

**Miscellaneous contributions to pathology and therapeutics : being a series of original and practical papers on rickets, hydrocephalus, impotence and sterility, pulmonary apoplexy, and haemoptysis, &c.; &c.; / by James Richard Smyth.**

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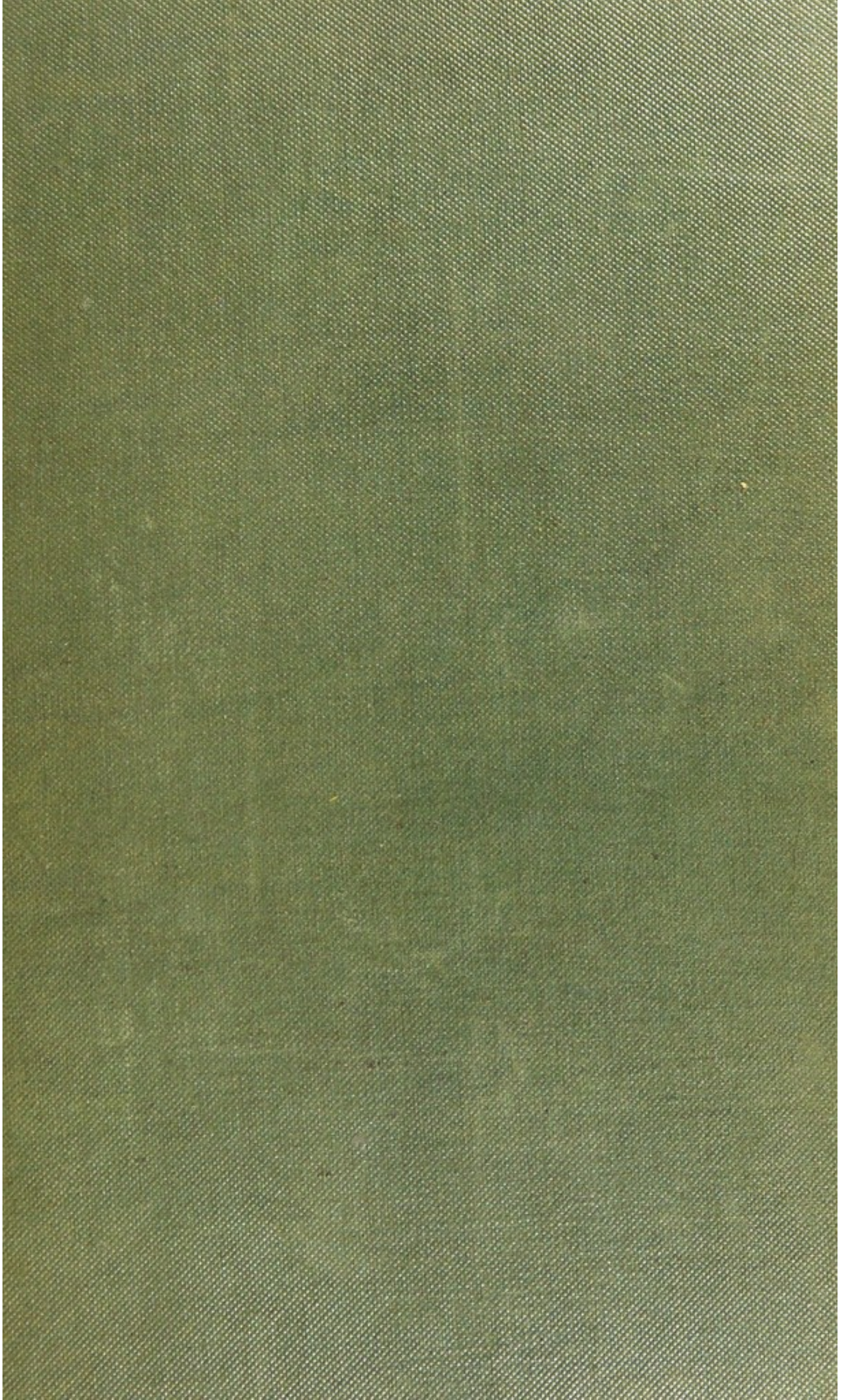
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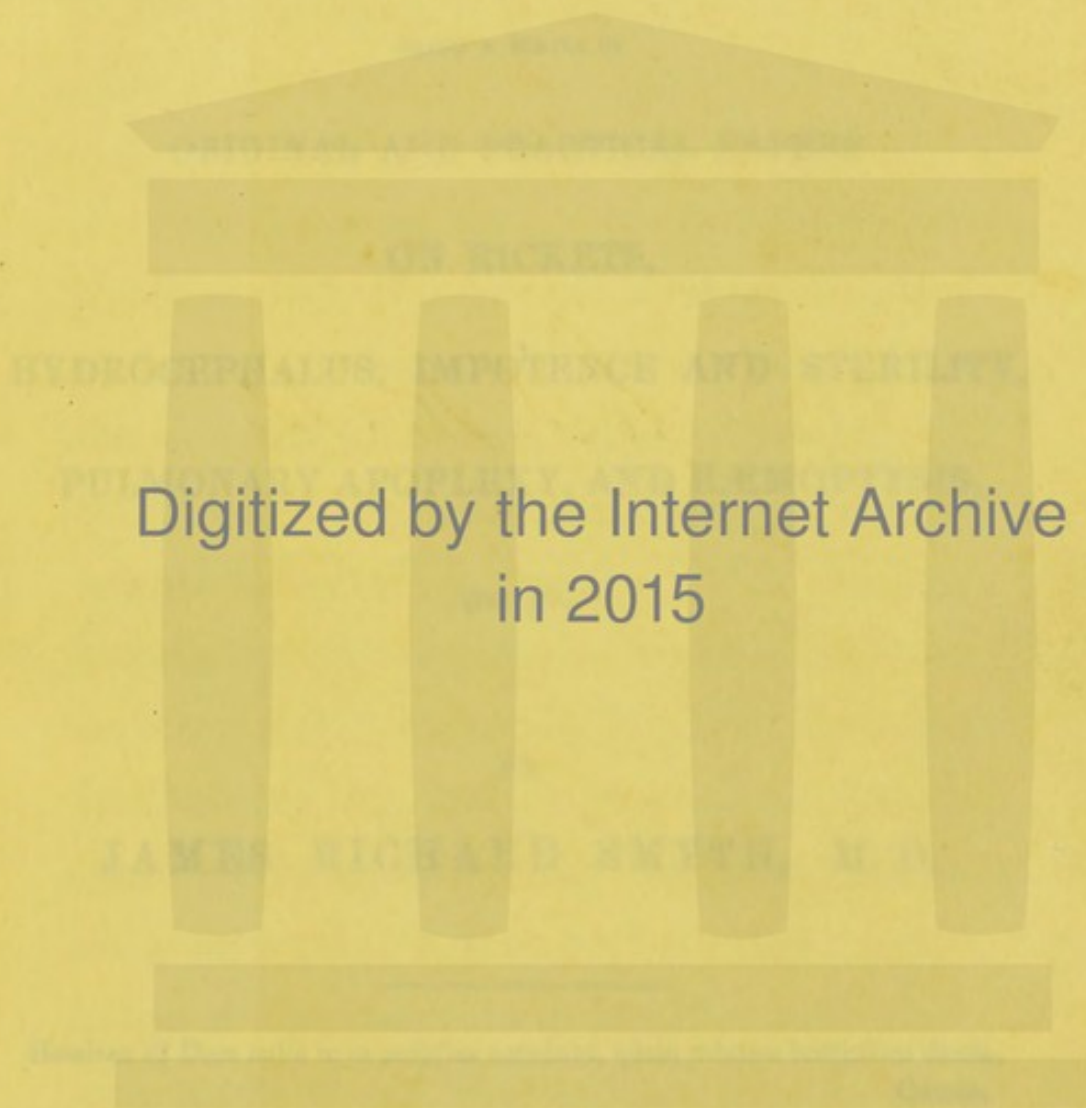
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NEW ORIGINAL CONTRIBUTIONS  
TO  
PATHOLOGY AND THERAPEUTICS.



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MISCELLANEOUS CONTRIBUTIONS

PATHOLOGY AND THERAPEUTICS

BY

JAMES RICHARD SMYTH, M.D.

OF BOSTON

HYDROPHOBIA, EMPHOSEMA, AND STRABISMUS

PULMONARY APOPLEXY, AND HEMOPTYSIS

AND

JAMES RICHARD SMYTH, M.D.

PHILADELPHIA: LEITCH AND BLOOMER, 1846.

1846

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1846

MISCELLANEOUS CONTRIBUTIONS  
TO  
PATHOLOGY AND THERAPEUTICS;

BEING A SERIES OF

ORIGINAL AND PRACTICAL PAPERS

ON RICKETS,

HYDROCEPHALUS, IMPOTENCE AND STERILITY,

PULMONARY APOPLEXY, AND HÆMOPTYSIS,

&c. &c.

BY

JAMES RICHARD SMYTH, M. D.

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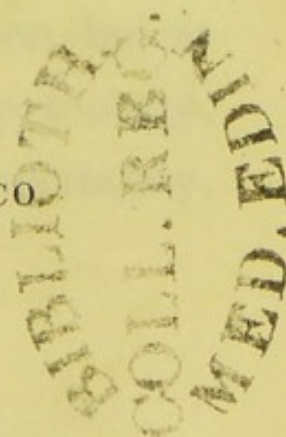
Homines ad Deos nulla in re proprius accedunt, quam salutem hominibus dando.

CICERO.

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LONDON:  
SIMPKIN, MARSHALL, & CO.

1844.



MISCELLANEOUS CONTRIBUTIONS

PATHOLOGY AND THERAPEUTICS

TREATISE

ORIGINAL AND PRACTICAL PAPERS

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C. WOOD & CO., PRINTERS, POPPIN'S COURT, FLEET STREET.

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JAMES RICHARD SMYTH, M.D.

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1844

103.03

PREFACE.

THE contents of this volume consist, for the most part, of *facts—res veræ*—that came under my own observation, and which struck me as being interesting, and calculated, by being noted and commented upon, to contribute something, less or more, to our knowledge of pathology; and also, perhaps, to bring some increase and aid to the difficult science and art of therapeutic medicine. We may, I grant, ultimately attain to a tolerably perfect and settled knowledge of anatomy, both healthy and morbid, even in all the variety of its most minute structure and organisation, but as regards physiology, practical pathology, and therapeutics, from the uncertainty,



delicacy, and indistinctness of many of their principles and phenomena, and the great intricacy of not a few of their relations and sympathies, we are destined, I fear, for cycle upon cycle to remain in a state of mingled light and obscurity—in a state of considerable knowledge with an equal amount of ignorance. Medicine, I do not hesitate to observe, notwithstanding the improvements which of late years it is considered to have undergone, is still, in some of its parts and many of its principles, one of the most imperfect and unsettled of the natural sciences.

In the following papers or contributions, there are three subjects or points to which I am particularly desirous of directing the attention of the reader; the first is, the view which I have taken of the etiology and pathology of rickets. It will be seen that I have attributed the origin and phenomena of that affection chiefly to infantile indi-

gestion; and that enlargement, in a greater or less degree, of the liver is a prominent feature of its pathology; and requires to be duly considered in the treatment of the affection. It will also be seen that I look upon rickets and scrofula as diseases identical in their causes and natures, and demanding for their cures similar remedies and modes of treatment.

Next to the subject of rickets I have treated of that of hydrocephalus, as I consider the two maladies, and also that of scrofula, as manifestations of the same morbid diathesis. I have also, as will be observed, applied auscultation to the head, and have pointed out the existence of a murmur or sound accompanying the cerebral circulation under certain conditions of disease in children,—in chronic hydrocephalus, in congestion, and acute inflammation of the brain, for instance.

With respect to impotence and sterility,

maladies, it will be allowed, involving some little difficulties, pathological and therapeutic, I hope it will be found that they have been treated of in a manner duly philosophic and practical, and accordant with the importance and social delicacy of the subjects. Where the constitutional causes of these maladies are considered, I have taken occasion to exemplify the same by a number of appropriate cases, in every respect of the most practical bearing and nature.

The contributions on pulmonary apoplexy and hæmoptysis, rheumatism and aneurysm are not, I am disposed to think, devoid of some practical interest.

JAMES RICHARD SMYTH.

Sackville Street, May, 1844.

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MISCELLANEOUS CONTRIBUTIONS  
TO  
PATHOLOGY AND THERAPEUTICS.

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CONTRIBUTION I.

RICKETS.

*Rickets—Cases—Pathology and treatment of the affection—Connection with enlargement of the liver and indigestion—Its affinity to Scrofula.—Scrofula—Its pathology and treatment.—Gastrodynia—Sometimes cured by a dietetical remedy.—Chronic Hydrocephalus—A CEREBRAL MURMUR symptomatic of its first stage.*

CASE I. May 27, 1839.—WILLIAM KATES, aged three years and two months, was born healthy and stout, and continued to be so until he was three months old, when his teeth began to appear, and he had an attack of inflammation of the lungs. About, or shortly after that time, he was transferred from his mother to her sister, to be brought up by feeding. The child's health then became much impaired, and he has been

always sickly and weak since. His present condition is as follows:—skin anæmitous and pale, flesh scanty and soft, legs and thighs bowed and emaciated, and body altogether approximating to a state of marasmus; can make no effort at standing or walking, and creeps but feebly; spine curved laterally, left side of thorax enlarged and projecting laterally and posteriorly; clavicles distorted; head has always appeared larger than ordinary, and at present there is a soft fluctuating tumour situated on the left parietal bone. His mother states, that previous to the appearance of this tumour the sutures of the skull were very open; that he had a fall a few days ago from a bench about two feet high, on which she had placed him, and pitched upon his forehead, and the next day the tumour appeared. He had a ravenous appetite, and slept pretty well before the fall, but not since; bowels stated to be regular, and the excretion of urine frequent; expression of countenance precocious; pulse rather quick, but respiration normal.

R. Hydrarg. c. Cretâ, gr. iij.; Pulv. Rhei., gr. iv.; Pulv. Cinnam. comp., gr. ij. Ft. pulvis. Mitte vj. Sumat j. alterna nocte.

R. Sp. Rosmar.  $\zeta$  ss.; Aquæ Font.  $\zeta$  vss. M. Ft. lotio; tumore constanter applicetur.

29th. Tumour considerably decreased; no perceptible change otherwise.

Continue the lotion and powders, and let a leech be again applied to the temple.

June 1st. Tumour of head almost disappeared, and some little improvement otherwise.

Continue the lotion and the powders, and let the child have a warm salt-water bath every other night at bed-time, and let him be well rubbed with a dry cloth, both on the body and limbs, for ten minutes, after coming out of the bath.

5th. The tumour on the head has entirely disappeared, and the parietal bone, on which it was situated, which was fully a line depressed below the others, has become elevated to its proper position. Head much hotter than natural; eyes dry and glassy-looking; pupils rather dilated; is fretful when awake, and frowns frequently in sleep, but does not start or grind the teeth; tongue deficient in moisture, but not furred; pulse rapid and rather unre-sisting; alvine excretions light-coloured; is very thirsty; head hot. On applying the ear to the anterior fontanel, or to the parietal bones, a *murmur* accompanying the cerebral circulation is very audible.

Continue the powders, one every night, and the cold lotion to the head, and the warm bath without the salt; let the child's diet be chiefly beef-tea, arrow-root, and milk and water.

July 1st. Little or no alteration in any respect since last report. Head still much hotter than natural; anterior fontanel agitated, and *cerebral murmur* very loud over the entire of the head, with the exception of the frontal bone; eyes still dry and glassy-looking; no strabismus, but frequent frowning. His mother states that the child frequently complains of pain over the left ear. Otherwise as before.

Let the head be closely shaved, and kept constantly wet with the cold lotion, and let two small leeches be immediately applied to the seat of the pain over the left ear.

R. Hydrarg. c. Cretâ, Pulv. Jalapæ, aa. gr. iij.; Pulv. Ipecacuanhæ, gr. j. Ft. pulvis. Mitte vj. Sumat unam, nocte maneque.

Continue the same diet.

5th. No obvious change since last report.

Continue the cold lotion, powders, and diet, and apply two leeches again to the left parietal bone over the ear.

9th. The leeches bled well; the powders have been taken regularly, and the bowels have been

moved thrice a day. The mother states that the child is becoming cheerful and better tempered, and more disposed to chat. Head still hot, and frequent perspiration from it and from the face during sleep; cerebral murmur very audible even over the occipital bone; frequent leering, but no strabismus; abdomen hot, but arms and legs rather below the natural temperature; appetite rather inordinate, and sleeps pretty well: excretion of urine less frequent; pulse frequent and resisting.

Continue the same treatment.

16th. Has administered the treatment as prescribed faithfully. The condition of the child in all respects is much improved since last visit. He has put on flesh, and his limbs are becoming plump and firm. There is not any frowning or leering now, and the eyes are acquiring an expression of softness and animation. He has lost much of his fretfulness, and is now daily becoming more mild and more easily amused. The head is still hotter than natural, and the cerebral murmur is audible, but less intense. Renal secretion less, and appetite not so voracious. Bowels stated to be more regular, and their excretions of a more healthy character. Respiration and action of heart not so disturbed.

Being struck to-day by the undiminished and still very protuberant state of the abdomen, after the use, for some considerable time, of aperient medicines, the thought occurred to me to examine it by percussion and pressure, when I found the liver enormously enlarged, the right lobe almost in contact with the correspondent crest of the ilium, and the left overlapping the stomach, and easily felt between two and three inches below the ensiform cartilage. The ends of the lower ribs, both on the right and left side, were considerably everted.

Continue the same plan of treatment, and let me see the child again in the course of a week.

Sept. 23d. Had not seen the child now for more than two months. Little, if any, discernible change in its condition since last report; but on the whole perhaps there is some improvement. The countenance looks better, and the child appears to have gained some more flesh; liver somewhat reduced in size, but still much larger than natural, and very easily felt by pressure of the hand on the right side of the abdomen; the child is not yet able to maintain the erect position, but it creeps with much more activity; all other symptoms as before.

R. Hydrarg. c. Cretâ, gr. ij. ; Hydrarg. Chlo-

rid. grs. ss. ; Pulv. Rhei, gr. iij. ; Pulv. Cinnam. comp., gr. j. Ft. pulvis. Mitte octo. Sumat unam alterna nocte.

R. Potassæ Bisulph. ℥ij. ; Sodæ Bicarb. ℥j. ; Aquæ Menth. Pip. ℥ix. Solve terendo, et adde Tinct. Rhei, Tinct. Sennæ, a a ℥iss. ; Syrup. Aurantii, ℥ij. Ft. mistura, cujus capiat cochlearia parva tria, omni mane.

To have solid animal food at least once a day, and also a little beef-tea, with diluents of arrow-root or of sago occasionally ; to be warmly clothed, and to be as much in the open air as possible.

October 8th.—Has used the powders, mixture, and diet, and treatment otherwise, in all particulars, regularly since last visit. Condition of child in all respects remarkably improved. His mother states that he sleeps well ; that his disposition is quite changed, as he has lost all his peevishness ; no frowning or leering, and countenance becoming full and animated ; has gained considerable strength both of body and limbs, and can make some effort at standing ; abdomen less protuberant, and liver further diminished in size, but still projects between two and three inches below the ribs on the right side ; the ribs both on the right and left side are much less everted, and the shape of the thorax



is altogether more normal; the cerebral murmur is still audible at all points of the cranium, and the forehead, and the left hemisphere of the cranium, on the parietal bone of which the tumour was situated, appears rather larger than the right.

Continue the same treatment in medicine, diet, and exercise.

This patient now ceased to be under my care, and I entirely lost sight of the case; but I have every reason to suppose the little fellow continued to recover, or he would have visited me again.

CASE II. Sept. 2, 1839.—ELIZABETH WILLIAMS, aged two years and a half, of fair hair and fair complexion; eyes light blue, skin and subcutaneous tissue fine and soft, and the economy generally discovering a tendency to the strumous diathesis; was a very healthy child until after vaccination, which operation was performed upon her when she was about six months old, at which time, or immediately after, she commenced to cut her teeth, and a papular eruption made its appearance all over the body; and at the same time, also, the child's bowels and general health were much disordered, the alvine excretions being frequent, and showing

some appearances of blood. The child has been in bad health, better or worse, ever since. Present condition:—much fretfulness and irritability; sleep light and easily disturbed; countenance pale and dejected; irides decolourised; surface generally pale and chill; no emaciation, but flesh soft and flabby; no morbid curvature of the spine or of the bones of the chest, but the right leg is very weak, and bent inwards at the knee; liver considerably enlarged—it can be felt in the right hypochondrium, between two and three inches below the ribs, but it is not perceptible in the epigastrium; renal secretion stated to be natural in quantity and appearance; pulse and respiration undisturbed; no thirst, but appetite voracious. The head appears rather large, and on applying the ear to it, or to either of the parietal bones, a faint *cerebral murmur* is audible.

R. Hydrarg. c. Cretâ, gr. iij.; Pulv. Jalapæ, gr. iij.; Pulv. Cinnam. comp. gr. ij. Fiat pulvis. Mitte vj. Sumat unam alterna nocte.

R. Infusi Sennæ, ʒvj.; Potassæ Bicarb. ʒss.; Mannæ opt. ʒiss.; Tinct. Cinnam. comp. ʒj.; Aquæ Carui, ʒj. M. Fiat mistura, cujus capiat cochlearia parva tria omni mane.

Let the child's diet be moderate in quantity,

but let her have solid animal food in fair quantity once a day at least, and let her be much in the open air.

22d.—Has used the treatment prescribed regularly. Two excretions have taken place from the bowels daily of a more healthy character. The condition of the child is something improved; it is less fretful, and is more animated, and its appetite is not so voracious; little if any perceptible alteration in the size of the liver; the cheeks are still pale, but the colour appears returning to the irides; cerebral murmur and other symptomatic phenomena as before.

The same treatment in all respects to be continued.

October 8th.—Has used the remedies prescribed regularly since last report; child's general condition and health altogether much improved; she is becoming lively and good tempered, and sleeps well; countenance less exsanguineous and drooping; irides deepening in colour; appetite not voracious but moderate; alvine excretions more regular, and of a more healthy character; flesh becoming firm, and the cutaneous circulation generally more active; cerebral murmur audible now only at the anterior fontanel, and here but faintly; abdomen

much reduced in size, and softer; liver lessened considerably, but still projects below the margin of the chest.

Continue the mixture, powders, and diet, as prescribed, and let the child have a warm bath twice a week.

I saw this patient once again after some little time, when her health was all but completely restored. The countenance had acquired colour and animation, and she had become plump and active; she slept soundly, and the alvine and urinary excretions were healthy; circulation and respiration the same; the liver was further reduced in size, but still to be felt under the right hypochondrium, but not at the pit of the stomach; *the cerebral murmur had ceased to be audible on auscultation of the cranium at any point.*

CASE III. August 17th, 1838. WILLIAM ROGERS, aged nineteen months, of light hair, light complexion, and blue eyes, was strong and healthy till he was eight months old, when he had an attack of illness of six weeks' duration, which his medical attendant pronounced to be inflammation of the lungs. This attack consisted chiefly in feverishness, with cough and much disorder of the bowels. The mother states that

the alvine excretions, towards the latter part of the child's illness were unhealthy, offensive, and contained substances like pieces of flesh. He appeared to have recovered from this attack pretty well; but about a month afterwards the head was first observed to be enlarged, and it has gradually increased in size since. Present condition as follows:—general health not much disturbed, but face and surface generally anæmitous and pale; no emaciation, but flesh soft; sleep unquiet; bowels generally relaxed, but their excretions, and also the excretion of urine, stated to be natural in character; is still at the breast but will eat any solid food that is presented to it; appetite rather inordinate; pulse 126, and regular; head large, circumference twenty-two inches and a half, from each meatus auditorius over the vertex fourteen inches and a half; no dilatation of the pupils, but considerable strabismus, and the eyes remain half open, and roll a great deal during sleep; anterior fontanel large, and of a crucial shape, where the cerebral movements are perceptible to the touch, and the *cerebral murmur* very audible on application of the ear. Has not had small-pox, measles, or any other of the eruptive fevers; was successfully vaccinated.

CASE IV. October 16, 1836.—Mrs. A's in-

fant, aged fourteen months, a pretty strong and large boy for his age, has been dull and listless for the last three or four days, and has rested badly the last two nights; at present he is unusually inanimate; the skin is harsh and increased in temperature; the bowels are irregular and their excretions fluid and of a light clay colour, without the slightest tinge of bile; the head appears rather above what is ordinary in size, and the anterior fontanel is open, and on applying the ear to this part a *cerebral murmur* is heard very distinctly; it is also audible, but less clearly, over the parietal bones; abdomen protuberant and somewhat resisting, but no enlargement of the liver can be detected; flesh rather soft; pulse frequent.

For this patient I prescribed a powder of hepatic alterative properties, which was taken every night, and occasionally every other night, at bed-time, with a dose of a mildly aperient mixture once or twice during the day; pretty full diet, with solid animal food in fair quantity at least once a day; warm clothing and exercise in the open air at all times when the weather would permit of it.

This child in a short time became quite stout and well.

These four cases, now described, present us with examples of profound chronic digestive derangement and disease in children, similar, I conceive, in their origins, causes, and natures, but in different periods of progress, and different states of development. The first case, that of the boy Kates, which will form the subject chiefly of the following observations, is manifestly a case of tabes and rickets; the cause of the tabes being, in this instance, not in the glands of the mesentery, but in a glandular structure of far greater magnitude and importance, namely, the liver. To an examination less accurate with respect to the state of the abdominal viscera than that which was given to this case by pressure and percussion, when, as has been seen, it had been some time under treatment, the diagnosis could scarcely have pronounced the affection other than tabes mesenterica. All the symptoms which are usually considered as peculiar to, and enunciative of, that scrofulous malady were present. There was the large protuberant abdomen, with the general and severe emaciation in contrast; the voracious appetite; the derangement of digestion, and disorder of the functions of the intestinal canal; the irregular hectic feverishness, and the diminished temperature of

the extremities, with other minor symptoms. The white alvine excretions, which we find mentioned by almost all authors upon mesenteric tabes as a pathognomonic sign of that affection, were not present. I entertain some doubts, however, on the perfect exemption from error of this diagnostic doctrine, and could give, I think, sufficient reasons for so doing. At present I will only observe, that I have seen white earthy excretions, not unlike the ashes of wood wetted, passed from the bowels, for months, by adults labouring under jaundice and organic disease of the liver. The fact, however, which deserves our first consideration, and which makes the case now under comment more particularly interesting in a pathological and practical point of view, is the immense enlargement of the liver that was present in this infantile patient. No one, I believe, however recent and imperfect his knowledge may happen to be of any disease he may be called upon to treat, but forms some idea to himself of its cause and original nature, and prescribes his remedies accordingly. The more correct, too, are his thoughts on the etiological points of the case, the more likely, it is certain, are his remedial measures of being beneficial and successful.



The question, then, of most import and utility involved in the pathology of this case, and one, undoubtedly, which it is difficult to determine, is, what place, in an analysis of its constituent phenomena, should be assigned to the hepatic enlargement; whether should it be viewed as cause, or as consequence, or as a concomitant morbid condition? Sydenham, I find, has mentioned the enlarged state of the abdominal viscera (without having particularised the liver) which is present in children affected with rickets, and he appears to have considered both the affection of rickets and the visceral disease as consequences of intermittent fever—a sort of metastatic and critical deposition of the febrile matter. “Children sometimes become hectic after both *continued* and *intermittent* autumnal fevers. The abdomen in this case swells and grows hard, a cough also and other consumptive symptoms frequently arise, which manifestly resemble the rickets.

“’Tis worth observing that when children have been long afflicted with autumnal intermittents, there is no hopes of vanquishing the disease till the *abdomen* (especially that part of it near the spleen) swells and grows hard; the distemper abating in the same degree, as this

symptom manifests itself. Nor can we, perhaps, more certainly foretel that the intermittent will go off in a short time, than by carefully attending to the swelling of the *abdomen*, in children, and to that of the legs, which sometimes happens in grown persons.

“The swelling of the *abdomen*, which happens in children after intermittents, in those years wherein the constitution of the air has a tendency to produce autumnal intermittents *epidemically*, appears to the touch as if the *viscera* contained matter hardened to a *cirrhus*; whereas that which comes in other years yields to the touch, as if the *hypochondria* were only distended by wind: hence 'tis worth notice that the true rickets rarely happen, except in those years wherein *autumnal intermittents* prevail\*.”

Baron van Swieten, too, in his admirable Commentaries upon Boerhaave's Aphorisms, has not omitted to notice the increased bulk of the liver that accompanies the condition of rickets; but the particular part which it acts in the pathology of the disease he does not distinctly point out; he only assigns to it the place of a “concurrent cause,” as he terms it, of the protuberant abdomen. “I have often,” observes

\* Swan's Sydenham, pp. 64, 65.

Van Swieten, "had children brought to me to be cured, supposed by their mothers to have been troubled with great liver, when they manifestly had the rickets. We shall hereafter see that, in this disease, the liver is found of a vast size, though no other disorder can be discerned in this viscus after death. Glisson, upon examining the dead bodies of rickety children, thus testifies: 'The liver, in all I have dissected, is greater than it should be; but otherwise is not of a bad colour, nor greatly indurated, or in other respects contaminated by any other remarkable vice.' He excepts some dead bodies in which other diseases had been complicated with the rickets before death, as he remembered to have observed in a dropsical and extremely tabid patient. From hence the reason appears why the rickets has, in some places, been distinguished by the name of *great liver*. He found no fault in the magnitude, colour, or substance of the spleen: yet he denies not that it might happen otherwise from a complication of rickets with other diseases\*."

My experience, I acknowledge, does not enable me to say to what extent enlargement of the liver, and more or less prolonged defect or vi-

\* Van Swieten's Commentaries, vol. xvii, pp. 339 & 367.

tiation of the biliary secretion in children, deranging and impairing the processes of infantile digestion and hæmatisation, may be connected with the proximate cause and early phenomena of rickets; but I could not avoid observing, during the treatment of the two first cases of the subject of this paper, in which great enlargement of the liver was present, that the return to a more healthy size of that viscus, and improvement of the general condition of each individual, and marked amendment of the rickety symptoms, were perfectly simultaneous. The great Boerhaave, it is true, has made the proximate cause of rickets to consist in "a sluggish, cold, and vapid cacochymy, together with a loose structure of the solid parts," which obviously gives to the affection a humoral origin, and places its *ens primum* in the blood; and in this respect Boerhaave is, no doubt, in a great measure correct. But the blood, it should be borne in mind, is dependent for its existence, and its continuous healthy condition, upon the combined and harmonious operation of a number of organs, the second in office and importance of which is the liver.

The first changes wrought upon the food by the vital battery (if I may be allowed such a

term) of digestion and sanguification in the abdomen, the chylo-poietic viscera more usually denominated, are effected, it is almost unnecessary to observe, by the offices of the stomach; the second by that of the liver. Is it unreasonable to suppose, then, that if this latter organ should become diseased or defective in function, and continue so for any lengthened time during infancy, the period of most tender growth and conformation of the individual, it must affect in some very obvious manner the processes of assimilation and healthy organic formation throughout the entire system? Look at a child, the subject of slight taint, or what you might consider as the state of commencing rickets. Criticise its entire condition. Does it not bear a strong resemblance, in many points, to that of an adult whom one would suspect to be labouring under some chronic concealed affection of the liver? So has it, in fact, not unfrequently struck my observation. At all events I am firmly of opinion that the practitioner who will view the infantile affection now under consideration as one simply of hepatic disease, with more or less aggravated derangement of all the digestive functions, and so apply his remedies judiciously in accordance, will be he who is most likely to

benefit, and in all respects improve the condition of his patient.

From some little attention I have occasionally paid, as opportunity offered, to the indispositions and disorders of children, I will take upon me to observe that there is a pretty comprehensive class of chronic digestive affections, which these tender young creatures too frequently suffer from, more particularly amongst the poor, the pathology of which is still a subject but imperfectly understood, and the treatment, as a matter of course, uncertain and unsatisfactory. In this class I place the different lesions and perversions of assimilation and nutrition, as exhibited in the respective manifestations of scrofula of the vascular, muscular, and osseous structures. I coincide in opinion, it is necessary to observe, with some authors of creditable authority, who consider the malady of rickets, as regards the softness of the muscles and bones, as nothing else than a scrofulous affection of those parts. I also attribute to a taint of the same distemper the dropsical diseases of hydrocephalus and spina bifida, as I am fully convinced these morbid conditions always originate in this peculiar diathesis of debility.

Sir Astley Cooper, whose name I always

quote with pleasure, has recommended the best measures, dietetical in particular, for the treatment of scrofula with which I am conversant. They are, I conceive, so correct and accordant with sound therapeutics, that I will venture to predict no future experience, founded on right observation, will ever find them much in error. It is the fibrine and red globules of the blood that give to that fluid the power and means of sufficiently nourishing our organs, and of developing and supporting good health and robust strength throughout the system. Sir Astley, having rightly noted that the blood of scrofulous individuals was serous and attenuated, and deficient in those important constituents, prescribed the means most likely to obviate such a state, and better its condition. To a child labouring under scrofulous debility or disease, he enjoined the use of animal food three times a day, namely, at breakfast, lunch, and dinner, and the last of these meals was to be taken at 3 o'clock P. M.; warm clothing, with frequent exercise in the open air, when wet, damp, or very cold weather did not forbid; the urging of the functions of the liver and digestive canal once a week by the administration of a solutive and alterative powder of calomel and rhubarb. This is, I truly

believe, the best plan of treatment that could be devised for counteracting in childhood, or, indeed, at any period of life, scrofulous diathesis, or tendency to such a state in the economy, and for preventing the development of scrofulous abscess and ulceration locally. Many a surgical incision, sore, and cicatrice, will such therapeutics prevent from injuring the otherwise mazing beauty of many a female neck \*. There is an error, in my opinion, abroad, of no little evil operation, in some instances, as regards the use of animal food. With a great many individuals, notwithstanding what the advocates of vegetable and farinaceous aliment may say to the contrary, this article of diet is unquestionably taken too sparingly, or its use is not properly timed. The presence of animal food in the stomach at an early period of

\* Whatever measures it may be in the power of the physician or surgeon to suggest, that will preserve from any degree of injury and deformity the most quietly beautiful part of one of the most beautiful objects in nature, must always, I imagine, be a matter of some little interest to all. "Observe that part of a beautiful woman where she is, perhaps, the most beautiful, about the *neck* and breasts; the smoothness, the softness, the easy and insensible swell, the variety of the surface, which is never for the smallest space the same, the deceitful maze through which the unsteady eye slides giddily without knowing where to fix or whither it is carried."—*Philosophical Inquiry into the Origin of our Ideas of the Sublime and Beautiful*.



the day, acts, with many persons of peculiar temperament and constitution not only as an efficient remedy in soothing and allaying general irritability, and vascular overaction dependent thereon, but it also performs the part of an anodyne and agent of cure in various dyspeptic neuralgias and irritations. Does not the following fact, which, with some others very similar, lately came under my notice, corroborate to a considerable degree these observations?

A young gentleman, who had suffered much from gastrodynia, accompanied with a feeling of cardiac distress and sense of sinking at the pit of the stomach, which generally came on between 10 and 11 A. M. (sometimes it was experienced immediately on getting up, between 7 and 8) and continued more or less severe until between 2 and 3 P. M., his usual time of dining. For the cure of this gastrodynia, by the advice of several eminent physicians, he had had recourse to a variety of medicines. He had made trial of the extract of stramonium and extract of belladonna, of the oxide of bismuth, the oxide of iron, and of the sulphate of quinine, and some other remedial agents of less note, without having experienced any permanent benefit. When he consulted me, his countenance was pale, lean, and anxious; he was thin and somewhat irritable

and nervous; his system generally had the appearance of being insufficiently supplied with blood; the pulse was rather frequent and contracted (contracted, I mean, as to the circumference of its vessel): his appetite was pretty good; the bowels were stated to be regular, and his sleep undisturbed. In the course of my inquiry into the symptoms of this case, I put the question to the patient—When do you generally observe the pain of stomach to cease? “Soon after dinner, towards the after-part of the day,” he replied. How often have you been in the habit of taking animal food in the day? I inquired. “Once,” he replied, “at dinner.” What do you breakfast upon? was my next interrogatory. “Bread and butter, with tea or coffee, and sometimes an egg,” was the answer I received. I then prescribed a mutton-chop with an egg, or a good large slice of ham and an egg, with his usual tea and bread and butter, for breakfast; and the second morning after taking the mutton-chop, as prescribed, the young gentleman, to his no little delight, and the gastrodynia, which had been the bane of his comfort for years, parted company, and have never since renewed acquaintance. When I last saw this patient, more than two years from the time I had prescribed for him, he still continued to take a little

animal food for breakfast, and he remained free from the pain. What was the nature of this gastrodynia, then? Was it the instinct or sensation of hunger, idiosyncratic and morbid in this instance, being in the human subject, but similar to that which is naturally experienced by some of the lower carnivorous animals, the beasts of prey, and which urges them so ferociously in quest of flesh, which no other sort of food has the property to allay\*. I could adduce other instances, if necessary, equally illustrative of the good effects of a little solid animal food being presented to the stomach at the morning repast, or at a less early hour of the day, in raising the system from a state of ill health and debility and conferring upon it the inestimable blessings of good health and strength.

It is only, I will here observe, the unhealthy and infirm that ought properly to be accounted poor. The health of the honest peasant, or labourer of any description, is his wealth, (his country's also, be that country what it may)

\* "In the course of this treatise we shall have frequent occasion to remark, that the *diseased* state of an organ in the human body is the physiological or *healthy* condition of the same organ in other animals.—*Andral's Pathological Anatomy*, vol. i, p. 91." *Translation by Drs. Townsend and West.*

and the happiest wealth or capital, too, in all respects, which he can possess. With none other, certainly, does he embark so cheerfully in the business of existence, and enjoy with such fulness the fruits of his exertions, or, when they chance to come, the bounties of fortune. With none other can he contribute to the continuance of the constitution and vigour of society, in the renewal of the youth and bloom of population, by raising up around him offspring and issue ruddy with life and the light of youthful health — the *lumen juventæ purpureum* — such objects as his heart always owns and exults in, and his bosom fondly cherishes; and through which thus, by the divinity of parental affection, is transmuted, it might be said, by a beautiful alchymy in the moral economy of humble life, the labourer's daily industry and toil into a daily hymn of silent happiness and content, not less acceptable and grateful to the Creator than are the most loud and lengthened orisons of the more indolent and inactive, yet dutiful and holy saint. But to return for a little to the more immediate subject of my paper.

In looking over the observations of the great surgeon, Cooper, upon the malady of rickets, I find that he places the proximate cause of that disease in the mesenteric glands, and thus

identifies in a great degree *tabes mesenterica* with rickets, although the affections are unquestionably, I think, distinct both in their origins and symptoms generally. In none of the cases I have described in this paper could I detect any enlargement of the glands of the mesentery, or any tenderness on pressure of the abdomen over these vessels. *Tabes mesenterica* in the infant is more allied, perhaps, to the affection of atrophy in the adult, than to rickets.

Some time in the autumn of 1837 I published a short paper in the *Medical Gazette*, in which I pointed out the existence, and described the characters, of a murmur or sound accompanying the cerebral circulation in certain conditions of cerebral disease in children. I took occasion then to state that I thought such auscultic phenomenon, when present in the head, might either be received as a premonitory symptom of chronic hydrocephalus, or as a diagnostic sign of the actual existence of the disease in its most incipient state. This murmur was present, as we have seen, in various intensity, in all the four cases which form the subject of this paper, and I still rest in the opinion I took up on first observing it, that it is always concomitant with, and produced by, a morbid action of the vessels of the brain, which precedes and accompanies more or

less dropsical effusion in that organ. As the phenomenon is undoubtedly one of some little interest and diagnostic novelty in the cerebral pathology of children, I would willingly direct the attention of other observers to it, in hopes that it may be found of some utility in indicating the best mode of treatment in the earliest stage of chronic hydrocephalus. Fine though it be,

“That nothing lives 'twixt it and silence,”

I consider there is a little credit due to me for having been the first in this country to observe and describe this sound, and auscultic sign of disease, in the encephela of children.

Shortly after the publication of the description of the phenomenon in the *MEDICAL GAZETTE*, one of the Medical Reviews (the British and Foreign Medical Quarterly) disputed my claim to originality in its observance, by the statement that I had been preceded in the matter by an American physician. I do not doubt the truth of this statement of the Review, but I have not yet seen a description of the phenomenon by other pen than my own.

