HUNCHBACKS CURED.

REMARKABLE results have recently been obtained in France by Dr. Calot, an Italian surgeon, in the curing of Pott's disease, which is a synonym for caries of the spine. It is so called because it was first accurately described by Dr. Pott, the great surgeon of St. Bartholomew's Hospital, in the last century. It is a disease which is generally of tubercular origin and often follows injury in young children. The deformity in those children who are attacked by this malady is caused by curvature of the spine. The present methods of correcting this are painful and tedious in the extreme. Perfect rest in a prone position on an especially constructed couch and the wearing of a plaster of

HUMPBACK BOY FIVE YEARS OLD.

Paris jacket are absolutely essential for any mitigation of the evil.

Dr. Calot has had exceptional opportunities for studying the disease, on account of its prevalence at Bercy-sur-Mer. Touched at the sight of so much suffering, he has for the last ten years given his attention to the study of the proper treatment of Pott's disease. The result, as he has explained in his paper read at the Académie de Médecine, has exceeded his most sanguine expectations. He was able to produce not only photographs of the patient before and after the operation, but also an instantaneous photograph showing the actual treatment.

The child is placed under the influence of chloroform and is held by four assistants. Dr. Calot then applies great pressure with his hands over the area of the deformity. He proceeds in regular order down the spine until all the vertebræ have gone down to the level and even underneath the neighboring vertebræ. It only requires about two minutes to place all the vertebræ in their normal position. The great difficulty with the operation was found to be to maintain the

absolute removal of the deformity taking exactly ten months. It should be understood that Dr. Calot has operated only upon children, and he has never attempted anything of the kind on adults.

The doctor has not had one accident in thirty-seven cases. He has been greatly surprised at the facility with which the operation has been done. In two very bad cases Dr. Calot showed great boldness in his treatment. In these, to bring the spine back to its proper position, he cut wedge shaped pieces from the vertebræ, and so corrected the deformity with perfect success. It is certainly a great triumph for surgery that

BOY FOUR MONTHS AFTER OPERATION.

now many young children may be saved from growing up with the hideous deformity. For our engravings we are indebted to the Revue Encyclopédique.

OPIUM ADDICTION: IS IT A DISEASE?*

By WILLIAM HUNTLY, M.A., B.Sc., M.D.

OPIUM addiction can be judged from two standpoints.

We can, in the first place, look at it as a form of indulgence, one among others prevalent in our present day life and subject to the same general rules of moderation, social judgment and control. Doing this, it is ranked, often unconsciously, with various extravagances of modern life, the luxuries of living and clothing, of food and drink, and we are apt to let the question slip, believing we have arrived at a just conclusion in the matter when we have summed it up in the two words—"moderation and excess." Recent judgments have tended to lead us into this position, and yet the term "moderation and excess" is, as a rule, so

Inasmuch as some medical men have mentioned opium addiction in the same breath with excess in eating and drinking, it is necessary to refer to this matter; but reference is made with the purpose of pointing out the utter irrelevancy of the comparison.

We can, on the other hand, consider opium addiction as an indulgence sharing certain characteristics in common with other forms of addiction, and possessing certain qualities apart from them and peculiar to itself. In this case our inquiry would be suggested by lines of investigation pursued in such indulgences as alcohol, tobacco and Indian hemp. There is here again a temptation to prejudge opium addiction by the attitude already adopted by us to those other forms. But, as medical men, we are called upon to leave such general terms as universal addiction, climatic necessity, moderation, excess, beneficial or non-beneficial, and other similar terms, and in a scientific spirit investigate every aspect of the problem. Universality of prevalence, antiquity of habit, racial peculiarity, and idiosyncrasy have all recently been employed in this question. Thus, to illustrate climatic and racial peculiarity, I have sat at table in India with two medical men, one from Persia and another from China, have heard opium addiction in Persia condemned and opium addiction in China condemned, and then the climate of India put calmly forward to support opium addiction in India. We find in tobacco addiction this prejudging from universality of prevalence preventing many men from accepting the finding of specialists on its effects. The eye specialist makes an ophthalmoscopic investigation of an eye and at once, from appearances observed, questions the man about his smoking. So constantly do certain optic phenomena accompany excessive smoking that the specialist concludes the smoking to be the cause. Yet, there are many medical men who deny this connection, basing the denial on general immunity and universality of the habit.

