

doses which are now employed, at the same time that the proper rules of hygiene are observed, and that tonics, cod-liver oil, etc., adapted to the lung-trouble, be not neglected. Surely no sadder cases are met with than those of persons who have both syphilis and tubercular disease to contend against. Let them be relieved of the former, if, as we believe, it can be done with safety.

Salivation.—The most frequent unpleasant effect of the administration of mercurials, and the one which it is especially necessary to guard against, is salivation, though this formerly was thought to be a desirable result of treatment and to favor the cure of syphilis. The therapeutic effect of mercury undoubtedly precedes its morbid action, although the two are often separated by a short interval only, and sometimes appear to be synchronous. If we carefully observe the phenomena which ensue after commencing a mercurial course, selecting by preference a case which has as yet received no treatment, and in which the effects of mercury are generally most clearly marked, they are usually found to be as follows: for the first few days, no improvement is perceptible in the symptoms, which may even become aggravated; the chancre may spread over a larger extent of surface, or new secondary lesions may appear; suddenly, however, the primary sore begins to assume a more healthy aspect, and the process of cicatrization to advance from its circumference towards the centre; the indurated base and neighboring lymphatic ganglia lose somewhat of their hard and cartilaginous feel; or the syphilitic eruption commences to fade away. If now the mercurial be continued, even though the quantity administered be not increased, tenderness of the mouth appears in the course of a very few days, sometimes as soon as the second or third day after the first improvement was noticed in the symptoms. In a few instances only does an amelioration in the symptoms appear to coincide with decided salivation, and in such cases the action of the mercurial has generally been so rapid, that an interval between the two may readily have been overlooked. Again, if mercury be continued after salivation has taken place, its therapeutic action is not increased, but in most cases, on the contrary, the symptoms are aggravated. The practical inference from the above remarks is, that the specific treatment of syphilis may be carried to tenderness of the gums, if we wish to be assured that its full therapeutic effect has been obtained, but that it should not intentionally be pushed to complete salivation, and never in any case be continued beyond this point. A patient is much more liable to be salivated by the first than by any subsequent course of mercury; the system becoming tolerant of its presence by repeated use. Patients who have supposed themselves extremely sensitive to the action of mercury, founding their opinion upon past experience, are often surprised at the large amount which they are able to take, not only with impunity, but with decided benefit to their symptoms and their general condition, while under treatment for syphilis.

The earliest indication of the morbid action of mercury upon the

mouth, which is likely to attract the patient's notice, is tenderness of the gums; this is soonest felt just back of the superior incisor teeth, and, in the lower jaw, posterior to the last molars. Patients should be warned of these symptoms at the commencement of a mercurial course, and directed immediately upon their appearance to suspend treatment. This precaution is desirable, though it sometimes leads timid persons to imagine the mouth affected long before this result has actually taken place. The soreness attendant upon the development of a wisdom tooth is often mistaken for mercurial salivation, and various other causes, as decayed teeth, may also produce tenderness of the gums, and a fetid breath. It is, therefore, always desirable for the surgeon carefully to inspect the mouth before commencing treatment, in order that he may be able to determine, at a subsequent period, how far to attribute its unhealthy condition to the influence of mercury.

Other prominent symptoms of mercurial stomatitis are a metallic taste in the mouth; a fetid odor of the breath—which, however, is not characteristic, since it may be perfectly simulated by the offensive smell proceeding from a want of cleanliness, or gums diseased from other causes; an increased flow of saliva; a sensation as if the teeth were elongated, and tenderness when they are struck together; swelling of the tongue, which bears the impress of the teeth upon its sides; tumefaction of the mucous membrane of the gums, cheeks, and lips; difficulty in talking and swallowing; enlargement of the neighboring ganglia; sometimes general febrile disturbance and great nervous irritability; in extreme cases ulceration of the soft parts, which may perforate the cheeks; loosening and detachment of the teeth; and even caries of the alveoli and of the maxillary bones.

