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BY ERASMUS WILSON, Esq.,  
Consulting Surgeon to the Saint Pancras Infirmary; Lecturer on Anatomy and Physiology in the Middlesex Hospital School.

## LECTURE XII.

The eruptive period of small-pox is attended by a complete remission of the symptoms of the primary fever. As in measles and scarlatina, the eruption appears first on the face, and thence extends to the upper extremities and trunk, and lastly, to the lower extremities, pervading the entire surface of the body in twenty-four hours. The first traces of the eruption are seen on the lips and forehead.

The eruption appears primarily in the form of red puncta, which are granular to the touch, and disseminated more or less abundantly according to the nature of the attack. When the small-pox is of the discreet kind, the puncta are separated by spaces of unaffected skin; when coherent, they are distributed in patches, as in measles, and give rise to the appearance termed *corymbose*; and when confluent, the skin is uniformly reddened by their close approximation. In the course of a few hours the red points rise above the level of the skin, are hard and papular to the touch, and each surrounded by an areola of corresponding magnitude with themselves. This latter appearance has gained for them a comparison with the small spot which follows the bite of a flea; but the comparison is bad, because the former is a capillary congestion, and the latter merely an ecchymosis. On the *second day* of eruption, the papule or vari have a conical form, with red and inflamed bases and transparent vesicular points; the vari are now converted into vesicles. On the *third day* the vesicles have increased in size, their bases have enlarged and become more inflamed, and some of the more advanced are flattened on the surface.—During the *fourth and fifth days* the flattening of the vesicles is attended by a median

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depression likened to an umbilicus, and they are said to be umbilicated; they are still farther increased in size, and are each surrounded by an inflamed areola. The contents of the vesicles also undergo change during their progressive development; they at first contain a limpid and transparent fluid, a layer of coagulable lymph is effused upon the exposed surface of the dermis, and the fluid becomes whitish and lactescent, preparatory to that change by which its place is to be supplied by pus. The skin, during the eruptive period, is hot, tense, and swollen.

Similar phenomena to those I have now described, are taking place on the mucous membranes of the body, and especially on those which are exposed to the influence of the atmosphere. The mucous membrane is swollen and congested; at first punctated; the place of the puncta is speedily occupied by white spots resulting from the elevation of the epithelium from the papillary layer by effusion of lymph. A number of these white spots frequently run together and the epithelium becomes separated from the membrane beneath in patches of considerable extent. When the epithelium is rubbed off a false membrane is found to occupy its place. In the mouth and pharynx the progressive action rarely proceeds to the formation of pustules; but in the trachea, which is protected from disturbance by contact with foreign substances, the latter change is occasionally observed. These morbid actions in the mucous membrane are necessarily attended with distress to the patient; the throat feels sore, is tender to the touch; deglutition is painful, and more or less impeded; the voice is weak and hoarse, and there is not unfrequently a hard, dry, and troublesome cough.

In confluent small-pox the symptoms are not so favourable as those I have just described; the fever of invasion is severe, and hurried through its course, is only moderated, without remission, on the occurrence of eruption, and the latter appears one day earlier than in discreet small-pox. The entire skin is of an uniform deep-red colour, very much swollen, tense, and granulated, but the vari are less prominent and hard. The vesicles are



so numerous as to blend by their bases, and eventually to form one continuous cavity over a surface of considerable extent, as over the entire face. Of course all trace of umbilication is absent; the contained fluid is in the first place limpid and transparent, afterwards opaque and milky, and the decorticated dermis is concealed by a thick layer of coagulable lymph which constitutes a false membrane.

As may be inferred, between the simple discreet and the malignant confluent form of eruption, there are many degrees of semi-confluence; moreover, the discreet and the confluent are frequently associated in the same individual in an ordinary case of small-pox. Those parts of the body which are habitually subject to irritation either from exposure to the atmosphere, or to the contact of secretion exhibiting the latter, while on the general surface the discreet form prevails. It is for this reason that we so frequently meet with the confluent eruption on the face, the hands, the buttocks, and inner sides of the thighs of children.—Sydenham referring to this peculiarity observes, that if there be 10,000 pustules on the entire body, 2000 of these will occupy the face.

On the mucous membranes the confluent form of small-pox is very distressing; the eyelids are excessively congested and swollen; the nasal passages are obstructed; the tongue is enlarged; the membrane of the mouth, pharynx, and larynx, swollen; and the functions of these parts interrupted and painful.

The period of supuration or maturation, during which the vesicles are changed in colour and form, losing their lactescent and umbilicated character, and becoming yellow and spheroidal, and are altered in their contents, commences on the sixth day, and continues till the eighth, when the pustule is perfected and the period is complete. The suppurative change commences primarily on the face, and extends from this region to the rest of the body, manifesting a disposition to affect those parts first on which the epidermis is most delicate.

Maturation of the small-pox pustule is the moment of the highest degree of aggravation of the cutaneous inflammation; and the latter is the exciting cause of those severe constitutional effects which constitute the secondary or suppurative fever. On the eighth or maturative day, the skin is intensely red, swollen, tense, painful, and throbbing. On the face the tumefaction buries the eyes beneath the swollen lids; the whole head is increased in size, and a similar change is propagated from the head downwards to the rest of the body. The mucous membrane participates in the inflammatory congestion; in the adult there is commonly profuse salivation, an affection not usual in children; and in both children and the adult there is a diarrhoea resulting from the inflammatory disturbance of the mucous mem-

brane of the alimentary canal. The eighth day is frequently fatal.

The secondary or suppurative fever of small-pox commences on the eighth day of the eruption, on the day of perfection of the pustule, and continues till the eleventh day. It is attended with great depression of nervous power, the patient is drowsy and listless, and there is more or less of delirium. In severe cases the symptoms are those of low typhus, there is muttering delirium, with a dry, brown tongue; a hard cough, with hæmoptysis; and occasionally hæmaturia.

In confluent small-pox the swelling, throbbing pain, redness, and heat, reach their utmost degree of intensity; supuration is not effected in individual pustules, but, from the concurrence of these, the epidermis is raised over a surface of considerable extent, and dries up into a thin crust. Beneath this crust pus continues to be poured out, and, desiccating as it collects, the crust is thickened and altered in its colour to a brownish hue.

The secondary fever in confluent small-pox is retarded in its appearance until the eleventh day. The patient is delirious and comatose, or restless and alarmed, the restlessness increasing towards night; the latter is a symptom of danger.

The period of desiccation commences on the ninth day of eruption, and comprises all the remaining changes in the pustule until the scab is formed and cast off, and the skin is left free of the purulent collections.—For the first three days of this period the secondary fever continues to rage, but the formation of fresh pus has ceased; many of the pustules are broken or torn, and their contents escape, while that which remains on the exposed surface quickly desiccates; the pustules which remain entire also dry up. In this manner two forms of scab are produced; the one resulting from the desiccation of a part of the contents of the original pustule, and of the effused fluid which takes its place, and the other from the desiccation of the entire pustule. There is some difference of colour between these two, for the former, being often the result of violence, is mingled with blood, which becomes a deep-brown or black colour as it dries, while the latter retains a lightish-brown tint. Wherever the surface has been made to bleed during the period of desiccation, the blood dries into black masses as it oozes from the wounded skin, or stains the crusts around it, and alters the natural character of the incrustation. The drying up of the purulent fluid is attended with a disagreeable and nauseous odour.

Desiccation commences on the face, often as early as the eighth day, particularly in the confluent form, but is less speedily apparent on more protected parts of the skin. Indeed,

it is not unfrequently happens that crusts are formed in this situation, even before maturation is complete on the lower parts of the body. Desiccation is accompanied by intolerable itching. This is a most troublesome symptom, particularly in children, and gives occasion to those extensive abrasions of the surface which are represented after the cure of the patient by unsightly seams and scars. The period of desiccation is that of the decline of the local disorder; the tumefaction gradually subsides, the cutaneous congestion diminishes, and the fall of the scabs is attended with repeated exfoliation of the epidermis.

In discreet small-pox the fall of the scabs takes place upon successive parts of the body from the eleventh to the fourteenth day, but in the confluent kind the removal of the scabs is not effected until the twentieth or twentieth-fifth day. The enormous crust which covers the face like a mask remains attached for ten or twelve days previously to its fall, and leaves the surface beneath a vivid red colour, and variously scarred and seamed by the ulcerations which have resulted from the cutaneous irritation. After the scabs are removed from the whole of the body the skin remains for some time red and congested.

#### COMPLICATIONS OF SMALL-POX.

The train of symptoms which I have just described may be taken as the ordinary features of small-pox, but the various periods are each liable to severe and dangerous aggravation. The fever of invasion is sometimes attended with nervous depression of such exceeding intensity as to overwhelm the sufferer at once and to prove fatal before any specific symptoms are declared. In other cases delirium, convulsions, or coma, are the immediate precursors of death. Occasionally local and visceral pains are so distressing as to divert the attention from the true nature of the disease, or the heart being disturbed in its function there is extreme anxiety, palpitation, and tumultuous action of this organ. In cachectic states of the system the patient is liable to passive hæmorrhages, either into the areolar textures of the skin, constituting petechiæ and purpura; from the mucous membranes, producing epistaxis, hæmoptysis, hæmatemesis, melæna, or hæmaturia; or from some trifling abrasion.

The period of eruption, like that of invasion, may be subverted and disturbed by a variety of conditions, and particularly by such as give rise to congestions of the viscera. Instances occur in which a train of symptoms indicating nervous disorder of a dangerous kind, put a sudden check to the progress of the eruption, or cause its retrocession. The vesicles on these occasions lose their firmness and roundness of form, and become flaccid and irregular. In other instances the respiratory organ, in others

the alimentary viscera, and in others, again, the kidneys principally suffer, the local congestion producing, according to its seat, bronchitis, pneumonia, pleurisy, diarrhoea, dysentery, hæmorrhage from the bowels, nephritis, hæmaturia, or suppression of urine. Passive hæmorrhages are liable to occur at this period of the disease as well as at the preceding.

The secondary fever attending the completion of supuration is the most to be apprehended of all the periods of small-pox. Dangerous symptoms invade and destroy in the course of a few hours at this stage of the disease. Disorders of the brain and air-tubes are especially to be feared, and when these occur an immediate arrest is put to the progress of the pustules; they become flaccid, serous, or sanguinolent, and in a few instances their pus is removed by absorption. The latter is one of the most fatal phenomena of the period. The symptoms which may be regarded as indicative of danger during this period are, the absence of any of the usual concomitants of the disease, as of the active congestion and tumefaction of the skin; the absence of salivation in the adult; the appearance of the dry and brown tongue of typhus; restlessness, anxiety, or mortification.

The termination of variola is not without its dangers, from the secondary affections which are apt to succeed in the congested and weakened tissues. Some of these affections are limited to the skin; the majority are those of the mucous membranes and internal organs, but no part of the body is perfectly free from the attack of these dangerous disorders. I may enumerate among these dreaded after-consequences of small-pox, subcutaneous abscesses, boils, erysipelas, sphacelus; ophthalmia, opacity of the cornea, and staphyloma, producing blindness; thickening of the lining membrane of the Eustachian tube, issuing in deafness; supuration of the meatus auditorii; œdema glottidis; bronchitis; hæmoptysis; pneumonia; pleuritis; empyema; phthisis; chronic diarrhoea from ulceration of the mucous membrane of the bowels; abscess of the kidney, hæmaturia; menorrhagia; miscarriage; caries of the bones of the face, and diseases of the joints.

It is stated by authors that small-pox has been seen in conjunction with scarlatina and also with measles. That small-pox may present modifications associating it in appearance with the allied eruptive fevers, is perfectly consistent with the principles of physiology; but I am far from being disposed to acquiesce in the opinion of a specific difference between the poisons of the three diseases. If a small-pox be perfect on one region of the body and aborted on another, it would be difficult to distinguish the arrest of development at its early period from a rubella; a catarrh



might determine the practitioner in favour of a rubecula, while a concomitant angina might incline him to scarlatina. The subject is worthy of investigation.

Besides the complications which I have now detailed in connection with the periods of small-pox, it must also be borne in mind that the periods themselves are subject to variation, one while being prolonged beyond their ordinary term, and another retarded in an unusual degree.

#### INOCULATED SMALL-POX.

The practice of inoculation, for many centuries in existence in the East and in the Turkish dominions, was first performed in England by Mr. Maitland, at the command of Lady Mary Wortley Montague, in 1721, the advantages of the practice having been seen by her ladyship in Constantinople, at which court her husband was, for several years, ambassador. Though slow in extension in England for some years, inoculation eventually acquired the consideration which it deserved as a means of protection against the epidemic invasion of the variolous disease, and became one of the most important and generally practised of the minor operations of surgery. While, during the progress of a century, inoculation was gradually entwining its roots around the prejudices of society and veiling them from the eye, the members of the medical profession became moved by the repetition of alarming consequences which often showed themselves in the train of this procedure. It became evident that, although the inoculated individual were protected, yet that the variolous poison generated by that individual, and diffused by the atmosphere around, too frequently became the starting point of a spreading epidemic; that in truth, according to our present method of viewing animal poisons, the operation might be regarded as the act of multiplying the variolous virus, and perpetuating spontaneously its ravages. Instances of the mischievous and dangerous effects of inoculation became daily more intrusive, but no steps were taken to avert an evil springing from a good, until the immortal Jenner, in his ministry of philanthropy, turned his attention to the subject, and discovered the chastened yet beneficent influence of the variolous virus of the cow. The fourteenth of May, 1796, is an era in medicine ever to be remembered, when Jenner made the first experiment which confirmed the applicability of vaccine inoculation, an experiment which not half a century later was to banish small-pox inoculation from our land.

Although inoculation with the matter of small-pox is now illegal, it will not be out of place to trace the effects, local and constitutional, of this operation, and the more so as the course of the pock forms an instructive il-

lustration of the stages of the idiopathic eruption.

After the introduction, with the point of a lancet, of a small quantity of the lymph of a small-pox vesicle beneath the epidermis, no local effects are perceptible until the *third* day, when a slight blush is seen to surround the inoculated point. To the sensations of the patient, the part feels warmer than natural and itches, and if it be touched by the finger it communicates a sensation of hardness and condensation of the integument. During the *fourth* and *fifth* days these signs and symptoms increase, the redness is more extended, the hardness is greater, the itching is converted into a tingling and pricking sensation, and a papula rises from the centre of the patch of redness, the latter constituting an areola around the little elevation. On the *sixth* day transparent and colourless lymph is effused beneath the epidermis of the papilla, the latter is converted into a vesicle, and the vesicle assumes the characteristic umbilicated appearance. By the *seventh* day all the symptoms have still further increased, the redness has become deeper and more extended, the inflamed skin is swollen and tender, painful when the arm is moved, and the lymph of the vesicle is lactescent. On the *eighth* day the vesicle is matured, the contents of the vesicle are still lactescent, but mingled with pus, and the areola presents a purplish hue. On the *ninth* day the contents of the vesicle are pus; it is consequently converted into a pustule, and by the accumulation of the purulent fluid, on this or the *tenth* day the umbilicated appearance of the vesicle is lost, and the pustule becomes spherical and mature. During the *eleventh* day the pustule is stationary; and on the *twelfth* desiccation begins, and continues till the *fifteenth* day, when the scab is completed. After the perfection of the pustule the local symptoms decline, the areola loses its redness and is less deeply purple, and the tumefaction subsides. The scab is of a deeply brown colour, of considerable thickness, and is thrown off between the twentieth and twenty-fifth day, disclosing a deeply pitted cicatrix, which remains for the rest of life.

The constitutional symptoms in inoculated small-pox usually commence on the ninth day, and consequently represent the secondary fever of the pustule, though primary of the consecutive disease. They are, for the most part, extremely mild, and sometimes so slight as to be scarcely appreciable. In rare cases the constitutional symptoms are induced and accompanied by eruption without the development of the local disorder.

