frequently come before us, are those of artificers who are employed with lead in some form or other, most commonly as the acetate or white-lead, and thus receive the poison in small quantities, gradually absorbed, into the system. Painters necessarily are most liable to suffer in this way; the facility and rapidity with which the system becomes affected depends upon a variety of circumstances; the vigour of the patient's constitution, his habits of cleanliness, the purity of the atmosphere in which he habitually works. The most rapid case of saturnine intoxication that has occurred in our own experience, was in a man not generally employed in this way, who for three days was engaged in applying a new process to the fastening of a roof, in which red lead was employed; during the whole time he was in a confined locality and forced to respire the fumes of the lead, and at the end of the three days gave unequivocal signs of lead-poisoning. The blue line which was shown by Dr. Burton to fringe the gums of persons poisoned by lead, and possibly dependent upon the formation in the system of a sulphuret, is an almost invariable characteristic of the affection, yet cases do occur where after exposure to the poisonous influence, symptoms are manifested which resemble lead-poisoning, and yield to the iodide, though the blue line is absent. Of the rapid action of iodide of potassium in saturnine neuralgia, the following are instances.

CASE. George C., aged 27, a painter, had colic two months previous to coming under my care. He then had been affected with it for six days, and was slightly jaundiced. His belly was hard, but towards night it became as "hard as a stone." There was no tenderness. A slight blue line was seen to edge the gums.

Sept. 15th. The following medicine was ordered:

R Potass. iodidi gr. v; liquoris opii $\mathfrak{m}$ x; misture camph. $\mathfrak{z}$ i.

The pain ceased two days after commencing the medicine. The liquor opii was then omitted. On Sept. 26th, it is stated that the colic is much better; that there is still occasional pain in the upper left abdomen; that the blue line continues. I then gave him ten grains of iodide of potassium, and three weeks later there had been no return of pain.

The following is a similar instance.

CASE. Thomas L., aged 28, painter, had never had colic or dropped hands, till a fortnight before coming under treatment he was attacked with severe and constant pain about the navel; the parts were tender; sense of nausea; urine high-coloured; bowels costive. A trace of blue line round several teeth. Pulse 72, normal. Good appetite.

Dec. 12th. The following pills were ordered to be taken every night at bed time.

R Pilulæ colocynthidis comp. gr. x; olei crotonis gtt. i.

Three days later, the pain is stated to be less; the bowels had been moved twice each day. The iodide of potassium was now administered in five-grain doses, and three days after the pain had left him, and though under treatment for other affections, for above two months, the pain did not return. The iodide was continued for some time, and when discharged cured, the gums were restored to their normal condition.

Many interesting questions are connected with the action of iodide of potassium in cases of metallic poisoning; not the least important being the mode in which the metal is eliminated. That it passes off by the urine has been demonstrated; but it is manifestly eliminated by other channels, because, at times, during its administration in undoubted cases of lead-poisoning, while the patient is rapidly recovering, the lead cannot be detected in the urine. We must then assume that it passes off by the bowels, after being set free by the antidote. Nor is the detection of the lead itself in the urine so easy a process; it does not occur in the form of an ordinary salt, but appears to enter into a very intimate combination with the organic matter of the urine, which must be destroyed before the common tests serve to demonstrate it.

In an ætiological point of view, the study of lead-poisoning is extremely interesting, as it gives rise to the most varied forms of nervous disease, in all of which an accurate diagnosis is the more important, as the proper remedy will rarely fail to establish a cure, that remedy being iodide of potassium. Thus epilepsy, almost always a disease with a doubtful prognosis, appears to lose this character when we trace it to lead-poisoning; for the cause may be removed, and with it the demoniac seizures likewise disappear. Steel and quinine, our ordinary anchors in neuralgic affections, fail us in lead-poisoning; but we are sure of allaying the pain as soon as we know that it is a case for iodide of potassium.

There is another metal which, to the disgrace of our profes-

sion, has long been employed to poison our fellow-men, under the protection of the ægis of science, but which now appears to be placed under such restrictions as to render it truly a remedial agent: we allude to mercury. This drug also, in its poisonous effects, finds a powerful and certain antidote in iodide of potassium. The latter searches it out in its various combinations with the organic constituents of the body, and, after more or less resistance, effectually expels it. Some pain most generally results from the mercury being first set free; and even salivation, which had subsided, may thus be again excited; but, in salivation itself, we know of no more effectual remedy, besides the exhibition of local astringents (upon which, however, we would not lay much stress), than the iodide.