Under the cautious method of administering mercury which is now adopted, excessive salivation is rarely induced, and, even when left to itself, usually subsides in the course of a week or ten days after the suspension of treatment. Much, however, may be done to shorten its duration and alleviate the sufferings of the patient. The bowels, if confined, should be freely purged, and the action of the skin promoted by warm baths and underclothes of flannel. The most distressing symptoms are the great difficulty in swallowing, nervous excitability, and inability to sleep. Nourishment should, therefore, be administered in a liquid and concentrated form, as strong beef-tea; and rest be secured by the exhibition of Dover's powder, aided by a hot mustard pediluvium at night, which will also act as a derivative from the head. Half an ounce or an ounce of Labarraque's solution of chlorinated soda in half a pint of water forms an excellent gargle for such cases.

Although the above measures should by no means be neglected, the most direct and effectual treatment of salivation consists in the administration of the chlorate of potash. I usually order an ounce of this salt in powder, and direct the patient to dissolve from one to two teaspoonfuls in a pint of water, milk and water, flaxseed tea,

decoction of marshmallow, or in whatever other vehicle may be most agreeable. This solution is to be used warm, and is to be kept constantly within reach of the patient, so that he may frequently rinse his mouth with it, and afterwards swallow a portion. From one to two pints are sufficient for the twenty-four hours; and about half of this quantity, containing one or two drachms (4.00-8.00) of the chlorate, should be swallowed.

It cannot be doubted that the amelioration in the symptoms which almost always takes place under the use of the chlorate, is due to the remedy and not to the mere suspension of the mercurial, since the stomatitis will often relapse if the salt be too soon discontinued. The therapeutic action of the chlorate is also proved beyond question by Ricord's experiments,¹ which show that the stomatitis will subside under its use if the mercurial be continued, and, in many cases, even if the dose be increased; and that the chlorate may be employed as a prophylactic from the commencement of treatment in persons who are peculiarly susceptible to the morbid action of mercury, without interfering with the remedial effect upon the syphilitic symptoms. This statement has been confirmed by Laborde.²

During the use of mercury, much may be done to prevent salivation by attention to cleanliness of the mouth, and by avoiding exposure to sudden changes of temperature and to moisture. The teeth should be brushed several times a day, or the mouth be rinsed with some astringent gargle, as diluted tincture of myrrh, or equal parts of brandy and water with the addition of alum. The influence of cold and wet must not be regarded as chimerical. But the apprehension which is often entertained by patients in regard to the use of cold drinks, provided other hygienic conditions be favorable, is probably groundless.

The young surgeon must not, however, suppose that salivation is the only indication that the system is fully under the influence of mercury. There exists a class of patients who, it would seem, cannot be salivated, no matter how much mercury they may take; but in such persons the point of saturation, if we may call it, is indicated in other ways, commonly by loss of appetite, general malaise and depression of spirits; by diarrhoea; or by ulceration of the internal surfaces of the cheeks on a line corresponding with the free edges of the molar teeth, which may readily be mistaken for a syphilitic ulcer. With due care, however, any serious inconvenience from these symptoms can be avoided; only let it be remembered that any falling off in the general condition of the patient during a mercurial course, the supervention of diarrhoea when the remedy was for a time well borne, or any tendency to ulcerative action should be regarded with suspicion and be well weighed before treatment is further continued.

Other morbid effects of mercury are an eruption upon the skin (eczema mercuriale) which sometimes follows mercurial inunction;

¹ Ricord, Leçons sur le chancre, p. 336.

² Laborde, Gaz. d. hôp., 24 avril, 1853.

mercurial trembling, and other affections of the nervous system; mercurial spanæmia and cachexia, etc.

