

Prize examinations of the practice of physic and midwifery classes, at the Argyle Square School of Medicine, session MDCCCXXXIV-V.

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Prize Examinations

OF THE

PRACTICE OF PHYSIC

AND

MIDWIFERY CLASSES,

AT THE

ARGYLE SQUARE SCHOOL OF MEDICINE,

SESSION MDCCCXXXIV-V.

EDINBURGH:

PRINTED BY H. & J. PILLANS,

7. JAMES'S COURT.

MDCCCXXXV.

THE UNIVERSITY OF CHICAGO

OF THE

PRACTICE OF PHYSIC

AND

MIDWINTER CLASS

AT THE

ANGEL SQUARE SCHOOL OF MEDICINE

SESSION 1888-1889

INDIANAPOLIS

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PREFACE.

THE following are the Essays which obtained the Prize Medals, at the annual competition of the Pupils attending the Practice of Physic and Midwifery Classes at the Argyle Square School of Medicine, Session 1834-5.

Having requested the publication, I consider it due to the writers to state, in mitigation of any imperfections with which the statements or manner of composition are chargeable, the conditions and circumstances under which they were written.

The competition having been intimated to the Class, consisting of 156 students, the competitors, from my dictation, took down 20 complex Questions, which were now for the first time known to them.

Immediately after, upon assenting to the condition, that no book, note, or memorandum of any description should be used, but that the answers should be the actual compilation, and the result

of the previous study of those engaged, the competitors were placed in a room, under the surveillance of a committee, composed of individuals unconcerned in the result.

The time was limited, the regulations compelling that the answers should be delivered into my charge at the expiration of eight hours.

Each Essay was accompanied by a motto, by which means the individuals were unknown till the successful Essays were announced to the Class.

The situation of the Essays in this pamphlet have been decided by lot,—the prizes being equal.

Foot notes have been added, explanatory of some statements ; where these do not occur, the matter remains exactly as it was originally written.

JOHN MACKINTOSH, M.D.

EDINBURGH, *April 26. 1835.*

PATHOLOGY, AND PRACTICE
OF PHYSIC.

Prize Answers,

BY

THOMAS CLARKE,

STUDENT OF MEDICINE,

AND

FIRST PRESIDENT OF THE HUNTERIAN SOCIETY.

Amicus Socrates, amicus Plato, sed magis amica Veritas.

QUEST. I.—The causes of inflammation of internal organs, and how these causes act in producing the combined phenomena.

The causes of inflammation may be divided into common and specific.

The common may be subdivided into predisposing and exciting.

Amongst the predisposing are age, sex, climate, occupation, habit of body, previous inflammation, and increased diseased action going on in an organ, and hereditary taint. [Answer not completed.] *

QUEST. II.—The different ways in which the contagion of fever and small-pox are supposed to produce their effects on the system.

1st, By exciting a depressing, and something like a poisonous, influence upon it, which tends to produce a fatal termination, independently of any local affection.

2d, By exciting inflammation (of a specific kind) in some organ or tissue of the body.

The advocates of the first, choose common continued fever† to illustrate their doctrine; and their arguments are,

* This question was not entered upon more fully for two reasons : 1st, because the writer felt less confidence in himself with regard to it than to some others; and, 2dly, because at the period of the examination at which he undertook it, time pressed, and several questions much less comprehensive, but of equal numerical importance, remained unanswered.

† As it occurs in the present epidemic.

1st, That frequently in cases of fever we have the phenomena of the disease, without any signs of local affection adequate to account for those phenomena.

2d, That on examination of the body after death, very generally the morbid appearances are quite insufficient to explain the symptoms during life, and that in some cases, rare perhaps, no morbid appearance whatever is found.

3d, That there are symptoms present in continued fever, which have no place in inflammatory fever,—the result of common inflammation, such as, the foul tongue and lips, the low delirium, the prostration, &c. (*Vide* Note 1.)

4th, That there is a spontaneous tendency to a favourable termination, which is not the case in ordinary inflammation, as it occurs, for instance, within the cranium, chest, and abdomen.

5th, The experience of the *juvantia* and *lædientia*, it being found as a general rule, that V. S. and the withdrawal of stimulants, is hurtful, while the use of wine is attended with advantage, even, in some cases, to the local complications which exist. (*Vide* Note 2.)

By the advocates of the second doctrine, it may be urged against these arguments, that the inflammations contended for are of a specific nature, and thus occasion the peculiarity in the symptoms; but this is obviously recognizing, although not with the intention of so doing, the operation of some additional influence, which thus qualifies and renders specific that inflammation.* It may be urged also, that local affections may go on in a suppressed form. But taking the arguments conjointly, I am strongly disposed to come to the conclusion, that the symptoms of continued fever, at any rate, are independent

* Unpublished Clinical Lecture by Dr Alison.—It is perhaps right to state, that the argument and reply, although the same as here laid down, were stated by Dr A. with regard to the pathology of Fever, apart from the question of contagious influence. The writer does not consider it necessary to state the extent to which he is indebted in the answer to this question, as well as in other places, to the study of Dr Alison's published writings.

of local inflammation ; and, consequently, that contagion operates in this case by an influence "*sui generis*," and certainly not through the medium of inflammation.

In small-pox, it may be, and indeed is the case, that a specific inflammation is generated ; but the very admission of specificity, recognizes, as before said, the operation of some cause besides the common causes of inflammation, although in this case it cannot, obviously, be shewn that it does not operate through the medium of that inflammation.

Another question that may be started with regard to the different ways in which the contagions of fever and small-pox are supposed to produce their effects on the system, is, as to whether the nervous system or the blood is first affected. The dissolved state of the blood is brought forward by the fluidists in support of their doctrine ; the symptoms of nervous depression, and the length of time that the contagious influence remains dormant in the system, may be appealed to by their opponents.

From the previous eruptive fever, and the symptoms of disease in internal organs during that fever and after the eruption, and from the relief to those symptoms on the appearance of the eruption, and the aggravation they receive from the non-appearance or repulsion of the eruption, it has been held, that the contagion in this, (and in the other contagious exanthemata, by a parallel reasoning,) first operates upon the mucous membranes of the chest and abdomen.

Note 1.—It may be stated, perhaps, that inflammation, when accompanied by particular circumstances, gives rise to fever of a typhoid type, as in concussion of the brain, and extensive burns ; but this does not invalidate the argument, for it merely shews the additional cause of a depressing nature, viz. the shock to the system, and how produced, which* in fever and small-pox is wanting.

* Or which (evidence) is inferred in these diseases.

Note 2.—An objection to this, but certainly not a complete objection, perhaps is, that bleeding is sometimes of service in the early stages of fever.

Quest. III.—The results of acute Inflammation in the following tissues, in its different stages, viz. Mucous Membranes ; Serous Membranes ; Substance of Lungs.

1. *Mucous Membranes.*—1st Stage. Increased vascularity, and diminished secretion.

2d Stage. Still vascularity, but increase of natural secretion ;—mucus.

3d Stage. Vascularity continues at first, but subsequently disappears. Throughout, puriform or purulent secretion ; ulceration, softening, thickening, gangrene, may also be terminations of inflammation in this membrane, as well as the effusion of lymph ; this latter termination is more common in certain portions of the mucous membrane, as that of the upper portions of the air-passages, and the lower portions of the large intestine ; but it does occur in other parts, *e. g.* the mucous membrane of the ileum.

2. *Serous Membranes.*—1st Stage. Dryness of surface, and increased vascularity.

2d Stage. Effusion of lymph or serum. Purulent secretion is also a result of inflammation in serous membranes, but not so frequent as in mucous. Ulceration and gangrene are very rare terminations. Indeed, inflammation of serous membranes generally, does not pass beyond the effusion of serum or lymph, and consequent adhesion ; but purulent secretion into the pleura or peritoneum is by no means uncommon. Dr Mackintosh speaks of cartilaginous formations on serous membranes ; but this would be the result rather of chronic inflammation, or rather a new mode of nutrition in effused lymph, as perhaps is osseous formation.

3. *Substance of Lungs*.—1st Stage. Sanguineous engorgement, with increased secretion into the air-cells. The lung presents on dissection a red and gorged appearance, crepitates less than healthy lung, and barely floats in water.

2d Stage. The lung presents the reddened colour, does not crepitate, and sinks in water. It presents a granulated aspect when cut, lines are observable on it, which are the vascular and bronchial parietes and interlobular septa. It breaks down on pressure between the fingers. This is the stage called by some, red hepatization; by others, red softening.

3d Stage. The lung presents a dirty grey aspect, breaks down on pressure between the fingers, and discharges purulent matter. This stage is the "hépatization grise," or grey hepatization. Inflammation of the pulmonary parenchyma, may terminate also in the formation of abscess, (very rare,) and in gangrene

Quest. IV.—All the symptoms indicating a high degree of danger in fever, and the pathological states of the body on which those symptoms may depend.

1st, Symptoms connected with the nervous system.*

An extreme degree of prostration with a cold surface, or extremities, or chills alternating with slight flushes, a pallid or leaden countenance, and a sunk eye, a feeble or an oppressed pulse, a degree of stupor sometimes approaching to coma, oppressed breathing; the pathological cause of which symptoms is, according to Dr Mackintosh, a lost balance of the circulation and congestion of internal organs, particularly the brain and lungs.

Another set of symptoms indicating great danger, is

* This remark is obviously misplaced.

violent head-ache, with contracted pupil, an injected eye, and intolerance of light, with a quick pulse, these symptoms going on to delirium, and terminating in coma, the pathological state of which is inflammatory action in the membranes of the brain.

Another set of symptoms indicating danger, is an anxious countenance, a low muttering delirium, feebleness and quickness of pulse, sordes collected on the tongue and teeth; the pathological cause of which is doubtful, but from the relief afforded to such a state by opiates and stimulants, (remedies which determine blood to the brain,) it is not altogether unreasonable to refer it to a state of anæmia in the nervous system, the more particularly that we find other symptoms of disorder in the nervous system connected with a diminished flow, as well as an increased flow of blood to the brain, *e. g.* convulsions and vertigo.

Another symptom which goes with bad cases of fever, is the appearance of diffuse circular petechiæ, but I am not certain that this is necessarily of unfavourable augury.

Cough, difficult breathing, expectoration of mucus, and the other signs of bronchitis, are a dangerous complication with fever, particularly when accompanied by a state of great depression; the pathological cause is, inflammation of mucous membrane of bronchi; and the danger is of death by asphyxia, from an inability or an apathy on the patient's part to expectorate.

I have not alluded to the circumstances in the state of the patient, which render the prognosis unfavourable, independently of the phenomena of disease, as they can hardly be called symptoms. They are, age, previous habits, &c.

I have also omitted to indicate, as a set of symptoms attended with danger, diarrhœa and tympanitic distension of the abdomen, connected in general with inflammation and ulceration in the glandulæ agminatæ, and which is the almost invariable concomitant of the typhoid fever of the Parisians.

Quest. VI.—The symptomatical difference between a case of natural small-pox, and one of modified, and the course of the eruption in each disease.

In natural small-pox, the prominent symptoms are cerebral disorder, such as head-ache, sometimes convulsions, the symptoms of bronchitis, and burning pain in the epigastrium. The papulæ appear from 50 to 80 hours after the commencement of the eruptive fever; vesicles form on the third day, which after some time become depressed in the centre; on the sixth day, the vesicle, having lost the central depression, is become a complete pustule, which, about the eighth day, bursts on some parts of the body, and discharges its contents, whilst in others the pustule becomes converted into a dry scale, which falling off, leaves a dark-coloured depression. In the modified disease, the eruptive fever is much less violent, and the local affections, if present, much less severe. The eruption less numerous, and does not mature regularly.

Quest. VII.—The most troublesome symptoms in a severe case of indigestion.

Pain and uneasiness in the epigastric region, increased by taking food. Flatulence, nausea, vomiting, a depraved appetite, and perhaps thirst. Inability to keep the extremities warm.

I am not here speaking of Dr Wilson Philip's third stage, because Dr Mackintosh regards that as merely a complication with organic disorder in some other parts.

Quest. VIII.—The best treatment in a severe case of indigestion, of perhaps six months duration, the pulse being still strong, perhaps full, and somewhat hard.

I should, in the first instance, perhaps, but such cases would be few, be inclined to try the effect of a limited bleeding. This to be followed up by leeches to the epigastrium, and subsequently by counter irritation there, having previously endeavoured to procure relief by, if such relief should not readily follow more than one application of, leeches. I would restrict the patient at first to arrow-root, or some other farinaceous diet, given in moderate quantities at a time, and at regular intervals. Gentle exercise out of doors. Gentle laxatives, if required; but the bowels should be regulated as much as possible by Enemata. Excesses of diet, stimulating drinks, exposure to cold, are to be strictly prohibited; and a very good plan is, to make the patient keep an account of his diet. Cotton or silk stockings under the worsted. As the affection improves, some meat, regulated as to quantity, may be allowed; mutton and beef the best, and from 4 to 6 oz. daily.

Quest. IX.—How is constriction of the rectum recognized? and state the progress and termination of complaint if not detected and cured.

Uneasiness at the seat of the disease, with sense of weight. Desire to go to stool, not relieved by passage of fæces, which will be distorted in their figure if solid; examination with the finger; of course, more or less constipation, if the disease is uncomplicated. All these symptoms become aggravated as the disease advances, and symptoms of ileus close life.

Quest. X.—Symptoms of acute tropical dysentery, and the best means of cure.

Diarrhoea, tormina, and tenesmus; matter at first discharged by stool feculent, but as disease advances, becoming mixed with blood, and consisting sometimes of nothing more than mucus mixed with blood. Pain extending along the direction of colon on pressure. Sometimes vomiting and hiccup; pulse variable but sometimes frequent; thirst; dry florid tongue, red all over, or only at edges, with fur in centre. Great anxiety and prostration; stools have characteristic smell. Symptoms become aggravated, a cold sweat breaks out, and death closes the scene.

Treatment.—Warm bath; oily anodyne purgatives at first. V. S. if pulse indicates it; strict antiphlogistic regimen; leeches; blister; acetate of lead and opium.

Quest. XI.—Morbid appearances in cases of dysentery in this country.

Redness, softening, effusion of lymph. Ulceration along the course of the plicæ of mucous membrane, and gangrene; all of the mucous membrane of large intestine and rectum.

Quest. XII.—The name of French writer who wrote on diphtherite, and the singular appearance he found on dissection.

Bretonneau. Inflammation and effusion of lymph about fauces, extending down the air passages, and if I remember rightly, the œsophagus.

Quest. XIII.—Name the individual diseases in which tartrate of antimony, when given internally, has been

found most successful ; the doses in each disease, and the intervals between doses.