We will close this paper by quoting a case in illustration of its efficacy under these circumstances.

James C., a painter, who had generally enjoyed good health, had been taking flowers of sulphur during the preceding summer, to counteract the effects of the lead paint with which he worked, but had never had the colic or dropped hands. Two weeks previously, his face began to swell. At first there was sore throat; then the gums swelled; and the teeth, which previously had been sound, became quite pulpy. The gums, at the time of consultation, were invisible, from the tumefaction of the adjoining parts. There was a decided mercurial factor, and the man bore the stamp of a man who was salivated; still he denied having taken any mercurial, and ascribed his affection to using a vinegar and rye gargle, and to working in a damp place. However, I prescribed—

R Potassii iodidi gr. iv; infusi cascarillæ $\mathfrak{z}$ j. M. Fiat haustus ter die sumendus.

Sumat olei ricini $\mathfrak{z}$ ss omni mane.

Habeat decocti quercus Oj pro gargarismate.

At the next visit, he, on repeated questioning, admitted having been in the habit of occasionally taking some pills prescribed for him by a physician a long time ago, and which contained some hydrargyrum cum cretâ. The treatment was steadily persevered in, and the improvement was satisfactory. In the third week, the report is, "Doing well; teeth recovering their normal appearance, but still loose, though less than they were; there was a blue ring round the gums." He now returned to work; the mercurial factor soon entirely disappeared; and in another month he was able to masticate.

In conclusion, allow me once more to revert to a remark made at the earlier part of my paper, that my intention has not been to exhaust the subject, as I know full well that much more might be said upon the action of iodide of potassium in other maladies than those named. My desire has been to submit for your consideration some of the opinions which practical experience has induced me to form relative to the drug we have considered, and to elicit from the stores of your own observation further illustrations in regard to its use and effects.

Lectures

ON CERTAIN VIEWS ON THE NATURE AND TREATMENT OF PHTHISIS PULMONALIS.

DELIVERED AT THE

BROMPTON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, IN THE SUMMER OF 1856.

By EDWARD SMITH, M.D., LL.B., B.A., Licentiate of the Royal College of Physicians; Assistant-Physician to the Hospital, etc.

LECTURE III (*concluded*).

REMOVAL OF THE EFFECTS OF THE DISEASE BY ABSORPTION AND EXPECTORATION. GENERAL SYMPTOMS: PULSATION, HÆMOPTYSIS, COUGH, DYSPNŒA, NIGHT-SWEATS, WASTING, AND DEBILITY. MODE OF ACTION OF COD-LIVER OIL.

DEBILITY AND WASTING are invariable concomitants of the disease in some of its stages; and it is highly probable that the former may in many instances be both a cause and an effect. Neither, however, necessarily precede phthisis, nor indeed necessarily attend the early stage of the disease. As a cause, debility acts, as has already been pointed out, by lessening the intensity of respiration; or, in other words, both the debility and the lessened respiration are due to or connected with lessened nervous influence. Thus it is that systems of defective organisation, as those of the scrofulous diathesis (if we would refer to a large and heterogeneous class in illustration), are so

prone to the attacks of this disease, and connect so frequently debility of body with liability to phthisis. It is also worthy of note, that such persons commonly have narrow and flat chests; that is, have a lessened thoracic cavity, and consequently a capacity for respiratory influences unduly small in proportion to the size of the body, and at the same time a lessened muscular power in effecting the act of inspiration. All these circumstances act together, and tend to one common end. As respects wasting, I do not think that there is any evidence which could prove that to be a necessary cause of the disease; and, although it is so frequently observed as an early concomitant of phthisis, it is in fact due to the conditions which have led to phthisis; and, on the generic view which I have taken of the nature of this disease, it is at some period due to the phthisis itself. There cannot be a doubt that it is frequently found before tubercle can be detected, and therefore may not be due to the tubercle; but it is the result of that condition which ultimately leads to tubercle, and which ought properly to be called the first stage of phthisis.