Mercurial eczema will soon disappear, if the remains of the ointment be carefully removed by warm water and soap and the part be dusted with some fine powder, as that of talc or precipitated chalk. The other morbid effects of mercury are so infrequent at the present day that we need not discuss them. The popular idea, fostered unfortunately by some physicians, that mercury remains in the system indefinitely and that it is responsible for tertiary lesions, as gummata, necrosis, and caries of the bones, etc., is without foundation. These lesions appear after any treatment whatever, and also in the absence of all previous treatment, thus disproving the assertion that they are caused by mercury.

Duration of Treatment.—It is hardly necessary to remark that treatment should be persevered with as long as any syphilitic symptoms remain. While these persist, specific remedies must be continued in doses graduated according to the effect produced and the general condition of the patient, increasing the quantity if fresh symptoms appear or old ones cease to improve; diminishing it, or suspending treatment altogether for a time, if intestinal irritation, salivation, general malaise, or decided cachexia supervene; in all cases seeking the aid of hygienic influences, and of tonics. The effect upon the symptoms is to be taken as the gauge of the extent to which mercurial treatment should be carried, and it is a mistaken notion that anything is to be gained by causing salivation or any of the other pathological effects of mercury. So soon as the symptoms begin to improve, the maximum dose required for the time being has been reached, and this dose should be continued, subject, however, to the rules just mentioned, until all the symptoms have disappeared, and for several months afterwards. Persistence of the induration of the base of the initial lesion, and more frequently that of the neighboring ganglia, is a signal of danger ahead, warning us not to stop specific medication. As Ricord facetiously says:

“Tant que le dur dure,
Donnez mercure.”

When all this has been accomplished, and when no trace of the disease remains, the question comes up whether treatment should be still further prolonged, and if so, for what period, with the hope of securing immunity for the future. Upon this subject the greatest variety of opinion prevails among different authorities.

Some take as a standard the period which has already been occupied in subduing the previous symptoms, and would have the treatment still continued for half or the whole of the same length of time. Others are content with a month or six weeks, irrespective of the previous duration of treatment; while many practitioners advise a period of from six months to two years. There is an equal diversity in the recommendations as to the form of mercurial to be employed,

the mode of its administration, and the extent to which it should be made to affect the system, some preferring the bichloride in small doses, and never pushing it to the extent of touching the gums; and others constantly keeping their patients upon the verge of salivation. Again, among those who favor a prolonged course of subsequent treatment, some would have it continuous, while others advise intermissions from time to time.

Although, in a previous edition, we expressed a contrary opinion, further experience leads us now to recommend most decidedly that treatment should be continued for at least two years or two years and a half, counting from the date of its commencement, and this, too, even in such cases as show no sign of the disease after its first general outbreak. Ricord¹ was in the habit of advising six months of mercurial treatment in as full doses as the system would bear, followed by three months of treatment by iodine, but we have known the most serious symptoms to appear within a month or two after this programme had been faithfully carried out. It would seem that the length of treatment has a much greater influence in the cure of the disease than the amount of the drugs taken. Thus a certain quantity of mercury pushed to the verge of salivation during six months will be much less advantageous than the same amount given in smaller doses and distributed over several years. We now endeavor to impress this fact upon our patients at their first visit, when their fears are greatest and when they are more ready to listen to advice, than after the disappearance of their early symptoms, and we seek to convince them of the importance of prolonged treatment if they would protect themselves for the future.

We do not mean, however, to imply by the above that the treatment should be continuous during the period stated, as recommended by some authors, and we would range ourselves on the side taken by Hunt,² Fournier,³ and others, in favor of an interrupted, and not a continuous, course. The tolerance which the system requires in the continuous use of any drug, as, for instance, opium or arsenic, is well known, and the same is true of mercury. If this metal be continued month after month without interruption, the surgeon will often find new lesions cropping out at a time when he was on the point of leaving off all treatment; whereas, if intermissions be allowed from time to time, the system loses its tolerance, and the remedy acts with renewed power on its resumption. The length of the intermissions is subject to variations in different cases. In general, they should at first be short, and not exceed one or two weeks; at a later period they may extend over one or even two months, during which time the iodide of potassium, either alone or combined with tonics, should be given.

