of the chest and in the axilla, the patient must lean from us; and whilst examining the upper part of the shoulder he should lean towards us; examining the back, he sits in bed, leans from us, and crosses his arms. If the patient is in a chair, it is best to

ESSAY ON THE USES OF THE STETHOSCOPE.

kneel on one knee to examine the anterior parts of the chest; and in all cases to turn his head from us during examination.

The voice in healthy individuals when speaking or singing, excites vibration perceptible to the hand placed on the thorax. This is not observable when the lungs are impermeable to air, or when effused fluid is interposed between the lung and the thoracic parietes. The intensity of vibration varies greatly as in fat persons, where the integuments are thick or flaccid, and where the voice is sharp, and weak. Thoracic anasarca destroys it although the lungs are sound.

The sound of the voice is very perceptible at the anterior superior part of the thorax; on the sides, and the middle of the back, the hand conveys a sense of vibration distinctly, but most distinct in the axilla, between the spine, and edge of the scapula, before and near the union of the clavicle with the sternum; in these points the voice sounds nearer, and stronger than in other parts.

RESPIRATION.

Applying the stethoscope (the plug removed) to the thorax during respiration, there is a slight but distinct murmur heard, occasioned by the air entering the pulmonary cells: this noise is compared to that of bellows, whose valve is removed, or that of a person in heavy sleep, who occasionally makes a deep inspiration. It is most distinct, where the lungs approach and are more thinly covered by the parietes, at the anterior superior part of the thorax, the lateral inferior posterior parts, and in the axillæ, but most perceptible between the clavicle, and superior edge of the Trapezius.

On the larynx, and the trachea, and opposite the bronchial bifurcation, there is a peculiar murmur, as if the patient respired thro' the stethoscope—Patients influenced by fear, breathe languidly, which obstructs observation (the intervention of clothes is not of material consequence, but friction is to be avoided, and the instrument placed gently but firmly; slow respiration is not heard, hence occasionally make the patient breathe quickly).

In children the sound of respiration is very distinct and peculiar; as if the cells were dilated to their fullest extent, hence it is sonorous. In adults the cells seem dilated stiffly, the sound is best marked in inspiration; dilatation of the chest is greatest in children, and diminishes towards puberty.

The sound varies much in adults, those of slow respiration being proportionally less distinct.

Some preserve the respiratory sound of children, which Dr. Laennec terms puerile respiration. These are generally women, and men of nervous habits; they soon get out of breath, and are subject to colds, or the chronic form of catarrh termed asthma. Adults acquire partial puerile respiration, when a lung becomes wholly or partly impermeable to air from acute disease; respiration becomes puerile in the sound portions, from unusual dilatation of the cells, the same is observable in some cases of fever; and in some nervous diseases.

Puerile respiration in children, results from the entire dilatation of air cells. Dyspnæa produces most noise in the thorax, which the most audible respiration does not. Puerile breathing must not be confounded with rattling, or other morbid sounds. When the respiratory murmur is equally distinct in every part of the chest, there is neither effusion, nor engorgement of the

lungs. When respiration is not distinguishable in any particular point, the corresponding part of the lung is impermeable to air from some cause or other.

This sign is more distinct, equally perceptible, and affords the same indications, as absence of sound in Avenbruggers percussion. Air passing through fluid matter in the lungs or bronchiæ, affords the sound, which from its resemblance to that in dying persons, is termed "rattle".

PHTHISIS.

When the voice seems to reach the ear thro' the stethoscope, it is called Pectoriloquism. It is identical with the voice heard thro' the stethoscope placed over the Larynx; and is most striking when the opposite ear is closed.

This is found in patients having excavations in the lungs, produced by the softening or dissolution of tubercles, which communicate by one, or more openings with the bronchiæ.

In the early stage of phthisis, neither percussion nor auscultation affords means of detecting the disease; when tubercles are congregated in numbers, so as to form masses, respiration is inaudible, and percussion elicits a dull sound; in the second stage of tubercle, incipient pectoriloquism is detected, particularly where there is purulent expectoration.

Sputa obstructing the bronchiæ may prevent hearing pectoriloquism, hence the necessity for repeated examination.

After repeated examinations, if pectoriloquism is not detected, but the case apparently consumptive, either the tuber-

cles are still immature; or if softened, they do not yet communicate with the bronchiæ, or lastly, the disease is not phthisis.

The superior lobes of the lungs are the most common site of tubercles, yet the whole parietes should be examined.

Pectoriloquism often shews disease, when no other symptom exists.

Cough, dyspnæa, puriform sputa, hectic fever, hæmoptysis, emaciation &c. may exist, yet phthisis not be the cause, but some other organic affection, simulated by nervous, or mere functional disorder; on the contrary, in true phthisis all the usual symptoms are often wanting; sometimes colliquative diarrhæa, and hectic are the only symptoms.

Egophonism is subject to be confounded with pectoriloquism, where unusual dilatation of the bronchiæ exists. Tubercles are most frequent in the superior pulmonary lobes, and they are detected readily in the superior anterior part of the chest. In the axilla, the space between the clavicle and trapezius, and on the upper flat part of the scapula. (this bone and its coverings do not destroy, but render the sound duller) we can best distinguish the commencement and progress of disease.

Pectoriloquism is certain or uncertain; when the voice appears somewhat more acute, and slightly altered, like ventriloquists; or, when it resounds under the stethoscope with more than its natural strength, without seeming to traverse the tube; the latter conveys a perfect idea of the uncertain pectoriloquism. It is found on applying the cylinder between the inner edge (base) of the scapula and spine, opposite the origin of the bronchiæ; in a healthy person who is lean and has an acute voice; and it exists more or less in all persons.

In thin narrow chested children, these points often give certain pectoriloquism.

In some cases no conclusion should be drawn from uncertain pectoriloquism, when it exists in the point last mentioned, in the axilla, or near the junction of the clavicle with the sternum; and even on the superior anterior part of the chest, when pectoriloquism is very imperfect, and exists equally on both sides; the same rule is applicable to the whole superior anterior part of the chest, when pectoriloquism is uncertain, and exists equally on both sides.

When pectoriloquism is uncertain in parts below the third or fourth rib, on one side only, there is strong presumptive evidence that excavation exists, and if the phenomenon does not exist in the other parts above alluded to, it is almost certain: and we must conclude that the tuberculous cavity is deep, or that it is filled by matter perfectly softened. If in any one point the voice is stronger than that of the opposite side, especially if it is stronger and nearer than the natural voice heard by the ear, the indication is as certain as if the voice traversed the tube, and in such cases pectoriloquism is imperfect, not uncertain.

Pectoriloquism is more distinct if the person's voice is sharp. This is frequent with women and children. Hence with them, caution is necessary against uncertain pectoriloquism. And again in persons with a very deep voice, pectoriloquism is often uncertain, when the excavations are fully formed: in these cases the voice is much agitated, and is tremulous. It does not enter the tube, but resounds at its extremity, with a force double or triple that which is natural to it. Sometimes the patient seems to speak thro' a speaking trumpet quite close to the observer, and not as in perfect pectoriloquism, thro' a tube into his ear.—If this exists on one side only, it is a certain indication of excavation.

This is more particularly the case, if stopping one ear, there is a great difference of sound between the place in question, and other parts of the chest.

When pulmonary excavations are very large, distinct pectoriloquism is changed into this variety, in persons not possessing a deep toned voice.

In some cases of perfect pectoriloquism, the voice instead of passing continuous thro' the cylinder, is intermittent.

Sometimes pectoriloquism ceases for a time, in consequence of obstruction of the bronchiæ by mucus, as we learn from the accompanying rattle, hence the examinations should be numerous.

Commonly in pectoriloquism, the voice heard thro' the tube is somewhat smothered, like that of ventriloquists; like theirs also some words are very distinct, others dull.

Sometimes it is weaker than the natural voice, but usually louder.

Sometimes it seems conveyed by a trumpet, at others, as if spoken directly in the ear, and so loud as to be disagreeable.

Sometimes it resounds as if thro' a brass tube and is accompanied by a sort of bleating (*chevrotement*) described under the name of Egophonism. This must not be confounded with pectoriloquism.

Sometimes every word is followed by a sort of tinkling or ringing, like that of a small bell or glass, which dies away in the tube at a variable altitude; this is termed (*tintement metal-lique*) metallic tinkling.

Sometimes every word is accompanied by a sound, resembling the forcible expiration of the breath, as in blowing out a candle, and the impression is, that air is rushing into the ear through the tube.

Extinction of voice does not affect pectoriloquism, it being frequently distinct, in persons whose voice cannot be heard at three or four feet distance.

A moderate sized and regular shaped pulmonic excavation, gives rise to this phenomenon more decidedly, than very large or irregular ones. An idea of the excavation may be formed from the characters of pectoriloquism. When the cavities are quite empty the voice is heard clear, and without any extraneous sounds; when, on the contrary they contain a certain portion of soft matter, the voice is accompanied by a sort of gurgling noise which renders articulation less distinct.

In the last stage of phthisis, respiration affords peculiar indications. The sound of respiration continues very audible over the site of the excavation, but instead of being attended with a crepitous noise, it simply resembles the sound of wind, passing, as of a pair of bellows, or like that observed by applying the cylinder to the trachea, but more distinct.

In these cases percussion elicits a dull sound, owing to engorgement of the parts surrounding the excavation. These two circumstances, and the existence of a spot yielding very forcibly the sound of respiration, without crepitus, in the centre of a portion of the chest which sounds dull, may be considered pathognomonic of this state of the parts. In certain cases, the sound of respiration over the site of tuberculous cavities, is accompanied by a sensation, as if the patient in inspiration inhaled air through the stethoscope, and exhaled it in expiration. This is observable on applying the instrument to the trachea of a person in health.

The rattle also affords some signs. The mucous or gurgling rattle. This is produced by the transmission of air thro'

soft tuberculous matter; in other cases it arises from accumulation of sputa or blood in the bronchiæ or trachea, and is the "dead rattle" of the vulgar.

This is the only species of rattle, heard by the unassisted ear, and it can be so only, when its seat is in the trachea or larger bronchial tubes; the cylinder detects it in any part of the lungs.