Regarding, then, both the wasting and the debility as effects of phthisis, in what mode are they induced in the early stages? They are not necessarily induced from want of food, or of the due alimentary digestion of the food; for, whilst the appetite may be capricious, there is commonly abundance of food taken to sustain the system. Neither are they due to waste of the food; for vomiting and purging do not usually exist at all at that period. They are not, I believe, due to excessive excretion of material from the system; for there is not generally any change in the function of the liver, except it be, that it is lessened; nor in that of the skin. As respects the state of the urine, I do not think that there is any change in the early stages that could be seized upon; and although, in the later stages, there is often a large deposition of lithates and oxalates, and sugar in a small quantity, these changes are neither sufficiently intense nor sufficiently constant to warrant us in believing that any great waste of tissue proceeds in that direction. In the inquiry which I prosecuted here last year, I carefully examined, microscopically and chemically, the day and the night urine of fifteen patients, daily for one month; and have obtained a large amount of material for analysis; but the limits of this course of lectures prevent my now referring to them, further than to state that the solids in the urine in phthisis are less in quantity than in health. Hence, as the wasting is not due to want of food, nor to waste of the food, we are compelled to fall back upon the deficient respiratory function; and there we find two causes for both the wasting and the debility. They are the deficient elaboration of the food, whereby the blood is imperfectly fitted to sustain the tissues of the body; and the permanently increased rapidity of the blood-current, by which the due deposition of material is prevented, and the removal of old material increased. It is quite evident that both of these must tend to the impoverishment and waste of the system. The intensity of their action will vary with the degree of the deficiency of respiration, the temperament of the patient, the season of the year, and the favourable or unfavourable hygienic conditions in which the patient is placed; and hence, although they must occur in every case of phthisis, may occur more or less early, and with more or less of intensity. My colleague, Dr. Thompson, has ascertained that the figure of the red corpuscles is somewhat changed, as well as that the quantity of those oxygen-bearing bodies is lessened in advanced phthisis. The quantity of fibrine is also lessened in the stage of sweating, and probably its quality is injured; and, with a thinner condition of the blood, there is a less quantity of material for nutrition and enervation, less power of coagulation, and a greater tendency to extravasation of that fluid. The muscular structure becomes flabby; the skin soft and relaxed; the teeth and other dense organs lose much of their colour; and the condition known as fatty or oily degeneration is met with in perhaps every tissue of the body. The former facts indicate a want of due tonicity, and of both nervous and vascular energy; and the last not a retrograde metamorphosis necessarily, but defective elaboration of material at the time of its deposition. By way of parenthesis, I may state, that the term fatty degeneration is liable to mislead, since it does not always imply a degeneration of the material already deposited, neither is fat in fat-cells necessarily a degeneration at all. In phthisis, the fat is removed from the cells; and the fatty degeneration, as it is called, consists of globules of oil occupying the sarcolemma of muscles or the cancelli of bones; that is to say, in many parts in which normal fat is not deposited, as well as in the areolar tissue, which normally contains fat.

The point to which I would at this moment call particular attention is, that the various morbid conditions to which I have now referred are due to the results of lessened aeration attending phthisis, and are not causative of phthisis; and that with them the deposition of tubercle in the air-cells of the lung is an accident—is not the cause of these conditions, and is not caused by these conditions. It is the practice to refer to this malnutrition of the body and deficient elaboration of material, with its morbid products, as evidence that tubercle itself is a morbid product allied to them; and hence, that it results from the tubercular blood-disease before discussed. The two circumstances are co-ordinate, and it may be that the morbid condition of the system shall have set in before the stage of the deposition of tubercle; but it does not thence follow that the tubercle is morbid material, although induced by the mal-assimilation of the material. Let us keep distinct in our minds the conditions which are the effects of the lessened respiration, and those which caused the lessened respiration; and let us remember that, whilst both the tubercular deposition and the morbid material in the system may be due to the one common cause of deficient respiration, they are not necessarily due each the one to the other. There can be no doubt that, as the system becomes impoverished, it will become enfeebled, and the respiratory process be less and less perfectly accomplished, and, as a consequence, the deposition of tubercle be hastened or increased in extent; but the tubercle would still not be a deposit from the morbid processes.