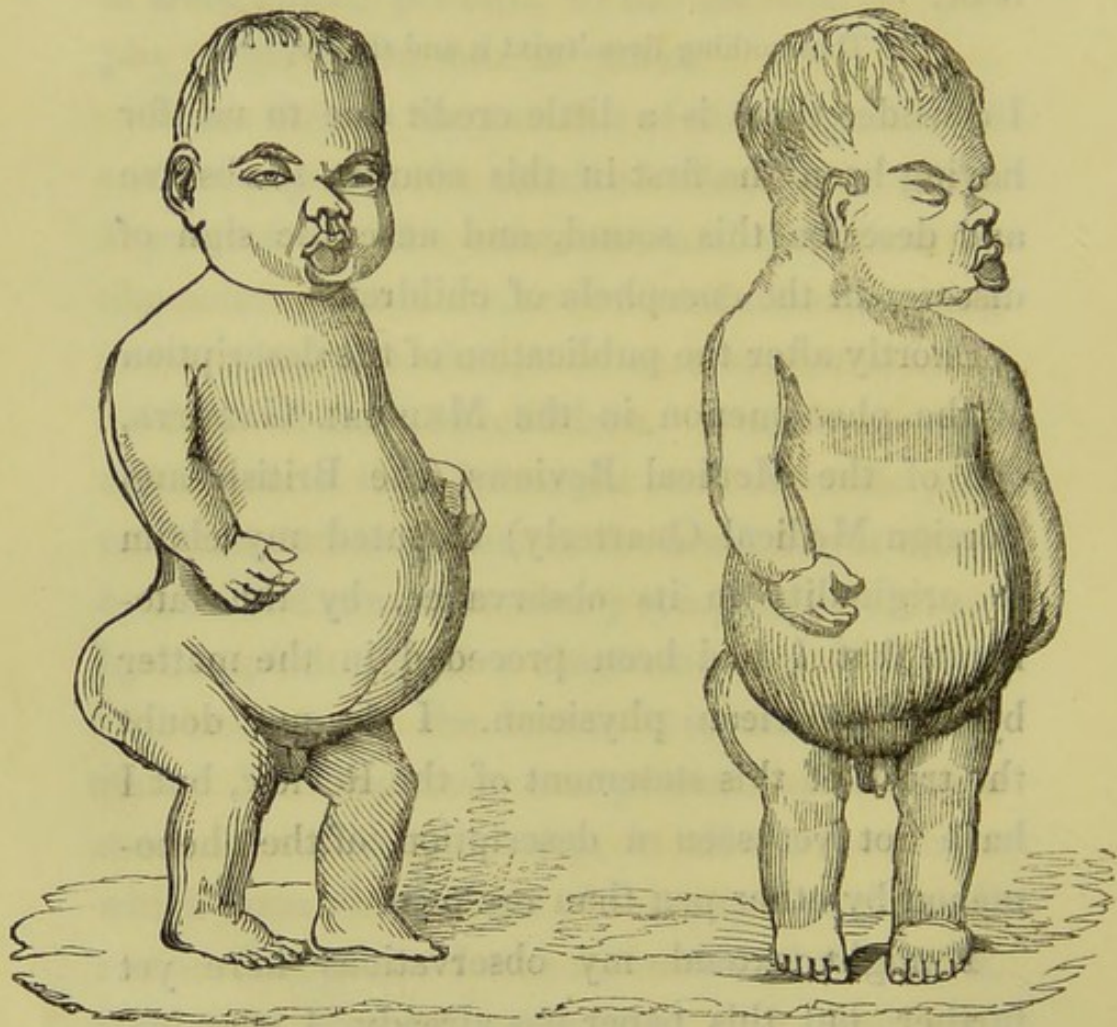
I might extend my observations here yet further, but this paper has already, I perceive, grown to some considerable length.

May 10, 1843.

CONTRIBUTION II.

RICKETS.

*Rickety defective nutrition and deformity, with disease of the heart and liver — History and description of the case, with observations on its pathology, and the causes of the defective growth. — Distinctive points marking the monster, dwarf, and deformed individual — Opinion that hydrocephalus is in some manner connected with disease of the liver in the child.*



RICHARD AYRIS, who forms the subject of these sketches, is now twenty-one years of age, and

twenty-eight inches in height. His mother, who has several other children that are healthy, gives the following history of this extraordinary youth. She states that he was born at the natural period of gestation, and that he was then a large, strong, and healthy child, and continued to be strong and healthy till he was three or four months old, when he had a severe attack of illness, the nature of which his medical attendant did not comprehend, and which had nearly proved fatal. From that time, as the mother herself expresses it, "the constitution of the child appeared to be entirely altered;" he was always pale, listless, and inactive, but he advanced slowly in growth till he was between two and three years of age, since which time his bulk has been stationary, and he has been, in all other respects, — in appearance, health, and habits — exactly as he is at present.

A clergyman, who has visited this boy frequently during the last sixteen or eighteen years, states that he can scarcely observe that any change has taken place, either in his appearance or in his intellect, since he first saw him.

I shall now endeavour to give a brief description of the present condition of this individual, more particularly of his internal or pathological condition, from which, perhaps, we



may be able to collect some information regarding the original cause of his diminutive development.

The head and abdomen, as the portraits exhibit, are large, and considerably out of proportion to the chest and extremities, the latter parts, as well as the genital organs, being still in their infantile state of development. The head, no doubt, is a little dropsical. The countenance is dull, listless, and abstracted; the cheeks are pale and puffed; the lips are thick and livid, and around the eyes the skin is somewhat blue. The mouth is generally open, and the tongue, which is large and livid, protrudes. When taking food, however, and when desired, he draws in his tongue and shuts his mouth, which, as would be anticipated, gives a considerable improvement to his countenance. He cannot, indeed, keep his mouth shut more than a few seconds at a time, as this seems seriously to interfere with the function of respiration. The nostrils are expanded and elevated. He has had but one imperfect set of teeth, eight in the upper jaw, and four or five in the lower, which are now decaying and falling out. The sutures of the skull are still ununited, and the anterior fontanel is very large. In short, the evolution of every part of the body, both as regards its

structure and its volume, is purely infantile. Although almost a man in years he is still but an infant in organization.

He can stand and walk by holding a person's hand, the chest being at the same time inclined backwards, to balance the large protuberant abdomen. His muscles and flesh are soft and flabby, and in all his movements he is exceedingly sluggish. These, indeed, are as slow as those of a tortoise. He is dumb, but his want of speech does not depend upon his being deaf, as is generally the case, for his sense of hearing, as well as the rest of his external senses, is tolerably correct, though obtuse. Memory, the only internal sense or mental power which he seems to possess, is stated to be retentive, he remembers any person whom he may have seen once. His desires are childish; he is amused by all sorts of toys and glittering objects, but, like the majority of his brethren, of a higher order of development, money affords him the greatest pleasure and amusement. When presented with a piece of money he will smile and return thanks by kissing his hand. He always feels cold, and the hottest day in summer cannot coax him to abandon the fire.

His surface and extremities are dry, rough, and

cold to the touch. The pulse at the wrist is just perceptible, between 90 and 100, weak and thready, but regular. The stomach and bowels are always, or for the most part, disordered. The excretions from the latter are stated to be generally fluid and light-coloured. The liver is much enlarged. No evidence of ascites. The urine is stated to be tolerably natural in quantity and quality. He has been for some years past at times troubled with a slight cough, during the presence of which, more than once or twice, his legs and feet have been observed to become swollen. He sleeps tolerably well.

*Auscultation of the Chest.*—The respiratory murmur is faint, and, I think, accompanied by a slight sonorous râle. Heart—*action* of both ventricles pretty regular; *impulse*, if any, very slight; *sounds*—in the epigastric region, along the greater part of the sternum, and on the left side of the thorax, stretching up to near the corresponding clavicle, the sounds are loud and abrupt. Along the course of the sternum, too, these phenomena are superficial and most audible. On the left side of the thorax, opposite the left ventricle, the sounds are comparatively weak and circumscribed. The jugular veins are much and permanently distended. When he

struggles and cries, which he is too apt to do on the application of the stethoscope, his face becomes congested and purple, and this state terminates generally in a few ineffectual attempts to vomit, which process, however, he does not appear to be able to complete from deficiency of contractile power in the muscles of the abdomen.

*Diagnosis.*—Much passive dilatation of the right cavities of the heart, with the natural, or perhaps a slightly hypertrophied, state of the left. Obstruction to some degree of the orifice of the pulmonary artery, and patescence, perhaps, of the *foramen ovale*.

What the exact nature of the organic lesion is, or where in the course of the pulmonary circulation the impediment is situated, which obstructs the passage of the blood from the right chambers of the heart, it is difficult to determine. The turgid state of the jugular veins, and the loud, abrupt, and extended sound of the right ventricle, clearly show that that cavity is much distended, and that the blood is retarded in its course in it, and in the corresponding auricle and continuous venous trunks. The enlargement of the liver is a common effect of such a state of the circulation. The substernal sounds, with the general symptoms, lead me to suspect

that the orifice of the pulmonary artery is partially obstructed, and that a great part of the blood makes its way from the right to the left side of the heart without previously going the round of the pulmonary circulation, and that, perhaps, this takes place by means of the pervious *foramen ovale*. The faint circumscribed sounds of the left ventricle, with the weak thready pulse, plainly show, however, that that cavity, with the arterial system throughout, are scantily supplied with blood.

The affection, then, of the thoracic organs, of which we have seen this boy now to be the subject, I am fully inclined to think is not of recent development, but, on the contrary, that it has existed in a form, more or less severe, since his infantile years; and, moreover, that we must regard it as the principal cause of his present diminutive stature. My reason for taking this view of the matter I shall here explain.

If we test the chief facts or events in the history of the case with what we are aware would have been the pathological, or rather, perhaps, I should say, the physiological effects on the infantile and growing constitution of a joint lesion of the respiratory and circulatory apparatus, such as in this boy now exists, they will afford, I think, such mutual and confirming support to

each other, that it is difficult to take any other view of the matter. The facts I allude to in the history of the case, are these:—1st. The boy, when born, was strong, perfect, and healthy, and continued so to be till he was a few months old. 2nd. About that time he had a severe attack of illness, which was observed to have produced a complete change in his constitution. 3rd. From the time that he was between two and three years of age, up to the present date, his external condition has undergone no appreciable alteration; in other words, he was, eighteen years ago, as far as external observation could perceive, exactly what he is at present. With regard to the second of the above facts, we may safely conclude, I conceive, without much fear of being incorrect, that no lesion or derangement either of function or of organization of any other part of the system, which might have occurred during the early life of this individual, could so immediately and so effectually alter his constitution and arrest its growth, as the lesion of the circulation and of the respiratory apparatus which now exists, and which we are now considering. The third fact hardly requires a remark, but I may observe that since the external condition of this boy has undergone no metamorphosis since his infancy, it is not unreasonable to conclude

that his internal condition has been equally unchanging.

This view of the case, I am aware, involves pathological circumstances, which, it must be confessed, are of extremely rare occurrence, namely, to find a child the subject of organic disease of the heart, and also to find that disease, no matter who may have been the subject of it, continuing during a period of twenty years. This latter circumstance, however, I conceive, receives an explanation in the effects of the disease upon the system generally having acted in a palliative and salutary manner on the disease itself. The prostration of the circulation, of the vital powers, and the early arrest of the development of the locomotive organs, consigned the individual to an inactive mode of existence, which of course prevented him from making any sort of exertion that might at any time have accelerated the circulation, and, consequently, aggravated the affection: so that, in this instance, nature has fairly verified the principles inculcated by therapeutics, and adopted a complete and rigid Valsalvian mode of discipline, which, though it has not been altogether effectual in working out a cure of the disease, has at least proved useful in retarding its progress and fatal termination. Nature, as it were, has sacrificed the

secondary or animal system to preserve the primary or organic. I may here observe that it is evidently the want of muscular power in the lips and tongue which prevents this boy from being able to articulate. He attempts to speak, but cannot give the necessary quick motions to those parts.

Is not this case in some degree interesting in another point of view? Does it not present us with a fair enough illustration of a law propounded by Serres, Saint Hilaire, Beclard, Andral, and others, in explanation of the cause of one class of monstrosities, namely, those from arrest of development? The law is this:—“That the absence or incomplete evolution of any part of the system depends on the defective development of the artery which should supply the part with the materials for its nutrition and growth.” In the present case, indeed, the arteries are present but they do not convey the material (oxidized red blood) for the nutrition and growth of the organs. During fœtal life also, I will venture to observe, that it is the defective development (if I may use that expression) of the blood which causes the defective development of the arteries; the latter being formed from and for the former.

The question then naturally arises, should



this strangely deformed creature be regarded as a monstrosity? and the answer must be in the negative. The period of life at which the arrest of development took place having been subsequent to the birth of the boy, precludes him from being ranked under the term monstrosity, it being necessary, according to systematic arrangement and definition, that a malformation should be congenital to merit that appellation. Is he then to be regarded as a dwarf? No, for the term dwarf is restricted to those individuals whose diminutive statures are owing not to malformation or disease, but to a proportionally diminished volume of all the parts of the body. How then is this case to be regarded? As one, I think, presenting us with an example of arrest of nutrition and development in consequence of disease and early failure of the functions of the circulatory and respiratory organs—the heart and lungs.

Considerable instruction may, I conceive, be derived from this case in a physiological and therapeutic point of view. Does it not show with some degree of distinctness the relation that exists between the perfect development of the function of respiration, and the perfect development of the animal system—the system of support and locomotion, the bones, muscles, brain,

and nerves? Does it not, too, perhaps, show that a principal cause of rickets (for this, if we confine our observation to the osseous system alone, is a case of aggravated rickets), curved spine, and *spina bifida*, with various other affections enunciative of debility of the organs of support, is to be sought for in some lesion of respiration? I think it does. How necessary then must it not be to be aware of the state of these organs in the treatment of disease situated in any part of the body! No one could with any certainty of success undertake to cure a chronic abscess, an ill-conditioned ulcer or indolent fracture, or a great number of other maladies that are looked upon as surgical, without first being aware of the condition of the heart and lungs. It is the function of respiration, that is, the manner and extent of the oxidation of the blood which determines the energy of the *nisus formativus*, and that which affects the *formative* power must necessarily, and does certainly, affect the *restorative*, as these are but different terms which imply the same physiological action.

May 13, 1834.

In the foregoing observations, made now some years ago on this case of defective growth and

deformity, I have attributed, as must be seen, the cause of the defective growth to disease of the heart, and injury of the function of respiration, occurring at a tender infantile period of the individual's life. There is another circumstance, however, in the pathology of the case that I must now notice, and which more extended opportunities of observing have led me to believe was intimately connected with its etiology and stunted development—I mean enlargement and disease of the liver, with concomitant protracted indigestion.

The dropsical-looking protuberant state of this boy's abdomen was unquestionably the result of an enormously enlarged liver. He was also no doubt the subject of chronic hydrocephalus in a mild form. There is an idea that frequently occurs to my mind that dropsy of the head in the child, particularly chronic dropsy, is in some manner or other connected in the relation of cause and effect, with disorder or disease of the liver. That, in fact, a state of disease of the liver in the child, more or less approximating or analogous to that which in the adult sometimes produces dropsy of the abdomen, may, in the younger subject, be the cause of a similar affection of the head.

### CONTRIBUTION III.

## RICKETS.

*Question of the ancient or modern origin of the disease—Opinions of Glisson, Bate, some Italian physicians, and others, on this point—History, description, and morbid appearances of the disease.—Observations on the Pulse and Circulation.*

It is the opinion of many that the malady of rickets first made its appearance, as an evil of the human race, in England, and that such took place somewhere about two hundred years ago. Glisson, Bate (physician to Charles the First, to Cromwell, and to Charles the Second), with six other eminent physicians of the time, who joined observation and experience in investigation of the origin, nature, and treatment of this disease, coincided in opinion that it was a new distemper, and not known to the earlier inhabitants of this island, or of the continent, or to the Greeks or Romans.

Glisson was an able and learned physician, and Regius Professor of Physic during forty years at Cambridge University, and might be considered well qualified to give an opinion on

such a statistical point in medicine. Boerhaave and Van Swieten also would appear to favour the opinion of the modern origin of rickets. Glisson is the first, I believe, who has fully and accurately written upon the disease; and it is a little remarkable that its name (of Greek derivation, from *ραχις*, spine, or chine) was not the suggestion of that author, but was the common appellation by which the complaint was known and spoken of at the time he wrote his treatise upon it. (*Glisson de Rachitide*, published about the middle of the seventeenth century).

Not a few writers, with whom I am much disposed to agree, are of opinion that the disease of rickets, in a mild or aggravated form, existed at all times, and was comprehended and recognised in the general morbid state of cachexy.

The following is a description of a morbid condition of a boy, given by a physician of Bologna, Johannes Baptista Theodosius, in 1554, a century before the rickets was noticed by any writer in this country; and if a similar case were to come under my observation to-morrow, I would have no hesitation in pronouncing it, with the fullest confidence in the correctness of my diagnosis, to be rickets:—Ejus temperamentum declinat ad frigidam et humidam, ex quo color totius pallidus

redditur ita ut ad cachexiam tendere videatur, et multæ in eo cruditates generentur. Affectus est debilitas virtutis motivæ, ita ut, cum mensium jam septendecim sit, non possit ullo modo se movere, nec stare; et, cum in ulnis a nutrice defertur, vix caput potest erectum tenere. Symptoma aliud omnium sævissimum est vertebrarum trium in costis notis ad exteriora declinatio, et est modus gibbositatis, et modum arcus costæ etiam incurvari videntur.” “The temperature of him (the boy) declines to cold and humidity, by which the colour of all the skin is rendered pale, so that he seems inclined to a cachexy, and many crudities are engendered in him. The complaint is a weakness and inability to move, so that this child of seventeen months old can in no manner move itself or stand; and, when it is carried in the nurse’s arms, it can scarcely hold its head upright. Another symptom, the most cruel of all, is, that three of the vertebræ of the true ribs bend outwardly, and form a kind of hump-back, and the ribs appear to be arched in the manner of a bow.” — *Theodosii, Epist. Medic.*, p. 250.

The protuberance of the abdomen, and enlargement of the epiphyses of the joints, and irregular inordinate appetite and digestion,

symptoms somewhat diagnostic of rickets, are not here mentioned; but there is little doubt that, with those which we find enumerated, these were also associated.

A celebrated Italian physician, Zaviani, and some German and French writers of good authority have argued for the antiquity of rickets; and if this disease and that of scrofula be of similar natures and kindred pathology, as I believe they are, the fact of the antiquity of the one, and the opinion of the modern origin of the other, are somewhat contradictory and incongruous. Was not the "bottled spider," the "hunch-backed toad," Richard the Third, not the subject of rickets at birth and during infancy? There is little doubt, I think, but that he was. The description of that monarch's person by our great dramatic poet, and the representation of it which I have seen by Kean, the present genius, is exactly that which those individuals generally present throughout adult life, who have suffered from the malady of rickets in childhood:—

“ But I, that am not shaped for sportive tricks,  
 Nor made to court an am'rous looking-glass;  
 I, that am rudely stamped, and want love's majesty;

\* \* \* \* \*

I, that am curtail'd of this fair proportion,  
 Cheated of feature by dissembling nature,  
*Deformed, unfinished, sent before my time*  
 Into this breathing world, *scarce half made up,*  
 And that so lamely and unfashionable  
 That dogs bark at me as I halt by them ;  
 Why I, in this weak piping time of peace,  
 Have no delight to pass away the time,  
 Unless to spy my shadow in the sun  
 And descant on mine own *deformity.*"

At the time that Glisson wrote his treatise on rickets the distemper was frequent in London, and seemingly endemic in other parts of England, but more particularly in Somersetshire and Wiltshire. It was also observed to prevail in Holland, France, and other parts of the Continent, where it was denominated the English disease (*morbus Anglicus, maladie Anglaise, &c.*)

Rickets has by some writers been divided into *perfect* and *imperfect*. From the enlarged state, and knobbed or knotted appearance of some of the joints, the Germans have designated the affection *articuli duplicati*, doubled joints; the French, *enfans noués*, knotted infants. When the disease comes upon a child after it has begun to walk, and while the epiphyses of the wrist and ankle-bones are only observed to be increased in size, and the flesh generally some degrees softer



than natural, and the little patient can still exercise the powers of locomotion, it is called *imperfect rickets*. When the malady is more severe, and the child cannot walk without falling, or is compelled to spend its time either creeping from place to place on its hands and knees, or sitting or lying, it is termed *perfect rickets*. The case of Kates, given in a former paper, is a good example, I consider, of perfect rickets.

The time during which a child is most liable to be attacked by this deforming disease is from the commencement of dentition, or from the period at which that process of organic development usually makes its appearance above the gums; that is to say, the seventh month until the age of two years. After this epoch the disease, it is true, may still invade the system of the child, but it is observed to be a circumstance of very rare occurrence.

The adult individual is subject to, and sometimes labours under, an affection similar or analogous to that of rickets in the child, termed *molities osseum*, or *malacosteon*, soft-bone (from *μαλακος*, soft, and *οστεον*, a bone).

The disease of rickets, as I have observed, most frequently attacks the infant about the time of teething; and the symptoms that cha-

racterise the indisposition which often accompanies that critical process are not unfrequently those which usher in this malady. The child, previously in good health and temper, is observed to droop and to be irritable, to be fretful and disinclined for the breast; its sleep is disquiet; the skin is hot and dry; the pulse is quick, but not strong; the bowels are disturbed; there is a slow continued fever present, that has a morning remission and evening exacerbation, which soon produces severe emaciation. After the continuance for some time of these more acute symptoms, the child becomes languid, solitary, and listless; its countenance is pale and dejected; the skin generally is pale and anæmitous; a remittent, slow, suppressed feverishness is still present, which would appear to be gastric, and to expend its forces chiefly internally; the appetite is abnormal and irregular, most frequently voracious; the functions of the bowels and the entire operations of the digestive economy are disordered and deranged; the alvine excretions are sometimes dark, but more frequently light-coloured, and altogether devoid of bile; the renal secretion is morbid, sometimes clear and rather copious, but most commonly turbid and scanty; the flesh becomes

soft, and emaciation progresses. When the disease proves fatal the emaciation is extreme, with frequent diarrhœa and convulsions preceding dissolution. Occasionally, however, as I have witnessed in a few instances, there is little or no emaciation, but the flesh is exceedingly soft and flabby.

The osseous system manifests signs of participation in the general disorder and error of assimilation; the bones soften and bend in various ways, and different deformities are produced. The spinal column exhibits curves posterior, anterior, and lateral. The posterior curve most frequently occurs in the upper dorsal vertebræ, forming the common deformity of hump-back; the anterior curve in the lumber region, which has the effect of throwing the abdomen forward, and thereby causing progression to be unsteady and feeble. The clavicles become more bent, and of a sigmoid shape, which allows the shoulders to approximate, and the arms to press upon the sides of the chest, which is thereby flattened, the ribs becoming less convex, and the sternum more so, causing the chests of those individuals to resemble in some degree the breasts of birds; from which circumstance persons with such deformity, which generally continues through

life, are usually said to be "pigeon" or "chicken-breasted." The pelvis also changes its form, by undergoing a sort of twist, and its antero-posterior diameter is diminished, which, in the female, frequently causes the process of parturition to be difficult, and sometimes impossible, without mechanical aid. The limbs, both upper and lower, become bowed forwards or outwards; most frequently the latter. Sometimes both lower limbs are bent in the same direction, as if the feet had been pressed against the ground at the same point, and the limbs bent by some external force, in a similar manner as one would bend a green young tree. Sometimes the knees come almost in contact, and the legs diverge, placing the feet upon the ground much apart, like the extremities of an equal-sided cross. In some cases the entire skeleton is so variously curved and deformed, that it is futile to attempt, and impossible, indeed, to give a correct description of it.

The joints, particularly the knees, wrists, and ankles, become enlarged. This enlargement of the wrists and ankles, and general softness of the flesh which accompanies it, are often the first symptoms of rickets that attract the attention of the parents or medical attendant.

The abdomen is protuberant; there is more or

less enlargement of the liver; in some cases the increase in bulk of this viscus is very great, and can easily be felt by percussion, or pressure of the hand on the right hypochondriac region.

The size of the head is increased, and the vertex becomes flattened from greater or less spreading of the bones of the cranium, in consequence in a great measure, I consider, of the atonic relaxed state of their integuments, and of the absence of that brace and support which they receive from these when the system is in health, and the soft parts in full tone. The anterior fontanel and the sagittal sutures remain open. To this condition of the bones of the cranium dropsical effusion in the ventricles of the brain is frequently united. Dentition is generally delayed, and sometimes the teeth are deficient in number for life, and often they early become dark-coloured and decay. The breath, too, is at times found to be exceedingly fœtid: cases are mentioned by authors in which the breath was so fœtid and deleterious as to destroy young birds exposed to its influence.

The development of the mental faculties of rickety children is irregular, and a thing of uncertainty; sometimes we find precocity of intellect, and premature quickness of the power of

observation and remark ; at other times just the reverse obtains—the intellectual faculties of the rickety child are plunged in abstraction and stupor. A great many rickety children are, in fact, more stupid than intelligent ; and they all appear to be rather stunted and weak in their feelings and affections.

When the distemper of rickets comes upon a child after it has begun to walk, and is beyond a year old, it will be observed to be chronic and slow in its progress ; it steals upon the young sufferer insidiously. The child's habits and disposition are perceived to be changed ; from having been an animated active child, it has become dejected, and disinclined to exercise or motion of any sort ; the countenance is pale ; the eyes dull and decolourised ; the skin generally pale, and diminished or irregular in temperature ; the flesh soft ; the knees and the extremities of the radius and ulna at the wrist, and also the tarsal extremities of the tibia and fibula enlarged. The child, previously of pretty stout and active progression, now stands infirmly and walks slowly, waddling and tottering till it falls, if not supported. The abdomen is protuberant and more resisting than natural, and, on examination, the liver may be found in a greater

or less degree increased in bulk; there is increased frequency of the pulse without any real disturbance or acceleration of the circulation\*; the appetite is irregular, generally inordinate; the alvine and urinary excretions unhealthy; the former are deficient in bile, and occasionally exhibit appearances of blood.

Such are the symptoms which, in the majority of cases, will be found to characterise the first stage of rickets, when this affection invades the system of the child that has begun to exercise the powers of locomotion and perhaps speech. The symptoms of the further progress of the malady are similar in all respects to those of the disease as it occurs in the infant of a few months old, which have been already described.

With regard to the prognosis in rickets, it may be stated that the earlier the disease makes its appearance in the system of the child, the greater is the difficulty of its cure, and the danger of its proving fatal. The older the child is before being attacked, the greater is the hope of its recovery from the malady. Few are attacked after five years of age, and the recoveries, all, or the greater part of them, take place previous to this epoch.

\* See paragraph at the end of this paper.

I will here quote a case of rickets as the disease exhibited itself in the system of a female infant, described in the Commentaries of Van Swieten, which must be considered instructive and worthy of note, as affording a good example of this malady in a state of great aggravation and severity, with its signs of amendment, and process and progress of recovery, and restoration to sound health. All diseases, observes Hippocrates, or some other ancient high authority, and the observation is founded in every-day fact, terminate in health, death, or transition to another affection: and if it be a matter of practical consideration and utility attentively to observe the gradual development of the signs of death, or of morbid change, when a disease is about to terminate fatally, or to assume a new nature, it is certainly satisfactory, much more pleasing, and not less useful, to note the appearances of returning health, and mark the gradual manner in which the characters of disease thereupon become more faint, and finally erased.

Speaking of this case, Van Swieten goes on to state—"She was born very healthy, and had so good a colour during the first months that everybody hoped she would totally escape the calamities of her brothers: she was hardly a year old when



she began to grow pale and ill; the abdomen swelled; the wrists, knees, and ankles, protuberated; the thorax was raised; the ankles were incurvated; the back-bone became crooked; all the bones of the head were enlarged, as if they were affected with an exostosis; the structure of all the bones of the body was vitiated: she also laboured under a complication of diseases—the scurvy, dropsy, a bloody diarrhœa, a scarcity of urine, a fever, a violent cough attended with anguish and a dread of suffocation. She lived in this miserable condition for above two years. The same remedies (crocus martis and ens veneris), which cured her brother, were applied to her during thirty months in vain, so that their application was almost given over, as there appeared no hopes of a cure from them; but the tender mother, unwilling to spare any pain or cost, the same method was still indefatigably persevered in. The anguish and cough began at length to diminish, and the fever ceased; the flesh looked of a better colour; the protuberance of the abdomen was diminished; the incurvated spine grew straight; the swelling of the joints lessened; the elevated sternum grew flatter; the arched figure of the clavicles decreased; the bones of the head subsided: she first began

to stand, and then to walk; at last no trace of so severe a disease remained, and she became equal in health and strength to other children of the same size. The muscular strength also began to be restored without the assistance of any artificial means; and the bones recovered their due form, which had been so very imperfect during thirty months."—*Van Swieten's Commentaries*, vol. xvii, pp. 436 and 437.

When rickets proves fatal, the emaciation is general and extreme. The subcutaneous cellular tissue has completely disappeared; the muscles are wasted, flabby, and decolourised; the deformed bones soft, and more cellular than natural, and deficient in their solidifying constituent of phosphate of lime. The deficiency in this distinctive osseous element has been found to amount to one-half the quantity which usually goes to the composition of healthy-formed bone. The medullary matter in the cavities of the bones is sanguineous and jelly-like; and the entire substance of the bone is spongy and more vascular than ordinary. The bones of the cranium, besides being softer, are generally larger than natural, and separated at their sutures; and the brain is frequently distended with dropsical effusion. The cerebral mass appears large and

inclined to be pulpy. The abdomen is always increased in size, and its parietes wasted and thin. The increase in the bulk of the abdomen is owing chiefly, according to the testimony of Glisson, Hoffman, and others, to greater or less enlargement of the liver.

The spleen is occasionally found enlarged. The mesenteric glands are sometimes quite sound, and at other times they are observed to be increased in size. The pancreas and kidneys are pretty healthy, and so also are the stomach and intestines, except that these latter are frequently observed to be more distended than natural. The thymus gland is sometimes greatly enlarged. I have seen it, in a boy between eight and ten years of age, the subject of scrofula and rickets, projecting fully three inches above the sternum, and pressing so upon the trachea as to cause severe dyspnœa. The heart and lungs are sometimes found diseased; the former enlarged or hypertrophied, the latter the nidus of tubercular deposit: but such conditions of these viscera are more adventitious and accidental than properly included in the morbid appearances of rickets. The blood is in a dissolved watery condition, and deficient in all its higher constituents.

The causes and treatment of rickets I shall take up in another contribution.

I will here take the opportunity of observing, that, in the examination of disease, there are few symptoms less fully to be relied on than those furnished by the morbid pulse, and it requires a clear comprehensive general knowledge of physiology, with much practical experience, and close acquaintance with clinical pathology, *viz.* the live and active disease in the person of the patient, to obtain accurate and true information of the state of the system in many cases. The phenomena of the pulse, in the study and treatment of disease, are more serviceable to the physician in the matter of *prognosis* than of *diagnosis*, and in affording frequent useful delicate indications of the necessity for the administration of general therapeutic agents. Frequently, as may be observed, when the pulse is beating rapidly, and from this, with other relative symptoms, one might be led to infer that the circulation was in a state of hurry and acceleration, it is not so, but just the reverse obtains—the blood is moving slowly, while the heart and arteries, the containing vessels, are acting inordinately. Such discordance in the motion of the blood and its active circulatory

apparatus constitutes a condition of disorder, frequently met with, of *false* excitement — *excitement with debility*. It is more hardness or resistance, I conceive, in the pulse, together with fulness, and not a high number of beats in a given time, which indicate and announce a rapid strong circulation; and the best ordinary method of nicely appreciating these qualities in the circulation is, when the fingers, in feeling the pulse, have remained for some time upon it, to slightly raise them, and gently repress the vessel. In this way, I have thought, that the most accurate estimate and information of the velocity of the current of the blood, and of the amount of *true* excitement of the circulation, is practically obtainable. It is only the pulse of real or true circulatory excitement that, for the most part, warrants *general* blood-letting; all others, with a few exceptions, perhaps, forbid it.

Notwithstanding the knowledge of the general circulation which has been obtained by the discovery of Harvey, there is still “ample space and room enough” in this department of physiology for further investigation. I believe there is still much to be learned respecting the ultimate distribution of the blood. The nutritive circulation of every organ, like the structure of

the organ itself, I am much of opinion, is more or less individual and particular; and the motion or movement of the blood, in its most minute and vital diffusion through the tissues of the economy, is a thing, like the shades and colours of a summer landscape, of the utmost variety. This, it is obvious, involves, in some degree, a practical point of some importance, namely, the *duration* of disease, inflammatory in particular, as it occurs in the different parts and structures of the system. I have an unsettled opinion, too, that the motion of the blood in the child is slower than in the adult, although its pulse is always considerably more frequent. The pulse of the child at birth is double that of the adult. In old age the circulation is always slower than in youth and early manhood, but in old age the pulse is slower also.

June 30th, 1843.

## CONTRIBUTION IV.

### RICKETS.

*The causes predisposing, exciting, and proximate of the affection.*

*—An illustration of morbid etiology in the development of consumption and of typhus fever. — Rickets and scrofula identical in their causes and natures — This illustrated by cases. — Treatment of rickets — The plans of treatment of Boerhaave, Sydenham, Van Swieten, Boyle, some Italian physicians, and others.*

THE scientific, and therefore most practical observer of, and prescriber for, disease forms, or should do so, his diagnosis *à posteriori* and his prescription *à priori*; that is to say, from the general assemblage of symptoms and morbid phenomena, which in any case present themselves to his observation and judgment, he determines as to the nature, and name (if any) of the disorder or disease; and, pursuing his clinical scrutiny and investigation still further, he endeavours to arrive at, and to comprehend, its proximate cause; towards the removal of which he designs and directs his remedies and treatment.

This applies, of course, to the conduct of the well-informed physician or surgeon, more parti-

cularly when the object of his therapeutic measures is the effecting of a cure: but when, from the nature of the malady under which the patient labours, such is impossible and impracticable, the aim of his prescriptions and therapeutic expedients, whatever they may be, can only be towards palliation of symptoms, and more or less improvement of condition: or perhaps to lighten and appease the last painful stage of life's weary journey and approach to

“The undiscover'd country, from whose bourn  
No traveller returns.”

Morbid etiology generally and properly resolves itself into three kinds of causes, namely, *predisposing*, *exciting*, and *proximate*. This division might appear somewhat refined and artificial, but such is not the case, as it unquestionably has its full existence in fact. Let me adduce an example in illustration of the entity, and too frequent mode of operation, of these three causes; and I will choose the case of one of the many delicate and interesting—in some instances, indeed, too interesting because too delicate—young ladies who constitute the beauty, life, and joy, and attractive captivating ornament and charm of society, in all its variety of better relations in this great metropolis and everywhere



else. I will choose, I say, the case of one of these young ladies, destined, through hereditary consumptive diathesis, and the changeable ungenial nature of this northern climate, aided by erroneous unhealthy educational and social arrangements and customs, to fall, like some tender early flower nipped by cold, a victim to the malady of phthisis. The hereditary diathesis, or specifically ill-developed and ill-organised state of the fluids and solids, then, in such instance, forms the predisposing cause, the ungenial atmospheric agency the exciting cause, and the tubercular matter deposited in the lung the proximate, sustaining, or constituting cause. Or, let me take a case somewhat different, but one equally in point, that of the outbreak and spread of typhus or contagious fever in a population suffering from insufficient or unwholesome food, and other not unfrequently accompanying privations.

The diminution and defect in the quantity of the blood, with its impoverished vitiated qualities and condition, and the concomitant resulting depression and debility of the circulation, and of the entire economy, form here the predisposing cause. And, under such circumstances of predisposition, an unusually

severe impression of cold, the more than ordinary exhaustion and fatigue consequent upon a toilsome day's labour, or more or less unusual privation of diet and sleep, or some event which gives a depressing shock to the mind and spirits, or, when the fever proceeds from contagion, the reception of the animal or vegetable *miasm* into the circulating fluids and system, and its impression and injurious effects thereon, from the exciting cause; the peculiar, perhaps specific, morbid change and derangement of its vital affinities and constitution which the blood undergoes, and which originate and continue the febrile state and phenomena, form the proximate or sustaining cause. "That," truly and elegantly observes Van Swieten, "is called the proximate cause of a disease which directly constitutes the whole present disorders, the presence whereof founds and continues the disease, and the absence of which removes it."

In the etiological pathology of rickets, the predisposing causes of the malady, like those of scrofula and consumption, are chiefly referrible to hereditary taint and organisation. When, as sometimes is the case, the disease becomes developed in the system of the child, not the offspring of strumous or otherwise debilitated

parents, it is difficult, and, indeed, unnecessary and useless, I think, to draw any distinction between the predisposing and exciting causes, as these are, in fact, the same morbid agents, which would appear to differ only as to the times and greater or less intensity of their mischievous actions. When a congenital strumous and rickety diathesis exists, a shorter and less rigorous operation on the infantile system of those causes which ordinarily act as the excitants of the disease, which I shall presently enumerate, are sufficient to quicken the malady into life and form, and on the contrary, where such diathesis or physical predisposition does not exist, but when the affection, like an isolated case of typhus fever, is altogether the offspring of contingent and external circumstances, a longer and more severe operation of those morbid agents are, generally speaking, requisite for the production of the disease.

That scrofula and rickets, as I have already observed, are distempers identical in nature, though somewhat different in their symptoms and forms, there cannot, I conceive, be a doubt; and that a scrofulous condition of the economy in either parent may, and does, according to modifying circumstances, act as a cause either

of a like malady — that is, of scrofula properly so recognised, or of rickets in their offspring — there is sufficient evidence to verify. I have witnessed, in the family of a respectable artisan, the father of ordinary stature, of active constitution, and free from every kind of debility and disease; the mother of large person and leucophlegmatic temperament and form, with tendency to a strumous state of the lymphatic glands generally, but without any particular scrofulous ulcer or tumour; one son, thirteen years of age, who inherited the temperament and constitution of the father, robust, and in every respect healthy; another son, between eight and ten years old, the subject of severe scrofulous diathesis and debility, and scrofulous enlargement and ulceration of the submaxillary glands, and also of the lymphatic glands on the side of the neck; an only daughter, fourteen, stunted in growth both of body and mind, of large head and abdomen, of bowed legs and arms, and twisted deformed spine and pelvis, of soft infantile flesh, and stupid lax countenance; in short, an unquestionable example, in every symptom, of the malady of rickets. There would appear to be a great defect in the power of developing animal heat in rickety individuals.

This dwarfed and deformed creature, although she could walk and run in a straddling unsteady manner, generally sat, like some stray and disabled elf, during the autumn and winter, the vigilant guardian of its own hearth; and, the warmer and brighter the fire, the more pleased and animated it seemed to be.

I have witnessed again, in one family, the father the subject of scrofulous enlargement and ulceration of the ankle-joint and bones of the tarsus; a son, nearly arrived at the age of manhood, labouring under scrofulous necrosis of the lower third of the femur, and also of the middle third of the connected tibia; one daughter, beyond twenty, strong and healthy; another daughter, between a year and two years younger, rickety, and curved, and deformed in various ways. The mother died of ovarian dropsy, resulting from scrofulous disease of the ovarian bodies.

In a medical controversy, upon perfect and imperfect rickets, held at Strasburgh, ninety years ago or a little less, by Buckner, that celebrated author adduced the case of a female of the labouring class, the subject of "king's evil," scrofula, who was mother of eleven rickety children, all begotten by the same father, a man

remarkably healthy both before and during the time his family was increasing.

Boerhaave, in one of his aphorisms treating of the etiology of rickets, states to the following effect, and nearly in the same words: this disease is chiefly fatal to children whose parents are of a lax weakly constitution, are indolent and delicate, who live luxuriously, who eat little bread, drink sweet wines, and much warm water; who have been exhausted by chronic diseases, generative intemperance, age, and particularly if they have had the lues venerea and frequent gonorrhœas, for such generally propagate weak and languid offspring.

Although such pathological doctrine is not, I believe, generally taught, repeated attacks of gonorrhœa and long-continued gleans have certainly the effect, in not a few instances, particularly in the male, of greatly depressing the spirits, and of relaxing and softening the solids, and of weakening in no inconsiderable degree, temporarily or permanently, the entire system and constitution. The offspring of an individual labouring under such debility of the system is very likely, no doubt, to be weak, and disposed to disease, and most of all to the distemper of

scrofula in some of its different forms. In some constitutions that have experienced repeated attacks of gonorrhœa terminating in lingering gleans, the hair loses its softness and healthy appearance, and becomes dry and falls off. I have myself witnessed two cases of this peculiar depilation, a symptom, I conceive, of profound constitutional injury. In one of the cases there was also falling off of the eyebrows, with disfiguring permanent dwarfish regrowth of the parts. Dr. Macartney, the late professor of anatomy and surgery in the University of Dublin, one of our most acute observers, and a profoundly learned physiologist and pathologist, was accustomed, I believe, occasionally to direct the attention of his numerous pupils to this remarkable fact.

The causes from which the malady of rickets is generally considered immediately to derive its existence, and from which, whether with or without a predisposition in the economy, the *essentia morbi* and its external characters are generated (if I may use the term) and developed, and in consequence of which they are denominated its exciting causes, are referrible, chiefly or altogether, to the condition and circumstances

of the child as regards aliment, air, and exercise, habitation and clothing, and exposure to wet, damp, or cold.

In every case of rickets which has come under my observation, the system of the individual certainly had been, or was being, subjected to the unsalutary agency of insufficient and unwholesome nutriment, in the form of breast-milk, or food artificially prepared; its habitation was generally damp, cold, and confined, and excluded in a greater or less degree from the due influence of the sun; the nursing and physical education of the child was negligent and bad, it being seldom in the free insolated air, and sometimes but scantily clothed.

The following observations, on the etiology of rickets, which I extract from the article on this malady in the *Dictionnaire de Médecine*, are, I consider, so sound and excellent, that I cannot do better than give them a place here:—“Laisant donc de coté les hypotheses, pour ne nous arrêter qu’aux faits, nous avouons franchement que la cause du rachitisme nous parait totalement inconnue. Le principe de cette maladie se développe spontanément chez certains individus qui y sont plus disposés que d’autres par leur constitution. C’est ainsi qu’on voit souvent



tous les enfans d'une même famille devenir rachitiques, que cette maladie se transmet à une ou deux générations, et que cette disposition héréditaire s'affaiblit, soit par le croisement des races, soit par le changement de régime ou d'habitation. Pour les individus chez lesquels cette disposition primitive est cachée et existe déjà, plusieurs causes secondaires peuvent concourir à développer la maladie : ainsi le travail de la dentition, l'affaiblissement de la constitution à la suite de plusieurs maladies aiguës et chroniques, deviennent autant de causes occasionnelles de rachitisme. L'habitation dans des pays humides paraît aussi favoriser le développement de cette maladie. C'est principalement en Hollande, dans le nord de la France et en Angleterre, qu'on l'observe plus fréquemment. Elle était tellement repandue dans ce pays, vers le courant du seizième siècle, qu'on lui avoit donné pendant un certain temps le nom de mal anglais ; c'est surtout dans les grandes villes les plus populeuses, à Londres, à Amsterdam, à Paris, que le rachitisme s'observe plus fréquemment ; il est plus rare dans les campagnes, dans les bourgs, que dans les grandes villes. Un mauvais régime alimentaire paraît contribuer à favoriser son développement. Les enfans de la classe inférieure, que

sont très mal nourris dans les grandes villes, qui sont en général plus sujets que ceux de classes élevées, quoique ceux-ci n'en soient point exempts."