Rattle, indicates the existence of tuberculous excavation, when it is found exactly circumscribed, and confined to particular parts of the thorax, it sometimes precedes pectoriloquism by several days, or even weeks.

Simple respiration and cough, produce this species of rattle in the pulmonic excavations, half filled with softened tuberculous matter. When this is very liquid, the fluctuation of a liquid in place of the rattle, is like the noise produced by the escape of water from a bottle, with its neck held downward. Sometimes a patient is sensible of the motion, occasioned by the passage of air thro' the excavation, as indicated by saying, he feels the expectorated fluid, coming from a particular point.

Peripneumony is the longest known disease; its symptoms are, impeded respiration, deep pain in the side affected, inability of lying on the opposite side, fever, cough, viscid sputa, often mixed with blood, urine deep red; any one of these symptoms may be absent, and all are common to various other diseases.

In many cases of peripneumony, there is no pain, dyspnæa, is often slight, and unperceived by the patient, even when it is noticed by the attendants; some patients cannot lie on the affected side, but the contrary is most usual. The cough is occasionally slight, not frequent, and in the chronic variety of

the disease particularly, it is often so inconsiderable, that its existence is denied by the patient: fever tho' usually attendant on those inflammatory affections, at least at their origin, is often wanting in this disease, after the first few days.

The only one of the general symptoms that can certainly be depended on, is, the tenacious sputa, but this is not always well marked, and seldom is so, after some days continuance of the disease; hence the liability to mistake, particularly if the patient is not examined in the commencement. When peripneumony supervenes, during the course of another disease, the percussion of Avenbrugger is a good method of examination, but it is not always applicable.

In the first degree of peripneumony, the respiratory murmur is still heard in the part affected, whether percussion affords alteration of sound or not, but it is accompanied with a crepitous rattle, which is a pathognomonic sign of the first degree of peripneumony.

The crepitous rattle resembles, the crepitation of common salt in a heated vessel, and is analogous to the noise emitted by a healthy lung when pressed between the fingers, only stronger. The other diseases in which this species of rattle occurs, are, œdema of the lungs, and hæmoptysis.

The second, and third varieties, are distinguished by a total absence of the respiratory murmur.

On the patient making a full inspiration, we see, and feel the motion of the thoracic parietes, but hear no sound.

Sometimes in place of the natural sound of respiration, there is a mucous rattle; this is particularly the case, when a pulmonary catarrh is conjoined with peripneumony; or when viscid mucous sputa of the early stage, becomes changed to-

wards the latter stage, into a thick, more opaque, and less viscid expectoration; in all varieties of this disease, but especially the two first, respiration is puerile in the healthy parts of the lungs.

When peripneumony terminates favorably, the cylinder detects the commencement and progress of the cure, before percussion indicates any diminution of the pulmonary engorgement. A slight murmur during expiration is first observable in one point, and always in the superior part of the side affected, increasing daily in degree and extent, until complete resolution of the engorgement takes place. When in this state the patient makes a deep inspiration, towards its termination, a sort of crepitation is heard, like that produced by blowing air into cellular substance, as butchers do, or like the sudden inflation of a dry bladder.

Sometimes, when the use of antiphlogistics appear to have almost cured the complaint, the fever and pain go off, cough becomes less frequent, the expectoration diminishes, strength and appetite return; but we learn by the cylinder, and percussion, that pulmonary engorgement is undiminished. Accordingly after a short deceitful convalescence, fresh inflammation or general exhaustion supervene with cerebral congestion and dyspnæa, and the patient sinks.

In more numerous cases, the peripneumony retains the characters of acute disease, only for four or five days, but the organic derangement of the lungs remains for several weeks. In many cases where auscultation is applicable, percussion fails.

1st. Percussion is inapplicable to that part of the thorax occupied by the liver, and the stomach.

2dly. Useless in cases of great fatness.

3dly. In most rickety subjects.

4thly. By some unknown peculiarity of constitution.

5thly. By application of a blister to the part.

6thly. When both lungs are inflamed in corresponding parts, or where they are violently and extensively affected.

In the last case, death always takes place before engorgement is sufficiently advanced, to be detected by the sound from percussion.

Considering the slight crepitus that accompanies respiration, in the first degree of peripneumony, and the comparative intensity of the natural respiratory murmur in the sound portions of the lung, the stethoscope furnishes a characteristic symptom, which is, that, although respiration is still heard in the inflamed part, we perceive it is much less powerful than it ought to be, compared with its frequency and the obvious enlargement of the thorax. In double peripneumony, where both lungs are affected. (which is so insidious, that it may be mistaken for an attack of asthma, or nervous dyspnæa, especially when it supervenes in disease of the heart). In such cases early bleeding will save the patient, and the stethoscope will invariably detect the disease; in examination the patient should breathe quickly, and percussion should not be omitted.

GANGRENE OF THE LUNGS.

Pathognomonic signs. Expectoration of gangrenous fetid fluid, breath of a gangrenous odour.

When disease has produced pulmonary excavations, pectoriloquisim exists. When these cavities communicate with

the bronchiæ, and the cavity of the pleura, and have excited pleurisy, accompanied by pneumo-thorax, the *tintement métallique* or metallic ringing is observed.

HÆMOPTYSIS.

The principal symptoms are, great pulmonary oppression, cough with irritation of the larynx, sometimes acute pain in the chest, expectoration of bright and frothy blood, either pure or mixed with saliva, or some bronchial or guttural mucus; full and frequent pulse with a peculiar kind of vibration, even when soft and weak, as it frequently is after its continuance a day or two. Of all these symptoms the spitting of blood is most constant and dangerous; it returns with fits of cough, attended with oppression, anxiety, intense redness, or paleness of the face, and coldness of the extremities.

When the hæmorrhage is great, it often comes on with moderate cough, and is accompanied by a convulsive elevation of the diaphragm, like that which takes place in vomiting, hence the expression "vomiting of blood."

The extent of hæmoptysical engorgement is usually too limited for recognition by percussion, and deep seated parts of the lungs are beyond this means of diagnosis. The stethoscope affords two indications.

1st. Absence of respiration in a small portion of the lung.

2dly. Mucous rattle; and in that variety of disease where blood is furnished by the bronchial membrane, the latter indication may exist without the former, but when any doubt exists as to the less or more dangerous pathological condition,

the treatment must invariably be adapted to the latter.

Pulmonary catarrh. The general symptoms of pulmonary catarrh, especially cough and expectoration, afford no certain means of distinguishing it, from other diseases of the lungs. There are four principal kinds of rattle which serve as good indications.

1st. The humid or crepitous.

2dly. The mucous or gurgling.

3dly. The dry sonorous.

4thly. The dry sibilous, or hissing rattle.

The two first are described already.

The dry sonorous rattle, is more variable in its character than the two former. This sound is more or less deep, sometimes extremely loud, resembling the snoring of a person asleep, the bass note of a musical instrument, or the cooing of a wood pigeon. This last sound is so perfect, that one would suppose the bird was concealed in the bed. This variety affects the organ only in a limited extent. Mr. Laennec has found its site in pulmonary fistulas, at other times in bronchial tubes præternaturally dilated; and he supposes it arises from the narrowing, partial obstruction, or thickening of some part of a bronchial tube. This must not be confounded with common snoring, which takes place in the fauces, and is inaudible in the chest.

The dry sibilous or hissing rattle, varies also in its character; some times it is like a prolonged whisper of varied intonation; sometimes momentary, and resembles the chirping of birds. The sound emitted by suddenly separating two pieces of smooth oiled stones, or by the motion of a small valve. These

different kinds often exist together, in different parts of the lung, or successively in the same part. This sound arises from minute portions of very viscid mucus, obstructing small bronchial ramifications. Besides, a slight sense of vibration is communicated to the cylinder, when the seat of derangement happens to be immediately beneath it.

When this vibratory sensation is not to be discovered in any part of the chest, we may conclude the rattle is seated deep in the lung.

Some of the species of rattle, especially the mucous, and crepitous, cannot be distinguished one or two inches from their site; other species may be distinguished the whole extent of the lung, the different varieties of this phenomenon, often convey to the ear a sensation, as if it was accompanied by the successive formation and rupture of soap-bubbles.

In this disease the indications afforded by the rattle, are less numerous, and of less importance, than those by the voice and respiration.

The rattle is observed over the trachea in certain cases, as in catarrh, and hæmoptysis, by the unassisted ear, but the cylinder often detects it when otherwise inaudible.

In the commencement of pulmonary catarrh, when the disease is apparently limited to a slight coryza, almost without cough, and a slight irritation in the throat, the cylinder announces a rattle which is often very loud. This is usually of a sonorous but dull character, and sometimes trifling; its site is indicated by the sort of vibratory sensation before noticed. When very loud we can hear it at a distance from its site, but then it is more feeble, and unaccompanied by the vibratory movement.

The rattle is more grave, and sonorous, in proportion as the mucous membrane is more swollen, and the secretion of mucus small; in proportion as the disease advances, the mucous secretion increases and the rattle gradually assumes the gurgling character, or the mucous.

When pulmonary catarrh is partial, as it usually is, the rattle is confined to the part affected. The danger of the disease, and severity of general symptoms, are always proportioned to the extent of the local affection.

When the rattle is heard over all parts of one lung, or the greater part of both, the case is severe. If the disease is acute, it is attended by violent fever: if chronic, there is orthopnœa and prostration of strength, progressively more severe as the patient is farther advanced in life.

If the rattle extends over the whole of both lungs (which is only the case where there is violent fever) the disease is generally fatal, except when the patient is very young.

One of the most remarkable phenomena in pulmonary catarrh, is the occasional suspension of respiration in the affected part.

This circumstance which may be considered as pathognomonic of this disease, often supervenes, and passes off suddenly, after coughing or expectoration. Its cause is obviously the obstruction of a bronchial tube, by the contained mucus. In such cases, sometimes, the respiration is not entirely lost, but so far lessened, as to be barely audible.

The temporary suspension of respiration, should not lead us to confound this, with other diseased conditions.

In the present affection, percussion of the chest elicits a distinct sound; a circumstance sufficient to distinguish it from

peripneumony and from pleurisy with effusion.