Pneumonia. Rheumatism. Pericarditis. Fever—

The doses in pneumonia vary according as it is used with a view to its physiological or therapeutic action. When given merely with a view to nauseate, (one of its physiological actions,) $\frac{1}{4}$ or $\frac{1}{2}$ grain doses every three hours. When given with a view to its contra-stimulant, (or therapeutic action,) 1 or 2 grain doses in 3 oz. of vehicle every two hours.

In rheumatism it may be given as a sudorific nauseant, and contra-stimulant. As a sudorific the dose is very small, from 15 drops to $\frac{1}{2}$ dr. of vinum ant. tart. every two or three hours ; the doses for its other actions are as in pneumonia.

Quest. XIV.—The individual diseases in which opium is most beneficial, the doses, and manner of its action.

Peritonitis. Spasmodic Asthma. Gastritis. Diarrhœa. Small Pox—

In peritonitis, (I would give it with calomel,) the dose is from $1\frac{1}{2}$ or 2 grains, down to $\frac{1}{2}$ grain every six hours. It acts by suspending the sympathetic depression of the heart's action, which the acute sensation in the abdomen gives rise to, and thus in cases when peritonitis is the result of perforation of intestine—— —*.

Quest. XV.—The symptoms, causes, and terminations of hemoptysis.

I shall here take the liberty of describing first the causes

* This was the last question answered. What the writer intended to say, was that opium in this case acts by suspending the acute sensation in the abdomen, which gives rise to the sympathetic depression of the heart's action, &c.

or pathological states on which hemoptysis may depend. *1st*, Sanguineous exhalation from the bronchial mucous membrane, occasioned in some cases by the suppression of menses, and perhaps vicarious with that discharge, in others, by the common causes, such as cold, constipation, severe exercise of the organs of respiration.

2dly, Pulmonary apoplexy, or the state so named, viz. the dark red, abruptly circumscribed effusion, into the pulmonary parenchyma.

3dly, Rupture of a vessel in a tuberculous cavern, a state which Laennec is disposed to deny, but which Dr Mackintosh illustrates by a case, in which the vessel was found ruptured into a cavern, which opened into the œsophagus.

4thly, Aneurism of the aorta, opening into the trachea.

In the first form, the discharge is generally slight, and preceded for a few days by uneasy sensations, such as headache, oppressed breathing, or uneasiness in the epigastrium, with loss of appetite and indigestion. It may be accompanied also by coldness of the hands and feet. The pulse is not necessarily affected. In the second form, all the concomitant symptoms are more violent. The breathing is more hurried and oppressed; the countenance is anxious; the surface frequently cold; the pulse full; and the quantity of blood discharged so great, as in many cases of itself to threaten death in the way of syncope.

In the third case, the symptoms will be the common ones of phthisis. In the fourth case, the symptoms will be those of the disease in question, such as, inequality of pulse, perhaps, in two arms, dyspnoea occasionally aggravated, caused by pressure of the aneurism on the trachea, and a pulsation audible at the upper part of the sternum, or about that situation, distinct from, but synchronous with the heart's pulsation.

The termination in the first case frequently is, that the blood is discharged, and there is no more of it, or it

goes on and exhausts the patient. In the second, either fatal hemorrhage or effusion ceasing, the blood is absorbed, or a cyst remains in the situation, inclosing a serous fluid.

In the third, the hemorrhage may also be fatal, or, perhaps, the vessel contracts upon itself, and the hemorrhage ceases. In the fourth, after repeated small hemorrhages, one excessive one occurs, and proves fatal, either by pure syncope or asphyxia, from obstruction of the air passages.

Quest. XVI.—The true nature of tubercles, found in cases of pulmonary consumption, and their progress from incipient state to that in which caverns are seen on dissection.

The tubercle is a production of a yellowish white colour, opaque, generally of a cheesy consistence, and exists in the state called miliary, or that in which small specks are disseminated (of the real tubercular character above described) through the tissue. It exists also in the state called crude tubercle, or that in which larger masses, resulting from the union of several miliary tubercles, present themselves. It exists also in the state of tubercular infiltration, or that in which large portions of lung present the tubercular appearance, without any intervening healthy tissue. An appearance found frequently, and, according to Louis, almost invariably to accompany the tubercular deposit, is specks of a whitish-grey colour, and semi-transparent. This appearance was considered by Boyle as a disease apart, by Laennec and Louis as simply the first stage of true tubercle. Dr Mackintosh regards this appearance as simply the result of hypertrophy, caused by inflammation in the parietes of the pulmonary vessels; and this opinion seems established by the researches of Andral. If with this fact we connect the fact stated by

Louis, in regard to the striking precursory relation which this appearance bears to the tubercle, being almost invariably found mixed with the tubercle in, and in a direct ratio to, the early stage of its development—if, I say, we connect these two facts, a result comes up highly favourable to the, generally speaking, inflammatory origin of tubercles. And this is a question, viz. the inflammatory or non-inflammatory origin of tubercles, which is of some pathological and practical importance. The further fact, which has been stated, of stone-cutters being peculiarly liable to phthisis pulmonalis, so much so, that it has been stated that scarcely one reaches the age of forty, or thereabouts, without being affected by it; this fact seems to confirm the inflammatory doctrine, for if the disease be the effect of the inhalation of small particles of the stone, it is difficult to understand in what way they operate, except by exciting irritation and consequent inflammation. The further fact of natives of warm climates being peculiarly disposed to the disease when their “habitat” is changed to a colder clime, also corroborates this doctrine; for however much we may allow for constitutional predisposition, created by the habits and influence of a tropical climate, still it is the change from a warmer to a colder clime which fans the lurking propensity (if such be insisted on) into action; and in what way this operates, except by the direct irritation of cold air, or the indirect irritation it causes in the lungs, by chilling the surface, it is not easy to say. Dr Alison has quoted some experiments of Dr Kay in support of the above doctrine, I believe; but I am not sure that any conclusive inference can be drawn from those experiments alone. The experiments consisted in injecting mercury into the trachea of rabbits, and examining the state of the lungs at various periods after the experiment had been performed. It was found that round the globule of mercury contained in a pulmonary vesicle, a quantity of matter, resembling tubercle in ap-

pearance, had been effused. On the examination of other rabbits, killed at a more distant period, after the experiment had been performed, it was found that a large portion, if not all, of the effused matter had been absorbed. Now this last fact goes, in my opinion, to invalidate any conclusion as to the inflammatory origin of tubercles, from these experiments alone, inasmuch as it is a doctrine not yet recognised by pathologists, that tubercular matter can be absorbed. But the doctrine, as already stated, rests upon other and better grounds, which may be stated briefly as follows :

1. The character of the demi-transparent granulations which accompany tubercles, (hypertrophy from inflammation,) and the striking co-existence between these, and the relation they bear to tubercles, as shewn by Louis.

2. The prevalence of phthisis among stone-cutters ;—a fact which, unless we suppose almost all these operatives born with a constitutional predisposition, (a most extravagant assumption,) leaves no choice but to refer the origin of the disease, in their cases, to irritation alone.

3. The fact already stated with regard to climate and its occupants.

Having stated these arguments in support of the inflammatory origin of tubercle, it may be as well to consider some of those urged against the doctrine of the source of this disease being inflammation of the pulmonary tissue.

Pneumonia, it is said, occurs, as a general rule, in the lower lobes of the lungs, phthisis pulmonalis in the upper ; pneumonia occurs, rarely, in more than one lung, phthisis pulmonalis generally occupies both ; pneumonia (I think I am correct in stating this as a further argument) is more frequent in males than in females ; the reverse holds for

phthisis pulmonalis. Now, admitting these statements in their full force, it is, at least, doubtful whether they attack the real question at issue ; now, the germ of that question appears to me to lie herein—Whether inflammation, not the ordinary acute inflammation of the lungs, but whether inflammation of a particular character, slow in progress, and low in action, does, or does not, in the majority of instances, precede pulmonary tubercle ? And the affirmative answer to this is, I conceive, untouched by the objections just stated. Another question connected with the pathology of tubercle, is, Whether it is the result of secretion, or a growth, independent, organised, and *sui generis*. It does not appear to possess any arcolated structure, its vascularity is perhaps doubtful, nor does it invariably soften from the centre ; but the question is for me yet undecided, although I am inclined to consider it as the result of secretion, which is the opinion of Andral. Dr Barron has maintained that the origin of tubercles is an hydatid ; but his observations must have been made on the lower animals, and his conclusions fallacious, inasmuch as, though the co-existence of tubercle and hydatid in these animals cannot be denied, it is yet to be proved that they stand in the relation of cause and effect, or of necessary priority and sequence ; and, moreover, their co-existence in man is rare.

The tubercle, having arrived at its stage of complete maturation, (crude tubercle) gradually softens and escapes from its bed in the lung, by destruction of portions of that tissue, involving one or more bronchi into the communication thus established with the trachea, and is discharged, leaving behind it an excavation, generally stated to be lined by false membrane, but the nature of which lining is considered by Andral to be merely tubercular matter, which adheres to, or is deposited on, the surrounding pulmonary tissue. These caverns, in some rare cases, heal on their surface, and become covered with a cartilaginous

lining, or the cavity may contract and leave no marks of its previous existence, but a cicatrix at the part. In this way phthisis is sometimes cured, but Dr Mackintosh considers it essential to a cure in this way, that only one such cavern should exist, or, at any rate, a very limited number, and that the tubercular deposit should not be disseminated throughout the lung.

It has escaped me hitherto to speak of the constitutional predisposition to the formation of tubercle. It does exist, and may arise either from hereditary taint, or from the influence of causes which produce a depressed state of the system, (or, if the term is liked better, leucophlegmasia,) and very probably it is the slowness of action which this state of the system gives to any inflammation in it, which occasions, in many cases at least, the production of tubercle. The characteristics of a scrofulous diathesis are generally stated to be blue eyes, a fair complexion, light hair, and thick upper lip; but I do not hold other temperaments to be free from the liability to phthisis. The causes which, combined, produce the predisposition, independently of any hereditary taint, are bad diet, damp dwelling, bad air, and insufficient clothing.

PATHOLOGY, AND PRACTICE OF PHYSIC.

Prize Answers,

BY

EDWARD HEADLAM GREENHOW,

STUDENT OF MEDICINE,

&c. &c.

to which we must now return your attention and to which we shall now direct it. We shall now return to the subject of the blood, and to the various changes which it undergoes in the system. It is well known that the blood is composed of a solid and a liquid part. The solid part is called the corpuscles, and the liquid part is called the serum. The corpuscles are of two kinds, red and white. The red corpuscles are the most numerous, and they are the ones which give the blood its red color. The white corpuscles are much less numerous, and they are the ones which give the blood its white color. The serum is the liquid part of the blood, and it is composed of water, salts, and various organic substances. The blood is constantly circulating in the system, and it is constantly undergoing changes. The changes which it undergoes are of two kinds, physical and chemical. The physical changes are those which are due to the action of the various organs of the system. The chemical changes are those which are due to the action of the various chemical substances which are present in the blood.

PATHOLOGY AND PRACTICE OF PHYSIC

The object of this work is to give a concise and accurate statement of the principles of pathology and practice of physic. It is intended for the use of students of medicine, and of the general reader who is interested in the subject. The work is divided into two parts. The first part is devoted to the study of the principles of pathology, and the second part is devoted to the study of the principles of practice. The first part is divided into three books. The first book is devoted to the study of the principles of general pathology, the second book is devoted to the study of the principles of special pathology, and the third book is devoted to the study of the principles of the pathology of the various organs of the system. The second part is divided into two books. The first book is devoted to the study of the principles of the practice of physic, and the second book is devoted to the study of the principles of the practice of surgery. The work is written in a clear and concise style, and it is intended to be a valuable aid to the student of medicine, and to the general reader who is interested in the subject.

STUDENT OF MEDICINE

1844

Felix qui potuit rerum cognoscere causas.

QUEST. I.—State the causes of inflammation of internal organs, and how these causes act in producing the combined phenomena.

Inflammation generally attacks persons who have previously been in a bad state of body, *e. g.* some derangement of the digestive organs, or who are predisposed by the influence of depressing passions or other debilitating causes. There is also in most persons some organ naturally weak; hence, when disease occurs, it generally attacks that organ. Some persons seem to receive this tendency hereditarily, as we see in Phthisis and Hydrocephalus.

The exciting causes of inflammations are, exposure to cold and moisture, or vicissitudes of temperature and weather. In some cases inflammation arises as a sequence of impaired function, *e. g.* in the intestines after long constipation, and in these cases seems an effort of nature to remove the evil. These causes act in very different ways; cold, moisture, &c. act by destroying the balance of the circulation, causing congestion of internal organs; and if any of these be either naturally or accidentally prone to disease, the functions of that organ become most embarrassed, and inflammation ensues; probably the disordered function, and change which the blood must undergo from the cessation of secretions in these local congestions, along with the increased quantity of blood in the vessels, is sufficient to explain the origin of inflammation in this case.

When inflammation is the immediate consequence of depressing passions, the functions of different organs first become deranged, and then we have inflammation following as the result of this derangement. There are also specific causes of inflammation producing the eruptive fevers.

Quest. III.—The results of acute inflammation on the following tissues in its different stages, viz. mucous membranes, serous membranes, and the substance of the lungs.

Acute inflammation of mucous membranes, first of all produces dryness, swelling, and redness, followed by increased secretion, which after a time becomes muco-purulent, and is perhaps tinged with blood; it terminates in softening, thickening, disorganisation, and sloughing. It sometimes produces an effusion of lymph, at first appearing in a soft semi-fluid state, in the form of an exudation on the mucous surface, which subsequently becoming organised, forms a false membrane; another, and not unfrequent termination of acute inflammation in this tissue, is ulceration; very rarely gangrene.

Acute inflammation of serous membranes produces effusion of serum and lymph, often of both; sometimes the effusion has a greenish purulent appearance; it also produces ulceration, particularly in the peritoneum; very rarely gangrene.

Acute inflammation produces softening of the substance of the lungs, and infiltration at first of a frothy sanguinolent fluid, later, it assumes a purulent character; if the inflammation continues, we have complete destruction of the tissue, and sometimes, though very rarely, gangrene. The formation of abscesses in this structure is very rare.

Quest. IV.—All the symptoms indicating a high degree of danger in fever, and the pathological states of the body on which these symptoms may depend.

Loss of sight, subsultus tendinum, paralysis with rigidity of the flexor muscles, convulsions, lethargy, coma, very rapid or intermitting pulse, red and parched tongue, tenderness of the abdomen, and any of the symptoms of internal congestions, indicate great danger in fever ; the first class of symptoms indicate cerebral embarrassment, or structural change of an inflammatory character ; coma indicates probable effusion, or perhaps ramolissement ; the second class indicates some sub-acute inflammation in the abdominal viscera. Præcordial oppression always indicates danger in fever, and so does diarrhœa caused by inflammation, or at least irritation of the mucous membrane of the bowels.