I draw attention to these points, seeing that the whole question of opium addiction has been involved and confused recently by many side questions and issues. Thus, we learn from India that opium smoking is reckoned worse than opium eating, and from China we are told that opium eating is held by the Chinese to be more disreputable than opium smoking; from the Straits we learn that opium hypodermic addiction is rapidly increasing, and, in the meantime, is more to be dreaded than either smoking or eating. We are again asked to believe from Indian medical evidence that opium addiction, if stopped, becomes the natural and necessary precursor to alcoholic addiction; and we are advised by so distinguished an authority as Dr. Lawrie, of Hyderabad, to experiment with engine drivers and signal men for the purpose of keeping their minds clear and on the alert while on duty.

The general conclusion likely to be come to by a medical man resident in Britain from the reading of recent Indian evidence is that opium addiction is clearly a complicated question requiring still further elucidation. It is hardly to be expected that an indulgence prevailing over a wide area will have no attractions or benefits to recommend it; every form of sensuality has them. The individual who is on the point of entering upon any such form is drawn by these attractions, generally subjective and temporary, which for the time outweigh other considerations. But the medical man ought to be swayed by none of these considerations, and the universality of any practice should be to him no sufficient reason for favorably prejudging.

So much is opium addiction complicated that there are those who would challenge the term "disease" being applied to the habit in general. Those who hold it to be a disease have the satisfaction of knowing that they have an ancient Persian proverb on their side: "Opium, which is a remedy for many diseases, is itself a disease."

Historically, the habit is traceable in its beginnings to the early centuries of the Christian era. The home of the plant is the shores of the Mediterranean, the discovery of the juice (*σάκος*), its mode of extraction, and its medicinal value are assigned with all probability to the Greeks. When the scepter of empire was on the march westward the spread of opium was going eastward, borne by those ancient traders and raiders, the Arabs. Persia, India, Java and China were the routes, and from about the eighth century we find in literature testimony to the use of the drug and the progress of the habit. History gives us no idea of the date of the origin of the alcoholic habit in India. In the records of some of the native states of Rajputana the alcoholic habit goes back to the mists of antiquity, but in the case of opium we get proofs which point us not only to time of entrance, but to the routes by which it came. Thus, at the outset, the habit cannot be defended by adducing antiquity. Without it generations lived and passed away, empires were developed and destroyed, and thus, in history, it lacks a defense which alcohol addiction can easily claim.

Nor can its necessity be advocated by its prevalence. To quote Sir William Roberts in his summing up of the statistics, "only a minority of the inhabitants, generally a small minority, even of the adult males, are opium eaters." The number of females who are addicted to opium is so infinitesimal that these may be ignored. So far, then, we have a habit of addiction which has grown to its present dimensions within the present era, which, though widespread, is not universal, and which is confined chiefly to males.

In the East, again, we have the Japanese, boldly sustaining a policy of prohibition; we have sectarians among Mohammedans and Buddhists who forbid it. These have assumed an attitude of opposition, not as a result of scientific investigation, but from general experience of the nature and effects of the habit. We have in the laws of China a proof of the feeling against and an example of unsuccessful legislation in the direction of prohibition, and we have, latest of all, British restrictive action in Burma.

For all these efforts at suppression or restriction there must surely be very powerful reasons. Thus, we have reached this knowledge concerning opium addiction, that, in the language of the East, it is recognized as a disease which is mainly confined to males, and to a minority of these, is widespread, though not universal; a disease, the origin and history of which are fairly well known, and toward which, by certain nations and sects, an attitude of condemnation and opposition has been persisted in.

