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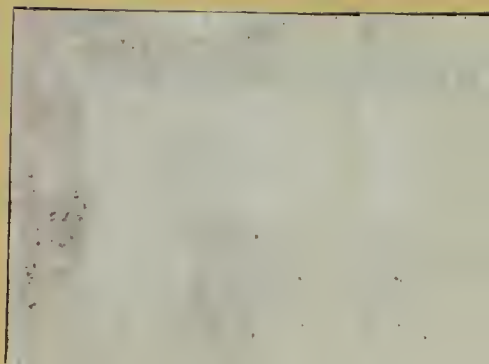
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OPIATE ADDICTION
Its Handling and Treatment



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OPIATE ADDICTION

Its Handling and Treatment

BY

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INTRODUCTION

About ten years ago the use of narcotics became the subject of popular agitation in the United States. There were good reasons for this agitation. The responsibility for a series of spectacular crimes occurring in the South was attributed to narcotic addiction. And criminal acts in varying degrees of atrocity occurring everywhere throughout the country, and with apparently increasing frequency, were laid at the door of drug habitués. Thus public attention was focused upon the evils of the abuse of narcotics, and the inadequacy of our legal measures for controlling the situation. As a result, the Harrison Narcotic Law was enacted by the Federal government on December 17, 1914.

This law was not a hastily conceived statute rushed through as an emergency measure. On the contrary, it was the

result of the mature deliberation of persons intimately familiar with the narcotic situation. It was formulated with the knowledge and assistance of medical men, and of medical associations, thus bearing the stamp of approval of the very persons who, next to the narcotic users themselves, were most vitally affected by its provisions. For this law placed restrictions upon members of the medical profession and, in effect, dictated the manner of practicing the profession of medicine to an extent scarcely approached by any legislation in recent years.

The law not only transgressed ancient customs heretofore held sacred to the judgment of physicians alone, but made it necessary for every physician to engage in irksome details and exacting clerical work quite foreign to the usual medical régime. All this with the approval and coöperation of the members of the medical profession who appreciated the importance of, and the difficulties involved in stemming the rapidly rising tide of opiate addiction.

Nor was it alone those most directly affected who approved the new statute. Popular approval was almost universal. And, as would be expected in the case of any law having such a background and such a backing, this statute became actively operative from the day of its enactment. Never for one moment has its enforcement been neglected. On the contrary, a veritable army of specially appointed officials—Federal, State, County, and City officials—have devoted their energies to the law's rigid enforcement.

From time to time the various courts have interpreted certain points in the law. And almost without exception these rulings have tended to tighten the net about the narcotic law breakers. There has been no trend toward leniency. So that, at the present time, practically every prescription written by a physician for a narcotic comes under the careful scrutiny of a competent inspector; practically every grain of narcotic dispensed by every pharmacy in the land must be accounted for to Federal and State inspectors; and a majority

of the habitual narcotic users are known to the authorities even to the extent of knowing approximately the amount of drug they are taking and the length of time they have been taking it.

Nor is this narcotic knowledge a mere formality. Prosecutions of offenders who have broken the Harrison Narcotic Law, or are suspected of having done so, fill the calendars of the Federal courts. And other courts are equally well patronized.

In short, the Harrison Narcotic Law has been a popular measure for something more than five years, and as actively enforced as is humanly possible.

What is the result of these years of almost unprecedented legislative activity?

The question cannot be answered in a sentence. But it seems to be the consensus of opinion of Federal, State, and County officials, who are most closely in touch with the situation, that the number of drug takers and the amount of drug consumed today, after five years of this active legislation, is just as great as, if

not, indeed, considerably greater than, it was five years ago. ✓ /

There is, however, a radical change in the method of obtaining opiates by the drug addicts. The closure of the legitimate channels for obtaining narcotics has brought into existence an illicit traffic of tremendous proportions. The elusive underworld "pedlar," well supplied with drugs, now exacts his pounds of flesh from his helpless victims, and tempts guileless "prospects" with free samples for the sake of future profits. Thus, without vitally affecting the actual evil, we have added criminality to what was formerly simply immorality. ✓

With this situation existing after five years of active legislation it behooves us to take inventory of our weapons and fighting equipment against the narcotic evil. Why has the Harrison Narcotic Act failed to accomplish the purpose for which it is formulated? Certainly this failure cannot be laid at the door of inactivity on the part of officials, or lack of interest and coöperation by the public. Wherefore, it

appears that there must be something fundamentally wrong with the inception of the law itself. A law that fails to effect its purpose when vigorously enforced, and after a sufficient length of time to give it fair trial, must be lacking in something not visualized in its original conception. There seems to be no other logical conclusion.