Quest. V.—Describe minutely the symptoms of remittent fever in infants, and the causes of death.

At first the child is observed to be restless, peevish, and listless ; to sleep badly, awakening sometimes at intervals as if frightened ; there is loss of appetite, thirst, with a preference for cold water, which is frequently observed to increase the sufferings ; a quick, and generally small pulse ; sometimes there is violent screaming ; in some cases there is diarrhœa, the stools being very foetid, and then the child generally draws up its legs when we press the abdomen. At other times, there is constipation, with cerebral symptoms, as screaming when brought into the erect posture, delirium, pulse scarcely quicker than natural, little thirst, listlessness, lethargy, or even coma, subsultus tendinum, and convulsive twitchings. In all cases, there are remarkable intermissions in the course of the disease, which are

apt to lead inexperienced practitioners to suppose convalescence is taking place. Death will be produced according to the organs affected by ulceration of the bowels, continued diarrhœa, or cerebral disease, as hydrocephalus, &c. &c. It very frequently terminates in *tabes mesenterica* or *marasmus*.

Quest. VI.—The symptomatical difference between an attack of natural small pox and the modified disease, and the course of the eruption in each case.

The chief difference between a natural attack of small pox and the modified disease, consists in the milder character of the symptoms, and total absence of the more violent ones in the latter; the eruption arrives at maturity sooner, or rather, instead of being filled with pus, the fluid contained in the pustules of modified small pox is of a more sanious character.

Quest. VII.—The most troublesome symptoms in a severe case of indigestion.

In the first stage of indigestion the most urgent symptoms are, a sense of weight and fulness in the epigastrium, heart-burn, acid eructations, costiveness, with flatulent distension of the bowels, frequent head-aches, and sometimes pains in the back and loins, said to indicate the existence of gravel in the urinary passages. The patient feels oppressed and listless, and does not go about business with his usual alacrity, feels unable to settle to any one pursuit, but wanders from one to another, finding all alike irksome and disagreeable. In the second stage, to these symptoms are superadded tenderness, with sometimes a sense of burning, at the epigastrium; the functions are

generally more deranged, and the patient feels still more languid and debilitated; the pulse is full, and somewhat hard. In the third stage, when structural disease has taken place, the most urgent symptoms will vary according to the nature of the change of structure.

Quest. VIII.—The best treatment in a severe case of indigestion, of perhaps six months duration, the pulse being still strong, perhaps full and somewhat hard.

In all probability there would also be tenderness at the epigastrium, in which case leeching, and in some rare cases, perhaps venesection might be necessary; this, with laxatives, due regulation of the diet and exercise, total cessation from business, and amusing the mind by change of scene, would form the prominent treatment. After the tenderness and more urgent symptoms are removed by these means, we might give a bitter tonic, or perhaps, if the pulse were soft and small, we might prefer a chalybeate, as the tinct. ferri mur., or combine it with a laxative, by giving sulphate of iron and aloes. If the disease existed without tenderness at the epigastrium, the local or general abstraction of blood would not be necessary; in other respects the treatment would be much the same, of course modified to suit particular cases.

It is unlikely that any organic lesion will yet have taken place, but, in case there should be any symptom indicative of such lesion, we must treat accordingly.

Quest. IX.—How is constriction in the rectum recognised? and state the progress and termination of the complaint, if not detected and cured.

When obstinate constipation exists, with painful and flatulent distension of the abdomen, a sense of weight,

loss of appetite, &c., we have reason to suspect the existence of constriction of the rectum; but if there be frequent desire to go to stool, with the evacuation of a small quantity of well formed vermiform fæces, without affording relief, we are more strongly confirmed in our opinion. Sometimes the symptoms are those of ileus, without yielding to the usual remedies.

The complaint terminates in a fatal attack of ileus, or in some inflammation of the intestines.

Quest. X.—The symptoms of acute tropical dysentery, and the best means of cure.

Tropical dysentery begins with griping pain in the abdomen, with frequent diarrhœa, at first feculent, but soon becoming of a mucous or muco-purulent character, streaked with blood; the pulse soon gets full and hard, the pain becomes almost intolerable, resembling tormina, with violent tenesmus, scanty and more frequent discharges of matter, either as above described, or sometimes slimy, affording each time less relief to the patient. The stools have now a particularly disagreeable odour, which may be termed very appropriately the dysenteric odour, being *sui generis*. At last the discharge appears mixed with shreds or flakes of lymph, sometimes resembling portions of the mucous membrane; at other times the discharge resembles butchers' washings, and this is almost always a fatal symptom; scybalæ are rarely seen in tropical dysentery. The attack is frequently very sudden, and patients are sometimes carried off before the fifth day.

Quest. XI.—The morbid appearances in cases of dysentery in this country.

The larger intestines, especially the colon, are seen very

vascular, ecchymosed, and sometimes appear gangrenous; they have the dysenteric odour; in some cases they look raw, in others they are ulcerated. The discoloured parts are frequently in transverse lines or patches. *

Quest. XII.—The name of the French writer who wrote on Diphthérite, and the singular appearances he found on dissection.

M. Bretonneau, of Tours. He found an effusion of lymph at the top of the trachea, larynx, and pharynx, extending into the œsophagus. The same has been observed by English practitioners; Dr Abercrombie mentions several cases.

Quest. XIII.—Name the individual diseases in which the tartrate of antimony has been found most serviceable when given internally.

In most cases of acute inflammation and fever, tartrate of antimony is especially useful; it is, however, inadmissible in inflammations of the stomach, very frequently in inflammations of the brain, or indeed wherever there is a tendency to nausea. The ordinary dose in fevers is the fourth or sixth of a grain, given every two hours. Some of the Continental physicians have recommended doses of 2 grains and upwards, repeated every 2 or 3 hours, in pulmonary inflammations and fevers, and some of our British practitioners have followed their example. When given in such doses, we must restrict the patient in the use of liquids. It is sometimes given in small doses to produce nausea, when we wish to keep a patient from eating. It is also frequently employed as an emetic, where

* From want of time, the writer was unable to enter more fully into this and several other questions.

we wish to produce some debilitating effect, as well as emesis. In all these cases, the dose cannot be fixed arbitrarily, as we have sometimes occasion to vary it, according to the age, idiosyncrasy, &c. of the patient.

The following are some of the diseases in which it is employed :—

- Acute pneumonia.
- Acute pleuritis.
- Acute peritonitis.
- Acute phlebitis.
- Acute pericarditis.
- Acute carditis.
- Cynanche tonsillaris.
- Croup—Hooping-cough.
- Inflammatory fevers.
- Eruptive fevers.
- Erysipelas, &c. &c.
- Less frequently in
 - Phrenitis, (either substance or membranes.)
 - Bronchitis.
 - Inflammation of the mucous membrane of the bowels.
 - Functional fevers, &c. &c.

Quest. XIV.—The individual diseases in which opium is of most benefit, the doses, and the manner of its action.

In all diseases or states of the system where there is morbid irritability, opium is especially useful ; hence it is often highly advantageous, after we have checked the progress of inflammation, to give a full dose of opium ; frequently when irritability exists, which would, if permitted to continue, terminate in inflammation, opium checks its progress ; for instance, in colic, after we have fairly evacuated the bowels, we frequently give a full dose of opium, sometimes combined with calomel, to prevent constipa-

tion ; in other cases, where we dare not employ a laxative alone, as in dysentery, we give castor oil or calomel combined with opium, with the happiest results. After severe hæmorrhage, when the patient is reduced to a very critical state from loss of blood, opium is of essential service, allaying the irritability which exists, and which, without the judicious employment of this invaluable medicine, might wear out the patient. In cases of chronic vomiting, as from cancer in the stomach, small doses of opium, given half an hour before eating, soothe and allay the irritation so as to prepare the organ for its food ; hydrocyanic acid has now been substituted generally for opium, but cases will still occur where the latter is preferable. In ileus, opium is found very serviceable, in connection with blood-letting ; when combined with calomel, it frequently evacuates the bowels, and relieves the patient ; in this case it is supposed to act by removing spasm, though Dr Abercrombie holds a contrary opinion. We occasionally employ opium in diarrhœa, when we are sure there is no inflammation existing, or after having removed it. Of course, in this case, we must ascertain that the first irritating cause, as hardened fæces, undigested food, &c. be evacuated. We always combine opium with acetate of lead when we administer the latter medicine internally, to obviate its bad effects ; we also frequently combine it with calomel, when we wish to make the latter affect the system ; in these latter cases we employ one-fourth or one-sixth of a grain at each dose. In delirium tremens, and some cases of mania, opium is employed to produce sleep and tranquillity. In colica pictonum, it seems to act as an antidote, and forms one of the most important remedies employed in that disease, particularly when assisted by blood-letting. Dr Elliotson recommends very large doses of calomel and opium, every four or six hours, in pulmonary inflammations ; he also recommends small doses of opium and sulphate of copper in the treatment of chronic dysentery.

Quest. XV.—The symptoms, causes, and terminations of hemoptysis, the morbid appearances, and the best method of treatment.

Hemoptysis may arise in three ways ; it may be either an exudation from the mucous membrane of the lungs,—or it may arise from apoplexy of the lungs,—or from the erosion of a vessel in a cavity ; it has also occurred from a fistulous communication between an aortic aneurism, and one of the larger air tubes. In the first case, it generally occurs in women at the time for the appearance of the menstrual discharge, and when that discharge does not appear ; or it may occur in consequence of healing up an old ulcer, or other discharge. The first symptoms in this case will in general be oppression of the system, or the symptoms peculiar to suppressed or obstructed menstruation. We hear a mucous râle on applying the stethoscope. The blood expectorated is not pure, and does not coagulate.

The first treatment we employ must be venesection, if the patient will bear it, followed by purgatives and a proper regulation of the diet ; subsequently, we must obviate the cause by employing means to restore the menstrual secretion ; in the cases of ulcer, &c. we must restore the old or some equivalent discharge. The second and third varieties are generally preceded by rigors, &c. In the second, we have dulness on percussion over the affected part, an entire absence of respiratory murmur, and a crepitous râle in the surrounding tissue. It differs from hepatization, or softening of the lung, in the change from total absence of respiratory murmur to the crepitous râle being sudden ; there being no gradual approximation of the two states into one another. Here we often require to bleed ; we must give laxatives, and keep the patient on strictly antiphlogistic regimen.

In the third case we have mentioned, the subcrepitating

and mucous râles are heard, and probably also cavernous respiration, thus leading us at once to the cause. No mistake can possibly occur between this and the second case, and we can distinguish the difference between this and the first by the floridity of the blood here, and by its coagulating; it also in general comes in larger quantity. In this case, bleeding is rarely admissible, though cases may occur where it is necessary; we must moderate action, employing brisk laxatives if the patient will bear them. We may perhaps give acetate of lead, rhatany, or some similar astringent; of these the former is undoubtedly the best.

Time pressing, I could not write answers to the succeeding Questions.

PATHOLOGY, AND PRACTICE
OF PHYSIC.

Prize Answers,

BY

WILLIAM COLLINS ENGLEDDUE,

STUDENT OF MEDICINE,

AND

PRESIDENT OF THE ROYAL MEDICAL SOCIETY.

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Practice of Physic without Pathology is mere quackery, from the treatment of the most simple to that of the most difficult disease.

QUEST. I.—State the causes of Inflammation of internal organs, and how these causes act in producing the combined phenomena.

Numerous and varied causes are continually acting to produce inflammation of the internal parts of the body. Perhaps, the greater number can be distinctly referred to excesses committed by man himself; and which, although he has the example of numberless cases occurring continually around him, and sees the baneful effects produced, he has still not courage enough to resist, but continues the same course, committing excess after excess, till at last, forced alone by the calls of nature, he is obliged to relinquish them.

To commence with the organs of digestion, upon which all the other organs of the body in a great measure depend, for the healthy performance of their functions,—we have inflammation frequently of the stomach, commencing from very trivial causes, such as eating something indigestible, or perhaps, which is the cause of its most frequent occurrence, (at least the severer cases) drinking large draughts of any cold liquid while the body is yet in a state of excitement from violent exercise; but here, although the cold liquid is evidently the cause of the disease, still I think the serious effects produced, are in a great measure to be attributed to carelessness, that is to say, not keeping up the force of the circulation, and not continuing the body under the same circumstances as prior to taking the draught. Cases certainly have occurred where death took place suddenly, and which in a measure prove that the effect must

be produced through the medium of the nervous system ; but this does not come exactly under the present question. The inflammation then, having commenced in this organ, may extend throughout the whole alimentary canal, and although perhaps not so severe at first, may lay the foundation for serious affections of the mucous membrane, and by thus acting throughout the whole extent of the digestive organs, ultimately affect the whole system, and produce many of the numerous affections to which the human race is subject. Having said this much with regard to liquid matters taken into the digestive organs, and which remarks are equally applicable to all substances taken in excess, it will be as well, perhaps, in the next place, to refer to the respiratory organs.

Numerous diseases attack these parts, they being composed of serous, mucous, and parenchymatous tissues. If we admit for an instant, (and which I think we are borne out in stating,) that each of these tissues possesses a peculiar irritability of its own, and that, from the varied circumstances under which man is placed, these parts are capable of being affected by very different causes, I think there is very little reason for wonder at the very extensive combinations, and numerous train of symptoms, which they exhibit.

Here then are two portions of the body, (and without which other important functions cannot be performed in a healthy manner,) capable of being affected in various ways, by numerous applications, and no less numerous causes, and at the same time presenting a very wide range of phenomena.

With regard to diseases of the chest, there are none which are more particularly under the control of the individual ; most of them are in the first place produced by the application of cold to the body, or by rapid alternations of temperature, giving rise to inflammation, and the numerous train of symptoms attending it. I do not by any means

intend to insinuate, that in many individuals, these attacks are not dependent upon some hereditary taint in the constitution, which may render them more prone to be affected in this manner, or that the varied states of the system may also have considerable effect ; but still, I think, if individuals would take more care of the functions of the skin and the digestive organs, numbers of the affections at present existing would be prevented. It will be evident, then, from what has been stated, that it is conceived that most of these complaints have their origin in inflammation, and that, consequently, these observations apply in a general manner.

Operations are frequently the cause of inflammation of internal organs ; such, for instance, as amputation at the hip-joint. It is quite evident, in this case, that a fourth part of the body being removed, the blood will have to circulate in exactly the same ratio quicker through the remaining parts of the body ; and, consequently, that any part prone by nature, or rendered so by excesses of any kind, will take on inflammatory action, and be more or less severe according to circumstances ; perhaps going insidiously on, and giving rise to deposits and adventitious formations, which so frequently occur after surgical operations, and which evidently must arise from inflammation, either in an acute or chronic form.