The eruption in inoculated small-pox is generally slight, but in rare instances has been seen to attain the severity of idiopathic small-pox of the discreet or confluent kind. It makes

its appearance on the third or fourth day of the constitutional symptoms; that is on the eleventh or twelfth of inoculation, and then runs its variable course. The precise period of the eruption, however, is subject to uncertainty, sometimes occurring at the end of a week after inoculation, and at other times being protracted to fourteen days.

The mildness of the variolous disease engendered by inoculation, as compared with that of natural small-pox, I conceive to be dependent partly on the more gradual introduction of the virus into the system, and partly on the quantity, both conditions being modified by idiosyncrasy on the part of the subject. The surface capable of absorption presented to the poison by the puncture or incisions of inoculation, bears an infinitesimal proportion to the surface of the respiratory membrane through which the poison diffused in the atmosphere enters. Again, the one, namely, the mucous membrane, is physiologically constituted for the process of absorption; while the other is forced by violence into the position of an absorbing surface, and its action is modified by the reparative changes which are occurring at the same time. Could we place the skin in a similar condition, relative to absorption, with the mucous membrane of the respiratory apparatus, namely, by the removal of its epidermis, I apprehend that the small-pox would be equally severe *ceteris paribus* with that which results from absorption by the lungs. The mode of inoculation pursued by the Chinese is an illustration apt to my opinion; a small-pox crust is introduced into the nostril, and is there retained. The disease resulting from this mode of conveying the poison, as might be expected, is always more severe than by inoculation through the skin; for, in truth, the poisonous vapour is brought in contact by inhalation with the whole extent of one of the most active of the absorbing surfaces of the body. Every blood-corpuscle as it receives its charge of oxygen, is impregnated with the poison of small-pox, and the marvel is, that life ever resists its deadly influence: *truly, are we wonderfully made!*

The eruption of inoculated small-pox is not unfrequently complicated with an erythematous rash, constituting what has been termed variolous roseola.

#### VARIOLA SINE VARIOLIS.

It occasionally happens during the prevalence of an epidemic of small-pox, that certain individuals are affected with the constitutional symptoms of variola without the cutaneous disorder, in the same manner that we have seen the constitutional affection of measles and scarlet fever to be present without the eruption. The symptoms which are thus generated were termed by Sydenham variolous fever; and instances of this fever have been noticed

from time to time by various practitioners. It must be confessed that the disease is extremely rare, but its occasional occurrence cannot be questioned.

#### PATHOLOGY OF SMALL-POX.

As may be inferred from the description of small-pox with which I have now engaged your attention, disease of the viscera is a common appearance in the bodies of those who have died of variola. The brain, the mucous membrane of the alimentary canal, the kidneys, and particularly the respiratory organs are found congested, infiltrated, and softened; and the morbid state of the blood is indicated by the blush of redness which stains the internal coat of the blood-vessels. I have already remarked that a certain degree of thickness and density of epithelium is necessary to the formation of a pustule; hence pustules are found only in those parts where this condition is present, as in the mouth, the pharynx, the oesophagus, the rectum, or in the respiratory passages. On other parts of the mucous membrane, as of the alimentary canal and urinary passages, the disposition to the production of pustules is indicated only by an abortive attempt. There is congestion in the form of a small irregular patch, separation of the epithelium, and the substitution, in the place of the latter, of a thin layer of false membrane. When the false membrane is rubbed off the appearance of the patch is that of a superficial ulceration.

As respects the cutaneous pustule, we find it to be modified by its position on the surface of the body. Thus, on the face, when the dermic papillæ are small and the inflammatory action rapid, the pustule is too speedily filled to obtain the umbilicated character which it presents in other parts of the body. The pustules, therefore, are non-umbilicated and flat; the latter character being dependant on the uniform density of the elevated epidermis. Where the epidermis is unusually thick, as on the palms of the hands and soles of the feet, the pus is unable to raise it in the form of pustules, and is spread out upon the surface of the dermis, forming a disk of a purplish yellow colour, surrounded by a white margin, which is seen through the epidermis. On the general surface of the body the vesicle of small-pox is depressed in the centre, reminding us of the appearance of the floral surface of an orange. This appearance is termed umbilicated. The umbilicus differs for the most part in tint from the rest of the pustule, being reddish or brownish in colour, and occasionally, though rarely, transixed by a hair.

The structure of the small-pox pustule is a subject of some interest to the pathologist, inasmuch as it serves to demonstrate, in a considerable degree, the succession of morbid changes by which the pustule is produced,



When examined by a vertical section, the mature pustule is seen to be composed of two chambers, containing pus, and imperfectly separated from each other by a transverse septum of false membrane. In the vesicular stage of the pustule, the false membrane lay in contact with the dermis, and naturally acquired the umbilicated form, which it afterwards retained throughout the successive stages of the growth of the pustule. As soon as suppuration commenced the false membrane was separated from the dermis by the evolution of pus, and the latter, by rupture of the edges of the septum, made its way into the superficial cavity of the pustule. The dermic bed of the pustule is highly vascular, and sometimes ulcerated, the proper papillary structure of the dermis being replaced by a pyogenic membrane of recent formation.

The cause of the umbilicated character of the vesicle of small-pox is not yet satisfactorily established, and has been the subject of some contrariety of opinion. Dr. Heming many years since having his attention drawn to the subject by Dr. Armstrong, referred the appearance to the perforation of the pustule by the excretory duct of a sebaceous gland, and afterwards published his belief in the "Medical Gazette." Velpeau, who is of opinion that the seat of the pustules is the sebaceous follicles themselves, would probably entertain the same view with regard to the central depression of the vesicle. Rayet explains the appearance by the aid of the false membrane, giving the credit of the depression to the attachment of this layer; while other writers consider the pores of the skin to be the operative cause.

My own opinion differs, as far as I know, from that of every other writer on the subject. I conceive the primary seat of cutaneous inflammation to be a single papilla of the dermis, constituting the appearance termed *punctum*. The inflammation of this point causes tumefaction of the papilla, effusion of lymph, and an adhesion between the papilla and the epidermic sheath which surrounds it. Subsequently, the inflammation spreads excentrically to neighbouring papillæ, but with the progression of the disease, the character of the inflammatory tendency has altered; the inflammation of the surrounding papillæ is of the effusive rather than of the adhesive kind; and while effusion proceeds from these, the adhesion of the central papilla is maintained, and the vesicle consequently tied to the surface in the centre. From this description it will be seen that the inflammation of the central papilla is throughout the morbid process of a different period to that which takes place around it, and has run through its course almost before that of the neighbouring papillæ has commenced. At a late period the local

disturbance is communicated by multiplication to the entire surface, and no trace of the periodic influence remains save in the permanently umbilicated appearance of the median septum.

In proof of this description I may adduce the structure of the fully formed vesicle, which when divided by a horizontal section, is found to be multilocular, and has been compared by Bousquet to a severed orange, and by Gendrin, not unaptly, to a spice-box.

#### BELLADONNA IN PHYMOSIS, &c.

THIS medicament seems likely to become the panacea for a multitude of diseases; and, indeed, its peculiar properties have not hitherto been sufficiently taken advantage of in medicine. A writer in the "Bulletin Medical de Bordeaux" recommends that no section of the prepuce should be performed in the treatment of phymosis and paraphymosis till after the practitioner has first attempted to avail himself of the relaxing effect of this remedy.—He recommends an ointment composed of 30 parts of simple cerate, and 12 parts of extract of belladonna, to be rubbed hourly on the prepuce in cases of phymosis, and on the glans on the occasion of paraphymosis. If great inflammation and pain attend the latter condition, the ointment applied is to contain 4 parts of the extract, with a small proportion of aqueous extract of opium, and 8 parts of mucilage of quince-seeds to 30 parts of cerate. About half a drachm of the mixture may be rubbed over the glans three times a day, the proportions of the belladonna and opium in the ointment being increased by degrees. In phymosis, the introduction, within the prepuce, is recommended, of small pieces of sponge moistened with a solution consisting of 4 grains of ext. bellad., and 12 grains of aqueous extract of opium, to an ounce of water, which solution may also be injected hourly with a syringe between the prepuce and the glans. The quantities of both belladonna and opium in the solution may be gradually increased to two or three times the above proportion. Conjointly with this treatment, the parts affected may be bathed in warm infusions of the herb, or its extract, two or three times a day.—*L'Experience*, Dec. 15.

THE TETE EAALTEE is a physiological condition which our French neighbours seem on every subject to manifest. There is nothing in the wide range of human ideas, nothing above, below, or on the earth, which may not in their hands be a theme for oratory or sentiment. A short time since, the healing art became the subject of an epic. Very well; there may be worse and less copious subjects for such a purpose. But more recently we have seen frequent announcements of "Sy-

philis, a Poem in Two Cantos, by — Barthelemy," and in one of the latest Parisian journals is the announcement of a new work termed "La Medicine Pittoresque!"

#### A COURSE OF LECTURES ON SYPHILIS.

DELIVERED AT THE SCHOOL OF MEDICINE,  
GROSVENOR-PLACE, ST. GEORGE'S HOSPITAL,  
SESSION 1841-42.

By SAMUEL LANE, ESQ.,  
Lecturer on Anatomy and Surgery, and Assistant-Surgeon to the  
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#### LECTURE XVI.

*The constitutional treatment of primary syphilis by mercury, continued. When is the mercury to be omitted? Mr. Judd's experiments. The opinions of Mr. Hunter, Dr. Wallace, and Mr. Mayo on this point. The lecturer's views on the subject. The selection of the preparation of mercury, and the quantity or dose required. The administration of mercury by fumigation; by inunction; its internal exhibition. The blue-pill; the chloride of mercury; the bichloride; the proto or deuto-ioduret; the cyanuret; the deuto-phosphate. Precautions to be observed during a mercurial course.—Supplementary or accidental symptoms of primary syphilis. Congenital phymosis; acquired phymosis.*

GENTLEMEN,—When I last addressed you on the subject of syphilis (p. 838 last vol.), I was considering the constitutional treatment by mercury in the primary symptoms of this disease. I told you then that the most important questions which immediately suggested themselves for our consideration were, the object to be gained by the employment of mercury; the principle upon which it acts; the period at which it should be commenced or omitted; the selection of the preparation to be employed; and the quantity required.

Some of these questions were answered in my last lecture, where it was explained to you in detail that the *object* was to lessen the liability to the secondary affections or even to prevent their appearance altogether; also to expedite the healing of the primary sore, but in certain cases only, namely, in those accompanied by excessive deposition, as evidenced by surrounding and persisting induration, or by the existence of over-luxuriant and fungoid granulations. The principle upon which mercury acts in the cure of syphilis was stated to be as a general and powerful evacuant, by the means of which all the emunctories were stimulated to increased action, in order to eliminate the poison as fast as it entered the blood, so as to prevent its injurious accumulation in the system. The period of commencement of the mercurial course was accordingly dated

from the period at which the poisonous secretion began to be formed in the primary sore, for from that instant would the absorption commence.

I shall now proceed to direct your attention to the remaining questions, viz., When is the mercury to be omitted? What preparation should be selected? What quantity of the remedy will be required?

Upon each of these questions you will find there is but little consent amongst our best authorities on syphilitic diseases. The plan I shall adopt in treating them, will be to lay before you the opinions of some of the writers of most weight in the present day on the subject, and sum up by stating my own views, and the data upon which they are founded.

When is the mercury to be omitted? It should be recollected that I am now speaking of the administration of mercury in the uncomplicated primary disease. I wish also, at present to confine my remarks to cases in which mercury may be said to agree with the system, or, at any rate, not to produce any of those extraordinary violent and injurious effects which compel the practitioner to abstain from its use. These states of disease occasionally resulting from the exhibition of this mineral will afterwards be treated of in a separate lecture, my immediate object being at present to give you some guide as to the period at which the mercury should be omitted in the treatment of primary syphilis.

The occurrence, too frequently noticed, of the appearance of secondary symptoms after a full course of mercury, and even in patients while under the influence of this remedy, has given rise to a strong impression in the minds of many surgeons that we are not warranted in continuing its administration for the sole purpose of preventing the secondary disease after the complete disappearance of the primary affection under its use. The general rule, consequently, is, in this country and on the continent, to omit the mercury as soon as the primary sore has completely healed and all induration ceased. We must not, however, forget that the principal object in the employment of this powerful remedy in the present day, as explained to you in a former lecture, is not to cure the primary sore, except where excess of deposition is the chief obstacle to the healing process, but to lessen the liability to secondary diseases. Mr. Judd, in a work on Syphilis published in the year 1836, containing many very interesting and carefully collected facts, details some experiments which he performed in order to determine the relative influence of courses of mercury, continued for different periods, in preventing the occurrence of secondary symptoms.



In his first experiment, ten cases of primary disease taken, promiscuously, were treated without mercury, of which two presented symptoms of the secondary disease. In experiment 2—Ten cases, similarly circumstanced, treated with mercury for nine days, furnished as many as five cases of the secondary disease. Experiment 3—Ten cases treated with mercury for a fortnight afforded two cases of secondary disease. Experiment 4—Ten cases treated with mercury for three weeks gave but one case of secondary disease. Experiment 5—Ten cases treated with mercury for a month furnished two cases of secondary disease. Mr. Judd concludes, from these experiments that short courses of mercury increase the number of cases of secondary affections, and that to be of service in lessening the liability to the constitutional disease, the mercury must be continued for twenty-four or thirty days after the mouth has become slightly affected. He also expresses an opinion which, if true, ought considerably to modify the mercurial treatment of the primary disease; it is to the effect that mercury cures the chancre by promoting the absorption of the poison from the part into the system, and he conceives that his experiments just detailed warranted the notion held by him, viz., that a small quantity of this mineral renders the patient more liable to secondary disease, while the longer continued course, by counteracting the effects of the poison after it has entered the system, prevents the appearance of the symptoms, or cures them when present. It should be remarked, that however well contrived and accurately observed the experiments above described may be, they are not sufficiently extensive to establish so important a point, more particularly when we consider how widely they differ from what has been stated by others to be the result of the mercurial treatment of primary syphilis.—(Vide Mr. Bacot's Summary of the Number of Cases of Secondary Disease following the Mercurial and the Non-Mercurial Treatment, p. 55 in his valuable Treatise on Syphilis.)—Where, after most carefully collecting the data from our own military hospitals and from others in different parts of Europe, he concluded the average number of secondary cases to be 1 in 10 under the non-mercurial treatment, and 1 in 75 only where mercury was administered.

If Mr. Judd's opinion that mercury promotes the absorption of the poison from the primary sore be correct, it would surely be judicious to abstain from its use during the poisonous stages of the chancre; and it is worthy of remark, that Dr. Wallace, whose opinions I have had frequent occasion to quote to you, actually prefers this plan of treatment; he objects to the administration of mercury

previous to the setting in of the reparative and poisonless stages of the primary disease. It should be recollected also, in duly appreciating this plan of treatment, that it is now pretty generally admitted that the exhibition of mercury in the greater number of primary sores rather retards than hastens the healing process, and that its advantage is chiefly as a preventive of the secondary disease. Although I have thought it right to place these considerations before you, I still adhere to the opinion I first expressed, namely, that the mercurial treatment should be commenced simultaneously with the production of the poisonous secretion. But to return to the subject under consideration, namely, the period at which the mercury should be omitted, Dr. Wallace is guided by the healing of the primary sore and the disappearance of all induration. But he gives, as a general rule, a fortnight after the healing of the sore as the time for the discontinuance of the mercury; he thinks, however, a longer period necessary where the sore has been small and has healed quickly, and a shorter under the contrary circumstances.

Mr. Hunter says, "In every case of a chancre, let it be ever so slight, mercury should be given internally, even in those cases where they were destroyed on their first appearance. It should in all cases be given the whole time of the cure, and continued some time after the chancres are healed."