From a medical viewpoint the law has the fundamental defect of not giving sufficient consideration to the underlying cause of opiate addiction. In effect, it regards narcotic addiction as a purely criminal act willfully indulged in by normal individuals, with only scant consideration of the possibility that disease may be a cause as well as a result of the condition. Stated in another way, the law emphasizes the legal aspect of the problem and subordinates the medical features.

Now, in point of fact, the vast majority of opiate addicts present an abnormal mental and physical condition closely akin in many respects to the condition known as insanity. And our present narcotic

legislation presents many features similar to the older legislation for the control of mental diseases.

It is not medical men alone, however, who believe that narcotic addiction is often the result of an abnormal mental state, not merely a "bad habit." The veteran officers of the law eventually reach this conclusion, almost without exception. In the beginning, when their duties first bring the officers in contact with this class of persons, they usually regard the drug addict as a self-willed and responsible criminal offender. Their opinion is based on the popular conception of addiction, not upon practical experience. But later, after they have been closely in touch with every phase of drug habituation, their viewpoint changes almost invariably. Their original conception was based on ignorance; their later point of view is the result of experience. And no one will question that experience is a better teacher than ignorance.

A precisely similar change in mental attitude occurs in persons who are brought closely in contact with the insane. The

novice in insane hospital work invariably thinks that a high percentage of his patients are not insane—that “there is nothing wrong with them.” But as he gains in experience his viewpoint changes, just as in the case of the officers who are brought closely in contact with narcotic addiction. And thus we find the experienced narcotic officer inclined to deal leniently with the non-criminal type of drug addicts, because he realizes that he is dealing with persons who are not wholly responsible for their shortcomings.

It is apparent, therefore, that the comparison between insanity and drug addiction is not overdrawn. And in this connection we should remember that it is only within the lapse of a century that insanity has been legally recognized as a disease. Christian nations, for a period of more than fifteen centuries, had regarded insanity as a “possession by demons”—a crime. The unfortunate insane were imprisoned and subjected to every kind of cruelty, just as in the case of the vilest criminal. Yet persons continued to be-

come insane, and usually incurably insane, in the face of the most hideous punishments.

America, the great haven of liberty, offered no sanctuary. Lunatics were beaten, imprisoned, chained in filthy dungeons and specially maltreated here, just as in monarchy-ridden Europe. And as a culminating touch of persecution, our ancestors burned at the stake that pitiful little group of old mad-women at Salem.

But even this did not stop people from "going crazy." And at last even the law itself stood aghast at its futile folly.

Then a great French physician, Pinel, proclaimed the heresy that madness is a disease, not a crime. And with the courage of his convictions, and fortunately, with an influence that could not be disregarded, he struck the shackles from the inmates chained in their madhouse hovels. And behold! many of these mad creatures regained normal reason! The era of rational treatment of insanity had dawned. Lunacy had evolved from a state of incur-

able criminality to the condition of a curable disease.

There is an analogy between our present attitude toward opiate addiction and the lunacy situation of one hundred years ago. Insanity was not thoroughly understood then, and, naturally, the lunacy laws of that time were inadequate and unjust.

The opiate addict, like the psychopath, is an abnormal individual. But in most instances his physical and mental abnormalities are not apparent to casual observation so long as his system is supplied with a sustaining quantity of the drug. When this necessary stabilizing narcotic is withdrawn, however, the abnormal physical and mental conditions quickly assert themselves with absolute certainty. Yet even when the similarity between insanity and opiate addiction is recognized, our attitude toward the two conditions is utterly different and is determined by the supposed underlying cause of each condition, rather than by the conditions themselves. We punish the opiate addict because his infirmity is often self-imposed,

just as formerly lunatics were punished because it was believed that they willfully associated themselves with evil spirits.

But the present legal attitude is not consistent even if we accept the dictum that the result of self-imposed vices should be punished, while unavoidable misfortunes should not. For it so happens that one of the most important and prevalent forms of insanity, general paresis, is the result of venereal vice—a self-imposed condition. At least ten per cent. of all cases of insanity are attributable to this vicious cause. Yet the law makes no distinction between parietic patients, with their virtually self-imposed disease, and any other types of insane persons. The parietic is not punished, although in acquiring the specific infection which is the cause of his condition, he gratified a willful indulgence scarcely more compelling, and generally regarded as far more reprehensible, than the craving for a drug.