In pneumo-thorax, and in emphysema of the lungs, there is also absence of the sound of respiration; and distinct sound on percussion, as in these cases of catarrh.

But in pneumo-thorax, all the other symptoms are so different, that there can be no risk of confounding the two affections.

In emphysema of the lungs, the very same indications are furnished, by auscultation, and percussion, as in the pulmonary catarrh; but in this case, sure means of discrimination are furnished by the general symptoms.

Pulmonary catarrh of sufficient severity to produce an extensive suspension of respiration, is a severe and acute disease, with fever, frequent and strong cough, and copious expectoration. Emphysema is a chronic affection, of which the chief, and almost only symptom, is impeded respiration.

Chronic catarrh is extremely difficult to distinguish from phthisis; and the general symptoms, as expectoration, emaciation &c. are perfectly similar.

Percussion gives no assistance in the diagnosis, as the chest usually sounds well in consumptive cases.

When examinations are made with the stethoscope, at different times, and for a certain period and that it does not detect pectoriloquism, the gurgling produced by softened tubercles, the tracheal respiration of tuberculous excavations, the permanent absence of respiration in certain places, from tuberculous engorgement of some extent, and if the respiration is perceptible over the whole chest; there is reason for strong presumption, that the disease is merely chronic catarrh; and if similar results present themselves repeatedly, after two or three months, we may be certain that it is so.

Adverting to the diagnosis of the different varieties of catarrh, the rattle is usually very sibilous, and frequently sonorous, resembling the low chirping of birds, the sound of a bass string, and sometimes approaching the cooing of a wood pigeon.

The pathognomonic signs of the dry catarrh, are similar to those of emphysema of the lungs, the existence of the former for a short time, necessarily producing the latter; but the former is an acute complaint, with strong frequent cough, and expectoration. In chronic catarrh, the respiration occasionally acquires the puerile character, and in acute catarrh it does frequently. When the dyspnœa is severe, the disease is called asthma; in many cases of dyspnœa, which might be called nervous, (nervous asthma) the respiration has been observed quite natural, in others with the puerile character.

M. Corvisart has proved, that very many of the cases termed asthma, were diseases of the heart and large blood vessels, or originated from those conditions. All those occupied with *post mortem examinations*, have proved, that asthmas with expectoration, are only chronic catarrhs.

DILATATION OF THE BRONCHIA.

This affection gives rise to pectoriloquism; and it is a very unfrequent disease. Dr. Laennec only met with one case.

The character of the voice, and the sound of respiration, will indicate, that pectoriloquism here, is not produced by an ulcerated cavity.

EMPHYSEMA OF THE LUNGS.

The dyspnæa varies, and the most striking symptoms occasion the disease to be sometimes, mistaken for, or confounded with asthma. The respiration is habitually impeded, aggravated during occasional paroxysms, which are quite irregular in their return and duration. Like dyspnæa from other causes, it is always increased by derangement of the digestive organs, by mental emotion, elevated situation, and violence or excess in exercise, more especially that of ascending a height, or mounting steps.

It is unaccompanied by fever, and the pulse is usually regular.

When this affection is severe, the skin assumes a dirty aspect, with a bluish tint, especially remarked on the lips.

In all cases, there is a slight habitual cough with inconsiderable mucous expectoration; the complaint often exists from childhood, and does not seem materially to abridge life. Like other dyspnæas, it often gives rise to hypertrophia, or dilatation of the heart.

When this disease only occupies one lung, or exists more in one than the other, the side most affected becomes enlarged, and consequently the intercostal spaces wider, and it yields a more distinct sound on percussion.

When both sides are equally affected, the chest yields a distinct sound throughout, and presents an unnaturally rounded outline, before and behind

The pathognomonic signs of the disease are furnished, by a comparison of the indications, derived from percussion, and those of auscultation.

The respiratory murmur is inaudible over the greater part of the chest, it is very feeble where it is audible; and at the same time, a very distinct sound is produced by percussion.

If the disease is not severe, the sound of respiration is audible; but in a much less degree than the sound on percussion would lead us to expect; occasionally there is a slight sibilous rattle. This single circumstance, the absence of respiration in the chest, which sounds well on percussion, is sufficient to distinguish emphysema of the lungs, from any disease except pulmonary catarrh, and pneumo thorax. The distinction between pulmonary catarrh and emphysema, has been before alluded to, and general symptoms will distinguish them. The mode of discrimination between pneumo-thorax and emphysema has been noticed.

Though it seems difficult to account for the absence of respiratory sound, in a disease which consists in dilatation of the air-cells, there being more air than is natural in the lungs, yet the fact is explained, by the bronchial tubes being obstructed by mucus, occasioning partial compression of the air cells. This is corroborated by the circumstance, of those laboring under the disease, having their breathing much oppressed when they catch cold, whilst respiration improves immediately after expectoration commences, and even becomes better than before the catarrhal affection.

ŒDEMA OF THE LUNGS.

The symptoms are, extremely impeded respiration, slight cough, and watery expectoration; usually these are the only signs of it.

Percussion affords no useful indication; the stethoscope furnishes two, but less satisfactory than in most other pulmonary diseases. These are;

1st. The respiratory murmur is much less distinct than might be expected from the efforts used in breathing, and the apparent great dilatation of the chest.

2dly. A slight crepitous rattle, like that in the first degree of peripneumony, but fainter; indeed the cylinder without reference to general symptoms, cannot distinguish peripneumony from œdema. Another case where it is almost impossible to ascertain distinctly œdema of the lung, is, when it is complicated with emphysema; because the indications by the stethoscope refer to the latter disease.

The cylinder and percussion, in the first degree of peripneumonic affections, only recognize emphysema; in the second and third varieties, they will only recognize peripneumonic affections; but if the patient is examined previous to the supervention of peripneumony, percussion of the chest will demonstrate the existence of emphysema and the invasion of peripneumony.

ACCIDENTAL PRODUCTIONS IN THE LUNGS.

Whatever may be the nature of these bodies, the symp-

toms attending are generally similar, and consist of a dyspnœa proportioned to the size of the tumours; and cough, varying with the extent and nature of the accompanying expectoration. Medullary tumours sometimes attain great size, and cause death by suffocation, without previously giving rise to marked derangement of the functions. Tubercles produce more numerous, and general effects on the system, yet even in tuberculous cases the effects rarely supervene until after their solution.

When an accidental production has attained large size, for example that of an egg, the cylinder marks its situation by want of respiration in the part; but when tumours are small, and the lung otherwise sound, respiration is not perceptibly affected.

Mr. L. has often observed the respiration equally distinct on both sides of the chest, in persons, where, after death, one lung was discovered sound or merely containing a few small tubercles, and the other lung was studded with tubercles, from the size of a grain of millet, to that of a filbert, and so numerous, as to double or triple the weight of a healthy lung. When the intermediate portions of a tuberculated lung, are engorged with any species of fluid or matter, respiration ceases in them, and percussion yields a dull sound.

In osseous, cartilaginous, or other concretions the cylinder gives no peculiar assistance.

MELANOSIS.

When these tumours soften and form a cavity, pectoriloquism follows, and when its fluid exudes into a portion of

the lung, the cylinder marks its impermeability to air; but we cannot distinguish this condition from peripneumony by the cylinder.

MEDULLARY TUMOURS.

The cylinder will point out in their site, a part untraversed by air, when they are of a certain size. They occasion little or no sensible degree of fever, and death arrives without much alteration of the pulse; emaciation may be very slow in taking place, but it always does so, and is rapid in its progress, towards the termination of the disease.

PLEURISY.

A well marked pleurisy is in general easily recognised; stitch in the side, dyspnæa, fever and dry cough, or cough accompanied by glairy and almost colorless sputa: are often sufficient to afford a moral assurance of its existence and supersede the necessity of further evidence for diagnosis.

But pleuritis frequently occurs, where many of these symptoms are wanting, and chronic pleurisies are often so indistinctly characterized, and accompanied by so many functional anomalies, that several weeks, or months would be occupied, in discovering the true nature of the disease.

Percussion detects the disease with much more certainty, because, as soon as effusion takes place, resonance fails over the whole of its site. This failure may arise from peripneumo-

ny; but the nature and course of the general symptoms, and particularly the character of the expectoration, and the absence or presence of stitch in the side, will tend to fix the distinction.

Mediate auscultation furnishes better means of distinguishing and ascertaining effusion, and its quantity. The signs given by the cylinder, are:

1st. Total absence or great diminution of the respiratory murmur.

2nd. The appearance, disappearance, and return of the sound, named Egophonism. When (as often occurs) pleuritic effusion is very copious from the commencement; the sound of respiration is then totally absent, over the whole of the affected side, except in a space of three fingers breadth, along the vertebral column.

This complete disappearance of respiration, after the existence of the disease for a few hours, is quite pathognomonic of pleurisy, with copious effusion.

In peripneumony, the disappearance of the respiration is gradual, and is unequal in different parts of the chest, being often not lost in the upper part for some days, or weeks, and it is preceded by the crepitous rattle.

On the contrary in pleurisy, the loss of the respiratory murmur is sudden, equable, and so complete, that no effort of inspiration can render it perceptible. The continuance of the respiration along the spinal column, is equally constant; but this exists equally in the chronic disease, attended with the most copious effusion. It is explained by the compression of the lungs backwards, towards their roots.

In some cases, respiration continues audible immediately

under the clavicle, owing to strong adhesions there, between the lung and the pleura.

The copious effusions occur chiefly in old persons, or in adults of weak cachectic habits; sudden cessation of respiration in such cases, must therefore be considered as affording a bad prognostic; as we may be assured, that the conversion of the false membranes into cellular substance, and the absorption of the effused fluid, will either not take place, or the process will be imperfect, and the disease pass into the chronic state.

In children and very healthy persons, effusion is seldom so rapid, and the respiration does not disappear, till after one or more days.

When the effusion is abundant, respiration becomes puerile on the sound side.

When the effusion begins to diminish by absorption, its diminution is traced by the extension of the respiratory murmur, from the side of the spine, (where it had not disappeared.) and soon after it is observed, in the anterior superior part of the chest, and top of the shoulder; in a few days more it returns to the other part of the chest. Where the pulmonic and parietal pleura adhere to a considerable extent, respiration continues audible over that part more, or less, throughout the whole period of the effusion, and the commencement of absorption is perceived, by the augmented intensity of sound, in these places.