Possibly, the main objection to any part of the above

DR. CALOT OPERATING ON A HUNCHBACK.

loosened spinal column in its normal position. The slightest false movement might bring about the rupture of the spinal cord and so cause instant death. To obviate this danger, Dr. Calot invented an apparatus in which the patient is placed. A circular bandage of plaster of Paris is laid on the bed of wadding, then over the gibbosity the bandages of wadding are laid crosswise, allowing for the tightening of the plaster band. The plaster sets in about fifteen minutes, so that the entire operation only occupies about twenty minutes. The bandage is allowed to remain on for three or four months. When it is taken off the back is flat, then the first apparatus is replaced by a similar one for the same length of time. After the second or third apparatus the child is allowed to walk with a corset, the

difficult to define that its use results more in confusion than clearness.

The extravagances of modern times in food and drink, dress and dwelling, while, in the elements of excess, terrible evils in themselves, do not directly call for medical investigation of these elements of extravagances.

Now, before we can class opium addiction with such indulgences, we would require to prove opium, in any form whatever, to be a necessity of our daily existence in the same way as food is a necessity, and require to prove, moreover, the presence of a normal appetite in man which the drug is intended to meet and satisfy.

*Read before the English Society for the Study of Inebriety, and published in the Quarterly Journal of Inebriety.

statement would be raised against the term "disease" being applied to opium addiction. Some have classed opium addiction with tea and coffee drinking. It has been called a tonic, a stimulant, a sedative, a prophylactic, a preventive, a climatic necessity, and other such terms, which, should they be absolutely true, would entitle it to rank among man's best blessings. Without discussing each term separately, their real value is discounted when we recall terms of like praise applied in the past to alcohol, and remember that notwithstanding all, alcohol addiction is scientifically held to be a disease. In many respects opium addiction can be studied along the same lines as alcohol addiction, and it is satisfactory to see the almost unanimous condemnation which has befallen alcohol addiction in the evidence of medical men who minimized the phenomena of opium addiction. It is playing with the subject to rank opium addiction with tea and coffee addiction; it tends little to settle the question to belaud it at the expense of alcohol addiction. Yet, it is satisfactory at length to have obtained from Indian medical men so crushing a condemnation of the alcohol addiction, and to read of their dread of its establishment in India. This was desirable, for in my own experience in visiting natives I found that natives generally had brandy ready to offer to European guests when a friendly visit was paid, in the common belief that alcohol in some form was universally drunk by English.

In India alcohol addiction is prohibited among many sects, even to the point of forbidding to take as medicine any alcoholic tincture. By one state in Rajputana prohibition, with death as a punishment, was enacted by one of the rulers, and Englishmen, in India, more than the natives of India themselves, will be helped by the strongly expressed adverse judgment on alcohol from medical men before the Royal Commission.

Whether, then, we may belaud or minimize the effects of opium addiction, and whether it is found less or more pronounced in its effects on the individual or on society, opium addiction must ultimately come to be viewed as a disease. We may even describe some of its effects in words which convey the idea that it is a remedy, but when the habit, however begun, has become established, it can be proved to possess certain features which will entitle us to class it among diseases. The history and progress of the cause of temperance, the lengthened and protracted nature of the fight which has wrested province after province from alcohol as a therapeutic measure, and which has resulted in a growing limitation even of moderation in its use as a beverage, furnish us with a guide to the probable final decision of the profession on the opium question. And the confusion which has arisen is easily understood when we remember that opium addiction does not dwell in our midst, appear at our tables, nor make its presence known in the columns of the daily newspapers, as alcohol does.

In my own experience of opium addiction several features in the disease forced themselves into my notice as a medical man. First and before all others was the physical change made on the habitue. This has been denied, and has received no attention from Sir William Roberts in his memorandum. Some medical men indulge in a thoroughgoing denial; others would grant this alteration to those using the drug in great excess and deny it in other cases. I venture to hold that, more or less, it is present in all cases. Our knowledge of alcohol addiction may here help us. Many deny to all, save the drunkard, the seal of alcohol addiction in moderation on the features. A few skilled observers who have made the subject a special study will trace its markings in habitues of most temperate habits. There may be complications. We may have the alteration modified by Bright's disease, by cardiac and lung complications, by liver diseases, and by the temperament and constitution of the individual, but withal the marks of alcohol are there for him who will devote time to their study.