Perhaps there is no organ more prone to take on this inflammatory condition, under the circumstances just mentioned, than the brain or its membranes, both on account of its delicate structure and its situation. In stating this, observation proves it to be the case ; for if, after a severe operation, excessive re-action comes on, the brain will be sure to manifest some important symptom.

I must not omit the occurrence of blows and wounds, which, although applied to the external parts of the body, still produce occasionally severe inflammation of internal organs.

The disappearance of eruptions suddenly, which eruptions

were apparently an effort of nature to throw off a certain something from an internal organ, are very apt, upon disappearing, to cause violent inflammation, either of the organ first affected, or of some other naturally weak.

We see this frequently taking place, for instance, in the various eruptive diseases, and perhaps very frequently also in Gout.

Inflammation of the heart, a very important organ, must not be omitted in this enumeration of Inflammations attacking internal parts. It frequently depends upon causes with which we are very slightly acquainted; but I cannot help thinking, that diseases of this part have been very much neglected; and the symptoms and phenomena attending it, arranged under general heads. Authors seem to forget that the heart is composed of four cavities, and that the cavities on the right side are lined by a very different membrane from that lining the left,—one being arterial and the other venous; so that we must have occurring Arteritis on the one hand, and, if I may be allowed the expression, Phlebitis on the other. Now, it is quite evident, if these two diseases produce symptoms so widely different in other parts of the body, that here also we must have the same occurring; but we have them all grouped together under the general term, Carditis. Now, these symptoms, I think, can be discovered in no other way but through the medium of the stethoscope. Perhaps it will be as well to mention while upon this organ, that we have here four distinct diseases, arteritis, phlebitis, inflammation of the muscular tissue, and of the serous membrane lining the pericardium, all giving rise to different symptoms and phenomena, which although perhaps undiscovered, I do not despair that we shall be ultimately enabled to do so, and that they will be of considerable advantage.

With regard to the last part of the question, "How do the causes act in producing the combined phenomena?" I have, I think, in the preceding remarks shewn, that this

must necessarily vary in regard to the cause, and to the part or organ attacked. Numerous symptoms have been classed under the general term *sympathy*, and persons using it think they account for the phenomena; perhaps in the present state of the profession it is as good as any other term; but still I think it is liable to make us neglect inquiry; and we certainly ought not to make it a cloak for ignorance, and rest satisfied. There is no doubt some connexion existing between certain parts of the body, with which we are by no means acquainted. Who, for instance, can account for the various phenomena occurring in the body at puberty? Certainly these must be depending upon a peculiar irritation set up in the system; and this irritation only affects certain parts.

Now here we have the body in a state of health,—in a state of nature, and we see certain parts affected; we are unable to account for the phenomena, and yet we vainly hope to account for the phenomena produced during a disease!

We must first find out the healthy state of the body,—trust to anatomists for a little more information; having done this, let us place our dependance entirely on the pathologist, and he will, no doubt, by tracing the various stages of the disease, and the results produced by the diseased actions, ultimately be enabled to point out how the various parts become involved, how the various phenomena are produced; and then, and not till then, shall we be enabled, profiting by his advice, to treat similar cases successfully.

Quest. II.—The different ways in which the contagion of fever and small-pox are supposed to produce their effects on the system.

On this subject so much has been written by men of great experience, and men ranking so high in their profession, that it is difficult to form an opinion.

Some suppose that it depends upon atmospherical influence, that is to say, that these diseases are entirely depending upon a certain condition of the atmosphere, which affects the body in a way by no means evident, but which, nevertheless, it is said, cannot produce an effect unless the individual is in a fit condition for receiving the contagion. This certainly appears to leave the question where it was found, and some contend that it does not explain in the least, or help us to clear away, any of the difficulties surrounding the inquiry; notwithstanding this, however, I am inclined to think that these diseases are produced by peculiar states of the atmosphere, which act by disordering the body, and thus rendering it more prone to be attacked by the contagion, or whatever it may be, conveyed by the atmosphere, or to which it may be accidentally exposed.

No doubt but a number of circumstances assist, such as a diseased state of the digestive organs, and indeed of any part of the body, which has a tendency to make it weak, irritable, and easily affected by external causes.

Some suppose that these diseases can be produced in no other way, (more especially small-pox,) than by actual contact. Experience, however, shows this to be a fallacious opinion, for numerous cases occur which cannot be traced to have arisen from contagion, and which consequently must depend upon some atmospherical influence; at least, we are bound to refer it to this, in the present uncertain state of our knowledge. Some suppose that it is conveyed into the system during respiration, others that it is taken in by the individual during eating.

Quest. III.—The results of acute inflammation on the following tissues, in its different stages,—viz. mucous membrane, serous, and substance of the lungs.

Inflammation attacking mucous membranes, gives rise to,

first, increased irritation, and almost a total stop to the natural secretion of the part; this is well seen in the nostrils during a common catarrh, and numerous other instances might be quoted. When this irritation is lessened and ultimately disappears, we have increased secretion, considerably more than was present during the healthy state; if this is allowed to go on, ulceration may even take place, and sometimes it degenerates into a chronic state, and produces a thickening both of the mucous and submucous tissues; this state continuing, renders the individual more or less liable to attacks ever afterwards.

When it attacks the serous membranes, the same phenomena at first occur; increased irritation, then increased secretion. All these phenomena are well explained by the application of a blister; we have no sensible effect produced at first, but during this period the blister is not idle, its irritation has produced contraction of the capillaries, which afterwards ceasing, produces the increased discharge.

In serous membranes we have frequently the most baneful results arising from inflammation; for instance, adhesion. This is well seen both in the pleuritic, and in the peritoneal cavities; coagulable lymph is thrown out; adhesions take place in the chest between the two pleuræ, and in the abdomen between the opposed surfaces, parts which were intended by nature to be free, and which not being so, must of necessity produce considerable embarrassment. In the abdomen, these adhesions often produce intus-susception, &c.

In proportion to the severity of the inflammation, the discharge will either be serous, muco-purulent, purulent, or pus, constituting various affections of the chest and abdomen, called dropsy, empyema, &c.

The process of adhesion we see very well produced by inflammation in hydrocele when the cavity is injected.

With regard to the substance of the lungs, numerous effects are produced; pneumonia is the name given to the dis-

ease affecting its substance. There appears to be some doubt as to the tissue on which this disease is situated; but in whatever tissue it may be, upon dissection we are enabled to see the ravages produced by it; for instance, we find hepatization grey or red, in their various stages more or less severe and extensive, in proportion to the activity of the remedies employed; we find effusions of blood; secretions of a muco-purulent matter; and the disease often ends in laying the foundation for phthisis.

Quest. IV.—All the symptoms indicating a high degree of danger in fever, and the pathological state of the body on which these symptoms may depend.

The symptoms which indicate a great degree of danger in fever, are great cerebral disturbance, such as, violent delirium, constant watchfulness, suffusion of the eyes, a quick intermittent pulse, extremities becoming cold, hiccough, tongue black and tremulous, teeth covered with sordes, tongue red at the tips and along the edges, trembling of superior extremities, pain of chest, difficulty of breathing, tenderness of abdomen, no secretion of urine.

The delirium evidently depends upon an affection of the brain or its membranes, and more particularly, perhaps, the pia mater, which is so intimately connected with the grey matter, and which, from the delirium and evident activity of the mental faculties, we may in general predicate to be in some way affected.

The intermittent pulse will depend on the irregular action of the heart, probably the result of defective nervous energy; difficulty of breathing, arising from the mucous membrane of the bronchiæ being inflamed, which in a number of cases is found to be a concomitant.

Black tongue, teeth, &c. depending on diseased secretions of mouth and stomach.

Quest. VI.—The symptomatical difference between an attack of natural small-pox and the modified disease, and the cause of the eruption in each.

An attack of natural small-pox is generally preceded by a severer degree of fever, and more general disturbance of the whole system; the rigors preceding the attack much severer; and in fact, as a general rule, every symptom is more acute. The eruption is more elevated, dispersed much thicker over the body, and in general much more elevated above the skin; it is much more fatal than the modified. Out of 2000 cases attended by Dr Thomson, in the last epidemic which visited Scotland, 1500 had been vaccinated, had the modified disease, and only 2 died; whereas out of the remaining 500, there were several deaths, proving undoubtedly that the modified disease is much milder and much less fatal.

This disease also produces much greater disfigurement than the modified.

In the modified, the symptoms are much less severe from the first, in every respect. The mucous membrane of the lungs not so likely to become affected; and the cerebral symptoms, if they come on at all, much less severe; the eruption, not so elevated above the skin, disappears sooner, does not produce such severe pitting as the former; generally coming off in small scales, which leave no disagreeable symptom or effect.

Quest. VII.—The most troublesome symptoms in a severe case of indigestion.

When the attack of indigestion is very severe, the patient will be annoyed by considerable irritability of stomach, causing him to vomit his food almost as soon as he has swallowed it; and if this does not take place, he will have

sour eructations, which are sometimes so severe as to set the teeth on edge ; if pressure is made over the region of the stomach, the patient will generally experience some pain ; owing to the accumulation and formation of this acid in the stomach, he is frequently annoyed by diarrhœa, at other times by obstinate constipation, thus giving rise to another disagreeable symptom, hemorrhoids. He is often attacked after meals with pain in the head, continuing severe till the vomiting comes on ; and if this does not take place, does not get relief till he retires to bed in the horizontal posture. He is also troubled with borborigmus, which in the female frequently gives rise in their case to an hysterical attack. Patient always complains of bad taste in the mouth. These, I believe, are the leading symptoms, and the most troublesome.

Quest. VIII.—The best treatment in a severe case of indigestion, of perhaps six months duration, the pulse still being strong, full, and somewhat hard.

In such a case as this, I should be most particular in inquiring into the habits and mode of life of the patient ; if he were of a leuco-phlegmatic or passionate temperament ; or if he followed a sedentary profession ; all these circumstances are very important to be ascertained before commencing the treatment. If the pulse were hard, full, and strong, and there was much pain over the region of the stomach, upon making pressure, I should most undoubtedly bleed either generally or locally, according to circumstances ; I would apply counter-irritation over the region of the stomach, by means of tartar-emetic ointment and a little bichloride of mercury in it, so as to bring out a good crop of pustules ; I would be most particular as to diet ; forbid too much drink ; allow no spirits ; and give the sub-nitrate of bismuth in doses of 5 grains. I would leech occasionally ; if purga-

tives caused much irritation of the stomach and alimentary canal, I would limit myself to injections of warm water; but I would be very particular in obtaining one stool daily. Numerous medicines have been recommended for the cure of this complaint, but a number of them are quite useless; in fact, it is needless to lay down any particular line of treatment for any proposed case.

Acidity may oftentimes be prevented by giving small doses of carbonate of soda, or even by requesting the patient to suck a small piece of liquorice; a simple remedy, but not the less effectual. In some cases, a seton will be found of considerable advantage applied over the region of the stomach; and indeed, in all cases, it will be as well to alternate the eruption brought out by the ointment with leeches.

Quest. IX.—How is constriction of the rectum recognised? and state the progress and termination of the complaint, if not detected and cured.

This disease oftentimes comes on in a most insidious manner, the patient frequently supposing that he is merely affected with internal hemorrhoids; or if he has at the same time difficulty in passing water, his surgeon perhaps concludes, without examination, that he has enlargement of the prostate gland. It is a disease which has lately attracted considerable attention, and more particularly since the publication of Mr ———, an Irish surgeon. The first symptoms of the disease are accompanied by pain in passing the stools; and also frequently they will be found tinged with blood, and gradually getting smaller and smaller in circumference in proportion as the disease advances. If the disease is not attended to, the part becomes narrower, the patient has constipated bowels, which circumstance causes, of course, greater pain in passing the stools; the

constipation will produce disorder of the whole system, by deranging the digestive organs. It has been stated, that ultimately ulceration takes place; and even some cases are recorded, where a communication has taken place between the bladder and rectum, or the disease has extended higher up the rectum, and the fæces have extravasated into the peritoneal cavity.

Quest. X.—The symptoms of acute tropical dysentery, and the best means of cure.

This disease is attended with considerable pain in the abdomen, oftentimes excruciating; it proceeds with so much rapidity, that if it is not attended to quickly, according to the statement of our naval and military surgeons, it commits the most devastating ravages. In some cases, upon dissection, the bowels are seen to be of a very dark colour, sometimes tinged with green, as if from an excessive effusion of bile; but these representations which we so often see, (the green,) are very often perhaps produced by the exhibition of the calomel, which is so much given in this disease. There are profuse, watery, biliary, and even bloody evacuations, oftentimes in immense quantities; severe tormina; cramps affecting the muscles of the abdomen, drawing them up in large knots; also severe cramps of the extremities; there is frequently great vomiting; and often upon dissection the intestines will be found studded with black spots, as if of effused blood, apparently, as some consider, indicating a purpurous diathesis; the disease, if allowed to proceed, will do so to ulceration, and the contents of the intestines becoming extravasated, puts an end to the unfortunate individual.

There can be no doubt but that this disease depends upon an inflammatory affection, in the first place, of the mucous membrane of the intestines, and perhaps also, which

is most probably correct, upon inflammation of the acini of the liver, thus giving rise to a profuse discharge of bile ; but in many cases, this discharge, instead of having the appearance of bile, puts on more the appearance of grumous blood. I am not aware whether an analysis has been made, but it is considered to be a diseased secretion, and not blood.

The treatment most generally adopted, is that of large bleeding accompanied by fomentations, and the exhibition of large doses of calomel and opium ; some have given scruple doses, it is said, with marked effect, both in altering the vitiated appearance and nature of the secretions, and also, it is said, abating the cramps in a wonderful manner.

Quest. XI.—The morbid appearances in cases of dysentery in this country.

In this country, the disease does not proceed to so rapid and fatal a termination as in the warm climates. The disease is generally very slow in its progress ; it is accompanied by violent pain in the intestines, causing the patient constantly to go to stool, where he perhaps passes a small quantity of a watery fluid of a light brown colour, sometimes tinged with blood. Upon dissection, we find quite enough to account for the symptoms manifested during life ; considerable ulceration will generally be found in the ileum, affecting the Pierian and Brunerian glands ; these have the appearance of complete excavations with elevated edges, and these edges of a very inflamed nature : this is generally confined to the large patches of glands, rarely to the miliary glands as they are called, but even sometimes these are found diseased. The greatest number of glands are generally found at or near the ileo-cæcal valve, on the ileal side of that valve ; occasionally, however, patches are found in the colon, but this is rare ; they are frequently,

however, observed in the rectum, and here sometimes there is considerable ulceration, particularly in cases that have been of long duration. As a general rule, it may be said, that the disease will be in a great measure found to be confined to the small intestines. Frequently the stomach is found inflamed, and even small ulcerations are occasionally visible; in some severe cases, the inflammation has been seen to extend as high as the æsophagus.