¹ Leçons sur le chancre, 2e ed., Paris, 1860, p. 312.

² On Syphilitic Eruptions, etc., with especial reference to the Use and Abuse of Mercury, by Thomas Hunt, F.R.C.S., 2d ed., London, 1854.

³ Leçons sur la syphilis, Paris, 1873.

The question will naturally be asked, What indications have we to guide us as to the dose after the more manifest lesions, as the eruption, etc., have disappeared? In many cases the remaining induration of the base of the chancre and of the ganglia may be relied upon. In the absence of this guide we continue the mercurial in the same dose as has thus far been used for about two months after the eruption upon the skin and mucous membranes has disappeared, when we allow a respite of a week or two. Upon resuming treatment, the dose may generally be reduced one-third or one-half, but no absolute rule in this respect can be laid down, since each case must be decided by itself. After another two weeks' treatment, a longer intermission may be allowed, as for a period of four weeks, if all has been going on well, and the intermissions may gradually be increased in length at a later date.

After a course of treatment which is deemed sufficient has been gone through with, the patient, on his last visit, is sure to inquire what the probabilities are of any reappearance of the disease, and if he can regard himself as safe for the future. Our only answer can be that there is no absolute certainty for any man who has once had syphilis, but that the chances are greatly in his favor, that we know that the great majority of cases (estimated as high as ninety-five per cent.) which have been thoroughly treated are absolutely cured, and are never followed by a relapse, and that he has great reason to be satisfied with this prospect. At the same time he should be warned never to forget the fact that he has once been infected with syphilis, and never to omit to state this fact to his medical attendant, if at any future time he should be taken ill. The confession may be entirely unnecessary, but it may be of the utmost importance in the diagnosis and treatment of his illness. Many of the late manifestations of this disease, occurring years after infection, are most dangerous in their character, but may be arrested by the timely use of the proper remedies. Indeed, in numerous diseases, and especially in affections of the brain, it is a source of great satisfaction to the medical attendant to be able to point to syphilis as the cause, since the course of treatment is then evident, and the chances of the patient's recovery are most decidedly increased.

I have used very extensively, during the past three years, in private and hospital practice, as an adjuvant, in the treatment of syphilis, the fluid extract of erythroxyton coca, and I have come to regard it as one of the most valuable agents at our command. Indeed, I know of no remedy which can take its place. I would not be understood as claiming that the remedy is a specific for syphilis, for such it is not, but that its marked tonic effect upon the heart, nervous system, and capillaries, and its power to invigorate the system, to improve nutrition, and to sustain life, is so great, that its use in syphilis, secondary to that of mercury and the iodide of potassium, is attended with results which no other agent now known to us possesses. It is especially useful in the anæmia and cachexia of the secondary period. Given