Such, then, being the explanation which I would give of the cause of the debility and wasting (assuming that no renal or other secondary complication exists), the plan of treatment is obviously to improve the elaboration of the blood by an increase of the respiratory process, if the quantity of food which can be supplied and taken, and the digestion, are normal. In the early stage, this is possible, for the obvious reason, that the air-cells are not so numerous implicated, and, if implicated, are not so entirely useless as at a later stage of the complaint. The aim, then, is to prevent further extension of deficient action to cells which may be more normal than others, and to restore as far as possible to increased activity those cells which are becoming useless. This must be effected directly by increasing the power of the nervous system, and indirectly by the mechanical distension of the cells as before advised. The former is attempted when we direct change of air and scene, amusement for the mind, more activity of both body and mind (if it should have been deficient), less anxiety, vigorous calisthenic exercises, sea air and bathing, sea voyaging, and such nervous tonics as iron, quinine, and nux vomica. To let the correction of the secretions (which may be more or less at fault), or the relief of some pectoral irritability or uneasiness, be our chief, much more our only aim, would be to treat effects, and leave the cause untouched. If the nervous power cannot be increased, and the respiratory process invigorated, it is evident that we can have no hope of arresting the disease, much less of restoring to the body its healthy processes.

The mechanical distension of the lung by deep forced inspirations is, as I consider, chiefly indirect in its action for the purpose in hand. Hence, both directly and indirectly, we may seek to restore the normal amount of respiration, which itself would imply the increase of nervous power as its cause, as also as its effect. Then, with increase of respiration, we may look for better assimilation of food, and lessened rapidity of circulation; and, as a further result, a better quality of nutritive material, a more quiet and effective deposition of it, and a lessened rapidity in its removal. Waste and debility would thus be lessened.

Cod-Liver Oil. The discussion of the merits and mode of action of cod-liver and other oils in phthisis is one which presents peculiar difficulties to my mind; for, on the one hand, I cannot but think that we are liable to be unduly influenced in its favour by the existing tone of popular feeling; and, on the other, we really have too little information to enable us to explain its action on good physiological principles.

There is a general belief in the minds of patients, and also of medical practitioners, that the oil is beneficial in phthisis; and, on inquiry, I find that the patients refer the beneficial effects to improvement in weight and strength, and oftentimes to ease in the acts of coughing and of expectoration. We will for the moment omit reference to the latter; and state that, in other states of system apart from phthisis, oils are also beneficial. These states are wasting and debility, where they do not depend upon defective primary assimilation of food; that is, in the very states in which oils are useful in phthisis. So far, then, there is nothing peculiar to this disease in the

action of the oils. But there is this broad line of distinction between the two cases: in states apart from phthisis, the debility and wasting have been due to, or at least connected with, a less supply of food to the system; as, for example, after fevers or some chronic disease, or long continued anxiety, grief, or over exertion; and hence we may readily infer that, with a deficient supply of food in general, there would have been a less supply of fatty or other carbonaceous matter in particular, and thence would result the wasting. There would not be coincident with the debility increased respiration and pulsation, with the corresponding requirements of a larger supply of carbonaceous material. In phthisis, however, the wasting and debility are accompanied by a sufficient supply of food; and, at the same time, the rate of respiration and pulsation may be, and at some period always is, increased. A question might be raised here as to the amount of carbon contained in the food of phthisical patients; for I have ascertained that, in a large proportion of such cases, there is, and always was, a dislike to fat food, more particularly after the disease had fairly set in; but opposed to this is the fact, that at the same time they will take plenty of butter, sugar, beer, and wine, and a fair supply of vegetable matters—substances which should surely do much to supply the requisite amount of carbon. There is, however, no proof that the desire for the latter articles containing carbon has increased with the decreased desire for fat meat; and hence the total quantity of introduced carbon may be lessened. But, on the other hand, many persons in health never take fat meat; and there is not any evidence to prove that such are particularly liable to phthisis, or any other disease of wasting and debility. Upon the whole, I doubt if any defect in the quantity of carbon in the aliment is the source of improvement in health, from the introduction of oils in medicines. Whether, however, the more general use of oils in the form of inunction, and also in such food as salads, after the fashion of all ages in hotter climates, would be conducive to health, and thence tend to ward off the attacks of phthisis in these colder regions, may be open to inquiry; but since, in the earliest condition leading to phthisis, it is customary to find feeble and inefficient respiration, whilst the quantity and quality of food remain much the same as before, we should rather, *à priori*, be disposed to infer that at that period, and, *à fortiori*, at later periods, the blood is surcharged with carbon; and hence, that the introduction of an unusual quantity of oils would lead rather to disease than to health. Vierordt ascertained that 260 cubic inches of carbonic acid gas exist in the pulmonary capillaries in one minute in a healthy person, whilst at the same time the quantity evolved would be only 13½ cubic inches with 12 respirations per minute, and 24·2 cubic inches with 24 respirations per minute. In phthisis, it is true that the amount of capillary ramification is greatly lessened; but I presume, as the quantity of blood in the body cannot be much influenced by that fact, the quantity of carbonic acid in that fluid would not necessarily be less than in health; and hence, as the respirations are at first both feeble and not increased in rate, and afterwards feeble and increased in frequency, the quantity of the gas evolved must surely be less than in health, and more would therefore be retained in the blood.