Quest. XIII.—Name the individual diseases in which tartrate of antimony has been found most serviceable when given internally, the doses in each disease, and the intervals.

This remedy is of considerable advantage in affections of the brain, either inflammation of the substance or of its membranes. If it were severe inflammation of the brain, I would order a solution of the tartar-emetic, to be made of the strength of about ten grains to the ounce of water, and give a tea spoonful every quarter of an hour, till some visible effect was produced; I would then lessen the dose. In insanity it is found, that the stomach will bear considerably larger doses than in any other disease; and in a case of this sort, where the patient was very outrageous, I would venture upon ten, fifteen, or twenty grains at a dose, according to circumstances.

It is found to be an excellent remedy in diseases of the heart, both in lessening the circulation, and also in keeping the patient's stomach in such a state as to be perfectly under the command of the practitioner: here it is unnecessary to give large doses, it will be sufficient to give small doses frequently repeated, so as to keep up constant nausea.

A disease in which it is highly extolled for its beneficial effects, is Pneumonia. Here very large doses have been given, and certainly in many cases which I have witnessed,

I have seen the most rapid, marked, and beneficial effects produced by giving doses of from ten to fifteen grains every half-hour, or every hour, according to circumstances, viz. whether the patient is of a plethoric or debilitated constitution. Some practitioners, I believe, are in the habit of giving the doses oftener than stated above; but I have never seen the practice adopted, and therefore cannot give an opinion.

It is a remedy of great service to the surgeon, in reducing strangulated hernia; here the patient is generally bled, placed in a warm bath, &c. and oftentimes when this has failed, a dose of tartar-emetic has succeeded immediately, by producing great prostration of the vital powers, and by this means relaxing the whole muscular system. It is stated also, that some lives have been saved by injecting a solution of tartar-emetic into the vein of the arm, and by this means producing vomiting, when substances have been obstructed in their passage towards the stomach, and where it was impossible to pass them into the stomach.

Quest. XIV.—The individual diseases in which opium is of most benefit, the doses, and the manner of its action.

Perhaps there is no medicine which the medical man possesses of greater use, or one which is of such universal application in the treatment of numerous diseases. In fact, it is a remedy which is given, in some form or other, at the end or commencement of every disease. The affections to which it seems of most benefit, from the peculiar and soothing effect it apparently has upon the nervous system, are the diseases and various affections of the brain or spinal cord; here it undoubtedly has a most extraordinary effect, subduing the most violent and outrageous lunatic, calming him in a short time, and

compelling him, as it were, to pass into a soothing slumber. There are however cases, certainly, and these not of unfrequent occurrence among lunatics, where this remedy has not the slightest effect; but I think it depends in a great measure upon not being given in doses sufficiently large, or sufficiently often repeated; it perhaps ought in these violent cases to be combined with the remedy just mentioned,—the solution of tartar-emetic. But practitioners oftentimes err, in supposing that by giving one or two doses, they are doing quite enough,—it is a very mistaken notion; this medicine ought to be given again and again, repeating dose after dose, till some effect is produced; and I heard Dr Robertson say a few days ago, that he did not care how often he repeated the dose, the effect was what he wanted, and until he obtained it, he continued to persevere. It will be evident then, that to mention all the diseases in which this medicine is given, would be impossible. To commence,—there is an affection which is extremely common in young children, viz. convulsions; these often appear to depend upon irritation of the mucous membrane of the bowels. Some, because they see this irritation, and a slimy discharge from the bowels, suppose that they must exhibit purgatives, whereas if they gave one single dose of opium, it would not only put an entire stop to the diseased secretion from the mucous membrane, but the convulsions also would immediately disappear; even this effect will be produced in adults, for epilepsy is known in some cases to depend upon this irritated state of the mucous membrane; and probably, if we were able to obtain any good diagnostic mark, it might prove beneficial here also.

In dysentery, it is found to be of great service in alleviating the pain and tormina which accompany every aggravated form of this disease; here it should not be given in very large doses, but perhaps small doses frequently repeated.

In mentioning diseases of the brain, of course it must

not be given till the inflammation, if any be present, is in a measure subdued.

The doses, in all cases, must depend upon the age, constitution, and temperament of the patient.

The muriate of morphia is undoubtedly the best preparation to administer, because you can generally depend upon its strength, and, moreover, it is not so liable to disorder the stomach. In solution, this preparation can be given in doses of about a tea-spoonful every ten or twenty minutes, till some decided effect is produced; in a child, of course, the dose must be in proportion.

In diseases of the eye, this medicine is of singular advantage after the inflammation has been subdued.

It appears to act upon the nervous system, in the first place, and, through its medium, upon the circulation. There are curious circumstances connected with its administration in the healthy state, which may perhaps throw some light upon its not always producing that soothing effect in maniacs which is so much to be desired, viz. that if it be taken in a particular dose, according to the constitution, it is found to act as a stimulant upon the nervous system, and that the person is able to direct his attention to whatever object of a literary nature he may wish.

I must not forget to mention also, that this remedy is of great benefit in diseases of the chest, of course being guarded in its administration by the circumstances already mentioned.

Quest. XV.—The symptoms, causes, and termination of Hemoptysis, the morbid appearances, and the best method of treatment.

The patient, before an attack of hemoptysis, feels often a very uneasy sensation, as if of a load; the circulation is often quickened, at other times it comes on without any manifest precursory symptom.

The causes are numerous; it may depend upon the functions of the uterus not being performed with sufficient regularity, or being altogether suppressed, the menses never having appeared. It may depend upon a predisposition to phthisis, and a natural weakness of the vessels of the lungs. It may depend upon a suppressed discharge of any kind, from restraining the accustomed hemorrhage from hemorrhoids; in fact, the causes are endless.

With regard to the morbid appearances, it is very rare indeed that any open-mouthed vessel can be discovered; in fact, in many cases it seems to arise from a kind of transpiration, thus leaving no evidences after death. A difficulty here arises, that it sometimes takes place so suddenly, as to lead us to the conclusion, that it must have been owing to the rupture of some large vessel; if this cannot be discovered, what must be the conclusion? It must be that already stated, that it is very probable it arises from transpiration.

It sometimes arises from an aneurism bursting into the lungs, and causing a sudden eruption of blood. A case of this kind I saw a few months ago in the Hospital, where an aneurism of the aorta had burst into the inferior lobe of the left lung, producing sudden death, and where, upon dissection, the lung had the appearance of pulmonary apoplexy.

Various plans of treatment have been proposed for this disease; the most effectual, undoubtedly, yet discovered, is the acetate of lead, given either in pill or in solution; or bleeding may occasionally be had recourse to, particularly in those cases where the patient is of a plethoric constitution.

Opium may often be combined with the acetate of lead, and by rest, and the other means just mentioned, a cure will be generally accomplished, provided it does not depend upon the suppression of any old discharge; in that case

all the treatment just mentioned, of course, can be only palliative.

Quest. XVI.—The true nature of Tubercles found in cases of pulmonary consumption, and their progress from the incipient state, to that in which caverns are seen on dissection.

The true nature of tubercles has certainly, I am inclined to think, not yet being fully elicited. The tuberculous matter evidently is the result of secretion, and at the commencement of the disease the small masses are not larger than millet seed; they are frequently seen in the foetus, and also in infants who die early; in fact, man, in passing through the various stages of his life, from that of the foetus to that of decrepid old age, possesses no time at which you can say with certainty he is not likely to be attacked by this disease. Many circumstances are constantly in action, combining to produce that state of the body in which this peculiar secretion takes place. It is a disease not attached to the lungs only, for it occurs in various parts of the body. The tubercle, when about the size of a millet seed, is the source of little inconvenience; but it gradually increases, and while doing so, encroaches gradually upon the neighbouring air-cells, becoming larger and larger, and at the same time softer and softer, till at last the cavity in which it is contained either bursts, or it is wasted and expectorated by degrees. It is during the stage of softening, that the tuberculous disease begins to develope itself with severity, and it is by the aid of the stethoscope that we are enabled to say with certainty how far the disease may have advanced, how much it has encroached upon neighbouring parts, and in fact are enabled to state how long the patient may be expected to linger.

Mr Carson has made numerous and ingenious investigations into the subject of tubercles, and evidently appears to suppose that it is a secretion, arising from the submucous tissue, and that this is more or less accelerated by the life the individual leads.

If we look at the lower animals, we shall find that they are liable to the same disease, and the matter which is secreted from the lungs of a sheep is apparently of the same composition as that found in the human lungs.

When they have once softened down, and purulent expectoration has taken place, it is generally supposed that little can be done, except in the way of alleviating the symptoms; but there are now some cases on record, where, upon dissection, cavities have evidently been seen to have existed, and to have disappeared by adhesive inflammation. In particular, there is an American author who has lately published a work, endeavouring to prove that this much wished for result can take place.

However, the usual progress of the disease is, that the patient becomes exhausted by the continual discharge; hectic fever, diarrhoea, &c., supervene, and he is ultimately carried off.

Quest. XVII.—The symptoms indicating inflammation of the brain generally, distinguishing those occasioned by inflammation of the substance of the brain and its membranes.

The general symptoms are, delirium, intolerance of light, the patient generally struggling a great deal, a quick bounding pulse, or a compressed and weak pulse; or the pulse may be of the natural standard, and yet severe inflammation may be going on; bowels are constipated; the toes will be generally found bent, particularly the great toe; the fingers clenched; hand inverted, and thumb turn-

ed in towards the palm ; oftentimes vomiting, and sometimes purging.

In inflammation of the membranes of the brain, there is generally more violent delirium ; and here again I cannot help alluding to the circumstance, that in this case the membranes are so intimately connected with the grey matter, that it affords a most excellent distinguishing mark between inflammation of the membranes and substance of the brain, viz. that the patient exhibits a violent, rambling degree of delirium, and, in fact, is incessantly talking, or in some cases screaming,—this state evidently depending upon the excitement of the various organs of the brain.

But perhaps the most conclusive symptom is, that in inflammation of the substance of the brain, upon attempting to feel the pulse, the flexor muscles are called into violent action, and the arm is bent ; this ceases when the hand is taken away, and in this inflammation the hands are inverted, and the thumb is turned inward towards the palm.

Quest. XVIII.—State the particular circumstances which are likely to mislead practitioners, and embarrass them in cases of diseased brain.

Perhaps no circumstance is more likely to embarrass than that very extraordinary one, of violent inflammation going on in the brain, and yet the patient's pulse be very little above the natural standard ; consequently, if they content themselves by taking Cullen's definition, they will be lulled into security ; the patient will fall, as they suppose, into a calm sleep, instead of which it is a fatal coma, and one from which, without proper and prompt treatment, he will never recover.

Another circumstance likely to embarrass practitioners, is, seeing the patient apparently in good health, perform-

ing his various occupations in a correct and proper manner, by which he is inclined to suppose that the slight headache, under which the patient is labouring, is merely functional, whereas, perhaps, at that very time inflammation may be going on, and even softening, or, as it is called, ramollissement, be advanced to a considerable extent.

It is by following the definition of these diseases, given in Cullen and other authors, that individuals are led into error.

Quest. XIX.—The morbid appearances observed in fatal cases of cerebral inflammation in the adult.

These appearances depend, in a great degree, upon the length of time the inflammation may have existed, and also upon its severity; generally in a chronic case it will be found that ramollissement has taken place, to a considerable extent; in some cases, the whole of one half of the cerebrum has been destroyed, in others, only particular portions; and this again, by the bye, is a circumstance which may mislead the practitioner, *and ought to have been mentioned* in the last answer, viz. that the patient only appearing unsound, as it is called, upon one particular subject, it is supposed no particular disease can exist in the brain. If the patient die during the inflammatory stage, upon making sections of the brain, bloody points will be frequently seen, sometimes situated in the optic thalami, or in the corpora striata; and when situated here, they give rise to particular symptoms, which there is not time to mention. Oftentimes there will be found an effusion of blood, perhaps the result of an apoplectic attack, around which there are evident marks of inflammation.

In addition to all these circumstances, effusion will be also found in the ventricles, sometimes tinged with blood.

These are some of the principal morbid appearances seen upon dissection.

Quest. XX.—A very particular account of the treatment in cases of cerebral inflammation.

I should certainly, on being called to a case of this kind, bleed largely, so that some considerable impression may be produced upon the system. I would at the same time exhibit the tartar-emetic solution in large doses, so as to lessen the force of the circulation. I would place the patient's feet in hot water, and keep them there longer than is generally done; I would keep them, if possible, for half an hour, the water having some mustard in it. I would pour a stream of cold water, from a considerable height, upon the patient's head, or place a bag of ice in that situation. I would again have recourse to bleeding if the symptoms did not abate; place mustard cataplasms upon the thighs and legs. Some apply leeches to the head, but some practitioners have remarked, that delirium * is likely to be produced if they are applied upon the anterior part of the head; and it being inconvenient to apply them to the posterior, and especially since so much more decided effects can be produced upon the system by a general bleeding, I should be inclined to neglect the leeching, and persevere with the treatment just now laid down.

* *Coma*.—This was observed by some of the Dublin physicians.

WINTER COURSE OF MIDWIFERY, AND
DISEASES OF WOMEN AND CHILDREN.

Prize Answers,

BY

CHARLES KINGFORD VACY,

STUDENT OF MEDICINE.

WINTER COURSE OF MIDWIFERY, AND
DISEASES OF WOMEN AND CHILDREN.

For the Students,

BY

CHARLES KINGFORD VACC,

STUDENT OF MEDICINE.

Adolescentem verecundum esse decet.

QUEST. I.—State the measurements of the pelvis, as to depth and breadth at the brim, cavity, and outlet.

At the brim, the pelvis measures in the antero-posterior diameter, about four inches, in the transverse, about five inches, and in the oblique, *i. e.* from either sacro-iliac symphysis, to the opposite acetabulum, a little above five inches. The cavity measures in depth, posteriorly, from the promontory of the sacrum to the extremity of the os coccygis, nearly six inches, laterally four inches, and anteriorly, at the symphysis pubis, nearly two inches. At the outlet, the measurements are four inches between the tuberosities of the ischia, and five from the coccyx to the symphysis pubis.

Quest. II.—What are the viscera of the pelvis? State their relative position, and give a minute anatomical description of the uterus and vagina, with the blood-vessels.

The viscera contained in the pelvis are, the rectum, uterus and vagina, and urinary bladder. The rectum is situated posterior to the uterus, between it and the sacrum. The urinary bladder is anterior to the uterus, between it and the symphysis pubis; the uterus consequently occupies the middle of the cavity of the pelvis, having the rectum behind, and the bladder in front.