In like manner the alterations from opium are in evidence both in old and young. Surgeon Lieut.-Col. Hendley, of Jeypore, furnishes a list of one hundred cases of children to whom opium was daily given, without, as he holds, any evil effect. In his list we find they are labeled "healthy." The strangest case in the list is of a baby two months old; the opium was first given when a month old; the drug was administered during the period of one month. The child is reported, by the statement of the parents, to have been "ill since birth;" the reasons for giving opium presumably stated by the parents and recorded, are "to keep it quiet," not to cure or make well, and the medical remark at the close is that it is "healthy." We have here nothing less than a discovery of qualities and effects unthought of by the parents themselves, who did not begin the opium with the idea of improving the health. If there be no discovery we are forced to conclude that the term "healthy" is elastic in its meaning. A further glance at the statistics shows us that the most of the cases have been receiving opium for a few days, weeks, or a few months and none beyond a year. There is no mention of children who have been dosed with opium for two or three years. Now, it is generally agreed that the drinking of milk in some measure retards and counteracts the physical alterations produced by the habit. Therefore, during the period when milk is the sole food, the effects would least readily reveal themselves, and we would expect to see these effects appearing when the child's diet became a mixed one. Thus, we expect to find alteration in the child of one and a half to three years.

Malarial influences, exceptional tolerance, maternal instinct, peculiar climatic circumstances, have been put forward to account for the habit in the young. In the history of opium addiction the likelihood is that the habit of giving opium to children represents the latest development in the progress of the habit among the people, the least ancient development of a not very ancient habit. While there is no great uniformity among medical experts in their search for a basis which will afford the practice a decent sanction, there is a wonderful uniformity in the reasons of those who give the opium to children.

In Dr. Hendley's list we have some twenty cases of fever out of the hundred receiving opium, yet the invariable reason, not excluding the fever cases, for giving the opium stated in the list, was not to prevent or cure the malaria, but simply to keep quiet. While thus the practice may be credited with a certain de-

gree of antiquity, the one and sole reason for the practice recognized and acknowledged by the natives themselves is, to prevent crying. If there be other advantages they have in these long years never presented themselves to those who adopted the practice, and they do not seem to have thought of giving it in infancy for any other medical reason. Even medical men who went so far as to state that people gave it to children in the belief of its beneficial influence in capillary bronchitis, have never advanced malarial fever in defense of the practice. Brigade Surgeon Keegan mentions prophylaxis in capillary bronchitis as a belief of the people. Granting this, it serves to show of how little value medically such expressions of native belief are, since there is no general treatment of capillary bronchitis in children which would be more disastrous than routine treatment by opium.

The question of opium addiction in children has a parallel in this country. The habit of giving gin or whisky to children was much more common long ago than now, so common that the gin-nourished child was a phenomenon to be seen and studied. By the growth of education, etc., on the subject, save in the lower ranks, very few, indeed, would carelessly give their infants alcohol. So in the giving of opium to children in India, education and opinion are acting in a similar manner. Yet, the phenomena of the effects of opium are to be seen—the emaciation, the dwarfed body, the shriveled dry skin and glazy look, the look of old age which comes over the child, and other such alterations have all been observed and noted. I can recall no more bitter denouncer of the habit in children than a Brahmin hospital assistant, who through sad experience in his own family was led to study the question. The addiction complicates all cases of disease occurring during the term of the habit in children, and retards if it does not destroy the chances of recovery.