Mr. Mayo states that the mercurial course should be continued for five or six weeks, but afterwards confesses that the shortest period and smallest quantity of constitutional effect necessary, to give a mercurial course full efficacy has still to be determined by positive experiment.

I shall now explain to you my own views on this point; I am not guided so much by the period of healing of the primary sore or sores as by the length of time the poisonous stages of the chancres have existed, their size, and number, as sources of the virus; the precautions taken in the local treatment to remove the virus as fast as formed, or to decompose it; in short, whatever would guide us in estimating the probable quantity of the poison absorbed into the blood. On the other hand, the state of health of the individual, his age, his mode of living, &c., as indices of the natural powers of his organs of excretion to eliminate the virus from his system; and the season of the year, the vicissitudes of temperature to which he may be subjected, as causes interfering with the due action of the excretories, should all, in my opinion, be taken into consideration in determining the period at which the mercury should be omitted, or, in other words, the length and severity of the mercurial course. It will be obvious that if these

considerations are to be our guide, the duration of the mercurial course must vary in different cases. I would fix the minimum for the purpose of preventing the appearance of secondary symptoms at three weeks; the maximum at two months; and, in ordinary cases, I should be satisfied with a six weeks' course.

A very general opinion prevails, against which I have endeavoured to guard you, namely, that mercury will not prevent, although it will cure, a venereal symptom. So completely am I opposed to this view that if a patient present himself to you who has had a primary sore which has healed without mercury, leaving no induration, and who is entirely free from any evident venereal symptom, provided he give you evidence that the specific or poisonous stages of the chancre lasted the ordinary period, I should recommend you to advise a mild course of mercury, as the best means of preventing the appearance of any secondary disease. Reasoning upon our best data, his chances of suffering without mercury is as 1½ in 10, with mercury as 1 in 75, and you would of course wish to give him the benefit of this lessened liability.

I shall now consider the selection of the preparation of mercury to be employed, and the quantity or dose required.

Three methods of administering mercury have been adopted by surgeons. Fumigation and inunction, when the mineral is to be introduced by the skin, and its internal exhibition by the stomach.

The red sulphuret of mercury is the preparation usually preferred for the purpose of fumigation. When a general effect on the system is required the patient is placed in a machine resembling a vapour-bath, from which his head is excluded by passing through an opening in its upper part, or roof. The sulphuret of mercury, contained in a convenient vessel, is heated by means of a spirit lamp, or thrown upon a heated plate of iron situated on the floor of the bath. The vapour will now rise and come in contact with the whole surface of the skin, excepting that of the head and face. The patient remains in the machine about a quarter of an hour each time.—The ordinary influence of mercury on the system will be experienced after the continued use in this way, of half a drachm to a drachm of the cinnabar, for a week or ten days, when the quantity may be lessened, or the fumigation used less frequently. A cloak of oiled silk, or other material through which the vapour of the mercury cannot escape, fitted securely around the neck, will answer the purpose sufficiently well, the patient being seated on a chair and covered by the cloak, while the cinnabar is placed on the ground and heated, as before explained. The fumes of cinnabar may

also be directed on a part, so as to be employed locally. The usual method adopted for this purpose is a heated plate of iron, upon which a sort of chimney is fixed, terminating by a narrow tube, generally bent at a considerable angle for the convenience of application.

The inunction is effected by rubbing in from half a drachm to a drachm of the strong mercurial ointment upon some thin and delicate portion of the skin. The inner part of the thighs is generally selected, but the inside of the arms, the arm-pits, or other parts of the body, will answer equally well. The friction should be continued for about a quarter of an hour each time. Its daily use for a week or a fortnight will generally mercurialise the system and necessitate the omission of the inunction every second or third day, or the quantity used each day must be diminished. The mercury may be rubbed in by the patient himself or by another person. The inunction, like the fumigation, may be used locally, for the purpose of hastening the absorption of indurated parts, connected or not with a hardened cicatrix, or with lymphatic glands in a chronic state of enlargement. When the mercurial ointment is used as a dressing to ulcerated surfaces the milder ointment is employed.

When mercury is exhibited by the stomach one of three preparations of the mineral is usually selected in this country, viz., the blue pill, the chloride, or the bichloride of mercury. On the continent, however, many other forms of this remedy are in use, such as the proto or deuto-ioduret of mercury, the cyanuret, the deuto-phosphate, &c.; but I am not aware that they possess any very decided advantages over the preparations first mentioned, and whose administration we are in the daily habit of witnessing.

The three preparations of mercury above alluded to as in general use in this country present us with remedies of three different strengths; the mildest, and that which is commonly preferred, is the blue pill. For the purpose of affecting the system it is usually given in doses of five grains, combined with a quarter or half a grain of opium, night and morning. This quantity ordinarily produces the characteristic metallic taste and tenderness of gums in ten days, or a fortnight, and the dose must be regulated for the rest of the course according to the effects produced.

When the chloride of mercury is administered it is generally for the purpose of bringing the system more rapidly under the influence of mercury. Two grains, combined with a quarter of a grain of opium, given every three or four hours, will affect the gums usually in two or three days. Hence, in cases of iritis, or whenever the full effect of the remedy is required without delay, the chloride is selected in preference to any other form. If it be intended



the primary syphilitic sore; but whatever the exciting cause may be the treatment must be directed against the existing inflammation, and must be regulated in its activity by the degree of this action present. In most cases it will be advisable to enjoin low diet and the horizontal position, with the administration of saline aperients, combined with antimonials. The Goulard lotion, the decoction of poppies, or a bread poultice may be applied to the part, and the penis should be supported towards the abdomen. Leeches are not usually advantageous. In the more severe cases general blood-letting and nauseating doses of tartar emetic may be necessary. But it is my object at present more especially to speak to you of the treatment of phymosis as a complication of the primary syphilitic sore.

It will be readily understood that a chancre or chancre on the glans penis, accompanied by inflammation, will produce considerable swelling of this part, so that the prepuce, without being either inflamed or thickened, may not admit of retraction. The inflammation, however, will shortly extend to the prepuce if active means are not taken to prevent it, and the inflamed prepuce, distended by the swollen glands, will soon have its circulation interrupted, and a slough will probably form, often of sufficient size to allow of the protrusion of the glans through either the side or upper part of the prepuce, giving, as Mr. Hunter observes, a strange appearance to the organ, as if it had two terminations, one formed by the glans and the other by the prepuce displaced and curved to one side.

The chancre causing the phymosis may be situated on the prepuce in the first instance, the glans being unaffected, but the secretion from the ulcer not getting a ready escape from under the contracted and swollen prepuce, may irritate the surface of the glans, and if the slightest excoriation take place inoculation will be the consequence, an inflamed and swollen state of the glans is thus added to that of the prepuce, the circulation in both will be impeded, and sloughing in one or both is threatened; or the original sore may implicate both the glans and the prepuce, and the same series of symptoms be occasioned. You will generally be enabled to prevent the inflammation extending to the degree above described provided you have the management of the case from the commencement, by adopting the antiphlogistic plan already recommended, accompanied by frequent ablations and injections of warm water, Goulard's lotion, decoction of poppies, or any mild and unirritating fluid, by which the secretion of the ulcer may be prevented from accumulating between the glans and prepuce, and these parts kept as free from its contact as possible.

#### CONSEQUENCES OF THE ACCIDENTAL INTRODUCTION OF PIECES OF GLASS INTO THE BODY.

M. Eck, of Berlin, reports in the "Medic. Zeitung," 1842, No. 32, that a Prussian subaltern officer was affected with a partial paralysis of the right arm, which had resisted all the general and local means of treatment employed for its removal. This paralysis, which chiefly exhibited itself in the flexor muscles, had been preceded in its commencement by sharp pains, extending from the palmar surface of the thumb along the forearm and humerus. M. Eck examined the thumb on its palmar side, and on observing several old cicatrices there he elicited from the patient that a few years previously he had fallen down with a bottle in his hand, several fragments of which had penetrated his thumb; but, as he had been assured, every one of these was afterwards extracted. M. Eck, however, rationally conceiving that some fragment might still remain to keep up the present symptoms, pressed each of the cicatrices with some force, which operation in one place caused acute pain. He accordingly made a deep incision in that place, and on probing it with the end of a bistoury he found his instrument distinctly to strike against a hard and gritty substance. After the hæmorrhage had been in some degree assuaged, M. Eck, who now made out clearly that this substance was a piece of glass, extracted it by the help of a pair of forceps, dressed with charpie; but with considerable difficulty, so deeply was it imbedded, and closely enveloped with the surrounding structures. It proved to be about half an inch in length, and of a curvilinear shape, its larger extremity having been the more deeply seated. On its removal the patient soon recovered the complete use of his arm.

In the "Gazette des Hôpitaux" for the 22nd Dec. ult., is detailed the case of a man who having severely cut himself by treading on some broken glass in his bedroom, entered the Hotel Dieu, Paris, where his wound was healed, the continuance of a piece of glass, deeply seated within it, not being recognised; but about five months afterwards he was unable from pain to put his foot to the ground, and he re-entered the hospital. M. Breschet, after ascertaining the fact that a foreign body still remained within the foot, made a crucial incision in the sole, and extracted a piece of glass, nearly an inch in length by half an inch in breadth, from the space between the first and second metatarsal bones. A severe attack of phlebitis supervened after the operation, as far upwards as the groin, and which was not overcome without much care, nor until the lapse of nearly a month, the patient being of a lymphatico-nervous temperament.

#### LIEBIG; HIS CHEMISTRY, AND REVI EWERS.

By HENRY ANCELL, Esq.,  
Lecturer on Medical Jurisprudence at the School of Anatomy and Medicine, Grosvenor-place, Saint George's Hospital, and Surgeon to the Western General Dispensary; and Author of "Lectures on the Blood," published in The Lancet for 1839—40.

#### No. VIII.

##### The "Yellow Bile."

One of the primary humours of the ancients, was for many years regarded as a prolific cause of diseases; an extensive series of symptoms were traced to it; and it furnished the practitioner of physic with some of his most important indications of cure. Numerous facts connected with the bile survived the downfall of Galenical medicine, and these facts were by no means lost sight of by the promulgators of the doctrines which followed that event, or by their disciples. The iatro-chemists, as they have been called, in particular, attached great importance to these facts, making them the foundation of some of their most important theories. It would not be profitable at the present moment to pause for the purpose of investigating these theories, although the present state of science declares them to be less fanciful and more true to nature than the sweeping proscription that they have met with would permit us to believe.—During the eighteenth century the bile was submitted to further scrutiny. Bianchi, of Piedmont, published a history of the liver and of hepatic diseases. Tissot described a bilious epidemic with great minuteness, and in the writings of Stoll, in Germany, the utmost importance was attached to the bile, and to the diluting and evacuating mode of treating that fluid. According to the authors of this period the bile occupied the most important place in pathology. Polycholia, bilious fevers, and bilious derangements, were the most frequent morbid conditions. In our own country Huxham, in particular, observed bilious complications in almost every disease. These were the prevailing opinions when solidism, arising out of the discoveries of Glisson and Haller, was received into public favour from the popular chair of Edinburgh, supported by the genius of Dr. Cullen.

Boerhaave's opinion of the nature and use of the bile is most important and instructive in connection with the present inquiry; I give it in part in a few sentences from his commentator, Van Swieten:—"The bile is a true native soap formed in an animal body. Soon after the crude aliment has begun to be digested this is thrown in upon it, in order to render the whole one uniform mass, and make it dissolvable in water. This is so well known, that silk-scourers make use of it to clean their silks of greasy spots." "When mixed with

the chyle in the duodenum it impresses on it what may be called the first character of humanity, and changes the acid or acetous part of it into an opposite nature." The magnitude of the liver, and the great capacity of the biliary pores, with the quantity of blood carried to the liver for the secretion of bile, seem to teach us that a very great proportion of this fluid is drained off by the liver, and poured from thence by an ample or common duct into the duodenum; but in a healthy person the faeces of the intestines are of a solid consistence, whence it follows that almost the whole mass of fluid secreted by the liver, and poured into the cavity of the intestines, is again secreted or drunk up from the alimentary and faecal contents, before they arrive at the anus."

Bile, as thus described, was the fluid to which the physiologists and physicians of the last century attached so much importance. Their practical indications appertaining to it were founded on their physiological opinions. With a change of physiology came a change of the theory of medicine as respects everything connected with the liver, and a change of practice also, except that deeply-rooted opinions, formed from the universal observation of facts of every-day occurrence, were not so easily eradicated. The bile was now regarded either as a purely excrementitious fluid, or as a simple excitant of the peristaltic motion of the intestines; or as, probably, an active agent in the conversion of chyme into chyle, but no longer as a fluid to be resorbed into the system, much less as a fluid possessing any utility whatever, beyond the offices which were admitted by some physiologists to appertain to it within the parietes of the intestinal canal. With these limited views of its uses in the animal economy, came equally limited notions of its importance in pathology. It will be found, as we proceed, that the facts and reasonings contained in the Animal Chemistry of Professor Liebig, tend to confirm several of the opinions entertained respecting the bile during the last century, that they give to it a higher physiological importance, and there cannot be the slightest doubt, should they be confirmed and generally adopted, that they must open out, very speedily, new and improved principles of practice.

Neumann made the first attempt, about the year 1759, to determine the chemical composition of bile; and in 1767 Cadet published an analysis in which he represented it to be of a soapy nature, a compound of an animal oil with an alkali; and he discovered that alkali to be soda. This view was adopted, as I have already intimated, by the medical schools of the period. Fourcroy, Powell, and others, followed up the investigation,



but Thenard's analysis, in 1805, was considered as overturning the notion of its soapy nature, and its most essential principle was described by him under the designation of picromel. Berzelius gave, subsequently, the name of biliary matter to the picromel of Thenard. Tidemann and Gmelin extracted as many as twenty-three substances from ox bile, and thirty-eight or forty different substances have been described as constituents of bile under various circumstances. Gmelin detected taurine, and believed it to be a newly-discovered component part of bile; but sufficient proof has been afforded that it is a product of the biliary matter before mentioned, formed during the process. The latest analysis of this description is by Frommherz and Gugert.

The bile was examined anew in 1838 by Demarçay. A sufficient guarantee of the importance of his experiments and of the credit due to them, is to be found in the fact, that they are sanctioned and adopted by Dr. Thomson, of Glasgow, in his late work on the Chemistry of Animal Bodies. Demarçay's discoveries form the basis of Liebig's theory of the formation and uses of the bile.

According to Demarçay, ox bile as originally discovered by Cadet, is an oily acid combined with soda. Thomson describes it as a

#### *Choleate of Soda.*

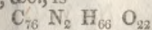
Choleic acid, the acid of this compound, is the picromel of Thenard and the biliary matter of Berzelius. It is a yellow, spongy, pulverulent, combustible, very deliquescent substance. Its taste is very bitter, with an impression of sweetness, and its powder irritates the nostrils and throat. It reddens litmus, and decomposes the carbonates, with effervescence.

The action of acids and alkalis on choleic acid is very peculiar. When bile is boiled with an excess of hydrochloric acid its choleic acid is converted into choloidic acid and taurine, two new substances, and ammonia. When bile is boiled in a fixed alkali its choleic acid is converted, on the contrary, into cholic acid, a new substance, and carbonate of ammonia.

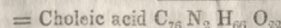
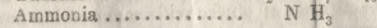
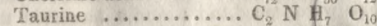
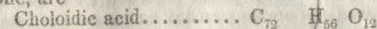
It is essential that we should distinctly understand Liebig's own views respecting choleic acid and its compounds. He regards it as the analogue of the bile itself, separated from the soda, salts, and all the inorganic constituents. The substances above mentioned are the products of the metamorphoses of the bile, none of them existing ready formed in this fluid. The elements of these substances are precisely the same as those which occur in the bile, but it by no means follows that these elements are arranged in precisely the same manner in the bile, and in

the compounds above described as produced from it; nor has this circumstance the slightest effect in the determination by analysis of the relative proportions of these elements.