"Leaving aside, then, hypotheses, to confine ourselves to facts, we frankly avow that the cause of rickets appears totally unknown to us. The seed of the malady is spontaneously developed with certain individuals, who are more disposed to it by their constitutions. Thus it is that we often see all the children of the same family become rickety, and this malady transmit itself to one or two generations, and again this hereditary disposition becoming weakened either by intermarriages or by change of regimen or habitation. With those individuals, in whom the primitive disposition, though not apparent, still exists, many secondary causes may concur to develop the malady; thus the pain and disturbance of dentition, the constitutional debility consequent upon many acute and chronic diseases, become as many occasional causes of rickets. Habitation in damp countries appears also to favour the development of this malady. It is chiefly in Holland, in the north of France, and in England, that we observe it most frequently. It was so prevalent in this latter country during, or towards the

end, of the sixteenth century, that, for a certain time, they had given to it the name of the English disease. It is principally in the great and most populous cities, such as London, Amsterdam, and Paris, that rickets is observed most frequently. It is more rare in the country and towns than in the great cities. Unwholesome aliment appears to favour its development. The children of the poor, in the great cities, who are very badly nourished, are in general more subject to the disease than those of the higher classes, although these are not exempt\*.”

The damp, and cold, and other atmospheric agencies of marshy and maritime localities, are considered by many to operate with peculiar effect as exciting causes of rickets. The disease was very prevalent at one time in Halle, in Saxony, owing, it was thought, to the very moist and unhealthy state of the atmosphere of the town, resulting from saline and carbonaceous exhalations suspended in it.

Like some other maladies which occasionally exhibit an endemic character, rickets has been viewed as a disease caused by, and propagated by contagion; but such an opinion I do not con-

\* Dictionnaire de Médecine, vol. xviii, pp. 167 & 168.

sider to have any foundation in fact. Sydenham has observed that the rickets — “true rickets,\*” to quote his own distinction, was most common, in his day, in those seasons in which autumnal intermittents prevailed; and it would seem that he was disposed to consider the intermittent fever as the originator, in a great degree, of the rickets.

It is difficult to determine respecting the proximate cause of rickets. The blood and humours in this disease, it is certain, early discover deterioration of their qualities and constitution. But the blood and circulating fluids generally— are they not, let me ask, at all times chiefly dependent for their existence, and the conditions of the same, healthy or unhealthy, on the functions and operations of the chylopoietic viscera and other organisation of digestion? No question but such is the case. “During the whole course of this disease,” observes Boerhaave in one of his aphorisms, “a slow fever consumes the body until death; and then all the fibres, membranes, vessels, and viscera, appear soft and

\* Sydenham, it would appear, made out two sorts of rickets—one true, the other false. The latter, I apprehend, was nothing but infantile atrophy, with mesenteric or some other abdominal disease.

flaccid, the humours dissolved; so that we may conclude the proximate cause of this disease to be a sluggish, cold, and vapid cacochymy, together with a very loose structure of the solid parts." To this doctrine of the proximate cause of rickets Van Swieten also gave his approval; and Du Verney, Buckner, and others, state that the blood of rickety children is dissolved, thin, and watery, and the flesh greatly decolourised.

Some authors, it is but proper here to state, as Bonetus, the learned Heister, Glisson, and others, have asserted that the medulla oblongata, in rickety subjects, is found to be unusually hard and apparently obstructed; from which circumstance the proximate cause of the disease has, by some, been placed in impediment to the free passage of the nervous fluid or cerebral influence into the spinal marrow, and thence into the trunk and extremities.

*Treatment.*—The first thing to be done in the treatment of this disease, or indeed in that of any other, is to rid, if possible, without delay, the individual from the influence and operation of its exciting causes. Though these, in the malady under consideration, may, as we find they do, according to circumstances, vary in de-

gree of action and morbid effect, and though they may therefore, in some manner modify and vary the external phenomena of rickets, the disorder is, however, I believe, essentially a disorder of infantile digestion and general nutritive and organic assimilation. If lingering feverishness and debility, with symptoms of rickets, such as I have described in a former paper, begin to show themselves in a child while at the breast, the health of the wet-nurse should be immediately inquired into, and her milk examined, and, if not found wholesome and nutritious, a new nurse ought to be provided for the child, who might afford it the necessary salutary aliment\*. Without question, every infant, with

\* “ Milk contains only one nitrogenised constituent, known under the name of *caseine* (cheese); besides this, its chief ingredients are butter (fat) and sugar of milk. The blood of the young animal, its muscular, cellular tissue, nervous matter, and bones, must have derived their origin from the nitrogenised constituent of milk, the caseine; for butter and sugar of milk contain no nitrogen.

“ The young animal receives in the form of caseine, which is distinguished from fibrine and albumen by its great solubility, and by not coagulating when heated, the chief constituent of the mother's blood. To convert caseine into blood no foreign substance is required, and in the conversion of the mother's blood into caseine, no elements of the constituents of the blood

a few rare exceptions, should be gradually weaned as soon as it has attained the age of nine months, as suckling it, and encouraging it to subsist altogether or principally on fluid nourishment after that period, is more a cause of physical relaxation and debility than of tone and strength to its digestive economy and constitution. Protracted suckling, in fact, is looked upon by many, and with some reason, I think, as a frequent cause of rickets. We are undoubtedly too frequently in the habit of neglecting the sound and certain dictates of nature. The child, every one knows, usually begins to cut its teeth when it is seven months old; and the object, plainly enough, of the development of the teeth is to furnish the little aspirant for man or womanhood with instruments for the mastication of more solid food, which should be presented to it, in more or less quantity, as soon

have been separated. When chemically examined, caseine is found to contain a much larger proportion of the earth of bones than blood does, and that in a very soluble form, capable of reaching every part of the body. Thus, even in the earliest period of its life, the development of the organs, in which vitality resides, is, in the carnivorous animal, dependent on the supply of a substance, identical in organic composition with the chief constituents of its blood."—*Liebig's Animal Chemistry, second edition*, pp. 51 and 52.

as the teeth have made their appearance. If dentition happen to be difficult, and thereby prove a source of pain and irritation, and of disturbance of the child's digestion and health generally, the protrusion of the teeth should be facilitated by incision of the gums.

In the early and acute stage of rickets, when the febrile symptoms are considerable, and we have acceleration and resistance of pulse, with fretfulness and anorexia, and dryness, or tendency to dryness, of the skin, with more or less disorder of the alvine and urinary excretions, some hepatic alterative aperients, consisting of calomel or hydrargyrum cum cretâ, with rhubarb in the form of powder, and a mixture composed principally of compound infusion of senna, with carbonate of soda and sulphate of potash, together with antimonials and the tepid bath, should be administered, and repeated as indications might prompt. The object, let me state, of the mercurial and alkaline medicines here advised is to urge and render active the biliary secretion, and emulge the liver, which viscus, I apprehend, is, to a greater or less extent, implicated in the etiological pathology of rickets, and, as we have seen, is liable, in an early or late



stage of the disease, to become, in a greater or less degree, congested and enlarged.

With increased bulk of the head, when symptoms of cerebral excitement and cerebral congestion and oppression are present and urgent, a cold lotion ought to be constantly applied to the head, and one or two leeches, or perhaps more, as symptoms might suggest, should be applied to the forehead, or to the temples, or post-aural regions. In the time of Glisson, scarification of the ears, indeed, was a remedy much relied on, and generally practised in this country in the treatment of rickets; no cure of the disease, it is said, being confidently expected without its adoption.

As soon as the symptoms of febrile excitement and of cerebral disturbance have somewhat subsided, and the derangement of the digestive functions has been put in some degree to right, and the malady is beginning to assume a chronic character, the child ought to have daily, with its other diet, milk, or whatever it may be, animal nutriment, properly prepared, and in quantity suited to its age and its digestive powers. Change of habitation is also very requisite. If a rickety child, as too many of them are so situated, be living in a damp, cold, secluded, ill-aired, and

worse lighted place in town, or in a low, unhealthy locality in the country, it should be removed to a residence affording hygienic conditions and influences different, and more salubrious; and being warmly clothed, and carried in an easy position in the nurse's arms, or in a carriage, it ought to be as much as possible, when the weather might permit, in the open sunny air. It is a custom (which experience of its good results has no doubt rendered customary) in some parts of the continent, with parents who have rickety children, to expose them frequently to the warm sun, on dry sandy eminences, in fine spring weather. There is, it is certain, no immediate cure, and but little amendment, whatever medicinal remedies we may prescribe, to be expected for the child labouring under the cachectic chronic disease of rickets, so long as it is kept cooped up within doors, and fed principally on sloppy vegetable and farinaceous aliment; it ought to have air and exercise, daily, immediately after breakfast, and again after an early dinner, between one and two o'clock, when cold or rain did not forbid, and animal food of the younger sort, the best of its kind—beef, or mutton, or veal, or fowl, or ham, plainly cooked, in moderate quantity, twice a day. During the employment

of these remedial diatetics, it may also be necessary to keep the intestinal canal, and its functionally associated glandular viscera, the liver in particular, gently active, for a time, by means of some alterative aperient, administered daily, or every other day, according as the condition of the alvine excretions might suggest; which it may also not unfrequently be found beneficial, and contributive to the cure, to follow, by the use, twice a day, in small rather than in large doses, of some chalybeate medicine, the carbonas ferri, or the tinctura ferri muriatis, or the vinum ferri, for instance.

The following is the substance of the therapeutics, for the treatment and cure of rickets, of the celebrated Herman Boerhaave:—The malady of rickets is best cured by a light dry diet of animal food, not fat, of easy digestion, and seasoned with the mildest spices, given often, but in small quantity; by generous liquors, drank in moderation, especially fresh beer well brewed; by a dry and warm air, and warm clothing; by sleeping upon mattresses filled with aromatic strengthening herbs, placed in the highest and driest apartment in the house; by tossing, shaking, swinging, and dancing them, and by having them borne in a carriage over stony

rough ways; by repeated warm dry frictions with flannel impregnated with the smoke of aromatic gums, principally applied to the abdomen and spine; by gentle emetics given with caution; by purging for some days successively with rhubarb, or some other aromatic cathartic; and lastly, by a long-continued use of strengthening and cordial medicines. The cold bath and liniments are also mentioned, but without experience as to their effects.

In the treatment of rickets, Sydenham appears to have placed his chief confidence in purgation. "According to the age of the child," observes Sydenham, "give it a spoonful or two, more or less, of the purging potion above set down \* every morning for nine days, intermitting a day or two, if need be; and the purgative must be so proportioned, either by increasing or diminishing the dose, as to give but five or six motions a day. When the course of purging is over, let the abdomen be anointed

\* The following is the prescription for the purgative potion here referred to, which was the same, also, that our English Hippocrates was in the habit of administering to his patients in continued fever:—

℞. Infusi Sennæ, Infusi Rhei, a a. oz. iss; Tamarindi Indicæ, oz. ss; Mannæ, Syrupi Rosæ, a a. oz. j. M. Ft. mistura.

with an opening linament for some days. By this method I have cured several children of the true rickets\*.”

Several medicines, of chalybeate and other natures, have held considerable repute for a time, and have had the confidence of eminent individuals both in this country and on the continent, as agents exercising a specific control over rickets. The great and philosophic Robert Boyle introduced, as a specific against this malady, the now antiquated medicine known by the name of *ens veneris*†. “Partly by a sister of mine, to whom I communicated it, and partly by myself, and those I directed to take or to give it, I think I may safely say,” states Boyle, “that two or three hundred children have been cured by it, and that almost always without the help of any other inward medicine, or using any topical medicine at all‡.”

\* Sydenham's Works, by Swan, p. 64.

† There has been some difference of opinion amongst pharmacutists and others respecting the chemical nature of *ens veneris*. Some will have it that it was a preparation of copper, others of iron. I am of opinion that it was a preparation of iron, the *perchloride*, which is not, I believe, amongst the medicines of any of our pharmacopœias.

‡ Boyle's Works, vol. v, p. 124.

The usual dose was two or three grains (which could be increased to thirty without any ill effects) given in distilled water, small beer, or any convenient vehicle. Van Swieten observes that when this remedy caused a sensible increase of perspiration, and of urine, it operated as a certain specific against the rickets. Benevoli, also, has given his testimony to the beneficial effects of *ens veneris* in rickets; and in proof of the same, has related, in his writings, several cases of cure produced by it, one of which, indeed, I quoted at length in my last paper. Van Swieten speaks in high terms of the good results he has witnessed from "golden tincture of steel" (tinct. ferri ses-chlor. of the present school of pharmacy) administered as a remedy for rickets. He states that he cured numbers of rickety children by feeding them on biscuits and mellow generous beer, and giving them, at the same time, three or four drops of this tincture, twice a day, in a little wine.

Zaviani used the same remedy for rickets; and so also did Benevoli, who administered it in milk. De Haen gave the ostrocodermata (of Aristotle) in fine powder, in scruple doses, two or three times a day; and he states that if the rickety children, using this medicine, enjoyed the benefit of a

warm sun in the country, of exercise in a child's coach frequently during the day, and of a dry bed and chamber, with sound aliment they were soon cured.

Hemlock and madder, too, have had their commendations as remedies for rickets. I find cases related, by writers on this malady, in which the former of these medicines was given to young children, to the amount of four and six grains a day, with, as they state, the best results. I do not myself, I confess, put any confidence in hemlock or madder as remedies for rickets.

It is better, I believe, while the bones of rickety children are soft, and liable to contract curves and deformities by efforts at standing and locomotion, to confine these little patients, as much as possible, to the horizontal position, as well while they are being borne about in the nurse's arms, or in carriages, as when they are in bed. But, with all the care by the most careful, in this respect, that may be taken of rickety individuals, it is perhaps impossible, in many cases, to prevent some of the long bones, and the chain of vertebræ of the spinal column, from becoming morbidly bent and deformed. Whenever there is any considerable degree of rickety or scrofulous taint, with its peculiar accompany-

ing debility in the system of the infant, or young growing individual, it seldom fails to manifest itself, by some kind of curvature or deformity of the spinal column. It is certainly the bounden and imperative duty of every parent, or other responsible person, to whom the care and welfare of weak and rickety children are entrusted, to do all in their power, in every way, to prevent them from becoming deformed, and disabled, and distorted pitiful objects, often disagreeable and painful to behold, as many of them, we almost daily see about the streets and lanes of this city, are. And, I will observe, that, for such purpose, in aid to the medicinal treatment, I am not disinclined to think but that benefit and assistance, sometimes considerable, may be derived from the judicious application of mechanical means, which, it is hardly necessary to remark, is more the part of the surgeon, than of the physician, to devise and apply.

If not trespassing on the field of the veterinary physician, before concluding, for the present, the subject of rickets, I will remark, that this malady, like that of scrofula, is not one exclusively confined to the human species; some of the inferior animals are also liable to be attacked by it.



The disease may occur in the monkey, lion, horse, ox, and in the sheep, pig, and dog, more particularly in the pointer and greyhound, and also in geese and ducks. I have myself seen the disease of rickets in the terrier, the turkey, and peafowl.

November 30, 1843.

## CONTRIBUTION V.

### CHRONIC HYDROCEPHALUS.

*Cases of the affection—A Cerebral Murmur an early diagnostic sign—First observation and description, in this country, of this phenomenon.—Case of delayed and difficult dentition, accompanied with severe congestion and excitement of the brain, and Cerebral Murmur.*

CASE I. August, 1835.—WILLIAM JOSEPH CRISPIN, aged seven years, height thirty-five inches, was born at the natural period of gestation, and was then strong, plump, and apparently healthy, in which state he continued for the first month or six weeks, when his mother perceived him gradually to become thin, and, at the same time, observed that his health was disordered. On interrogating the nurse, it was discovered that the child, a short time before, had been exposed to severe cold, and that that exposure had been followed by a fit of convulsions; his bowels were subsequently much confined, and he was feverish and restless. For these symptoms recourse was had to medical advice, and aperient medicines with the warm bath were administered with temporary, but no apparent permanent good effect.

From that time up to the present, his condition, as regards his health, has been more or less what we now find it. His bowels are always very irregular, and difficult to move by remedies of any sort: their excretions are sometimes dark, but for the most part light-coloured. The slightest exposure to cold produces a cough and dyspnœa, which, in the form of a paroxysm, have sometimes been so severe as to terminate in epistaxis. The respiratory murmur throughout the whole of the right lung is healthy, and, of course, puerile, that is to say, intense, soft, dry, and smooth. In the subclavicular region of the left lung respiration is weaker than natural, but all over the posterior part of this organ it is pretty normal. There is no evidence of either functional or structural disease of the heart.

The abdomen is small, hard, and retracted; the liver does not appear to be enlarged. The skin generally is of a dirty clay colour, and there is great and general emaciation, which appears chiefly to result from a total absence of cellular tissue, from which circumstance the muscles of the arms and legs are distinctly and beautifully delineated. He frequently complains of pain in the vertex, and always, when unwell, he perspires freely from the head, but from no other part of

the body. The mother states that, at these times, the perspiration from the head, during a night, is so profuse as to damp the pillow through the night-cap, while the trunk and extremities are quite dry.

The head, which is no doubt a little dropsical, is larger than natural: its circumference, from forehead to occiput, is between nineteen and twenty inches. The sutures of the upper part of the cranium are all ununited, and the pulsatory movements of the brain can be both seen and felt in the anterior and posterior fontanel, and along the course of the sagittal suture. On applying the ear to any of these situations, and also over the parietal bones, a brief, rather soft, and rushing sound, synchronous with the pulse, is distinctly audible. Over the anterior fontanel and parietal bones it is heard the loudest, and it gradually becomes fainter as the examination recedes over the sagittal suture, posterior fontanel, and occipital bone.

To be somewhat more particular in the earliest description of this new auscultic phenomenon—it is *an abrupt, brief, rushing, arrested sound, in tone something between a bruit de soufflet and a bruit de rape; not soft enough for the former, nor hard enough for the latter. In its character*

*of intensity, it varies, of course, with the energy of the action of the heart and pulse. When the circulation is excited and vigorous, and the heart, unembarrassed by palpitation, beats steadily and strongly, the sound is most clear and audible.*

The veins of the scalp are all considerably enlarged, and very distinctly and remarkably visible. The scalp is quite bald. This boy is pretty active and fond of taking exercise; and his mental faculties are not undeveloped. The countenance (more particularly the eyes) is clear and expressive. He is exceedingly timid.

What to me, and perhaps to the reader, renders the case now described chiefly interesting is the fact of the existence of this sound, hitherto unobserved\*, which I have pointed out as accompanying the cerebral circulation. May it be hoped that the zealous cultivators of auscultation,—those who are familiar with every character and variety of the respiratory and placental murmurs,—will direct their attention to the further investigation of the sound now in-

\* When this paper was first written, and published in the Medical Gazette, in July, 1837, I was not aware of the fact (which I have since become acquainted with) that Dr. Fisher, of Boston, had preceded me in the observation of this cerebral phenomenon.

troduced to their notice — this similar or at least analogous phenomenon, which, for the present, I will term *cerebral murmur*.

Whatever remarks I may be prepared to make on the cause of the phenomenon, its mode of generation, with the condition of the cranial bones, and of the brain itself, under which it becomes developed, must be reserved for a future contribution; and until I shall have given a few more cases in which it was *present*, and also one case in particular, having many pathological points *similar*, but with one, and perhaps only one, point *dis-similar*, or may be additional, in which the phenomenon was *absent*. In this latter case, I am disposed to think, the pathologist may find himself furnished with a few facts, not altogether new, but certainly remarkable, and of sufficient importance to merit some little attention. It was a case of chronic hydrocephalus, in which the operation of tapping the brain was performed ten times.

By the way, (if it be not out of place) I would here remark, that, on a cursory consideration of the physical symptoms of this case, the symptoms, as will be seen, of the last stage of the disease, in connection with the appearances found in the head on dissection, and, on comparing these observations with others made at an earlier

period of the malady, I confidently expect further investigation will enable us, by the aid of auscultatory signs, to mark the progress of the effusion into the ventricles of the brain, and the concomitant changes in the structure of the organ, in hydrocephalus (chronic) with the same degree of accuracy as daily obtains in certain diseases of the chest;—I allude more particularly to the diseases of hydrothorax and empyema. That, in fact, as in these affections, the respiratory murmur is observed to become feeble, faint, and ultimately extinct, as the serous or purulent effusion continues to increase, and the lung becomes more and more compressed,—so, in like manner, in chronic hydrocephalus, will the cerebral murmur be found to undergo changes indicative of the increase, or the contrary, of the water in the ventricles of the brain, and the consequent compression and absorption of the cerebral substance.

CASE II. October, 1835. — ROBERT LONG, aged one year, pale and emaciated, was born at the full time, and was then strong and apparently healthy. He continued to enjoy good health, and to thrive, up to the period of weaning, which took place when he was about five months old. At the age of seven months he was vacci-

nated, and shortly afterwards he had a severe attack of illness, the symptoms of which were hot skin, head particularly so; lethargic drowsiness, interrupted by frequent startings; bowels much disordered, and the discharges green and viscous. During this attack, which lasted for some time, the child became considerably emaciated, and has ever since been more or less unwell. Of late he has recovered, in some degree, his flesh but not his spirits. The alvine excretions are stated to be at present natural; he sleeps tolerably well, but with the eyelids considerably apart; the skin generally and the mucous membrane of the mouth and tongue are abnormally pale. He is not emaciated, but the muscles and cellular tissue are soft and flabby.

The head is large and is stated to have been so from birth. Its measurement is as follows:—circumference (from forehead to occiput) twenty-one inches; from each meatus auditorius, over the vertex, fourteen inches. The *cerebral murmur* is very audible at all points of the head, but loudest and clearest over the parietal bones and fontanel.

CASE III. October, 1835.—HANNAH MOORE, aged eighteen months, was born at the natural



period of gestation, and was then stout and apparently healthy. She continued to be healthy and to thrive up to the time of being weaned, at the age of six months, when she gradually became inanimate, pale, and emaciated, as she, at present, is. The commencement of this child's indisposition, as stated by the mother, was accompanied by a cough and wheezing, which latter affection still continues, and the cough is present at times. The bowels are always irregular, their excretions being, for the most part, fluid and light-coloured. The appetite is not deficient. She does not sleep well, in consequence of slight startings now and again; the surface and extremities are generally cold, and she is frequently affected with cold clammy perspirations; the abdomen is more tumid than natural, but no enlargement of the liver can be detected.

The pupils are not dilated; the head is larger than natural, and the anterior fontanel and sagittal suture are still open. On auscultating the skull, the *cerebral murmur* is audible at all points, but most distinctly so over the parietal bones and fontanel. In the former of these localities it has more the character of the *bruit de soufflet*—it is prolonged; in the latter situation

it has more the character of a soft *bruit de rape*—it is brief.

At present I will not offer any observations on the matter of diagnosis or treatment, or enter into any disquisition on the pathological natures, of the maladies of these three young patients. All or most of the symptoms, I should say, directly or indirectly, draw attention to the head, and chronic hydrocephalus, in an early or later stage of development, would appear to be the malady more or less distinctly announced in each.

The next case is one of *acute* affection of the head, in which the cerebral murmur was also present.

CASE IV. Saturday, December 5, 1835.—  
WILLIAM ROOKE, aged ten months, was attacked, on last Monday morning, by a fit of convulsions which continued from five to ten minutes. This child was quite well the day before (Sunday), but was taken ill, during the night, with sickness and vomiting, and has since been more or less feverish, restless, and occasionally drowsy; was very drowsy yesterday, but, to-day, he is more lively. His present condition is as follows:—considerable heat of skin; tongue slightly furred; pulse 180, regular, full, pretty strong, but not

hard; excretions from the bowels green and gelatinous; some thirst; urine more copious than natural.

Face flushed, and eyes suffused; sleeps with the eyes a little open; pupils slightly contracted; head hot; anterior fontanel open, elevated, and pulsating strongly; *cerebral murmur* heard very distinctly over this part and over the temporal bones. The mother states that, at the commencement of the attack, the child vomited a great quantity of bile, and that the anterior fontanel formed a considerable projection above the rest of the scalp.

Since yesterday morning the child has been taking the following powder every third hour, which appears to have tranquilised the stomach, and increased the discharge of urine.

R. Hydrarg. Chlorid. gr. j; Sacch. Alb. gr. j.  
Ft. pulvis.

This child being a patient of Mr. Arpthorp, of Prince's Street, Leicester Square, I advised that gentleman to continue the calomel powders, and to apply a leech to each post-aural region, and administer a warm bath.

7th. Has taken the powders regularly, and administered the warm bath as recommended. The leeches were applied and bled well. In all

respects the child is much improved since last visit; the fever is abated; the pulse is now fallen to 160; the skin is cool, and the child is becoming lively; face not so much flushed; eyes less suffused and dull; he is now peevish and fidgety, and disposed to notice those around him; the discharges from the bowels are still green and gelatinous; there is not so much pulsation of the fontanel, and the cerebral murmur is less loud. The entire head appears to have become less; at present there is some irritability of stomach, and inclination to emesis.

Let the child have a dose of the infusion of senna with manna, every third hour, till the bowels are well moved.

9th. Much improved in all respects to-day; is very irritable and restless; excretions from the bowels stated to be more natural; the head certainly appears smaller than it was during the acme of the attack; could not auscultate it in consequence of the restlessness of the little patient. The gums are full and tender, and one or two of the teeth appear about to protrude.

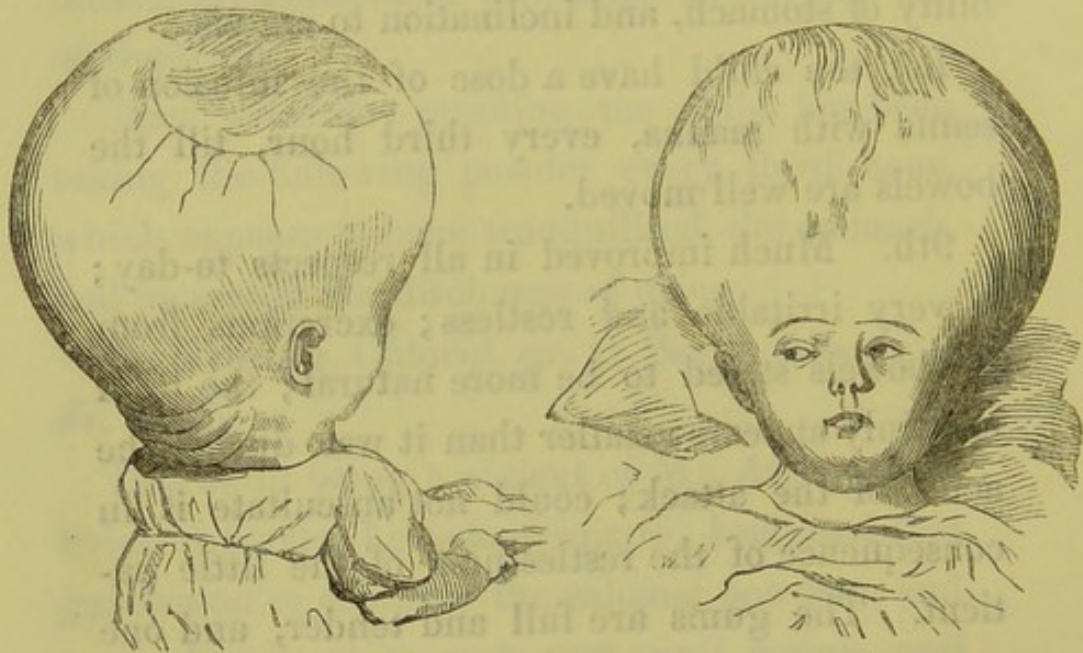
This patient, under the use, for a few days, of James's powder, followed by a tonic, in a short time became quite well.

July 31, 1837.

## CONTRIBUTION VI.

### CHRONIC HYDROCEPHALUS.

*Case of the affection treated by tapping, with observations on its symptoms, pathology, and treatment—Conditions of disease in this affection warranting the operation of tapping—Therapeutic and other effects of the operation—Quantity of water that should be extracted at each operation—Case of chronic hydrocephalus detected, two years before death, by auscultation of the head—Cessation of Cerebral Murmur, in chronic hydrocephalus, as the water continues to accumulate in the brain, and the size of the head increases.*



November 28th, 1835. — EDWARD SAUNDERS, aged five months, was born at the natural period of gestation, and at birth appeared to be strong and healthy. He thrived well until attacked by small-pox, which occurred when he was about

five weeks old. He passed through that disease pretty well, but, about a fortnight or three weeks after, he was seized with severe griping pains of the bowels, and inward fits, accompanied with dark slimy discharges from the bowels. About this time, or shortly after, the child's head was first perceived to be larger than natural, and its volume has continued slowly to increase up to the present period. During the last month he has been taking occasionally a little aperient medicine. His present condition is as follows:— surface generally pale and chill; there is not much emaciation, but the flesh is soft and flabby; pulse regular, but frequent and weak; bowels regular, and their excretions healthy; urine very copious. The parents state that they consider the child passes at least three pints of urine in the course of twenty-four hours. He frequently makes water three or four times while at the breast, and he has been observed to wet five or six napkins during the course of the night. Appetite good; tongue clean; sleep disturbed by frequent startings, and sometimes screamings; violent and frequent oscillations of the eyes; pupils *not* dilated; no vision; senses of taste and hearing almost extinct; cranium much enlarged; measurement of cranium as follows:—circumference, from forehead to occiput, twenty-two inches and

a half, from each meatus auditorius, over the vertex, fifteen inches and a half. The coronal, sagittal, and lambdoidal sutures are all very open, and, in any of these tracts, the fluctuation, in the interior of the head, can be easily detected by the sense of touch. There are not the slightest cerebral movements or cerebral murmur present. The veins of the scalp are all unusually large and apparent, and there is scarcely any hair.

After having had the bowels cleared out, once or twice, by infusion of senna with manna, the following powder was ordered to be taken every sixth hour:—chloride of mercury, half a grain; white sugar, two grains.

December 1st. Has taken seven powders. Frequent viscous and greenish discharges from the bowels. The mother considers that the child does not pass so much urine since he commenced to use the powders. He is also more restless, somewhat feverish, and he has had several attacks of sickness and vomiting. In other respects no change.

Continue the powders.

4th. Has taken eight more of the powders. The child has been very lively, and has rested better during the last day or two; he has not screamed or started so much in sleep. The alvine excretions are still very frequent, and vary in

colour from that of wet chalk to green. Pulse and skin at present pretty natural, but the mother states that the temperature of the head is changeable, that it is sometimes very hot, and at other times equally cold. Size of head unaltered; oscillation of eyes scarcely so violent; pupils as before; no sickness.

Continue the powders and let a teaspoonful of an astringent mixture, composed of the compound infusion of catechu with a few drops of the tincture of opium, be taken with each.

6th. Has taken the powders and mixture regularly since last report. The excretions from the bowels are still rather frequent and greenish; urine much less copious, considered to be natural in quantity; pulse quick and feeble, but regular; tongue clean; surface chill; great restlessness, both during the night and day; oscillation of eyes very violent; bulk of the head increased fully an inch in the transverse measurement, and three-fourths of an inch in the circumferential. No anorexia.

Continue the powders—one three times a day, and repeat the mixture.

8th. No appreciable change, either local or general, since last examination. The medicines have been used regularly, but no constitutional



effects from the mercury are yet manifest. Take of the chloride of mercury, eight grains: white sugar, twelve grains; divide into six powders, one to be taken every eighth hour; and let a warm bath be administered immediately.

9th. Five o'clock, P. M. Has taken three of the last ordered powders. The child has had frequent attacks of retching and vomiting this morning. At present there is frequent and troublesome dry cough, with anorexia, dyspnæa, and restlessness. Surface and extremities chill; pulse quick and feeble; in other respects no change.

Let a drop of the sedative liquor of opium, with a little syrup and tincture of cardamoms, be taken immediately, and repeated every fourth hour until the retching and vomiting cease. Omit the powders, but repeat the warm bath.

10th. Had a fit of insensibility last night between eleven and twelve o'clock, which lasted three quarters of an hour. While this fit was present, the child was so prostrate and cold that the parents considered him dying. The cough is still rather troublesome, but the dyspnæa and attacks of vomiting are much less urgent; pulse frequent, feeble, and intermittent; alvine excretions still greenish, but more natural in quantity;

scarcely any urine passed since yesterday; no alteration in the condition of head since the report of the 6th.

12th. The general condition of the child has improved considerably during the last two days. There has been no return of insensibility, and the dyspnæa and sickness, with the other signs of prostration, have disappeared. The urinary secretion is re-established. Pulse, skin, and excretions from the bowels more natural; no change in the condition of the head.

Omit the use of all remedies.

March 15th. Had not seen the child now for the space of three months. In all respects little or no alteration since last examination. On applying a piece of tape to the head its volume was found to be exactly the same as when last measured. Appetite good; bowels said to be regular, and their excretions of a healthy appearance. The diuresis still continues. The mother states that she has observed the child to make water thirty-six times from six o'clock yesterday evening until seven o'clock this morning. Two incisor teeth are just protruding in the lower jaw.

No medicine prescribed.

April 17th. The child has had frequent

attacks of slight convulsive fits during the last fortnight, which have been chiefly confined to the eyes, muscles of the face, and the arms. The head has rather increased in size and the hair has grown considerably during the last month. Appetite good; sleep undisturbed; pulse pretty natural; bowels regular; diuresis as before.

No medicine prescribed.

June 8th. The size of the head continues to increase, and two small tumours have formed on its lateral and posterior parts, in the tract of the lambdoidal suture. There is also considerable emaciation, and the child has now frequent attacks of violent and general convulsions, which alternate sometimes with fits of general tension of the body. Stupor and oscillation of the eyes continual and intense; vision, pupils, and senses of hearing and of taste as before stated; much starting and grinding of the teeth in sleep. Pulse feeble, frequent, and irregular; urine very copious and limpid; surface chill.

Seeing that I had failed to effect any improvement in the condition of the child by the mercurial treatment, and having little dependence, under the existing circumstances of disease, in any of the other alteratives in use, I thought it right

at once to have recourse to the operation of tapping the head, and to-day, at two o'clock P. M., after having placed the child on its back in its mother's lap, and the hair having been closely removed from the site of the operation, a short longitudinal incision was made with the lancet through the scalp down to the dura mater, a little to the left and about half an inch behind the anterior fontanel, and a fine trochar and canula introduced to the lateral ventricle. Four ounces of clear water were drawn off, and a piece of lint applied to the wound, and the head tightly bound up with a flannel roller. The child immediately after the operation became faint and pale, and experienced a slight convulsive fit which was confined to the muscles of the face and arms.

No medicine prescribed.

9th. One o'clock P. M. Spent a quiet night. He turned upon his face during the night, and the bandage and compress came off the head, but no water escaped from the wound. Had two severe fits of convulsions this morning. From the time the operation was performed till twelve o'clock midnight (ten hours) the child made water only four times. Has made water very frequently this morning. The wound of the scalp

has healed, and the head seems as full and tense as before the operation was performed. Tongue clean ; bowels regular ; pulse undisturbed.

Go on without medicine.

13th. No very appreciable change since the 9th, except that the head, in both measurements, appears to be from a quarter to half an inch less.

Repeated the operation this morning in the manner already described. The trochar having been introduced about a quarter of an inch from the former puncture, six ounces of limpid water were drawn off. Towards the close of the operation, as the fluid continued to escape, the vertex became considerably concave, and the child became pale and chill, but it did not, as before, manifest any signs of convulsions. The incision in the scalp bled more freely at this operation than at the former one. After the bandage was applied to the head, the child appeared endeavouring to look about him with some consciousness and surprise of countenance. The mother states that during the last day or two he is more lively, and more disposed to exercise his arms. These (what he had not before been able to do) he has once or twice raised to his mouth. Otherwise no change.

No medicines prescribed ; but let the child be

as much as possible in the open air, and let him have some beef-tea three or four times a day.

14th. Eleven o'clock A. M. Passed a quiet night; condition of the child in all respects much the same as yesterday, except that the circulation and vital powers are rather more depressed. The vertex remains concave and the brain collapsed, as immediately after the extraction of the water. The dropsical effusion appears to have been suspended during the last twenty-four hours. Refuses the breast.

To have a warm bath immediately, and occasionally a little cordial medicine.

15th. Had the bath, but no medicinal effect appeared to be produced by it. The child spent a feverish and restless night. Skin, at present, hot and dry; eyes dull, and their oscillations languid. There is a slight patchy exanthema on the shoulders and front part of the neck; pulse rapid and irregular; urine scanty; bowels confined. Refuses the breast, but he takes a little milk-and-water, when put into the mouth. Vertex remains concave, and brain collapsed. No grinding of the teeth, but much moaning during sleep.

Take of chloride of mercury, three grains; antimonial powder, eight grains; white sugar,

eight grains. Mix, and divide into six equal parts. One part to be taken every sixth hour.

Take of antimonial wine, ipecacuanha wine, each one drachm; simple syrup, two drachms; caraway water, one ounce. Mix, and let two small spoonsful be taken every second hour.

16th. Spent a better night, and is not so hot or feverish as yesterday. Exanthema still present; and vertex still concave, and brain collapsed. Two or three greenish discharges have been passed from the bowels. In other respects no change.

Continue the medicines.

18th. Considerable improvement in condition of child to-day. The pyrexial symptoms have nearly subsided, and the exanthema has entirely disappeared; skin, pulse, and state of bowels more natural. Sleeps better, and is less disinclined to use the breast. Vertex remains concave and brain collapsed.

Continue medicines.

26th. Little or no alteration in the child during the last eight days. The vertex is still slightly concave. The circumferential measurement of the head has increased an inch; and its transverse measurement has diminished an inch. The diuresis has returned.

Intermit the medicines.

July 7th. Head again much distended and tense, and the child has frequent fits of general convulsions. There is also much stupor and oscillation of eyes. Otherwise as before. Operated again to-day. The puncture was this time made on the right side of the longitudinal sinus, and the trochar introduced to the corresponding lateral ventricle. The scalp bled rather freely, and the child appeared, from its screams, to have experienced considerable pain during the introduction of the instrument. Six ounces of clear water were drawn off, and the roller, as before, applied to the head. The system did not appear in the least affected by this operation; no manifestations of either syncope or convulsions followed it. The child sucked during the time the water was escaping, and seemed altogether unconscious of what was going forward.

No medicine prescribed; but let the child have a little beef-tea or arrow-root, three or four times a day, and let him be as much as possible in the open air.

I made a visit to the child in the evening, and was not a little surprised to find that the head was almost as full and tense as in the morning before the operation was performed.



8th. Spent a good night. The child is evidently improving; he is becoming lively, and the stupor and drowsiness are disappearing. There is also more freedom of motion of the head and limbs. No return of convulsive fits since yesterday. The oscillation of the eyes is still violent, but there is some improvement discernible in this symptom. The motion of the eye is considerably less languid, and the duration of the writhe less prolonged. Tongue clean; pulse and skin pretty natural; bowels regular, urine not copious. He takes his beef-tea.

Continue the remedies prescribed.

18th. The size of the head has slightly increased during the last ten days, and the vertex is now quite distended and tense. The general health and condition of the child are much improved. The little patient is remarkably animated and lively; he now laughs frequently, and is conscious of, and much pleased with, being caressed. The convulsive fits have entirely ceased since the 7th instant. He is very fond of being out of doors in the open air, and he seems to derive some pleasure and benefit from pretty tight friction of the scalp with the hand, which the mother has been in the habit of performing for some time back, and which we have ordered

to be continued and repeated frequently during the day. Pulse, state of bowels, and skin pretty natural; diuresis again present.

Punctured the head to-day again, and allowed seven ounces of clear water to escape. The child screamed loudly during the introduction of the trochar, of which he appears more acutely sensible at each succeeding puncture. Some retching and vomiting followed the operation. The roller, as before, was applied to the head.

No medicine prescribed, but continue the present diet and regimen, with the friction of the scalp.

21st. Going on extremely well. No febrile movement followed the operation. The child has been playful, and in high spirits during the last three days. The water has already re-accumulated in the head, which is now quite full and tense. In the manifest improvement of the general health the brain has, however, much participated. The insensibility and sleepiness, and every other indication of cerebral oppression, which hitherto existed, have entirely disappeared. The child is now very vigilant, and can exercise his senses; he listens to every sound, more particularly that of the voice, with remarkable attention, and turns his eyes towards

the direction whence it proceeds. The eyes are more steady, and with the countenance altogether more lively and intelligent. Pupils, as before, not dilated, but, if any thing, slightly contracted, and quickly obedient to the light, to the presence of which, the mother thinks, the child is now, in some degree, sensible. The sutures of the skull are considerably less open, which results, not from diminution of the size of the head, but from advancement of ossification, and increasing volume of the cranial bones. The flesh also is more firm, and the body and limbs more plump and round. Appetite good; sleeps well; no return of fits; bowels regular; diuresis still present.

Continue all the remedies.

August 2nd. Little or no alteration in any respect in the condition of the child since last report. The ossification of the cranial bones has progressed a little, and the size of the sutures is still further lessened. Two incisor teeth have made their appearance, one in the upper and one in the lower jaw. Operated and drew off twelve ounces of clear water. Dr. Baird and one or two other medical gentlemen were present. No retching or faintness followed the operation.

Being desirous of giving mechanical support to the head more efficient than that afforded by the roller, I had a sort of many-tailed tourniquet bandage\* constructed, which was now applied, and by means of which the cranial bones could be so pressed together and approximated, as to be brought into complete contact, although, at some points, they were from an inch and a half to two inches apart.

Continue the present diet and regimen.

4th. No change during the last two days, except that the head is again half distended. Tightened the bandage, which had become a little slack.

6th. Had a restless night, and has been retching and vomiting frequently this morning. Skin hot and dry; pulse quick; urine scanty and high-coloured; little appetite; bowels confined. The head remains in the same state of distension as on the 4th.

\* This bandage answered its object remarkably well. One broad strip of it embraced the head longitudinally, the others vertically. On the former, besides a buckle, was fixed a screw, like that of a tourniquet. To the latter were attached merely buckles. On applying the instrument moderately tight to the head by means of the buckles, by a few turns of the screw, the head could be compressed to any extent thought requisite.