The uterus is a body of a pyramidal shape, the base directed upwards, it is about three inches long, its walls being half an inch thick, and it is divided into four parts, viz. fundus, corpus, cervix, and os. The fundus includes the part above the apertures of the Fallopian tubes, the corpus is the part between the fundus and cervix, and the cervix is the constricted part between the corpus and os uteri, which last is the aperture by which it communicates with the vagina; this part also frequently receives the name of os tincæ. The substance of the uterus consists of fibres which are said to be muscular, but are in fact so interlaced, that their course cannot well be determined; externally, the uterus is partially covered by the peritoneum, internally it is lined by a mucous tunic, continuous with the mucous membrane of the vagina.

The cavity of the uterus is about the size and shape of a moderately large almond, its mucous membrane is vascular, and near the cervix beautifully folded, forming what is termed the arbor vitæ, or arbor Morgagni.

The vagina is a canal formed of mucous and cellular tissue; it establishes a communication between the external parts of generation and the uterus; its relations are nearly the same as those of the uterus, having anterior to it the urethra. The mucous membrane of the vagina is continued higher up posteriorly than in front, which makes the posterior lip of the os uteri the longer.

The arteries of the uterus and vagina are, the *spermatic*, coming off from the aorta, and distributed to the broad ligaments and fundus uteri; and the *uterine*, from the internal iliacs, which supply the cervix uteri and vagina.

The veins correspond with the arteries, running in an opposite direction, the right spermatic vein terminating in the inferior vena cava, and the left in the left renal vein.

The absorbents join those proceeding from the lower extremities.

Quest. III.—State the structure and measurements of the child's head at the full period.

At birth the child's head consists of twelve bones, viz. os frontis, *two*, os occipitis, *four*, ossa temporalia, *four*, and parietalia, *two*; these are joined together by membrane.

The head measures, from the parietal protuberance of one side to that on the opposite, *three and a half* inches; from the crown of the head to the foramen magnum, *three and a half* inches; from the occiput to the root of the nose, *four and a half* inches; and from the occiput to the chin *five* inches.

Quest. IV.—Describe the mechanism of labour; the powers by which the expulsion of the child is accomplished, and its adaptation to the passages.

The powers by which the child is expelled are, the contractions of the uterus, the diaphragm, and abdominal muscles, and also of the muscles which close the glottis.

The long diameters of the head and shoulders of the child are successively adapted to the long diameters of the brim and outlet of the pelvis, in the following manner, viz. the occiput is at the left acetabulum, and forehead at the right sacro-iliac synchondrosis. This, Dr Conquest describes as the most usual presentation at the commencement of labour, and in this way the head descends into the cavity of the pelvis, where its progress is arrested by the shoulders of the child being opposed to the short diameter of the brim of the pelvis, and by the head being opposed by the spines of the ischia. The child now makes a half turn, its face passing into the hollow of the sacrum; thus the long diameters of the head and shoulders correspond respectively with those of the pelvis, and on a recurrence of the expulsive efforts of the mother, the occiput emerges

under the symphysis pubis ; when the head is born, the child makes another half turn, by which the shoulders are accommodated to the outlet ; the rest of the body is then speedily expelled.

Quest. V.—A minute account of the structure of the placenta, membranes, and cord.

The placenta consists of two parts, maternal and foetal ; these are perfectly distinct, having no direct vascular communication. The vessels of the uterus ramify in the maternal half of the placenta ; these arteries pour their blood into cells, on which the vessels of the foetal half ramify, and in this manner the foetal blood is oxygenized. The membranes are, the *decidua vera*, which lines the uterus ; the *decidua reflexa*, which disappears as pregnancy advances ; the *amnion* and *chorion*,—the latter is outermost, and is continuous with the true skin of the foetus ; it is thick, vascular, and shaggy, and lined internally by the amnion, which is continuous with the cuticle, and is thin, strong, and transparent, containing the liquor amnii. These membranes (amnion and chorion,) pass over the placenta, and are reflected on the cord. The cord consists of the two umbilical arteries and the umbilical vein, which are imbedded in a gelatinous substance, and covered by the membranes.

Quest. VI.—The duration of pregnancy ; period of quickening, and the signs or evidences of impregnation.

The average duration of pregnancy is *nine* calendar months, *forty* weeks, or *two hundred and eighty* days.

Quickening occurs about the termination of the fourth month, *i. e.* at the sixteenth or seventeenth week. The

signs of pregnancy are, *suppression of the menses, morning sickness*, which is more particularly felt on rising from the recumbent posture; *irritability of both mind and body; darting pains through the mammæ; darkened areolæ around the nipples; heartburn*, which is at times exceedingly distressing, and often resists all the ordinary means of relief; *quickening*, very important as an evidence of pregnancy, and subsequent to it the motions of the child are felt by the mother; *progressive enlargement of the abdomen*, which is perceived to commence about the fourth month, at which time, if the patient be placed on her back, and the os uteri tilted up by the finger of one hand, introduced into the vagina, the fundus uteri will be felt to strike against the parietes of the abdomen, just above the symphysis pubis, if the other hand be gently pressed on that part; what Gooch calls the "bobbing of the foetus in the waters," is after the *fifth* month an almost infallible indication of pregnancy. This experiment must be performed whilst the woman is standing erect; it consists in striking the os uteri with the finger, and as the foetus descends in the waters, its momentum is plainly felt. It must be remembered, however, that if the placenta be placed over the os uteri, (which is exceedingly rare,) this means of diagnosis is ineffectual. It may be observed of this experiment, that it is not very certain before the *fifth* month, nor after the *seventh* or *eighth*. But during the latter months of pregnancy, other symptoms occur which will assist our diagnosis; these are a *varicose state* of the veins of the lower extremities, *piles, tenesmus*, with *irritability of bladder*. As pregnancy advances, the umbilicus becomes prominent, which frequently serves to distinguish this state from diseased enlargement of the abdomen; about the *fifth* month, the cervix uteri begins to be obliterated, and at the *eighth* wholly disappears, being taken up, and forming a part of the cavity of the uterus.

Quest. VII.—The causes of spurious pains, and the method of distinguishing them.

The *causes* are, griping, tenesmus, irritability of the bladder, diarrhoea, &c.; they may be detected by the irregularity of their recurrence, by their affecting the belly more than the back, and by their not producing dilatation of the os uteri.

Quest. VIII.—How is a forehead presentation recognised?

The presenting part is not so conical as the vertex, in addition to which the coronal suture and the anterior fontanelle are felt.

Quest. IX.—How would you manage a crown presentation?

I would use the *lever*, this being the case above all others in which that instrument is required; it should be introduced over the vertex of the child, which is to be *pulled* down so as to enable it to protrude first.

Quest. X.—Supposing the face to present with the chin to the symphysis pubis, how ought the case to be managed, for the safety of the mother as well as the child?

The vertex should be pushed up, and the chin allowed to emerge under the arch of the pubis.*

* This answer requires to be somewhat qualified, since the treatment proposed may not be applicable to every stage of labour. If the resistance be not too great, the position of the head may be changed, and the case be made

Quest. XI.—In an arm case, discovered before the membranes are ruptured, how would you proceed?

Having ascertained *which* hand presented, I would introduce my hand to the uterus, (taking care to have the abdomen of the child opposed to my palm,) rupture the membranes, search for the feet, and bring them down. I would not attempt this until the os uteri was dilated, or dilatable, and the turn should be made in the absence of a pain.

Quest. XII.—In a case of threatened abortion at the eighth week, how would you treat the patient, supposing the existence of severe hemorrhage?

I would enjoin the horizontal posture, give gentle laxatives, keep the feet warm, and regulate the diet, which should be dry and sparing; but great attention must, at the same time, be paid to the hemorrhage, which should be suppressed by sugar of lead and opium, or, if necessary, by plugging the vagina, having previously ascertained that the hemorrhage is not kept up by part of the ovum protruding; should this be the case, it might be removed by a pair of curved dressing forceps. Application of cold water is recommended by some to arrest the hemorrhage, but it generally incommodes the patient; if applied, the patient should be seated over a bidet of cold water, which may also be dashed over the loins. Sulphuric acid has also been recommended, but does not prove so efficacious as acetate of lead.

a vertex one; this may be done by pressing the face upwards and to one side *during a pain*. If the case be discovered *early*, the lever may be used to depress the occiput, the face being at the same time pushed up by the fingers: if the face be lower down, this practice is inadmissible, and the chin must be allowed to pass out under the symphysis pubis, as happens when the case is left to the powers of nature.—C. K. V.

Quest. XIII.—The symptoms and treatment of suppression of the lochia.

The symptoms are—general fever; pain in the abdomen, (often more violent than that accompanying peritonitis); rigors, followed by heat; headache; sometimes delirium; pain in the mammæ, perhaps accompanied by suppression of milk; thirst; restlessness and want of sleep; the bowels are generally constipated.

Treatment.—Venesection must be had recourse to, should the inflammatory symptoms run high; the bowels are to be kept open by gentle laxatives, such as castor oil, or the compound colocynth pill with hyosciamus; bland enemata are also found very useful; warm fomentations should be applied to the abdomen, and, if necessary, leeches to the groin.

Quest. XIV.—The symptomatical and pathological description of phlegmasia dolens, with the treatment, and the names of the authors who have written on the subject.

The symptoms of phlegmasia dolens are—stiffness in the groin, accompanied by pain shooting up and down in the course of the veins; the limb enlarges, otherwise preserving its natural proportions; and though the swelling is accompanied by heat, there is no redness, the surface being even paler than natural.

The pathology of this disease is now known to consist in inflammation of the veins, as was proved by Dr Davis, in 1822. The inflammation generally attacks the iliac and femoral veins, which, on dissection, are found filled with coagulable lymph and purulent matter. The extent of the disease is very various in different cases; the inflammation is generally confined to one side, but sometimes it

"doubles the Cape," and affects the veins of the opposite side. Besides the iliac and femoral veins, the inflammation frequently attacks the veins of the limb generally; and during the first stages, they can be felt like hard cords.

The treatment to be pursued is, general bleeding, and local, by means of cupping and leeching; cathartics are to be freely exhibited, but the chief reliance is to be placed on calomel and opium; warm fomentations will afford considerable relief. In the chronic stage, bandaging, and frictions with camphorated mercurial ointment, or the ointment of hydriodate of potass, are found very beneficial. Perhaps iodine might also be used internally with good effect.

This disease seems to have been known to Hippocrates; it was also known to Rodericus Acastro, and to Wiseman; but Mauriceau was the first to give a complete account of it; the case he describes, occurred in the person of his aunt. In this country, it has been described by White of Manchester, and Trye of Gloucester,—both of them imputing the cause of the disease to derangement of the lymphatics, occasioned by injurious pressure during parturition. Dr Hill, also, has described the disease, and was the first to point out the proper means of cure; he considered the disease an inflammatory affection of all the tissues of the extremity.

Quest. XV.—Treatment of inflammation of the *mammæ*, in order to prevent suppuration.

If the symptomatic fever be considerable, blood should be taken from the arm, but this will be seldom found necessary; the patient should take cooling laxatives, and live sparingly; leeches may be applied to the gland, but more reliance is to be placed on warm fomentations, or poultices of linseed meal.

Quest. XVI.—A description of sore nipples, and the best application to each case.

Soreness of the nipples is generally occasioned by excoriation, a fissure in the skin, or a superficial ulcer. The excoriation should be treated with astringent washes, as solution of sulphate of zinc, or nitrate of silver; the diluted citrine ointment is, in many cases, an excellent application. The fissure should be touched with a stronger solution of the nitrate of silver, made with about a drachm of the salt to an ounce of distilled water. The strong solution of the nitrate of silver is also the best remedy for the ulcer; its use should be followed by milk, to limit the extent of its action. In all these cases, the ease of the mother will be best provided for by the use of a shield, which is generally made of ivory or box-wood, and over it a cow's prepared teat is to be sewed. The mammæ are to be protected by the use of oiled silk.

Quest. XVII.—The symptoms of difficult dentition, and its occasional consequences.

The child is observed to be feverish and fretful, with a flushed face; the mouth feels hot, the gums look red, and are a little swollen; the nipple is greedily seized, and suddenly quitted from the tenderness of the gums; there is diarrhœa, and the evacuations are green and offensive; cough often supervenes, with wheezing; the child often cries on being brought into the erect posture. The occasional consequences are, bronchitis, and inflammation, perhaps running on to ulceration of the bowels.

Quest. XVIII.—The symptoms, consequences, and treatment of a severe bowel complaint in a child seven months old.

Symptoms.—The child is restless and feverish; the skin is dry; the tongue loaded, white, and, in the latter stages, red at the tip and edges; sleep is disturbed; there is griping, (known by the cries of the child); flatulence; the alvine evacuations lose their natural colour, becoming green and extremely foetid, sometimes smelling like the discharge of a foul ulcer; they are sometimes seen of the colour of red currant jelly. The consequences are inflammation and ulceration of the bowels.

Treatment.—The warm bath, warm clothing, a powder composed of rhubarb, combined with a little Dover's powder and aromatic powder. The hydrargyrus cum creta is an excellent medicine, in the bowel complaints of children. The diet of the child should be particularly attended to; and undoubtedly the best nourishment is afforded by its mother's breast.

Quest. XIX.—The symptoms of Ophthalmia Purulenta in a child of seven days old.

There are two stages—the *acute* and *chronic*. The acute stage is marked by redness of the conjunctiva, intolerance of light, and a glueing together of the palpebræ, which become much swollen; red vessels are now seen extending over the conjunctiva and cornea; the latter, in some places, becomes opake, and ulceration ensues, perhaps sloughs may separate; the purulent discharge becomes very copious. These symptoms are accompanied by general fever, heat of surface, and a deranged state of bowels.

TREATMENT.—Acute Stage.—The means of cure are, warm fomentations of milk and water to the eyelids; these are to be everted and scarified; ten or twelve very superficial incisions, mere scratches, may be made, and the blood is to be absorbed by means of a linen rag; if neces-

sary, a leech might be applied near the eye; the warm bath will be found of much service.

Chronic Stage.—This is known by the blood-vessels becoming more tortuous, the redness being duller, and the pain and intolerance of light less severe. Scarification may at this time be necessary, to prevent the spreading of the ulceration, and sloughing, if still continuing. The *ulcers* are to be touched with a strong solution of nitrate of silver, by means of a camel-hair pencil;—the solution may be made of the same strength as was mentioned in the treatment of sore nipples, and the same precautions are to be followed in its application. A wash for the eye may now be used, consisting of a solution of nitrate of silver, or sulphate of zinc, in the proportion of two or three grains of either salt to an ounce of distilled water; the collyrium should be dropt on the inner canthus, so that it may be diffused over the whole eye.

SPRING COURSE OF MIDWIFERY, AND
DISEASES OF WOMEN AND CHILDREN.