In adults opium addiction soon makes itself known on the features. I can recall several impressive cases. In one case two photographs were laid before me of a gentleman living in Persia. The photographs represented a year of difference in the man's life. Copies had been sent to his wife in England, who had lived in Persia with him several years. The wife, in the return letter, wrote that her husband must have been seriously ill or had taken to opium. Her latter conjecture was correct. A year's addiction had made sufficient mark on him to allow of an unskilled observer pronouncing on the cause. Again, on an occasion about midday I was seated in the veranda of a castle with thirteen natives around me. I knew one of them intimately, but looking at them all I saw that the look and bearing of one was different from the other twelve. I then carefully looked over the twelve, and at the close of my inspection bluntly informed them that twelve were addicted to opium, while only one of them was not. This proved to be the case. The circumstance was unique, exactly the reverse of what is usual, namely, picking out the opium eater from among a group of non-eaters. Long practice and observation would, I have no doubt, make it possible to pick out even the very moderate opium eater from the abstainer. The brightness and clearness of the eye are the first to fade and grow dull, and in the extreme it becomes glazy, the head hangs forward a little and downward, a stoop for which no reasons from work can be brought forward shows itself, leanness, and, in many, a distinct discoloration of the skin, generally over the body, can be observed.

The Eastern proverb that an opium habitue is known three stages off can be verified by any medical man who takes the trouble.

Another point in dispute is the enslaving power of opium.

In this respect opium surpasses alcohol. The impression is conveyed by the statements of medical men that it is taken twice a day, before and near the time of the two principal meals, and, therefore, is an adjunct to digestion, or a mild stimulant similar to alcoholic drinks at home. The undeniable very large percentage who take to opium for sensual purposes should dispose of the digestive theory.

There is this great difference between opium and alcoholic indulgence even in moderation, that as a rule, wines, etc., are partaken at the close of the day when work is over, and are never in moderate cases consumed to start the day; the general relation to work is more as a mild constitutional stimulant to overcome the feeling of weariness at the close of work, in a word, as a refreshment. The man may take a little more or a little less, but need not have an exact daily amount.

Opium is far more imperious in its demands. It can almost enable a man to regulate the clock. As the time approaches the craving becomes more and more intense, the discomfort greater, and when the time of taking it is past, and the drug cannot be had, wretchedness ensues.

The state of the excessive habitue is well known and is a pitiable one. Before the body can be stirred to work the opium must be partaken. The man's will is helpless until the goad is applied (and this is the case), even in so-called moderation.

I have met with cases among natives, of indulgence in alcohol, tobacco and opium, at the same time, and when, by the necessities of the case, one or other habit had to be abandoned, opium is the one which keeps its grip to the last on the victim. The habitue is its slave. To the confirmed eater, cutting off the drug is immediately followed by loss of the power to work and will, and loss of control of the secretions of the body, seen in running of water from the eyes, nose, mouth and bowels, in a greater or less degree.

The rule of opium addiction is that the longer the habit is continued, the more the consumer is under the grip of his master, the more the will power is abolished, the moral judgment weakened, and the hours and power of work dependent on and carried on under the influence of the drug.

The rule holds good whether in so-called moderation or excess. The man who takes four grains daily lives in the power of that quantity as much as the man who takes forty.

I had all along believed that in this respect opium surpasses alcohol. Lately I came across the "short story of a 'Literary Gent.'" by the author of "A Dead Man's Diary," and there is illustrated what is regarded by the author as a law of alcoholic addiction, namely, the necessity of alcohol to inspire the pen of him who

has accustomed himself to moderate potations in doing his work.

Whatever may be the exact truth in alcoholic addiction, it holds true in opium addiction. Utter wretchedness and helplessness of body and mind succeed any effort to go without.

The questions of moderation and toleration come up for joint consideration. Is it an easier matter for a man to find the limit of toleration for himself in opium than in alcohol? For Englishmen the question is at once answered in the negative. The Japanese, as a nation, will not discuss either national or individual toleration. The Buddhist estimate of it results in its condemnation along with alcohol. Burma sees more danger in opium than in alcohol, and the Royal Commission* associates badness of character with opium addiction as a consequence thereof. But the Indian (the conclusion is) has more self-control than the Burman. If this be so, then tolerance is not measured by a supposed mysterious power of the Indians to bear toxic doses with less effect than other nations, but by their greater self-control. We are asked to believe that each opium eater in India (with very rare exceptions) is able to find out his own tolerance; that tolerance may vary from four to forty grains, and that none of these doses when named the dose pointed out by tolerance produces detrimental effects. We assign to the average Indian the power to discover, in the case of a drug more powerful and more enslaving, what the average Englishman cannot find out in the case of alcohol.

