

Pepper (Wm.)

MEDICINE.



DISEASES OF THE GENERAL SYSTEM.

THE TREATMENT OF PULMONARY PHTHISIS.

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[After giving a most instructive description of phthisis, too long for our pages, Dr. Pepper describes the following treatment:]

I will take up the treatment of the fever in chronic catarrhal phthisis. You will remember that I spoke of its irregular course, differing in different individuals; being in some very marked, while in others it was very slight. This does not appear to depend upon the amount of local disease, since in some systems a comparatively small amount of local disease will be attended with a high degree of fever, while in others a much more extensive local disease will be accompanied by a very slight elevation of temperature and increase in the pulse rate. Undoubtedly, an explanation of a part of this great difference is found in the fact that different individuals get fever with different degrees of ease, owing to some difference in the nervous organization of the individual; but in addition to this, there is reason to fear that in cases attended by much fever there is danger of absorption into the system of some irritating or septic matter, so that this fever is, to a certain extent, of a septic or zymotic character. As a rule, in those who present a considerable degree of fever in proportion to the local lung trouble, we are to dread the development of tubercle. Thus, it is an unfavorable prognostic sign.

I further told you that, in any given individual, the fever, from time to time, presented remarkable fluctuations. The true nature of these exacerbations is frequently overlooked. The patient is said to have a bilious attack, a little chills and fever; almost every other explanation than the true one, which is, that it is due to a fresh attack of pulmonary catarrh; and examination will show that with each attack there has been a distinct extension of the area of catarrhal irritation and an increase of the inflammation. Therefore, when a patient with catarrhal phthisis gets increased fever, no matter what the other symptoms may be, whether associated with disturbance of the stomach, loss of appetite, diarrhoea, or not, I advise you to suspect the existence of a fresh attack of catarrhal inflammation, and treat it accordingly. In such patients there is a most intense susceptibility to the action of damp, cold, and other disturbing influences, so that a catarrhal attack is set on foot by an amount of exposure and with an ease that seems scarcely possible.

The treatment, then, of this febrile action is a matter of the greatest importance. In the first place, let us recognize that it is distinctly connected with the irritation of the local disease, and that when it is very high in proportion to the local disease there is reason to fear that infection of the blood and system is going on. We must also bear in mind that there is nothing in the condition of a patient with catarrhal phthisis which would prevent him from suffering from malaria. Indeed, such a person would be very liable to be attacked by malarial fever, if exposed to its cause; and on the other

hand, there are no people who are more likely to get catarrhal phthisis than those who have had their blood impoverished and their systems broken down by the malarial poison. In such persons an attack of catarrhal pneumonia is very apt to pass into a catarrhal phthisis. Therefore, where the fever is of a high grade and obstinate, it is well to consider the question of the possibility of the co-existence of malaria.

Now, what are the principles that should guide our treatment? I think we ought, as a rule, to try to get rid of this fever, even if it is only moderately severe; for certainly those patients who have the least fever do much better and live longer than those who have more marked fever.

The first thing we should do is to recognize the cause. Suppose we find a malarial element; this should be removed by full doses of quinia, and the patient kept upon the continued use of quinia and arsenic. I mention arsenic particularly, because you will find, in cases of obstinate hectic fever, arsenic a very valuable remedy; but to produce a good effect it must, in the first place, be well borne by the stomach, and generally the mucous membranes of patients with phthisis are very irritable, so that arsenic must be given with the greatest care; and secondly, if it is well borne, its use must be kept up for a long time. Under such conditions it is a very useful remedy. If, however, there is no trace of malarial complication to be found, but if the hectic fever assumes a distinct intermittent character, presenting, as I have said it sometimes does, a rigor, followed by high fever and marked sweating, so that it stimulates an ordinary intermittent malaria fever, quinia is always to be given in large doses, and will nearly always modify hectic fever, but will not stop it, as would be the case if a malarial element was present. To accomplish this full doses are required.

More frequently, however, we have a grade of hectic much less marked than this, one in which the morning temperature is not over 100° , and the evening 101° or 101.5° . Of course, this fever cannot be broken as long as active irritation is going on in the lung. We must, therefore, not expect such brilliant results from our remedies as we would in an idiopathic fever, and besides treating the febrile action, we must also address our remedies to the local catarrhal disease of the lung, by which the fever is kept up.

In these cases quinia is useful, but should not be given in such large doses as we would where a malarial element existed, that is, twelve or fifteen grains, but in doses of one or two grains three times a day. As to the mode of giving this, I would be guided by the state of the circulation. If, at the same time, the pulse was rapid and weak, I should associate digitalis with the quinia. If, on the other hand, there was a marked tendency to night sweats and relaxation of the system, the fever not of high grade, and the pulse not rapid, I should use aromatic sulphuric acid with the quinia, and give them in solution. Nearly always, in these cases of fever, you will find a little opium an important addition to the quinia; for instance, there is no better combination where there is marked irritation, with fever of high grade, with rapid, weak pulse, than a pill of quinia, digitalis and opium; but you are to observe that this pill is to be used only occasionally, so that the patient will not be led into the habit of taking opium every day. I think there can be no doubt but that the habitual use of opium, except in exceedingly trifling amount, exerts a depressing effect upon nutrition. Of course, it would not injure the patient to take one-eighth or one-sixth of a grain of opium, but to take as much as one-grain doses for a long time, I think is injurious; but, bad as opium is, there are things that are worse; for instance, a high degree of nervous irritation and hectic fever; so that, where we cannot dispense with opium, we must use it carefully. In such cases we may give one grain of quinia with one-fourth, one-third, or one-half a grain of powdered digitalis, and one-eighth, one-sixth, or even one-half a grain of powdered opium three times a day, according to the indications of the case. Where there is a marked tendency to relaxation of the skin and to night sweats, one grain of quinia with ten drops of aromatic sulphuric acid and minute doses of morphia, may be given in solution three times a day. I have already alluded to the use of arsenic where the hectic fever is obstinate, and a pill containing quinia, digitalis, opium and arsenious acid, is often followed by an admirable result, if its use is kept up for a long time.