In order to obtain further information on this subject, I have entered upon the following mode of investigation. If cod-liver oil have any effect over the respiration (other than chemical), it would be shown by taking it fasting in the morning; that is, when the system is fresh, the stomach free of the remains of food, and the functions of the body rather increasing than decreasing in activity. I therefore, at 8 A.M., eleven hours after taking food, and before making any exertion, took five drachms of cod-liver oil alone; and immediately, in consecutive inquiries of five minutes duration, ascertained that the frequency of respiration, the quantity of air inspired at each inspiration, and the total quantity per minute, were all reduced, and the latter so much as one-eighth of the total volume. The pulsations, but especially the temperature of the breath, were both increased for a period. Thus the diminution in the inspired air, with at the same time increase of animal temperature, implies rather an influence upon the nervous system, whereby the intensity of the vital chemical action was increased, than any excessive requirement of oxygen in the processes of respiration, to meet the increased quantity of carbon which has thus been introduced into the system.

These results are of peculiar interest, as they are so opposed to the effects of food; for food of almost every kind at once increases the frequency of all the functions, and the quantity of air inspired. Thus so far it would seem that the action on re-

spiration of cod-liver oil is opposed to that of tea in particular, and of food in general, except that of wine, with which it closely corresponds.

Such, then, being the facts of the case, unless there be some error, how can we attribute the good effects of the oil to the carbonaceous element? I do not see how it is possible; but I would rather direct inquiry in another direction. I believe it to be true that, in many instances, the weight and strength of the patients are materially increased on taking the oil; but it has yet to be proved in what per centage of the whole cases of phthisis, in all stages, this improvement is found. I feel assured that they do not by any means comprehend the whole number of such cases, or even a majority of them (for the instances of success, and especially if the improvement be marked, are apt to engross the attention unduly); and hence it would become a question whether, in the particular instances of improvement, there was any defect in the supply of carbon in the aliments, or any particular excitement of the respiration which would have called for a larger supply of that element than the food was able to furnish. There is clearly less difficulty in discussing the question, if the good effect be restricted to only a section of the phthisical cases, although we may be quite unable even then to ascertain its true mode of action. The true course appears to me to take each case by itself, and apply to it the ordinary chemical and physiological knowledge which science has afforded to us, in order to determine the question; since I much doubt if, in the direction now under discussion, any general law can be discovered which shall apply to phthisis and phthisical patients universally.

Then, again, it is open to inquiry whether the good effected is permanent, or only temporary; for, if it be only temporary, it is clear that no law relating to phthisis universally would be discoverable. Now, I fear that we must all admit both that in many instances no good whatever has followed the employment of the oil, and that in almost all cases the effect is temporary, although for a time it may be renewable. If it were permanent, we should have the pleasure of permanently arresting the disease constantly, and of preventing the fearful mortality which still occurs. But we know that, notwithstanding all our remedies, the patients die. The good effect is, I believe, most frequently observed in the early stage, in which the system is but little influenced radically, and in which the amount of residual air and pulmonary capillary circulation is fully sufficient for the maintenance of the system. Then also the mind is more influenced by hope; and we cannot doubt that the reputation which, rightly or wrongly, attaches to the remedy in the minds of patients, and especially of the poor, is great, and likely in itself to bring about a temporary good. At a later period, the respiratory process is materially impaired, an excess of carbon must remain in the blood, and oils and every other remedy can be of but little avail. At such a period, the improvement is both slight and evanescent as a rule.