The return of respiratory murmur is much slower in pleurisy, than in peripneumony, sometimes it is several weeks, and even months, after the re-appearance of it near the clavicle, before it is perceptible in the inferior part of the thorax; and several months after convalescence, it is only half as distinct in the affected, as in the sound side.

When the disease is accompanied by a slight degree of effusion, a characteristic sign called Egophonism, or caprine pectoriloquism, should be added. This phenomenon has great analogy to pectoriloquism, and may be confounded with it.

Egophonism consists like pectoriloquism, in a strong resonance of the voice, under the stethoscope; it seldom seems to enter the tube, and scarcely ever completely traverses it. As in true pectoriloquism, the voice seems more acute, and as it were argentine, (of a clear sound like that given by silver when struck) than the natural voice of the individual, and exhibits the illusion, as if some person was speaking within the cavity of the chest. It has a peculiar character from which Mr. L. gives it the appellation of a trembling or bleating sound, like the voice of a goat, a character the more striking, as the key of it approaches that of this animals voice. It also resembles the sound of the human voice, transmitted through a cleft reed, or the nasal intonation of the juggler, speaking in the character of Punch. This species of bleating, is most commonly combined with the articulation of the words, as heard within the chest, sometimes it seems synchronous, with the articulation, but not arising from the same point. It often seems to succeed, and not accompany the articulation of the words. To hear this sound distinctly, apply the cylinder strongly to the chest, and the ear slightly to the instrument; if the latter is applied strongly the bleating sound is diminished half, and approaches pectoriloquism.

Mr. L. thinks this phenomenon only exists in cases of pleurisy, (acute or chronic) attended by a considerable effusion into the pleura, or of other fluids in the same proportion.

Egophonism decreases gradually with the absorption of

the fluid, and in acute cases it often exists a few days only, but in chronic cases for several months.

When effusion is very great, causing thoracic dilatation, it ceases, and in old cases of emphysema, where the lungs are compressed towards the mediastinum, Mr. L. has not met with Egophonism; its absence was probably owing to partial absorption of the fluid.

Egophonism differs from pectoriloquism, in being extended over a considerable space; commonly, it is perceived at the same time, in all the space between the scapula and the spine, around the inferior angle of the former, and in a zone three fingers breadth from the middle of the scapula to the sternum. Mr. L. attributes this phenomenon, to the natural resonance of the voice in the bronchial tubes, rendered more distinct by compression of the pulmonary tissue; respiration is always very perceptible in points where egophonism exists.

There are only two classes of pleurisy, where it is not observed.

1st. Where a very rapid and copious effusion, has suddenly compressed the lung against the mediastinum.

2dly. Where former attacks of the same disease, have firmly attached the posterior parts of the lung to the pleura. Egophonism is a favorable sign in pleurisy, as it indicates only a slight degree of effusion: and its continuance shews that effusion is not increasing. If it continues as long as the fever, or longer, we may be certain it will not become chronic.

Simple peripneumony is not accompanied by this sign, but where pleuritic effusion exists, it may be present even if the lung is hepatized.

Egophonism like pectoriloquism, is often suspended till the

patient coughs, or expectorates, and clears the obstructed bronchia of sputa; and in the site of this phenomenon, the patient often seems to inspire through the tube

CONTRACTION OF THE CHEST.

Those pleurisies which terminate by the production of false membrane, of a fibro-cartilaginous nature, are obscure, variable in their symptoms, and in their progress. In the commencement, they do not resemble acute pleurisy, and the term of "latent pleurisy" is more applicable; there is stitch in the side, but infrequent, and transient, often so slight as not to fix the patient's notice; dyspnæa slight, cough infrequent and dry; in others, particularly those who are asthmatic, and subject to cold, the dyspnæa is well marked, and expectoration plentiful; yet these latter symptoms rather indicate catarrh or asthma, than pleurisy.

In some cases the symptoms are anomalous, calculated to mislead attention from the chest; in such cases there is absence of the usual sound on percussion, and of the respiratory murmur, except at the root of the lung. In less severe cases, where contraction of the chest is considerable, after a complete change of the false membrane into cartilage, the respiratory murmur returns a little, but is still less than on the sound side. This points out the period of change, and thence the final cure of this variety of pleurisy.

CIRCUMSCRIBED PLEURISY.

Absence of respiration in the affected part, is the only sign. Hence it cannot be distinguished from an extensive tumour of the lung, or from chronic peripneumony; but the history and general symptoms will distinguish the case.

HYDRO-THORAX.

The chief symptom of this disease is impeded respiration. Percussion elicits the dull sound, and the cylinder detects the absence of respiration over the whole chest (if filled with fluid,) except at the root of the lung.

Mr. L. suspects that Egophonism must be sometimes present.

The nature of the general symptoms, and the progress of the disease only, can distinguish it with certainty from chronic pleurisy.

HŒMA-THORAX.

The cylinder and percussion, afford the same indications, as in pleuritic effusion.

M. Laennec says œdema of the integuments, is an invariable pathognomonic sign of effusion of blood in the chest. Sharp, and Hey, notice the same.

ACCIDENTAL PRODUCTIONS OF THE PLEURA.

Extensive tumours may be distinguished from pleuritic effusion, and hydro-thorax, by the slow progressive diminution of the respiratory sound in the former, and from peripneumony, by the absence of the crepitous rattle, which has been mentioned as pathognomonic of this affection, in its first degree.

Intestinal hernia in the thorax, will be distinguished, not merely by the absence of respiration in the site of the tumour, but by borborygmi, which should not occur superior to the stomach.

PNEUMO-THORAX.

The general symptoms of this disease are very obscure, percussion alone, tends to mislead. When the gaseous effusion is considerable, the diseased side gives a more distinct sound than the healthy one, as if indicating the healthy, to be the diseased side; dilatation of one side of the thorax is not to be attended to as aiding the diagnosis; its occurrence with an increase of sound on percussion, will rather make us suspect, that less volume of the other side, is the result of contraction. When one side of the chest sounds more distinctly than the other, and at the same time, respiration is distinct in the least sonorous side, and not on the other, pneumo-thorax exists in the latter; and the diagnosis is equally sure, when both sides are alike sonorous, or equally so, if the affected side is less sonorous than the sound one. This latter case occurs, when pneumo-thorax supervenes to pleuritic effusion, or extravasation of any other fluid, the affected side from yielding a perfectly dull

sound, the respiration either absent or heard indistinctly, yet as gas begins to accumulate, resonance of the chest returns, in the situation it occupied without being equally distinct as on the sound side. The extent and intensity of this resonance increase daily, without any return of the respiratory sound; but with total extinction of the respiratory murmur. One circumstance may render the diagnosis difficult. The lung adhering to the side of the thorax; over those points of adhesion, respiration will be audible. It is almost unnecessary to observe, that in pneumo-thorax, as well as in pleurisy, and hydro-thorax, some degree of respiration, will be still perceptible, in that part of the back, corresponding to the root of the lungs.

The only disease presenting signs analogous to these, is pulmonic emphysema, and the difference between the two diseases is striking. In pneumo-thorax the absence of the respiratory murmur is complete, except between the spine and the scapula, corresponding to the root of the lung, and in emphysema it is never completely inaudible, but heard with a slight rattle. Pneumo-thorax comes on rapidly, and cannot continue long, without giving rise to dangerous symptoms, or being fatal. Emphysema comes on slowly and is never so severe, as to confine the patient to bed, or incapacitate him from ordinary occupations. Mr. L. never saw a patient with pneumo-thorax, that was not in bed.

These indications exist in all cases of pneumo-thorax, but when it is accompanied by effusion of fluid, resonance on percussion, and respiratory murmur, are absent in the part occupied by fluid, and there is absence of respiration in the parts occupied by gas.

Husson and Rullier thought simple pneumo-thorax, often most favorable for the operation of puncturing the thorax; Riolan met cases where air only escaped, on puncturing.

The stethoscope furnishes another phenomenon in pneumo-thorax, the *tintement metallique*. This metallic tinkling consists of the peculiar sound resembling that produced by striking with a pin, or dropping a grain of sand into a glass, metal, or porcelain cup; it is perceived during respiration, speaking, or coughing, but most distinct during the latter. However it is sometimes more perceptible during respiration, than in speaking or coughing; it is heard in a striking manner whilst coughing. It may exist with or without pectoriloquism. It is only detected in that variety of pneumo-thorax, complicated with emphysema, and which communicates with the bronchia, by means of a fistulous opening; and it may be considered the pathognomonic sign of this triple lesion. This peculiar sound, seems caused by agitation of air, confined between a surface of puriform fluid, and the solid parietes.

The sound is generally distinct, in proportion to the size of the fistula, communicating with the bronchia, and in proportion to the volume of gas, confined in the cavity of the chest.

When tinkling originates in a large tuberculous excavation, or in a lung half filled by tuberculous purulent matter, it is less intense, and its vibrations are confined to a small space; it also seems to penetrate the cylinder, and is conjoined with pectoriloquism. All these peculiarities will distinguish this case from pneumo-thorax, setting aside the little resemblance between the general symptoms of the two diseases. Mr. L. has observed the metallic tinkling, only in four cases of tuberculous excavations.

Another means of ascertaining the existence of pneumothorax with effusion, is by Hippocratic percussion of the chest. The patient is placed in a chair well fixed, an assistant takes hold of his arms whilst the physician shakes him gently by the shoulders, to distinguish if there is vacillation of fluid within.

This practice is not attended to, yet Morgagni and others employed it.

It is not necessary to shake the body much, but move the shoulders quickly, and stop suddenly. The cylinder will often enable us to hear fluctuation, when the unassisted ear could not.

ON THE HEART.

The stethoscope ascertains,

- 1st. The extent of the heart's action.
- 2dly. The shock or impulse it communicates.
- 3dly. The nature and intensity of the sound.
- 4thly. The rythm of its actions.

EXTENT OF THE PULSATION OF THE HEART.

Is considered in two points of view.

1st. The sensation conveyed by the instrument when applied to the region of the heart.

2dly. Its action in other parts of the chest.