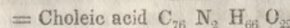
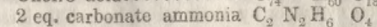
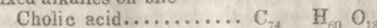
The formula adopted by Liebig for choleic acid, and accordingly for bile separated from its soda, salts, &c., is



Those of the products above described resulting from the action of hydrochloric acid on bile, are



Those of the products of the action of the fixed alkalis on bile



In Liebig's reasonings it signifies nothing that the choleic and choloidic acids may be composed of several compounds united together, or how many such compounds they may contain. The formulæ express the relative proportions of the elements derived from the analysis of each substance.

Thus the complicated analyses of the bile by former chemists, which time has amply proved to be valueless, are reduced to these simple formulæ, and the formula most nearly representing bile itself to that of choleic acid.

Liebig states distinctly that he does not consider the bile as a choleate of soda, and he gives a very substantial reason. Choleate of soda, formed artificially with choleic acid obtained from bile, has not the same chemical qualities as bile. So that while our author gives the name of choleic acid to the whole of the animal matter contained in the bile, he regards the bile as a very remarkable compound of the analogue of choleic acid with soda, the nature of which compound is not yet determinable.

This brief statement will facilitate the right understanding of

#### *Liebig's whole Argument concerning the Bile.*

Already in the 5th paper, part of this series, an explanation has been given of the simple form which nutrition assumes in certain carnivora. It is a fact that the chemical constituents of the urine of these animals, taken with the chemical constituents of bile, are together equal to the essential component principles of their food. If this fact stood alone it might be passed over as an interesting coincidence of slight physiological importance. But it occurs in association with numerous other facts, a due consideration of which leads to some inferences of the highest

importance. In the example here referred to, the excrements are composed of urate of ammonia, they contain absolutely no bile. The bile must, therefore, be resorbed into the system, and its compounds of carbon and hydrogen must be ultimately eliminated as carbonic acid gas and water.

#### *Bile in the Carnivora.*

So intimate is the relation which subsists, according to Liebig, between the formation of bile and urine in the animal body that one cannot be studied apart from some of the most important considerations belonging to the other.

The animals in which nutrition occurs in the above simple form are among the lower classes, as serpents, amphibia, and perhaps worms and fishes, which respire but little oxygen and take but little exercise. In those of the same class (carnivora) which respire more oxygen, and lead altogether a life of greater energy, no uric acid or urate of ammonia occurs in their excrements. These substances are replaced by urea. Thus, the excrements of lions and tigers consist chiefly of bone-earth, and their urine contains urea, a compound in which carbon and nitrogen are in the same ratio as in the neutral carbonate of ammonia. As in serpents, their food contains eight equivalents of carbon to one of nitrogen, but their excrements furnish only one equivalent of carbon to one of nitrogen, which is even a smaller proportion of the former to the latter than occurs in the excrements of the last-mentioned reptiles. Thus, according to Liebig, there is a greater excess of carbon available for the formation of urea, and which must be ultimately converted into carbonic acid gas, in this than in the former variety of carnivora, and the same may be said of hydrogen.

Following Liebig in his chemical argument we are led, in the next place, to consider the circumstances which attend the conversion of uric acid into urea. The disappearance of the former, and the appearance of the latter, in different animals, are stated by him to stand plainly in close relation to the amount of oxygen absorbed in respiration, and the quantity of water consumed in a given time. The water favours the solution of the uric acid or of its compounds, and promotes the action of oxygen upon them.

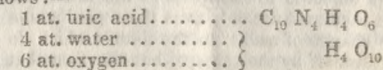
When uric acid, out of the living body, is acted upon by oxygen, a series of transformations takes place. It is first resolved into alloxan and urea, then, by a new supply of oxygen, the alloxan is converted into oxalic acid and urea, or into oxaluric and parabanic acids, and ultimately it is converted into carbonic acid gas and urea.

Numerous facts support the opinion, that in the living animal body, oxygen produces

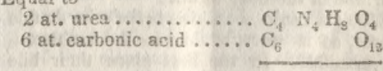
changes analogous to these in its action upon uric acid or its elements, derived from the metamorphosed tissues. In animal systems, which do not usually deposit uric acid, anything which prevents the free action of oxygen favours the formation, or rather the accumulation, of this substance; or favours the formation of those compounds which contain a minor proportion of oxygen as compared with carbonic acid gas and urea, into which it would otherwise be converted. Thus uric acid and its salts appear as calculi in man and other animals in want of exercise, and under those circumstances which lessen the absorption of oxygen. Articles of diet, as for instance wine and fat, being compounds of carbon and hydrogen, which by uniting with oxygen prevent its action on the uric acid, are attended with similar results. Thus Liebig quotes the fact from Dr. Prout, that urine, after fat food has been taken, is turbid, and deposits minute crystals of uric acid. The formation of oxalic acid and its compounds, and of alloxan, and their appearance in the urine, are promoted by analogous circumstances.

This is sufficiently illustrative of the very material point, that the disappearance of uric acid and the appearance of urea in the urine of animals, is attributable to the action of oxygen. That water promotes this action is exemplified in the case of birds and animals which seldom drink; uric acid then predominates. The excrements of a buzzard fed only upon meat were chiefly composed of urate of ammonia.

Finally, the mode in which an atom of uric acid may be resolved into urea and carbonic acid by the addition of six atoms of oxygen and four atoms of water, is shown as follows:—



Equal to



In the former paper it was shown that the bile contains nitrogenised compounds, although they bear but a very small proportion to the compounds of carbon and hydrogen which compose that fluid. It is a circumstance of considerable interest and importance to the present inquiry that the nitrogenised products of the transformation of bile are identical in ultimate composition with the constituents of urine, if to the latter be added a certain proportion of the elements of water:



1 at. uric acid	.....	C <sub>10</sub> N <sub>4</sub> H <sub>4</sub> O <sub>6</sub>
1 at. urea	.....	C <sub>2</sub> N <sub>2</sub> H <sub>4</sub> O <sub>2</sub>
22 at. water	.....	H <sub>33</sub> O <sub>22</sub>
<hr/>		
C <sub>12</sub> N <sub>6</sub> H <sub>30</sub> O <sub>30</sub>		
Are exactly equal to		
3 at. taurine	.....	C <sub>12</sub> N <sub>3</sub> H <sub>31</sub> O <sub>30</sub>
3 at. ammonia	.....	N <sub>3</sub> H <sub>9</sub>
<hr/>		
C <sub>12</sub> N <sub>6</sub> H <sub>30</sub> O <sub>30</sub>		

And that some relation subsists between the bile and the urine, and the bile and the metamorphosed tissues, is rendered extremely probable by a consideration of these formulæ alone.

*The Formation of Bile in the Herbivora* is next to be considered. It has been seen that in these animals, together with the compounds of protease essential for their nutrition, a large proportion of non-nitrogenised substances, which cannot be employed in the nutrition of their tissues, is received into the system with their food. Life, however, cannot continue in this class of animals unless they are supplied with compounds of the latter description, as starch, sugar, &c., which, for the most part, are composed of carbon, and of the elements of water in the proportion to form water. It has been shown, also, that the excess of carbon separated from the living tissues in carnivorous animals, over and above that which enters into the composition of urine, appears in the form of bile. Those parts of the metamorphosed tissues which are immediately consumed in the process of eremacausis by oxygen, are voided as useless excrements. Those which are not so immediately consumed re-enter the circulation, according to our author, previous to the final changes which they undergo. The same thing occurs in herbivorous animals, but Liebig's object is to show that in the latter, the bile is formed not only from those products of the change of matter in the tissues which do not pass off by the kidneys, but also from that part of their diet which does not contain nitrogen, and which is not employed in the nutrition of the body at all.

Liebig's reasons for this belief of a double source, as it were, of bile in the herbivora, are manifold. In the first place their bile contains the same nitrogenised constituents as the bile of carnivora, and, secondly, it contains a much larger proportion of carbon than could possibly reach the liver, in consequence of a change of matter; perhaps five times as much as the metamorphoses of tissues could furnish. A part of this large quantity of carbon must be derived from starch, sugar, &c.; that is to say, from the non-nitrogenised principles of their food.

Suppose starch to be the principal substance which contributes to this. It may be shown, chemically, that by the abstraction

of a certain quantity of oxygen from starch (as in the case of the formation of fat), choleic acid, one of the substances before pointed out, analogous to the oily acids, will be produced. But, since the bile is a compound of nitrogen, its formation is impossible without the addition of an azotised body.

That the latter is furnished by the metamorphosed tissues seems to be indicated by the facts, that the gall-bladder is found distended with bile in animals starved to death, and that the secretion of bile, as well as that of urine, goes on during hibernation, and in the fetus in utero. Liebig remarks that the non-nitrogenised principles of food may be carried from the intestinal canal to the liver, where they meet with the products of the metamorphosed tissues, and are converted into bile; but he by no means excludes the opinion that these said non-nitrogenised principles, after undergoing some change, may be conveyed to all parts of the body, and unite where the change of matter is going on, with the elements separated from the tissues, to form bile and urine.

Let us now look to the urine of herbivora, which is alkaline instead of being acid. It contains an abundance of alkaline carbonates, and little or no phosphates. The food of this class of animals contains more azotised compounds than are necessary for the supply of waste alone (Paper VII.), and a very great abundance of carbonaceous material. It will be seen on a future occasion that the object of this large quantity of carbon is the production of animal heat; but the quantity is frequently greater than can be disposed of in this way, owing to a deficiency of oxygen. This excess of carbon is, in part, evacuated in the urine, and in part deposited as fat. The urine, instead of containing uric acid or urate of ammonia, contains urea, ammonia, and benzoic or hippuric acids, which are compounds richer in carbon than those of the urine of carnivorous animals.

The manner in which bile consisting of choleic acid, and urine containing the compounds just mentioned, are formed in herbivora, is thus conceived by Liebig.

Suppose the animal in full exercise, and that forty-five atoms of oxygen are added to the empirical formula, multiplied by five of their blood, during its metamorphoses. The products may be represented thus:

6 at. benzoic ac.	==	C <sub>64</sub> H <sub>30</sub> O <sub>18</sub>
13½ at. urea	==	C <sub>27</sub> N <sub>27</sub> H <sub>54</sub> O <sub>27</sub>
15 at. carbonic ac.	==	C <sub>15</sub> H <sub>30</sub> O <sub>30</sub>
3 at. choleic ac.	==	C <sub>114</sub> N <sub>3</sub> H <sub>90</sub> O <sub>33</sub>
12 at. water	==	H <sub>12</sub> O <sub>12</sub>

which equals exactly  
 $5(C_{48}N_6H_{30}O_{15}) + O_5$

Suppose, again, the animal stall-fed, and respiring a minimum of oxygen, say nine atoms to five of blood, the product would then be—

6 at. hippuric ac.	==	C <sub>108</sub> N <sub>6</sub> H <sub>48</sub> O <sub>30</sub>
9 at. urea	==	C <sub>18</sub> N <sub>18</sub> H <sub>36</sub> O <sub>18</sub>
3 at. ammonia	==	N <sub>3</sub> H <sub>9</sub>
3 at. choleic ac.	==	C <sub>114</sub> N <sub>3</sub> H <sub>90</sub> O <sub>33</sub>
3 at. water	==	H <sub>3</sub> O <sub>3</sub>
<hr/>		
C <sub>340</sub> N <sub>30</sub> H <sub>195</sub> O <sub>84</sub>		
which equals exactly		
5(C <sub>48</sub> N <sub>6</sub> H <sub>30</sub> O <sub>15</sub> ) + O		

Thus we have the essential constituents of the bile and urine in herbivorous animals, accounted for under all circumstances, from the component parts of their blood, or of their metamorphosed tissues.

*The Part which Soda plays in the Phenomena before us*

has to be considered in the next place. Liebig's remarks under this head are again most interesting. Soda is derived, for the most part, from common salt. Nearly the whole of this alkali in the animal economy is contained in the serum of the blood and in the bile. Regarding the blood, then, as a compound of soda, when the tissues receive the materials of their nutrition from the blood, the soda must be retained in that fluid; so that the blood which is formed into new tissue must give up its soda to the particles separated; that is to say, to the compounds formed by the metamorphoses of previously existing tissue. Of such compounds of soda the bile is the most important. When the alkali leaves the economy it does so by way of the kidneys, in the form of phosphate, carbonate, or hippurate of soda. The soda of the bile is found in the feces no more than the animal matter or choleic acid, and it must accordingly, as well as the organic matter, return into the circulation from the intestinal canal.

The quantity of soda required by animals of different classes is singularly unequal.—The food of the carnivora contains but very little. Accordingly, sometimes none and for the most part but a small quantity is expelled in their urine. When they obtain in their food as much as suffices for the production of their blood an equal amount is excreted; when they obtain less, a part of that which would otherwise be excreted is retained by the organism. Salts of ammonia, with sulphate and phosphate of soda, are formed in the acid urine of carnivora, a decisive proof that the soda of their metamorphosed tissues is insufficient to neutralise the acids. But viewing the blood as a compound of soda, a given amount of the latter must pass into a new compound, that of bile, so that a sufficient quantity of soda in the blood to form bile is absolutely necessary.

Herbivorous animals consume a much

larger quantity of soda in their food, and the alkali predominates in their urine in the form of carbonate, hippurate, or benzoate of soda, compounds, as before intimated, containing large quantities of carbon; they also form a larger quantity of bile, much more than answers to the metamorphosed tissues. The soda of the blood employed in nutrition cannot possibly suffice for the supply of the daily secretion of bile in this class of animals. Hence the herbivora require soda to be furnished directly from their food, and they have the power of applying directly to the bile all the decomposable compounds of soda received into the alimentary canal.—The abundance of soda in the blood and bile of herbivora is indicated, as we see, by the qualities of their urine before described. The soda consumed is much more than can possibly be required simply for their daily consumption of blood in nutrition, and their food contains all that is necessary to form a second compound of soda. These substances, formed of animal matter and soda, serve the purpose of fuel in the production of animal heat, the compounds of soda in the urine being the ashes or caput mortuum; and thus it is that, as in plants, so in animals, the vital process is closely connected with the presence of alkalies; potassa, according to our author, being essential to the production of milk.

Thus the non-azotised materials of the food of herbivora are traced by Liebig to a compound of soda, which compound, whether it forms bile or not, must serve the same purpose as the highly carbonised material, the bile, serves; for its animal matter is ultimately eliminated from the system in the form of carbonic acid gas and water. The facts relating to the soda in the blood and bile of animals, mutually confirm, and are confirmed by, Liebig's theory of the origin of the bile.

The constituents of bile in the herbivora, then, contain nitrogen derived from the compounds of protease; they contain more carbon than corresponds to the nitrogenised food or to the change of tissue, and a part of this carbon must be derived from the non-nitrogenised food. In the formation of bile a part of the elements of starch, sugar, &c., must combine with a nitrogenised compound derived from a compound of protease.

Thus it is that the formation of bile is accounted for in the distinct forms which nutrition assumes in carnivora and herbivora. But the food of the young and the former class approaches in its nature to that of the adult of the latter class (Paper VII.): bile is accordingly produced in the same way. The caseine of milk supplies the essential constituents of blood to the young animal, but in the butter and sugar of milk, which cannot be employed in nutrition, we find an excess of



carbon and hydrogen. This hydro-carbonaceous matter is given off ultimately as carbonic acid gas and water, for it does not occur in the feces or urine; but bile is secreted in ample quantities, and the train of reasoning which has been adopted indicates the production of the bile from the two sources—the products of the metamorphosed tissues, and the non-azotised principles of food.

A farther confirmation of this important doctrine is found by the author in an examination of the fluid of the allantois, and of the meconium of the foetal calf.