Lastly, you often find that the hectic fever is kept up or increased by irritation of other mucous membranes, as the gastro-intestinal. Frequently after the catarrhal condition of the lung has been much relieved, the hectic

fever will remain obstinate, and on a careful examination of the patient it will be found to depend upon a continuance of a catarrhal state of the gastrointestinal mucous membrane, accompanied by a coated tongue, capricious appetite, impaired digestion, and other evidences of irritation of the digestive tract. Where such a condition exists, we may be sure that any febrile action occurring at that time will be aggravated. In these cases, if we suspend all remedies directed to the lung, and treat with dietetic and regimenal measures and remedies, addressed to the digestive canal, we will obtain more relief for the patient than we did while treating the fever as a symptom of the lung trouble. All through the treatment of phthisis there is no principle so necessary as paying scrupulous attention to the digestive apparatus, not only because its irritation will increase the fever, but where a cure is effected, it is only brought about by a maintenance of the nutrition.

At the last lecture I spoke of the occurrence of profuse night sweats.

Let us then consider this symptom of night sweats. Here, again, we find an individual element in the matter. Some, with comparatively little lung disease, and only a moderate elevation of evening temperature, will have copious night sweats, while others, with a considerable amount of lung trouble, and a high degree of fever, will have little or no night sweats. It is only when these sweats are extremely profuse that they are to be regarded as a bad sign. When they are only about as much as we would expect to have in order to carry off the febrile action, they are not unfavorable. It is better for a patient to have a fever which terminates in sweating, than to have a fever with a temperature of 103° going down to 101° , and the skin not becoming entirely relaxed and cool. Of course, the latter patient will be consumed much faster than the one in whom the fever is followed by sweating. In other words, the one has intermittent, and the other a remittent fever, and the latter is much the worse. A moderate amount of night sweats is not, then, a bad sign.

Again we are to remember that this is entirely secondary to the local disease of the lung and the febrile action; it is to be treated by treating the local condition and the condition of the other mucous membranes. It is only when it becomes a source of exhaustion that it demands a separate treatment. The remedies that do most good are those that increase the tone of the skin and act powerfully upon its blood-vessels.

Frequently you will find that the removal of the patient to a cool and bracing climate will greatly lessen night sweats. Sometimes they may be checked by a change of diet; a change to one consisting of light and easily digested food containing a large amount of liquid, which acts as a diuretic. Another useful measure is cool bathing, or cool sponge bathing with water containing salt or alcohol. This is a remedy that is too much neglected. It may be used much more frequently than is generally supposed, but the baths must be taken with care, going over the surface rapidly with the sponge, and immediately drying by friction with a towel. The temperature of the water must be regulated by the temperature of the body, never being so low as to cause chilling of the patient. This bathing is a most important element in strengthening the system and fortifying it against the repeated attacks of fever.

The drugs that are used to increase the tone of the skin are astringents, tannic and gallic acids, the mineral astringents, acetate of lead, sulphate of copper, oxide and sulphate of zinc. Frequently you will find that while these remedies do good in one case, in another they will fail. Among the drugs that influence the state of the vessels, quinia and atropia may be mentioned as the two most potent. The quinia may be given in combination with any of the astringents I have mentioned, and is very useful where there is a moderate degree of fever with night sweats. Where the sweating is more profuse, you will find that atropia given at bedtime is a powerful remedy. It may be given in solution, in doses of one-hundredth to one-sixtieth of a grain, according to the susceptibility of the patient. This will produce a dryness of the skin, which will often enable the patient to pass through the night without his customary sweat; but I do not think that atropia is to be regarded as an adequate treatment for night sweats, since they depend not only upon the relaxation of skin, but are also due to the local trouble. I think it is well to keep up the continuous use of such remedies as the combination of quinia and tannic acid, or quinia with other astringents, while we reserve atropia for use at nights.

Sometimes the night sweats are checked by the external use of hot water containing alum or alcohol, which has a stimulating effect upon the skin, and thus tides the patient over his ordinary time for having the sweat.

In the patient I had before you at the last lecture I tried probably half a dozen of these remedies, without stopping the night sweats. Atropia has no effect. I then gave him a remedy whose use has lately been revived for the treatment of this condition, and one which I think is of little value, that is, agaric. I gave it to him in large doses, but it produced no effect. Finally, he began to improve under the use of quinia and tannic acid, but I attribute the cessation of night sweats more to the subsidence of the local lung trouble than to the quinia and tannic acid, for as the lung became better the nutrition improved and the night sweats became less marked. Another symptom to which I desire to call attention is hemorrhage from the lung and its significance.