To have an aperient powder immediately, and occasionally a little febrifuge mixture.

8th. The pyrexial symptoms have all disappeared; appetite returned; diuresis again present; head full and tense; considerable emaciation of the body and limbs during the last few days, and the ossification of the cranial bones does not appear to be progressing. The child is becoming peevish and listless, but he is still fond of being out of doors in the open air, and he takes his beef-tea regularly.

10th. No improvement or appreciable alteration during the last two days. Punctured the head again. Dr. Baird and Mr. Vance were present, and suggested that the whole of the water should be drawn off. The trochar was introduced close to the cicatrice of the last wound, and between sixteen and seventeen ounces of clear water escaped. At the close of the operation the child became faint and pale, and vomited two or three times. A few teaspoonsful of a cordial mixture were administered, which immediately revived him. The head now presented a very singular appearance. The scalp was quite loose and flaccid, and the vertex formed the floor of a deep concavity, at the bottom of which the feeble pulsatory move-

ments of the brain were just perceptible to the touch. By the advice of Mr. Vance I now discontinued the use of the tourniquet bandage, and reapplied the flannel roller to the head.

Continue the remedies.

11th. Had a good quiet night, but has been retching and vomiting this morning. Occasional starting and raising of hands to head; skin rather hot; pulse frequent; urine scanty; bowels confined, but appetite not deficient; vertex still concave, but less so than yesterday. Otherwise as before.

Let the child have a little castor-oil immediately, and let five grains of strong mercurial ointment be rubbed upon the thighs every night at bed-time.

Continue all the other remedies.

14th. The ointment has been rubbed in three times, and the child has been very irritable and peevish during the last two days; his sleep, also, has been disturbed by frequent startings; little appetite; diuresis as before; head full, but not tense; bowels free.

Continue the ointment and other remedies.

22nd. The parents have discontinued the use of the ointment, as the child has not been able, for some days, to use the breast in consequence

of soreness of the lips and tongue. These parts are at present covered with a thick crop of aphthæ. On applying the tape to the head its size was found to be exactly the same as when first measured, namely, twenty-two and a half inches by fifteen and a half. In other respects no change.

Operated for the seventh time, and drew off twelve ounces of *straw*-coloured water, which did not appear to affect the child in the least. Roller applied to the head as before.

Omit the ointment, but continue the diet and regimen; and let the child be removed for some time into the country.

September 30th. The child has been in the country during the last five weeks, which has not been productive of any improvement in his condition. The head, indeed, appears now larger and more tense than I have ever seen it, and the trunk and limbs are more emaciated; countenance dull and oppressed; oscillation of eyes violent, and he has lately experienced one or two rather severe fits of general convulsions; diuresis urgent; appetite good; continues to take his beef-tea with eagerness; in other respects no change.

Punctured the head again, and extracted

twenty-eight ounces of *straw*-coloured water ; no signs of faintness, or manifestation of suffering from this operation.

To go on as before.

October 3rd. Was very restless, and had several fits of slight convulsions the night following the operation ; the next day, however, the child was better and tranquil, and has continued so till the present time, without any return of the fits ; the water, to a considerable extent, has reaccumulated in the head ; in other respects the same.

To go on as before.

12th. Head much distended and tense, and, from the progressing emaciation of the trunk and extremities, appears now unusually large ; the stupor and dulness of hearing, though less than before, are again present, and the oppression of countenance is increasing. No return of the convulsions, and pupils still, as first described, *not* dilated ; surface chill ; pulse weak and very quick ; urine profuse.

The operation was to-day performed on the back part of the head, the trochar being introduced in the course of the lambdoidal suture, to the left of the os triquetrum. Forty-two ounces of clear water were drawn off, and the child did



not appear in the least affected by it. Roller tightly applied to the head.

Let the child have a teaspoonful or two of a cordial mixture occasionally.

13th. Spent a restless night; the vertex remains concave, and brain collapsed, as after the operation, and the condition of the child in all respects much the same as yesterday; no convulsions; appetite pretty good, and sucks often.

Let a little boiled milk with arrow-root be substituted for the beef-tea.

15th. No change in the condition of the child during the last two days, except that the head is again nearly full.

As I was rather dissatisfied at the manner in which the alterative, administered at an early period of the treatment, had disagreed with the little patient, I now felt disposed again to try the effects of the medicine; and considering that the pressure of the water on the brain had in the first instance interfered with its absorption and constitutional action; to obviate this circumstance a puncture was a second time made in the course of the lambdoidal suture, and twenty ounces of clear water extracted. The following powder was ordered to be given to the child every sixth hour: —

Chloride of mercury, a quarter of a grain ; compound ipecacuanha powder, one-eighth of a grain ; white sugar, one grain. Mix for a powder.

16th. One o'clock, P. M. Three of the powders have been taken, and three or four thin light-coloured evacuations have been passed from the bowels. The night has been spent in restlessness and whining. About five o'clock this morning the child fell asleep, since which time he has remained quiet and silent ; at present he appears to be in a semicomatose state. There is violent oscillation\* of the eyes, with frequent grinding of the teeth ; considerable

\* *Writhing*, perhaps, would be a more appropriate term than oscillation for this morbid motion of the eyes, which evidently is not, like that of a pendulum, from which the term would appear to have been borrowed, either mechanical or uniformly lateral. In the case now being related, the eyes, though almost in continual lateral motion, were sometimes turned downwards ; but, what appeared to me remarkable, I never once saw them directed upwards. Dr. Copeland, in describing the condition of the eyes in chronic hydrocephalus, states : " The eyes are generally watery, covered by the eyelids ; the pupils dilated, directed upwards, occasionally downwards, and sometimes horizontally to either commissure of the eyelids." The three latter strokes here of Dr. Copeland's generally steady and correct pencil or pen, I should say, are certainly, according to my observation, *mistouches* and errors of description.

tension of the extremities; skin dry and hot; tongue dry; pulse very rapid and irregular; respiration hurried and heaving; anorexia, with immediate vomiting when any thing is taken into the stomach; urine very scanty; vertex concave, and brain collapsed.

17th. Had an attack of general convulsions about nine o'clock yesterday evening, which was repeated at longer and shorter intervals, till three o'clock this morning. He died at four, an hour after.

*Dissection eight hours after death.*

Great and general emaciation. On laying open the head, by a crucial incision over the vertex, the dura mater presented its usual healthy appearance; the arachnoid membrane was of a pinkish hue, and its vessels gorged with blood of rather an arterial colour. The convolutions of the cerebrum were completely obliterated, and this division of the brain formed a large double *cul de sac*, smooth externally and internally, which contained four pints of clear water. The lateral ventricles, and also the third, in which this fluid had collected, communicated by an opening almost as large as the foramen of Winslow in the peritoneum, the septum lucidum and the fornix being absent, either from morbid destruction or

non-development. The serous membrane lining the entire of this cavity was somewhat thicker, and less transparent than natural; its veins were much enlarged; and their course, converging from the circumference to the centre, was beautifully conspicuous. The plexus choroides were large, and of a drenched appearance. The cerebral substance was much softened and very thin; on the upper part of the anterior lobe it was little more than a line in depth; its thickness increased in the middle and posterior lobes.

There were no appearances, either in the brain or its membranes, from which it could have been inferred that inflammation to any extent had followed any of the punctures. The situations of three or four of these were marked by little cicatrices or white lines, in the cerebral substance, similar to those which remain on the arm after venesection. The arachnoid membrane and pia mater, at the base of the brain, were much thickened, and also covered by a deep incrustation of stratified lymph, which exhibited a difference in colour and consistence, as if its effusion had taken place at old and recent dates. On removal of this lymph, with the subjacent membranes, the cerebral nerves, white and healthy looking, were seen issuing from their respective origins. No tubercular de-

posits\* of any sort were found either in the cerebral substance or its meninges. The condition of the cerebellum appeared pretty healthy. Weight of the cerebrum and cerebellum, with a portion of the medulla oblongata, one pound ten ounces and a half. These, after the whole of the water was removed from the cranium, did not occupy more than between a third and fourth of its cavity. No other part of the body was examined.

*Quantity of water extracted at each operation.*

|                               |           |
|-------------------------------|-----------|
| Operation first.....          | 4 ounces. |
| second.....                   | 6         |
| third .....                   | 6         |
| fourth .....                  | 7         |
| fifth.....                    | 12        |
| sixth .....                   | 16        |
| seventh ...                   | 12        |
| eighth.....                   | 28        |
| ninth .....                   | 42        |
| tenth .....                   | 20        |
| Found in the head after death | 64        |
|                               | <hr/>     |
| Total .....                   | 217       |
|                               | <hr/>     |

This water, during the course of the treatment, was several times tested, in the usual manner by

\* I allude to the appearances recently disclosed, in some interesting papers on Infantile Pathology, by Dr. Hennis Green, published in the *Lancet*.

heat and an acid, but no trace of albumen was detected.

In the treatment of this case of chronic hydrocephalus, although I was not so successful as to have established a cure, nevertheless I must claim some credit for the therapeutic measures employed, in having effected for a time considerable and manifest improvement in the condition of the brain, and also in the general condition and health of the child.

In combating disease (let me here observe) especially if of an intractable and destructive nature, when, from the peculiarities of the case it may be deemed fit to have recourse to remedial means of doubtful or disputed reputation, though death, as in this instance, should ultimately supersede our efforts, it must still be satisfactory to know that, by these, an amelioration of symptoms and some prolongation of life had been obtained. I am fully aware of the difference of opinion which generally prevails regarding the results, whether beneficial or otherwise, of tapping the head in this affection; and several of the facts that have been urged on both sides of the question I had an opportunity of witnessing, during the progress

of the present case, to a few of which, with some other points in its pathology, I mean now briefly to advert.

It is scarcely necessary to state that I am an advocate of the operation, and, on this account, naturally feel the more disposed to draw attention chiefly to those circumstances in the treatment of the case, which must evidently be considered commendatory of the measure. Look at the condition of the child when it first came under my care, and during the early medicinal treatment, and compare this with that which it presented from the third until after the sixth operation. What a happy alteration in all respects did not the state of the little patient exhibit during this latter period! and to what was it attributable? Solely and simply, I think, to the relief afforded to the brain by the removal of the incumbent fluid. Observe the great amendment which had taken place, not only in the cerebral functions, but also throughout the entire extent of the animal and organic systems. The attacks of convulsions had ceased; the stupor and drowsiness had disappeared; sensibility and voluntary motility had returned; the senses were resuming their functions; the development of the mental faculties had actively

commenced. The sense of hearing, as we have seen, from having been almost extinct, had become remarkably acute. Vision also, to some extent, had returned, and the expression of the eyes, and the countenance altogether, was considerably more improved and more intelligent. The circulation, too, had become more diffused and equable, and the functions of assimilation and of nutrition were more healthily performed. These latter amendments, vital and important, as will be granted, were very manifest, in the much less anæmic appearance of the cutaneous circulation in general, and that of the scalp in particular; and by the plumpness and firmness which the body and limbs had acquired, and also by the progressing ossification of the cranial bones. Up to this point matters could hardly have gone on more satisfactorily, or more to the credit of the operation; but after the seventh tapping, when the child was ordered into the country, I had relinquished, I acknowledge, all hopes of its recovery; and the subsequent punctures and other remedial measures were had recourse to, more with the object of alleviating symptoms and mitigating suffering, than from any hope I then entertained of effecting a cure. It has been seen, however, that the extent to



which the water had accumulated in the head, during the child's stay in the country, had brought on a return of the convulsions, and that these inauspicious symptoms, on the removal of the fluid, again subsided, and did not return till a short time previous to death. This fact of itself, as it contains some therapeutic instruction, is not undeserving of a little attention; and, though not altogether in place, I am tempted here to remark, that it cannot be the part of a diligent physiologist, or of a humane and attentive physician, to permit his prognosis, however unfavourable it may necessarily be, either to impair his interest in the terminating phenomena of disease, or interrupt his solicitude in administering whatever relief his art or his anxiety might suggest. With me, unquestionably, there is no period in the progress of human suffering which more fully engages my attention, and from which, I conceive, I derive so much information as the period now referred to, namely, the latter hours of fatal illness. Is it not, I would ask the student of the bedside, at this particular time, during the coexistence of disease and incipient dissolution, as the symptoms of the former are gradually being obscured in the signs of the latter, that human pathology

becomes most of all analytical, and develops some, nay, many of its most impressive and instructive facts, and, therefore, that much critical and practical knowledge of the direct dependencies of the several vital functions may be obtained by attentively observing the order in which their lesions rapidly supervene, together with the increasing difficulty with which life is sustained, as these become more and more numerous?

I would willingly continue my observations on this point, but it would detain me from the subject.

I have said that I am an advocate of this operation. I shall state my reasons. They are these. I advocate it—First, from the number of cures which it is reported to have produced, and I am satisfied it has done, in the hands of other and more experienced operators. Drs. Conquest, in this country, and Graefe, on the Continent, have published some cases in which they seem to have been singularly successful. Secondly, from the very manifest benefit which I observed to result from it in the present aggravated, and, as was considered, hopeless case; and thirdly, from the obvious rationality of the measure, as it would appear to me, when had recourse to at

the proper time, and under the combination of lesions which ought, indeed, I conceive, *per se* to indicate its application.

When the head, like as in the case under consideration, has become so enlarged that its appearance altogether might bear some resemblance to that of a small balloon, and the coronal and sagittal sutures are from one to two or three inches asunder, and, when over these parts the scalp has become so distended and tense, that it has acquired a smooth and shining surface; and further, when the touch here can discover no cerebral movement but can easily detect the subjacent fluid, and if (as no doubt generally is the case) with this set of physical signs, coma, insensibility, and, perhaps, convulsions be joined, no reliance on general expedients should, in my humble opinion, delay for a moment the employment of the trochar. This case, let me state, had been under the care of several medical gentlemen and had undergone a variety of treatment before I saw it, but no means that had been adopted had afforded any relief, or, indeed, produced any effect on the disease; the tapping alone wrought the first change, which change, seconded by the nutritious diet of beef-tea, and the salutary exercise in the open air, I had every

expectation, for some time, would have gone on to a perfect cure. To what the cause of the relapse should be attributed it is difficult to say. The parents latterly became impatient and negligent, and the child, in consequence, did not receive all the attention I should have wished.

As a good example of the pathological sympathy which is frequently manifested between the brain under some states of disorder, and the functions of the kidneys, I would instance the diuresis that was present in this case, and the manner in which it was immediately influenced by the removal of the water at each operation. At these times, indeed, it appeared to me that a sort of metastatic connection existed between the sudden diminution of the renal secretion, and the rapid simultaneous re-appearance of the cerebral effusion.

Is it not a circumstance of some curiosity and interest, and somewhat difficult to understand, that the improvement which took place in the general health and condition, and also, as we have seen, in the state of the brain itself, of this child, was not, as might have been expected, accompanied by a consentaneous reduction, or, return to a more natural size of the head, or, in fact, any abatement of the dropsical accumula-

tion? The head, certainly, on measurement, was found to have varied a little in dimensions two or three times during the course of the treatment, but this, it seemed to me, was not owing to any thing other than a casual modification in the state of the effusion; for, I actually observed, not without considerable correction of my preconceived ideas on the matter, that during the period when the child's condition externally in all respects was most of all improved and improving, at that very time, on occasion of the removal of the water from the head, the distension returned with most celerity. What explanation are we enabled to offer of phenomena so seemingly discrepant? If we criticise with attention the salutary alterations which the treatment had effected, will it not be perceived that the greater part, indeed, that all of them, can be traced to a more active and healthy performance generally of two or three of the organic functions, namely, circulation, exhalation, and nutrition; and, that it was simply to the having succeeded to a considerable extent in arousing these primitive and vital actions, concomitantly with their increased activity in other parts, to a more energetic state of movement within the cranium, that we were indebted for the temporary

revival of the cerebral functions themselves, properly so called, *i. e.* sensation, motion, and intellect; and to which, too, we must attribute the cause of the continuance of the hydropic effusion. The proximate cause of the disease, I am disposed to think, was seated, not in the arterial but in the venous side of the cerebral circulation, and involved a defect in the function of absorption; and, notwithstanding the reaction and approach to a more normal condition, which were manifested, for a time, in the state of the brain, its vital and intellectual functions above-mentioned, this lesion of absorption remained unrepaired from first to last, which, I have no doubt, was the reason of my ultimate failure in effecting a cure.

The principal ill consequences, which have been placed to the discredit of the operation, are inflammation of the substance of the brain, or its membranes, and cerebral collapse. Of the former, mechanical injury by the trochar has been considered the cause. But the experience derived from the case under consideration would lead me to doubt the entire correctness of this opinion; for, on reference to the dissection, it will be found that the vicinity of the punctures were exempt from all inflammatory results, but

that these were located at a different part of the brain, namely, at its base. These facts have induced me to think that, perhaps, in this case, it was not so much the puncturing of the brain as the consequent collapse of the organ which gave rise to its several attacks of inflammation; and this opinion, it may be allowed, receives more than a little corroboration by my having observed, during the treatment, that the symptoms of cerebral inflammation and the state of cerebral collapse were always concomitant; that, after each operation, although the brain necessarily became more or less collapsed, if that state continued longer than twenty-four hours, it was afterwards accompanied by general febrile excitement, and symptoms of cerebral inflammation, and that, on the disappearance of these, the dropsical effusion was again quickly repeated, and the brain rendered distended and tense. Such phenomena I observed not only once but three or four times; and the mode in which it would occur to me to explain them would be, that, under the condition of collapse, the mass and weight of the brain instead of being supported and pressing, as in the healthy state of the organ is the case on the sides as well as on the floor of the cavity of the cranium,

pressed wholly on this latter part, thereby producing more or less obstruction of the circulation, with some degree of irritation of the interposed membranes, on which the inflammatory attacks supervened; that, during the existence of these attacks, and more especially of the sympathetic febrile excitement, owing to, and concomitant with, the *general* arrest of secretion and exhalation which accompanies and characterises such a state of the system, the *local* effusion in the present instance was suspended, and the brain, in consequence, remained collapsed. But, as has already been remarked, as these inflammatory and febrile states disappeared, and the processes of exhalation and secretion generally resumed activity, the dropsical effusion was speedily repeated, and the brain rendered distended and tense. If this explanation be correct, what is the instruction, and what are the practical indications which it contains? Does it not point to the propriety, in performing the operation, of using every precaution to avoid the occurrence of collapse? and that, it appears to me, can only be done by extracting the water slowly and in small quantities. From four to six ounces is the most, I think, that should be drawn off at a time.



The practice of removing the water by acupuncture recently had recourse to in the treatment of other species of dropsies, namely, hydrocele and ascites, might, perhaps, be beneficially applied to chronic hydrocephalus; and as I am disposed to think well of it, I intend, indeed, in the first case, like the present, which may come under my care, requiring to be operated upon, to give it a trial. A few words more in conclusion.

In a former paper, in the Medical Gazette of August 19th, 1837, in which I described three cases of cerebral disease in children, which I considered to be cases of chronic hydrocephalus in its first stage, I pointed out the presence of a murmur or sound accompanying the cerebral pulsations, audible on the application of the ear to the anterior fontanel and parietal bones. In the case I am now considering, it is well worthy of notice, though a similar affection to those to which I allude, but in a different and more advanced stage of its progress, this auscultic phenomenon was entirely absent. And why? Because, in fact, the diseases, though similar in names and natures, were very different in their pathological conditions. In the cases of Crispin, Long, and Moore, in the paper above referred to,

(which, regarded as cases of chronic hydrocephalus, should, perhaps, be viewed as more in their causes than actually formed) considerable excitement of the circulation, and increased action of the vessels of the brain, which would appear to belong to the earliest stage of the malady, and from which the sound evidently results, were present. But not so in this case of Saunders, here the disease was in its fullest state of development; its pathology had run its course complete, and had passed beyond the point at which, if the child's head had been auscultated, the sound in question would, no doubt, have been detected. Here the cerebral circulation, instead of being excited and accelerated, had become depressed and languid almost to arrest, and the usual pulsatory movements of the brain had altogether ceased.

As a diagnostic sign of chronic hydrocephalus in its most incipient state, that state obviously in which remedial measures can be had recourse to with most hope of success, I am much disposed to think this cerebral murmur will be found of considerable practical utility; and, as an instance in point, I will here relate a case which has occurred within the limited range of my own experience.

Nearly three years ago, Mr. M<sup>c</sup>Cay, then of Stewart Street, Bishopsgate Street, a fellow-student of mine, whose attention I had drawn to the existence of this sound in the heads of some children, requested me to examine a case with him in a court convenient to the Bank, of a child of the name of Griffiths, between two and three years old. On examination, I found the child drooping, peevish, and pale; its flesh soft and flabby; its abdomen larger than natural; the bowels irregular; its sleep disturbed; some thirst, and occasional complaints of head-ache. The head did not appear in any degree enlarged, but the anterior fontanel was still open, and its pulsations more heaving than natural, and, on applying the ear over the part, the subjacent cerebral sound was very audible. I at once expressed my apprehension to the mother that the indisposition, under which her child laboured, was dropsy of the brain, commencing or already present, and prescribed accordingly. I did not see or hear anything further of this child for about two years, at the end of which, to a day or two (not having a case of the disease then in my own practice) I went in search of it, and to my surprise found it. And how? Just moribund, with its head enormously enlarged, and full of water. I learned

from the parents that, from the time I first saw the child, its general health never showed any signs of improvement, but gradually became worse, and its head commenced to enlarge; that up to the time of its death it had been continually under medical care, but without having experienced any satisfactory relief from any treatment which was adopted. No operation was performed.

In the paper which I have already, during the course of these remarks, referred to, I took occasion to observe that I thought some analogy might be perceived to exist between the condition of the brain and its circulation, during the presence and absence of this cerebral sound in chronic hydrocephalus, and the condition of the lungs or lung and its respiration, during the presence and absence of the respiratory murmur, in the diseases of empyema and hydrothorax.

When I began to operate upon this child, the idea occurred to me, that if the treatment should prove successful, as the cure advanced, and the quantity of water in the head gradually diminished, I might probably have an opportunity of observing the disease in some respects retrace its steps; of witnessing, for example, the resuscitation of the cerebral pulsations, and the rede-

velopment of the cerebral murmur, just as, after the operation of tapping the chest for empyema or hydrothorax, is frequently observed, the re-expansion of the compressed lung, and the redevelopment of its respiratory murmur. But such was not the case. The disease, as we have seen, in spite of all my exertions, proved fatal. Whether if it had been otherwise, and, instead of the improvement that was produced, a cure had been effected, I would have had the satisfaction of witnessing the confirmation of my views, must remain for further experience to determine. The editors, I will mention, of the British and Foreign Medical Review, in their number for October, 1837, do not seem disposed to fall in with my opinions on these points.

September 24, 1839.

## APPENDIX TO THE PRECEDING CONTRIBUTIONS.

### CEREBRAL AUSCULTATION.

*Number of cases affording examples of the phenomenon adduced by the Writer—Difficulty of the diagnosis and treatment of diseases of the brain—Value of cerebral auscultation and contrast between it and auscultation of the heart and lungs—Neglect of the subject in this country and on the Continent, and its better fate in America—Enumeration of the morbid conditions of the brain and system in which an auscultic phenomenon becomes developed in the head—Case of aneurism of the basilar artery of which a modified cerebral murmur was a diagnostic sign—The cerebral murmur a pathological and not a physiological phenomenon—Sounds that originate at other parts of the system heard on auscultation of the head—The sound of the voice, in certain conditions of effusion on the brain, gives rise to the phenomenon of cerebral agophony—Case in exemplification of this fact.*

IN the preceding papers upon rickets and hydrocephalus, it will be seen that I have given nine cases of cerebral disease in children, in which, on auscultation of the cranium at different points, a murmur, bruit, or bellows-sound was distinctly audible. Eight of these cases were cases of chronic hydrocephalus, in states of more or less incipiency, and progressed development. One was a case of severe congestion, irritation, and

inflammatory excitement of the brain accompanying the process of dentition.

The subject of cerebral auscultation does not appear to have received, in this country at least, that attention from the profession which it is undoubtedly deserving of. No means should, in my opinion, be overlooked which is likely to contribute in the least degree towards facilitating the diagnosis of the diseases of the brain—a department of diagnosis and a class of diseases still unquestionably the most cumbered with conjecture, the most obscure, and unsatisfactory. Abercrombie, Rostan, Lallemand, Pinel, Serres, and others, have respectively laboured with considerable effect in augmentation of our knowledge of the pathology and treatment of diseases of the brain: but, notwithstanding the light which has been thrown upon the subject of cerebral pathology, by the united observations of these eminent authors, it still, in many points, awaits elucidation and improvement; and if auscultation, which has assisted us so materially in distinguishing the different diseases of the thoracic viscera, can be rendered available for a like purpose with respect to the lesions of the contents of the cranium, it is a culpable negligence, I conceive, of the claims of humanity, and

a breach of duty to the interests of science and philosophy, not to put it in practice, and prosecute the inquiry. I do not for a moment imagine that cerebral auscultation will ever arrive at a state of such accuracy of recognition, and diagnostic clearness and precision, that auscultation of the heart and lungs have, the anatomical and physical structures and conditions, and the physiological economies and functions of the thoracic and cephalic organs being so considerably different. But it is certain—it is already not a matter of speculation but of fact—that auscultation, either by the ear alone or by the aid of the stethoscope, is capable of being usefully applied to the examination and diagnosis of several conditions of disease of the brain.

I am not aware that any person, in this country or on the Continent, has paid such attention to the subject of cerebral auscultation as to be enabled to bring forward cases in exemplification of the presence of an auscultic phenomenon in the head symptomatic of cerebral lesion, but myself. It is not so everywhere, however. In America this subject has occupied the attention of Dr. J. D. Fisher of Boston, and Dr. S. S. Whitney of Newton, Massachusetts; and has apparently been well inquired into by



these gentlemen. According to the observations of the latter physician a murmur or bellows-sound is present in the head and audible, with some variation of distinctness, on auscultation of the cranium at different points, in the following diseased conditions of the brain:—

*First.* In simple congestion of the brain.

*Second.* In acute inflammation of the brain, either with or without effusion.

*Third.* In chronic hydrocephalus.

*Fourth.* In local compression of the brain: as, for example, in compression of it by a fractured and depressed portion of the cranium.

*Fifth.* In ossification of the arteries of the brain.

*Sixth.* In induration, or scirrhus transformation of the substance of the cerebellum.

*Seventh.* In aneurism of a cerebral artery.

*Eighth.* In certain hydrocephaloid diseases, and in states of excessive anæmia and exhaustion of the system; as, for instance, in cases of severe chlorosis and amenorrhea.

Of the first, second, and third conditions of disease of the brain here enumerated, it will at once be seen that I have given cases, furnishing good examples of the presence of the auscultic

phenomenon now under consideration. In one of the cases, that of Elizabeth Williams, it is worthy of note, that, on the re-establishment of the child's health, the sound entirely ceased; thus showing that it is not a physiological phenomenon, but strictly a pathological one, a phenomenon connected with, and resulting from, a definite lesion of the brain.

In cases of chlorotic cachexia and severe general and cerebral anæmia, the cerebral murmur or bellows-sound is observed to become modified in its character, and to acquire some tones similar to those that are blended with the respiratory murmur in the inflammatory disease of bronchitis. It acquires musical, cooing, chick-like tones. In aneurism of a cerebral artery it puts on a thrilling purring character. There is an interesting case of aneurism of the basilar artery given by Dr. Whitney in an ample article on cerebral auscultation in the number of "The American Journal of the Medical Sciences" for last October, a portion of which I shall here transcribe:

"January 15th, 1841, I was consulted," states Dr. Whitney, "by Mr. S—, aged thirty-seven years, in regard to the nature of a complaint which he had been told arose from an affection of the heart. The particular symptom, which

was the more immediate cause of trouble to him, was a continued and uninterrupted buzzing or whizzing noise in his head 'as though,' to use his own quaint expression, 'a swarm of bees had made his head their hive.' This symptom together with an obstinate head-ache and deafness, which had induced an extremely nervous and irritable state of the mind, were indications which demanded something more than a passing consideration.

"Having for a number of years laboured under hypertrophy and dilatation of the left side of the heart, he had been induced to believe that the present indication of trouble about the head could be nothing more than the noise produced by the impetuosity with which the blood was thrown into the brain. Accompanying this peculiar whizzing sound, he occasionally experienced something more than his ordinary dulness of hearing. This, however, was only temporary, and never prolonged more than a few minutes at a time. During those moments of temporary surdity, the buzzing sound, before referred to, entirely vanished, returning again, however, as soon as the deafness had passed away. He has also been subject to frequent attacks of epistaxis, and thinks this affords oftentimes the most de-

cided relief from that most annoying symptom, the buzzing noise in the head. Once in two or three weeks, moreover, he is troubled with a most violent cephalalgia, which is relieved only by the recurrence of the hæmorrhage from the nose. In years gone by, he had frequent recourse to copious venesection. This, however, he had long since abandoned, as a remedy of only temporary and exceedingly doubtful utility.

“On applying my ear to the head of this gentleman I was immediately struck with a singular phenomenon which presented itself, and which I at once recognised as the ‘bruit de diable,’ which had been the source of so great trouble and annoyance to him. The exact character of the sound, I have discovered, it is impossible to describe; and yet it is so unlike any other sound which I have heard in the brain, that it would be difficult, when once recognised, to confound with any other cephalic murmur. It is harsh, rough, and accompanied with a *purring* vibratory thrill, which seemed to be communicated to the whole brain. It is quite distinct and audible over every portion of the cranium, and especially through the external auricular foramen of the patient himself.

The *purring* sound or thrill, which renders this

murmur so exceedingly unique, is continuous and seems to be prolonged beyond the ordinary duration of the pure bellows-sound of the brain. It accompanies the systole of the heart, and consequently corresponds in frequency with its pulsations. Compression made upon the carotids very much enfeebled the sound, never entirely obliterating it, but mellowing it down to a simple bellows-murmur.

“On describing the peculiar nature of the sound which I had heard to the individual himself, he at once noticed its similarity to the sound, which was so unpleasantly, and continually audible to his own ear. I had occasion frequently after this to notice this phenomenon. It was always present, and never for a moment ceased to annoy and disturb the comfort and well-being of the man.

“August 22.—About seven months from the time, at which I first saw this gentleman, being in possession of his usual health, while in the act of stooping to raise his little son in his arms, he suddenly fell prostrate upon the floor a corpse.

“The following appearances were presented after death:—

“Head—Vessels of the dura mater much engorged, and the grooves, which formed their

beds in the skull, seemed unnaturally deep and furrowed out. Those of the arachnoid and pia mater were also congested. Substance of the brain natural both in colour and consistence.

“On prosecuting the dissection still further, and an opening being made through the longitudinal fissure which separates the two lobes of the cerebellum toward the base of the brain, a large quantity of loose and coagulated blood was found extravasated on and about the substance of the cerebellum, and lower portions of the cranium. On cutting away portions of the cerebellum at this point, nearly down to the medulla oblongata, I noticed directly over the pons varolii, and in the situation which is usually occupied by the basilar artery, the loose edges of a ruptured sac of no inconsiderable magnitude. A more particular examination at once showed it to be the wreck of an aneurism of the arch of the basilar artery at this point. Appearances seemed to indicate that it must have been not far from the size of a common prune, and of an oblong shape. The fibrous structure of the pons varolii, which in its natural state is so easily recognised, had degenerated into a hard homogeneous mass. The identity of the sixth pair of nerves, with the thick bundle of filaments of the fifth and also of

the seventh pair, amid the bloody and disorganised condition of the parts, could with difficulty be made out. The substance of the cerebellum, about the position of the aneurismal sac, from the long continued pressure which had been made upon it, had become hard and inelastic. Other portions of the brain and medulla oblongata appeared sound."

The singular and very interesting nature of this case of aneurism of an artery of the brain will, I trust, entirely excuse the length of the quotation it has been thought necessary to give.

It is only, according to our present knowledge, in disordered and diseased states of the cerebral vessels and circulation, that a sound becomes developed in the head. Unlike those of the heart and lungs, the functions of a healthy brain are performed in silence, or without the emission of any sound that the ear can catch. On auscultating the head, however, of a healthy child or other more adult individual, four sounds, more or less audible, may be heard, which have originated at other parts of the system. These the brain and cranium have only, of course, conducted to the ear. The sounds are these:—1st. That of the heart. 2nd. That of respiration. 3d. That of deglutition. And, 4th. That of the voice.

These sounds are all easily recognised, and so distinct and obvious, as to preclude the necessity for description. They have been denominated—the cephalic sound of the heart—the cephalic sound of respiration—the cephalic sound of deglutition—the cephalic sound of the voice.

This last sound, in certain cases of cerebral inflammation and effusion between the membranes and on the surface of the brain, has been observed to undergo a change of character, similar to that which the voice undergoes in its passage through the lung and wall of the chest in some cases of pleuritis and pleuritic effusion. It acquires an ægophonic tone, which, according to the experience of the American writers, already mentioned, may be considered as a certain diagnostic sign of effusion between the membranes of the brain. Thus, it would appear, that we have a cephalic ægophony expressive of a particular condition of disease of the brain, as we have a thoracic ægophony expressive of a particular condition of disease of the chest\*.

\* That points of similarity, something like this, would eventually come to light and be seen to exist between cerebral and pulmonary auscultation I predicted several years ago, but met with contradiction from those, who considered their judgments better than mine, and their knowledge of unobserved phenomena more authentic.



I shall now conclude what I have here to say on cerebral auscultation by giving another quotation from Dr. Whitney's practical paper on this subject, in the American Journal already referred to, descriptive of the phenomenon of cerebral ægophony :—

“Besides the bellows-sound already described,” observes this physician in giving his account of a case, “my attention was, for the first time, attracted to the presence of a peculiar, and to me, novel sound, connected with the passage of the voice through the brain and skull. It has a much sharper, shriller tone, than that of the natural voice, and seems to strike upon the ear, as though the shrill notes of the clarion were echoing through the vault of the cranium below. It has, moreover, another character, which renders it altogether *so unique*, that, when once heard, it cannot easily, the second time, escape recognition; I mean a trembling, brazen, vibrating sound, which, in imagination, resembles nothing so much as the noise produced by singing, crying, or speaking through the teeth of a comb, previously covered with a bit of silk, parchment, or paper. In two or three instances, since the record of this case, I have noticed this sound corresponding almost exactly with the

trembling bleating sound which is so characteristic of the ægophony of the lungs. And, indeed, so nearly does this sound resemble, in every essential particular that of ægophony, and so nearly also do the pathological conditions, necessary to the development of these phenomena, resemble each other, that I know of no appellation by which *this* can be better designated from *that*, than by applying to it, the term 'encephalic or cerebral ægophony.' But to resume the history of this case — it will be sufficient to state, that the bellows-sound still remained a constant and important symptom, so long as the powers of life were well sustained, and failed only, when they had become so much enfeebled as to render existence, every moment, an improbability. The ægophonic sound of the voice, on the contrary, was equally present and distinct, from the time of its first appearance up to the moment, when the last groan told that life had indeed departed from the body.

On examining the body after death, the following appearances were noticed, beside the usual pathological appearances of acute inflammation of the brain.

The convolutions on the surface of the brain were much flattened; and an extensive extrava-

sation of a serous fluid was found within the cavities and between the membranes of the brain, covering nearly the whole of their free surfaces. The great mass of the encephalon, in fact, was, as it were, surrounded with the fluid which had been secreted within it. Over nearly a third of the posterior portion of the cerebrum, there was spread a thick layer of coagulable lymph, which had the appearance of a real membranous expansion enveloping this part. Beyond this there was nothing peculiar in the pathological appearances of any part of the body\*.”

This comprehends, I believe, all the principal facts of cerebral auscultation up to the present time.

April 17th, 1844.

\* American Journal of the Medical Sciences, October 1843, page 301.

## CONTRIBUTION VII.

### IMPOTENCE AND STERILITY.

*General observations on these maladies—Their connection with nervousness, insanity, and our social instincts and affections—Cases in illustration of this connection.—Relation between the generative organs and the voice.—Causes and symptoms of Impotence and Sterility—General division of the causes into MENTAL and CORPOREAL—This latter subdivided into CONSTITUTIONAL and LOCAL—Enumeration and description of mental and constitutional causes.*

THE observations contained in the following pages on the important subject of the intercourse of the sexes, and on the salutary and destructive exercise of the functions concerned therein, will be found, I hope, deserving of the consideration of all persons anxious to enjoy, and desirous of transmitting to their offspring the greatest gift which the beneficence of Providence enables a parent to bestow upon a child, namely, sound health of body and of mind. No man, not even the peasant, or the porter, or the mechanic can truly be accounted poor who is in possession of good health and a robust constitution. Although his daily labour may only serve to supply his daily wants, and the toils of to-day must be renewed on the morrow — so long, however, as the functions

of his body and the faculties of his mind remain unimpaired and vigorous, he has no reason to be dissatisfied, nor any just grounds for complaint. All that is necessary to ensure happiness \* is his, and grateful for the same, let him carefully preserve that, the full value of which he may only come to know when it is too late, when, perhaps, his evil indulgencies have irreparably injured them, and when consciousness of error with unavailing regret must render life miserable to its latest hour.

No bodily ailment, it is certain, imposes such dire discomfort upon the individual of either sex, as the inability to exercise the reproductive functions, and to beget and give birth to offspring. It is truly painful, indeed, to witness the degree of misery which, in almost all instances, the subjects of such defects are, by some unerring

\* "Time's use was doom'd a pleasure, waste a pain ;  
That man might feel his error if unseen,  
And feeling fly to labour for its cure."

\* \* \* \* \*

"The man, who consecrates his hours  
By vigorous effort and an honest aim,  
At once he draws the sting of life and death ;  
He walks with nature, and her paths are peace."

"NIGHT THOUGHTS."

law of nature, it would seem, destined to endure. The morbid state of mind, too frequently a state of complete insanity, which always accompanies, in a more or less aggravated degree, either temporary prostration or premature destruction of the sexual powers, by different causes induced either in the male or female, is certainly deserving of the most attentive consideration. It is a subject, be it observed, not less interesting to the moralist than to the medical practitioner; and it really has surprised me to see that nothing worthy of notice is to be found on a matter, which appears to me so important, in the various writings of standard authors upon mental and nervous diseases. The trifling little pamphlets of some quacks and empirics contain more information on this department of pathology, than is at present to be found in the more respectable publications. This circumstance has certainly appeared to me remarkable; and, I confess, I have been at a loss to account for it, knowing how short a time I had been in practice when my experience had fully convinced me, that sexual weaknesses and imperfections, either hereditary or acquired, constituted the great majority—perhaps nine-tenths of the causes of nervousness, mental imbecility, and derangement.—How then are we to account for a fact

like this? a fact of such frequent occurrence, and so highly philosophic and instructive, as it undoubtedly is, having obtained so little attention? Can a general feeling of ill-exercised tenderness towards the depraved habits of most of the pitiable sufferers have operated in preventing the matter from having been duly investigated, and candidly avowed and discussed? or, has it resulted from ignorance? The former, I am disposed to think, can scarcely have been the case; for, with the medical practitioner less frequently, perhaps, than with any other professionalist, from the confidence so readily reposed in his calling, does delicacy or prudery supersede utility.

The intimate connection and constantly interchanging influence which unquestionably exist between the organs and functions of reproductive life and some of the best faculties of the understanding, and qualities, and passions of the heart, during the active years of youth and manhood, is a fact as true and manifest as any other in nature. Frequent and sufficient, indeed, are the proofs of it that may be witnessed in the manner in which the entire characters and dispositions of individuals of either sex may be observed to undergo changes—changes various and striking, and always, it need scarcely be mentioned, for

the worse; always becoming deteriorated, more or less unprincipled and ungenerous, as sexual intemperance or disorder has enfeebled their generative economy, and rendered them the subjects of sexual incapacity or unfruitfulness, more or less complete. This is a curious and melancholy moral truth, and one, the illustration of which has, in too many instances, excited my surprise and commiseration. No being pursues, in all respects, perhaps, a more culpable and infatuated course than does the sexual sensualist; and although, as generally is the case, the conviction of his wickedness may, for a time, slumber beneath the moral insensibility which debauchery so surely induces, sooner or later he is awakened to a sense of his error, and compelled, however reluctantly, to undergo that punishment which is the natural and unerring result of his licentious and criminal indulgences, namely, moral degradation, mental or bodily infirmity, or madness; and, like the stricken deer\*, which the rest of the herd unfeelingly deserts, and leaves to its

\* I have had under my care two cases of sexual incapacity, accompanied by severe melancholy, and more or less derangement of mind; in both of which the individuals, without any knowledge of each other's sufferings, compared their conditions to that of the stricken deer in Shakspeare's beautiful simile.

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lorn and dismal fate, he finds himself a helpless sufferer, equally destitute, and alike lorn and separated from the society and sympathy of his species.

There is a generative organisation of the mind which corresponds to and co-operates with the generative organisation of the body. Both have the same periods of development and of decay. During the long term of years, too, from the epoch of puberty to that of old age, they maintain, as I have already observed, an uninterrupted sympathy with each other, which is less apparent during health, but which becomes very manifest under certain conditions of disease—under that of generative incapacity in particular, which I am now about to consider.

All the feelings which lighten care, which dispel gloom, and which give cheerfulness and animation to the disposition and character—all the lively social instincts and affections—all the affections that delight, and the passions that transport—those of kindness and friendship, admiration and love—derive their tone and strength, and some, indeed, their entire existence, from the secret and mysterious source of our reproductive being. The passion of love, for one, which, it is unnecessary to ob-

serve, can only exist between individuals of opposite sexes, is never in any degree developed, or, as may frequently be observed, becomes totally extinguished in such individuals as are either by hereditary defect of constitution, or by an acquired state of debility, disqualified for the performance of sexual intercourse. What an important and instructive fact this is, both morally and physiologically! And how satisfactorily does it illustrate that connection, I have already stated, which exists between our mental and bodily procreative powers!