Prize Answers,

BY

FRANCIS COOKE,

STUDENT OF MEDICINE.

MOTTO.—Nil desperandum.

QUEST. I.—Bones that compose the pelvis.

The bones which compose the pelvis or basin of the adult female, are, the two *ossa innominata* at the sides, and the *sacrum* behind, to which is appended inferiorly the *coccyx*, by a moveable articulation; to these some have added the last lumbar vertebra.

Quest. II.—Most important processes and parts that have received names in each bone, and the parts attached to them.

In the infant at birth, and during the period of childhood, these four bones are in an imperfect state of ossification, each bone being subdivided into smaller bones, which are connected at various points by cartilage. The *ossa innominata* are each divided into *ilium* or haunch bone, *ischium* or sitting bone, and the *pubis* or share bone. The *sacrum* and *os coccygis* are also in separate pieces, joined by intervening cartilage. The pelvis forms an osseous cavity, which is lined by soft parts, and has been divided by accoucheurs into the *false*, or that which lies above the *brim*, or *linea ileo-pectinea*; and the *true*, or that situated inferior to it. The *false pelvis* is bounded posteriorly by the inferior lumbar vertebræ, at the sides by the expanded wings of the *ossa innominata*; and before, the osseous parietes are deficient, it being bounded merely by the abdo-

minal muscles, fasciæ, and integuments. The *true pelvis* is bounded above by the brim, the sides are formed by the sacro-sciatic ligaments, behind is the sacrum, at the lower part is the coccyx, and in front is the symphysis pubis; the *brim* is formed by the promontory of the sacrum behind, which encroaches somewhat on its dimensions, at the sides by the salient angle formed by the ilium, and in front by the os pubis, which in some cases is sharp where it looks upward. At the sides of the brim lie the psoas and iliacus internus muscles, and also certain vessels and nerves which go to supply the lower limbs. The *arch of the pubes* is formed by the diverging limbs of the ischium and pubis, and it is more expanded in females than in males; in them, it gives attachment above to the suspensory ligament of the clitoris, at its sides to its two crura. At the lower part of the cavity of the pelvis, we find the important *spines* of the ischia, to which are attached the sacro-sciatic ligaments, passing between them and the sacrum and os coccygis; internally to these, we find the *planes* of the ischia, which perform so important a part in the mechanism of labour. The symphysis pubis, which is situated above the arch, varies in its depth from one to two inches; its junction is by an intermediate cartilage, and its union with its fellow is strengthened by the anterior and posterior pubic ligaments, which are thicker on the out than on the inside, by which they are not allowed to encroach so much on the capacity of the brim. The *sacrum* forms in front a cavity which is called the hollow of the sacrum, and in it is placed the rectum, lying in a slanting and curved direction; it is fixed behind to the sacrum by cellular tissue, and in front lies the vagina, united to it by the same substance. To the back of the symphysis pubis is closely applied the urethra, which is fixed to it by cellular substance. To the linea ileo-pectinea is attached the levator ani; while to the ligament which closes the obturator foramen, is fixed the

muscle of that name. The pelvis, at its outer surfaces, gives attachment to many muscles which proceed to the lower limbs, or which form the abdominal parietes, and which possess no obstetric interest.

Quest. II. *continued*.—What is the length of the vagina and uterus, and Fallopian tubes, and the appearance of the mucous membrane in each?

The length of the vagina has been very variously stated by different authors; some estimating it, in the virgin state, at *four inches*, while others, as Cloquet, make it to vary from *six to eight*. Like the other canals of the body, its length varies in different persons; also during gestation, its length is increased in the latter months; it must also be remembered, that its length may be increased by pushing the os uteri upwards; but from *five to six inches* may be considered its usual length. But if the length of the vagina has been disputed, there is much greater variety in the description of that of the uterus; it is described by authors to be from $1\frac{1}{4}$ to $2\frac{1}{2}$ inches; but probably, in the latter case, some slight degree of enlargement existed, and $1\frac{1}{2}$ inch will be found to be about the average size. The length of the Fallopian tubes, which are tortuous, varies, when extended, from 3 to 4, and even 5 inches. The inner surface of the *mucous membrane* of the vagina presents rugæ, which take a circular course, but do not extend entirely around the canal; its surface is studded with numerous follicles or lacunæ, which afford the lubricating discharge; at the lower part, is the plexus retiformis, or vascular tissue, which is erectile, and becomes distended at certain periods. In the *cervix uteri*, the rugæ take a penniform appearance, and are thence called *R. Palmatæ* or *Pennatæ*, by Haller; at its lower part are situated several large lacunæ, improperly called *glandulæ Nabothi*,

which, it is said, pour out the viscid mucus which plugs up the os uteri as soon as gestation commences; the inner surface of the uterus is smooth in maids, but exhibits rugæ in married women; in the tubes the rugæ are found, but in them take a longitudinal direction.

Quest. III.—What are the different formations of the hymen?

The hymen, which is in general merely a semi-lunar fold of the mucous membrane at the inferior part of the orifice of the vagina, and which, when ruptured, forms the carunculæ myrtiformes, from their resemblance to myrtle-berries, presents three remarkable varieties:—the first, where the aperture is in the middle of the fold of membrane, of a circular form; the second, where there is a transverse slit, extending from above downwards; and the third, which presents an aperture both above and below. In some cases it is congenitally deficient, in others it has remained entire till the full period of pregnancy, so that its existence or non-existence is not to be looked upon as any test of virginity.

Quest. IV.—What are the peculiarities of the foetal pelvis? What the structure, shape, and measurement of the foetal head?

The long diameter of the brim of the foetal pelvis, lies in the antero-posterior direction, while that of the adult lies from side to side. In the pelvis of the foetus, the bladder lies out of its cavity, while in the adult state it does not rise above the brim, unless distended with urine; from this elevation of the bladder, the length of the urethra is increased; in the female foetus, the uterus also lies in a

great measure above the brim of the pelvis, hence the cul-de-sac which, in an advanced period, exists between it and the bladder before, and between it and the rectum behind, is much elevated. The foetal head has a peculiar structure, to render its adaptation to the passage through which it has to pass during labour, more easy to the mother; in place of being formed like the adult cranium of solid bones, united by fully ossified unyielding sutures, the ossification of its bones is very incomplete, and they are united at their edges by a membrane, which allows both of their overlapping during the progress of labour, and also of a considerable lengthening of the head in its long diameter, thereby admitting of its passage through a pelvis, which, were the case otherwise, would be quite impossible: Also the os frontis, instead of being composed of one unyielding piece of bone, is divided into two by the frontal suture, which is merely a continuation of the sagittal through the whole length of the bone. The head also presents two *fontanels*, one *anterior* or large, formed at the junction of four sutures, by the superior angles of the two frontal and the two parietal bones; and the *lesser* or posterior, formed at junction of three sutures, by the posterior-superior angles of the parietal bones, and the upper angle of the occipital. The foetal head presents three *diameters*, the *longest* or occipito-mental, which extends from the chin to the vertex, measures about five inches, but in some cases of difficult labour, it has been extended so much as to measure seven, eight, and even nine inches; the shortest diameter between the prominences of the parietal bones measures from $2\frac{3}{4}$ to $3\frac{1}{2}$ inches, but it will not admit of diminution in the same degree that the long diameter admits of extension. The distance from the root of the nose to the vertex is about four inches.

Quest. V.—What are the smallest measurements of the

pelvis, that will allow a child to pass at the full time, without instrumental assistance? That which allows of the long forceps, or will require embryulcia?

Those deformities of the pelvis which affect the hard parts, and are caused by rachitis, osseous growths, ill united fracture, or mollities ossium, generally produce the narrowing of the pelvis in the antero-posterior diameter; there is very rarely a deficiency of space at the sides of the pelvis, while those which are produced by enlarged ovaria, or soft growths in the passages, may reduce the lateral admeasurement of the pelvis; but in the latter case, it would be rarely a question, whether we should use instruments or not, for in these cases, the most approved practice appears to be, to reduce the size of the tumour by puncturing it, before we attempt the delivery of the child; our attention will be directed to the measures to be adopted when the sacro-pubic diameter of the brim is diminished in its capacity. In the most favourable and ordinary position in which the head of the child descends into the pelvis, with its chin applied to its chest, and the vertex directed to one or other acetabulum, the head presents its greatest diameter, of four inches from the base of the nose to the vertex, to the greatest diameter or diagonal of the brim of the pelvis, which varies from $4\frac{1}{2}$ to $5\frac{1}{4}$ inches; if no obstacles be opposed, the head will find no difficulty to its passage in this direction: Again, the head presenting its short diameter between the parietal protuberances of from $2\frac{3}{4}$ to $3\frac{1}{2}$ inches, to the short or sacro-pubic diameter of the pelvis, which varies from $3\frac{1}{2}$ to 4 inches, its passage will be equally easy in that direction; the period which it takes for its passage depending on the compressibility of its cranium, and the resistance offered by the soft parts, and the *vis a tergo* supplied by the uterine and abdominal efforts for its expulsion. Should, however, these dimensions be altered, either from diminished size of the pelvis, or increased size

of the head from ossification of the sutures, or from hydrocephalus or emphysema, instruments will become necessary. Where the sacro-pubic diameter of the brim measures above 3 inches, and the foetal cranium is of the usual size, if the pains be effective, and the bones of the head lap over each other, we may give a fair trial to the powers of nature, till any unfavourable symptom arises, as they have often in such cases been found equal to effect delivery, always keeping in mind, that instrumental aid may become necessary at any period of the labour, should symptoms appear which by further delay might endanger the safety either of the mother or child; but where the sacro-pubic diameter of the brim is under 3 inches, it is evident, that a head whose short diameter is 3 inches or $3\frac{1}{2}$, will experience very great difficulty in its passage, and in most cases its unaided delivery is impossible; in most of these cases, formerly the life of the foetus was destroyed, but by means of the long forceps, or Dr Davis's instrument with one short and one long blade, applied over the face and occiput, we are able to effect delivery even where the sacro-pubic diameter of the brim is as *small* as $2\frac{3}{4}$ inches; but below this size, except where the foetus is very small, as in labour occurring in the earlier months, we must have recourse to embryulcia. With the improved instruments of Dr Davis we are now able to perform this, where formerly the operation was impracticable; he has frequently, by means of his osteotomist, extracted a child by cutting up the skull into small pieces, where the pubis admitted the passage of a sphere whose diameter was not more than one inch. As the smallest pelvis that has ever been recorded (Sir C. Bell's) was but one or two lines less than this, we may hope that the Cæsarean section, which dooms the mother to almost certain death, will, with the use of the instruments of Dr Davis, be scarcely ever necessary; for where we have a pelvis of more than *one inch* in diameter, embryulcia may be attempted with every hope of success.

Quest. VI.—Give the causes of lingering labour, and an account of the cases in which the ergot of rye may be employed with advantage, and state those in which venesection is necessary.

Causes of dystocia diutina.

1. Original or accidental weakness of habit of the mother.
2. Disproportion between the size of the child and pelvis.
3. Death of the child.
4. Shortness of the funis.
5. Rigidity of the os uteri.
6. Rigidity of the external parts.
7. Over distension of the uterus.
8. Membranes too tough to rupture.
9. Too early evacuation of liquor amnii.
10. Plethora.
11. Abuse of stimulants.
12. Irritability of the bladder.

Weakness on the part of the mother can rarely afford an obstacle to delivery, for there the resistance is enfeebled as well as the uterine power; we find that women in the highest state of debility from phthisis, have easy labours. Shortness of the funis may be original; it is at times, but very rarely, not more than four inches long, or it may be accidental, from being twisted round the foetus; its existence is shown by the child receding at the end of each pain; where it is found much twisted round the child, some authors recommend that it should be divided. Rigidity of the os uteri is a most frequent cause of lingering labour; here patience is the best remedy; it is most common where the waters have been discharged too soon, so that the os uteri has not the advantage of being dilated by the wedge which they form. We may gradually dilate with one or two fingers the os uteri; or, if the woman be very plethoric, we may bleed. Rigidity of the os externum is most com-

mon in first labours, and in stout women in the country who have been much used to work in the open air; they will generally bear one, or even two bleedings with much advantage; and if the rigidity continue after this, a large dose of opium may be given, which will probably produce sleep, and when in two or three hours the woman wakes, the os uteri and external parts will be found more yielding and dilatable, and attempts may be made to dilate the os uteri with the finger. For over distension of the uterus, the obvious remedy is to rupture the membranes, by pushing the finger against them during a pain; if they do not break on this, they may be torn by pinching a portion of them with the nails; and should this fail, a stilette or probe may be pushed through them. The only way in which the death of the foetus can act in retarding labour, is, that the uterus is not stimulated by the movement of the foetus in its cavity, which we must admit that it is before the head of the foetus is engaged in the pelvis, when all foetal motion ceases. An irritable bladder may be relieved by the catheter, or by pills of 2 grains of camphor and 2 of hyosciamus. Where the external parts are rigid and unyielding, or the os uteri undilated, it is improper to give the *ergot*, for it may produce such violent contractions, as will cause a rupture of the uterus; here V. S. is of great importance, and will produce the happiest effects. The *ergot* is of much service in doses of 2 or 3 drachms, where the os uteri and external parts are well dilated, and where the head has entered the pelvis, but the pains are weak, irregular, or ineffectual, it being premised, that no obstacle exists to oppose the free passage of the head; with the same precautions the *ergot* will be of much use where the foetus is dead. Some authors have ordered it to be given during the labour when hæmorrhage is expected, and cases have been given where it has fulfilled very well the object.

Quest. VII.—All the cases and circumstances that render embryulcia indispensable?

These may depend either on the small size of the pelvis, with a standard head, or the pelvis may be well formed, yet the head enlarged to such a degree, as will render its passing undiminished impossible. Where the head is of the standard size, but the sacro-pubic diameter of the pelvis less than $2\frac{3}{4}$ inches, we must not use the long forceps, for we may do injury to the mother, without any hope of delivering a living child: where the pelvis is standard, but the head enlarged by disease, we should feel very little hesitation in puncturing the head, if any symptoms of danger to the mother appeared.

Quest. VIII.—All the alternatives for embryulcia?

Two have been proposed, and the former often practised with success—1. The induction of premature labour. 2. Reducing the growth of the foetus, by limiting the supply of food to the mother. The first is performed in the seventh or eighth month of pregnancy, when the child, being born, is able to live, either by puncturing the membranes through the os uteri, and then allowing the waters to drain off, when labour will come on; or, as was practised long ago in London by Dr Sims, by introducing the finger into the os uteri, gently dilating it, and detaching from around it the membranes, which will cause labour to come on. Although argument is much in favour of the second plan, of starving the mother to reduce the size of her offspring, we must have more cases in which it has been successful, before we trust to it.