then, with the mercurial, the adynamic effects of the disease are averted. In cases in which great debility has existed, and in which mercury is badly borne, this agent often so invigorates the system that the specific treatment may be resumed with comfort. I have seen markedly good results in bad cases of iritis, with the attendant debility, and in the cachectic rheumatoid affections. In many cases of extensive gummatous ulcerations improvement has followed both in the general nutrition of the patient and in the character of the sores, under the combined use of specific treatment and of this agent. In many instances the ulcers had remained either indolent or continued to extend, under local and specific treatment, until this agent was given, when a reparative tendency began. I have seen this so frequently, that I am thus confident in my statement. I have often seen iron and other tonics fail utterly to improve nutrition, and mercury to apparently have no beneficial effect, when, under the influence of coca, the health improved, and healing began in large ulcers. I have recently had under my care, at Charity Hospital, a number of cases of malignant precocious syphilides, in which the most favorable results were obtained from the adjuvant effect of this remedy. One point has struck me very forcibly in its use, and that is, that when taking it mercury can be pushed without bad results. Indeed, it seems that when this remedy is given mercury can often be used in larger doses, and is more efficacious than when it is not used. I have had, as have others, cases in which the use of mercury was invariably followed by such debility that it could not be given, and have been able, after a short preliminary period of treatment with the coca extract, to resume the mercurial with good effect. Then, again, this remedy is useful in the treatment of syphilis, by the fact that its stimulant action will largely replace that of alcohol. As is well known, in many subjects the benefits of treatment are more or less impaired, and often even lost, by reason of the patient's addiction to alcohol. There is no remedy which will replace this stimulant as will the fluid extract of coca. Thus, in practice I have often induced patients to cease drinking and to have no craving for alcohol, simply by giving them this agent, at first more frequently, and in larger doses, and then, as the craving grew less, the dose could be made smaller. Again, patients who have been for years accustomed to quite copious drinking, can be often made to partake very moderately and suffer no serious effects from the deprivation, so long as they take the coca. Under these circumstances, I think that I am warranted in bestowing the encomiums I now do on this great adjuvant remedy, which is alike beneficial for the old and the young of both sexes. The dose to begin with is generally half a drachm. My favorite formulæ are as follows:

R. Fl. ext. Erythroxyton Cocæ, ℥ij 60
 Tinct. Cinch. Co.,
 Tinct. Gent. Co., āā ℥i 30
 M.

Dose.—Two teaspoonfuls, in a wineglass of water, three times a day; an hour after meals.

R. Fl. ext. Erythroxyton Cocæ, ℥ij 60
 Tinct. Gent. Co.,
 Tinct. Cinch. Co., āā ℥i 30
 Elix. Calisayæ, ℥iv 120
 M.

Dose.—One tablespoonful, in a wineglass of water, three times a day; one hour after meals.

These tonics may be taken at the same time as the antisyphilitic remedy, since there is no incompatibility between them.

While, in general, the dose of half a teaspoonful of the coca will be found to be ample, I have seen cases where it had no appreciable effect, and in which it was required to be given in teaspoonful doses, and others, but rare cases, require two teaspoonfuls, and still more rarely, three teaspoonfuls were required. I have usually found three daily doses sufficient, but I have, in urgent cases and in severe adynamic conditions, given four, and even five doses daily. As a rule, it is well borne by the stomach, and in but two cases had I to discontinue its use by reason of its causing acidity of the stomach. It should always be given after meals, since its action is apt to be too stimulating upon an empty stomach, causing a feeling of great fullness of the head, burning of the eyes, sometimes buzzing of the ears, and even a sensation of moderate intoxication. Each case has to be treated according to the indications derived from the use of the drug. In half-teaspoonful doses there are rarely any unpleasant cerebral or cardiac symptoms; hence this is a safe standard for the commencement of treatment. I may also add, that in all conditions of debility, even when not complicated or attended by specific disease, this cerebral and cardiac tonic is of the highest benefit. I have seen much improvement in phagedenic chancroids in debilitated subjects follow the use of this agent.

IODINE AND ITS COMPOUNDS.—The therapeutic effect of iodine and its compounds upon syphilitic symptoms is in direct ratio to the duration of the disease. Although possessing little, if any, power over early secondary manifestations, their action upon tertiary lesions and those of the transition stage is very decided. In deep tubercles of the cellular tissue, rupia, syphilitic orchitis, affections of the bones and periosteum, syphilitic cachexia, etc., the results of their employment are frequently almost magical. An unfortunate patient, whose life has been rendered miserable for months by pains in his bones, which have deprived him of sleep, by a pustular eruption upon his face, which has debarred him from society, by deep ulcerations about the pharynx, which have rendered speech and deglutition almost impossible, and which finally threaten suffocation, or who has suffered from any other of the numerous late manifestations of syphilis, will in most cases obtain comparative ease and comfort in the course of a few days or weeks from the administration of the iodides. It would be difficult to name the circumstances under which the surgeon feels more pride in his profession, or in which he finds more conclusive