In the treatment of hæmoptysis something will depend upon the condition of the patient and the state of the lung. As regards drugs, I do not know anything more difficult than to estimate the value of remedies in hæmoptysis. The hemorrhage frequently stops spontaneously. There are certain things to be done in the treatment of all cases. You must first try to arrest the hemorrhage, and then determine the condition of the lung. An essential element of the treatment is absolute and perfect rest in bed, avoidance of talking, and the suppression of cough, as far as possible. Then, everything which renders respiration easier should be encouraged. Nothing should obstruct the neck and chest. The room should be cool, the head and shoulders elevated, and the patient should swallow little pieces of ice. I think that the cold exercises some influence in checking the hemorrhage. All the nourishment should be cold and non-stimulating, as, for instance, cold milk and meat broths. We will see later that the debility of the system is sometimes so great that we have to resort to stimulants in order to maintain the circulation. As to the local application of cold to the outside of the chest, I do not think that this is advisable. It is probably true that if we could localize the seat of the hemorrhage, and if it was superficial, the cold pack might aid in checking it, but I think that the risk of the bad effects from the cold would be too great. I would prefer to resort to dry cupping over the back and front of the chest, over the spot from which the blood comes, if this can be located; but where you cannot locate the exact seat, a dozen dry cups may be applied over the back and front of the chest, if it can be done without disturbing the patient too much.

Of drugs, ergot seems to be the most powerful in checking hæmoptysis. The extractum ergotæ fluid may be given in doses of a teaspoonful every fifteen minutes, until the hemorrhage is stopped, and then continued in smaller doses, or it may be given by hypodermic injection in doses of gtt. xv, or ergotine may be used. If the stomach is irritable, gr. v of ergotine may be given per rectum. Sometimes ergot will have no appreciable effect. Under such circumstances I think that gallic acid is the next best remedy. I frequently combine it with aromatic sulphuric acid, which makes a more efficient and pleasant mixture.

R. Acidi gallici.....	5 ij
Acidi sulphurici aromat.....	f. ℥ss
Glycerinæ	f. ℥ss
Aquæ, q. s. ut. ft.....	f. ʒvj. M.

Sig. A tablespoonful, as required.

This is to be given every hour, every half hour, or at shorter intervals, until the hemorrhage is brought under control. This, I think, ranks next to ergot, and where the stomach refuses ergot, or where ergot produces no effect, I usually resort to this combination.

You will observe that so far I have made no mention of the use of opium, which should be given to control the cough, quiet nervous irritability, and allay vascular excitability. The opium may be given either by suppository, by hypodermic injection of morphia, or the deodorized tincture may be added to the ergot or gallic acid combination. I prefer the use of opium to that of morphia in the condition I am now describing. For internal use I think there is no preparation of opium equal to the deodorized tincture, the tinctura opii deodorata. Where the stomach is irritable, suppositories of opium or hypodermic injection of morphia may be used. The amount must be determined by the effects, but patients with hemorrhage will bear large quantities of opium. The proper method is to give small doses, frequently repeated, until the desired effect is produced.

Sometimes the patient passes into a state of obstinate bleeding, lasting, not for an hour or two, but for several days, with evidence of severe congestion of some portion of the lung; and you may find that ergot, gallic acid, and aromatic sulphuric acid fail to check it; we then come to the mineral astringents. Of these, I think the best is acetate of lead, and next sulphate of copper. These should be given in pill form with opium; but I do not think that they are so useful for producing an immediate effect as ergot and gallic acid.

Suppose we are able to tell where the hemorrhage comes from. Take a patient who has been healthy, has had no cough, no evidence of lung trouble; he begins to spit blood, but this is checked, in great part, by one of the means already mentioned; still it continues in small quantity; an examination of the lung reveals no solidification, no râles, no evidence of any disease; here we must conclude that the hemorrhage has, in all probability, come from the bronchial mucous membrane. In such a case astringent inhalations are very useful. They may consist of solutions of Monsel's salt, tannic acid, or other astringent, which, by being forcibly drawn in, may reach the seat of hemorrhage. In cases where the hæmoptysis is due to an acute congestion of the vesicular structure, or to an acute catarrhal pneumonia, you will find inhalations of no material service.

I have spoken of derivation by dry cupping; this I think is an exceedingly important mode of treatment, and it becomes more important in proportion as you are able to localize the seat of hemorrhage, and to determine that it comes from a congestion of some portion of the lung, or from the seat of a catarrhal pneumonia. In such cases, I think that local depletion by dry cupping, or if there is a high degree of vascular excitement with fever, and if the patient is strong, by wet cupping, is an exceedingly valuable means of arresting the hemorrhage.