1st. In the natural condition: examined between the cartilages of the fifth and sixth ribs, and lower end of the sternum, its motions communicate a sensation, as if it corresponded

evidently with a small point of the thoracic parietes, equal to that occupied by the stethoscope; sometimes it appears as if it were placed deep in the mediastinal cavity, leaving a vacant space between it and the sternum. In this case, although its action may be energetic, it communicates no vibratory impulse to the neighbouring parts.

In other cases the heart seems to fill the mediastinal cavity, to extend beyond the point occupied by the instrument: and its contractions, tho' slow and noiseless, seem to elevate the thoracic parietes considerably, and disturb or displace the adjacent viscera. This difference of sensation, conveys an impression of a larger or smaller heart. This inference is correct, if the symptoms are afforded whilst that organ is in a state of natural quiet action, from bodily repose.

2dly. This point is of great practical importance. In healthy persons of moderate fulness, whose heart is well proportioned, the pulsation is only perceived, in the cardiac regions, viz. the space between the fifth and sixth ribs, and over the lower extremity of the sternum.

The motions of the left cavities are perceived in the former, those of the right cavities in the latter situation. This is so unvarying, that when one side of the heart is diseased, the pulsations in these two situations, give quite different results.

When the sternum is short, pulsation extends to the epigastrium. In very fat subjects when we cannot feel pulsation, the space where the cylinder detects it, is not an inch square. In emaciated persons and in children, the pulsation is more extended, being perceptible over the lower third, or even three fourths of the sternum, sometimes over its whole extent, and also above and under the left clavicle, and slightly under the right.

When the pulsation is confined to the parts mentioned, in the several conditions alluded to, and weaker below the clavicles than in the cardiac regions, the viscus is well proportioned.

Pulsation may extend to be heard successively, in the following places.

1st. Over the whole left side of the chest, from the axilla to the stomach.

2dly. The whole of the right side.

3dly. The Posterior part of the left side of the chest.

4thly. The Posterior part of the right side of the chest.

The last case occurs very rarely, and the intensity of sound progressively decreases in the succession mentioned. This succession has appeared unvarying, and may be considered the index of pulsations. This, if it is perceptible on the right side, will be equally so, over the whole of the sternum, under the clavicles, and over the left side, but we are not sure it will be so on the back; if it is perceptible on the back of the right side, it will be more audible over every other part of the thorax.

Some circumstances may derange this order of pulsation: a hepatized, compressed lung, or a portion of the left containing tuberculous excavations, may derange it. In every case the heart gives two distinct pulsations, for one beat of the arterial pulse. In many hundred examinations M. Laennec only observed one case, where he heard the beat of of the subclavian arteries.

When the heart's pulsation is heard over a greater extent, than above stated as the range of a well proportioned heart, the individual rarely has good health; if dyspnæa is not present, at least the breathing is shorter than usual, the person more easily put out of breath, and more subject to palpitation.

This state however may remain stationary many years, and does not always prevent the attainment of old age. Comparing the condition of the heart, with the extent of pulsation, it is increased in direct ratio with the thinness and weakness of the heart, and inversely with its thickness and strength. The increased size of the organ, extends the limits of pulsation; but such increase does not depend on increased thickness of structure, but dilatation. Thus, when the pulsation extends over all the parts first mentioned, the heart is increased beyond its natural size, and that increase is owing to dilatation of one or both ventricles. This presumption is strengthened, if the pulsation is equally great under the clavicles, or in the axillas, as in the region of the heart. When pulsation is not perceived either in the back or right side, but in the other points mentioned, if its intensity is nearly equal in all the cases, the ventricles are indicated to be moderately dilated, or the parietes of the heart are naturally thin. On the contrary, when there is very strong pulsation in the region of the heart, and none or very little under the clavicle, we may be assured, (if the patient has other general symptoms of diseased heart,) that the disease is hypertrophia of the ventricles.

But if the patient has never experienced any marked derangement of the circulatory system, those symptoms indicate thickened parietes of the left ventricle, though perhaps not so extensively as to constitute disease.

Generally speaking, a great extent of pulsation is a mark of thin parietes of the heart, more particularly of the ventricles, and a confined range of pulsations, coincides with their increased thickness.

Accidental causes may augment for a time the extent of the heart's pulsation. Thus, nervous agitation, fever, palpitation, hæmoptysis, and in general whatever increases the frequency of the pulse.

2dly. Of the impulse communicated to the ear by the heart's action.

In this investigation, when the breath is short, take care not to confound the thoracic respiratory motions with the heart's action.

The intensity of the shock the cylinder communicates to the ear, is generally inverse, as to the extent of the heart's pulsation, and directly as the thickness of the walls of the ventricles; when the circulatory organs are well proportioned, the shock is slightly perceptible, often altogether so, if the individual is fat. When the parietes of the heart are unusually thick, the shock is sufficient to elevate the observer's head, and disagreeably shock the ear. The more extensive the hypertrophia, the longer time the impulse is perceptible. When the disease exists in a high degree, we feel as if the heart in dilating, first comes in contact with the thoracic parietes in one point, then with its whole surface; and that it contracts and falls back all at once. The shock or impulse of the heart, is only felt during the systole of the ventricles: or, if in some rare cases an analogous phenomenon accompanies contraction of the auricles, it is easily distinguished from the former. In fact, whenever auricular systole is attended by unusually sensible action, still it is perceived to have its seat much deeper, and only consists of a sort of vibration; in any case it is very little marked, compared with the sensation produced by ventricular contraction, when their parietes have the natural thickness. When the heart's pa-

rietes are thin, no shock is communicated, even where pulsation is greatest, and in this case, the alternate contractions of its cavities, are only distinguished by the sound they produce. Therefore a strong shock, must be regarded as the chief sign of hypertrophia; and absolute absence of all shock, as characteristic of dilatation of the heart.

Impulse or shock of the heart's action, is usually perceptible only, over the region of the heart, or at most over the inferior half of the sternum. When very great, or where the sternum is short, it extends to the hypogastrium.

In simple hypertrophia it is usually perceived in no other part; but when this is conjoined with dilatation, it is sometimes distinctly perceived, under the clavicles, and on the right side of the chest.

The impulse of the heart's action, is of course diminished, by whatever reduces the general strength of the system.

3dly. The sound produced by the action of the heart. The alternate contractions of the heart, produce a peculiar sound audible to the individual; during palpitation, and fever, and in certain rare states of disease, it is heard at some distance from the patient. The noise detected at the inferior part of the sternum, is that of the right cavities, those of the left are distinguishable between the cartilages of the 5th. and 6th. ribs. In the natural state the sound is double, and every stroke of the pulse corresponds to two successive sounds; one clear, sudden, and deep; the other more dull, heavy and prolonged: it corresponds with the pulse, and affords the shock or impulse mentioned, and indicates contraction of the ventricles.

In the natural state, the sound of the heart's contractions is equal on both sides: in certain cases of disease, it becomes

extremely dissimilar. The sound produced by the heart's action is great in proportion, as the parietes of the ventricles are thin, and their impulse feeble; consequently it cannot be attributed to the heart's percussion against the side. In a moderate degree of hypertrophia, contraction of the ventricles yields only a dull sound, like the murmur of inspiration; and the auricles much less noise than the natural state. In a high degree of hypertrophia, contraction of the ventricles produces merely a shock, without any sound; and the sound of the auricles is scarcely audible: on the contrary, when the ventricular parietes are very thin, the noise produced by their contraction is clear and loud, approaching to that of the auricles; and if there be a marked dilatation of the ventricles, the sound becomes very similar to theirs, and almost as strong. In health the heart's contractions are best heard in the region of the heart; in certain diseased conditions they are more distinct in other parts: a softening of the heart's substance deadens the sound of its contractions, as does any impediment to circulation, whether from too much blood, or obstacles in the auricular or ventricular orifices. In the latter state, there is a dull rustling sound, like the noise of bellows, or that produced by filing wood, which bleeding sufficiently repeated, removes. The particular orifice affected is indicated by the part and time, when the sound is observed: when the orifice is affected on the left side, the hand feels a vibratory sensation, like that felt, in drawing the hand along the back of a cat when purring. The noise produced by a cavity with obstructed orifice, is not only duller, but much more prolonged, than in a natural state.

4thly. Of the rythm of pulsation of the heart.

By rythm is understood, the order in which contraction of

the different parts of the heart takes place, their relative duration, and succession, as detected by the stethoscope.

The heart and auricles ought to equal in size, the individuals closed hand, and it is usually little less, or greater than that. The walls of the left ventricle, ought to be twice as thick, as those of the right; and its texture being firmer, and the muscular tissue more dense, it should not collapse when empty or laid open. The right ventricle ought to be a little larger than the left, with larger *carneæ columnæ*, collapsing when cut into.

The following are the phenomena of its action. The moment the arterial pulse is felt, the ear is slightly elevated by an isochronous motion of the heart, which is accompanied by a dull but somewhat distinct sound. This is the contraction of the ventricles. Immediately after this, and without any interval, a noise resembling that of a valve, of bellows, a slight crack of a whip, or the lapping of a dog, announces the contraction of the auricles. This noise is not accompanied by any perceptible motion, nor separated by any apparent interval of repose, from the duller sound and motions, indicative of ventricular contraction, which it seems abruptly to interrupt. The duration of this sound, and consequently of auricular contractions, is less than that of the ventricles, although that fact was doubted by Haller.

The state of quietude, was not known to Haller as a natural condition.

M. Laennec calculates its relative duration and contraction to be as follows.

In the duration of a period occupied by a complete succession of the heart's movements, a quarter of the period is an

absolute repose of all its parts; one half is occupied by contraction of the ventricles, and one quarter by contraction of the auricles.

Thus, in 24 hours the ventricles have 12 hours repose, the auricles 18; and when the pulse is habitually under 50, the ventricles have 16 hours repose daily. These observations are best made on a strong healthy subject, especially when the pulse is slow.