According to this fact, then, it would appear that the poetic passion of love, although it belongs, as will be allowed by all who have experienced it, to the mind, and is purely and essentially a mental phenomenon, cannot be regarded, philosophically, as any thing otherwise than a sort of generative emotion—a generative emotion certainly of the highest order and refinement, experienced only by the human species, and originating in an innocent and virtuous impulse of the soul—an impulse which is productive immediately of a variety of new thoughts and feelings in the mind of the individual; but having, it is true, for its prospective object, the generative intercourse of the sexes, the repro-

duction of life—a new conception—and eventually the evolution of a new creature.

It may seem a little singular, and perhaps paradoxical, to state, what repeated observation has induced me to believe, namely, that the emotions of love and anger, although apparently so very opposite in their natures, are, nevertheless, in some measure, closely allied, and more or less mutually dependent. The emotion of anger is, it is certain, in some way or other, interwoven in its origin with that of love. The same circumstance, as may frequently be observed, which is destructive of the one is equally so of the other. In every instance of complete impotence, whether temporary or permanent, the result of constitutional or other causes, in which the susceptibility of the latter emotion has become extinct, that of the former will be found equally dead or dormant. Is not this a remarkable fact, and one deserving of some attention from the mental pathologist? The impotent or sterile patient will be peevish, fretful, and irritable; but none of those circumstances, which usually excite anger and resentment in persons of sound body and mind, have a similar effect upon them. On the contrary, so long as the impotent malady is present, their conduct in

all things is marked by timidity and pusillanimity, which although the unhappy sufferers are themselves quite conscious of, they, at the same time, are altogether unable to correct.

The passion of anger is by some considered as little less than a brief fit of insanity; but such an opinion is really unphilosophic and by no means correct. It is as natural, I believe, for a sound understanding to be roused to anger, and to manifest the emotion under circumstances calculated to excite it, as for the sea to be ruffled by the breeze, or raised into waves by the boisterous tempest. Somewhat in corroboration of this observation, I will here mention a fact which the late Dr. Milligen, the translator of Majendie's *Physiology*, was in the yearly habit of relating to his class in Edinburgh:—The keeper of a lunatic asylum in the neighbourhood of that city had acquired considerable celebrity for his success in the cure of insanity, and the following was his mode of treatment:—He was a strong man and a dexterous pugilist, and with the usual attention to the bodily health of his patients, he was in the daily habit of exercising their strength, and also of testing their courage occasionally in the art of boxing. In his combats, although he generally made it a point that his insane an-

tagonists should suffer considerably, before terminating the conflicts, he always took care, if possible, to let the victory appear on the side of his patients; at all events not to send them away under the impression that they had acquitted themselves badly. This man observed, that if he could rouse a feeling of retaliation in his patients, and engage them in earnest angry combat, he generally succeeded in effecting a cure.

This is a singular fact and speaks, I conceive, the spirit of no shallow philosophy. It is as necessary, perhaps, for the strength and sanity of most minds, that all the feelings and passions should be moderately exercised as that the body, to preserve its health, and activity should be exercised. Further, the emotions of joy and laughter and their opposites, *viz.* those of sadness and weeping, although the observation may appear singular, would certainly seem to me to have a conjoint existence, and in some way or other to emanate from a common source, which is dependent upon, and more or less intimately connected with, the system and power of procreation. Observe the alternate, and in many instances, indeed, the compound fits of laughter and weeping which often accompany the gene-

rative disorder of hysteria. May not a hearty fit of laughter, too, be frequently observed to terminate in tears? But what do the following facts say?

A military gentleman of strong constitution, of considerable talents and acquirements, and of a social animated disposition, who had indulged to excess in sexual intemperance and excitement, began to experience, towards forty years of age, a considerable impairment of his procreative powers, which gradually increased, until in a short time he found himself completely impotent. At the age of fifty-two, twelve years from the commencement of his disorder, he placed himself under my care and a more miserable creature, one in all respects more deserving of commiseration, I had never before beheld. No condition, certainly, could have been more distressing than that of this patient. During the last four years his spirits had always been so depressed, and his mind so dejected, and at times so distracted and irritable, that on several occasions he feared he should have been urged to the commission of self-destruction. On this account, together with his having manifested symptoms of insanity, his friends had at different times been

necessitated to have him placed in a lunatic asylum, or under private superintendence.

The point, however, to which I wish to direct attention, at present, is this—during these latter four years of this patient's sufferings no circumstance, however ludicrous, or however tragically affecting, was ever observed either to elicit from him a smile, or to awaken the emotion of compassion: nothing, in fact, could for a moment remove or mitigate a sense of despairing sadness and destitution, which weighed continually upon his heart, as he described it, "like lead." When he had been under medical treatment, living in the house of the writer about six weeks, and his health had been in a great measure restored, and the generative power, which had lain so long dormant, had considerably revived, he accompanied me to one of the theatres, and, during an affecting scene in the performance, I was not a little surprised to observe him shedding tears. I drew his attention to the circumstance the next morning, when he remarked that he was sensible of a great change having taken place in the state of his mind, for, that a few evenings before he had astonished himself and several members of his club, by having laughed on two or three

occasions at some occurrences at the whist-table.

A law-student, affable, of much cheerfulness and animation, and rather remarkable for his talent of conversation, gave way for a time to much sexual intemperance, which brought on an attack of impotence, of between six weeks and two months' duration, accompanied by great depression of spirits, general emaciation and debility, and the other usual symptoms, together with complete absence of the susceptibility and power of laughter. He stated, that to be present during a scene of merriment, instead of its affording him pleasure, had the contrary effect, as he found it impossible, and indeed painful, to attempt to reciprocate the emotion. When his general health and spirits had begun to improve, he was spending the evening with a few young friends, and a circumstance having occurred, which gave occasion to much laughter, he unexpectedly found that, as formerly, he could join in it with pleasure. From this time he was sensible, as he himself observed, that his constitution had recovered; and the following morning when he awoke, after a sound night's sleep, he discovered, with some little joy, that his gene-



rative power had returned, as the reproductive organ was in full sexual development.

I could adduce many more facts, similar and equally illustrative of the connection which obviously exists between the bodily and mental generative powers, but these will perhaps be considered sufficient. When I come, as I will immediately do, to describe some of the symptoms of the sexual diseases under consideration, I shall notice the peculiar alteration which the expression of some of the features of impotent individuals undergoes, and also more or less the entire form of the body—*vultus in corpore patuit*.

I shall conclude these general observations here with a few remarks on the relation that exists between the vocal and generative organs, and the manner in which the functions of the latter influence those of the former, both physiologically and pathologically.

In every animal, formed with a vocal apparatus, when the period arrives that the reproductive organs have attained that state of development, which fits them for the performance of sexual intercourse, the voice, at the same time, quickly assumes new characters; it becomes stronger, more sonorous, and grave; and all

males, not even man excepted, show a greater disposition to exercise it. This remarkable change in the characters of the voice, which, let me remark, is the surest sign of the presence of puberty, results principally from rapid increase in the size of the glottis. According to the statements of the best physiologists, this opening, in less than a year, at the epoch of male puberty, doubles its capacity, increasing in the proportion of five to ten.

In the human female, puberty is not accompanied by any such remarkable change in the characters of the voice, and the structure of the larynx. From five to seven is the proportion in which the female glottis generally enlarges at this period; nevertheless, the voice of the woman or maiden, at twenty or twenty-five, is evidently as different in its characters from that of the girl of thirteen or fourteen, as the voice of the man is from that of the boy previous to puberty. Throughout the whole term of womanhood, too, the female voice, like her disposition, has appeared to me more variable, and in more sympathetic and delicate relation with the generative system. The following fact, bearing somewhat upon this point, lately came within my knowledge.

A young lady, of promising musical talents, much admired as a singer, and who had been in the habit for two or three years of earning a considerable income by performing at public and private concerts, was addressed by a lover, and entered into the state of matrimony. In a short time afterwards, without any manifest impairment of her general health, her vocal powers had so declined, that she found herself altogether unable to sing in the manner she was accustomed to do, and was consequently disqualified for taking part in musical performances. This lady was advised to separate for a time from her husband, which she did, and recovered to some extent her former voice ; but some of the higher musical notes she has never since been able to compass, and has, therefore, been compelled to relinquish her profession.

The barbarous custom, which still prevails in Italy, and some eastern countries, of castrating boys for the purpose, as it is thought, of improving their voices and musical abilities, is founded in nothing better than ignorance and error, and could only have originated in the darker ages of physiology. From what I have just stated regarding the change of structure which the larynx undergoes at puberty, in sympathy with the

sexual organs, it will easily be understood what subsequent influence the removal of the testicles in early life must have upon the voice. The effect is simply this,—such youths as are born with good voices, which by exercise and instruction up to the period at which puberty usually makes its appearance they may have improved, these, castration during infancy, or previous to such epoch, is found to preserve, or rather renders permanent.

*Causes and Symptoms.*—Impotence and sterility, with regard to both sexes, have been differently arranged by different writers; but the most simple, comprehensive, and in all respects most practical divisions, according to my experience, are the following, founded on the general nature of the causes; *viz.*, *mental* and *corporeal*; the latter subdivided into *constitutional* and *local*; and under these heads I shall now consider the subject in reference, first, to the male; and, secondly, to the female.

*Mental Causes.*—Mental impulses or emotions frequently occasion temporary, or more or less prolonged impotence, even in individuals of

sound constitution and perfect reproductive organisation. Any feeling or passion, in fact, which may be sufficiently intense as to absorb the attention of the mind to the exclusion of the sexual emotion, which accompanies and immediately precedes the act of propagation, will interrupt for a longer or shorter period the functions of the genital organs, and therefore operate as a cause of impotence. As soon, however, as such influences cease, and the mind becomes disembarrassed, the system reacts, and the generative organs recover the capacity and assume the condition fitted for the performance of sexual intercourse. This species of impotence seldom, I believe, lasts longer than twenty-four or forty-eight hours, unless it depends, as not unfrequently is the case, upon some permanent affection of the mind; and the moral or mental impulses or emotions, which most frequently occasion it, are, too anxious, over-violent, over-excited desire, affections of the imagination; insanity, both maniacal and melancholic, and the various depressing passions.

The constant association of sexual disorder, and more or less of generative incapacity, with mental derangement, whether as cause or effect,

is a remarkable fact, and one which appears to me not to be very generally known: yet I will venture to say, that every insane individual, whether male or female, is at the same time also the subject of some sort of procreative disability, defect, or disorder, either impotence or sterility, or both; and the removal of the one affection (most frequently, I apprehend, the mental) would often seem to prove immediately curative of the other. I have seen several instances of insanity accompanied by impotence and barrenness in both sexes, in which such, certainly, appeared to have been the case, in which, by the adoption of a similar mode of treatment in each case, the return of reason, and the resuscitation of the sexual powers were so strictly concomitant, that it was impossible not to infer but that either the one disease was the cause of the other, or that both affections depended upon some common cause.

Fear of incapacity, timidity, excessive modesty, disgust, disappointment, hatred, jealousy, surprise, terror, anxiety, belief in the power of sorcery and witchcraft, will occasionally operate so intensely on the feelings and the imagination, as to be the cause of impotence of longer or shorter duration. I have prescribed successfully for an

impotent patient, who was fully impressed with the belief that his infirmity was the result of some spell or enchantment.

*Constitutional Causes.* — In nine cases, generally, out of ten of impotence and barrenness, for which the practitioner is called upon to prescribe, the causes of the ailments are, without doubt, constitutional, and the conditions themselves not congenital and hereditary but acquired. I have had experience sufficient to convince me that such is unquestionably the fact. Instances certainly do occasionally occur of innate and hereditary generative incapacity in both sexes, and the constitutional condition with which it is associated has been beautifully and figuratively described by Sir Astley Cooper. "There are," observes this eminent surgeon, "several causes which produce a destruction of the virile power. These may sometimes be traced to a peculiar sluggishness of constitution, to a general torpor of the procreative system, on which the usual attractive animal affinities exert no influence. To such persons a Venus might display her charms, and on such her son might exhaust his quiver in vain. No genial spring

is here, no blooming summer, or fruitful autumn, but all is winter—a dreary, desolate, and barren winter, in which the springs of life are frozen up and the animal propensities destroyed. Some men are so constituted that they may be said never to possess a venereal stimulus, and some of the other sex are equally frigid. I knew a person who remained unwarmed by the flame from the hymeneal altar for seven years, and who was incapable of performing the duties which devolved upon him.” The external characters of this condition of constitution are chiefly the following:—the body is generally delicate, rounded, and rather feminine in its form; the muscles and cellular structure are soft, weak, and lax, and the gait, in consequence, wants the firmness and elasticity which are the accompaniments of strength and vigour. The hair is soft and very fine, and deficient on the face and pubes; the voice is weak, sharp, and shrill; the eyes are dull, watery, of a light colour, and devoid of fire and animation; the manners are capricious and boyish; the circulation is weak and languid, and the secretions scanty and imperfect. The testicles are small, and soft, and sometimes retracted towards the abdominal ring, showing a disposition to return to their primitive foetal po-



sition in the abdomen, and the scrotum pendulous. Such are the signs which, for the most part, indicate innate weakness or incapacity of the procreative powers, and for which little can be done in the way of treatment.

Constitutional exhaustion and general enervation and debility, resulting from premature, intemperate, and *unnatural venereal excitement*, are, without doubt, by far the most frequent causes of impotence and barrenness in both sexes. This latter pernicious vice, which can only have been conceived originally by the imagination of some fiend, and which it is lamentable to know is so much practised, in the present day, by the youth of both sexes, produces more examples of the disease in question than all other causes combined. By this evil habit it so occurs, that the generative organs and the entire nervous system are excited to a degree beyond what takes place during actual copulation, and the natural and certain consequences of such excitement are prostration or premature and total destruction of the sexual energies. The spermatic fluid, which every one knows it is the office of the testicles to secrete, every one should at the same time be aware is not, as is too commonly supposed, an excrementitious fluid, and

intended, like the urine, to be eliminated from the body; but, on the contrary (except during an occasional act of generation), to be received into the circulation, and thence distributed to every part of the system. It is the presence of the semen in the circulating fluids of the male, and the accumulated influence of unexhausted ovaria in the system of the female, which gives to the countenances of the continent and chaste the peculiar expression of energy and vigorous health which generally characterise them, and which, though the features themselves should not be fashioned to the lines of beauty, never fails, notwithstanding, to impress the beholder with a sense of admiration and some feeling of respect.

Impotence and sterility are sometimes the effect of disease situated in parts at a distance from the generative system. Affections of the brain, particularly of its posterior division called the cerebellum, of the liver, stomach, and other digestive organs, and also of the circulation, occasionally produce them. I have seen complete impotence (absence of erection) of three months' duration, accompanied by general emaciation and impairment of health, excessive irritability of both mind and body, and con-

siderable shrinking of the penis and testicles, occur in a strong young man of twenty-five, from injury of the back part of the head. This gentleman, being engaged in a quarrel, received a blow on the face which stunned him, and, having fallen backwards, first struck the ground with the tuberosity of the occipital bone, and sustained, in consequence, a concussion of the brain, manifested by insensibility and total unconsciousness of eight or ten hours. The blow was received between ten and eleven o'clock, P. M., and he remained in a state of unconsciousness and more or less insensibility until seven the next morning. Being a diligent student of medicine, he continued his professional pursuits by attending lectures and hospital the following day, and without interruption for six weeks, during which time he took no further notice of the occurrence. The general emaciation and failure of the sexual function were first perceived in little more than a week after the injury, and continued for the time above stated. Purgation, followed by a slight alterative course of blue pill, effected a complete and speedy cure in this case, after change of air and occupation from the town to the country, with other hygienic measures had been tried in vain. It was truly

impressive and pleasing to observe how, immediately after the gums had become tender, this patient began to recover flesh, and to experience a return of the procreative power, the latter within eight and forty hours. The cerebellum, be it observed, is generally allowed, under circumstances of health, to exercise considerable influence over the functions of the genital organ; and the impotence, in this instance, as well as the concomitant constitutional disorder, was, no doubt, the result of some chronic inflammatory affection of this portion of the brain that supervened on the concussion from the fall, which the action of the mercury so promptly and so fortunately subdued.

Mr. Abernethy elevated the practice of surgery, and freed it from much empiricism, by having directed the attention of the profession to the constitutional origin and treatment of ulcers, and various kinds of local diseases. Few maladies, I am desirous here of observing, though necessarily local in their principal symptoms, are, as I have previously observed, more dependent with respect to their causes upon general disorder of the system than those now under consideration; and, although some medicines are to be found which, through their influence on the urinary

apparatus and secretion, have, in consequence, some degree of stimulant and aphrodisiac action on the conjoint genital organs, and thereby sometimes give a temporary vigour to the function of erection, the treatment certainly which aims at permanent benefit for the impotent, and which, in a great many instances too, affords it, must be constitutional in its operation, that is producing more or less change in the entire economy; more especially the glandular, in the condition of the secretions generally, and in that of the testicles in particular. Some of the most obvious and positive characteristics of impotence in the male (I mean those which involve an inefficient and irregular performance of the functions of erection and of seminal emission) are, I am confident, often but secondary lesions, resulting directly from an alteration in the physiological and chemical characters of the seminal fluid. Why may not irritability and irregular action of the vesiculæ seminales (the reservoirs of the semen), like similar affections of the receptacle of the urine, to which they are attached, and of the rectum on which they rest, not occasionally or frequently depend upon an unhealthy and irritative quality in the fluid they contain? In how many cases of irritability of the bladder,

and disorder of its expulsive function, and also of irritability of the intestinal canal, and disorder of its peristaltic action, although such lesions are, without doubt, sometimes purely nervous, and require to be treated accordingly, do the causes not consist in a morbid condition of the urine, and of the alvine secretions and discharges? And the remedial measures which will prove most useful and curative, will they not be whatever, in the one instance, corrects the error of the renal secretion, and, in the other, that of the secretion of the liver, of the pancreas, and of the intestinal mucous membrane?

August 28, 1841.

## CONTRIBUTION VIII.

### IMPOTENCE AND STERILITY.

*Analogy between the constitutions and reproductive economies of the animal and vegetable.—Contrasted positions of the sexual organs in the animal and vegetable systems.—Case of sexual incapacity in the male the result of indigestion and severe chylopoietic derangement—History, description, and treatment of the case with commentatory observations.*

IN a paper in the *Lancet* of August the 28th, 1841, I stated that in the great majority of cases, in either sex, the causes of impotence and sterility would be found, on careful investigation, to consist in some lesion involving the constitution and general health of the individual; of which there certainly can be little doubt. And the circumstance is easily understood by simply bearing in mind that the reproductive system of the animal, like the flower of the plant or tree, to which it is analogous, is wholly dependent for its primitive evolution, and subsequent vitality and vigour, upon the perfect development and continuous healthy condition of the general system and circulation; and as canker, or defect, of the root or stem (the parts which compose the

vegetable constitution) of the plant inevitably causes its flower to fade, and its seed and fruit to wither and fall; so also does disease, or any circumstance which impairs the general powers of the constitution of the animal, debilitate for a longer or a shorter time, or altogether destroy, the energies and functions of the reproductive organs. Of this truth, if necessary, numerous illustrations might be adduced.

Let me, by the way, here further notice how very opposite, in the two systems of animals and vegetables, are the positions which nature has assigned to the sexual organs. The fact is, unquestionably, not a little remarkable. In the one, namely, the animal, we see these organs, with undeviating carefulness, and for reasons better known to nature herself, removed from the site of immediate observation, and placed in partial cover and concealment; while in the other an arrangement altogether the reverse obtains. The flower, or efflorescence (as it is termed in botanical language), of the plant, which constitutes its reproductive organisation, occupies, not only the most conspicuous part of the vegetable body, but is also invested with forms and colours the most beautiful and attractive. But to be more practical. The fol-



lowing case of sexual incapacity in the male, consequent, as I conceive, upon constitutional debility and general disorder of the economy, corroborates, to a considerable extent, the opinions I entertain upon this pathological point. And let me here observe, *en passant*, that the most useful, and, in all respects, satisfactory mode of exemplifying causes in the unabstract science of medicine is, without doubt, to give the phenomena which accompany them, which result from and involve them; that is, in short, to state and describe the individual cases of disease, together with their plans of treatment, whether successful or otherwise, and to draw therefrom, if possible, a useful indication and improvement of practice.

CASE.—Mr. B., aged fifty-two, a bachelor, a military gentleman, originally of strong constitution, of robust health, and of a cheerful active disposition and warm temperament, which qualities of body and mind he continued to enjoy without interruption up to the age of forty, when he began to experience occasional fits of depression of spirits, with considerable impairment of all his energies, more particularly those of procreation. These ill symptoms continued gra-

dually to increase for some years, accompanied with general emaciation and marked decline of health and strength, until, eventually, he found himself a complete invalid, and perfectly impotent. His appetite, which hitherto, during his sound health, had always been good, but moderate, became voracious; his temper uncertain and irritable, and his mind sad, and often very melancholy; he was subject to drowsiness in the evening, and his sleep during the night was light and unrefreshing; his bowels were always irregular, and their excretions unhealthy, and frequently passed suddenly and involuntarily; his urine was turbid, of a foetid heavy odour, with occasional deposit of mucus, and requiring to be drawn off by the catheter, in consequence of the bladder having lost its expulsive power. For these disorders, which had continued more or less severe during a period of eight or ten years, he had consulted a great number of medical men, some of them the most eminent, and had used a variety of remedies, without material benefit. In consequence of increased and uncontrollable irritability and wretchedness, and of his troublesome discontented disposition, together with his having manifested symptoms of insanity, his friends had latterly considered it

necessary to have him placed in a lunatic asylum, or under private superintendence.

When this gentleman came under my care on the 2nd of November, 1838, his condition was nearly as follows:—much general emaciation and debility; body stooped; countenance pale, contracted, and expressive of deep distress and misery; eyes dull, and irides and eyebrows de-colourised; no refreshing sleep, but is disturbed during the night by the slightest noise, and gets up from bed tired and depressed as he lies down. Skin dry and harsh, and never feels soft or moist, although he is rolled in flannel and occasionally takes considerable exercise; bowels regular, their excretions clay-coloured, completely devoid of bile, sometimes fluid, at other times solid, and frequently passed involuntarily and without intimation, as if the bowels were insensible of their presence; urine rather more in quantity than natural, of a whey-colour, and of a fœtid heavy smell, and requiring to be drawn off by the catheter (which instrument the patient has learned to use himself), in consequence of the weakness of the bladder; has occasional attacks of vesical catarrh, during the presence of which a mucous deposit appears in the urine; penis always flaccid and elongated; with a con-

stant gleet discharge from the urethra, and has not exhibited any sexual development for years; testicles much diminished in size, the epididymi quite empty, and scarcely to be felt; appetite immoderate, but no thirst; tongue clean; no discoverable enlargement of the liver, or other abdominal viscera; respiration and pulse pretty healthy.

Considering that at present, as from the commencement and during the entire long course of this gentleman's complicated disorders and sufferings, the great and primary error was seated in the liver and bowels, and that it consisted for the most part in suspended, or more or less deficient and depraved secretion from those viscera, I immediately directed my attention and treatment to the rectification of the error, by the revival of their healthy actions, leaving the lesions of the urine, with all other morbid phenomena, to await the result of the restoration of the functions of the digestive canal, which I deemed of the first importance.

It was evidently vain and fruitless, I thought, to endeavour to produce any salutary change in the condition of the urine, or of its eliminatory apparatus, or to prescribe, with any hope of advantage, for the distemper of the nervous system,

so long as the circulating fluid, and the general economy throughout, received their materials of renovation and support from an *origo et fons* so disturbed and depraved as were the primæ viæ, and the important processes of digestion and sanguification. Two five-grain pills, composed of the compound extract of colocynth and rhubarb with three grains of blue pill, were ordered to be taken every other night, at bedtime, followed by a little castor-oil in the morning, and occasionally a common enema, if the bowels were obstinate in responding to those aperients, with moderation in diet and exercise. This treatment was steadily pursued for the space of three weeks, or a month, without any other apparent benefit or result than that of having freed the intestines from a large quantity of dark clay-coloured excretions. At this stage of the treatment of the case I received the following communication from the patient himself:—

“Wednesday, Nov. 10th. — Dear Sir—I have taken the pills as directed, *viz.*, every other night. I have had no evacuation of the bowels since Monday, except what has been effected by the enema, a few hard round lumps of a clay-colour. The bladder and other infirmities are still in the same dreadful state. My servant is

good-tempered, but totally without *capacity, energy, judgment, or memory*, all which requisites are so necessary in my deplorable condition. At three o'clock took an ounce of castor-oil. Yours truly, R. M. B."

The same remedies were continued, and ten or twelve days after I received from the patient the following note, which still refers to the state of his bowels:—

"Dear Sir—The pills which I took last night have operated when from home this morning. The evacuations still dark-coloured, so that I shall take two more to-night, unless you advise otherwise, and in which case, perhaps, you will send me a note, and defer your visit to-day until to-morrow. Yours truly, R. M. B."

November 30th. To-day a plan of treatment, somewhat different from the foregoing, was commenced, which I intended should operate principally on the liver, and glandular economy generally. Having advised the adoption of a mild alterative course, five grains of blue-pill were prescribed every night at bed-time, with a five-grain compound rhubarb pill in the morning, and also two warm baths in the week, at the temperature of 100°, to be taken between eight

and nine o'clock in the evening, the time of immersion from a quarter of an hour to twenty minutes; the body generally to be well rubbed with a flesh-brush during the administration of the bath; moderation, as before, in diet and exercise.

This treatment, under my own immediate superintendence, was regularly pursued during a period of between two and three months without any other change or modification than that of having occasionally increased the dose of the blue-pill, and intermitted a bath now and again. When it had been continued about a month or five weeks (the alvine excretions during the whole of the time having been more or less of a dark unhealthy character, and with little, if any, discernible improvement, but evidently with no aggravation of any of the other morbid phenomena, mental or bodily) the urine was observed to have lost in a great degree its fœtor and turbidness, and to have regained almost its healthy appearance, which the patient was the first himself to remark, having requested me, during one of my visits, to examine his urine, observing that he had either caught a cold, and could not perceive it, or that his urine

had lost its disagreeable smell. He stated that he rested a little better, and felt less languid and depressed on getting up. The same remedial measures were steadily persevered in, and the condition of the patient, in all respects, went on gradually to improve.

The next note of the case is on the 21st of the following month, January, 1839, when the system had been for some time under the specific influence of the alterative. Gums slightly turgid, more vascular-looking, and a little tender, but no ptyalism; condition of patient, in every respect, greatly improved; skin more natural and soft, and he frequently has some perspiration on the back and loins during exercise, and in the morning before getting up; he is regaining flesh and strength; he has taken the warm bath pretty regularly; after the first two or three baths the surface of the water was covered with a coating of powdery furfur of the exfoliated cuticle; the countenance, in every feature, is remarkably improved, it has lost its exsanguineous melancholy expression, and is acquiring colour and animation; the pigment has returned to the irides, and the eyes have lost their dull inanimate look; the painful sense of wretched-



ness and destitution from which he had so long suffered is in a great measure removed, and he now feels comparatively comfortable, and disposed for society; he makes no complaint now of want of sleep, and the action of the bowels, instead of being sudden and involuntary, is now quite regular, and the alvine excretions pretty natural; these, however, during the last two or three days, have been rather profuse, and the greater part composed of dark inspissated bile. The urine is now quite clear, without feter, and natural in quantity, and the contractility of the bladder is so far recovered that more than one-third of the urine is ejected, and with considerable force, before having recourse to the catheter. The penis which, as I have stated, was elongated and lax, is now contracted and firm, and the patient has remarked that it requires more dexterity and force to pass the catheter, in consequence of lessening of the calibre of the urethra. He states that for the last three or four mornings he awoke with erections, which subsided shortly after awaking, and that last night, together with an erection, he had a sexual somnium and emission, occurrences he had not experienced for years. The testicles are firmer, and very per-

ceptibly increased in size, and epididymi are slightly distended with seminal fluid. His spirits, temper, and habits, are altogether much improved; appetite less immoderate; no appreciable change in the pulse, except that it feels a little fuller and softer.

The same treatment to be continued.

February 4. Condition of patient still further improved; has had for the last two mornings on getting up, a copious discharge from the bowels, of dark bilious matter; he states that he feels himself, to-day, in a condition he has been a total stranger to since the commencement of his illnesses; that he feels himself a new man both in body and in mind; his observation was, to quote his own words, "I find your treatment has not only done a great deal for my bodily health, but it has also removed the veil from my mind."

5th. Advised him to-day to leave off the blue-pill for a time, as he feels exhausted, in consequence of a large quantity of inspissated bilious matter having come from the bowels last night; otherwise no change to be made.

24th. About ten days ago commenced to take the blue-pill in the morning, and the compound rhubarb pill at bedtime, and has continued to

use these medicines in this manner up to the present time. His health of body and of mind he now considers as re-established, and he makes no complaint to-day but of the troublesomeness of being necessitated to use the catheter to assist the bladder in ejecting the urine, as the contractile functions of that viscus has not kept pace with the other improvements; nearly one half, however, of the urine is now expelled without having recourse to the aid of the instrument, and the virile power, which had slumbered, like an animal in hybernation, for some ten or twelve years, under the oppression of the constitutional disease, is now revived, and in considerable activity, as he expresses an intention of entering into the state of matrimony. Advised him to-day to leave off the alterative altogether, and to take a dose or two of the compound infusion of senna with sulphate of magnesia, to clear out the bowels well, before commencing a course of chalybeates.

March 2nd. All treatment discontinued, as he considers himself cured.

In the truly interesting case of which I have now given a description, it is very evident that, although the suspension of the generative secre-

tion, and the prostration of the procreative power, with the conjoint disorders of the urine and bladder, and also the accompanying, and as I conceive, connected derangement of the functions of the brain, and I will add, too, of the feelings and affections of the mind, had occupied the chief attention of the patient and his professional advisers,—it is very evident, I repeat, from the result of the treatment, that this combination of morbid conditions owed its origin and its protracted existence to obstinate and extensive functional disorder of the liver and of the alimentary canal, with the entire circle of the chylopoietic viscera.

I viewed the case at once as one primarily of dyspepsia and hypochondriasis, which had merged into melancholia. Such, it is true, in the complicate picture of disease on which I am now about to offer some observations, my diagnosis, in accordance, as I think, with the natural disposition of the lesions, had placed in the principal morbid group, and therefore deserving of the first attention. The genito-urinary affections were viewed (as the termination of the case proved they stood) in a secondary light, and as secondary phenomena, within the shade and under the influence of the constitutional and more

general malady. I have never witnessed, at least I cannot at present recollect, within the compass of my own experience, a case of disease in which the resources of medicine were so happily illustrated, and which impressed me, in consequence, with so full an assurance and trust in the principles and reasonable foundation of the healing art, which at one time, and without much exaggeration, perhaps, was considered divine. Just observe the condition of this gentleman during ten or twelve years of his life, when all the powers of man's mind and body are usually in the summer meridian of their strength and activity, before nature undebilitated by disease or other causes, for the most part shows little if any decline; the oppressed and woe-begone (to use his own epithet) subject of mental and bodily affliction, ultimately, through the instrumentality of medicine, restored to comparative comfort and tolerable enjoyment of health and of all his faculties,—and then say whether the ancients either over-estimated or over-respected that art, in having designated it *divine*, which could produce such changes and establish such beneficial reformations in organs and systems cast and constructed, and put into life and movement by the Creator alone.

What was the state of this patient when I first took charge of his case, and recommended my plan of treatment? Here it is. A person whose earthly misery, in all respects, appeared consummate. The fugitive from an asylum\*; his reason overcast, but not so darkly as to prevent him from seeing that his understanding was impaired,—the subject, in fact, of madness, and conscious of his condition, the most unhappy of all the unhappy kinds of mental disease. Sometimes giving up all use of medicine and all hope of cure, and endeavouring to become resigned to his fate, and applying for comfort and consolation from that rarely failing source, religion. Then, again, either at the suggestion of his own disturbed feelings, or at the advice of some compassionate friend, betaking himself to some new physician or surgeon, adopting his instructions and pursuing his mode of treatment for a time only, as he found, to add to the number of his disappointments in his efforts and his anxiety to recover health.

This is but an imperfect epitome of the moral pathology (if I may be allowed the expression)

\* He had left the Denham-Park Lunatic Asylum rather unceremoniously a short time before.

of this gentleman's condition for no little time previous to my administering to his relief. What was his physical state? Stooped and tremulous with debility and emaciation to atrophy; impotent, as he had been for years, in the power of generation; every important organ of the body, in fact, with the exception of those contained in the chest, either perverted or defective in function. This state of things, as has been seen, was very manifest with respect to the liver, the stomach, and the whole continuous chain of viscera, from the duodenum to the rectum. The secretions into, and the excretions from, that extensive tract in which digestion, the business of organic development, begins, in which the food undergoes its first transformations, and the blood assumes its first forms and properties of vitality, were in an extreme degree unhealthy, and the peristaltic and expulsive action, as a direct consequence, was also much disordered. The fœtid condition of the urine, with the partial palsy of its receptacle, the bladder, were united, I conceive, in the relation of cause and effect, the defective contractile function of that viscus, like that of the contiguous intestinal canal, having been the result, no doubt, of the long-continued contact of their

unnatural excrementitious contents upon their lining membranes.

These membranes, it is not out of place here to observe, of every viscus and vessel of the body, are endowed with a peculiar sensibility independent of that they may have received from the brain and spinal marrow, which the celebrated and finely philosophic Bichat termed "organic," by which they are kept in constant harmonious relation with the different substances, solid or fluid, with which they may be in contact, and which, in the institutes of our economy, it is a principal function of their respective organs, either for a time regularly to retain and eject, or regularly and immediately to transmit, so long as these substances present the qualities and the conditions that correspond with, and characterise their healthy state. It is to this physiological circumstance, or ordination of the economy, *viz.* the constant action and reaction upon each other of the contents and the containing viscera and vessels, that the intestinal tube with all its numerous tributary ducts—that the semino-urinary receptacles and passages—and that the heart with its continuous arterial and venous canals, owe the existence, at least the unceasing manifestation and exercise during life, of their contractile func-



tions—the functions of elimination and of circulation; which functions, as I have endeavoured to explain, act harmoniously and to the well-being of the individual during a healthy and perfectly-constituted state of the more important excretions and of the blood; but during an opposite and depraved condition of those parts, such as prevailed to an extreme degree in the case now under consideration, instead of harmony from reciprocated action with concurrent and resulting health, discord and disease reigns throughout.

The humoral pathology, notwithstanding that it is made to contain, according to the doctrines of the early writers upon it, a great many fancies, and what might very properly be denominated *false facts*, still abounds with many grave and important truths, which, to prescribe with success for many diseases, it is highly necessary to be conversant with. For example, the diseases of gout, rheumatism, scurvy, scrofula, the green sickness of young females (temporary sterility of the blood?), with many others that I might enumerate, are all unquestionably affections primarily of the blood and humours, which are only to be cured or materially meliorated, I believe, by remedies that ply their virtues chiefly to

these parts, and produce some salutary change in their qualities and conditions.

As a therapeutic fact, is it not deserving of some little attention, the length of time from three to four months, without interruption, which this patient continued to use the mercurial oxide with the most beneficial results? The warm baths, by the manner in which it was observed, they softened and improved the condition of the skin, and by their having given a temporary agitation and change to the circulation, and also by their, in some degree, having promoted absorption and secretion, contributed something, it will be allowed, towards amending the condition of the case; but the principal remedial agent, that which finally accomplished the cure and restored the sufferer to the enjoyment of health and the possession of all his powers, corporeal and mental, was unquestionably the alterative pill. During the first three weeks or month of the administration of that mild remedy, I had no little trouble with my dispirited patient in pressing him to persevere in its use, as he stated he had been advised by several eminent physicians not to adopt such a course of treatment, as they considered it more likely to aggravate his complaints than to cure or alleviate them. But how

differently did he find the effects of the condemned treatment themselves speak! Just simultaneously with the appearance of the general and specific action of the medicine on the system, the condition of the patient in every respect began to amend. This was not distinctly discernible until after the lapse of between six weeks and two months; previous to which time, and to this commencing amendment, let me mention, I had no criterion or other encouragement to persevere in the course I was pursuing, than that the stomach and system bore the remedy without having exhibited any signs of irritation or intolerance; which, considering the nature and usually slow mode of operation of the medicine, and the chronic character of the maladies I was ministering to, was as much, perhaps, for the time as could reasonably be expected\*.

\* "In acutis morbis cito mutetur, quod nihil prodest; in longis, quos tempus, ut facit, sic etiam solvit, non statim condemnetur, si quid non statim profuit: minus vero removeatur si quid saltem paulum juvat, quia profectus tempore expletur." — *Celsus* †, lib. iii, cap. i, p. 112.

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† Styled by Calumella "Universæ Naturæ Vir Prudens."

The impotence and sterility which existed in this case for so long a period, and which forms a remarkable feature in its history from first to last, were manifestly the effect of causes seated in the constitution of the individual, and not in the local generative organisation. Was not such sufficiently proved by the general mode of action of the remedial measures employed, and their coincident, yet consequent, *modus medendi*? I prescribed no aphrodisiac or particular local irritant whatever. The testicles (the glands which secrete, as few are ignorant of, the spermatic fluid), resumed their long-suspended functions as soon as the general glandular system, on the development of the alterative excitation, was roused from its torpor and urged into activity and healthy action; and the penis—the excretory, or rather, the ejaculating duct of the testicles—recovered its power of erection when the vital secretion, for the transmission of which, during the generative act, the erectile power of the member, and its state of erection, to perfect the purposes of nature, are requisite and indispensable. In this instance of impotence, then, would we not be correct in concluding that the incapacity of the penis was not an idiopathic and primary morbid condition, but a sympathetic and

secondary one, the result of the sterile state of the testicles? And this latter lesion, again, had it not its cause in the constitution, namely, in the digestive and melancholic affections we have been considering?

In a former paper, already referred to, upon subjects similar to the present ones, I took occasion to state I was of opinion that an intimate connection existed between premature defect or destruction of the power of procreation, and more or less mental disorder. Any further observations, I have had an opportunity of making upon this interesting and important point of pathology since the publication of that paper, have not given me reason to alter, in any respect, the opinions there expressed. I look upon the matter as certain, as a *fact*, indeed, of not less regular occurrence than most others in medicine.

As in the case which forms the subject of the present contribution, it is often difficult, nay, impossible to determine whether it has been the sexual disease which has caused the mental, or *vice versá*, for the two affections undoubtedly, I think, reciprocate each other's existence; that is to say, when these maladies are observed together in the individual, in one instance it will be found that insanity has been the cause of the sexual

infirmity, and in the other this latter will, in a great measure, have been the cause of the mental ailment. Considering, however, the nature of the treatment, and the process of recovery, in this particular case, I am rather disposed to think that inveterate indigestion—aggravated derangement of the functions of the chylopoietic viscera, was in a great degree the common parent of the other principal disorders present, namely, of the melancholia and impotence. Melancholia, in fact, as one form of mental malady, is always, I believe, associated, whether in the male or female, with some sort of debility or derangement of the generative economy, but whether as cause or as effect I cannot in the present state of my knowledge positively say. How frequently, in the young female, do we find the generative lesion of amenorrhœa united with melancholia! And the remedy or treatment, whatever it be, which restores the uterine secretion, seldom fails to cure the melancholy. But more upon this subject at another time.

December 1, 1842.

CONTRIBUTION IX.

IMPOTENCE AND STERILITY.

*Case of the same in the male dependent upon constitutional causes — Treatment and cure of the case, with some practical observations on the therapeutic action of calomel, blue-pill, and Plummer's pill. — Morbid semen — Connection between it and disorder of the generative functions. — Disposition to suicide in those suffering under the malady of sexual incapacity.*

THE following case I consider a fair, and, in a practical point of view, an instructive example of impotence, which depended for years upon causes chiefly constitutional — causes which consisted, I conceive, more in an imperfect development and ill diathesis of the system, with consequent weak functional habits, than in the presence of any distinct disorders, as in the case of Mr. B., last treated of.

Mr. J. G. S., aged twenty-eight, of a sluggish leuco-phlegmatic constitution, and of a melancholic temperament; no obvious emaciation, but vascular and muscular systems generally atonic and soft; no appreciable lesion of respiration or of circulation, but pulse rather languid, and animal temperature low; countenance pale, and

of rather sad expression; pupils somewhat dilated, and irides decolourised; alvine and urinary excretions stated to be of a healthy appearance; appetite inordinate; testicles of the ordinary size, but softer than natural; epididymi contracted and empty; scrotum and penis lax and elongated. He states that he is at present, and that he has been so for years, subject occasionally to nocturnal seminal emissions of a thin watery character, and that he has never performed the act of sexual intercourse, although he has frequently attempted it, and also that for three or four years after he had arrived at the age of twenty-one he practised the sin of the "trespass of Onan." Gen. c. xxxviii, v. 9. But I cannot do better here than give the patient's own graphic account of his case from an early period.

"Sir—According to promise I proceed to lay before you a history of my case, and in so doing I shall trace back further, perhaps, than is necessary, but in this respect you will be best able to judge. In the first place I would inform you that in early youth, *viz.*, from ten years of age until sixteen, as well as I can recollect, I laboured under a scrofulous state of my constitution; was the subject of venereal desires and



nocturnal emissions at fifteen, from which time my health seemed gradually to improve, until the age of eighteen, when I had an attack of inflammatory fever, which left me greatly debilitated. At twenty-one I seemed nearly recovered from my attack of fever, and my sexual powers appeared to revive; but about that time, while performing ablution, I became accidentally acquainted with the error of the second son of Judah, which folly I practised, more or less, until the age of twenty-five, when I became better acquainted with the laws of my physical constitution, and I have no doubt I should have escaped the evils which have resulted from that vice had I been better informed, and had had facilities for the natural exercise of my generative powers. Between this age, twenty-five, and my application to you, I made several attempts to have connection with girls of the town, but never could succeed in obtaining a perfect erection (at the time of attempting it in particular) before emission took place, which I attribute partly to the fear I laboured under of contracting disease, and partly to disgust, the affection having been absent as well as the physical ability. And I must also state that, during the greater part of the latter period, I have mentioned, I was fre-

quently thrown into the company of a young female, whom I used to romp with and take upon my knee, and on many occasions these, of themselves, have caused emissions, and even conversing with her for a few moments has frequently caused a slight discharge of albuminous fluid from the urethra for two or three hours.