Sometimes a patient with hæmoptysis, either from a previous weakening of the system by phthisis, or from the excessive amount of blood lost, or else from the severity of the local disease with which he has been attacked, falls into a very weak state, with rapid shallow breathing, a rapid feeble pulse, and marked muscular prostration. Bleeding, under these circumstances, becomes dangerous, and occasionally we find a continual oozing of blood, which may even go on to a fatal result. Here we have to treat not only the hemorrhage, but also the constitutional condition of the patient, which verges on to the typhoid state. This condition often occurs in severe pulmonary congestion, where the system has been run down, or where the congestion involves a large part of the lung and is attended with this hemorrhage. In these cases the patient's strength must be supported by quinia, given freely. In order to avoid irritating the stomach, it is sometimes better to give the quinia by suppository. This drug also acts as an astringent by increasing the tone of the vessels. Digitalis, which acts in a similar manner, should also be given. It may be given in the form of the tincture or the infusion associated with astringents by the mouth. If I found that the appetite had disappeared, that the tongue was foul and coated, and that sordes had begun to form on the teeth, I would associate turpentine with the quinia and digitalis, in place of other astringents. In this low condition turpentine is a valuable remedy, both for its hæmostatic power and for its influence over the typhoid state. I have met with cases where quinia, digitalis, turpentine, good nourishment, and a moderate amount of alcoholic stimulus carried the patient through an attack of hemorrhage, where I am sure an attempt to keep up the use of astringents or to use stronger ones would have resulted in death.

Finally, in those cases in which hemorrhage takes place from a cavity, owing to the ulceration or rupture of a blood vessel, our treatment has, I think, little or no power to arrest the bleeding, for if the vessel is large and the opening is free, the patient will die; but if the opening is small or valvular, the bleeding may stop spontaneously; but I do not think that we have any means of arresting such hemorrhage. Possibly, astringent inhalations might reach the part and thus favor coagulation of the blood, but at the time of the hemorrhage they can scarcely be used. I have suggested, but never tried the operation of introducing the needle of a hypodermic syringe directly into the part and injecting some astringent solution. This, I think, would be attended with risk, and as I think the general proposition I have just made holds good, *i. e.*, if the opening is large the patient will die, and

if it is small the bleeding may stop spontaneously, the treatment I would recommend is to sustain the patient's strength, keep him perfectly quiet and administer opium.

The next complication to which I shall ask your attention is diarrhœa. It occurs in a great many cases of chronic phthisis. In some it becomes so troublesome that it forms a most serious complication, and may even be a cause of death.

Now, as to the treatment. Rest in bed, I should say, was essential in such cases, for I assure you, if the patient is allowed to go about and the diarrhœa to continue, you will find great difficulty in stopping it. Rest in bed, then, with absolute liquid diet of the most nutritious character, consisting of milk, arrowroot, meat broths, finely-minced meat, and other articles of this kind, must be continued until the tendency has been entirely overcome and the stools have been normal for a day or two. A moderate amount of opium must be used to control the tendency to diarrhœa. As to astringents, nitrate of silver, given in minute doses, guarded by opium, is, I think, a most valuable remedy. Bismuth does well in most cases. Sugar of lead or tannic acid with opium is also very good. Aromatic sulphuric acid with sulphate of morphia and camphor solution will do very well in many cases. The nitrate of silver may be given in pill form, or in small doses dissolved in the syrup of acacia.

If you find that there is a wide-spread catarrh, with involvement of the duodenum, and extension of irritation into the bile ducts with obstruction to the flow of bile, I would advise you to preface the treatment by small doses of calomel, soda, and opium, given for a few days until the tongue begins to clean and the character of the stools shows that the bile passes freely. Then you may substitute nitrate of silver and opium, or one of the other astringents. Such patients are very susceptible to the action of mercury, and we must use the calomel in small doses. It may be given according to the following formula :

R. Hydrarg. chloridi mite gr. ij
 Sodii bicarb..... ʒj
 Pulv. opii..... g ij. M.

Ft. pulv. No. xij.

Sig. One every four hours.

These are to be taken until they produce the desired effect, or all are taken.

This complication of diarrhœa is an exceedingly important one; it wastes the patient's strength and flesh, it renders him still more susceptible to damp and cold and predisposed to extension of his lung trouble, and consequently it may be ranked among the most serious complications and deserving of the most careful treatment.

The last of these great complications is the laryngeal complication, or as it is called tuberculous laryngitis; but just as we have seen in the case of phthisical diarrhœa, many of these cases are not tuberculous at all. Laryngitis occurring in the course of phthisis may be an expression of tuberculosis, and we may find miliary tubercles in the follicles of the mucous membrane, but patients with phthisis are very liable to get attacks of ordinary catarrhal laryngitis, and such attacks are, for precisely the same reason as in the case of the diarrhœa, apt to become troublesome and leave behind lasting lesions, thickening of the membrane and enlargement of the follicles, with hypersecretion. These cases of chronic laryngitis may be developed without there being any tubercle in the case, or it may be due to tubercles forming at the beginning of the attack or developed later, after the irritation has lasted for some time. Here we have an explanation of the fact that in many cases we are able to effect a cure, while in others we utterly fail. After true miliary tubercles have formed in the larynx, I fancy that an arrest of the disease is of the rarest occurrence, for the state of the system and the presence of these tubercles and ulcers favor increased congestion, and the course of the disease is steadily downward. In cases where the lesion is of a catarrhal character, you may, by judicious treatment, greatly relieve if not cure the catarrhal trouble.