Increase of weight is, however, a very palpable sign, and one which really does associate itself with a feeling of improvement. We have had remarkable instances of this nature in the hospital; but amongst the out-patients I have a young man in whom the total increase was 29 lbs., at the following periods: July 28th, 7 lbs.; Sept. 8th, 16 lbs.; Oct. 13th, 21 lbs.; Dec. 19th, 29 lbs. In his case, however, the disease progressed all the time; for, with the increase of weight, deposit, softening, and a cavity, followed each other in the lung; and, although the patient really looks almost well, both of his lungs are now extensively diseased. It is a disputed point, if arrest of the disease do really attend upon the apparent improvement in the general symptoms from the use of oils; and no doubt the cases must differ much amongst themselves, whether as to the stage, the constitution, or the circumstances of the individual.

I cannot form any opinion as to the value of Dr. Bennett's theory of the action of the oil; viz., the deficiency of fat in the chyle, or as to the efficiency of cod-liver oil; because, in some cases of phthisis, the acid secretions of the alimentary canal interfere with the digestion and absorption of fat. I do not believe that we can attach any real value to the iodine or to the phosphorus; and hence, if there be a value to the general system in the use of the oil, it must, so far as we know, be attributable to the carbon and hydrogen, or to the mechanical action of the particles of oil in the processes of alimentation. On the latter grounds, it is probable that all oils would have the like action, which in phthisis is not the case; and on the former, they should be on an equality, except so far as dose may be concerned. The statement that cod-liver oil is more readily assimilated than any other kind of fat, is an assertion for

which there is not sufficient proof; for, on the one hand, I found that patients who have discontinued the use of fat food have been able to resume it by varying its form, quality, and cooking; and, on the other, that a very large proportion of those to whom cod-liver oil is prescribed are unable to take it either temporarily or permanently.

On the whole, if the benefit be not restricted to a small section of the cases, and if it do not chiefly depend upon mental influences, it is probable that we must either know more of phthisis, or of the composition and action of oils, before we can offer a rational explanation. There is, however, one physiological fact to which I would ask attention; viz., that, during sleep, the rate of respiration in phthisis is greatly increased, sometimes to so much as the double of the ordinary rate—a circumstance quite opposed to health: and hence, as, during a large part of the twenty-four hours, the consumption of carbon and oxygen must be greatly increased, an unusual supply of the former may be imperatively called for. This appears to me to be a fair explanation, so far as it goes; and hence, at and in the night, the oil may be of value. If this were at all universally admitted, we might probably find that a limitation of the time of exhibition to those periods would include all that could be of service. Acting on this opinion, I have commonly directed a dose to be taken the last thing at night, and have presumed that the more frequent respiration in sleep and the exhibition of the oil both tended to sustain the animal heat under circumstances unfavourable for its production.

I know that an increase in the quantity of blood-corpuscles has been attributed to the use of the oil, and such may be the case; but it is improbable that this should be its usual or chief mode of action, since the improvement from the oil is commonly found in the early condition of the disease, when there is no fixed alteration in the composition of the blood; and in the latter stages of colliquative sweats, when the blood has become really poor, the oil can effect but little good. When, however, the increase in the quantity of the red corpuscles does occur, it must be a secondary effect, and result from the improvement of the assimilative functions.

So far I have considered the influence of cod-liver oil as acting through the system; but I believe there to be a local action which is oftentimes of value. A large proportion of patients who conceive themselves to have been benefited by it, mention a soothing influence which they have experienced about the sternum, and a "softening" of the cough. This statement is so frequently made, that I cannot but consider that there is some truth in it. It may be explained by a local influence, as the oil passes over the irritable or perhaps desquamated mucous membrane of the pharynx, soothing that membrane, and for the time lessening the irritating influence of air. It may thus be readily understood how it will relieve the cough and irritation in the throat; but it is probable that, so far, any oil or fat, of the same degree of fluidity, would have a similar effect. I have also felt a general soothing influence, as of a mild narcotic, after having taken cod-liver oil experimentally, so much so as to induce me to consider that further inquiries in that direction were needed.