The allantois in mammalia contains a fluid from which the chemical principle *allantoine* has been obtained. Physiologists have for some time known that this fluid in the embryo represents the secretion of the future kidneys, and uric acid has been found in that procured from birds. The composition of meconium, according to Berzelius, is similar to that of bile; choleic acid may be regarded as its principle constituent (p. 141). Six atoms of allantoine with one of choleic acid is equal to two atoms of proteine. Thus, in the foetus, the essential constituent of the allantoic fluid (urine?) and of the meconium (bile?) with the addition of water, make up the formulae of the basis of albumen and fibrine furnished by the mother, and every physiological observation is in favour of these two substances being products of the change of matter in the tissues, which must occur during foetal life.

The bile having been thus traced to its source in different classes of animals, and in various circumstances under which it is formed, there remains to illustrate the

#### Origin and Production of Bile in Man.

As living upon animal or vegetable food exclusively, the reasoning is the same as hitherto adopted, and regarding man as an omnivorous animal, it does not materially differ. Liebig's is an elaborate but a very beautiful argument to demonstrate, that if the elements of proteine (starch, oxygen, and water being also present,) undergo transformation together, and mutually affect each other, we obtain as the product of their metamorphosis—

Urea,  
Ammonia,  
Choleic acid,  
Carbonic acid gas.

And besides these no other products whatever.

I. Proteine is converted into choleic acid and urate of ammonia.

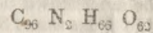
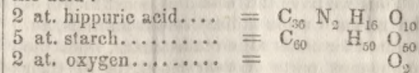
II. Uric acid disappears, and is replaced by urea and carbonic acid gas, as a consequence of a complete oxidation of the products of the metamorphosed tissues.

III. But in the more complicated forms of metamorphoses, the uric acid, while only par-

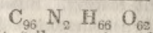
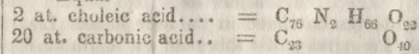
tially converted, might give rise to the production of hippuric acid and uric acid. Thus, 2 atoms of proteine, with the addition of 3 atoms of uric acid and 2 atoms of oxygen, are equivalent to 6 atoms of hippuric acid, and 9 atoms of urea.

IV. Further; uric acid, choleic acid, and ammonia, contain the elements of proteine in a proportion almost identical with that of proteine itself; and

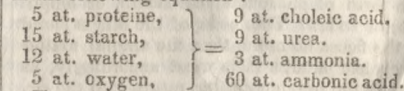
V. The elements of starch, added to those of hippuric acid are equal to the elements of choleic acid plus a certain quantity of carbonic acid:—



Equal



VI. From these premises it follows, that if from five atoms of proteine with the addition of oxygen and the elements of water, we subtract the elements of choleic acid and ammonia (the products of part of the proteine minus uric acid,) the remainder (the products of the other part of the proteine plus the uric acid of the former) will represent the elements of hippuric acid and urea, and the elements of starch being added to the elements of the hippuric acid, will form carbonic acid with an additional quantity of choleic acid. The results of these metamorphoses are exhibited in the following equation:—



Thus, by the process of eremacausis, or the action of oxygen gas in the intimate structures of the living system, with the addition of certain component parts of the food received into the blood, may the chief constituents of the animal secretions and excretions be accounted for; urea and carbonate of ammonia for the kidneys, carbonic acid for the lungs, and choleic acid for the liver.

On examining the author's splendid chain of reasoning to account for the origin and formation of the bile, and the extraordinary results to which it has led, it is obviously founded upon the relations which exist between the chemical equivalents of the essential constituents of food, blood, the animal tissues, and the principal secretions and excretions. One fact only is assumed from the statements of physiologists, respecting the quantity of bile secreted by an animal, viz., that it is much greater in the herbivora than

in the carnivora. At the same time these statements are referred to in confirmation of the theory, and they require to be noticed in this place.

The quantity of bile secreted by man according to Haller is twenty-four ounces daily. L'Héritier quotes the case of an individual who was affected with a biliary fistula, from which bile flowed to the amount of about sixteen ounces in twenty-four hours, but in this case it is not certain that the whole of the bile secreted was evacuated through the opening. Schultz found from twelve to sixteen ounces of bile in the gall-bladder of oxen which had not recently taken food, and after digestion from two to four ounces. The last mentioned physiologist has determined the quantity of bile secreted by animals from its neutralising quality. Since the chyme is acid, and the whole of its acid becomes neutralized by the bile, it was only necessary to ascertain the quantity of chyme formed in order to determine the quantity of bile secreted. In this manner it was found that a large dog secretes about thirty-six ounces, and that horses must pour into the alimentary canal about 37 lbs., and oxen about 37½ lbs. of bile daily. Liebig adopts twenty-four ounces as the minimum of fluid bile secreted by man, which, calculating at 90 per cent. water, and 69 per cent. carbon in the dried bile, is not two ounces of carbon daily, but this is five times the quantity which could reach the liver in consequence of the change of matter in the body; hence it may be concluded that non-nitrogenised substances afford bile.

That, as a general rule, bile returns entirely into the circulation, and disappears completely, appears to be manifested in a variety of ways. In numerous animals provided with a biliary apparatus, which secretes bile abundantly, not one particle of this substance appears in the feces. In 1000 parts of fresh human feces Berzelius found only nine parts of a substance similar to bile. Supposing this to be bile, it will not account for more than one-fortieth or one-fiftieth part of the bile admitted by physiologists to be secreted by the liver of man. Bile, again, has been shown to be a compound of soda, but little or no soda appears in the ashes of the feces of animals. No picromel, nor choleic acid, nor any of the more abundant constituents of bile have been detected in fecal matter. It is not for one moment imagined that the bile is absorbed as bile, nor should we mistake the colouring matter of bile for bile itself. It is the fluid compounds resulting from the admixture of bile with the chyme or with the contents of the alimentary canal which are absorbed. Although, after tying the ductus choledochus, a fluid somewhat resembling chyle is found in the lacteal system, there is every reason to

believe that it is not perfect chyle. Even were it so, the bile in this case is carried by the lymphatics to the thoracic duct, and it may there perform all the changes attributed to its admixture with the products of the food, by Liebig, and by physiologists generally, having merely evaded, as it were, the alimentary cavity. Bile is absorbed from the alimentary canal, with other substances when used as an enema. Finally, Magendie believes that chyle may be produced by the admixture of bile with the other intestinal fluids, without the presence of any chyme at all, as seems to be shown by the existence of a lactescent fluid in the lacteals of dogs kept without nourishment for periods varying from twelve to thirty-six hours. These considerations appear to me to afford pretty conclusive evidence that the greater portion of the whole bulk of the bile is reabsorbed from the alimentary canal.

If, then, the bile be a true native soap, if its alkali be soda, if it be secreted into the alimentary canal in large quantities, if it change the acescent part of the chyme into an opposite nature, and if the whole mass of the fluid be again "drunk up" from the alimentary and fecal matters before they arrive at the anus, then were the views entertained respecting the bile during the last century, more correct in many important particulars, than those which have been in fashion during the greater portion of the present century. According to the opinions which formerly prevailed, the bile is of far greater importance in physiology and pathology than has more recently been taught in our medical schools, and this importance will be more than ever apparent, if Liebig's theory of the use of the elements of the bile during their ulterior circulation should be confirmed.

#### FRACTURE OF THE FEMUR AT EIGHTY-NINE YEARS OF AGE.

To the Editor.—Sir: Allow me to put on record the following instance, exhibiting the *vis medicatrix nature* favorably developed in the successful and speedy termination of fracture of the os femoris in a female subject of the great age of eighty-nine years:—

Sept. 10, 1842. Mrs. F., a meagre person, of temperate and regular habits, sustained a fracture of the left femur while, in the dusk of the evening passing across the road and coming in contact with a horse and light baker's cart, the driver of which did not observe her. On my seeing her, a few minutes afterwards, the nature of the injury was apparent. She was removed to her house, and the fracture ascertained to be oblique and near the centre of the bone.

Apparatus not being at hand she was placed in bed, and the limb encased in pillows, so as to form a double-inclined plane. On the next



morning, September 11th, the fractured portions were placed in exact apposition, after considerable difficulty in retaining them *in situ*. The limb was put on the double-inclined plane formed by Macintyre's apparatus, with a long splint outside, and another, shorter, inside the thigh, each well padded. Thus was the extremity comfortably secured, and thus it remained without a single untoward or bad occurrence of consequence until October the 26th, the forty-fourth day, when the apparatus was removed, and the fractured part found to be firmly united, the tumour of callus being small, but sufficient to show the perfection of the cure and to allow motion of the limb in every direction. In a few days, by appropriate treatment, she was able to put her foot to the ground, and even step out, bearing the weight of the body. She has long ago been able to move without the aid of a stick, has been out of doors, and perfectly competent to take exercise on foot when the weather permits, no deformity existing in the parts.

This case is placed before the surgical world, particularly the junior portion, as a reason for not being dispirited in prognosticating osseous union in subjects far advanced in life, as in the present instance, at first, it was pronounced to be not at all likely that any other than cartilaginous union would take place, and that therefore Mrs. F. would terminate her days as a cripple, from want of power in the system to unite the fractured bone. It is hoped its relation may call forth reports of any similar instances occurring in the practice of some of your numerous readers and correspondents.

I am, Sir, your obedient servant,

W. F. HENDERSON, M.D., Surgeon.

Clapham-rise, Jan. 5, 1843.

#### VAGINAL DISCHARGE IN CHILDREN.

##### IRON IN GLEET, ABSCESS AND DEBILITY.

To the Editor.—Sir: In answer to the inquiry of "C." (LANCET, Dec. 24.) relative to the treatment of vaginal discharge in children, I beg to inform him that I have lately seen a case which readily yielded to calomel, rhubarb, and cinnamon, given every morning, employing, as an external application, a lotion composed of spirits and lime-water, and which was afterwards changed for one made with the decoction of oak-bark and the tincture of galls.

I observe that Dr. Allnatt (page 232.) in noticing this subject, advises the creosote injection for the cure of gleet, and as these cases are of some moment, perhaps I may be allowed to trouble you with the following:—About six months since J. H., *etat.* 25, presenting a pale, pasty aspect, applied to me in consequence of suffering from a urethral discharge, the effect, he believed, of a gonorrhœa

which he had contracted two years previously. He had been under the care of three London surgeons of some note; the ordinary injections had been used, and both the disulphate of quina and the steel mixture had been administered, without his experiencing much relief. The discharge had persisted for nearly two years, was of a yellowish-white colour, and did not exceed more than a tea-spoonful during the day. He was depressed in spirits, and "would give anything if he could only get rid of it," as he was desirous of being married. I ordered him—℞ *Disulphate of quina*, one scruple; *citric acid*, eighteen grains; *best orange wine*, twenty-six ounces. Make a mixture, of which three table-spoonfuls are to be taken three times a day, with aloetic myrrh pill every other morning. This treatment was continued for a fortnight, and a cold silver catheter was passed every alternate day, but it appeared to exert no decided influence over his disease. I then directed him to take six drops of Mr. Tyson's "liq. ferri oxysulphatis," twice a-day, in a wine-glassful of water, and prescribed the following injection, to be employed thrice daily:—℞ *Iodide of iron*, four grains; *distilled water*, eight ounces. The injection produced some pain, and at first appeared to increase the discharge, but in five days it had entirely ceased, and I believe has never returned. The internal exhibition of the iron was persevered in for a month, when, owing to his being attacked with catarrh, it was omitted.

A few weeks ago a man was admitted into the Casualty Hospital of this town who was afflicted with an old sinuous abscess, which was situated on the posterior region of the right thigh. It was laid open, pledgets of lint, dipped in a solution of iodide of iron, were inserted into the wound, and a poultice was applied. Free suppuration was speedily induced, its cavity became completely obliterated, and he was dismissed cured. In this instance the iodide of iron was also given internally. Might not a *weak* solution of this preparation be tried as an injection in obstinate leucorrhœa?

With regard to the "liq. ferri oxysulphatis," I may mention that I have taken it myself, combined with the infusion of calumba and wine of aloe, for the relief of debility, &c., caused by tropical dysentery, and I fancy that I have derived benefit from it. Should it not be prepared with a less quantity of nitric acid than that ordered by Mr. Tyson? I am, Sir, yours obediently,

T. C. LEWIS.

Wolverhampton, January 10, 1843.

OBSTINATE CONSTIPATION.—In a recent debate, Dr. Chowne mentioned an instance in which habitual constipation in an hysterical girl aged fourteen years, gave way before the

internal use of croton oil, and injections of the same remedy. She had frequently gone a week without a motion; sometimes a fortnight, and, on one occasion, a month. In the same debate Dr. Reid stated that he had found, in a case of obstinate constipation in a young hysterical girl, that the most effectual way of producing an action of the bowels was to apply seven or eight leeches to the abdomen. This plan was found to be successful when all other means had been of no avail. Mr. Snow advocated the use of enemata of warm water in cases of obstinate constipation, the continual use of violent purgatives being liable to be followed by inflammatory mischief.

#### DR. MACLEAN'S ALLEGED CURES OF EYE DISEASES WITH PRUSSIC ACID.

To the Editor of THE LANCET.

SIR,—Dr. Maclean, of Thurso, communicated in THE LANCET for the 7th of January, page 266, seven cases of diseased eyes, treated by the vapor of prussic acid. The doctor's statement being very short, several important particulars are overlooked in it.

1. It would be desirable to know the strength of the acid used by Dr. Maclean. He calls it merely "strong prussic acid." Now, it is well known that it is very dangerous to work with *strong* prussic acid, as the inhalation of its vapor proves immediately fatal; I presume, therefore, the doctor's acid was dilute. Even dilute prussic acid soon decomposes, unless certain chemical means are taken to prevent this. Did the doctor employ any means to prevent the decomposition of the acid he employed? Did he use the same acid, day after day, to any, or to all, of his seven patients? If he did, and if he employed no chemical means to prevent the decomposition of his acid, I am afraid that, after a day or two, he must have been using a substance totally effete, and just as good as so much ditch-water.

2. What does the doctor mean by saying that "if the results prove permanent the prussic acid must occupy a very high place amongst our remedial agents?" He relates cases in which opacities of the cornea cleared, a closed pupil opened, a staphylomatous eye became nearly normal, and a capsular cataract disappeared. It seems quite unnecessary to employ any such *if* as that promised by the doctor. Such results following the use of prussic acid, even for a day, or an hour, the remedy may at once assume a very high place, indeed, in the *materia medica*.

3. In the seven cases related by Dr. Maclean was prussic acid trusted to, alone, after once commencing it, or were other remedies in use at the same time? This is a point of great importance, which the doctor has omitted to mention.

4. Dr. Maclean's first case is one of diffuse opacity of the cornea after scrofulous ophthalmia, a state of disease which tends to disperse of itself, but which may be assisted by almost any stimulant applied to the eye. May I ask whether Dr. Maclean supposes prussic acid vapour to possess any specific power of dispersing specks of the cornea; and, as it is evident from the patient being able to open the eye over the acid, that the intolerance of light had already subsided, whether *vinum opii*, solution of nitrate of silver, or any other of the usual stimulants, was not as likely to have effected a cure as prussic acid?

5. The second case purports to be one of rheumatic ophthalmia in a child twelve years old. The occurrence of rheumatic ophthalmia in so young a subject is extremely rare, so rare, indeed, as to excite a doubt whether the case might not be rather one of scrofulous ophthalmia, especially when we are told that intolerance of light was a principal symptom. The doctor tells us that the prussic acid rendered the pain trifling *for the rest of the day*. If it was a case of rheumatic ophthalmia, was not this of little value, as it is during the night, and not during the day, that the pain is felt in that disease?

6. It would be of great importance to know whether in the third case, one of albugo of each cornea, the use of the acid caused any dilatation of the pupils, so as to allow the patient to see past the specks. I am the more anxious to ascertain this, as it has been suspected that, under the pretence of using prussic acid, preparations are sometimes employed which possess the power of dilating the pupil, such as alcoholic or ethereal solutions of atropine.