We should always warn the patient against the slightest exposure, and when the least hoarseness occurs, we should treat it immediately, for by so doing we can often prevent the development of the later stages. In the early stages counter-irritation, by means of a blister, or by the repeated

application of iodine, or of iodine and croton oil, and the direct application of astringents, as sulphate of zinc, grs. x-xl to the ounce, will often cut short the attack. If the attack is more marked, and we have not been able to cut it short, the larynx must be put to rest as much as possible, by inducing the patient to do without speaking, not even whispering, and to communicate everything by writing. The food should be unirritating, and great care should be taken that no particles get into the larynx. The patient should be careful that he does not take a fresh attack from chilling of the surface. Opium must be given, to allay irritability and cough. Counter-irritation must be steadily kept up. Topical applications must be used, to relieve the swelling and favor cicatrization of the ulcers.

Now as to topical applications. I think that in treating these cases the strength of the solutions used is often too great. We must remember that we have to deal with a not very highly vitalized tissue, and one which, when in a state of chronic inflammation, will not respond to strong applications. You will find that mild applications will do more good than strong ones. Solution of sulphate of zinc, or of the salts of iron, or of iodine, will be found of service. Lately I have been using a solution of iodoform in ether or chloroform, varying in strength from grs. xv to the ounce up to a saturated solution, which is, I think, about ʒi to the ounce. This is a very unirritating application, and it certainly possesses very marked absorbifacient and alterative powers. Of course, each of these applications is to be made only to the diseased spots by the aid of the laryngoscope.

Inhalations are very valuable in the treatment of the laryngeal complication of phthisis. They may be used with the ordinary atomizer, which is a good method, but apt to excite coughing. In this way we may use nitrate of silver, tannic acid, sulphate of copper, sulphate of zinc, iodine, etc. We may use an inhaler made of a piece of rubber tubing, in which is placed a number of small rolls of bibulous paper. The solution to be inhaled is dropped in at one end, and then the patient uses it as an ordinary cigar. I have made a little alteration in this, by substituting for the rubber tube a glass tube with a constriction near one end, and for the paper, pumice stone, which makes it more cleanly. With this we may use a number of volatile solutions. In other cases we may employ a sort of mask made of two pieces of rubber, with sponge between them. By this means the patient may breathe medicated vapors for hours at a time. We may use with this tar, carbolic acid, iodine, etc.

We have now finished the discussion of the great complications of phthisis, and now I shall ask your attention to the treatment of the pulmonary condition itself.

In the first place, if it is true in regard to any disease at all, that we are not to treat the disease as a separate entity, but to treat the sick person as an individual, it is more true in phthisis than in any other. In its treatment we are to begin before the phthisis has commenced, since the treatment of phthisis is to prevent its development. This applies not only to cases in which there is a local disease of the lung; but still more does it apply to persons who are evidently getting ready to have phthisis. Where we have an individual showing a weak constitution, who has little power of maintaining his temperature and circulation, who loses flesh upon slight provocation, who, after an acute illness, recovers slowly, such a person is predisposed, upon any attack of lung trouble, to have it pass into a chronic state. Where we see these indications of weakness of constitution in childhood or infancy, we should advise the parents to resort to the proper treatment, in order to develop a healthier and stronger constitution; for, as we have seen, in those who have an inherited tendency, or an acquired debility, there is a marked susceptibility to have phthisis developed. In such cases an attack of lung trouble, which in a healthy individual would disappear in a short time, is apt to remain and effect such changes in the epithelial lining as will lay the foundation of catarrhal phthisis.

In order to prevent the development of phthisis, to increase the constitutional health and eradicate weakness, there is nothing so important as proper hygiene. If there are any great and radical differences between the practice of to-day and that of fifty years ago, it is in the more accurate diagnosis and the broader views of hygiene, as bearing upon treatment, that have been introduced. Nowhere do we see this more marked than in this group of diseases.

Sunlight, pure air, proper gymnastic exercises, regular out-door exercise, maintaining the tone of the skin by bathing and friction, and if necessary, a change of residence to a more suitable climate, are the elements that are able to convert a feeble system into a vigorous one, and which, when there is a commencing predisposition to phthisis, are able to overcome and eradicate it. The same thing is true after the patient is taken with catarrhal or croupous pneumonia.

Now, as long as it was the habit to think of phthisis as always tubercular and always associated with this special new growth in the lung, the treatment was practically regarded as hopeless, and it was thought that all that could be done was to render the patient as comfortable as possible and treat the special symptoms as they appeared; but now, since we know that phthisis, in the majority of cases, at least in the beginning, is not tubercular, and that it may run through its whole course without the development of tubercle, its treatment becomes of extreme importance. If a person with a feeble constitution gets an attack of catarrhal pneumonia, we must regard him as liable to pass into a state of phthisis; and this is true, not only of severe attacks, in which, perhaps, the whole of one lung or large portions of both are involved, but also of those involving small and circumscribed portions of the lung tissue, which so frequently occur and are regarded as common colds.

Catarrhal pneumonia of this latter type will be one of the most frequent diseases with which you will meet, and it must be treated vigorously. The patient should be absolutely confined to bed. Rest should be insisted upon until the physical signs of the local disease are removed, or until the disease, despite our efforts, has passed into a chronic state. Local counter-irritation and depletion should be employed, by dry cupping, or if the fever be high, and the patient pretty strong, wet cupping, and by blisters, or counter-irritant applications. I do not want, to-day, to enter upon the treatment of catarrhal pneumonia, but desire to dwell upon the importance of rooting out this disease at its very beginning, the importance of regarding it, as it really is, of an inflammatory character, and the danger of the exudation passing into a state of cheesy degeneration. If you treat this disease actively, you will be able, in many cases, to prevent it from passing into phthisis.