I will now describe my feelings and condition during the last eighteen months, or two years, which, with more or less exactness, will apply to my state for the last ten years of my life. In the first place I have been troubled with frequent lowness of spirits; pains along the spine; irritation of the bladder; fainting sensation before dinner; bashfulness; timidity; swelling of the hands and feet with very little exertion; general costiveness, but sometimes relaxation of the bowels; copious perspiration from a little extra-exertion; soon feel chilled in cold weather; appetite generally good, and sometimes voracious; often, after meals, an unpleasant feeling of fulness, with head-ache and drowsiness; sometimes troubled with painful though imperfect erection, accompanied with considerable tenderness of the extremity of the penis. Frequently the thoughts of these things would cause me great mental uneasiness; again

serenity of mind would return on some object being presented to it which caused its exercise. Then, again, I used to feel that if I could but exercise the generative functions I should be as happy as nature would permit. Thus was I tossed to and fro by conflicting feelings, when about eight or nine months before I applied to you, further evils were added to the foregoing long catalogue, one of which engaged my attention more than all others, *viz.*, dimness of sight, with great humidity of the eyes. I now began to think more seriously than ever of my situation, and to fear that I was doomed to perpetual celibacy, and the subject daily engaged more and more of my attention, in fact, it haunted me the first thing in the morning and the last at night, which had a constant depressing influence on my spirits, that led me to serious apprehensions as to the effect it might ultimately have upon my mind, when, from the circumstances I mentioned, I was induced to apply to you, since which time, through your kind attention and advice, many of those symptoms are removed, and all considerably alleviated. This statement, Sir, embraces, I think, the principal features of my case: I therefore beg to subscribe myself your much obliged and obedient servant, J. G. S. Wells Street, Oxford Street, January 19, 1842."

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This patient came under my care on the 4th of September, 1841. The treatment of his case was commenced by the administration, twice a day, during ten days or a fortnight, of resinous warm aperients in the form of pill, with a bitter stomachic infusion. By such medicines the functions of the alimentary canal were quickened, and strengthened, and the character of the alvine secretions and excretions improved. On the 17th of the same month I prescribed, and he began to take five grains of Plummer's pill every morning, with a chalybeate in infusion of quassia twice a day. I also prescribed an increased quantity of animal food, with some good beer; abstinence from wine and all spirituous stimuli; moderate exercise and regular and early hours in going to rest and in getting up; abstraction of the mind as much as possible from all amorous subjects, and the exercising of it, on every occasion of leisure from business, in the study of some interesting work of practical science.

This mode of treatment, medicinal and dietetical, was pursued for upwards of three months with the most satisfactory results. Every time, indeed, I saw the patient, his symptoms, and condition in all respects, presented additional evidences of improvement. The depression of

spirits, the fainting sensation ante prandium, and the spinal and vesical irritations, gradually became extinct. The general debility of the circulation and of the vascular system, as exhibited in the swelling of the hands and feet, and in the copious perspiration from little exertion, and in the morbid chilliness from cold, were much relieved. Only a trace, in fact, of these symptoms of circulatory lesion remained when he left off consulting me.

The head-ache, drowsiness, and sense of gastric distension after meals, the irregularity of the appetite and action of the alimentary canal, and other anomalous dyspeptic symptoms, all vanished. The irregular seminal emissions, and the urethral discharge, were completely arrested, and the perfect erectile power of the penis restored. The wateriness of the conjunctiva, and consequent dimness of sight, were removed. The constitution and entire economy, in short, of this individual seemed altered, and to a great extent renewed—regifted, as it were, with fresh life and spirit of fecundation, like the ever fruitful earth on the return of spring.

From the date above mentioned, namely the 17th of September, 1841, until the 4th of January, 1842, the compound pill of Plummer,

with an aloetic and rhubarb pill, were used regularly once, and sometimes twice a day. During the last month of their administration the gums were slightly turgid and more vascular-looking, as was also, let me observe, the glands penis; which latter part, more particularly its corona, would appear to evince the constitutional action of mercury as early or perhaps earlier, than any other part of the system before the gums or the inner surface of the lips or the pulmonary or cutaneous exhalations.

In certain cachectic and other chronic morbid states of the system, both in the male and female, when, after some purgation, it is an alterative medicine that promises to be of further benefit, there is none, according to my experience, so appropriate and efficient as the compound calomel pill. For combating an acute inflammatory affection of any important organ or membrane, with its consequent effusion and obstruction—such as, for example, an attack of acute pneumonia, of acute hepatitis, or of acute inflammation of the pericardium or peritoneum, after moderate blood-letting with other necessary antiphlogistic and preparatory measures have been had recourse to,—calomel to gentle ptyalism is without doubt the remedy chiefly to be relied on. And in some chronic inflammatory disorders and chronic local

disease and obstruction, when time is at the service of the physician—and it is an important principle, too, in judicious treatment to avail himself of it to act upon the economy and alter and remove diseased action and structure *slowly*\*—blue-pill, perhaps, taking all circumstances into practical computation, is the best agent that could be employed. But in cases similar to the one I am now commenting upon—in cases, observe, in which the pathology is not a thing of morbid relief, positive and substantial, but more a condition the reverse, a condition altogether of degree of physiological imperfection, the proximate causes of the affections consisting, for the most part, in weak and languid circulation generally, and tardy and defective performance of all the vital functions—Plummer's pill, as an alterative, rightly timed and

\* *Tuto, celeriter, et jucunde.* The therapeutic precept of the Roman physician, Æsclepiades, is excellent, but only properly applicable to treatment of acute diseases, in many cases of which, be it observed, the natural rapid progress of their pathology to fatal termination within a determinate brief space of time, is the greatest difficulty which the practitioner has to contend with. To arrest their progress then, and thereby merely gain time for the administration of remedies, and the development of their beneficial effects, is frequently three-fourths of the way towards cure.

apportioned, is without an equal. It seems to me to enliven and excite, in a peculiarly salutary manner, all the nutritive actions of the economy, and also to leave upon these, after its administration has been discontinued a somewhat persistent impression of its virtue. No simple or compound medicinal substance, that I am acquainted with, possesses the power to such a degree, of developing animal heat generally throughout the system, without the weakening accompaniment of perspiratory moisture; on which account, perhaps, it is that I have found it an exquisite stomachic, tonic, and deobstruent, in cases of dyspepsia, of general cachectic debility, and of amenorrhœa, in persons of cold phlegmatic temperaments. Sometimes alone, and, occasionally in more or less quantity in union with myrrh and aloes (as in the pill of aloes with myrrh of the Pharmacopœia), I have found it successful in the cure of amenorrhœa after chalybeates and a variety of other emmenagogues had been tried in vain. I have also witnessed its good effects in the cold species of chronic rheumatism. It is unquestionably, I think, the mildest and most delicate alterative we have, and would seem to hold a position in the class of medicines of such nature analogous



to that which Mr. Travers has, with nice discrimination, allotted to henbane in the class of sedatives. "The virtues," observes this eminent and experienced writer, "of other sedatives are, in my observation, pretty correctly appreciated. There is, however, one deserving of particular mention, both as an adjunct to opium and the best substitute when this is inadmissible." And to this the following description of the medicinal properties of henbane appears in a note which is well deserving of a place in the text of any medical treatise:—"In the ruffled states of the system generally, but especially in the over-active state of the vascular system, there is a charm in the operation of henbane altogether peculiar. It is feeble as an anodyne, feebler as a soporific; but not 'poppy nor mandragora' soothe and still so unexceptionally as henbane.\*

As a matter of some practical usefulness, let me again direct attention to a point of generative pathology which, in my first contribution upon impotence and sterility, I took occasion to notice, and of which the present case, as we have seen, affords an exemplification, namely, the immediate connection that would appear to exist be-

\* Travers on Constitutional Irritation, p. 479.

tween the thin and imperfectly-formed seminal fluid and its irregular and premature emission.

There is a sort of chemical association in the qualities and conditions of our fluids, and a certain concomitance and co-operation in the actions and functions of our economy, morbid as well as healthy; so that in the matter of any analytic minute diagnosis, where one morbid quality, or morbid action, or phenomenon, is distinctly observable, the presence of another or of others may, generally speaking, with every confidence be inferred. This observation will apply to the unhealthy character of the testicular secretion, and to the excessive irritability of the vesiculæ seminalis, and of their assistant ejaculatory muscles of the urethra and perineum; to the irregular seminal emissions, and the imperfect erectile function of the penis,—generative lesions, in the foregoing described case, associated, and all dependent upon one common cause, *i. e.* great constitutional derangement and debility.

Sir Astley Cooper, in some remarks to be found in his lectures on this subject, has given us two distinct causes of impotence in the male; first, excessive irritability of the vesiculæ seminalis, and, secondly, nocturnal emissions. But with all deference, in the fullest sense of the

word, due to such authority, I cannot coincide in the etiological distinction there drawn, as morbid irritability of the seminal vesicles and disordered irregular emissions are obviously one and the same sexual lesion, the disturbed emissions being only the symptomatic manifestations of the irritable condition of the receptacles whence they emanate.

A few words upon the medico-moral question of disposition to suicide which some of those suffering under the malady of premature and long-protracted sexual incapacity exhibit. I have never witnessed a case of the disease in which the unhappy condition of the sufferer carried him or her to such lamentable extreme as that of self-destruction, but I have prescribed for a few of those patients, the very wretched states of whose feelings appeared bordering upon it. Here is an extract from a letter which I received a few months ago from a patient the subject of sexual incapacity of some continuance, whose case I had then under my care:—"I beg you will favour me with a line to-morrow conveying the result of your deliberation on my case, on the cure of which depends the fate, I may say, both of my *soul* and *body*."

And the following is an extract from an in-

structive work on the diseases of the testicles by Mr. Russell, a surgeon of many years' experience in Edinburgh:—"The defect (impotence) rarely goes further in this country than to prevent individuals from procreating heirs to their estates. I have known very few instances of more calamitous consequences. In one distressing case, of a gentleman of rank and fortune, the effect of premature and excessive indulgences weakened him so much that he lost all enjoyment of life, sank under a degree of despondency which did not admit of consolation, and, though I encouraged him to marry, in full confidence of his recovering his health by prudent management of his constitution, he would not listen to my exhortations, and drowned himself in a fit of despair\*."

In a great many cases of suicide it is certainly difficult, and in some, indeed, it is impossible, to arrive at a knowledge of the *vera causa* of the sad act, but I have no doubt that the sexual disorders in question sometimes lead to its commission in both sexes, and no human being is ever aware of the dark truth but the unfortunate victims.

February 7, 1843.

\* Russell on the Testicles, p. 36.

CONTRIBUTION X.

IMPOTENCE AND STERILITY.

*Cases in exemplification—Plans of treatment—Cures—The arrest of the seminal discharges the first step towards cure—Disposition to insanity in these cases of sexual incapacity from unnatural sexual indulgences.—Injurious effects on the healthy testicles of putting them in a suspensory bandage, and not allowing them to remain in their natural pendulous swinging position.*

THE following cases of generative disorder and morbid seminal emission with consequent temporary impairment, of more or less grave character, of the powers of procreation, which lately came under my observation, I consider it proper and indeed a duty in me to place before the public.

CASE I. March 15th, 1843. Mr. C. L. W., aged twenty, of fair hair and similar complexion; of rather slender frame of body, and nervous temperament; countenance pale and dejected, and much decolourisation of the irides; skin generally pale and anæmitous; flesh soft; is very easily affected by cold and heat; and perspires and feels fatigued from but little exertion; respiration healthy and somewhat intense; pulse

frequent and rather soft and small; action of heart regular, but impulse feeble, and sounds sharp and diffused, and accompanied with a *bruit de soufflet*, very similar to what we find in the chlorotic female; appetite irregular, sometimes inordinate, and at other times the contrary; bowels for the most part confined; is timid and bashful, and subject to occasional fits of lowness of spirits and ungovernable gloomy thoughts and forebodings of insanity; sleep light and little restoring, and accompanied frequently with seminal emissions, which he finds very debilitating, and which he blames as the cause of all his other ailments; testicles of the ordinary size but void of firmness, and the epididymi are empty and contracted. He states that for the last three years he has practised the vice of unnatural sexual excitement and seminal emission, an immorality he learned from a comrade-boy at school, and that he has never performed or attempted the act of generative intercourse, from fear he laboured under of contracting disease.

For this young gentleman we prescribed a mild course of resinous aperients together with the administration twice a day of a dose of the muriated tincture of iron with a few drops of laudanum; regular and early hours in going to bed and get-

ting up; discontinuance of his vicious habits and of all sexual excitement. He had been in the habit of breakfasting at nine o'clock upon a cup or two of coffee or tea with bread and butter, and going without any other food until dinner at five o'clock, I advised him to take a little animal food and an egg, if he fancied it, every morning with tea for breakfast, and to dine between two and three o'clock, or, if he could not conveniently alter his dinner hour, to take a lunch of sandwich or mutton-chop between one and two, and to make, in consequence, a lighter dinner; no wine or alcoholic liquors of any sort to be used, but to drink water or a little good beer when thirsty; to have the cold hip-bath thrice a week.

March 24th. Has pursued the plan of treatment laid down regularly since last visit. The pills have caused the bowels to act rather frequently, and he feels a little weak in consequence. Has had fewer of the nocturnal emissions. Otherwise no change.

Omit the use of the aperient pills, but continue the steel drops and other remedial measures.

April 24th. Is very much improved in all respects. Has not had any seminal emissions for

the last three weeks, and feels his strength daily increasing.

Continue the remedies prescribed.

May 10th. Is still further improved since last visit; his lowness of spirits has entirely vanished, and he is much less nervous and reserved; the seminal emissions have entirely ceased to trouble him. The appearance and constitutional condition of this patient having struck me as bearing a strong resemblance to that of a female labouring under the malady of chlorosis, I prescribed for him the following mixture:—

R. Mist. Ferri comp. ℥ viiss; Tinct. Cinnam. Comp., Spt. Myrist. aa., ℥ ij. M. Ft. mistura cujus capiat cochlearia magna duo bis die.

Omit the steel drops, but continue all the other remedies.

June 6th. Has used the remedies prescribed faithfully, since last visit. Is so improved that he feels to-day a different person altogether from what he was two months ago. His countenance has lost its paleness and drooping dispirited look, and has acquired vigour and animation. There has not been any repetition of the emissions; he sleeps soundly and awakes refreshed; he feels his flesh becoming firm and his muscles strong, and his timidity and bashfulness are daily



lessening; the testicles have increased in size and have become firm, and the reproductive orgasm and energies he considers now strong and healthy, in short, he looks upon himself as being quite well.

Of this patient I heard no more, and his case obviously requires no comment, as the facts of it speak for themselves.

CASE II. "August 2, 1843.—Sir—I have lately taken up a number of the *Lancet* in which it appears that you have treated successfully that disease which I had almost given up in despair as absolutely incurable, namely, a case of impotence arising, to a certain extent, from early depraved use of the genital power. Pray advise me under similar circumstances. I will state to you, as concisely as possible, the leading features of my case, and should there be any thing further, that may be necessary for you to know in order to judge properly of it, I will ask you to send such questions as you wish answered.—I am twenty-five years of age, in good general health, and have never had a day's illness, that I can remember, save a slight indisposition now and again arising from a bilious attack; I am moderately spare in person, and do not possess great

muscular strength; my habits of living you will probably be able to judge of from the nature of my occupation, a commercial traveller; I do not think, at least I hope, that my virile powers are not entirely destroyed, but considerably enfeebled; I am frequently troubled with nocturnal emissions, sometimes for two or three nights consecutively; I experience no pleasurable sensation during the time of the emission, nor would it appear that an erection always takes place or, if it do, it is but a very imperfect one; I cannot say that I ever have a perfect erection at any time. My intercourse with women has always been forced, with little pleasure to me at the time, and always with great disgust afterwards. If I obtain an entrance the emission takes place almost instantaneously, and frequently before it can be obtained. The least dalliance sometimes with a female produces a discharge of a viscous whitish fluid from the urethra without erection. Such is my state, the result, I have little doubt, of the early bad habits I have mentioned. I applied to a physician, in the same manner as I now apply to you, but his prescription, which I forward to you, was of no avail. With your other matters to occupy your time you will not thank me, Sir, for an account of my reflections on my

condition, but, of this I am quite sure, that, had my employment been sedentary with much time for thought instead of bustling, I must either have gone mad or ceased to live; as it is, I feel that my energies and spirits are daily failing, and the subject of my ailments is now fairly beating me. I am, Sir, your obedient servant,

R. S. I.

Post Office, C——t Street.”

For this patient I prescribed nearly the same remedies and plan of treatment as for the previous case of C. L. W., and the following is a further account of his condition.

“August 28th.—Sir—I have to thank you for the instructions contained in your letter. At the time I received them, I was suffering from a bilious attack, for which I took my usual remedy, a five-grain calomel-pill and black-draught. I commenced taking your medicine on the 16th, the pills in the evening and the draught in the morning, as prescribed, repeating the same on Friday last and again on Monday. The drops (twenty-five in number) I have taken in a wine-glassful of cold water, in the morning on getting up and again at noon, every day. I have had no emissions since. I do not, of course, expect to derive any particular benefit from any treat-

ment in so short a period. My spirits, however, are better. The effect of the drops has been to make the discharges from the bowels perfectly black. You mentioned in your letter that I was to abstain from all stimulating liquors. Do you include wine? I have followed your instructions relative to this point to the letter. Indeed it is no particular gratification to me to take wine, but from the nature of my occupation, I am thrown much into the society of those who do take it, which, for the purposes of business, I am compelled to join in. At the same time I will be prepared to follow up any plan you may lay down whereby I may become myself again. Waiting the favour of your further instructions, I am, Sir, your's gratefully, R. S. I.

Post Office, C — t Street."

To the above letter I replied by prescribing an increased dose of the chalybeate drops, and by advising the gentleman to persevere otherwise correctly, for some time longer, in the mode of treatment I had enjoined, and the following is the next communication I received from him.

"October 5, 1843.—Sir—I have continued the use of the medicine you prescribed for me, and have also followed your rules, and I am happy to say that the nocturnal emissions have almost

ceased, having had only one since your last communication, and in other respects I feel my condition improved. I now write to you to know what further steps are necessary for me to take. Your's gratefully, R. S. I.

Post Office, C——t Street."

I now a second time advised this gentleman still to persevere in the entire plan of treatment he had been pursuing, and I have not heard any thing more of his case since, but I have little doubt but that the satisfactory improvement which had taken place went on to more or less perfect establishment of health.

CASE III. March 27, 1843. Mr. A., aged twenty-seven, of fair complexion, stout person, and leuco-phlegmatic form and temperament; countenance pale, haggard, and melancholic; irides decolourised, and eyes dull; muscles and flesh soft; states that he has been troubled for the last three or four years, by nocturnal emissions which occur three or four times a week, and frequently without being accompanied with erections; has practised the sin of the "trespass of Onan" some years ago, but not at all lately; his spirits are always bound and depressed, and he has frequent uncontrollable

fits of wretchedness and presentiments of insanity; is always nervous and timid, and his voice, he thinks, is weaker than it should be; he cannot perform the act of sexual intercourse in consequence of anxiety and the emission (which is thin and watery) taking place before the penis has entered the vagina, and sometimes before it is more than half erected; sleep light and very easily disturbed; appetite irregular, sometimes voracious and at other times the contrary; bowels generally torpid and confined; excretion of urine occasionally rather frequent. He has been under the treatment of an advertising empiric for the last two years, and has taken a great deal of medicine without having experienced any melioration of his complaints. By the advice of this empiric he has been wearing a suspensory bandage for more than a year. He has neither sarcocele, varicocele, nor any kind of organic disease of the testicles or spermatic cord, but the testicles are considerably wasted, being little more than one-half their usual size, and soft.

My prescription for this patient was that he should leave off altogether for a time all attempts at sexual intercourse; that his habits of life ought to be regular, observing early hours in

going to rest and in getting up, not being out of bed after eleven P. M., nor in it after seven A. M.; that he should take considerable moderate exercise daily in the open air; that his diet should be chiefly solid, and plainly cooked, and that it was necessary to take a little animal food at breakfast as well as dinner, and to use no other sort of drink but water or good fresh beer. The suspensory bandage to be thrown aside.

I also prescribed a gentle course of alterative aperients with a dose of the muriated tincture of iron twice a day, joined with a few drops of the tincture of opium.

April 1st. The aperient medicine has acted rather strongly. Condition otherwise as before.

Continue the treatment prescribed.

29th. Condition in every respect much improved; he has lost much of his timidity and nervousness; the seminal emissions are less frequent, and his spirits are greatly improved; his countenance is becoming animated, and he sleeps much better and feels stronger and more refreshed in the morning. The suspensory bandage has been laid aside since last visit, and the size of the testicles are increased nearly one-half, and they also feel more firm.

Let the treatment in use be continued with

some increase of the dose of the chalybeate drops.

May 9th. His improvement continues to go on most satisfactorily; his muscles and flesh are becoming firm; his eyes are acquiring depth of colour and animation; he sleeps well and gets up in good spirits; he can take double the exercise he formerly could do without fatigue, and he has got rid entirely of his disagreeable susceptibility of heats and chills; he has still occasionally some nocturnal seminal emissions, but he thinks they occur during a sexual somnium, and with perfect generative development of the penis.

Let two table-spoonfuls of Griffith's myrrh mixture be taken twice a day, and continue the diet and other treatment prescribed, and let a pint of warm milk with a large slice of bread be taken every evening at nine o'clock P. M., for some time, and no other supper.

20th. The improvement still goes on most satisfactorily.

Continue the same remedial measures.

June 6th. Feels himself in every respect vastly improved, at which he is greatly rejoiced; his general and local debilities are nearly gone; and he has not had any repetition of the seminal



emissions since last report; he states that his friends used to remark—"how queer and ill you look! but they don't do so now." His timidity and involuntary reserve, which had been for years a great annoyance to him, have disappeared and he now feels himself in every respect a totally different person.

R. Sulph. Ferri., gr. jss; Sulph. Quinæ., gr. j; Pulv. Rhei., gr. ij; Ol. Cinnam., gut., j. Ft. Pilula. Mitte xij. Sumat j omni die ante prandium hora una.

Continue the treatment otherwise, and let a cold hip-bath be taken thrice a week.

July 11th. Considers himself well and cured. He complains now of nothing but of a slight gleet discharge which takes place from the urethra every morning on the subsiding of sexual development. This discharge was diminished after a time by the use of a stiptic injection, and the gentleman left off consulting me.

In some cases of sexual lesion — in cases like the following one, for instance, the generative organization of the mind would appear to have sustained greater injury and become more prostrate than the generative organization of the

body. It is such cases, no doubt, of the class of sexual maladies, that will always be found the most difficult of cure or amendment.

CASE IV. "August 28, 1843.—Sir—I have been induced by the perusal of your paper in a number of the *Lancet* of January last to seek your opinion and advice. An object and degraded being (for whom language has no name) I could not consult you personally, and feel that I owe you an apology even for addressing you on such a subject. My character is, indeed, beneath contempt; but if you knew the mental agony I endure, the entire prostration of all energy, moral and physical, the utter incapacity for any and every sort of enjoyment—the wear of the heart from the unremitting pressure of *one* overwhelming and degrading sorrow—a sorrow, too, that one cannot communicate, but *crimine ab uno disce omnes*:—if you knew the horrors of a state compared to which all other sufferings appear trivial and enviable, your contempt would be converted into pity; and, as humanity is generally the attribute of a scholar and a gentleman, may I venture to ask you, in the exercise of that humanity, to forget the cause, and give your attention to my case, as though it were one in which vice had no part.

Though my unhappy malady is of several years' duration, I have never consulted any one, nor read any work connected with the subject except one, and I have not much hope from any direct applications, medicinal or otherwise; but it has occurred to me that you might afford some general directions what to do and what to avoid doing: I have fancied, too, that, during the last two or three months, there has been a change for the better in my system, as if nature were making an effort to re-establish her powers, and I have hoped that your advice might enable me to encourage and assist her.

*Symptoms.*—Absence of sexual desire; erections only in sleep or upon waking in the morning; somnolent emissions at intervals of about eight days; a sensation of great weakness in the parts; an occasional slight muculent discharge from the urethra; penis flabby and pendulous; testicles unchanged; frame thin and emaciated; countenance pale and haggard; extreme irritability and dreadful anticipations of insanity; aversion to society; torpid and indifferent to all amusements and enjoyments; no energy and character generally inert and irresolute.

*Constitution.*—Age thirty-eight; liver, heart,

and lungs sound; digestion difficult, and consequent frequent headaches; appetite sufficiently good; duration of complaint several years. I remain, Sir, your obedient servant, H. I.

Address—Post office, C——h Street.”

For this gentleman I prescribed a nearly similar plan of treatment to that which was pursued in the three preceding cases here described, and the following is the next account of his case I received.

“October 2, 1843.—Sir—I have taken the medicine regularly, and attended to all your other recommendations, and I now write to say that with regard to my *general health* I feel much benefited by your advice. I feel stronger, more active, and capable of greater exertion with less fatigue; my appetite has been good, and my bowels regular, but with respect to the *particular* symptoms I do not perceive much alteration. I enclose you the last prescriptions, and shall be glad to be favoured with your further instructions. I remain, Sir, your obedient servant, H. I.

Post Office, C——h Street.”

I now prescribed (together with the further employment of the entire plan of treatment he had been pursuing) the use for some time of a

medicine of glandular alterative action, and I have not been re-consulted in the case; from which I am disposed to infer that the considerable improvement which had taken place in so short a time in this inveterate case went on still further, and, perhaps, to restoration of perfect health.

It is hardly necessary for me, I conceive, to make any comments on the four cases of sexual disorder here described, as the facts which they contain, manifestly, of themselves, speak much that is practical and instructive. I will observe, however, that, in the treatment of these distressing maladies, the first thing, which reason and experience would dictate to the practitioner to do, is to arrest as soon as possible the seminal emissions. All the other morbid phenomena, both general and local—the debility of the constitution, of the circulation and nervous system, and the absence or imperfection of the generative orgasm, are chiefly the effect of the unhealthy elimination of the seminal secretion from the system. It is not in the least difficult to understand how frequent seminal emission, unassociated with the act of generative intercourse, must injure, and, in aggravated cases, altogether prostrate the function of generative orgasm. In the actual orderly physiological process of

propagation it is the spermatic emission which, in the male, terminates the train of phenomena; on the occurrence of which, as we experience, the preceding and preparatory orgasm of the penis immediately subsides. But in those cases of seminal emission, in solo and morbid, the order and harmony of the propagative process is disturbed, and that phenomenon, namely, the emission, which should be late and the last of development, occurs early, and in some aggravated cases, indeed, without the development of the others at all. Thus, in such instance is nature thwarted in the complete and proper performance of her functions by the misplaced development of one of her phenomena.

The depression of spirits, nervousness, melancholy, and forebodings of insanity—occasionally the actual paroxysms of that disease—which are present, in a more or less severe degree, in all or the greater number of these cases of sexual disorder and premature impotence, such as we are considering, are points in mental and physical pathology most worthy of attention. I must here repeat an opinion, which I have already stated in one of my previous contributions, namely, that disorder, temporary prostration, and premature destruction of the procreative

powers, both in the male and female, from over-exercise, natural or otherwise, are the most frequent of all causes of nervousness, mental imbecility and derangement. That such is fact and truth there cannot, it is certain, be a doubt.

In every case, of any degree of aggravation, in which I have been consulted, and latterly such cases have been pretty numerous, nervousness and fear of becoming insane were the symptoms, next to the defect of the procreative power, which appeared to cause the individuals most disquiet and misery. See how this dread of insanity was present in all the four cases which form the subject of this contribution. With respect to the eyes in the severely impotent and insane, according to my observation, they manifest one morbid phenomenon in common, I mean more or less *blanching* of the irides.

In the case of Mr. A. the great reduction of the size of the testicles in consequence of the use of a suspensory bandage, which, by the advice of an empiric, he had been in the habit of wearing for nearly two years, is a practical point of some little importance. Except where there is organic disease of the testicles or of their appendages such as enlargement of them and of the scrotum from chronic inflammation,

sarcocele or hydrocele, causing increased weight and pain, a suspensory bandage should never be had recourse to. Its effect, on healthy testicles, by elevating them from the hanging swinging position in which nature has, with care and design, placed them, is to impair their circulation and dependent vital functions of nutrition and spermatic secretion. There are no other organs of the body obviously so much detached from its general frame and structure as the testicles; and none, I believe, in which the circulation has to perform so tortuous and difficult windings. How has nature, then, in the little economy of the reproductive system, compensated these difficulties of physics and physiology? Why, by the constant agitation, during the exercise of the body, which the testicles experience from their location at the bottom of the bag of the scrotum. Undoubtedly such agitation must ever have the effect of more or less stirring and quickening the otherwise sluggish circulation of the testicles; and, when these glands are not diseased, it is certainly an error in therapeutics to brace them up for any length of time in a suspensory bandage, as it has the effect, as I have seen in more instances than one, of considerably lessening their size, and



consequently of injuring the generative powers. The tight white breeches or trowsers, and the tight leather-breeches, which we may observe worn by some of our dragoons, and by postilions, and gentlemen in hunting, by keeping, as they do, the testicles constantly bound motionless and compressed on one of the thighs, cannot but have the effect, to some extent, of a suspensory bandage on them, and in some instances must undoubtedly injure their structure and functions. The impotence, noticed by Hippocrates and others, to which the Scythians, who spend the greater part of their time on horseback, are liable, is more likely, I should think, to result from the braced-up and quiescent state in which the testicles are year after year retained, through the habits of these wild equestrians, than from any other cause.

January 15, 1844.

## CONTRIBUTION XI.

### IMPOTENCE AND STERILITY.

*Two remarkable cases in medical gentlemen—Histories, descriptions, and modes of treatment of the cases—Cures—Commentary observations diagnostic and pathological—Utility of Plummer's pill and the compound myrrh-pill in some cases of inveterate dyspepsia—Emesis though sometimes more productive of depletion yet less exhausting to the system than catharsis—Parts of the subjects of impotence and sterility not treated of.*

THE following case of strictly constitutional, and, it might be added, dyspeptic impotence, in a medical gentleman, is one that will be found, I conceive, in every respect remarkably interesting and worthy of attention.

“ May 27, 1843.—Sir—I am an unfortunate member of your own profession who am labouring under that most distressing of all diseases, impotence, which you have treated so philosophically in your papers in the Lancet. I am in my thirty-eighth year, of good muscular development. I have never been robust, but I have always been healthy, with the exception of my present unfortunate malady. I have always been very irritable. Perhaps I belong to the nervo-sanguineous temperament. Very early in

life I commenced to enjoy venereal pleasures, and gave myself, I may say, completely up to them. I also practised, for a short time, unnatural excitement of the generative organs. In the year 1828 I suffered from fever of which I had two relapses, so as to be confined to my bedroom from October to Christmas. Immediately on my recovery a change in the circumstances of my family occurred which had the effect of depressing my mind exceedingly, and, being yet a student, I then for the first time betook myself to very hard study. I also, at that time, contracted a most virulent gonorrhœa, which continued upon me for months, and during connection with females, which I did not refrain from even during the gonorrhœa, I had frequent bleedings from the urethra, which was followed by two or three attacks of inflammation of the right testicle, that left the organ larger than before with hardened epididymus. Next came all of a sudden complete incapacity of erection. On applying to my master, Mr. K., (not for the impotence) he found I had stricture, and the night after passing the instrument the erectile power returned, but only for a short time.

I contracted marriage in 1833, when, strange

to say, my virile power evidently improved, although I indulged exceedingly. About five months after marriage secondary venereal symptoms appeared on my wife, and subsequently also on myself; but I must do myself the justice to state that the infection was caught before marriage, which evinced itself merely by a heat and itching in the folds of the scrotum, of which I thought nothing at the time. My wife now was pregnant, and could not be cured until after her confinement. The child was still born at about the eighth month. All these circumstances united gave a very great shock to my nervous system. My wife has never since become pregnant.

I got on comparatively well, however, until the year 1836, when I was attacked by the severe influenza, which then prevailed; and from the commencement of the attack of that disease my virile power and capacity of erection underwent a very material alteration for the worse. I had no involuntary erection; it was only by dalliance I could procure one. There was a feeling of emptiness and prostration about the genitals with coldness and flaccidity; there was generally a discharge of seminal fluid when the bowels acted, and when I attempted to have

connection with a female of the town, in the expectation that I might succeed better than at home, there was a complete and total failure, and every such attempt left me worse, and the feeling of prostration about the genitals greater than before. At this time, too, the left testicle appeared to undergo a degree of atrophy, and the right to become larger, harder, and as if congested. I also suffered considerably from neuralgia of the right testicle.

During all this time my constitution and disposition underwent a series of changes; first, my stomach gave way and I was harassed by the most troublesome dyspepsia; I suffered from a feeling of faintness and sinking in the præcordia about noon. My mind became irritable beyond measure. I became peevish, ungenerous, low-spirited, pusillanimous, shy, silent. I despaired and wished for death, but had not the courage to seek it. I took no pleasure in any thing. My cup of wretchedness, though full, was not yet overflowing. In the early part of the year 1842 my wife got hysterical mania, and was obliged to be removed from her home. I cannot describe to you the shock which this event gave to my whole frame coupled, as it was, with unpleasant domestic circumstances, which I need

not mention. During my wife's absence of six months, to save myself from the horror of self-destruction, to which I was greatly inclined, I at length, for the first time, made my case known to a second person, a gentleman in London, who advertises in the newspapers, who gave me some general directions, and offered to cure me with some specific medicine for a sum of money which I could not conveniently have procured. Believing him to be an unlicensed person, I did not make known to him that I was a medical man. I certainly improved somewhat by following his directions, but it was only for a short time. And now for my later and present condition.

Last Christmas I began to experience a change greatly for the worse, both in my general health and in the genital organs. My appetite since has sometimes been voracious, and at other times the contrary, although I have eaten much occasionally. The sinking in the stomach before dinner and hysteric movements of the bowels are often truly distressing, and, during the presence of these, the genitals, though braced previously and in the morning, will begin to hang. I never feel comfortable after meals except occasionally after breakfast; yet I am not now harassed, as formerly, with acidity of the stomach; swelling

about the epigastrium ; short breathing ; and palpitation of the heart. I have seldom any thirst ; the bowels are pretty regular, unless when I am under the influence of great despondency, and then they are confined, and their discharges are perhaps darker than natural. My breath is always bad. During the entire winter my sleep was light and unrefreshing. I usually awoke about four o'clock and could not again fall asleep until about day-break, and when I did, I afterwards awoke with a feeling of extraordinary prostration.

The urinary secretion exhibited a very marked alteration from Christmas until within the last three weeks ; it was very scanty and very muddy, and, on testing it, it was always acid ; when not so muddy, there was on the surface of it a semi-transparent pellicle. This unhealthy condition of the urine and general prostration were always coincident and proportionate. The temperature of the skin was decidedly low ; the pulse feeble ; and there was a general indisposition to either bodily or mental labour, but more particularly to the latter. I suffered from muscular pains in various parts. Above all my condition was aggravated by a number of angry pustules on different parts of my head, which, on disappearing, left behind them bald spots. I also had one

or two of these little pustules or anthraxés on my jaw and several on my fingers, with the utmost indisposition to heal.

During this time the prostration of the genitals was still increasing, and was so great during the latter part of March and all the month of April that I did not at all experience an erection. There is now constantly, when the bowels act, a discharge from the urethra, of a fluid of three different kinds; first, a fluid resembling thin milk; second, a fluid of the appearance of green mucilage; and third, a fluid more consistent and somewhat resembling the white of a half-boiled egg. My symptoms are always a great deal worse when the two last discharges occur.

During the winter, when I had an imperfect connection, there followed it a degree of bodily and mental prostration truly distressing, and which continued for at least a week afterwards. This prostration after connection I never experienced before the last winter. If I attempt connection with a stranger there is no erection, but the semen is discharged. I have been always worse at the end of winter and throughout the spring. Is this owing to the occupation of spending a couple of hours each day, at these seasons, in the dissecting room? The state of my mind at present is dreadful, and was the same during



all the winter. My memory is greatly impaired; I dread insanity or self-destruction; religion has fled my breast; I am become a misanthrope and blasphemer; originally possessed of some talent and a great deal of energy, I am now a pusillanimous driveller struggling for existence and incapable of the struggle, with vain remorse for the past, confusion and wretchedness at present, and no hope for the future unless indeed there be a ray derived from the perusal of your papers, which I saw for the first time in February last. Your philosophy perfectly astonishes me. You are so far before the rest of the profession. The profession appears to me to be in great ignorance of the physiology and pathology of the male system of generation. In you now is my only hope. If I fail with you, I dread the consequences. I send you this letter with the intention of presenting myself to you within a few days. My own idea is that I have an affection of the ganglionic system, with particular debility of the genital organs. Until I see you pray forgive this detail of error and its dreadful punishment. I am, Sir, your obedient servant, S. M."

Could there be a portrait, no, but rather, I should say, historic picture of disease more truly deserving of attention from the zealous practitioner

and diligent student of practical pathology than the one now given? The fact of its being the case, noted and described by himself, of evidently a well-informed medical gentleman, renders it the more valuable as the symptoms, it is obvious, are more certain of being thoroughly and accurately observed. A day or two after I received the case in writing the subject of it presented himself to me in person, and, on examination, I could find little to add to, or correct in, his own account of his condition. His countenance was anxious and dispirited; his cheeks congested; his flesh generally soft; there were manifestations of considerable congestion of the entire venous system,—*false* plethora, and the pulse was frequent and unresisting; the abdomen was rather large, and there was infarction of the hypochondria indicative of more or less congestion and enlargement of the liver and spleen. The right testicle and spermatic cord were considerably larger than natural, and the left somewhat smaller. The heart and lungs were perfectly sound, and no symptom was manifested of any affection of the brain. The case altogether was evidently one of much complication, but it appeared to me to be resolvable into one of dyspepsia severe and inveterate,

which had merged into cachexy, hypochondriacism and melancholia, with great accompanying constitutional and local (generative) debility and disorder, the original evil and cause (and by no means an unfrequent cause of dyspepsia and its morbi comitati) being sexual intemperance and dissipation.

The same plan of alterative diet and regimen, which I had repeatedly prescribed in not un-similar cases with the most beneficial results, and which I have already laid down in detail in one or two of my previous contributions, I recommended this gentleman at once to adopt, together with the following medicamenta.

R. Tinct. Ferri Muriat.,  $\bar{3}$  ij; Tinct. Opii,  $\bar{3}$  j.  
M. Capiat gut. xx bis die ex cyatho aquæ frigidæ.

R. Hydrarg. Chlorid., gr. iij; Extract. Colocynth. Comp., gr. iv; Pulv. Ipecacuanhæ, gr. ss; Extract. Hyosciami, gr. j. Ft. Pilulæ duæ. Hora somni sumendæ.

R. Infusi Sennæ comp.,  $\bar{3}$  j; Sulph. Magnesiæ,  $\bar{3}$  j; Tinct. Cinnam. comp., Spirit. Ammon. comp., aa,  $\bar{3}$  ss. M. Ft. haustus. Primo mane sumendus.

These aperient pills and draught to be repeated twice a week; a warm bath to be taken once a week at eight o'clock P. M., and a cold hip-bath

every morning. The following is the next report of the case.

“July 2, 1843.—Dear Sir—I should have troubled you with a communication ere this, but that circumstances, to which I alluded when I saw you, prevented me from pursuing the plan of treatment that you were kind enough to prescribe. I have up to this date taken four doses of the purgative pills and draught. I have taken the tonic drops night and morning regularly. I retire to bed at ten o'clock, and sleep alone. I rise at seven, and breakfast at eight, upon a little cold meat and an egg with chocolate. I dine at two upon roast or boiled beef or mutton, bread, and cold water for drink. I take my third and last meal at seven P. M., which consists of cocoa, with bread and butter. I have taken one warm bath, a little before bedtime, at the temperature of 98°. I remained in it half an hour, and it appeared to me to produce prostration, which continued during the next day. I use the cold hip-bath night and morning. The purgatives acted most salutarily, without pain or griping, and with scarcely any prostration; they brought away each time a large quantity of dark matter. I never supposed I should have borne the action of purgatives so well. I feel con-

siderably lighter and better than when I was with you. I sleep better and my appetite is good. I feel somewhat thirsty after the purgative medicines, but there is no confinement of the bowels after their immediate effect is over. The urine has been muddy but once since I commenced the treatment. All symptoms of dyspepsia have nearly fled. I never feel oppressed or loaded after meals now, and there is scarcely any gas in the bowels. The sense of precordial sinking does not take place at noon as before. I experience a little of it at bedtime and in the morning before getting up, and until breakfast, when I also experience hysteric movements of the bowels. The idea of self-destruction now never enters my head, and the emasculation of the mind is certainly less. The genitals are still pendulous, and the urethral discharge, when the bowels act, is still unabated. On last Friday, the day on which I took my last purgative draught, I experienced two or three times, an erectile development.

I have now laid before you, as accurately as possible, every thing that has occurred in my case since I saw you. Will you kindly consider my letter and say what next step you wish me to take, both as regards diet and medicine?

Whilst I anxiously wait your reply I shall take a fifth dose of the purgatives. Permit me to subscribe myself, dear Sir, your most obliged and faithful servant, S. M."

My reply to this communication now was:—discontinue the purgative medicines, but go on in the use of the drops and in the plan of diet and mode of living you have been pursuing; take the following alterative pill twice a day:—

R. Massæ Pil. Aloes c. Myrrha, gr. iij; Hydrarg. Chlorid. comp., gr. iss.; Ol. Carui, gut. j. Ft. Pilula. Mitte xij.

Have yourself examined by an experienced surgeon to ascertain whether or not you have disease of the prostate gland, and let me know the result of the examination.