Quest. IX.—How are crown presentations recognised and treated?

Here the face of the child may be either to the one or other side of the pelvis; one ear will be found behind the symphysis pubis, and the other in the hollow of the sacrum; the ovoid shape of the vertex as the presenting part, is missed in these cases, and the wrinkled tumor of the scalp is absent. The practice of Smellie, and that taught by Dr Blundell in these cases, who seems to speak of it as if nothing were more easy, is, to place two fingers on the side of the face, and co-operating with the pains, to turn the face into the hollow of the sacrum, so as to bring the vertex to present; but as this is an operation which it is more easy to describe than to perform, our best course will be, to apply the forceps to the head, one blade over the one ear, and the other over the other ear, and then, in the absence of a pain, gently to turn the forceps, so as to move the face into the hollow of the sacrum, and the vertex to present; when the rest of the delivery may be left to the efforts of nature.

Quest. X.—Symptoms and treatment of convulsions at the full period, but before the commencement of labour,

Convulsions may be of two kinds—1. The Hysteric. 2. The Epileptic.—A woman who has never been subject to hysteria before, may have a fit at this period; its nature is known, and it is distinguished from the second kind by observing that the woman comes out of the fit laughing or crying; the muscles of respiration appear to be principally affected, and, according to Dr Dewees, those of the head are particularly so, producing a state of opisthotonos, which never occurs in the true epileptic kind. Here a little of the volatile tincture of valerian, with cool air, and the sprinkling of some cold water on the face, will generally be sufficient to remove them. In the second species, which only differs from true epilepsy in not being accompanied by an

aura; the woman has generally some premonitory symptoms, such as pain of the head, flushes of the face, flashes of light before the eyes, and spasms of various parts of the body; the pulse is slow and full; this state is quickly succeeded by a most violent convulsion of the whole body; the face becomes livid, the eyes glazed and wild, while the whole appearance of the woman is most frightful; the attack gradually abates, leaving the woman either wholly or partially insensible; at other times the fit comes on suddenly, and Dr Dewees relates a case, where a woman uttered a cry, a convulsion and death immediately succeeding. Here the most prompt treatment is required; the moment that the premonitory symptoms appear, we should open a vein, and take away blood till relief is obtained; sometimes 50 or 60, or even 100 ounces are required to be drawn before the symptoms are quite removed, but this quantity is not to be taken at the first bleeding; 40 ounces may be first taken, and this repeated in a short time, according to the urgency of the symptoms; the cold affusion should be applied to the head, by bringing it to the edge of the bed, and pouring a pitcher of cold water over it; purgatives are also of much service, the stools being always dark; the purgative must be very prompt in its action. A scruple of calomel, or 2 drops of croton oil, may be put on the tongue while the mouth is open, or an injection, with an ounce of oil of turpentine, given. As measures to prevent the recurrence of the fits, when their severity has been subdued, cupping-glasses may be applied to the neck, or 30 leeches to the head, also cold evaporating lotions, or ice; should the convulsions not be mitigated by these measures, or threaten fatal consequences, it will become a question, whether manual delivery must not be attempted, the symptoms appearing to arise from the distension of the uterus; having decided on this point, our hand, well lubricated, must be passed to the os uteri, and, gradually dilating it, introduced, taking great care not to rupture the mem-

branes, till we arrive at the feet, which must be grasped, and the child delivered by them. Our previous bleeding will, in most cases, have rendered the os uteri so dilatable, as to present no very great obstacle to turning. A most fatal error has been made by some practitioners, in these cases, who, regarding the convulsions as merely nervous symptoms, have given large doses of opium, which have proved speedily fatal; Dr Dewees has given a case very clearly illustrative of this. Opium, in all stages of epileptic convulsions, is hurtful, although it may, perhaps, be given with benefit in the hysteric kind, and also where convulsions occur from flooding, or from great exhaustion during a very tedious labour; but we must be very careful to ascertain, before we give it, that no symptoms indicative of increased determination of blood to the head exist.

Quest. XI.—Management of a cord presentation.

This is a complication of labour most dangerous to the child, for there is much likelihood, that if not quickly removed, the cord will suffer such compression between the head and the sides of the pelvis during labour, as to destroy the circulation in it; for, although the cellular substance which connects the vein and arteries of the funis contains a quantity of thick, tough substance, which obviates the effects of pressure to a certain degree, yet if it be long pressed between the head and pelvis, its circulation will be stopped. When, therefore, we find the cord protruding, we ascertain whether there be a pulsation in it or not; if there be no pulsation in it, the life of the foetus will, most probably, be extinct; but should we find that it pulsates, we must immediately return it to the uterus. Sir R. Croft hooked it over a foot of the child; Dr Aitken wound it round a little grooved ivory ball, and returned it; others have wrapped it up in soft cloth; but perhaps the best mode of

practice is to return it in the absence of a pain, and to retain it there by the fingers, or a piece of sponge.

Quest. XII.—Treatment of obstructed labour from an enlarged ovary.

These tumors have sometimes attained to an immense size: Dr Merriman met with a case, in which the whole of the pelvis was occupied by one, and believed it was the child's head. These ovarian tumors are generally filled with a thick gelatinous fluid, often too thick to escape through a trocan; Dr Merriman gives the results of 17 cases of tumors in the passages, in which a variety of treatment was pursued, but the most successful appears to have been that in which the tumor was punctured, its contents evacuated, and the remainder of the process left to nature.

Quest. XIII.—General principles of treatment in a case of threatened abortion, at the third month.

Before we can attempt to direct the course here to be pursued, the causes of abortion must be taken into account, and with them the treatment will also vary: the most common are violent mental emotions, injuries, flooding, diseases of the mother and foetus, and also of the placenta; when an abortion is threatened, there is in most cases both pain and some little degree of flooding, but one may exist without the other. If the woman has received a blow on the abdomen, or if she has had a violent fright, or there has been much flooding, it is most probable that the ovum will be dead, and therefore its immediate expulsion is desirable. Here some persons advise that the membranes should be punctured with a probe, which will certainly allow the waters to flow off, but Dr Dewees observes, the uterus will

find much difficulty in ridding itself of the membranes, and he supposes that in some cases these are never discharged, but that they are absorbed by the uterus. He would seem hence to infer, that the best plan in these cases would be, to detach, according to Dr Sim's practice in the induction of premature labour, the membranes from the os uteri, and thus cause the ovum to be expelled whole: probably the ergot of rye would be of much service here, in producing their expulsion. There is very great pain in these cases in general, from the little disposition that there is in the os uteri to dilate at this period.

Should the symptoms, on the other hand, be slight, a slight degree both of pain and of flooding, which have been induced by a trivial cause, as a slight cold, our efforts must be directed to the preservation of the ovum entire, and we must try to conduct the mother safe to the full period of pregnancy. The first thing to be done is, to keep the woman in the horizontal posture, and avoid all causes which may produce an increase in the power of the circulation; the room should be cool, and the woman must not be loaded with clothes. If there be much vascular excitement, V. S. will be of service to a small extent; the bowels must be opened by the neutral salts, the diet must be light, and by no means stimulating; if there be pain, it indicates that the uterus is acting to detach the ovum, and opium must be given to allay it; internal astringents, as the sulphate of iron, alum, or the compound infusion of roses, with sulphuric acid. An idea prevails among women, that red wine is necessary for them; but it is in all cases prejudicial.

Quest. XIV.—The most approved mode of managing women after delivery till the third week.

Having, as soon as the process of delivery is completed, applied a warm napkin to the pubes, and a bandage to the

abdomen, we take our leave. It is always proper, if the labour has gone on well, to see a woman again within 12 hours after delivery. Our first inquiries are directed to ascertain the state of the woman ; we inquire about the after-pains, the lochia, the bladder, bowels, feel the state of the pulse, and ask if the woman has slept. For severe after-pains, opium should not be given for the first day, as they arise from the contractions of the uterus, which expel any clots of blood which may be found in its cavity. If the woman has passed no water, we feel for the bladder above the pubes ; if it be distended, we pass the catheter, and order suitable medicines ; if the bladder be very irritable, the catheter is also required, and some hyosciamus and camphor. The bowels *will not require to be interfered with till after the first two days*, and then we must give the mildest medicines ; for irritation of the bowels produced by drastic purgatives, has appeared in some cases to have produced death, by being extended to the peritoneum. Before we take our leave, we inquire after the child, and request to see it ; our visits should be repeated for the first three or four days, once or twice a day. Formerly it was usual to treat women lying-in, as if they had received an inward bruise, and give them "the sovereign remedy" for it, "spermaceti," keeping them at the same time in close hot rooms, loaded with bed-clothes ; and many affections were then common, which we now rarely meet with. Dr Hunter was the first who showed the absurdity and mischief of this, and the mortality among puerperal women has since his time been progressively diminishing ; we keep a woman now cool, and instead of the stimulating messes which were given in former times, we order a light farinaceous diet ; and if any medicine be given, it is a little nitrous febrifuge, or a laxative ; but we do not allow a woman to get up soon ; in the higher ranks, a woman should not be allowed to get out of bed till the fifth or sixth day, and then to sit up but for a short period, and she should keep on the

sofa, in a great measure, till the third week ; by this means the uterus gradually diminishes in bulk, and she does not run the risk of prolapsus, and affections of the uterus, which are but too common in poor women, who are obliged to rise up and work often on the second and third day.

Quest. XV.—All the diseases of pregnancy, and a general outline of the treatment to be pursued in each.

Women in a puerperal state are liable to all diseases, but there are some to which they are more particularly exposed, and others which are peculiar to pregnancy.

When these occur in a mild form, they are termed the indications or signs of pregnancy, and they rarely require any treatment ; but when more aggravated, they often produce the most distressing effects.

The principal are—

1. Heartburn.
2. Nausea and vomiting.
3. Piles.
4. Œdema of the legs.
5. Salivation.
6. Diarrhœa and constipation.
7. Determination of blood to the head.
8. Retroversion of the uterus.
9. Irritable bladder.
10. Prolapsus of the uterus.
11. Mastodynia.

The first of these, *Heartburn*, is very distressing, and in some cases has produced abortion ; the sensation is often that of a burning coal in the stomach, or there is an excoriation of the throat, produced by the regurgitation of an acrid matter from the stomach, which is generally acid ; bile is often ejected. The *treatment* is very unsatisfactory ; all the alkalies, which usually are of such service, seem

here to have little power ; but the most effectual are magnesia, and the liquor potassæ has appeared often to do much good. Leeches to the pit of the stomach are often of service, or sometimes, if other symptoms seem to demand it, bleeding may be practised ; blisters are also of service at times, or an opiate plaster ; the common black liquorice is of much use ; perhaps the nitrate of bismuth, of such service in pyrosis, and that stage of indigestion which is accompanied by a slight degree of inflammation of the mucous membrane, would also here be of benefit : but perhaps it is rather to be regarded as an action of the stomach sympathetic with the state of the uterus, than as depending on any affection of that viscus, as it generally disappears the same day that the woman quickens. *Nausea* is one of the first symptoms, very often, that leads a woman to suspect that she is pregnant,—it is always most severe in the morning ; but it seems to be a mere effort of nature to relieve the plethoric state of the system which exists in pregnancy, and would, if not relieved, probably induce the lesion of some internal organ ; an effervescing draught is all that is required in most cases, with a few drops of laudanum if the vomiting be very severe, and we are sure that it does not arise from bile or constipation, when a gentle emetic and purgative must be given first.

Piles are often very painful ; sometimes they appear for the first time during pregnancy, but generally the woman has had them before, and they become much aggravated during the period of gestation ; if slight, we may order a laxative, as sulphur, with the lenitive electuary, and tell the woman to bathe them every night with decoction of poppy-heads ; if they are very severe, we must examine, and if they are external, and are pedunculated, we may remove them by the knife, scissors, or ligature, or we may open them with the lancet, and squeeze out the coagulum of blood which they in general contain. The knife is perhaps the best instrument for removing them, if we are not

afraid of much hemorrhage, as a slight degree of it would be beneficial; the scissors tear in some measure the orifices of the divided vessels, which renders the risk of hæmorrhage less, but it being a contused wound, is less likely to heal by the first intention, which is to be desired in this case. The ligature is a very painful, as well as a tedious process, and in some cases which I have seen, it was obliged to be removed, and in others the knife was used on the second day after its application, from a diarrhœa coming on, and the pain which was caused when the patient went to stool was excessive; perhaps in these cases, after the use of the knife, the torsion of the arteries, used so effectually by Lisfranc in his operations on the uterus, would be very applicable.

Retroversion of the uterus.—This is most generally caused by the pressure of a distended bladder on the fundus of the impregnated uterus, (it may occur, but very rarely, in the unimpregnated state,) by which the fundus is forced below the promontory of the sacrum, and the os uteri rises high towards the symphysis pubis; it cannot occur after the fourth month of utero-gestation, as then the uterus is raised above the level of the pelvis; this state may continue till the full period of gestation, and when the labour-pains come on, no os uteri will be felt, it being situated high up anteriorly above the symphysis pubis. This was the case which Dr Merriman met with, and which was seen by some of the most distinguished accoucheurs in London, who entirely agreed with him in his views with respect to the nature of the case. According to Dr Dewees, the distension of the bladder is the effect and not the cause of the retroversion, by its pressure on the urethra, causing obstruction to its flow of urine; but whether the effect or the cause, our first efforts must be directed to the emptying of the bladder, which must be done by the catheter, —a flat one will perhaps most advantageously be used. The bladder emptied, if its distension was the cause of the

retroversion, the uterus will rise to its proper place in the pelvis spontaneously; but if the uterus was first thrown out of its situation, and the distension of the bladder was secondarily produced, we must by manual assistance restore the uterus to its place in the pelvis. This is best done by placing the woman on her knees and elbows, then with one finger in the vagina, and another, or thumb, in the rectum, we obtain a bearing upon the uterus at two points, and by pushing up the fundus, and gently drawing down at the same time its cervix, we readily restore it to its situation.

Prolapsus of the uterus, exhibits three varieties, according to the degree of its descent; it varies from a simple relaxation of the uterine ligaments to those cases where the whole uterus descends, and lies between the patient's thighs, termed *procidentia uteri*. This state is easily ascertained by the os uteri, which is found at the lower and posterior part of the tumor, while the uterus is felt to be moveable within it, and the inner surface of the vagina being extended over it; but in the more slight cases, where none of the tumor appears externally, it is more difficult to ascertain the nature of the affection. The symptoms are—pain in the lumbar and sacral region; a sense of bearing down; a feeling as if something would come forth at the os externum; generally a discharge from the vagina, and a general leucophlegmatic state of the system: it is most common in poor women who have got up too soon after delivery. The remedies are—pessaries, astringent injections, astringent and tonic medicines, bark, sulphate of iron, extract of gentian, with warm and cold bathing.