Suppose, despite your effort, the disease passes into the chronic form, or that the patient does not come to you until it has reached this stage; for in five out of six cases you will find a history something like this—the patient has had a severe cold, which settled on his lungs, he has been gradually losing strength and flesh, has, perhaps, a little fever, and on examination you will find evidences of local catarrhal disease. Here there has been these limited catarrhal attacks, which have attracted little attention, and have slowly passed into cheesy degeneration, with perhaps disintegration of the lung tissue. Here, again, we find the immense importance of a proper hygiene. I think our power of successfully treating these cases depends upon our power of getting the patient to understand that we cannot cure this condition by drugs. The truth is that the general health is so impaired, and the tone of the system is so reduced, that instead of the inflamed epithelial cells being able to throw off the catarrhal product and return to a healthy grade of action, they tend, more and more, to pass into this unhealthy state, the matters undergo cheesy degeneration, the lung tissue becomes involved, and phthisis is developed.

Secondly: in consequence of this extreme weakness of system, there is a great susceptibility to changes of temperature, damp, and other depressing agents, so that he is constantly getting, from the most trifling causes, fresh attacks of congestion and catarrhal inflammation, which extend the original trouble. This weakness of system is what you have to meet by your treatment. In the great majority of cases, when they first come under notice the local trouble is so slight that if the system was in a healthy state it would be thrown off in a few weeks. As soon as you have gotten the patient to grasp this view of the subject, and to make it his business to endeavor to build up his general health, you have accomplished a great deal in the treatment.

In speaking of the hygienic treatment of phthisis, I shall allude to only one or two points. All the conditions that predispose to phthisis serve to maintain it. The study of the skin and its circulation is most important, for a loss of tone of the skin constantly predisposes the patient to take cold, the

cutaneous circulation is checked, congestion of internal organs takes place, and extension of the local trouble results. I would say, then, that our care should first be directed to improving the tone of the skin, and the surface circulation. For this purpose you will find a cold sponge bath, or a plunge bath taken every day, at suitable times of the year, a very important measure, and one which I think is too often neglected. The best way to take this bath, is not to take it in the slow desultory manner of an ordinary bath for cleanliness, but to take one quick plunge, in and out in a second, and then to dry the surface rapidly by vigorous friction. Where the patient is too weak to do this, sponging with cold salt water may be substituted. The time of day when these baths should be taken is important. They are usually taken in the morning before breakfast, but this is wrong. They should be taken some time after breakfast. Suppose the patient has breakfast at 7:30 A. M., or 8:30 A. M., then 11 A. M., is the best time for the bath, as at that time the power of reaction is at its best. In many cases, where the patient has his business to attend to, this time is not suitable. In such cases the bath should always be taken in the morning. There is a great amount of good to be gained by this mode of treatment, if properly carried out.

In cases where there is an almost invincible tendency to take cold, with feeble circulation, cold extremities, a skin that is delicate, dry and exceedingly sensitive to changes of temperature and humidity, I have found inunction of oil into the skin, over the whole surface of the body, after the bath, of the greatest possible value. In many instances it will render the patient proof against these changes.

Diet and exercise require fully as much attention as does bathing. Let me here refer to the importance of abundance of fresh air. Note that these attacks of congestion depend more upon feebleness of the circulation than upon anything else, and that anything that renders the circulation less vigorous will make the attacks more frequent. If the endeavor is made to protect the patient from exposure by keeping him shut up in a warm room, the susceptibility will only be increased, so that no matter how warmly clad the patient is he will not be able to resist the slightest exposure. The only way to protect the patient is to increase his strength, and thus enable him to resist these changes. If the patient is too weak to carry out the proper measures to increase his strength in the climate in which he is living, he must change it for a more suitable one. Exercise in the open air is absolutely necessary. It should be taken every day, about the middle of the day, except when the weather is stormy, blustery, or so intensely cold that the patient would be chilled at once, for cold of itself is not so injurious.

Closely allied to the question of exercise is that of change of climate. The greatest fallacies exist as to the reasons for, and the objects gained by a change of climate. The climate of one place is essentially the same as that of another, leaving out, of course, all consideration of malaria, filth, etc. What you induce a patient to change his climate for, is to place him under better conditions to practice the same hygiene and therapeutics as he would at home. The change of climate is not going to do anything directly for that man's trouble. If he should go to a suitable climate and think that then he had done all, leave off all his hygienic measures, fall into irregular habits as to eating, sleeping, etc., it would have been far better for him to have remained at home.

Change of climate is exceedingly important under two conditions. In the first place, when the climate in which the patient lives is one where there are long periods of inclement weather, as, we will say, in this city during the next ninety days, to the first of April, when it is doubtful if much out-door exercise can be had. A climate like this is not suitable for such patients. Again, if the patient is so weak that he is unable to bear much cold, even if it be dry cold, he must be sent to a milder climate. Change of climate is, then, not to be regarded as possessing any curative effect in itself, but simply as an assistance in carrying out the proper hygienic and remedial measures, and to be resorted to when the patient does not respond to these measures in the climate in which he is. Diet, dress, out-door exercise, gymnastics, mostly in-doors, and proper bathing, are then essential elements of our treatment, and lie at the bottom of all successful treatment.