7. Dr. Maclean's fourth case is one of staphyloma of one eye, and occlusion of the pupil by lymph in the other; and here, it must be confessed, the doctor puts our faith to rather a severe test.

In the centre of the closed pupil there was an opening which would admit the point of a needle. In three months the effused lymph disappeared, and the pupil expanded to about four lines in diameter, under the influence of the acid. Was not this degree of dilatation rather too much? The average diameter of the pupil is about one-tenth of an inch, and that of the cornea four-tenths and a half. To dilate the pupil to four-tenths of an inch is excessive, and I think the doctor should be aware of carrying the acid so far in other cases of occlusion of the pupil which may come in his way. So great a dilatation, leaving a rim of iris no broader than one-twentieth of an inch, is apt of itself to cause a great confusion of sight. Was the pupil, dilated from the size of a needle-point to four lines in diameter, perfectly regular, and devoid of tags to the



capsule? This is a point omitted by the doctor.

A staphyloma is an union of the iris to an opaque and projecting cornea, or rather to an opaque and projecting cicatrix. From the beginning of the world till the time of Dr. Maclean, there never was an instance of a staphyloma cured by any sort of medical application. The iris of a staphylomatous eye has never, I shall venture to say, been known to separate from the opaque and projecting cicatrix of the cornea, and the cornea to become transparent. This, however, has been effected by the doctor with the aid of prussic acid, but is it not a fact of that damning sort which proves too much, and might vindicate, in the minds of those who do not know Dr. Maclean, the suspicion that the whole of the cases in *THE LANCET* for 7th January, were a tissue of falsehoods, concocted in the region of Russell-square, London?

It is a law of evidence, that when extraordinary events, such as were never before known to happen, are asserted to have taken place, they must be proven by the testimony of more than one competent witness. I would ask, then, what medical man of education in Thurso saw the cure of the closed pupil, and of the staphylomatous eye, accomplished in this case by Dr. Maclean, with the aid of prussic acid?

8. In Dr. Maclean's fifth case, the motions of the iris were natural, but from over-exertion of the eyes there was pain in the orbits, intolerance of light, and some obscurity of vision. These symptoms subsided under rest and the use of the acid. May not as much of the benefit be attributable to the former of these means of cure as to the latter?

9. In Dr. Maclean's sixth case, a woman is affected with capsular cataract for three or four years, prussic acid vapour is used, and the "diseased structure" is absorbed. Does the doctor mean that the opaque capsule was absorbed? Might it not have been merely a deposition of lymph on the surface of the capsule, stimulated to absorption by the acid vapour? Was this case seen by any other medical man, and recognised as one of true cataract, having its seat in the capsule?

10. The seventh case is merely one of chronic ophthalmia, which subsides under the use of the acid, and might, possibly, have done so under the influence of the vapour of turpentine, ammonia, laudanum, or even of mere warm water, had any of these been tried.

I have written these remarks in no unfriendly spirit towards Dr. Maclean, but from a sincere desire to elicit the truth. I trust the doctor will be so good as to give an answer to the queries I have taken the liberty of putting. In the meantime, as the author of certain queries formerly published in *THE LANCET*, regarding the effects of prussic acid on the

organs of vision, I beg leave to thank Dr. Maclean for his communication, and am, &c.  
Aberdeen, Jan. 11, 1843. BORUSSUS.

#### USE OF THE NITRATE OF SILVER IN THE SUBDUCTION OF ERYTHEMA.

To the Editor of *THE LANCET*.

SIR,—A healthy boy met with an accident by which the right cheek was lacerated from the inner canthus of the eye to below the angle of the mouth. The parts were brought together by adhesive straps, but contact could not be very well preserved immediately subjacent to the eye itself. This, however, was effected, and union facilitated, by placing underneath the plaster a small piece of moistened card-paper. All went on well for about a week, when the lower lid, on the under-edge of which the card-paper necessarily pressed, became erythematic. The paper was removed, but still the swelling remained. The lid was moistened with water, and a stick of nitrate of silver was passed freely over every part of it *without producing any pain*, by which the swelling was transferred from the lower to the upper lid. The nitrate of silver was again used, which caused *considerable pain*, and the inflammation was subdued. My little patient was living with his parents, several miles from my residence, and it was on visiting him that I found, rather unexpectedly, that the inflammation was unsubdued, notwithstanding the card-paper had been removed. Leeches might have been advantageously applied in ordinary cases, but in this instance they would have interfered with my treatment of the wound, and, besides they could not have been procured without considerable loss of time. The tincture of iodine, also, I have no doubt, would have acted *specifically*, but I had none with me, and as there was the greatest necessity for *prompt* treatment, I had recourse to the lunar caustic, which I had occasion to apply to the wound. A few days after this I met with Dr. Hocken's excellent paper, describing a new plan of treating strumous conjunctivitis (page 382), which he appears to have been taught by Mr. Wormald, at St. Bartholomew's Hospital, but the latter gentleman repudiates the idea of its being *new*. Probably the application of the nitrate of silver in the treatment of local inflammation in general, originated with Mr. Higginbottom. At all events I believe that his excellent treatise on the subject has contributed towards its being more extensively used. Dr. Hocken's paper, however, affords a striking illustration of the importance of the remedy, for the publication of which I feel much indebted to that gentleman. I am, Sir, your obedient servant,

RICHARD LANYON, M.D., F.A.S.

Lostwithiel, Jan. 9, 1843.

#### CONTENTS OF THE SPLENIC VEIN.

To the Editor.—Sir: On the re-opening of the controversy "on the anatomy and physiology of the spleen," by the publication of Mr. Stevens's paper in *THE LANCET* of January 14th (page 281), allow me to notice one grand "flaw" in that gentleman's demonstration, &c. I mean the absence of any analysis, either sensual or chemical, or of any proof whatever that the splenic vein contains arterial blood. I believe that I was the first to call attention to the fact that the splenic vein (so called) did not contain venous blood; I now equally object that it *does not contain arterial blood*, which objection, if well founded (as, from mere sensual analysis, I believe it to be,) is at once fatal to Mr. Stevens's theory, and may save the shedding of some ink. I am, sir, your obedient servant,

FRANCIS EAGLE.

Kingsland-road, Jan. 15, 1843.

#### FORTITUDE OF THE MIND DURING OPERATIONS.

To the Editor of *THE LANCET*.

SIR,—That the fortitude which is necessary to enable a patient to bear a surgical operation without making any exclamations of suffering can be produced through the mind only, without having recourse either to mesmerism or opium, the following instances, among many others that I could adduce, sufficiently testify.

When the late gallant officer, Sir Thos. B. Thompson, Bart., lost his leg in action, it is well known that he was singing during the time the amputation was being performed. A monument to the brave admiral is erected in the burial ground of this institution, and in the same ground is one to a seaman of the *Leviathan*, who was wounded in the battle of Trafalgar, and of whom the epitaph states that "In this he shares but in common with many others, the praise and the glory of having died in defence of his country; but he farther signalled himself by a display of fortitude which is not surpassed in the records of naval intrepidity. The severity of his wound required the amputation of his left arm."—Some part of the epitaph is here worn away by time, but it goes on to state that "while the amputation was performing he was exultingly singing the patriotic song of '*Rule Britannia*.'" Another seaman in this hospital, who was undergoing amputation of his leg without a murmur, jocosely told the surgeon, "Avast a little till I take a pinch of snuff;" coolly took the box out of his waistcoat pocket, and after having ceremoniously offered a pinch to the assistant surgeon, took one himself, and the operation was finished without his having uttered a moan! In neither of these cases was there any mesmerism, and if ever I have wanted to tranquillise a man who was about

to undergo a painful operation, I have done it by working upon his mind through his ears (not by waving my hand before his eyes,) and have over and over again succeeded in creating in my patients a fortitude and resolution under which they have never murmured during the operation. I cannot help thinking that this is the only way in which such an effect can be produced, and from this you may infer what my opinion is of mesmerism. I am, sir, your most obedient servant,

R. DOBSON,

Inspector of Hospitals and Fleets.  
Greenwich Hospital, Jan. 9, 1843.

#### STATISTICS OF CARCINOMA AND OPERATIONS FOR ITS CURE, &c.

DURING the five years from 1836 to 1840 inclusive, there were performed at the Hotel Dieu, 95 operations for the excision of tumours in the female breast, and 29 operations for removal of testicles. Of the subjects of operation on the breast, 75 recovered so as to be discharged from the hospital; \* and 20, or 1 in 4½ of the whole, died. Of the subjects of castration, 24 were subsequently discharged; and 5, or 1 in 4½ of the entire number, died.

Organic alteration of the mammary gland is certainly much more frequent than degeneration of the testicle; but the above comparative view must not be considered as indicating the relative frequency of cancer in the different sexes. From the more frequent state of excitement and liability to disease into which the female generative system is brought, by menstruation, the pregnant and puerperal states, &c., various fibrous, fatty, and other tumours originate in the mamme, not involving their glands, and which the patients readily suffer to be removed by excision. On the other hand, castration is never resorted to until the cancerous nature of the degeneration in the testicle is decided. Of the above 20 female patients who died in the hospital, none succumbed in the first five days after the operation; but 4 between the 5th and the 10th days; 7 between the 10th and 20th; 4 between the 20th and 30th, and 5 between the first and second months after the operation.—Of the five patients who died after castration, death took place in three instances during the first six days; in one on the 9th day; and in 1 two months after the operation. Operations for disease in the breast were performed on only 4 male subjects; of the remaining 91 female subjects, 72 were married, or widowed, and 19 unmarried (girls.) Of the same 91,

\* The term discharged *cured*, would not be absolutely correct, as the patients operated on for mammary cancer frequently re-entered the hospital in consequence of a return of the disease.



25 were between the ages of 18 and 40; 43 between 40 and 50; and 23 between 50 and 70 years. And of the 20 who died, two belonged to the first of these periods, 9 to the second, and 9 to the third. It would thence result, that while the critical period of female life (say from 40 to 50 years of age) favours most the development of diseases of the breast, the mortality is greatest in the more advanced and least in the earlier periods. A different result obtains as to diseases of the testicle.—Of the 29 cases above cited, 20 occurred between the ages of 18 and 40, and 9 between 40 and 70 years. Here the period of virility, in which the organ is in the state of its greatest activity, is that in which it appears to be most liable to degeneration. The period of youth predisposes to carcinoma of the eye; those of puberty and mature age to disease of the testicle; and the decline of life to cancer of the mucous membrane.—*Gazette Medicale.*

**BISULPHURET OF CARBON.**—Mr. J. C. Atkinson informs us that Dr. Otto, professor of medicine in the University of Copenhagen, has given the bisulphuret of carbon a trial in the following manner:—He prescribes four drops of a mixture composed of one part of the bisulphuret of carbon and two parts of highly rectified spirits, to be taken every two hours. He also directs the affected parts to be rubbed with an embrocation consisting of one part of the bisulphuret, and two parts of olive oil.—The cases in which he has mostly administered the above remedy are rheumatism, enlarged glands, &c., and he ordinarily effected a cure in eight or fifteen days. I have (says Mr. A.) applied it in one patient suffering from neuralgic affection of the facial nerves, with decided benefit, and I leave my professional brethren to give this new chemical substance a trial.—Romney-terrace, Westminster, Jan. 9th.

**THE DIAGNOSIS IN SOME OBSCURE AFFECTIONS OF THE UTERUS.**—M. Pereyra reports, in the "Journ. de Med. de Bordeaux," the case of a woman, fifty years of age, who, after having for a considerable time been afflicted with all the symptoms of uterine cancer, suddenly felt pass through and out of the vagina a bulky tumour, which it was found impossible to reduce. The tumour was of a yielding consistence, and moistened with a sanguinolent fluid: it was not painful on pressure. The finger being introduced into the vagina was soon arrested by a *cul de sac*, and several surgeons, who were now called into consultation, considered the case one of retroversion of the uterus. While, however, they were deliberating about the remedial means to be employed the tumour sphacelated, and the patient died. At the autopsy, the uterus was found occupying its natural situation, though its neck was elongated, and a

tumour of a cancro-fungoid nature grew from the inferior extremity of the os tinæ. This growth was probably expelled beyond the vulva when, by its augmenting size, it had dilated the vagina to the utmost practicable extent. The "*Gazette Medicale*," Nov. 26, which quotes the above case, remarks, that the difficulty of distinguishing diseased growths from retroversion of the uterus is greater than might at first be supposed, and that the only way of attaining a correct diagnosis is to ascertain if the uterus be or not in its normal situation. Two methods are proposed for this end; either the fore finger is introduced into the rectum, or a male catheter into the bladder, by the extremity of which instrument an exploratory process is conducted. The latter mode, treated of by Malgaigne (*Thèse de Concours*, 1833,) requires, of course, some tact, but to the experienced surgeon it will give the more certain indication. In the case cited, indeed, a precise diagnosis was not absolutely necessary; for, whether fungus or retroverted uterus, as the tumour was manifestly carcinomatous, its peduncle should have been tied, or its excision immediately effected.

*To the Editor.*—It is common for children to force rings on their fingers, and when they are of any metal that can be cut, or filed, they are easily removed; but there are at present an immense number of case hardened steel rings, such as are used for common silk purses, which no file can touch, and the strongest nippers crumble before them. At about two o'clock this morning a lady brought to me her child, a little girl, five years old, who, unknown to the nurse, had forced one of these rings on the forefinger of the right hand, and told no one of it until the finger had become much swollen, and the ring deeply imbedded. The surgeon of the family tried all means to remove it, and then advised that a watchmaker should be applied to. When the child was brought to me I found that the hardest file could make no impression on the ring, which was more than a quarter of an inch thick, and therefore, the only way of removing it was to break it. This I accomplished by a simple instrument, called a clockmaker's hand vice, the chops of which are narrow enough to go between any of the finger joints. The faces are rough (toothed) to prevent slipping. By means of the screw the chops may be closed slowly, and just enough to break the ring, which in this case yielded to the first pressure. I may add that this method is only applicable or necessary when the ring is quite hard. If any elasticity be discovered, it proves that the steel is tempered (softened) and may, therefore, be cut by a hard file. I am, sir, your obedient servant,

ADAM THOMSON.

New Bond street, Jan. 3, 1843.

## THE LANCET.

London, Saturday, January 21, 1843.

If the objects which it was intended to accomplish by the enactment of the 6th and 7th of WILLIAM IV. cap 89, were better understood, we cannot believe that the differences which now exist between Coroners and medical practitioners, in relation to the working of that Act of Parliament, would be of long duration. That the law is most grossly violated and abused by many coroners we shall not attempt to deny. At the same time justice demands from us the acknowledgment that vast numbers of medical practitioners are unjust in their demands relative to the provisions of that law.

Previously to the enactment of the statute in question two pressing evils, of enormous magnitude, were constantly operating to the prejudice of medical practitioners. First, they were summoned *unnecessarily* at nearly all the inquests held by coroners; and, secondly, there existed no law to ensure to them remuneration for their services, or to reimburse them for their expenses in attending the court.

It was intended effectually to remove these grievances by the enactment of the statute commonly called the MEDICAL WITNESSES' ACT, both by preventing medical practitioners from being unnecessarily summoned to attend inquests, and by paying them an adequate remuneration when their services were really required in the coroner's court.

It is difficult to determine which of the objects in question was the most important in relation to inquests, and to ascertain which of the two, the profession, as a body, most value. The annoyance to which medical practitioners were subjected prior to the operation of the law in question, by being unnecessarily summoned to attend inquests—sometimes at a great distance from the residence of the practitioner—and then often being detained for hours together, was one of no inconsiderable magnitude. Complaints on the subject from surgeons in general practice were forwarded to us from all portions of the empire.

Again, it was felt to be a considerable hardship that after a surgeon had attended at an inquest, and had furnished the only evidence that could enable the jury to take a correct view of the case, and return a verdict in consistency with reason and justice, he should be denied all remuneration for his really valuable services.