Moderate hypertrophia of the ventricles of the heart, necessarily gives a firmer systole, and renders the heart's actions and rhythm more cognisable; thus the ventricular contraction becomes less noisy, more readily distinguished from the auricular: after the latter, the interval of quiescence is well marked, and contrasts sensibly with the sound that precedes, and the motion which follows it; but in a high degree of hypertrophia, the heart's rhythm is singularly changed. The ventricular contraction is greatly prolonged. This is perceived as a deep and obscure motion, which gradually augments, elevates the applied ear, and then terminates in producing the impulse or shock. This contraction is unaccompanied by any noise, or if it exists, it is merely a sort of murmur like that of respiration.

The contraction of the auricles is extremely short, almost or altogether without sound, and in some cases, the systole of the ventricles seems scarcely over, when they again contract.

In extreme cases, there is no sound distinguishable, but the murmur above mentioned; we merely observe an elevation of the heart, corresponding to each beat of the pulse; and in these cases, the increased brevity of the auricular contraction, is not merely the consequence of their diminished contractibility, but also of their contraction recommencing, before that of

the ventricles had entirely ceased. When the walls of the left ventricle are naturally thin, or become so from dilatation, the rhythm is quite different. In this case, the interval of repose, after contraction of the auricles, is no longer perceptible.

The contraction of the ventricles is more sonorous, more resembling that of the auricles, and more approaching the latter in duration. In this condition of the heart, (as before observed) the shock of ventricular contraction is diminished, and the site of pulsation is extended. This is sometimes congenital. It does not necessarily abridge life, but is usually conjoined with a delicate constitution. A ctual dilatation produces the characters of thin parietes; and ventricular contraction becomes short and noisy as the auricles. In addition, the shock of contraction is absent, pulsation is extended over the whole, or greater part of the chest, equally perceptible under the clavicle, in the axilla, or region of the heart. This last character is pathognomonic, if the patient is not phthysical; and pectoriloquism exists in the parts indicated.

5th. Palpitation of the heart, is a beating of the heart unusually sensible, and unpleasant to the individual, of unequal force and frequency; tho' more frequent and stronger than natural.

Many varieties are found by the stethoscope, which have the common character of being irksome to the patient; in a horizontal posture, the patient sometimes hears the heart beating; in an upright position, contraction of the ventricles only, is heard by the patient; but lying on the side, he is sensible by the ear, of a pulsation equal to double that of the pulse. Viz. of both auricles, and of both ventricles. In some cases there is merely increased frequency of pulsation, though the patient imagines an increase of force also. This species of palpitation

is most common in dilatation of the ventricles, and lasts longest of any. M. L. has known it last 8 days, the pulse remaining all this time small, weak, and frequent, from 160 to 180; the patient was aged 70 years.

Another variety consists in an increase of frequency and force. This is what arises in healthy persons from great exertion, or from moral causes; it also accompanies a slight degree of hypertrophia.

In simple hypertrophia in a high degree, the ventricles are found to contract with great force, forcibly elevating the thoracic parietes, to a much greater height than natural. The noise produced by their contraction is much duller, and more indistinct than usual. The extent of the thorax over which pulsation is perceptible, is not increased; and notwithstanding the increase of the heart, to double or triple its natural force, the pulse is always two or three times more feeble, and smaller, than in a healthy state of the heart. In hypertrophia with dilatation, the impulse, noise, and extent of the heart's action, are usually, equally increased by palpitation; and it is when these two affections are combined, but, with an excess of the dilatation, that the heart's systole assumes the peculiar character, of being quick and violent, like the blow of a hammer.

6th. Irregularity of the heart's action.

This may exist without palpitation. In old persons it occurs, without any perceptible alteration of the general health. The irregularity which occurs in palpitation, usually consists, in mere variable frequency of pulsations. Sometimes this variation is recurring frequently, or at longer intervals, and consists of a few contractions slower or quicker than ordinary. These irregularities are most frequent in case of dilatation.

In hypertrophia, and during the existence of palpitation, ventricular contractions are so quick, and prolonged, that those of the auricles being less distinct, are masked, and cannot be distinguished from the former, there being no interval. It sometimes tho' rarely happens, that each contraction of the ventricles, is followed by several successive contractions of the auricles, so quick, as to equal in time, an ordinary contraction; sometimes they consist, of two, or four, but more frequently three. Sometimes in the midst of very regular action, the ventricles act twice in rapid succession, the second with vastly increased shock, and the heart re-assumes regular action.

7th. Intermission of the heart's pulsation, is the sudden and momentary suspension of its action, during which the artery is not perceptible to the finger.

The variable duration of intermissions, divides the affection into well marked varieties; as it is shorter, equal to or longer than, one arterial pulse.

The first kind of intermission is more common, and it is frequent in old age during health: at other periods of life it is only observed in certain diseased states of the heart, particularly hypertrophia. The stethoscope detects this species of intermission, always succeeding contraction of the auricles; hence it only differs from natural quiescence, after this contraction, in the irregularity of its recurrence. The duration and recurrence of this species, vary considerably.

The second species of intermission consists, in the absence of one complete pulsation, returning periodically, at longer or shorter intervals. This is the sign discovered by Solano, to indicate the approach of critical diarrhæa. M. L. has found the second species very constant in epidemics, but he conceives

that idiosyncrasy may prevent some from being subject to it. In the critical or symptomatic diarrhoeas of the last three years, he was unable to detect it. He conceives that it is produced by a very feeble contraction, rather than positive cessation of the heart's action. The third variety is accompanied by a state of fulness of the artery, during its continuance, but M. L. has not met with an example of that kind.

PULSE.

The pulse is frequently insufficient to afford a true idea of the state of the circulation.

In peripneumony, and pleurisy, the absence of fever and a natural pulse, often mark an incurable disease.

In diseases of the heart, the pulse is often feeble, sometimes almost imperceptible, although the heart's contraction, especially that of the left ventricle, is unusually energetic.

On the contrary, in apoplexy, we often find a strong pulse where the heart's impulse is scarcely observable. These two opposites are verified by the cylinder; and hence the arteries seem to exercise a power or action, independent of the heart.

Practitioners unanimously, in their observations on the different effects of bleeding, whether it was general, local, venous, arterial, depletive or derivative, have considered the relative connections of the diseased organ, with that part from which the blood was drawn. The same is shewn by the great efficacy, of a natural hæmorrhage of a few ounces, perhaps only a few drops, and the previous inefficacy of copious venesection in the same case; and by the trifling exhaustion sometimes produced by profuse hæmorrhage, compared with the great col-

lapse occasioned by the bleeding only of a few leeches, in the same person.

These facts tend to prove, that capillary circulation, is in some degree independent of general circulation. The influence of the latter on the former, seems inconsiderable in certain hæmorrhagies from the uterus, bowels, nose and lungs, which copious venesection is unequal to restrain or moderate.

Hence the pulse is an inadequate, and in many instances an erroneous indication, of the real state of the circulation. In fact it only indicates the action of the left ventricle: but not that of the auricles, or right ventricle; hence the pulse is not invariably a sure guide, as to the expediency of blood-letting.

In certain cases of apoplexy, peripneumony, pleurisy, and inflammatory affections of the abdomen, the pulse is small and weak, yet after bleeding it becomes, strong and full. It is necessarily of the greatest importance to distinguish this pulse, as error regarding it may be fatal.

Suppose the pulse is low, yet whenever contraction of the ventricle is energetic, we may bleed without fear: the pulse will rise; but if the contractions be feeble, although the pulse is strong, we must be cautious of venesection. When the pulse is very strong, and contractions of the heart moderately so, which often occurs in apoplexy, we may still bleed, provided there is not a diminution in the noise and impulse of the heart's action. When the pulse and heart are mutually weak, we must never open a vein, whatever be the name of the disease, as it destroys the few resources left to nature. The most we can do, if there is local congestion, is to apply leeches. The above discordance between the action of the heart and arteries, is

contrary to Bichât's doctrine, of the arteries' dependance upon the heart, for their action.

SYMPTOMS COMMON TO ALL

DISEASES OF THE HEART.

The most serious diseases of the heart, and the most frequent are, dilatation of the ventricles, thickening of their coats, or a union of these. Sometimes only one ventricle is affected, sometimes both, either in the same manner or inversely: thus, dilatation of the right ventricle, accompanied with hypertrophia of the left, or, vice versa. The permanence of the foramen ovale--perforation of the ventricular partition--Ossification of the sigmoid or mitral valves--excrescences--ossification--or formation of sundry kinds found in the heart; are derangements any of which produce a marked train of symptoms. An habitually short and difficult respiration, palpitations, and oppressed breathing by ascending quick, or walking; emotions of the mind, or without any known cause, frightful dreams, sudden starts from sleep, a cachectic paleness, and tendency to anasarca, mark the advanced progress of the disease. To these is frequently added or succeeds, angina pectoris; a nervous affection, characterized by a sense of constriction, and oppression in the region of the heart; pain and numbness of the arm, generally the left, though frequently both; and when the disease attains the height, it is recognised at a glance.

The patient cannot bear the horizontal posture, but sits up night and day, the face is swollen, often very pale, more commonly of a violet tint; either diffused over the whole face, or only on the cheeks. The lips are swollen, prominent and livid,

even when the face is pale. The whole body is more or less anasarcaous; the serous exhalations augment, and the absorption diminishes; hence ascites, hydro-thorax, and hydro-pericardium; which are associated with organic diseases of the heart, more frequently than with any other. Congestion and lentor of the capillary circulation, are further shewn by various affections of the internal organs, as by hæmoptysis, pains of the stomach, vomiting and apoplexy, which often terminates the disease. The most frequent of all is dyspnæa, which has often caused the disease to be confounded with asthma. The symptoms of pulmonic emphysema, bear much resemblance to some diseases of the heart; the following marks will distinguish them. In diseases of the heart, the patient although habitually having short respiration, does not usually experience oppression or dyspnæa, except when using exertions as walking &c. but more particularly ascending an elevation. On the contrary, individuals affected with emphysema, become oppressed with dyspnæa when quite still; and these attacks occur without any known cause; or from a slight change of weather. Moderate exercise seems often to relieve them, if the disease has not reached a great degree of intensity. In diseases of the heart, the general circulation is not always so much affected, as the capillary. Sometimes the pulse is almost natural, but is often irregular; at all events if the general symptoms above mentioned, are not sufficient to characterize diseases of the heart, mediate auscultation will detect them.