Now, after all these are attended to there comes up the question of therapeutical remedies. There are two principles that would occur to all in the thinking what we would do in a case of phthisis; one is, that we should

aim at improving the general strength, the other, to aim at removing the local disease. The patients are always reduced in health, and this would at once suggest the use of nutrients and tonics. The best nutrients are food and fresh air; besides these we have a number of other valuable remedies, as iron, malt, alcohol, glycerine and cod-liver oil. They all are analeptics. They supply material from which the system can build up its tissues, and when the patient is able to digest these articles, in addition to his ordinary diet, they may be given with great advantage. They do not exert any specific action upon the local disease. They produce their effects upon the general nutrition, and thus tend to restore a more vigorous grade of action to the affected cells, so that they will produce more perfect cells. On the whole, there are perhaps no remedies of this class so generally applicable as the oils, and of these, the best is cod-liver oil. It is to most persons very digestible, and can usually be given by some device that will conceal its taste. If the patient falls off in the quantity of food that he takes when taking oil, he had better give up its use. It is only of advantage when it does not interfere with digestion, when the patient is able to take his full quantity of food, and when the oil is easily digested. The same is true of all other remedies of this class. They furnish the same elements of nutrition, in a concentrated form, that we have in milk, beefsteak, etc.

In many cases, where the digestion will tolerate it, iron is of extreme value and perhaps in such cases our choice of the preparation to be used will depend somewhat upon the condition of the local disease. We may give it in a simple form, if we desire only to introduce iron into the system, or in the form of the iodide of iron, where we feel that iodine would be of service for the local condition.

The same general principles would govern us in the use of tonics. They do not exercise any direct power over the local disease; but it is only by enabling the system to receive and appropriate nourishment that they do good. When the appetite and digestion are good, tonics are not needed; but when there is functional disturbance of digestion, the vegetable tonics and mineral acids are to be used upon the same principles that would govern their use, in the same condition of depraved nutrition, under other circumstances.

In estimating the progress of the case, and in governing the treatment, you have two elements to guide you: first, the quantity and the character of food assimilated; secondly, the character of the discharges and the movements of the body weight, as determined by frequent observations. Without paying attention to these points, I think little can be told as to the condition of the patient and the success of remedies.

Now, as to the treatment of the local disease. This is undoubtedly last, because it is of the least importance; yet it is very important; and I think great good can be done by addressing ourselves to its treatment. Counter-irritation is, I think, of great value throughout the whole course of the disease until tuberculosis is developed. As long as the disease is a simple inflammation, even after destructive disease has shown itself and a cavity has formed, I think that mild counter-irritation is of service.

Secondly, the alterative effect of inhalations is of unquestionable advantage. A great variety of inhalers and a great variety of remedies to be inhaled might be recommended, but your own judgment will guide you in the selection of the former, and your preference and the result of your experience in the choice of the latter.

Then, we use certain drugs internally, in the hope that they will modify the condition of disease at the affected part. Among these are to be mentioned mercury, iodine, and arsenic, as the most potent. There is great difference of opinion as to the use of these powerful alteratives in phthisis, and in discussing this subject we are treading on delicate ground. There is no doubt that if we had to control only the acute disease, where destructive lesions had not shown themselves, we would resort to these drugs, if we did not dread their interfering with digestion and destroying the strength and vitality; and just as we find the strength and vitality well preserved, do we feel justified in using these remedies. Take, for instance, a case of croupous pneumonia, passing into chronic solidification of the lung, and where you fear that it will pass into caseous degeneration and phthisis; here, I think, you will find mercury, associated with alkaline expectorants, very useful. It may be given in the following combination:—

R. Hydrarg. bichloridi..... gr. $\frac{1}{12}$ $\frac{1}{16}$.
Ammonii chloridi..... gr. v-x.

This may be given dissolved in syrup of acacia, or some other vehicle. Instead of the muriate of ammonia you may substitute the iodide of potassium in doses of from two to four grains. In cases, then, that have a marked inflammatory beginning, particularly if attended with a considerable amount of solidification, which becomes more or less permanent, and where you fear that the exudation will pass into cheesy degeneration and terminate in phthisis, you will find counter-irritation and the use of mercury and iodide of potassium of extreme value, associated, of course, with the most minute attention to hygiene; for we must not forget, while we are trying to remove this local effect by drugs, that the ultimate result will depend upon the maintenance of strength and constitutional vitality.

You will more rarely be led to employ mercury in catarrhal pneumonia threatening to pass into phthisis, than in croupous pneumonia; still, there are a number of cases of a catarrhal character where the local signs will remain obstinate, and there is a limited patch of solidification, where the general strength is not much impaired and other remedies have failed, in which minute doses of mercury may be used with great advantage. In such cases I usually employ the protoiodide of mercury in minute doses, one-eighth to one-sixth of a grain, associated with a vegetable tonic, as the extract of gentian, or nux vomica. I do not think that minute doses of mercury given in this way exert any very depraving effect upon the constitution and nutrition, while I am satisfied that they greatly favor the absorption of inflammatory products, whether croupous or catarrhal, which will not yield to simply alkaline and resinous expectorants. But I say you are treading upon delicate ground in the use of these powerful remedies, and I do not mention them except with the most strenuous caution, that they should only be used under the most watchful supervision, and in carefully selected cases.