"July 11th.—Dear Sir—Many thanks for your punctuality. In accordance with your advice I consulted Mr. G., who is considered the best authority here on urino-genital diseases. He examined me and stated that, as far as he could perceive, the prostate gland was perfectly sound. I mentioned to him the three different discharges from the urethra, which I have already described to you in my first letter. He was rather surprised at the one that resembles gum-mucilage, and said that perhaps it came from the vesiculæ.

He told me not to think about it, and said it would wear itself out. I have been obliged to omit the pills last ordered in consequence of their producing griping sickness and four or five evacuations daily. I have taken only five of them, and do not intend to take any more until I hear from you again. I eat a very good breakfast of meat and an egg, but I am not able to eat much meat again at two o'clock. Would it answer the same purpose to eat a little meat, as lunch at two o'clock, and dine at five? When I returned from London the physicians here refused to certify as to my wife's insanity. They have at length done so, and she was removed to an asylum on the 9th instant, which has been the cause of the most poignant mental agony to me. It is not irrelevant and unnecessary to relate this circumstance to you to put you in possession of the whole facts of my case. It would be next to impossible that I could recover under such trying circumstances. My mind is now more tranquil. I have had no erection whatever since I last wrote, and the discharge from the urethra continues as before. I do not, however, feel the same general prostration as when I last wrote, and I have not been taking any wine. I have taken a bath at 90, and it did not as before

produce prostration. Waiting your reply, believe me, dear Sir, your's most faithfully, S. M."

I replied to the gentleman immediately, and advised him to go on confidently in the plan of treatment he had been pursuing, in every respect, with the exception of the alterative pills, which I recommended him to take one every other morning, instead of twice a day.

In the treatment of inveterate cases of dyspepsia, like the very remarkable one I am now giving a history of, where always or certainly for the most part, there is more or less congestion of the liver and spleen and of the entire organisation of digestion to emulge and remove, this alterative pill, composed of Plummer's pill and the compound myrrh-pill of the pharmacopœa, will frequently be found most beneficial and efficient. See the number of excretions from the bowels daily, in this case, this pill produced, although the dose was manifestly but a small one. These excretions, during their operation, appeared to debilitate the system, and certainly did debilitate it considerably, nevertheless their effect was much for the ultimate benefit of the patient, as undoubtedly no real and permanent improvement of his condition could have been brought about without them. It may



appear singular and somewhat difficult to explain, but the fact, I am convinced, is no less true, namely, that the system, in many instances of disorder, cannot afford, without incurring a greater degree of exhaustion and debility, to eliminate as much fluid morbid matter by catharsis as by emesis. The ancient and less modern practitioners, some of them not dull observers, were more in the habit of having recourse to emetics in their therapeutics than those of the present day.

“August 11th.—Dear Sir—Subsequent to the posting of my last letter to you, in which I complained that the alterative pill had disagreed with my bowels, I suffered a most violent attack of indigestion, during which the stomach appeared almost to cease to discharge its functions, for every meal produced a sensation of heaviness, coldness, and swelling, in the epigastrium. I became so weak that I could not take any exercise between breakfast and dinner, but was obliged to recline on a sofa during the greater part of that time. For this state of debility I ventured to take a tepid shower bath each day before dinner, and under its influence I regained strength again. I then recommenced the alterative pill, according to your last instructions,

every second day, but the first I took appeared to renew the dyspepsia. Thinking there might have been a mistake, I now had the pills made up in another house, and I only took the tonic drops at night, fearing that possibly, by taking them in the middle of the day, their effect might be opposed to that of the morning pill, and so be productive of the stomach derangement. But all would not do. Every pill I subsequently took, though it did not produce such violent effects, left me uncomfortable, and caused in the bowels a disposition to discharge their contents two or three times a day, or sometimes more frequently. The genital organs, too, became very flaccid and pendulous, a condition from which they had been free for a considerable time previous, and I further had about them the instinctive feeling of emptiness and total impotence. The discharge from the urethra has been less since I last wrote; but whether such has been owing to the free state of the bowels, or to increase of tone in the parts themselves, I cannot say. On Thursday and Friday, August 3d and 4th, the excretions from the bowels were more nearly healthy than for a long time before. On Friday night, August the 5th, and following morning, I took the aperient pills and draught, which brought away a great

quantity of dark unhealthy looking matter. I took an alterative pill again on Sunday morning, being the seventh since I last heard from you. The same day I dined upon tender corned-beef, goose, and green peas, and afterwards took a couple of glasses of good Port-wine, and since that day I have been miserable both in body and mind; my stomach and bowels out of order, the discharges from the latter being very unhealthy and dark. Nothing in fact appeared to agree with my stomach but a broiled mutton-chop. I slept badly, awaking about half-past three and falling asleep again at five or six, and then unable to get up until eight or nine; my temper became irritable again; I felt extremely wretched and tired of life; in fact, I was in despair, and had not energy to write even to you. Yesterday morning I awoke at half-past three, and could not again fall asleep. At six o'clock I discharged from my bowels a considerable quantity of dark, heavy, clayish matter, the discharge of which acted like a charm, as I immediately became tranquil and slept soundly. In the early part of the same day I had three similar discharges from the bowels. I afterwards went to dine with a friend two miles from town, and the first decided improvement I felt in myself was this, that,

although I did not sit down to dinner till six o'clock, an hour later than my usual time, I felt neither craving nor sinking. I dined heartily, and drank at least half a bottle of Port without any inconvenience, although previous to this two glasses made me hot and uncomfortable. I walked home without the least fatigue, and slept soundly all the night. I feel a great deal better both in body and mind to-day. I am surprised and disappointed that the alterative has disagreed with me, who have before taken mercury in all its shapes, even the bichloride. I am perhaps too prolix, but I feel anxious to convey to you as accurate a description of my real state as possible.

Whilst I have made so many complaints it is pleasant to have to mention something good. Before I consulted you I was subject for years to troublesome muscular pains on the slightest exposure. These evils have all fled. Since I commenced your treatment I have had only something approaching to them, a threatening of them, but for the last month they are gone, although I have courted them by exposure as much as before. Secondly, the urine which in winter was almost constantly muddy, and in summer, though clear, coated with a thick pellicle, like that which occurs on the surface of lime-water

exposed to the atmosphere, has become perfectly clear, and threw up the pellicle only three times since my return from London. I feel convinced that the view you take of my case is perfectly correct, and under this conviction I again throw myself on your kindness. I believe the powers of my constitution are not yet gone but only sleep, and wait the aid of medicine to be roused into activity and vigour. Believe me, dear Sir, yours ever faithfully, S. M."

Suggesting some little alteration in the alterative treatment I advised him still to continue it, and to use, at the same time, the following tonic pill:—

R. Pulv. Rhei., Pulv. Gum. Myrrhæ, aa., gr. j;  
Sulph. Ferri, gr. ij; Spt. Vin. gut. j. M. Ft. pilula.  
Mitte xx; quarum sumat unam ter die.

I continued to receive varying reports of the case, sometimes better and again not so well, from this until I received the following:—

"October 26th.—Dear Sir—It was only last night that I received your favour, dated August 31 (which was delivered at my house from the deadletter-office where it was opened), although I have called and inquired regularly. Since my last letter to you, of the 5th instant, a great improvement has taken place in the condition of your patient. After the first dose (which I took

at bedtime) of the drops composed of the muriated tincture of iron and tincture of hyosciamus the following morning the urine flowed as blandly as if it had been warm oil, and a heat and slight shudder, which I previously experienced in passing my urine and of which I thought nothing, no longer takes place. On the third day all discharge from the urethra, when the bowels acted, had ceased. From this until the seventh day I felt myself completely restored both in body and mind. During the whole of this period I had priapism to uneasiness throughout the entire of each night until the seventh, when I experienced an amorous dream, which ended in profuse seminal emission, not watery. Since that night I have not been so well, although I was greatly rejoiced at the occurrence of an event to which I had been a stranger for so many years. The following morning after this seminal emission the urethral discharge returned, but it was only of the milky kind, and not glutinous. Not hearing from you, I took fifteen grains of cubeb with thirty drops of tincture of hyosciamus twice a day, and passed a bougie every fourth night, under the use of which the urethral discharge again ceased.

Nine nights after the first seminal emission I

experienced a second profuse one, and also the same the two following nights in succession, all preceded by lascivious dreams. My stomach is much out of order, my tongue being covered every morning with a yellow fur; the appetite is not so good as usual; I have some thirst up to dinner-hour; the bowels are irritable, and the urine is cloudy, and throws down a deal of sediment; I do not sleep well. All which I conceive to be owing to the cubebs disagreeing with the stomach. Though I do not feel strong, the prostration is gone, and my mind is no longer wretched; all timidity, too, has ceased.

I cannot close this letter without expressing to you how convinced I am of the great benefit I have derived from your dietetic plan. I eat meat for breakfast, a few oysters for lunch, and a light meat dinner. I do not take more animal food in the day than formerly, but the fact of taking it at two different times has been of signal service to me. The sense of sinking and craving for food before dinner is gone, and I have two or three times omitted lunch without any inconvenience. If the stomach were well and the nocturnal emissions checked, I think I would be restored completely. Under these improved circumstances, dear Sir, will you have the kind-

ness to say what treatment you would recommend for the further guidance of your patient? Would you approve of horse-exercise? I have already left off taking wine; am I still to refrain altogether from it? The nocturnal emissions have renewed slight urethral discharge. I have stopped both the cubebæ and hyosciamus in consequence of disturbed stomach and bowels. Hoping soon to hear from you, and with every sense of gratitude for your kindness and attention I am, dear Sir, yours most faithfully, S. M."

I approved of his taking horse-exercise, recommended him to take some good bitter beer at dinner, not to touch wine, and to adhere, in all other respects, to the course of treatment he had been pursuing, and which, it was evident, was proving beneficial and curative.

The following is the next account I received of the case.

November 16, 1843.—Dear Sir— I have received your kind favour of the 11th instant. Since my last to you your patient has had no involuntary nocturnal emission. I was unable to continue the cubebæ and hyosciamus, which appeared to exert so salutary an influence on the urethral discharge. Thirty drops of the tincture of hyosciamus produced in me the most



marked dyspeptic symptoms; total loss of appetite; great thirst; irritability of bowels; tenesmus; very foul breath; and a yellowish colour of the skin of the face. I have even tried forty drops of the tincture in an ounce of cold water, as an enema, but the dyspeptic consequences were the same. Your patient, if you recollect the history of his case, had been totally impotent when attempting intercourse with a stranger; since my last letter to you I have had the imprudence to sleep with a stranger, and I have been successful so as to surpass my fullest expectations.

I am now drinking at dinner the bitter beer you ordered me. I have taken as much as sixty drops of the succus conii twice a day, with the view of checking the urethral discharge, but without effect. I was in rather better spirits when last I wrote to you, in consequence, at that time, of the absence of the urethral discharge. I would be strongly disposed, if you do not disapprove of it, to try cauterisation of the prostatic portion of the canal, in order to put an end to the urethral discharge, which appears so obstinate. With many thanks for all the favours I have received at your hands, believe me, dear Sir, yours most faithfully, S. M.

P. S. I forgot to state the improvement that

has taken place in the genitals: they do not now hang so as they did; the left testis is certainly larger, firmer, and more elastic; the right is smaller; and the fulness is less in the right cord."

I approved of his making trial of cauterisation, and recommended him to persevere still further in the plan of treatment otherwise. Here is now the last account I have had of this remarkable, interesting, and instructive case.

"January 29, 1844.—Dear Sir — I have not written to you before, waiting to have a definite account to send you regarding your patient.

On last Saturday three weeks the operation of cauterisation was performed. There was a sense of heat not amounting to pain felt at the time. For three days after there was a frequency of making water, and blood passed each time mixed with the urine, particularly the last drops. On occasion of evacuating the bowels the two first mornings blood passed from the urethra. On the third morning after the operation, the most profuse discharge of viscid gummy matter that I ever remember occurred. The same discharge, more or less, took place every day for a fortnight; so that up to last Thursday, I have no hesitation in saying, the urethral

discharge was worse than before the operation. From the quantity of the discharge and the ejaculation of it, it is my belief that it is spermatorrhœa.\*

The effect of the operation on the bladder has been decidedly beneficial. The frequency of passing water and the urgency to do so have been lessened, and there is now no heat at all felt at the neck of the bladder; the quantity of water passed each time is greater, and it is now sometimes clear and sometimes turbid, but the quality of the urine is certainly on the whole much improved. My stomach and digestion have undergone a vast change for the better; dinner is eaten with a relish not felt for years; there is no oppression nor drowsiness after that meal; the midday sinking in the præcordia is totally

\* Spermorrhœa (from σπέρμα, semen, seed, germ; and ρέω, to flow, run, or fall away) would be as good Greek, and a term certainly, in my opinion, better adapted to express the true nature and to convey to the mind the most correct idea, of the malady it is intended to express and to convey. Observe, spermatorrhœa—a term and name of a disease that has been much before the readers of the *Lancet* of late—comes from σπέρματα, a noun plural, that rather, I believe, means offspring, progeny, or descendants, and ρέω, to flow, &c., which is scarcely better than nonsense.

gone. I take nothing now between breakfast and dinner and I feel the better for it. The bitter beer you recommended me to drink I feel invigorating me at every draught. I sleep profoundly. I feel stronger, and my spirits are buoyant. What has effected this change? Can it have been the sea-sickness from which I suffered beyond measure? I have already detailed the condition of the urethral discharge up to last Thursday. On that day I made an infusion of ergot of rye, and I have taken since a teaspoonful of it three times a day, with an equal quantity of the infusion of bark. Since then the urethral discharge is diminishing, but I know not to what influence to refer it, whether to the caustic or to the medicine. I may mention to you that I tried the tincture of hyosciamus since the operation, but it had no effect whatever on the discharge.

Under all these circumstances will you again consider my case and say what is best to be done. The favour of a reply will be felt as an additional one to all those already received at your hands by your most obliged and faithful, S. M.

P.S. There has been no discharge from the urethra for the last two days."

This gentleman, I am happy to say, is now in the enjoyment of good health.

I will give another case of sexual malady and temporary constitutional prostration in a medical gentleman similar, in many respects, to the preceding. The subject of the following evils, detailed by himself, is now, I am happy to say, quite well, and an active promising young member of the profession. During the last autumn he obtained a prize for his knowledge in one department of medicine, which he places entirely to the credit of his restored health.

“——— Hospital, March 20th, 1843.—Sir—  
On reading the Lancet of the 4th of this month, my attention was arrested by the close resemblance which the case of J. G. S. bore to the malady from which I have been suffering during the last five years of my existence, which has rendered that usually happy period of life a miserable blank, on which I cannot reflect without deep regret that I should have fooled away so much of the best and brightest period of life.

I am now, Sir, in my twenty-first year, and I should have been precluded by narrow circumstances from consulting you, had I not believed that a student of medicine would not appeal to your generosity in vain; it being of the last importance to me that I should be enabled to regain the *mens sana in corpore sano*, which I feel to

be essential to the successful prosecution of my studies. And, as I am the subject of an infirmity visible to all, which frequently exposes me to unavoidable ridicule, and renders me, in consequence, averse to society, and a prey to low spirits, I trust you will excuse the liberty I take in addressing you, and favour me with a reply directed as above. I remain, Sir, your very obedient servant, E. F.”

Two days after I received the above letter this gentleman called upon me, and I found his condition nearly as follows:—much nervousness; leucophlegmatic temperament, complexion, and form; countenance pale and dispirited; eyes very inanimate; flesh soft, and the system altogether devoid of tone, and in a state of much enervation; pulse frequent and not strong; appetite irregular; bowels inclined to be confined; frequent, almost constant, sense of uneasiness and weight in the crown of the head. He practised continence with respect to sexual intercourse, but he was subject to frequent nocturnal losses of the seminal fluid, which he considered the principal cause of all his sufferings. I, in fact, requested this patient to write me out his case, and here it is at considerable length, and interesting throughout:—

“ I passed through the periods of infancy and childhood in the enjoyment of good health ; the only serious illness which I suffered (besides the diseases incident to childhood) being an attack of typhus fever in my tenth year, which, however, inflicted no permanent injury on my constitution. At the age of eleven I left the country for London, and spent rather more than four years at a large school in one of the suburbs. During the first three years my physical and mental powers were on a par with those of the majority of my compeers, and might have so remained to this day had I not in an evil hour fallen a victim to a sad vice which was prevalent amongst the senior pupils. Some time elapsed before my health suffered from it ; but at length, during the last year of my school-days, I became subject to occasional slight attacks of headache and fever ; I was also less able to fix the attention on the routine of study, while, the memory becoming treacherous, the acquirement of knowledge became a wearisome task, and, in consequence, many a magisterial rebuke fell on my luckless head.

I was but too happy to escape from such bondage, and, on entering the medical profession in my sixteenth year, indulged in vain dreams

of happiness, and freedom from restraint. During the first few months of my medical novitiate my health slightly improved, but, from subsequent increased confinement and necessary application to the routine of study combined with the increasing repetition of the *causa malorum*, both body and mind became more and more enfeebled, while I remained in total ignorance of the real cause of decay; it being by one attributed to indigestion, by another to worms, constipation, &c., &c.

I now proceed to describe the leading features of my malady.

At the commencement of my apprenticeship those symptoms, which had hitherto been occasional, became permanent, and were accompanied by others of a more marked character, which have harassed me for upwards of four years. The following is an average specimen of each day's indisposition:—

On rising in the morning, at a late hour and unrefreshed by sleep, the countenance was flushed; the skin hot and dry; pulse quick and small; tongue loaded with yellowish fur; mouth parched; and the palms of the hands very hot. This feverish state usually subsided in an hour or two, and was succeeded by constant headache or



rather sensation of weight in the head and of constriction of the scalp. As the day advanced drowsiness, lassitude, and depression of spirits came on, and in the evening the febrile symptoms invariably returned, with some relief to the headache, and followed occasionally by cold clammy perspirations on the extremities. Unless completely worn out by great and unwonted exertion sleep was a stranger to my pillow for hours after retiring to rest; and these hours were the most miserable of the twenty-four, from the thousand phantoms and vague apprehensions which usurped the throne of reason, and the tormenting thoughts and bitter self-reproach which ever occupied my hours of solitude. And, when sleep came at last to the relief of over-wearied nature, it was broken, unrefreshing, and disturbed by fearful dreams. Thus was each day and night spent for upwards of four years, the symptoms varying in intensity with external circumstances, the only modes of relief being cold effusion to the head, and free exercise in the open air in dry weather; while, on the other hand, mental exertion or any description of excitement, except music, unfailingly aggravated the headache and mental depression, always the most distressing symptoms.

From the continued drain on the system, kept up by the sexual disease, I became gradually pallid, weak, and emaciated; the eye lost its lustre; the countenance its firmness; the muscles their tone; the general appearance being that of one whose development had been arrested in its transition from youth to manhood; the circulation and respiration more rapid than in a state of health, and excited to irregular action by trivial causes. The important function of assimilation being imperfectly performed, dyspepsia with its attendant train of ailments ever occupied a prominent place in the legion of ills which daily tormented my hapless flesh.

The cutaneous and mucous surfaces were constantly in a state of morbid susceptibility, bringing every winter a succession of catarrhs of various severity; and hence it was at one time supposed that I was consumptive, and, indeed, if atrophy and general debility were pathognomonic of phthisis, the supposition was by no means groundless. The secretions and excretions, especially those of the skin and testes, were in an unhealthy state; the skin being either hard, dry, and hot, or bathed in cold unctuous perspiration. The secretion of the testes was reduced to a fluid more resembling very thin mucus than healthy semen. The urine was very variable

in quantity, and of every tint from limpid clearness to the colour of mahogany. When high-coloured it frequently deposited the lithiates in small quantity.

But the greatest and most grievous affliction, that I had to lament, was the deprivation and impairment of the intellect. The oppressive headache induced by study, and the constant unremitting effort necessary to concentrate the attention diminishing the pleasure otherwise derivable from abstraction from self in the pursuit of knowledge; and, after repeated ineffectual struggles rewarded only by defeat, producing at length an almost Bœotian hebetude of mind, akin to the want of energy characterising its earthy habitation. Numberless instances of failure of memory, erroneous judgment, want of perception, rash and ill-considered actions, the natural offspring of a weakened brain, gradually destroyed all self-reliance and all confidence in my own resources. Society was thus to me but a mortifying penance, from the painful consciousness of the ridicule which the reserve and awkward bashfulness of my manners could not fail to excite. Study afforded but little relief from the number of evils that tormented me, and solitude and tranquility, so ardently desired by many a weary mind, instead of peace, refresh-

ment, and recruited energies, brought to me only corroding care and remorse, the contemplation of a gloomy past, and the fearful anticipation of a boding future."

In March last I first prescribed for this patient, and put him upon an alterative and tonic plan of medicine and diet, very similar to what I have already several times laid down and endeavoured to explain during the course of these papers on impotence and sterility, and by the latter end of August he was all but free from all his ills and troubles. Nothing, I may say, but the pathological memory of them remained in his system.

The subject of *local* sexual incapacity in the male, and also those of *sterility* and *local* sexual incapacity in the female, together with the principles and modes of treatment respectively applicable to these serious bodily defects and maladies, I intend for the present to pass over. At another time I may take them up. The former female malady, namely, sterility is, let me observe, a comprehensive and deeply philosophic subject, and one which might, I consider, if properly treated of, furnish practical matter sufficient to fill a small volume.

## CONTRIBUTION XII.

### PULMONARY APOPLEXY AND HÆMOPTYSIS.

*Case of pulmonary apoplexy and hæmoptysis, complicated with pneumonia, pulmonary emphysema and asthma—History, description, and treatment of the case—Dissection and morbid anatomical appearances—Commentary observations—Nosologic propriety of the term “Apoplexy” as applied to this hæmorrhagic affection of the lungs by Laennec—Diagnosis of the affection—Physiological and therapeutic effects of lead, iron, iodine, and mercury—Death of the patient not caused by the pulmonary apoplexy or hæmoptysis, but by the supervened pneumonia—Effects of blood-letting in an advanced stage of pneumonia—Dissent from the doctrine of Laennec on this point and agreement with that of the ancient physicians—Healthy respiration and respiratory rhythm—Peculiarities of the respiration in some asthmatic paroxysms.*

OCTOBER 5th, 1837. CHARLES MOSS, aged forty-seven, of middle size, lax fibre, and asthmatic expression of countenance, has been affected for some years past with difficulty of breathing during foggy weather, and on using any sort of violent exercise. Of late he has had several rather severe attacks of catarrh with cough and some hæmoptysis. Was seized about half an hour ago, in Albermarle Street, with profuse

spitting of blood, accompanied by dyspnœa amounting almost to suffocation. He fell upon the foot-path, where he remained for some time insensible, and was afterwards conveyed to his lodgings. He considers that altogether he must have expectorated above a pint of blood. The hæmoptysis still continues, but somewhat abated; blood florid and frothy; distressing orthopnœa, with pain and sense of constriction in the interior of the chest; expression of countenance very alarmed and anxious; cheeks pale and collapsed; lips slightly livid; pulse 130, small and feeble; surface chill.

Chest anteriorly very cylindrical and resonant. On applying the ear to its posterior part, over the superior and middle lobes of the right lung, a loud, distant, muco-crepitous râle is audible; and over the whole of the same tract, also, the resonance on percussion is dull. Under this part and over the entire extent of the opposite side of the chest posteriorly, and also in the subclavicular region, a pretty distinct mucous râle is present. In the left precordial region the respiratory murmur is clear and rather intense. Action of heart feeble and rather fluttering, and much more audible at the lower part of the sternum, and in the upper part of the epigastric region than in

its usual situation under the fifth rib. In this latter part its beats are barely and distantly perceptible. Venesection to twenty-four ounces immediately; not followed by any signs of syncope, but some relief of breathing. Blood slightly cupped and buffed.

To remain quiet in bed, and let the following medicine be taken:—

R. Plumbi Acetat., gr. vj; Aquæ Menth. Pip., ℥vss; Syrup. Balsam. Tolutan., ℥ss; Tinct. Hyosciami, ℥ij. Misce. Sumat partem quartam quarta quaque hora.

6th. Eleven o'clock, A. M. Feels himself much easier to-day. He spent a pretty good night. The cough and hæmoptysis ceased in a great degree shortly after the visit yesterday, and did not become troublesome till between two and three this morning, since which time up to the present he has expectorated a considerable quantity of red frothy blood; respiration, however, less laborious, and he still complains of pain and sense of constriction in the interior of the chest immediately under the sternum; face less pale and collapsed: skin warm and moist; pulse 105, full and unresisting; bowels rather confined.

The muco-crepitous râle is still present in the posterior and right side of the chest; but it is not

so loud or so coarse as yesterday : anteriorly, over the whole extent of this side of the chest the resonance on percussion is tympanitic, and the respiratory murmur very feeble and brief. In the posterior and inferior part of the opposite side a mucous râle is audible ; and anteriorly on this side, in the usual position of the heart, the respiration is still clear and intense.

R. Hydrarg. Chlorid., gr. ij ; Pulv. Antimon., gr. iij ; Extract. Colocynth. comp., gr. iv. M. Ft. pilulæ duæ, statim sumendæ.

Let an aperient draught be taken in the evening, and let the lead-mixture be continued.

7th. One o'clock, P. M. Had a pretty good night, and feels still better to-day. The pills and the draught have acted strongly on the bowels, the excretions from which are not of an unhealthy appearance. Little or no dyspnœa, and the pain and sense of constriction in the interior of the chest are quite gone ; cough frequent and difficult ; sputa tenacious and rusty, but no expectoration of pure blood since yesterday. In the posterior and inferior part of the chest the resonance on percussion is now rather dull, and the character of the respiratory murmur more crepitous than mucous. At all other points of the chest the auscultic signs are much the same



as yesterday. Countenance more natural; tongue clean; skin warm and moist; pulse 103, soft, and rather tremulous; appetite little impaired; no thirst; urine less than natural, but not high-coloured.

R. Antimon. Tartarizat., gr. ij; Aquæ Menth. Pip.,  $\bar{z}$  v; Syrup. Aurantii,  $\bar{z}$  iij; Tinct. Hyosciami, Spirit. Æther. Nitr., aa,  $\bar{z}$  ij. M. Sumat cochlearia magna duo quarta quaque hora.

Two of the cathartic pills to be taken at bedtime. Low diet with occasionally a little beef-tea.

8th. No appreciable change in the symptoms, either general or local, since yesterday. The antimony has caused some nausea and sickness.

9th. Feels still easier to-day, but complains much of nausea and sickness; cough less frequent; expectoration frothy and mucous, with little or no tenacity, and no appearance of blood. Over the whole extent of both sides of the chest, posteriorly, the respiratory murmur, faint and interrupted occasionally by a mucous click, is audible. Anteriorly over all the right side the respiration presents similar characters; but on the opposite side, from the clavicle to the hypochondrium, it is now loudly puerile. Pulse 100, soft and tremulous; action of heart still heard

loudest at the lower part of the sternum, and in the upper part of the epigastrium. Other symptoms as before.

Omit the mixture of tartarised antimony, and take the following one instead:—

R. Tinct. Opii Camphorat., ℥ ss.; Syrup. Scillæ, ℥ vj; Spirit. Æther. Nit., Spirit. Ammon. Aromat., aa, ℥ ij; Mucilag. Acaciæ, Aquæ Ciinam., aa, ℥ ij. M. Sumat cochlearia magna duo sexta quaque hora.

Increase the quantity of diet.

This patient continued to improve daily, and on the 15th was considered convalescent. The secretion of urine, however, was only one pint in the twenty-four hours, and rather high-coloured, but not albuminous or otherwise abnormal. To remedy this state of the urine an alkaline diuretic was prescribed, and I heard no more of him till November the 8th, when I was called in haste to see him, at six, A. M., in consequence of his having experienced a return of the hæmoptysis. When I arrived, I found him sitting up in bed; his countenance was expressive of much anxiety and distress; respiration was short and difficult, and he complained of pain and sense of constriction under the ensiform cartilage; the surface was chill and moist; the pulse quick, unequal,

and soft; he had expectorated a large quantity of frothy red blood, which came up with little effort and without pain. The resonance on percussion at all points of the chest was clearer than natural. In the superior and posterior part of the right lung a subcrepitous râle was present; and in the inferior and posterior part of the left lung the respiratory murmur was entirely absent. At the other points of the chest the respiration was audible, but blended and obscured by a variety of mucous râles. In the left precordial region, between the fifth and sixth ribs, neither impulse nor sounds of heart were to be heard, but at the lower part of the sternum and in the scrobiculus cordis, the organ was heard beating in a struggling irregular manner: its impulse and sounds were very defective; the second sound was exceedingly faint, and so close upon the first as to have been almost concealed by it. He had slept none during the night.

Venesection to twenty-four ounces. Blood much cupped and buffed, and remarkably dark-coloured. No signs of syncope or prostration from the loss of blood.

The acetate of lead mixture to be resumed, in the dose of two tablespoonfuls, every three hours. And let the patient be kept cool and quiet, and

let a little cold tea or arrow-root be taken occasionally.

10th. Two o'clock, A. M. Was roused out of bed again to visit this patient in consequence of a return of the hæmoptysis. I found him sitting up in bed; the respiration was difficult and hurried; and, in the posterior and inferior part of the right side of the chest, the resonance on percussion was dull, and a faint crepitous râle audible. In all other respects much the same as before. He describes his sensations on the return of the hæmoptysis as follow:—He states that his feet, and skin generally, first become cold, which in a short time is succeeded by a glow of warmth, during the presence of which the spitting of blood commences. Venesection to thirty ounces. Blood not so dark as before, but still presenting a pretty deep buffy crust; no signs of syncope from the bleeding; breathing much relieved.

Repeat the mixture of tartarised antimony.

Nine o'clock, P. M. Continues easier since the morning. Expectorations considerable in quantity, tenacious, and much streaked with blood, but comes off without much difficulty; pulse 102, small, and unresisting. Otherwise no change.

11th. Twelve o'clock, mid-day. Spent a better

night; the cough and respiration continue easier; pulse 100, and not small; expectoration profuse, and streaked with blood, but no distinct hæmoptysis; tongue and skin moist; urine of a dark pink colour; bowels rather confined; some appetite. In all other respects no change.

Let an aperient draught be taken immediately.

12th. Had no sleep last night. About midnight the cough became hard, and the sputa ceased to be expectorated, and at two o'clock the hæmoptysis, somewhat profuse, returned. The expectoration is now viscid, and much streaked with blood. No appreciable change in the stethoscopic or general symptoms since yesterday; but altogether the condition of the patient, apparently, is not worse; the skin is moist; and he states that he is in no pain, and that he feels rather hungry.

13th. Eleven o'clock, A. M. Condition in all respects much the same as yesterday. The hæmoptysis returned in a slight degree between two and three o'clock this morning.

14th. Two o'clock, P. M. No discernible change since yesterday. He slept little during the night, but no return of the hæmoptysis.

15th. Had a restless night in consequence of

dyspnœa and the cough having been troublesome. The hæmoptysis returned in a slight degree between two and three. The crepitous râle is now present in the lower part of both sides of the chest posteriorly, and also in the lower part of the left side anteriorly. Bowels rather confined. In other respects no change.

Let him have an aperient draught.

16th. Two o'clock, P. M. The bowels have been moved twice, and their excretions are not unhealthy. The night has been passed restless, but without any return of the hæmoptysis; skin dry, but not unusually warm; pulse small, rapid, and irregular; tongue congested, slightly livid, and covered in the centre with a brownish fur; considerable prostration; and he refuses every thing as sustenance but arrow-root; urine scanty and high-coloured. He complains of some pain occasionally in the lower and anterior part of the right side of the chest; and over this part the resonance on percussion is dull, and the respiration crepitous. In other parts of the chest there is no appreciable change in the auscultic signs since yesterday; expectoration copious, but presenting no appearances of blood, and it has lost in a great degree its viscid tenacious charac-

ter. It is now somewhat diffluent, and of a greenish colour.

Let a blister be applied to the posterior part of the chest on each side.

R. Tinct. Opii Ammoniat.,  $\bar{\zeta}$  ss; Syrup. Scillæ,  $\bar{\zeta}$  vj; Vin. Ipecacuanhæ,  $\bar{\zeta}$  jss; Mucilag. Acaciæ, Mistura Camphor., aa,  $\bar{\zeta}$  ijss. M. Ft. mistura cujus capiat cochleare magnum sexta quaque hora.

To have a little soup or beef-tea occasionally.

17th. The blisters have risen well, but he has spent a restless night in consequence of urgent cough and dyspnœa; expectoration profuse, globular, of a greenish yellow colour, but free from blood. In the night the expectoration ceased for an hour or two, during which time the breathing was so difficult that the patient thought he must have been suffocated; countenance anxious; lips becoming livid; pulse rapid, small, and feeble; skin hot and dry; urine high-coloured; the crepitous râle has entirely ceased at the lower and back part of the lungs where it was audible, and is replaced now by bronchial respiration, which is evidently at a greater distance from the ear of the listener; a faint crepitous râle is present in both sides of the chest

anteriorly and inferiorly; and at the upper part of the chest, both behind and before, the respiration is distinctly puerile.

Let a little warm gin-and-water be taken occasionally.

18th. One o'clock, P. M. Passed an uneasy night in consequence of dyspnœa and sense of suffocation; cough urgent; expectoration copious, greenish, and more adherent than yesterday; a coarse crepitous râle is again audible in the posterior and inferior part of the left side of the chest; in the opposite side a sort of dry stifled soufflet is heard during inspiration, which is graduated and prolonged, a loud mucous râle is audible; considerable heat of skin and thirst; signs of sinking evident; countenance pale and anxious; tongue pale, slightly congested, but moist; respirations 32; pulse 120, soft and feeble; bowels not confined; urine high-coloured and scanty; some appetite.

Continue the expectorative mixture, and the diet with the gin-and-water.

19th. Had an easier night; countenance more composed; cough less urgent, and breathing less difficult; respirations 30; pulse and general symptoms as yesterday; the crepitous râle is again present in the right side of the chest; at



all other points the auscultic signs remain the same.

20th. The night has been restless; the cough and expectoration ceased for some time in the dead of the night, when the breathing immediately became difficult and suffocative; pulse 120, soft and feeble; respirations 33, and laborious; increasing prostration; in all other respects no change.

Let the medicines be continued and let an ounce of port-wine be administered every fourth hour.

21st. The night has been spent restless, and without sleep; cough very urgent; expectoration profuse and purulent; prostration still more evident; respirations 35, and spasmodic; pulse 140, small and feeble; surface becoming cold; hands puffed and bluish, but no œdema of the feet; voice suppressed; some stupor; no change in any of the stethoscopic signs.

22d. Continued to sink and died at six this morning.

*Dissection twenty-four hours after death.*

Lungs not collapsed, but filling up the cavity of the chest at all points; their air-cells much

dilated, particularly those of the upper lobes, which were very elastic, and of a blanched exsanguineous appearance. The lower lobe of the left lung completely overlapped the heart, and prevented it from being seen. The inferior two-thirds of both lungs throughout were in a state of gray and red hepatisation irregularly interspersed; the bronchial ramifications, at some points, were gorged with a sero-purulent fluid, which exuded abundantly on pressure; there were no cellular bands uniting the pulmonary and costal pleura. The pleura investing the posterior and middle part of the upper lobe of the right lung presented a slight depression, and stellated puckered appearance, under which, when divided, was found a mass of fibrine infiltrating the pulmonary parenchyma. It was dry, of a light brown colour, firm, and pretty regularly circumscribed; its size was about that of a small orange; in its centre was found a small cavity (tubercular), lined by a cartilaginous membrane, which contained but two or three earthy concretions. The heart was rather larger than natural, pale and flabby; its left cavities and also the superior and inferior venæ cavæ, for the extent of four or five inches, were half filled with fibrine, which was tough, smooth on

its surface, and striated longitudinally as if from the action of the circulating current; there were no appearances of disease in any of the valves. The abdominal viscera were all pretty healthy. The liver and kidneys were a little congested, and a little larger than ordinary, but otherwise normal. The brain was remarkably exsanguineous, but quite healthy in structure.

The observations I am now about to make on this singular and complicated case of disease will naturally come together under three heads: first, the pulmonary hæmorrhage or apoplexy, with its treatment and partial resolution; secondly, the supervened peripneumony, with its fatal results; and thirdly, the pre-existent lesion of the air-cells, that is to say, the emphysema, together with the concomitant asthmatic and catarrhal affections, from which, it is manifest, this patient had been for some years more or less a sufferer.

The propriety of the term "apoplexy," which Laennec and some other preceding writers have applied to the hæmorrhagic affection of the lung under which this patient laboured at the onset, and during the early period of his illness, has been questioned by Dr. Elliotson, but, how far Dr. Elliotson may be correct in his strictures upon this

point of medical nomenclature, I will not take upon me to judge. It is a matter, at all events, of no practical importance. If the pathology of a disorder be duly understood it imports little, I conceive, in a therapeutic point of view, by what name it be designated or whether indeed it receive a designation at all. The anomalous lesions, the various states and degrees of deranged physiology (if I may be allowed the expression) for which the practitioner finds himself daily called upon to prescribe, are they less numerous or of less frequent occurrence than those which have obtained names and places in the systems of nosology? I am disposed to think not. Who, that for any length of time but attentively notes his own observations, having recourse to no instructor but nature alone, will long burden his memory with the classifications of Cullen or of Good? In the case of this individual and that of another of symptoms very similar, recorded by a German author, Dr. Bohnbaum, and which the translator of "Laennec on Diseases of the Chest" has given in a note to that work\*, on the occurrence of the pulmonary

\* See Laennec on Diseases of the Chest, translated by Dr. Forbes, p. 176.

hæmorrhages, the subjects were suddenly struck down and deprived of sense and motion; such cerebral symptoms identical with those of apoplexy, properly so called, were plainly caused by sudden congestion of the brain resulting from regurgitation, this latter being the natural and direct effect of the obstruction in the pulmonary circulation.

Looking exclusively to the general phenomena which characterised this patient's attack at the commencement, its real nature would appear to have been a compound of asphyxia and syncope; the former having comprised, as, in fact, it necessarily always does when severe, the essential symptoms of apoplexy, namely, the sudden suspension or destruction of the functions of the brain, and the consequent sudden deprivation of the powers of locomotion. But it was not, it appears, on account of the similarity which the general symptoms of the disease under consideration, when witnessed by Laennec, might have exhibited to those of cerebral apoplexy, that that distinguished physician was induced to nominate it as he has done, but wholly in consequence of the resemblance, as he states, which he conceived the anatomical characters of the two affections bore to each other. The following are Laennec's

own words:—"This lesion," speaking of pulmonary apoplexy, "is evidently produced by an effusion of blood in the parenchyma of the lungs, in other words in the air-cells. From its exact resemblance to the effusion that takes place in the brain in apoplexy, I have thought the name pulmonary apoplexy very applicable to it, as it resembles in every respect the cerebral hæmorrhage commonly termed apoplexy\*."

The diagnosis in this case, it need hardly be mentioned, was obviously not a matter attended with any difficulty. The florid arterial hue of the blood expectorated, together with the accompanying cough and dyspnœa, showed plainly enough that the disease was hæmoptysis, and that the lungs were the parts from which the hæmorrhage proceeded; and, by the further aid of auscultation, I was enabled to detect the seat and the precise extent of the hæmoptysical infiltration.

This latter circumstance, at the same time that it was satisfactory, was also of some practical utility, as it indicated more clearly the necessity of immediately adopting an active mode of treatment; and to the manner in which, as we have seen, venesection was had recourse to, I am in-

\* See the work of Laennec already referred to, p. 172.

clined to think the arrest and resolution of the pulmonary apoplexy were chiefly owing. The acetate of lead, by the power which it would appear to possess of inducing a disposition in the blood to coagulate, contributed something, no doubt, towards the controlling of the hæmorrhage, and the masses of polypus-like fibrine that were found in the superior and inferior venæ cavæ, and also in the adjoining chambers of the heart, on dissection, might they not have been in a great degree the result of the action of this medicinal agent? Lead and iron, I will here observe, bear to some extent a resemblance to each other in their action on the economy; both have the power of more or less incrassating the blood, and of altering the tone and temper of the solids; but the action of the former substance on the solids is exactly the opposite of that of the latter. Lead, as is frequently seen in the partial palsy which it occasions in the disease of colica pictonum, softens and decolourises in a remarkable manner the muscular structure besides depriving it of the power of motion. But iron, as we have many opportunities of witnessing during its administration in cases of cachexy and chlorosis, at the same time that it restores the colour and improves the condition of the blood, also repairs the

tone and energy of the solids, and of the entire system.

It is interesting and not a little instructive to observe, how very different from those of these two minerals are the effects upon the condition of the blood and the general economy of mercury and iodine. Both these medicinal substances, when administered for any length of time for alterative purposes, have the effect of greatly attenuating the blood and all the more consistent fluids, and also of softening the flesh. This is peculiarly apparent during a protracted, or, in delicate constitutions, even during a short and mild course of mercury; and to such effects, no doubt, it is that this medicine chiefly owes its utility and singular efficiency in freeing the circulation, in rendering it more equable and diffused, in resolving and removing tumours and obstructions, and in restoring suppressed secretions.

No article of the *materia medica*, it is certain, possesses the power, to half the extent, which mercury does of attenuating the blood, and of softening and relaxing the solids; and it is in consequence of this very circumstance, beneficial or baneful, as in every instance of its operation it must be, that it influences so much temporarily or permanently the stamina and



constitutions of individuals. Sometimes, as may be seen in cases of injudiciously prolonged or of frequently repeated alterative courses, the processes of sanguification and of assimilation being perverted and impaired, the blood and fluids remain permanently ill-constituted\* and thin, the flesh soft and flabby, and the strength and constitution irreparably broken down. This destructive action of mercury may, in some instances, be carried so far as to deprive the soft parts and even the bones, in the event of fracture, of the power of reparation. Under such circumstances, it may be observed that ulcers and wounds of all kinds become almost irremediably ill-conditioned and phagedenic, and the fractured bones remain un-united. Further, in cases of extreme mercurialisation, it has been observed that the bones become peculiarly brittle, and, from very slight causes, liable to fracture, in consequence of the softening and partial absorption of the animal matter of which they are in part composed, produced by the mineral. I have witnessed a case or two illustrative of this condition of the bones,

\* There is, I conceive, a constitution of the blood, as well as of the solids and general system, for which its specific gravity might, perhaps, be a sufficient medicinal test. Sydenham has spoken of the constitution of the air.

and I have heard the experienced and eminent Dr. Colles, of Dublin, some years ago, lecture with much earnestness and chaste eloquence on the subject. But I am digressing into the province of the surgeon.