An accurate study of the physiological conditions, and actions of the heart, by the cylinder, requires infinitely more time and application, than that of the voice and respiration; but the prior history aids us in the diagnosis. Thus hypertro-

phia or dilatation of the heart, may be confounded with nervous palpitations; another and more insidious cause of mistake, arises in diseases which diminish the extent of respiration; for instance peripneumony, emphysema, and more particularly chronic pleurisy. In cases of this kind M. L. found the heart enormously dilated, and thickened; tho' its contractions had been perfectly natural, in sound, impulse, and rythm. Such dilatation necessarily diminishes the capacity of the lungs. Cases of this kind tho' rare in hospitals, are not so, in private practice; and in all such, the previous history of the disease will prevent mistake. Except in the paroxysm, incipient and moderate disease of the heart, ordinarily produces only dyspnæa and oppression, after violent exercise, or ascending steps; whereas in emphysema, they are produced by the slightest motion, change of temperature or without known cause. Long walks at a very moderate pace frequently repeated, are powerful means of cure. In moderate disease of the heart, the capillary, is infinitely more altered, than the general circulation; but in the severe advanced stages, palpitations varying according to the condition, are very constant. Happily judicious bleeding, diet, diuretics, tonics, and other auxiliary measures adapted to the case, relieve the patient, restore comfort, and greatly prolong life. To arrive at their use, let it ever be kept in view, that mediate auscultation is the sole means, of exactly and early detecting disease of the heart.

HYPERTROPHY OF THE LEFT VENTRICLE.

The cylinder placed between the sternal cartilages of the

5th. and 6th. ribs, gives a very strong shock, more dull than natural; prolonged in proportion to the extent of the disease. The auricular contraction is very short, has little sound, and in extreme cases is scarcely perceptible.

The systoles are only distinguishable over a small extent of the thorax: usually under the left clavicle, and superior part of the sternum, exclusive of the cardiac regions.

The patient feels the heart's action, more constantly in this disease, than in any other, but is less subject to palpitations except from physical or moral causes; and when they occur, irregularities and intermissions are unusual.

HYPERTROPHY OF THE RIGHT VENTRICLE.

A sanguineous reflux, and arterial impulse, distinguished in the inferior part of the external jugular veins, either serve as peculiar signs, or at least warrant the suspicion of this disease.

Ventricular systole assumes the characters mentioned of the left, in the same condition; but in this case the impulsion is stronger under the inferior sternal extremity, than between the sternal extremities of the ribs; and the reverse takes place in hypertrophy of the left side.

M. Laennec regards this sign, as perfectly conclusive, indicating with certainty the ventricle diseased; and his experience shews, that simple hypertrophy of the right side, unaccompanied with dilatation, is very unfrequent; but on the left side, they are very fequent.

SIMULTANEOUS HYPERTROPHY OF THE VENTRICLES.

Consists in a reunion of the characters of the two former diseases; but with an almost unvarying predominance of those, pertaining to affection of the right side.

DILATATION OF THE LEFT VENTRICLE.

The only certain sign, is, a clear loud sound of its systole, indicated by the stethoscope, between the sternal extremities of the 6th. and 7th. ribs. The degree of clearness, and extent of its site, mark the degree of dilatation. When the sound is as clear as the auricular, if the sound is extended to the right side of the back, the dilatation is extreme.

DILATATION OF THE RIGHT VENTRICLE.

The only pathognomonic and constant sign, is the loud sound of the systole explored at the inferior extremity of the sternum; or on the right side between the sternal extremities of the 5th. and 7 ribs. The degree of dilatation may be reckoned, according to the extension of the sound, compared analytically with the heart's action.

DILATATION WITH HYPERTROPHY OF THE VENTRICLES.

The combination of these two affections is very frequent, more so than simple dilatation; and much more than hypertrophy without dilatation.

The signs of hypertrophia and dilatation, are united in this disease. The ventricular systole gives a strong shock, and a marked noise; the auricular systole is sonorous. The pulsation is distinguished over a great extent, and the shock equally felt under the clavicles, between the ribs, and even a little in the left part of the back.

Examining the patient in calm moments, the head, members, clothes, bed furniture, and even the bed, are shook by every pulsation. The beating of the carotids and most superficial arteries, is perceptible. Palpitations in this condition have unusual energy, but are not marked by irregularity.

Dilatation of one of the ventricles, with hypertrophy of the other. This complication is not very rare, but more so than the preceding. A combination of the signs indicative of each, mark the disease; and the greater predominance of the one or other class of signs, will shew the excess of that condition.

DILATATION OF THE AURICLES.

The signs of this affection are obscure. Corvisart does not distinguish them from those of the corresponding ventricles. M. Laennec is not positive of their peculiar signs, but he is of opi-

nion they would assimilate with those of the corresponding ventricles; or from rigidity of the valves, to which latter he believes auricular dilatation is consequent.

Negatively speaking, when in hypertrophy the auricular systole is indistinct in the region of the heart, but at the superior part of the sternum and under the clavicles it is very perceptible, often with a clear sound: this constantly indicates that the auricles are in a sound state.

SOFTENING OF THE HEART.

Cases of total softening of the heart, are accompanied by a certain degree of cachexy, tho' the individuals otherwise have tolerable health. When such subjects are attacked with dilatation or hypertrophia, which generally happens, they do not present the usual swollen livid state of the face, observable in other cases. When softening exists along with dilatation of the ventricles, the sound produced by their contraction is loud, yet dull, and without the clearness which attends simple dilatation. When it is complicated with hypertrophia, the sound of the contraction of the ventricles is so obtuse, as nearly to be inaudible; and in extreme cases, the impulse of the heart is attended with no noise whatever. M. L. adds, that in every examination of those who died from idiopathic fevers, softening of the heart had taken place. He asks, is that condition, the cause of the quick pulse, continued through some weeks' convalescence, after the attack of those fevers?

CARDITIS.

In the present state of our knowledge, it is impossible to ascertain by known signs, the existence of either an abscess or ulceration of the heart, provided such be unaccompanied by other disease; but we know those states may exist without any material derangement of the circulation.

**CARTILAGINOUS AND BONY INDURATIONS
OF THE VALVES OF THE HEART.**

The symptoms of ossification of the mitral valves, differ from those attending the same affection of the sigmoid. Corvisart's principal sign of mitral lesion, is a peculiar rustling sensation, on application of the hand to the region of the heart, which resembles the purring of a cat. Corvisart said, the same was perceptible in the pulse; which is weak, but without hardness and fulness. To these symptoms may be added, those characteristic of hypertrophia, and dilatation of the left auricle, and the cavities of the right side of the heart. M. Laennec has not perceived Corvisart's character of the pulse; and in some cases has not found the peculiar vibration, but he believes the last is perceptible by the hand; only in cases, of a very contracted orifice. Corvisart gives several signs of ossified sigmoid valves, but the whole may be reduced to a purring sensation. With the cylinder M. L. has detected only three cases of ossified mitral valves, where the purring sensation existed; and only four of sigmoid, in a slight degree, but no purring existed

Ossification of the mitral and sigmoid valves, does not produce irregularity of the circulation, and is not cognizable by the pulse, or hand applied to the region of the heart, except in extreme cases. In ossified mitral valves, the sound of the auricle contracting, is much more prolonged, duller, and with a tone of rasping wood, or bellows smartly compressed. This sound is well marked, when the purring is not perceptible to the hand, but it is more distinct, as this is perceptible. Ossification of the sigmoid valves of the aorta, is shewn by this sound taking place, during contraction of the ventricle; but it does not exist in slight degrees of affection, of the sigmoid or mitral valves. In these cases, as in dilatation and hypertrophia, alternate and often repeated examination of the heart, under the sternum, and between the 5th. and 6th. ribs; also the state of the external jugular vein, will enable us to decide the seat and condition of disease.

PARTIAL DILATATION OF THE HEART. HARDENING OF ITS MUSCULAR SUBSTANCE.

GENERAL ATROPHY.

PARTIAL DEGENERATION OF THE MUSCULAR INTO FATTY SUBSTANCE.

These have all repeatedly occurred, and their study is recommended:--but the observations on their signs, are not yet sufficiently numerous, to admit of an accurate arrangement, and recommendation to confidence.

PERICARDITIS.

1st. Acute pericarditis is of exceeding difficult diagnosis, and the symptoms are extremely variable. Sometimes it appears with all the symptoms of a very violent disease of the chest; at other times it proves fatal without our suspecting its existence; again, we find all the symptoms attributed by nosologists to this disease, and after death, we can find no trace of it:--nay sometimes nothing to account for the deranged circulation or death.

Corvisart attributes this difficulty of diagnosis, to its being always complicated with pleurisy, peripneumony, or some other disease of the chest; in fact it remains to be studied. Numerous facts prove, that pericarditis is often a local affection, of little violence, inconsiderable influence on the general system, or on the circulation; whilst often it is accompanied by acute fever, and such violent disorder of almost all the functions, as to compromise the patient's life. Corvisart says, when the disease is acute, the symptoms are obscure. He says, its invasion apparently is instantaneous, its progress rapid, and termination sudden." When less acute he says" it is to be recognized by the following symptoms viz. sense of heat in the region of the heart, great difficulty of respiration, greater colour of the left cheek than the right, pulse at first frequent and hard, seldom irregular, and becoming on the 3d. or 4th. day, small, hard, contracted, and irregular, with great anxiety, frequent palpitations, partial faintings, peculiar change of features, and towards the close of the disease, total or partial cessation of local pain." All these symptoms may be present,

but many may be absent, and some are rare. M. Laennec has never observed the high colour of the left cheek, and seldom found complaints of local pain or heat. He has found the pulse always of the last character. The stethoscope does not furnish any particular signs of the disease; but the following appear most common. When the disease is not latent, the contractions of the ventricles yield a greater shock, and sometimes a more marked sound than usual: and at intervals feebler and shorter pulsations are perceived, which correspond with the intermissions of the pulse, the smallness of which contrasts forcibly with the strength of the heart's pulsations. When those symptoms come on suddenly, with persons not affected with other disease of the heart, there is great probability of this disease; besides the patient has commonly much dyspnœa, great anxiety, and even suffers syncope on taking a few steps, or moving suddenly in bed.