The object, then, which the framers of the Medical Witnesses' Act had in view—and we repeat our statement of them because they should not be mistaken—were, first, to prevent medical practitioners from being *unnecessari-*

*ly summoned at inquests*, and, secondly, to secure the payment to them of a *sufficient remuneration when their presence as witnesses was really required*; and it cannot, we think, be denied, with truth, that the attainment of two such advantages was a matter of importance to the profession.

We regret, then, to observe that in two respects there has existed, on the part of coroners and medical practitioners, a strong disposition to abuse the law; and, in both instances, an attempt has been made to extend the operation of the Act beyond the motives of the framers of the law, and the provisions which the law itself distinctly embraces.

First, many coroners, instead of not summoning medical practitioners unnecessarily, have extended their construction of the law so far as to resolve *not to summon them at all*; and, on the other hand, medical practitioners often appear to consider that they ought to be summoned at *every inquest*, and to receive, on each occasion, the highest fee which the statute awards.

The complaint that is here alleged against numerous coroners certainly does not apply to the whole of those officers; for evidence has been offered to us, with respect to many of them, which proves but too clearly that they summon medical practitioners most unnecessarily, and thus, imprudently, if not fraudulently, dispose of the public funds which are committed to their charge. If this abuse should be much extended we predict that the MEDICAL WITNESSES' ACT will not long form one of our unrevoked statutes. A return from some of the counties, showing the amount of money which has been paid by coroners under the operation of that law would astonish the public. Such a practice is wholly indefensible, and cannot be too strongly condemned. It is degrading and disgraceful to all the parties concerned in it. We have repeatedly been informed that it is a practice with some coroners, when they receive notices which demand inquests, from medical practitioners, to reward those practitioners by summoning them to the inquests, and paying them one or other of the fees named in the Act. We hesitate not to say that this practice is exceedingly dishonest, and is a scandalous mal-appropriation of the county funds. The effect of such a system, too, on the minds of jurymen is most injurious, and operates strongly against the production, the utility, and the value of medical testimony in those cases where it is really required to enable the court to understand the subject of investigation. Juries are not less sensible to what is passing under their immediate observation than are other persons; and by constantly seeing medical practitioners paid at inquests, when their evidence could be of no possible



utility, they become prejudiced against medical testimony, and are disposed to reject it altogether. Such conduct on the part of coroners admits of no defence. A sense of justice, however, requires that we should not be less stern in our condemnation of the conduct of those medical practitioners who are continually censuring coroners for not summoning them to attend the inquests. The demand is, evidently, not for the summons, but for the fee. If our medical brethren would bestow a few moments of their time in reflecting dispassionately on this subject, they would, we are quite certain, entertain other opinions respecting it. What, we would ask of them, is said of policemen, constables, and other persons who force their way into courts of justice, as witnesses, merely for the purpose of obtaining the payments which may have to be made to them in that character? How often are the police officers rebuked on that very account! They allege that they have heard important statements or confessions made by prisoners; that they have, in fact, seen and heard a variety of things,—only to procure such a footing in the witness-box as will enable them to obtain the customary payments as witnesses. Such witnesses! Their testimony is always scouted by jurymen, and frequently they receive the smart but deserved reprimands of the presiding judges. The respectable members of our profession will always guard against being classed with such disreputable persons. Nothing can, in short, be more repugnant to a sense of justice than that an individual should complain that he was not summoned to an inquest, when it is known that his grievance is urged, in reality, because he is deprived of the payment which he would have received in such a character! Of what value can that evidence be which such a witness would furnish to the court? We really blush at finding that there is a single member of our profession who can have exposed himself to such an imputation and such a rebuke. If the fee at the inquest were two shillings instead of two guineas, not a word of complaint would be heard at the absence of the summons. In this single fact every dark shade of the case is at once disclosed.

We quit the subject, at present, well knowing that the great majority of our professional brethren require no further information or explanation with reference to it. They understand the question fully.

**NEW CHARPIE.**—The French Acad. des Sciences was lately presented with a specimen of charpie manufactured by a new process, and which it is supposed will possess an advantage over that now in use, by its greater purity. The thread is successively submitted to the action of acid chlorine, alkaline, and caustic

alkaline solutions, before being washed in pure water, and dried, beaten, cut, and carded.

#### REMARKABLE MALFORMATION OF THE HEART.

A RARE instance of imperfect development of this organ occurred in Paris in April last. A female child, four months old, was deposited at the Hôpital des Enfants Trouvés, of whom it was impossible to obtain any previous information. The child was seized with dyspnoea several times in the course of the succeeding day, the fits of which were accompanied with a blueish tinging of all the surface of the body, and it was accordingly sent to the infirmary. Here, on the ensuing day, it presented general cyanosis; and the tongue, anus, genitals, and adjacent parts, were of a blackish-violet colour. Asphyxia supervened five or six times in the twenty-four hours. The pulse beat 136 times per minute, and a marked bellows-sound (*bruit de soufflet*) replaced the normal sound in the heart during its diastole. About ten days afterwards the child died of dyspnoea. On opening the thorax, nearly all its anterior half was found occupied by the pericardium; and on laying open this, it was seen that the heart consisted of only one ventricle and one auricle, the deep sulcus between which was filled with a process of the left lobe of the liver (with, of course, a portion of the diaphragm). The auricle, which was much larger than the ventricle, was nearly spherical, and its sides, which were about an inch (two to three millimetres) in thickness, were formed internally by strong columnæ carneæ. At its posterior part the two venæ cavæ opened into it by a common mouth, or a sort of sinus, apparently a rudiment of a right auricle. The pulmonary veins terminated in their ordinary manner.—The ventricle was of a conical shape; its walls were much thicker on its left than on its right side. Three openings existed in its base; the auriculo-ventricular, closed by a true mitral valve; the aortic opening; and, on the right side of the latter, an opening into a cylindrical sac, which seemed to represent the wanting ventricle, but had no communication with the auricle. The ductus arteriosus was wanting. There was no malformation in any of the viscera excepting the heart, nor in any part of the arterial system.—*Gaz. des Hôpitaux*, Suppl., Dec. 1842.

**ULCERS FROM LYING STILL.**—A German surgeon has found the following ointment of great utility for the ulcerations which infest patients who have lain long in an horizontal posture:—Cocoa-nut oil (*beurre de cacao*) and spermaceti, of each an ounce; yellow wax, half an ounce; acetate of lead, two drachms. Mix and keep continually applied.

*The Physical Diagnosis of Diseases of the Lungs.* By WALTER WALSH, M. D., &c. London: Taylor and Walton, 1843. 12mo, pp. 307.

This is a most complete treatise on the various means of physical exploration practised for the discovery and determination of diseases existing within the cavity of the chest, and on the numerous signs that are distinctive of the normal and the abnormal conditions of the thoracic viscera. The work is divided into three parts. In the first the various examinations by inspection, application of the hand, mensuration, percussion, auscultation, and succussion, are successively explained, and the phenomena detectable by them in health and disease are described. The second part consists chiefly of a tabular view of the physical causes, and ordinary seat of morbid signs, and the diseases in which they are separately observed. This table extends over nearly forty pages, and presents a novel and very useful medium for classifying the information embodied in the first part; it is followed by a synopsis of the signs attending each affection of the lungs, the pleura, and the larynx. The third part forms a commentary on the two preceding, wherein the different opinions of authorities on the signs of disease are canvassed, much practical information being derivable from this portion of the work. Dr. Walsh has not neglected to notice a single important symptom tending to ensure a correct diagnosis of chest-disease; and he is justified in claiming for his little volume the character of being "the first elementary work in which all the methods of physical examination are considered with the care to which they are severally entitled." He has fully accomplished his promise at the outset to avoid unnecessary disquisitions on acoustic principles, &c., and to exclude discussion upon debateable points from the descriptive portions of his work. We have seldom seen so much useful matter in so small a compass.

*On Nervous Diseases originating from Morbid Derangement of the Liver, Stomach, &c., occasioning Low Spirits, Indigestion, and Gout, &c.* By Geo. R. Rowe, M. D., F. S. A. Fifth Edition, enlarged, 1842. London: J. Churchill. 8vo., pp. 171.

This work has reached a fifth edition—at least a proof of some eagerness on the part of the public to learn what a legally-qualified medical practitioner has to say on a subject of practice in which the quacks generally run away with the profits. The origin of hypochondriac affections in an unhealthy state of some of the chylopoietic viscera forms the chief topic of the treatise, the value of which is enhanced by its practical nature. The researches of Drs. Wilson Philip, Paris, J. Johnson,

Combe, and others, on diet and digestion, are pretty well known, but Dr. Rowe, the first edition of whose work appeared in 1820, claims, with justice, a priority of authorship, over these and many other writers in this field of inquiry, while he yields to none in a methodical treatment of his subject. Having in a manner equally intelligible to the unprofessional and the medical reader, pointed out the intimate sympathy between the great nervous centre and the stomach, &c., and enumerated the most striking symptoms manifested in the functional derangement of the latter, he states concisely the axioms which guide his general treatment of disorders of the digestive organs. This treatment is detailed in a succession of cases, presenting a variety of symptoms, clearly and satisfactorily narrated. The continual occurrence of similar cases in practice gives to these a wide interest.—Though for the most part indulging a hearty concurrence in the sentiments of Abernethy, the author has, throughout his book, eschewed a bigoted adherence to any unbending system of practice, frequently availing himself of the experience of his *collaborateurs* in this department of medicine, with honest acknowledgments of his authorities. Some general rules are laid down by Dr. Rowe, towards the close of his volume, for the preservation of health, which are well worthy the attention of non-medical readers.

*Practical Observations in Midwifery, with Cases in illustration.* By JOHN RAMSBOTHAM, M. D., &c., 2nd Edition, revised, in one vol. London: S. Highley and J. Churchill. 1842. 8vo. pp. 501.

A FIRST-RATE production, combining advantages, as a work of instruction and admonition, which only long personal observation and practical experience could supply, compared, improved, and completed by a discriminating study of the labors and discoveries of modern contemporary writers. We shall make one extract from it, and that from the preface, showing the opinion of an authority on a question of particular interest to accouchers:—

"The discovery of the singular effects of the ergot of rye upon the gravid uterus have introduced a new and powerful agency into obstetric practice. I certainly continued for a length of time sceptical as to its active power, but I am now ready to acknowledge, and duly to appreciate, its influence. Yet even now I have my doubts, upon a general principle, whether its introduction ought to be hailed as a boon, or reprobated as an evil. I have long been of opinion that officious interference in the practice of midwifery does much mischief, and cannot be too much censured. The mere possession of such an agent may induce practitioners to have more fre-



quent recourse to its exhibition than is absolutely necessary, either with a view of saving their own time, or under the more specious pretext of shortening a woman's sufferings.—But if a labour be going on safely, though slowly, I hold that a high degree of responsibility attaches to any attempt to hasten its termination, since such attempts may possibly implicate the mother or her infant in a state of hazard; and it would be a dangerous axiom to be established in midwifery, that because you had the means within your power of terminating any given case, therefore you ought to take advantage of those means. The serious character of officiousness, as well as the imputation of neglect, ought to be equal and carefully avoided.

#### ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Tuesday, January 10, 1843.

DR. WILLIAMS, President.

*Case of Obscure Disease in the Chest.* By C. J. GRAHAM TICE, M. D., Assistant Surgeon 8th Reg. of Foot. Communicated by Sir J. M'GRIGOR, Bart.

THE patient in this case was the quartermaster of the regiment, a man of plethoric and nervous temperament, aged 48. On the 7th of September, 1842, he complained of pain in the left side, slightly affecting the respiration; pressure over the liver caused uneasiness; he had a disagreeable taste in the mouth, like fried onions. He was treated with calomel and purgatives, and lost blood from the arm, but with only temporary relief. The dyspnoea increased in severity, and he had much cough, and the only easy position in which he could lie was leaning forward holding both knees. Percussion elicited no morbid sound, and auscultation proved that the lungs on both sides, as well as the heart, were healthy. Active treatment, consisting of venesection, calomel, antimony, &c., was pursued without relief. On the 8th of October he was salivated. Up to this time the cough had been dry, now there was abundant expectoration of glairy viscid mucus. Notwithstanding the severity of the symptoms, the pulse was little affected. At this time Dr. William Stokes saw the patient, and, after careful examination, pronounced the lungs and heart to be healthy. He considered the disease depending on nervous and spasmodic irritation of the respiratory organs, and advised expectorants and sedatives. Soon after this the breathing became stridulous and the cough laryngeal; there was a distressing sense of choking, and the same factor of the breath. No relief followed the treatment adopted, viz., leeches, and extract of belladonna, externally, and calomel, tartar emetic,

and sedatives, internally. The stridulous breathing was now replaced by mucous rale and a total absence of vesicular breathing on the right side, and nearly so on the left. He died suddenly, shortly after this, six weeks from the commencement of his illness.

#### *Examination of the Body Thirty Hours after Death.*

Both lungs were healthy, save being a little gorged with blood; on separating the right lung, the knife entered a cavity the size of a pullet's egg, from which a most offensive odour was emitted. It was formed by an abscess in a mass of enlarged bronchial glands at the bifurcation of the trachea, and opening into the right bronchus. A loose calcareous mass was partially engaged in the lower part of the bronchus, almost wholly obstructing its canal. The mucous membrane of both bronchi, above the ulceration, was marked by a deep blush. A small ulcer was found towards the inner edge of the descending cornu of the thyroid cartilage on the right side. The remains of the suppurative glandular mass lay in the bifurcation of the trachea, pressing on the glandular surface of the œsophagus. The author remarks that the appearances on dissection satisfactorily explain the phenomena observed during life. The fœtid taste in the mouth arose from the abscess opening into the bronchial tubes. The sense of suffocation, no doubt, was caused by the pressure of the large tumour on the trachea; and the sudden extinction of life may be accounted for by the calcareous mass falling into the right bronchus, added to the partial obliteration of the left.

THE PRESIDENT had never seen a case similar to the one detailed in the paper.

DR. FORBES did not agree with the observation of the author to the effect that in this instance auscultation was of no service, for it gave evidence of the sound condition of the heart and lungs. During the reading of the paper he had thought the case to be one of chronic pleurisy of the right side, a disease, occasionally mistaken for an affection of the liver.

DR. C. J. B. WILLIAMS could not call to his recollection any case like that which had just been narrated, but he could refer to several drawings illustrative of the softening of tuberculous matter in the bronchial glands, and of its evacuation, and of the discharge of calcareous concretions into the trachea. The signs to be expected in such cases were those indicative of enlargement of the bronchial glands; dulness on percussion in an interscapular region, and sometimes a peculiar rhonchus or stridulous respiration at the same spot. This rhonchus was not constant, but occurred chiefly when mucus accumulated in the tubes, or they became additionally irritated

by catarrhal inflammation; under these circumstances, the part pressed on by the enlarged bronchial gland became the first to exhibit the signs of constriction. He had several times diagnosed disease at the root of the lung by these signs, particularly in children, both with and without disease of the lung. In the case of a girl of ten years, a member of a consumptive family, these signs were present, with occasional severe fits of cough; she afterwards coughed up a small mass of osseous matter, and the symptoms entirely ceased.—He had lately met with several instances in which similar symptoms were produced in adults by disease at the root of the lung; in some malignant, in others not; and in some of these there were also severe asthmatic paroxysms from spasms or flux in the bronchi. The general symptoms in some of these cases were so much like those in the history which had been read, that, hearing there were no signs of disease in the chest generally, he (Dr. W.) was led to expect disease at the root of the lung before the account of the dissection was read. He could not say that the physical signs must have existed also, but he thought the inter-scapular space was not generally explored by auscultation so much as its importance deserved.