I think the extreme cases, and especially the case of De Quincey, tell us that with steady practice any one Englishman or Indian can go on increasing and increasing the opium dose, the immediate toxic effect diminishing as the habit grows.

When begun for pain, the opium eater in India goes through the same experience as the opium eater at home. He finds the first amount gradually losing its antidotal effect, the dose requiring to be increased, and as time goes on still further increased. This is the invariable rule. The limit of dose or tolerance, when taken for sensual or other reasons, is frequently gaged by the means of the man. He would take more opium daily if he could afford it. I have often met men who had increased the dose for a season, and then been compelled by sheer necessity to do with a smaller dose, with this result, that the disease for which the habit was begun, such as asthma, was not one whit better, while the new disease induced by opium enthralled and marked the wretched man. To cure these chronic diseases by the opium habit and expect to recover health, is to expect to quench our thirst by the waters of the ocean or by whisky.

The relation of opium addiction to disease may be summed up briefly.

It has not been proved to be a preventive or prophylactic in malaria. Investigation and experience on my own part give no support to this. I find a mildly malarious district to have its habitues quite as much as a marshy malarious one. I find men who have taken to the habit, with a view to mitigate the pains of malaria, too late to escape from the habit, finding its curative uselessness. I find a growing majority of educated and influential natives who would scorn, not from religious reasons, but from their conviction of the character of the habit, to mitigate the fever by the adoption of such means. I find malarial fever prevailing as much among opium eaters as among non-eaters, even though the habit naturally leads a man to incur less exposure and do less continuous work. These experiences are sufficient for me. Dr. Hendley's list shows that it does not exempt children from fever.

Again, I find that opium addiction does not cure or prevent attacks of asthma as has been claimed, and that the use of the drug medicinally in this disease is under like considerations with the use of other remedies. The opium habit is not to be recommended by medical men as a cure for asthma. In a word, the opium habit as a habit is not curative of any known disease, save, perhaps, as an alternative to alcoholic addiction by those who would favor opium.

And, again, it is clearly recognized that opium addiction renders a man less amenable to treatment when disease arises, and in certain affections in which recovery is critical, hampers and destroys the chances, by lowering the constitutional powers of resistance. It can be easily understood how harmful the opium habit may be in a country in which diarrhea, dysentery and cholera are scourges, and how ill adapted the opium habit is to help a man in these illnesses.

What a priori reasoning would lead us to expect was verified in my own medical experience. Looking back at my own experience and study of the habit, the result is a growing conviction of its effects which compels me to assume a hostile attitude to it.

There is much more that might, if space allowed, be said in detail concerning my observations and inquiries. And there is much still to be done. There is, for example, a line of inquiry directed to the trades in which opium is taken with a certain degree of impunity and those in which the taking of opium would mean loss of work and place. Questioning a coachman in the employ of the Kotah state, I learned that the coachmen dare not take it with any expectation of keeping their posts.

I learned that the light porters at our railway stations in India knew well that the opium unfitted them for work, while, on the other hand, the native tailor, proverbial for his laziness, sits in the veranda half the day muddled with the drug.

In the matter of servants, Englishmen in India will not keep table servants who are opium eaters. I carefully experimented with two opium-eating servants. On my leaving for furlough, a brother medical who had not expressed himself against opium, asked if I had a good servant I could recommend. I mentioned that I had one who was an opium eater, and added that such constituted no fault in his eyes. His refusal of the offer was more forcible than polite.

Englishmen in India have not found the opium habit one which enhances the value of the servant on the score either of work or punctuality. This line of investigation it is my intention to follow up on my return to India. Dr. Lawrie urges it in place of alcohol for signal men and other railway employes, in Britain. The result of this I prefer to leave to the imagination. It has not been tried in India, and is not likely to be.