It is scarcely necessary to observe that it was the inflammatory affection, the supervened peripneumony, and not the hæmorrhagic, which proved the cause of this patient's death. The latter lesion, the pulmonary apoplexy, as it has been termed, though one at all times extremely dangerous, so much so, that in every case I can find upon record it proved fatal, had been successfully combated; and the resolution of the hæmoptysical infiltration (which the dissection disclosed as being considerably progressed) would, no doubt, had the patient survived the pneumonic attack, been finally complete. It is occurrences like these, such successions or transitions more or less immediate of disease—the state of a part on the removal or modification of one malady forming the predisposition to, or constituting the actual cause of, another—and also the morbid combinations so frequently met with, which form the greatest difficulties in the practice of medicine, and render the offices of the physician often perplexing, and the application of his knowledge

less certain and satisfactory than it otherwise would be. Look at the number of lesions of the respiratory organs that existed in the case under consideration. We have pulmonary hæmorrhage, pneumonia, and bronchitis, and also dilatation of the air-cells, of old standing, with asthma dependent thereon.

With respect to blood-letting in the latter stages of pneumonia I find the following observations in the celebrated work of Laennec from which I have already made an extract, and which observations I here quote, for the purpose of expressing my decided dissent from some of the precepts therein advocated:—"From the time of Hippocrates to the present day," observes this eminent French author, "most medical men have regarded pneumonia as one of the diseases in which blood-letting is productive of the most striking benefit. To this general truth all good practitioners have admitted only a few general exceptions; and it has only been by some few theorists and medical heretics that its employment has been prescribed. The same uniformity of opinion, however, has not existed respecting the quantity of blood to be drawn off at one time, the period of the disease when blood-letting ceases to be useful, and the part of the body where it ought

to be performed. The greater number of the ancient physicians bled only at the onset of the disease, and allowed the blood to flow until syncope took place. This practice was sometimes followed even by Galen. It was much used in the century before the last. It is still very common in England; many of the physicians of that country, in the commencement of pneumonia, directed the detraction of twenty-four, thirty, or thirty-six ounces of blood. This practice is not to be found fault with; since it is certain that a copious bleeding in the beginning of the disease reduces the inflammatory orgasm much more speedily than repeated smaller venesections will do at a later period, and, moreover, leaves less chance of a renewal of the inflammation. The ancients considered bleeding as a questionable remedy after the first days of the disease, fearing thereby to check the expectoration; and the best practitioners of the two last centuries forbade its operation after the fifth day, if the discharge was mucous and abundant. Apprehensions of this kind are not, perhaps, unreasonable, if the loss of blood be carried to syncope; but we know from experience that in a lesser degree, though still very copious, blood-letting may be had recourse to with much advantage in a very advanced

period of pneumonia, even when this has reached the suppurative stage, and is attended with a great expectoration\*.”

With the doctrines of the ancient and less modern physicians, in regard to the mode of employment of blood-letting in the disease of pneumonia, my experience would lead me entirely to agree; and I confess I am not a little surprised to find a different mode of practice recommended by such high authorities as those of Laennec, Andral, Cullen, &c. But no authority, be it here stated, however eminent, shall ever cause me to reject the evidence of my own observation and the result of my own experience, which have repeatedly informed me that in pneumonia, whether simple or associated with more or less of bronchitis, when the cough has become easy and soft, and the discharge from the bronchi mucous and abundant, that blood-letting is not only not beneficial, but positively injurious, and too often destructive.

The loss of blood in the first stage of this inflammatory disease no doubt prevents or modifies in some degree the extent of the effusion, and thereby acts beneficially, and fulfils the intention

\* See p. 123 of the work of Laennec already referred to.

for which it is administered ; but at a later period of the malady, as its pathology progresses, and when the expectoration has commenced, it certainly neither, as far as I have been able to discern, promotes this natural and direct depletion, nor contributes, in any appreciable degree, towards the resolution of the hardened lung, when pneumonic inflammation, in fact, has advanced to the effusion of lymph and secretion of purulent matter, no resolution, in the usual signification of the term, that is, no sudden extinction or dispersion of the disorder can take place ; it must either be gradually removed by a process of absorption, or thrown off by expectoration ; and, with respect to the mode of treatment, the safest and most successful, I believe, that can be pursued, is simply to support the strength of the patient by the judicious administration of nutritious diluents, to give palliatives and expectorants, and, as the case may require, to have recourse to counter-irritation, and not altogether to forget that there is a *vis medicatrix naturæ*. A few observations now upon emphysema and asthmatic dyspnœa.

Without pretending to such accuracy of observation as would catch the light and shade of morbid phenomena, I will here notice a

few circumstances connected with respiration, both healthy and abnormal, which appear to me to have been in a measure overlooked. By-the-way I will here state that the pure physiological respiratory murmur, in any work upon auscultation I have had an opportunity of perusing, has not, according to my observation, received an accurate description, one that accords with nature. The murmur is described as being double, inspiratory and expiratory, and similar to that of small bellows. The difference in the *intensity* of these two sounds has been noticed by all writers; but, what I consider rather singular, the difference of *duration*, though to my ear very perceptible, has not been pointed out. The first or inspiratory sound, like the first or systolic sound of the heart, is in duration fully double that of the expiratory or second sound. This observation can at any time be put to the test, by directing attention to the acts of respiration in one's own person. The rhythm of respiration runs thus:—First, there is the period of inspiration, which, I will say, occupies four-twelfths; second, the period of pause or transition, which occupies one-twelfth; third, the period of expiration, which occupies two-twelfths or one-half that of inspiration; and fourth, the

period of repose, when the entire respiratory apparatus rests, which occupies five-twelfths, or a little more than that of inspiration.

It is interesting, and, in a practical point of view, not unimportant, to observe how the relative duration of these actions, in paroxysms of asthmatic dyspnœa, are altered, and sometimes, as may be seen, completely reversed. Inspiration becomes brief and spasmodic and expiration becomes so prolonged as frequently to include the usual period of repose. What practitioner has not occasionally witnessed, with painful anxiety, the spasmodic inspiratory gasp succeeded by the prolonged expiratory moaning effort, when the face becomes congested and purple, and the system throughout is affected by transitory asphyxia. In all these cases, the great difficulty, it would seem, which the patient experiences, is in the expulsion of the air from the chest not in taking of it in; and all the respiratory powers are pressed into action to accomplish this object. Such instances of peculiar asthmatic dyspnœa only occur, I believe, in cases of excessive emphysema, accompanied by more or less of bronchitis, of which, perhaps, the dilated weakened\* condition of the air-cells, to-

\* Incapacitated for contraction.



gether with the mucous obstruction of the bronchial tubes, afford a sufficient explanation\*.

I intended to have concluded with a few observations on the causes of pulmonary emphysema, and hæmoptysis, but, I find, I have already extended my paper to some considerable length.

Dec. 28, 1841.

\* This species of dyspnœa in the human subject is similar, I imagine, to that to which the horse is liable. "In thick wind the breathing is rapid and laborious, but the inspiration and expiration are equally so, and occupy precisely the same time. In broken-wind the inspiration is performed by one effort, the expiration by two, which is plainly to be observed by observing the flanks, and which occupies double the time. The reason of this may easily be stated. Broken-wind is the rupture or running together of some of the air-cells. When the lungs are expanded the air will rush in easily enough, and one effort of the muscles of respiration is sufficient for the purpose; but, when these cells have run into each other, the cavity is so irregular, and contains so many blind pouches (bullæ or interlobular emphysema), that it is exceedingly difficult to force it out again, and two efforts are scarcely competent fully to effect it."—See chap. Broken-wind, article "Horse," *Library of Useful Knowledge*.

CONTRIBUTION XIII.

RHEUMATIC PERICARDITIS AND PLEURITIS.

*History, description, and treatment of a case—Diagnosis of pericarditis—Effects of blood-letting in structural disease of the heart—Remedial employment of mercury in rheumatism and syphilis—Physiological and therapeutic action of iodine, arsenic, iron, and mercury—“Friction of ascent and descent”—Diagnosis of the phenomenon.*

OCTOBER 16th, 1836. Mr. P——s, aged forty-six, exceedingly emaciated, has suffered more or less from rheumatism for the last six years. Of late, he has been for the greater part of his time, confined to bed, in consequence of pains and stiffness in his limbs and joints. Had a severe attack of inflammation in the chest about six months ago, which his medical attendant considered to be pleurisy and treated as such. Towards the close of that attack he was suddenly seized with profuse hæmaturia, which had almost proved fatal. He states, that at least between two and

three pints of dark-coloured blood were passed by the urethra. Since that time up to the present he has not been able to quit his bed.

A few days ago, after having experienced a slight chill, he was attacked by acute pain in the region of the heart, accompanied by some dyspnoea, and considerable aggravation of the pains and stiffness of his joints and limbs, which symptoms still continue unabated; at present he lies upon his back and cannot alter his position without increasing all his pains; pulse above 100, full and starting, but not hard; respiration slightly accelerated; heat of surface but little increased; tongue moist; bowels open; the left side of the chest does not dilate so freely on inspiration as the right, and throughout its whole extent the resonance on percussion is rather duller than natural, and the respiratory murmur is but faintly audible; in the precordial region, the resonance, on percussion, is unusually dull, and the pain is chiefly confined to that part; the action of the heart is pretty regular, but abrupt, and accompanied by a bruit de soufflet; its impulse is not increased. Venesection to  $\bar{z}$  xij; blood much cupped and buffed.

R. Hydrarg. Chlorid., gr. iij; Pulv. Antimon.,

gr. iv; Ext. Colocynth. c., gr. v. Ft. pilulæ duæ. Statim sumendæ, et haust. cathart. post horas quatuor.

Twelve drops of the tincture of digitalis every sixth hour in saline mixture.

18th. Two o'clock, P. M. Spent a better night and could breathe with more freedom after the bleeding. The symptoms, local and general, are now much the same as at last visit. Pulse 120, starting and somewhat more resisting; bowels have been well freed; some complaint of thirst; no congestion of the cheeks or lips. Venesection to  $\bar{3}$  xvj; blood exceedingly cupped, and buffed, its serum abundant, and its crassamentum small in quantity, and remarkably deficient in red globules.

Continue the tincture of digitalis.

19th. Two o'clock, P. M. Had a restless bad night; shortly after the bleeding yesterday, an increased difficulty of breathing was experienced, which continued for some hours; at present the general symptoms are much the same as yesterday, but a remarkable difference is now appreciable in the state of the local phenomena; the dilatation of the left side of the chest is still considerably restrained, and the resonance on percussion, over its two inferior thirds, both an-

teriorly and posteriorly, is abnormally dull; in the middle posterior third and towards its lateral aspect the respiratory murmur (if any exist) is completely masked by a dry, coarse, superficial, friction-like sound, which is simultaneous with the elevation and depression of the walls of the chest; to the ear of the auscultator it communicates the impression precisely as if two pieces of coarse paper rubbed loosely against each other during the respiratory acts; he complains much of pain in the precordial region, and in his shoulders and knees; pulse increased in rapidity, full and starting; bowels rather confined; skin moist; and urine little altered either in quantity or quality.

A cathartic draught immediately, and a blister to the painful part in the evening. Continue the digitalis.

21st. One o'clock, P. M. The blister rose well and afforded a temporary alleviation of the precordial pain; but he has spent two bad and sleepless nights; at present there is considerable dyspnœa, with slight dry cough; face pale and anxious, and he complains much of vertigo and nausea, with anorexia and thirst; pulse 130, and somewhat less full and starting; he complains much of pain in the region of the heart,

stretching in every direction over the extent of a foot, and becoming considerably aggravated from pressure on the intercostal spaces, above the left mammæ, and along the adjoining margin of the sternum, and upwards on the left hypochondrium; the peculiar friction-like sound in respiration, which was present at last visit has since disappeared, and is displaced by a faint, dull, distant murmur, not unlike the brief stifled sound, which characterises pulmonary œdema.

Omit the digitalis, but repeat the blister.

R. Hydrarg. Chlorid. gr. xvj; Pulv. Opii. gr. ij;  
Confect. Aromat. q. s. M. Ft. pilulæ octo æqualis.  
Sumat unam sexta quaque hora.

Linseed-tea or barley-water to be drank freely.

23d. Three o'clock, P. M. The blister rose well and the pain of the precordial region is much abated. He has taken seven of the pills, but no tenderness of the gums or specific mercurial action is as yet apparent in the system; he has perspired rather freely during the last two nights, and he has experienced considerable pain of head, with some delirium on going to sleep. Present condition as follows:—Skin and tongue moist; bowels free; slight pain of head; pulse not so frequent or so full as at last visit; action, sounds, and impulse of heart as before;

slight dry cough with increased dyspnoea, and considerable prostration; in the posterior and inferior part of both sides of the chest, the resonance, on percussion, is now abnormally dull; and, in the left side, the respiratory murmur is completely extinguished, but higher up it is still audible in the right side, in this situation affording a dull resonance; an acute twinging pain is experienced, and throughout its whole extent a dry friction-like sound, in all respects similar to that which has just disappeared from the opposite side, is now distinctly audible; this sound is loudest at the centre and most convex part of the thorax, and it gradually becomes faint and lost in all directions as you depart from that point; a distinct interruption, too, is observed to take place in it corresponding with the period of transition from the inspiratory to the expiratory act, and during the latter of these also it is more prolonged and more audible.

Continue the calomel pills every eighth hour. Apply a blister to the painful part.

25th. One o'clock, P. M. The blister rose well and the pleuritic pain has ceased; he has taken five more of the pills, and has drunk freely of the barley-water; since last visit a diarrhoea, rather profuse, commenced yesterday morning

about five o'clock, and has continued more or less severe up to the present time; the excretions are dark coloured, fluid, and very offensive; pulse 108, soft and less starting; tongue and skin moist; urine but little altered from natural; gums turgid and tender; considerable prostration, with some œdema of the feet and ancles; the peculiar friction-like sound is still present, but it is faint and circumscribed; still some complaint of pain in the precordial region.

A blister to the precordial region; red wine  $\bar{z}$ ij in the day; to take every sixth hour, while the diarrhœa continues urgent, a table-spoonful of an astringent mixture, composed principally of decoction of catechu; to drink freely also of beef-tea.

27th. Two o'clock, P. M. Condition in all respects much improved since last visit. The febrile symptoms have almost disappeared, and the pains of the joints, limbs, and chest, have entirely ceased; he can alter his position in bed, and move his legs now in all directions, without pain or inconvenience, which, he states, he has not been able to do for the last six months; the œdema of the feet and ancles has subsided; pulse 100, less full, but still slightly starting; no dyspnœa, and respiratory murmur anteriorly,



over the whole extent of both sides of the chest now clear and natural. The patient appearing disinclined to be moved, I did not disturb him to examine the back part of the chest. He has taken the astringent mixture, wine, and beef-tea regularly, but the diarrhœa still continues, accompanied by severe and painful tenesmus. The alvine evacuations are still watery and offensive, but of a more natural colour; he is not, however, losing, but on the contrary gaining strength.

Intermit the astringent mixture but continue the wine and beef-tea; and let him have five grains of opium in the form of suppository immediately, and to be repeated in eight hours if the tenesmus be still urgent.

30th. Four o'clock, P. M. Very manifest improvement during the last three days. He is rapidly gaining strength; the diarrhœa and tenesmus have nearly ceased, and he has been out of bed trying, with the assistance of the arm of his nurse, to walk about his chamber; gums tender but no ptyalism; appetite considerable; and he sleeps well.

Intermit the wine, but continue the beef-tea, and let him have a mutton-chop also with a little porter daily.

November 4th. Eleven o'clock, A. M. This morning the patient has no complaint to make, but of the tenderness of his gums, which he says prevents him from eating as much as he could wish; he continues to gain strength and flesh, and he speaks of sitting up for an hour or two to-morrow.

Continue diet and regimen.

15th. My patient having been so much improved at my last visit, I did not consider it necessary to see him again for some time, and when I called to-day, the short report of his condition runs thus:—Found him at dinner; he eats heartily, sleeps well, and is free from pain in all parts; he expresses himself as being quite comfortable; he is becoming robust; he takes daily a little exercise in his room, and he says he intends to venture out of doors in a day or two; he has taken no medicine for the last fortnight, and considers himself cured. The only trace of disease now appreciable is a slight restraint in the dilatation of the chest, which results, perhaps, from the presence of adhesions uniting the pulmonary and costal pluræ; the respiratory murmur is audible at all points of the chest, both anteriorly and posteriorly, but somewhat weaker than natural; the pulse still retains, in a considerable degree, its starting character, and

ranges between 95 and 100; the action of the heart is pretty regular, but its sounds are sharp, louder, more abrupt, and more diffused than natural, and the first sound is accompanied by a sonorous bruit de soufflet.

Of this patient I heard no more until the following May, when I was grieved to learn, from his subsequent medical attendant, that, at the commencement of the preceding month, he had a return of the rheumatic fever and inflammatory affection of the chest, accompanied, after a few days, by profuse hæmaturia, which proved fatal.

The case which has now been related, although from the absence of its anatomical characters, it is rendered less satisfactory, and of course somewhat less interesting, I am disposed to think, presents a few points of considerable practical interest, and therefore deserving of some attention. The diagnosis, notwithstanding that it was formed, necessarily from the complicated symptoms of a plurality of diseases, was not a matter of much difficulty; I did not hesitate on a first, and but a cursory examination, in pronouncing the case to be one of rheumatic fever with rheumatic pericarditis and pleuritis; and, moreover, that these acute and inflammatory affections had supervened upon organic lesion of the heart, of

previous and not very recent development. An early acquaintance with this latter fact was obviously of much importance, as it enabled me to perceive that, from this source, a deceptive frequency, and false pyrexial character, were communicated to the pulse, and an exaggerated intensity to the general excitement. It was evident, indeed, that in consequence of this circulatory lesion, the velocity of the pulse was permanently increased, at least twenty beats, and, under such circumstances, in the application of remedial means, more particularly venesection, for the cure of the rheumatic disorder, it was necessary to be aware that the pulse was in some degree mechanical, and not liable to be lowered or influenced by this measure in the manner which generally obtains in simple inflammatory affections.

I do not know whether others may have made the observation, but I certainly think it has occurred to me to remark the difficulty with which syncope is induced by blood-letting, or otherwise, when the heart is structurally diseased; and the correctness of the observation would appear to be corroborated by the fact that fainting, which under the ordinary and normal state of the circulatory apparatus, is but a trivial event is under

the condition of disease in question, at all times a serious and not unfrequently, a fatal occurrence. Nature, conscious, it would seem, of some incapacity to re-establish the action of the heart, is therefore reluctant in permitting it to undergo a pause. In illustration, in some respects, of these remarks I may mention that I well recollect a case, which I witnessed some years ago in the Royal Infirmary of Edinburgh, and which at the time made no pleasant impression on my mind. A young female, who had for some time been under treatment for a secondary attack of rheumatism and pericarditis, with pre-existent hypertrophy and dilatation of the heart, together with valvular induration and morbid bruit, had recovered so far from her rheumatic seizure as to be considered convalescent. I had seen her, and had examined the morbid sounds of the heart, during the physician's round in the morning. Towards the evening of the same day, it appeared, that she first experienced a slight rigor, with an accession of fever, and a return of the symptoms of rheumatism and pericarditis. Under these circumstances the clerk of the ward, in the absence of better experience, had recourse to a large blood-letting, which was immediately followed by severe dyspnœa, precordial distress, palpitations,

paleness, with anxiety and collapse of countenance, and coldness of the extremities; in short, with every sign of prostration of the circulation, which terminated fatally in two hours. This case certainly made an unusual impression on my mind, and I have never entertained a doubt but that the immediate cause of the patient's precipitate dissolution was the unguarded use of the lancet, under a state of embarrassment of the circulation consequent upon organic disease of the heart. In the case of P——s, as we have seen, after the second bleeding, there was some threatening of a train of symptoms similar to those which announced the dissolution of the girl. And have we not some reason to think, that the loss of a few ounces more of blood might have been attended with results not less lamentable in the one case than the other?

The pain, more or less permanent, in the precordial region; the pain on pressure in the corresponding intercostal spaces, and along the adjoining margin of the sternum, and upwards in the left hypochondrium; together with the dyspnoea, the anxiety, the pyrexia, and the peculiar starting character of the pulse, with the increase in the intensity and extent of the sounds of the

heart,—and I may also include the bruit de soufflet,—formed an assemblage of symptoms from which I could scarcely hesitate to infer the presence of pericarditis. I know, however, that there is hardly any disease as regards its diagnosis, more puzzling to the practitioner, and sometimes, too, as may be seen, to the peevish emaciated patient, than inflammation of the pericardium, especially chronic, and to be more accurately descriptive, recurrent. And why is this the case? The circumstance, I conceive, must be attributed more to the nature of the seat, and the indistinctness, for the most part, of the symptoms of the complaint, than to the rarity of its occurrence; for, amongst the rural population, those especially whose occupations necessarily expose them much to wet and cold, the affection, according to some opportunity I have had of observing, would really appear to be rather frequent; more so, I am satisfied, than many might be disposed to admit. During the autumn and winter, I will venture to assert, there are few of my brethren in extensive practice in the country who are not in the almost daily habit of prescribing for this disease.

The subject of the case which has suggested

these remarks, was a farmer, and I had two others, very similar, under my care at the same time.

In referring to the writings of the less modern authors,—to those of Boerhaave, Sydenham, Van Swieten, for instance,—on rheumatism, it is a matter, it appears to me, for congratulation, to find how much the remedial efforts of the physician of the present day are assisted through the salutary control, which mercury, judiciously administered, evidently exercises over this harassing disease; and it is not frequently perhaps, during its alterative administration, that we have an opportunity of witnessing a better instance of the simultaneous development of its physiological and therapeutic effects, than in the case now under consideration. In not many hours, as we have seen, after the patient's gums had become tender, and his system generally had experienced the specific influence of the medicine, he found himself, to his no little surprise, released from his pains, and completely cured of his inveterate disorder.

I certainly would be slow in distrusting the correctness of any medical principle or doctrine supported by such authority as that of Sir Astley Cooper, yet with regard to the manner, that is to



say, the TIME, during which, in the treatment of the different forms of syphilitic disease, this eminent surgeon has recommended the administration of mercury to be continued, I have never, in any case, found it necessary fully to adopt his instructions. Sir Astley states in his lectures, that for the cure of primary ulcer it is necessary to continue the administration of mercury during one month; for secondary symptoms six weeks; and for an affection of the bones two months or longer. Now, when I examine, with due attention, a large number of facts relative to the sanative action of mercury upon syphilis, which have come within the scope of my own observation, I have sufficient grounds, I conceive, for entertaining the belief that the foregoing rules for the mercurial treatment of lues are too unconditional, and countenance, I have no doubt, what in a great many instances must be a superfluous administration of the remedial specific. I have notes of a large number of cases, in which I have witnessed permanent cures of syphilitic ulcers of some weeks' standing, both of the genitals and of the pharynx, accompanied, not unfrequently, with cutaneous eruption, by twelve, and occasionally, eight, blue pills of five grains each, administered each night at bedtime. Frequently,

too, have I observed a similar effect from six drachms of the strong mercurial ointment rubbed upon the inner part of the thighs, one drachm each night. I am acquainted with a gentleman who has been four times cured, within the last six years, of syphilitic ulcer and eruption, and at no time has he found it necessary to take more than ten or twelve blue pills (a quarter of a grain of opium in each) until his gums were made tender, and the healing process commenced in the ulcers. What, I will ask, must have been the consequence to the constitution of this patient, if, instead of the short time during which the mercury, in each instance, was administered, its use had been continued for the space of a month? Great impairment, no doubt; and I know that this gentleman is at present in the enjoyment of perfect health.

I have paid some attention, having considered it a point of much practical moment, to the physiological changes, both generally in the system, and locally in the sore, which appear to characterise the mercurial alterative action. No medicinal substance, when it agrees with the constitution of the individual, and is received into the circulation, possesses the power of communicating such a stimulus to the capillary

vessels, and to the entire of the organic functions, that mercury unquestionably does. Iodine, it is obvious, lends its aid chiefly to the function of absorption; and arsenic, perhaps, I might say, shows a bias for that of nutrition; iron evidently exhausts its medicinal virtues in improving the condition of the blood, but mercury, more general in its operation, gives an almost equal impulse to the whole of the vital functions; circulation (capillary), exhalation, secretion, nutrition, and absorption; all are more or less urged and excited during the alterative action of this potent mineral, and the order also, let me remark in which these functions are here enumerated, has seemed to me to be that in which, with considerable regularity, they generally evince the influence of the medicine. Observe the changes that take place in the appearance of a syphilitic ulcer, whether in the throat or on the genitals, and also in the state of the circulation of the mucous membrane, and of the skin for some distance around them, as soon as the mercurial action has superseded in these parts that of the specific disease. The skin and mucous membrane, which previously were rather paler than natural, have become somewhat flushed and a little moist; the base of the ulcer, which before

on being pressed, felt almost as hard and resisting as a button, feels no longer so, it has become soft and pliant; the little excavations, also, of the ulcer have lost their abruptness and appearance of depth; its secretion, hitherto scanty and ichorous, has increased in quantity and has acquired a purulent character; the ulcer which had been stationary, or slightly increasing perhaps for weeks, now begins to cicatrise, and in eight-and-forty hours its cure is almost complete. These remarkable and salutary changes, which may frequently be observed to occur in the condition of syphilitic ulcer, under the administration of mercury, no other agent, it must be allowed, has the power at all to produce.

But the practice, let me here observe, of continuing the use of the mineral during any determined time, for the purpose of sustaining its effects upon the constitution and the syphilitic sores, has seemed to me not only unnecessary and injudicious, but the principal cause of the ill consequences which too frequently follow its administration; it is, according to my observation, in syphilis, as in rheumatism, during the incipiency of its alterative action, that mercury proves salutary and curative. There is, as I have

already stated, an order in the mode of action of the medicine, and, at this period, it is certainly the formative functions, the functions of growth and reparation, that are chiefly excited; absorption, which whether healthy or morbid, is rather an opponent and destructive function, would appear to be the latest in being urged by the mercurial alterative.

These few remarks upon mercury, and its therapeutic relation with syphilis, although in connection here with the subject of rheumatism, may appear a little digressional. I will vouch, however, for their not being unpractical, leaving it to the attentive observer to determine.

The peculiar friction-like sound, which, in this case, accompanied, as we have seen, the respiratory movements of the chest, did not escape the observation of Laennec; it was termed by him the "friction of ascent and descent." It is a sound of very rare occurrence, but one that is not difficult to be recognised when present, and so peculiar in its character as not likely, I think, to be confounded with any of the other physical signs of pulmonic disease. Its very close proximity to the ear of the auscultator, the time of its occurrence, synchronous exactly with the elevation and depression of the ribs, with its dry harsh

tone, are its most prominent and diagnostic characters. The dry râle cripitant of pneumonia, for which it is barely possible it might be mistaken, is always, to my ear, most perceptible towards the conclusion of the inspiratory act; it is also deeper seated, and I do not recollect to have ever heard it double.

January 23, 1840.

#### CONTRIBUTION XIV.

### FALSE ANEURYSM.

*Singular case of this disease in the aorta—History, description, and treatment of the case—Its morbid anatomy—Question of the possibility of the occurrence of such a disease—Refutation, in this case, of some doctrines on aneurysm in the work of Dr. Hope on diseases of the heart—Observations on the symptoms, etiological pathology, diagnosis, treatment, and mode of development of the case.*

JOSEPH HUMPHRIES, aged sixteen, strong and muscular for his years, was, on the 29th of November last, about nine o'clock, A. M., after having ascended a ladder to a considerable height, suddenly seized by a sharp piercing pain in the region of the heart, accompanied with a feeling of suffocation and syncope. He would have fallen to the ground but for his father, who, being at hand, came to his assistance and supported him while he descended the ladder, at the foot of which he lay for a short time in a state of insensibility; his lips, cheeks, and ears livid; his respiration laborious. After recovering from

this state of insensibility, he complained of pain with a sense of tightness and weight in the precordial region. The respiration was still difficult.

With the assistance of his father he now walked to a neighbouring house, and then a second time became insensible, and continued so for a longer period than the first. On recovering from this fit of insensibility he was carried home, a distance of nearly a mile through a village, some of the inhabitants of which, from his appearance, enquired if he had been drowned. I saw him at eleven o'clock, A. M., two hours from his first attack of insensibility. The most striking symptoms of his affection at that time were those of asphyxia; his lips, cheeks, and ears were livid, his extremities bloodless and cold. He shuddered as if extremely cold or in the first stage of ague. The pulse at the wrist was just perceptible, quick and thready. He complained much of pain and sense of weight in the precordial region, and also of soreness and weariness in the legs. The respiration was difficult. The thorax was somewhat more convex than natural, and, on the application of the stethoscope, the respiratory murmur was heard, faint and abrupt. The resonance on percussion posteriorly on both sides,



and anteriorly on the right, was clear. On the precordial part of the left side, stretching up to near the clavicle, and extending laterally, the resonance was remarkably dull. On applying the ear to this part of the chest, the action of the heart was heard irregular and at a distance. He vomited and had a profuse fluid evacuation of the bowels on arriving at home; he had also considerable thirst.

Being yet unsatisfied as regarded the diagnosis, I ventured, with the view of relieving the asphyxia and pain, on venesection, and twelve ounces of blood, which flowed freely, were drawn from the arm. Slight relief from the asphyxia followed, but no relief from pain.

R. Hydrarg. Chlorid., gr. iij; Pulv. Opii, gr. ss. Ft. Pulvis. quamprimum sumendus et octo quaque hora repetatur.

To have warm applications to the feet and warm tea with a little brandy occasionally to quench the thirst.

At eleven o'clock, P. M., Mr. Jones\*, an intelligent surgeon, visited the patient, and at this time it appears a degree of reaction had taken place. He found the boy in a calm sleep; surface and

\* The case occurred in this gentleman's practice at Brackley, Northamptonshire.

extremities warm, pulse soft, and not remarkably small; countenance natural. On being awoke, he still complained of pain in the region of the heart, which now, however, was not constant but recurring in transitory stings. He moaned and was restless from this time until four o'clock next morning (Nov. 30th), when he again fell asleep, and so continued until nine o'clock, A. M., when he awoke and expressed himself as being better, took his powder, and, during the day, which was spent in tolerable comfort, had some tea and toast. In the evening he became uneasy. The night was passed without sleep, and in a very restless manner. About nine o'clock, on the 1st of December, he complained of being tired of lying in bed; he dressed himself, and came down the stairs from his bedroom without any assistance, and, having sat for more than an hour at the kitchen fire conversing freely with those around him, again went up stairs without assistance, and lay for some time in a restless manner in bed, complaining much of pain of the heart and difficulty of breathing; he again attempted to descend the stairs, but he had passed only a few of the steps when he fell backwards, and was carried to his bed in a state of insensibility, and in a few moments expired. The fatal event

occurred at twelve o'clock midday, fifty-one hours from the commencement of the attack.

This boy never felt any symptom of his disease till within a month or six weeks previous to his death, during which time he was frequently started by a transitory stinging pain in the chest, which, for a short time, interrupted his breathing. This pain, however, was not so severe as to cause him to apply for relief. His father is a thatcher, whom he was in the daily habit of attending, thus following an employment similar to that of a hod-man in London. He was the champion of his companions and used to amuse them much by tumbling and other feats of activity.

*Autopsy twenty-six hours after death.*

On laying open the thorax, the lungs were found to be healthy. The right lung was in its natural position; the left was pressed backwards by the pericardium much distended. This sac, on being slit open, was found to contain thirty-six ounces of blood, the serum and crassamentum of which was perfectly distinct, the latter being firmly coagulated, and moulded to the shape of the heart with more nicety than plaster of Paris could be modelled by the hand of an artist. By

removing this clot of blood, a transverse lacerated aperture, about an inch and a quarter long, was discovered in the pericardium, situated just between the tip of the right auricle and the root of the pulmonary artery. This aperture led into the interior of an aneurysm of an ovate, or rather, pyramidal shape, about the size of the right auricle when fully distended, which it had surmounted and pressed a little downwards, so that at first view the whole was mistaken for dilatation and rupture of that cavity. To be somewhat more particular in the position of the aneurysm, it was situated as follows:—Buried deep in the chest, it was bounded on the left by the arch of the aorta, on which it was engrafted, and by the pulmonary artery; on the right by the descending cava; before by the anterior mediastinum; the blood-vessels of the root of the right lung lay behind it. Its apex mounted up to near the commencement of the arteria innominata. Its base rested, as I have mentioned, on the right auricle and base of the right ventricle, and overhanging those parts a little, formed a slight bulging into the bag of the pericardium, the serous membrane of which, in a thickened and softened state, formed the partition in which

the rupture took place. The wall of the sac was thin, and formed, except in the part corresponding with the aorta, by the serous membrane of the pericardium, and cellular tissue consolidated by adhesive inflammation, and strengthened at some points by small portions of fibrinous deposits. The interior was irregular and contained a firm clot of blood.

The ascending portion of the arch of the aorta was considerably lengthened, and was dilated to upwards of twice its natural capacity. Its wall was as thin as paper, soft, and easily torn, but free from every kind of morbid deposit.

In the right part of the wall, facing the aneurysm, about its centre, a large recent, ragged, angular rent was situated, one side of which was longitudinal, the other transverse, and each an inch in length. Two small apertures, about the size of those in the rose of a large watering-pot, were also discovered, opening into the sac, about a quarter of an inch from the aortic valves. These valves were cartilaginous and considerably puckered, forming a stricture between the dilatation and the left ventricle, which permitted the index finger to pass with difficulty as far as the second joint. The mitral valves were a little

thickened. The other valves were sound. The heart completely empty, was considerably enlarged the left ventricle being much hypertrophied.

From the infrequent occurrence of such a case of aneurysm as the one now related, the following remarks will not, perhaps, be considered much out of place.

It has been stated by writers that *false aneurysm* of the ascending portion of the arch of the aorta does not, nor can ever occur, for this reason, that the structure of the part,—the absence of a cellular coat to this part of the vessel—will not permit such a lesion. Dr. Hope, a good authority on this subject, makes the following statement:—“Almost all the aneurysms,” says this distinguished author, “of the ascending portion of the arch are originally of the true species, but the false are sometimes engrafted upon them; the tumour generally springs from the anterior or lateral part of the vessel, while the posterior part is little, if at all implicated. It sometimes attains the magnitude of a mature foetal head, and generally inclines to the right side of the chest. When it springs from the root of the aorta, and the middle and internal coats happen to burst, then results not a false aneurysm surmounting

the true, as in other parts, but a fatal extravasation into the pericardium. The reason of this is, that the part of the aorta referred to is destitute of a cellular tunic, and the pericardium which supplies its place, not being equally distensible, bursts, rather than dilates, into a false aneurysm."

The doctrines contained in the two last sentences of this quotation, can no longer be received as authentic. This case proves the contrary, namely, that *false aneurysm* may form at the root of the aorta, as well as at any other part of the arterial system. Theories, however plausible or respectable they may be, can only be regarded as illegitimate offspring of reason, and in the republic of science are doomed to give place to the legality of fact.

The serous membrane of the pericardium forms at the root of the aorta, a sort of third coat to the vessel, and, in this instance, with the assistance of the adjoining cellular tissue, served every purpose, which the more dilatible tunic does elsewhere in the formation of aneurysm. In the present case, indeed, the serous membrane *external* to the fibrous coat of the aorta was scarcely more distended than the internal. Again, Dr. Hope says, "It has been stated by a recent writer, that a preparation in Mr. Hunter's collection

subverts the doctrine that false aneurysm does not form at the root of the aorta. The preparation of which he speaks, however, scarcely subverts this doctrine, since it is not one of false aneurysm; for the middle coat is perfect, the internal one alone, being either diseased or removed (which is doubtful) at the base of the sac."

If this preparation in Mr. Hunter's collection do not subvert the doctrine, "that false aneurysm does not form at the root of the aorta," the preparation now in my possession does, than which a fairer specimen of the disease in question could hardly, I presume, be procured from the collections of any of the museums of this city\*.

In the supervention of the false aneurysm upon the true, the blood, in this case, as far as observation can now detect, seems to have oozed through the wall of the aorta by several small openings, forming at first a sort of extravasation or echymosis between the serous membrane of the pericardium and the fibrous coat of the vessel. The extension of the sac to the size, which it presented on examination, must have been a process of unusually slow progression. This we can un-

\* This preparation I gave to the late Dr. Hope, who said he would put it in the museum of St. George's Hospital, which, I have no doubt, he did.



derstand from the nature of serous membrane. The lateral pressure of the blood following each systole of the heart, was prevented from acting with force on the wall of the sac, by the partial intervention of the wall of the aorta, and this useful support was afforded to the sac by the aorta, until the occurrence of the angular rent. But immediately this took place, a gush of blood, propelled by the increased power of an hypertrophied ventricle, escaped into the sac and caused the rupture and fatal extravasation. The latter rupture followed the former, then in close succession, and both took place while the boy was on the ladder, fifty-one hours previous to his dissolution. This, in my humble opinion, is the authentic view of the case, and the subsequent short analysis of the symptoms will, perhaps, contribute to its support.

Although it is stated by Laennec, Dr. Hope, and other writers on this subject, that life continues longer after extravasation into the pericardium than after extravasation into any of the other cavities (for instance the pleura, trachea or œsophagus) into which the blood from aortic aneurysm, is more commonly effused, I am not aware that there is on record a case, in which the patient survived the extravasation for so long a period

as fifty-one hours. Rupture into the pericardium is, indeed, so extremely rare, that the inventor of the stethoscope never saw an instance of it. Dr. Hope has met with one, but he has not mentioned the length of time which the patient survived the event. In the present case, it is to be regretted, that the patient did not remain quietly in bed, as, by so doing, there is little doubt that he would have survived the rupture even longer than he did.

A curious fact in the history of this case is, that so serious a lesion of the circulation should exist, and yet interfere so little with the health, and not at all with the laborious employment of the individual. Up to the moment at which the aneurysm burst he had never relaxed for a day from his customary labour. This circumstance led me somewhat astray in the *diagnosis*; for although, as I shall here explain, I was perfectly satisfied that the pericardium was distended with a fluid, I could scarcely come to the conclusion that that distention was derived from the bursting of an aneurysm. My diagnosis, therefore, was "extravasation of blood into the pericardium, from rupture of some of the chambers of the heart." This diagnosis was advanced shortly

after my first visit to the patient, and the evidences on which it was founded were these:— 1st. The sudden manner in which the patient was attacked. 2nd. The tightness with the un-deviating locality of the pain in the precordial region. 3d. The very enlarged extent over which in this region, the resonance, on percussion, had become dull, with the *distant* feeble sound of the action of the heart.

The attacks of insensibility following the rupture, must be regarded as compounds of syncope and asphyxia, the former caused by the sudden extravasation of so large a quantity of blood; and the latter by the pressure of this blood interfering with the distole action of the heart. The syncope in both instances was soon recovered from, but the asphyxia, which, when I first saw the patient was sufficiently manifest in the livid cheeks and lips, and the weak thready pulse, continued more or less intense, from first to last, until syncope, brought on evidently by the muscular exertions of going up and down stairs, again supervened and proved fatal. From this view of the matter it is tolerably manifest, that not a little risk of immediate dissolution was incurred by the sanguinious depletion. In defence

of the practice, however, I may observe, that when this remedy was had recourse to, I was not decided on the score of diagnosis. It was resorted to with the view of relieving the asphyxia, and it had in some degree the desired effect, for the patient, after the operation, expressed himself as being easier, and remained tolerably comfortable until next morning. The bleeding was not repeated for fear of inducing syncope.

The pathological commencement and course of this affection will admit of two modes of explanation. The primary lesion, or first diseased action, may be placed either in the aorta or the heart; and first I will commence with the aorta.

That vessel from some invisible cause (a slight degree of inflammation, I am disposed to think, was the cause in this case — not morbid deposit as seen by autopsy) was deprived of its elasticity, the power of reacting to the distolic impulse of the heart, and thus, from being an active it became a passive tube; and, yielding to the expanding force of the passing current, gave rise to dilatation, the first *apparent* step in the pathology.

The immediate consequence, then, of this dilatation was, the permitting of a larger column,

and consequently a greater weight of blood, to press upon the area of the aortic valves. Those parts being by this circumstance called upon to perform a function which, from their natural organisation, they were incapable of executing, must either have ruptured or permitted of regurgitation. But Nature, fruitful in resources, obviated this evil by strengthening these valves by means of the deposition of cartilaginous matter in their texture. This cartilaginous and rigid state of the valves, however, from being a consequence, became in its turn a cause,—the cause of the hypertrophy of the heart, principally of the right ventricle, the increase of the muscular texture of the ventricle being the result of the increased efforts of the cavity to expel its contents,—from a similar cause, and in a similar manner, to that of the muscular coat of the bladder sometimes becoming thickened when a stricture exists in the urethra.

In beginning with the heart the matter may be explained thus:—The continued laborious exercise to which that organ was subjected, in consequence of the daily employment of the patient, produced in the first instance hypertrophy, and that hypertrophy increasing the power of the left

ventricle, the blood was propelled with augmented force against the wall of the aorta, and overcame its elasticity, giving rise to dilatation,—the dilatation then producing disease of the valves, in the manner already explained. One of these two explanations comprehends, I presume, the pathology or pedigree of this disease. The former is, perhaps, the one most likely to be correct.

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January, 1831.

The following is a translation of the original Latin text, which is a medical treatise on the pathology of the heart. The text is written in a cursive hand and is somewhat faded. It discusses the anatomy and physiology of the heart, particularly focusing on the valves and the effects of blood flow. The author mentions the elasticity of the aorta and the possibility of dilatation leading to disease of the valves. The text is a detailed medical analysis, likely from a 19th-century medical journal or book.

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