DR. GREGORY could not perceive in what way the disease could be diagnosed by the ear. This case showed us that bronchial disease might exist, go on to the formation of abscess, to the deposition of bony matter of the size of a shilling, that this might drop into the bronchial tube, without an affection of the lungs, and without the cause of death being suspected.

DR. CURSHAM said that abscess of the bronchial glands in children might exist without disease of the lungs. Cases were recorded in which there was a deposition of calcareous matter in these glands, but having no communication with the tubes.

MR. PERRY, some years since, had found in dissecting a person at Bartholomew's, that one of the bronchial glands contained a mass of phosphate of lime, and without an abscess surrounding it. In this case there was no disease of the lungs.

DR. ADDISON thought that the dysphagia, which was a prominent symptom in the case before the society, had not attracted sufficient attention, and that that, combined with the other symptoms detailed, would have led him to suspect the presence of an aneurism at the arch of the aorta. If, on examination, this was not found to exist, then he should have expected the disease was situated either in the bronchial glands or their neighbourhood. He knew of no other cause but the two mentioned which could give rise to dys-

phagia similar to that under which the patient laboured.

MR. WILKINSON KING considered that the case under discussion involved circumstances which were quite independent of each other. Strumous glands, in various situations, ceasing to be the seat of active changes, became infiltrated with earth. This was seen not infrequently in the mesentery, and in different stages. It was found also in the head and neck. The gradual penetration of a bronchial tube by old ossified contents of a gland was not a very uncommon process; it explained the coughing up of calcareous matter. It was a curious natural process, and, though morbid, it was still, in a manner, curative, and by no means necessarily productive of harm. Various stages of all the changes alluded to were to be seen in the museum of Guy's Hospital. Simple hypertrophy of bronchial glands was a specific affection, sometimes slight and variable, and dependent on successive colds, or other constitutional disturbances, in all of which, however, the interval of restorative action is evident; but occasionally hypertrophy was great, and more uniformly progressive even, perhaps, to destruction of life. Of suppuration of the bronchial glands Mr. King could find several cases. He once met with a supposed case of apoplexy in which acute suppuration of the bronchial glands alone was discovered after death.

THE PRESIDENT and Dr. Addison entered into a short conversation respecting dysphagia as a symptom of the enlargement of bronchial glands, or of the presence of aneurism of the arch of the aorta. The President related a case in which the most distressing symptom was dysphagia, and yet there was no kind of pressure on the œsophagus.

#### *On the Decrement of Weight in Phthisis.*—

By ROBERT WILLIAMS, M. D., Physician to St. Thomas's Hospital.

THE author states that some years ago he began a series of experiments on possible remedies in phthisis, satisfied that general treatment was of little avail, and that the cure of the disease must be sought for in a specific remedy. This series embraced preparations of platinum, palladium, ormium, tridium, titanium, chromium, and cerium. He subsequently tried every seed that Messrs. Charlwood, of Covent Garden, could furnish, and he had previously tried every wood, every bark, and every gum he could obtain. Nothing appeared beneficially to influence the disease; the result was as usual, uniformly fatal, but the termination was not accelerated as to time, or aggravated in the preceding phenomena. The pathological appearances, also, in the cases examined after death, were the same as when the ordinary form of treatment was adopted, not the



slightest attempt at reparation was seen in any part of the lungs. No injury, however, was done, except in two cases treated with white hellebore, in both of which death was so remarkably hastened, that it seemed as if that substance, or probably the veratrine it is said to contain, acted as a poison in phthisis. In making these experiments the author determined on weighing the patients, considering that an increase or decrease of weight would afford a better criterion of amendment, or otherwise, than the fallacious hopes with which nature cheers the individual in this desolating disease.

The numbers weighed were few, perhaps eight, unexpected difficulties having occurred, and the experiments being prematurely terminated in some cases by the patient leaving the hospital. One general law, however, was observed in all, viz. that the loss of weight was not continued but intermittent; or, the patient being weighed weekly, and as nearly as possible under the same circumstances, showed an alternate increment and decrement generally of one or more pounds on each alternate week. The decrement, however, usually exceeded the increment, and consequently every few days an increasing balance was left against the patient. Several cases were related illustrative of the law, which the author states does not appear to have been mentioned by any writer; these, however, our limits will not allow us to give. The following are the concluding remarks of the author:—"The large number of substances I have tried as possible remedies for the cure of this fatal disorder has assured me that there is no class of substances which a prudent physician, beginning with small doses, and gradually increasing them, may not safely make use of in his attempts to cure this or any other equally intractable disorder; and as experiment is the only means by which medicine can be advanced, I strongly recommend the adoption of this practice, at least in public hospitals, as an imperative duty. The only inference which I am enabled to deduce from the singular law of the alternate increment and decrement of weight in phthisis, is that it may afford an explanation to the buoyant feelings of the patient, who must necessarily feel his symptoms ameliorated, and his health improved, every few days. It is evidently the measure of the last flickerings of the vital principle, but how the lamp of life is fed is, perhaps, beyond our power of explanation.

The PRESIDENT stated that he could not remember any particular state of the atmosphere, or any other circumstance, which could explain the difference in weights observable in these cases.

Dr. GREGORY inquired the experience of the President and others in regard to the cura-

bility of consumption, and whether any cured cases had come under their personal inspection. Dr. Baillie had recorded one case, and other physicians had one or two.

The PRESIDENT had seen one case which he suspected to be phthisis recover, but in that instance he rather thought there must have been an error in diagnosis.

Mr. CHARLES HAWKINS related a case of phthisis in which change of climate appeared to have arrested and cured the disease.

Dr. C. J. B. WILLIAMS believed that many practitioners present could cite cases like that mentioned by Mr. Hawkins, with the additional and stronger evidence afforded by physical signs. He (Dr. W.) must, therefore, express his dissent from the dreadful opinion pronounced by the President, that pulmonary consumption is invariably fatal, and that its progress is neither stayed nor even retarded by any mode of treatment. This was not a time for bringing forward numbers of facts which bore on this question; but he would refer to the description given by Laennec of the cicatrization of tuberculous cavities, a process the reality of which Dr. Carswell had stated to be as well established as any fact in pathological anatomy. Yet this healing of cavities was only one of the modes by which phthisical lesions were stayed, or rendered innocuous; and he (Dr. W.) believed that many of those who have long practised auscultation would agree with him in the opinion that tuberculous disease is fatal by its degree rather than by its kind; and that although the cases of recovery are very few when compared with the deaths, yet they are sufficiently numerous to give a just ground of hope where the signs of tuberculous disease are limited, and the constitutional health little impaired. He did not connect the improvement of such cases with the operations of any single remedy, certainly not with any specific remedy, the very idea of which seemed to him chimerical, but rather with favourable circumstances of climate and regimen, and the careful avoidance or counteraction of those causes which are now well known to accelerate as well as induce consumptive disease.

Dr. TRUMAN said that it had been shown that the bones of animals that die of phthisis are much diminished in weight. The alteration in gravity observed in Dr. Williams's cases must have depended on some change in the fluids or soft parts, and was very difficult of explanation.

Dr. WEBSTER alluded to the great mortality of phthisis, and to the uselessness of specific remedies in the disease.

Mr. BURGESS got up to speak, but the noise made by members leaving the room was so great, that what he said could not be heard.

### THE THEORY OF "CELLS" OPPOSED.

*The Structure of Fibrinous Exudations, or False Membranes; Origin of Fibre.*—It has been commonly supposed that fibrine exhibits an organised appearance only when it has coagulated in contact with the living textures. In his Notes and Appendix to "Gerber's Anatomy," Mr. Gulliver has depicted a distinct structure in fibrine which has set, either within or out of the body, simply from rest; and a similar character is shown in a false membrane. He now gives several more figures to exhibit the analogy, in structure, of fibrine coagulated merely from rest, and fibrous exudations resulting from inflammation. This structure is made up of fibrils of extreme delicacy and tenacity, and of corpuscles possessing the characters of primary cells, or organic germs.

Of late years the origin of fibre, as well as of all other tissues, has been ascribed to the growth of cells; but these observations of Mr. Gulliver render it probable that cells are not essential to the formation of all textures, since it would appear that fibrils, which may be the primordial fibres of certain parts, are formed, in a few minutes, by the simple act of coagulation in fibrine.

M. Gerber (Gen. Anat., figs. 16—18.) has delineated what he terms the first, the second, and the complete stages of fibrillation, in the progress of organization in the fibrine composing coagulable lymph; but he does not say how much his drawings are magnified, though in some of them a very low power must have been employed. Others are sufficiently enlarged to show the cells from which he says the fibres are formed, and this is precisely the point on which Mr. Gulliver says that his observations are at issue with the views now generally entertained concerning the origin of fibres.

"All the organic tissues," says Dr. Schwann, "however different they may be, have one common principle of development as their basis, viz., the formation of cells; that is to say, nature never unites molecules immediately into a fibre, a tube, and so forth, but she always, in the first instance, forms a round cell, or changes, when it is requisite, the cells into various primary tissues, as they present themselves in the adult state." (Wagner's Physiology, by Willis, p. 222.)

"How," continues Mr. Gulliver, "is the origin of the fibrils which I have depicted in so many varieties of fibrine to be reconciled with this doctrine? And what is the proof that these fibrils may not be the primordial fibres of animal textures? I could never see any satisfactory evidence that the fibrils of fibrine are changed cells; and, indeed, in many cases the fibrils are formed so quickly after coagulation, that their production, according

to the views of the eminent physiologist just quoted, would hardly seem possible; nor have I been able to see that these fibrils arise from the interior of the blood discs, like certain fibres delineated in the last ingenious researches of Dr. Barry." Such are the remarks of Mr. Gulliver in his "Contributions to Minute Anatomy," in the number of the "Lond. and Edinb. Philos. Magazine," for Oct., 1842.

### THE BLOOD.

DIFFERENCE OF THE PUS-LIKE GLOBULES OF THE BLOOD IN HEALTH FROM THOSE IN DISEASE.

Although the pus-like globules which are found in the blood of patients who are affected with various severe inflammatory and suppurative diseases, are very like the pale globules now so well known as belonging to healthy blood, it often happens that the former globules differ manifestly from the latter. In inflammatory affections the pus-like globules of the blood are generally rather larger, more irregular in size and form, and sometimes more opaque, than the pale globules of healthy blood; and the globules occurring in disease are frequently clustered together very remarkably. They are sometimes of a reddish color, including from one to four blood-discs, rarely five or six, in a very delicate and pale envelop. Besides, in the pus-like globules of the blood of patients laboring under inflammatory disease, the molecules composing the nucleus are mostly surrounded, and often are more or less separated, by a quantity of minutely granular matter, which is either generally less obvious, or even absent, in the pale globules of healthy blood. In a case of great swelling, with purulent deposit, in the leg of a mare, the pus-like globules presented an average diameter of 1.2666th of an inch, and were nearly as numerous as the red discs; while in the blood of a healthy mare, examined at the same time, for comparison, the pus-like globules were by no means so plentiful, and they almost all ranged between 1.3500th and 1.2900th of an inch.—*Mr. Gulliver, Lond. and Edin. Phil. Mag., Sept., 1842.*

### BIRTH OF A SECOND CHILD TWO MONTHS AFTER THE FIRST.

*To the Editor.*—Sir: On reading an account of Dr. Jameson's "extraordinary case of twins" last week, it reminded me forcibly of a similar case which occurred in the practice of a veteran accoucheur in this neighborhood many years since. I send you the facts, though brief, without comment, as related to me by him about six months ago.

Martha Lowe, in her fifth pregnancy, was taken in labor at the 7th month of uterogestation. A midwife was in attendance, when, at



the expiration of a few hours, a little girl was born. The after-pains were unusually troublesome and severe for a short time, when Mr. B.'s aid was requested in order to prescribe for the pains. She stated at the time that there was positively another child in her womb, and that she should then retain Mr. B. to perform, at the end of *two months*, the duties of accoucheur at the birth of the next child. At this rather novel engagement Mr. B. smiled (not dreaming that she was in earnest), and promised to send her an andoyne, which abated all the pains, and in a short time she was well, and busily engaged about domestic affairs, and so continued until exactly the day two months from the first time that Mr. B. was called in, when, in his presence, another living child, full-grown, of the same sex, was speedily ushered into the world. In the interim of the two births, at the month's end, as is usual, the patient was churched, for safely passing through her first accouchment. The eldest child lived but a few months; the last born is still living, and six months ago resided with her mother, a fine young woman, nearly twenty years of age. I am, Sir, your's most obediently,

J. T. VALE, M.R.C.S.L.  
Birkenhead, Cheshire, Dec. 31, 1842.

**MODE OF FORMATION OF RED GLOBULES**—Dr. REMAK, of Berlin, has been able to distinguish these bodies in the blood of an embryo chick in the third week of artificial incubation, as well as in the embryo pig an inch in length, in which last he finds they are from four to six times as large as in the full grown animal. In the chick they are of different shapes—rounded, pyriform, and pediculated, or elongated, and with a nucleus at either end, united by a minute prolongation. This last condition has given rise to a notion that the reproduction of the globules takes place by a procedure analogous to fissiparous generation. Dr. Remak had recourse to the following experiment to ascertain in what way the red globules were reproduced, and the facts that he observed throw some light on the process:—A horse was bled for several successive days, as much as 30 lbs. of blood being taken from him on the first day. At that time the red globules were very abundant, while only a few colourless globules were present. Next day the latter were numerous, and mostly enlarged, having in their interior one or more globules of a pale-red colour surrounded by small granules. On the succeeding days these globules deepened in colour, and, correspondingly, the accompanying granules disappeared. On the fourth day it became evident that red globules, similar to those existing in the blood in an independent state, had been formed within the larger co-

lourless corpuscles, and set free by the bursting and disappearance of the latter. Similar phenomena presented themselves in similar observations on the blood of the frog and the human subject. In man between the fourth and eighth day, after the loss of a large quantity of blood, and notwithstanding the presence of typhoid and inflammatory diseases, the reproduction of the red globules goes on in the same way as proved by the discovery of a proportionable quantity of the outer films of the colourless globules in the clot. In fact, according to Remak, the clot is in a great part composed of these films, and to the quantity of them that it contains it owes its relative softness. M. Remak anticipates obtaining further characteristic signs of difference between a clot composed chiefly of these films, and another formed mostly of coagulated fibrine owing to slow coagulation.—*Med. Zeitung*, No. 27.

**DETERMINATION TO THE SKIN**.—A correspondent (*Anthropos*) writes as follows:—The iodide of potassium possesses the remarkable property of causing determination of diseased action to the skin. In cases or what may be termed "suppressed measles" and "scarlatina," it will frequently induce a healthful reaction under the most desperate circumstances. One or two grains, according to the age of the patient, under twelve years, may be dissolved in a quantity of sugared water, and administered, repeatedly, as an ordinary drink, the whole quantity being given in twenty-four hours, for three or four days. In measles, a small plaster to the chest assists the peculiar action of the iodine. In scarlatina, the compound tincture of iodine, diluted with three or four parts of water, may be frequently applied, by means of a camel-hair brush, to the front and sides of the throat and neck. Milk is injurious during the first two or three days, in cases either of measles or scarlatina. I have not had an opportunity of giving iodine to individuals suffering from small pox, but think it might prove serviceable, especially after the appearance of the eruption, as anticipatory of secondary fever. Let those readers of *THE LANCET* who doubt the sufficiency or efficacy of so small a quantity of the iodine test it by their practice. Those to whom experience has demonstrated the utter insufficiency of other measures in malignant cases cannot reasonably object.

**ROYAL COLLEGE OF SURGEONS IN LONDON.**

List of gentlemen admitted members on Friday, January 13, 1843: H. H. Corbould, F. D. Howell, J. J. Atkinson, R. E. Davies, B. W. Hutchinson, F. O. Barker, H. W. Reynolds, F. J. Burge, T. F. McGauran, R. E. Lutley, R. Rudall, A. Featherstonhaugh.



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