The practical conclusion which I wish to draw is this, that no theory has been propounded which can apply universally to all the heterogeneous classes of cases which are said to have been benefited by the oil; and, as there are many patients who cannot take it, and many others to whom it is not beneficial, it would be more philosophical to restrict its use to such cases as are amenable to any theory which, in the present unsettled state of the question, any one may prefer. To have no theory, or to administer the oil to cases to which our theory does not apply, must surely be empirical and indefensible. A universal remedy must surely involve a fallacy.

I am equally at a loss to determine the dose which is really the best for our purpose, and yet without inducing a waste of the oil. It is well known that the system can digest but a limited quantity of fat in health, and superfluous fat is thrown off by the bowel; hence fat is found in the faeces of all healthy men, in variable quantity. But it is curious to note that, in all wasting diseases, fat in a disproportionate amount is found in the faeces; and yet, in such instances in general, no increased quantity of fat could have been taken in the food. Hence, in phthisis, there must be an unusual disposition to the waste of this substance—a circumstance unfavourable to the exhibition of large doses of the oil. We need a series of investigations which should show the largest dose which could be taken without a waste of the remedy.

In conclusion, I would remark, that the night sweats, which

are so often associated with debility and wasting in phthisis, are due to the low state of pulsation, and of all vital actions, which have been proved to occur in the night in phthisis. Hence any remedy which will raise the pulsation at night will arrest or prevent the sweats. Food is thus the most natural remedy; and a large cup of cold tea, with bread and butter, has in my experience been almost invariably efficacious. Milk is no doubt very proper; but it is far less powerful than tea, since, under any circumstances, its influence over both pulsation and respiration is far less than that of tea. Of course it is needful to take away the usual causes of perspiration, viz., feather beds, too much covering, bed curtains, and perhaps bed-fellows; and to have a free admission of cool fresh air into the room. The plan will be far more efficacious with dry than with very moist air, for obvious reasons.

63, Grosvenor Street, February 1857.

Reviews and Notices.

ON THE DISEASES OF THE BLADDER AND PROSTATE GLAND. By WILLIAM COULSON, Surgeon to, and Lecturer on Surgery at, St. Mary's Hospital. Fifth edition. pp. 640. London: Churchill. 1857.

THE publication of separate treatises on the disease of an important organ or system has become sanctioned by use; and, in many respects, it is attended by advantages. Amongst works of this kind, the treatise of Mr. COULSON has been long favourably known to the profession. It is written in an unpretending style, and contains the experience of a surgeon who has worked assiduously at his subject for more than a quarter of a century.

Mr. Coulson has adopted the anatomical arrangement as the basis of his work; in other words, he investigates the different kinds of organic lesions which are found in the different tissues of the bladder, describes the symptoms to which these lesions give rise, and explains the various modes of treatment by which their effects may be alleviated or removed. This plan, based on pathological anatomy, is the one adopted by all scientific writers of the present day; but we doubt whether it can be applied with the same effect to the diseases of the bladder, as to those of most of the other important viscera; while there is, to a certain extent, a parallelism between the bladder and the stomach. The bladder is destined to retain the urine for a time, and to expel that fluid at intervals. The contractile action of the bladder is, therefore, intermittent; but it may be increased or diminished by many circumstances not immediately affecting the organ. When the contractile power of the bladder is inordinately increased, the organ is no longer able to retain the urine, and incontinence ensues; when this power is disordered, the bladder is unable to expel the urine in a proper manner, and retention is the result. Experience teaches that incontinence and retention of urine arise more frequently from lesions and disorders not immediately involving the bladder than from organic disease or nervous disorder of the reservoir itself; and hence a very limited view of vesical affections is obtained, if we merely regard the organ apparently suffering and its pathological changes. Numerous illustrations of this principle might be furnished. The author's plan has been executed in as complete a manner as it admitted, and many valuable additions have been made to the last edition. The supplementary matter is mainly of a practical character, the author having preferred to avoid all speculative considerations, and to confine himself strictly to symptoms and treatment.

Tumours of the bladder are distinguished into malignant and non-malignant. Under the former head, Mr. Coulson describes scirrhus and medullary cancer, which latter is subdivided into villous cancer and encephaloid.

Scirrhus of the bladder, as our readers are aware, is a very rare disease. The author has never met with a case of it. On