CHRONIC PERICARDITIS.

The signs of this disease, are equally or more uncertain than those of the acute form. In some cases he has found his diagnosis true, while in others the pericardium was affected with true chronic inflammation, but full of pus, where he did not suspect the latter affection: in these cases the symptoms were those of the acute disease, but less violent. In other cases, one or two years elapsed before the cure was perfect; and the action of the heart and pulse became natural.

HYDRO--PERICARDIUM,

Lancisi states, that the principal symptom is, a sensation of an enormous weight in the region of the heart. Reimann and Saxonia, said, that the patient felt the heart as if swimming in water. Senac said "he saw fluctuation of the fluid, between the 3d. and 5th. ribs." Corvisart said "he felt the latter by the touch," and says the following are symptoms," sense "of weight in the region of the heart, diminished resonance on "percussion, pulsation of the heart irregular, obscure, and felt "over a large space, and with a constantly varying intensity, "and clearness, in the same, and in different points of this space; "the pulse small, frequent and irregular, suffocation threatened "in a horizontal posture, frequent syncope, rarely palpitation. These symptoms Laennec says, may exist in greater or less degree or number, with, or without hydro-pericardium; he cannot say how far the cylinder will assist in the diagnosis.

SANGUINEOUS CONCRETIONS, OTHERWISE CALLED POLYPI OF THE HEART.

When a person with regular pulsation, experiences its sudden interruption, by its becoming irregular, confused and obscure, so that the systole and diastole cannot be analysed or distinguished, there is reason to believe that a polypous concretion is actually formed. If this only takes place on one side of the heart, we may be certain it is so. Exploring the systoles

at the inferior part of the sternum, if they are confused, and tumultuous, notwithstanding their having been regular during the night; it is very probable that a concretion is formed in the right cavities, especially if at the same time, the diastoles of the left ventricle, explored between the cartilages of the 5th. and 6th. ribs, are discovered in a regular state.

VEGETATIONS DEVELOPED ON THE VALVES, AND LINING OF THE HEART.

Very numerous cases are recorded, yet our knowledge is insufficient for the arrangement of their symptoms.

RED COLOUR OF THE INTERIOR OF THE HEART, AND OF THE LARGE BLOOD VESSELS.

Was observed by M. Corvisart, Frank and Laennec. M. Corvisart could not satisfactorily account for it; but in a conversation he had with M. Frank at Vienna in 1809, the latter told M. Corvisart that he had studied that affection; that he had found it pervade the whole extent of the arteries at one time; that he considered it the cause of a particular fever, always mortal, and announced by the most unequivocal symptoms. M. Recamier told M. L. that he could recognize this disease, by the two following symptoms, viz. the face suddenly becoming of a violet colour, in a person not naturally so, and the

heart's action becoming extended and tumultuous. The autopsy of one individual verified the diagnosis.

M. L. has found the interior of the arteries, in persons dead of nervous and putrid fevers, of a deep, violet red, resembling that of the face when it is said to be very high coloured.

UNUSUAL OPENINGS BETWEEN THE CAVITIES.

The two auricles contracting pour their contents into the ventricles; they in turn contract, and throw the blood, one into the pulmonary artery, the other into the aorta. Hence as the two auricles contract together, and throw their contents simultaneously into the ventricles; should the foramen ovale remain unclosed, or an opening exist between the ventricles, it does not seem that either could communicate any peculiar characters cognizable by the stethoscope. These circumstances however produce, increased sensibility to cold, frequent faintings and dyspnæa, more constant than in other diseases of the heart; also a blue, violet or livid colour of the skin, more extensive than in any other disease and sometimes general.

DISPLACEMENT OF THE HEART.

This has occurred. Of course the cylinder would detect it readily.

ACCIDENTAL PRODUCTIONS DEVELOPED IN THE SUBSTANCE OF THE MEMBRANE COMPOSING THE PERICARDIUM.

Those are numerous, well authenticated, serious and curious, but our experience is insufficient for the arrangement of their symptoms.

ANEURISM OF THE AORTA.

Respecting this most insidious, not unfrequent, and often fatal disease; medical records, living authors, and the experience of M. Laennec, establish the following conclusions.

1st. That in many cases, aneurism of the descending aorta, may be recognised by the cylinder.

The systole of the heart being, double, when the stethoscope is applied over the site of an aneurism, a single beat isochronous with the pulse, is heard with intensity; and when accustomed to explore arterial action with that instrument, a person acquires the faculty of forming a singularly correct judgment, of the vessel's calibre, under examination.

2d. That in many other cases, aided by the stethoscope, and the most minute and particular attention, one can only distinguish the aneurismal systoles from those of the heart.

Because in the ratio its proximity to the heart is increased, so are the motions and sounds of both, confused and blended together.

31. That aneurism of the descending thoracic aorta, can be recognised, especially when they press on the vertebral column.

The heart's systole being rarely heard in the back, the single beat will be distinguished over the site of the tumour, including the heads of the neighbouring ribs. A pain either dull or acute, will often accompany this affection; referred to, and extending from that part of the column interferred with.

4th. That all those signs constantly escape detection; because the individual affected, not believing that he has any serious disease, the thorax remains unexplored.

The individual affected often experiences no material inconvenience in the progress of this insidious disease; and the first indication of its existence is afforded by sudden and instantaneous death, occasioned by the aneurismal sac bursting.

5th. That aneurism of the ventral aorta, may be readily recognised with the cylinder, even where the application of the hand only affords a doubtful diagnostic. *Simulated aneurism*, which without the cylinder must be confounded with the real, is easily distinguished from it, by the aid of that instrument.

The sound or shock of the aneurismal sac, possesses much more intensity than the systole of any other part of the aorta: nay, more than that of the ventricle; moreover, having, by experience of the stethoscope in exploring arterial pulsation, acquired the faculty of discovering the calibre of the vessel, there

is no longer any difficulty in distinguishing aneurismal enlargement. M. Laennec denominates simulated aneurism, a powerfully increased systole, suddenly assumed in any part of an artery, and either accompanied or not, with a swelling sensible to the hand. Several cases observed by M. Laennec, where, a strongly pulsating abdominal tumour presented to the hand; but the stethoscope announced the calibre of the artery in a natural state, its pulsatory powers singularly increased in a particular point: they were so speedily removed, that he considers his diagnosis correct. The local swelling he conceives, arose from the confinement of gaz, in some of the cells of the transverse colon.

I take leave to add, that the circumstance of an artery, suddenly assuming extraordinarily increased energetic action, in a space equal to one third of an inch, has very repeatedly come under my own observation, in the arteries of the extremities.

M. Laennec is of opinion, that the assumption of increased energy in particular parts of an artery, indicates that they possess, power of action, to a certain extent, independent of that which they derive from the systole of the heart.

Reverting to those diseases of the heart, in which M. L. has not specially explained the utility of the stethoscope in their detection, their symptoms are equally numerous and distressing, and usually comprised under the denomination of anomalous. The cylinder not having been sufficiently used in those cases, to enable M. L. to discriminate them from one another, their symptoms are not entered on in this place. Enough has been said to shew its extensive utility in various important cases; to direct those so disposed, to acquire exacti-

tude in exploring the signs it brings under their cognizance; and subsequently it is hoped, that laudable professional zeal on the part of Indian practitioners, will extend our knowledge of cases, where its application is useful.

M. L. speaking of the treatment adapted to aneurism and hypertrophy of the heart, says, that he has often endeavoured to employ that recommended by Valsalva viz. the most rigidly severe diet, and constantly repeated general bleedings; but found the aversion of the patient and repugnance of the friends combined, too powerful. Two young people were perfectly cured of hypertrophy, by several years perseverance, in using only half their usual food with occasional bleeding, and it was beneficial in every case whilst employed. He conceives that reducing the body, or producing leanness, materially reduces the size of the heart. It is sufficiently obvious, that diminishing the column of circulating blood, relieves the dilated vessel in aneurism, and lessens the shock of the systole, which it must necessarily sustain.

M. L. published his work on the mediate auscultation, in 1819; since which two papers have appeared in Paris, extending the cases of its application.

The first is by the professor M. Lisenfranc in 1821. This ingenious gentleman, who has done much and honorably for the profession, shews its farther utility, by recognising osseous fracture, in cases of an obscure and doubtful description. The discovery is effected by the grating noise of the broken extremities, and the motion, which the instrument detects.

The second paper (published at Paris, in 1822,) is by the professor M. Kergaradec, whose extensive acquirements and

professional accuracy do him great honor. He shews its application in cases of pregnancy. It detects two important signs, provided the abdomen is judiciously explored with perseverance: and caution against the mistakes, occasioned by borborygmi or noise of the intestinal tube, is necessary to success. The interposition of light clothing does not impede the sound: consequently there is no exposure whatever.

1st. Sign——Simple pulsation with the force and sound of several large tubes, accompanied with the blowing sound of bellows, similar to that produced in some diseases of the heart; detected over a very small extent of the abdominal parietes, (in one spot) isochronous with the individual's pulse; and believed referable to the circulatory operation, between the matrix and placenta.

This sign has undergone minute and extensive investigation, which has established its reality. It indicates the site of the placental attachment, and has been repeatedly heard from the third month's advancement, either in the right or left side of the abdomen. As a mode of examination it is of superior delicacy, and equal certainty, with that heretofore employed—this sound continues until placental separation takes place.

2d. Sign——Double pulsation, not isochronous with the individual's pulse, the latter being natural, and the double pulsation ranging from 125 to 160 per minute: this is produced by the foetal heart's action, and usually may be recognized at four months or soon after.

This may be on either side of the linea-alba, or in the lumbar regions. Its site will indicate the position of the foetus in utero, by remembering the cardial region over which alone it is heard, and comparing the superior and inferior uterine dimensions, with those of the foetus. Continued feeble foetal pulsation,

indicates its want of energy, and consequent danger. It has been heard in every case where a living child was born: and in many others the first sign being found, and this wanting, the issue was a dead infant: nevertheless it is not proposed as an indication of that circumstance, but that we are then warranted, in having suspicions to that effect: or it is positively in a languid condition. The absence of both those signs during repeated examinations, after their due period of commencement are conclusive against the existence of pregnancy.

FINIS.

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