We have as other remedies favoring the removal of these products, the alkaline expectorants. Of these, muriate of ammonia is at once the most accessible, the most used, and as good as any other. It may be given in pretty large doses without interfering with the digestion. It enters into the composition of a great many cough mixtures; and just here let me say, in regard to cough mixtures in phthisis, that I think, as a rule, they are better omitted. I do not know what good is to be done by giving the patient large quantities of syrup of tolu, of squills, or of senega. If the patient has a bronchitis with his phthisis, and if there is a large quantity of ropy mucus, keeping him constantly coughing and disturbing his sleep at night, you may, for a time, employ these stimulating and somewhat nauseant expectorants; but such remedies as these do not possess any decided alterative effect upon the diseased lung tissue, while we know that they lessen appetite and interfere with digestion, and they should be therefore used only for the temporary purpose of relieving the bronchitis. If we are to get any benefit from remedies in phthisis, I think that they must be given in a simple form and in pretty solid doses.

We now come to a question closely connected with this, that is, the use of opium in connection with expectorants and alteratives. I think that opium should be avoided as long as possible in phthisis. Undoubtedly, the continued use of opium, even in small doses, is injurious to digestion and nutrition; but there are certain conditions that call for its use. These are a tendency to diarrhoea, intense irritability of the air passages, constant irritative cough, extreme nervous irritability and wakefulness. These, particularly if connected with marked febrile action, are much benefited by minute doses of opium. Opium is to be used, not as a remedy for phthisis, but to meet certain definite indications, and its use is to be discontinued as soon as the indication has been removed.

Returning to the alterative expectorants, there is a very good preparation in the market, known as the compound syrup of the hypophosphites. I refer to the preparation without iron. This is a combination of the hypophosphites of soda, magnesia, and lime, with free hypo-phosphoric acid. It is a tonic, stimulating the digestion, and at the same time, I think, exerting a favorable action on the epithelial cells, softening the secretions and rendering expectoration easier. This preparation will often be well borne by the stomach when all others do not agree.

The other alterative expectorants are drawn from the class of resinous substances. The most useful of them being tar, carbolic acid, and yerba-santa. Purified tar, taken either in emulsion or in capsules for a long time,

in cases of chronic catarrhal phthisis, is often well received by the stomach, stimulates digestion, and, I think, exercises some alterative action over the local disease. It is evidently absorbed, for its odor can be recognized in the various secretions, and if its use is continued for a long time, it may, in its excretion from the lungs, modify the local disease. This is also true of carbolic acid, but its effect is not as good as that of tar.

The best of this class is, perhaps, yerba-santa. This is a remedy lately introduced. It is the *eriodyction glutinosum*, a native of and indigenous to California, and furnishes a resinous extract. It may be prescribed in the form of the fluid extract, and it possesses in a high degree the power of turpentine and copaiba. It is non-irritating to the stomach, stimulates the appetite, may be given in full doses without causing disgust, and probably exerts a mild local alterative action. When you think it not advisable to employ mercury and iodide of potassium, you may use a combination something like this :

R. Ammonii, chloridi..... ℥ij
 Ext. eriodyctionis, fld..... f. ℥ij
 Syrupi pruni virg., q. s. ut. ft..... f. ℥ij. M.

Sig. A teaspoonful every three or four hours.

If necessary one grain of muriate of morphia may be added to this combination.

The old expectorants, as squills, senega, etc., I would relegate to a back group, to be used only for occasional attacks of bronchitis.

I have now alluded to the most important remedies for the treatment of phthisis. I will allude to only one thing more in conclusion. Sometimes, after you have pursued this treatment as long as possible, you find that the general health remains pretty fair, the local disease remains about the same, does not tend to spread through the lung, a cavity has perhaps formed, purulent expectoration is still kept up, and the patient's strength is slowly being worn out, but yet your remedies do not seem to arrest the disease. Under such circumstances, local treatment is very desirable, and after inhalations had been tried and abandoned, I should resort to another form of local treatment, by the introduction of a hypodermic needle through the chest walls, and the injection of stimulating substances into the diseased spot. This plan of treatment I consider only applicable in rare cases. The group of cases in which inter-pulmonary injections are to be used is very circumscribed and well defined.

It includes only those persons who have a local circumscribed spot of disease which does not disappear, and particularly if a cavity has formed, whose general health is still fair but is slowly breaking down, and where hygienic and therapeutic means have been tried without success. These are the cases in which inter-pulmonary injections may be used with benefit and without risk to the patient.—*Medical and Surgical Reporter, July, 1880, p. 89.*

ON THE RELATIONS OF DIPHTHERIA AND SCARLET FEVER.

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There are, unexceptionably perhaps, no two diseases between which there exists so intimate a relationship as between the two which constitute the subject of discussion in the present instance. One so completely glides into the other, that we have the singular phenomenon of two disorders, generally described as distinctly separate, existing, apparently, in the same person at the same time. While one is not likely to err in his diagnosis when either disease appears in its clearly marked forms, yet it is quite often difficult in individual cases to determine whether it be one or the other in question. This observation is especially true in sporadic occurrences of attacks of these maladies. Among all the symptoms, there is no single one that would be completely indicative and pathognomonic in the diagnosis at all times. To particularize, the following may be noted as marked features of resemblance