It is evident, therefore, that the cause of insanity does not influence the legal attitude toward this disease. Such is not the

case with opiate addiction. A drug addict is a malefactor in the eyes of the law whether he acquired his habit through pure viciousness, or whether, as is often the case, his addiction was thrust upon him unwillingly as in the case of many maimed veterans from France.

It is true that there is a somewhat vaguely phrased distinction in the legal attitude toward persons who are criminally insane and other demented individuals. All insanity is a disease, but in some States special hospitals are provided for the care of persons suffering from "criminal insanity." But even so, a very great distinction is made between this type of insanity and ordinary criminality. No such distinction is made in the case of drug addicts. Yet we know that there are addicts whose drug taking makes them criminals; and others who regard criminal tendencies and criminal acts with just as great abhorrence as the highest type of normal individuals. It is just as inconsistent to put these persons in the same class as it would be to place ordinary crim-

inals and insane criminals on the same level.

The important thing about the existing narcotic laws, however, regardless of inconsistencies, is the fact that they do not appear to be getting adequate results.

One modification of the present law that naturally suggests itself is to increase still further the scope and stringency of the statute. But it would seem that this is scarcely possible without curtailing the legitimate use of opium. And opium, bear in mind, is our most useful and most important drug. Curtailing its legitimate use would cause untold suffering among countless numbers of innocent persons afflicted with painful diseases. These persons far outnumber the addicts. So that even the complete elimination of this relatively small handful of drug habitués would be scant recompense for such a sacrifice.

A less objectionable plan would be some slight modification in the existing narcotic laws tending to emphasize the medical side of the narcotic problem. There is nothing

novel in this suggestion. Indeed, a practical step in this direction was taken in certain cities recently. For example, the Narcotic Clinics, conducted in the cities of Los Angeles and San Diego for a brief period in 1920, were based on this principle, and produced results that were encouraging, to say the least.

The Los Angeles clinic was started as a department of the Board of Health, with the approval and assistance of the municipal authorities, for the purpose of giving preliminary medical treatment to the narcotic addicts. This clinic endeavored to supply persons who required the constant use of an opiate with the necessary amount of their narcotic in gradually decreasing doses at a nominal price. It was conducted by physicians detailed by the Health Commissioner, and under the immediate direction of a Narcotic Board composed of prominent physicians, public spirited citizens, and Federal, State, and Municipal officers who volunteered their time and services.

It was not the purpose of this clinic

merely to supply the opiate addicts of the community with narcotics. On the contrary, the clinic was established for the purpose of medical treatment, with gradual withdrawal of the drug, and final cure when possible. Complete cure by this method would not be possible in most cases, of course; but it was possible to reduce the amount of drug used, and improve the patients' physical condition so that they could be treated successfully in some suitable institution at the proper time.

The things actually accomplished by this clinic attained, in a measurable degree, the object for which it was created. During the five months of its activity, more than five hundred drug addicts applied for treatment. It was a motley company representing every walk and condition of life. Every degree of financial status was represented, every shade of dishonesty, as well as every grade of intellect. Some came from purely criminal motives, others with the exalted purpose of being cured of their habit. Still others, in the hope that

they could escape the clutches of the illicit pedlar and his extortionate prices.

A record of the obstacles that had to be overcome in putting this experimental clinic into practical running order, the mistakes that were made, the trickery and deceptions that were practiced, as well as the honest endeavors of the deserving addicts and persons suffering from painful bodily afflictions, would make a volume of intensely interesting and variegated narrative. But the important things accomplished may be summarized in a few paragraphs. For one thing, illicit peddling was reduced to a minimum. When the patient could get morphine honestly for ten cents a grain, why be dishonest at ten times that price with a good chance of landing in jail into the bargain? The pedlars complained, almost openly, that they were "being ruined" by the Clinic.

To the class of persons suffering from painful afflictions, such as tuberculosis and cancer, whose condition made the continued use of an opiate an absolute necessity, the clinic was a veritable Godsend.

For it enabled them to procure their necessary drug at a reasonable price and in a legitimate manner. Thus they were able to reduce the amount of the narcotic, since, curiously enough, the uncertainty of being able to get a supply of the drug always tends to make the addict use more of it.

The clinic made it possible for several individuals to engage in honest occupations for the first time in many months. Heretofore the uncertainty of the source of supply, and the ruinous prices demanded by the pedlar, had kept these patients in such a state of physical dilapidation that they were unable to work. Thus the Clinic enabled many of these victims to become again honest breadwinners. Several of them were now able to provide for their families and again live in a respectable and self-respecting manner. And meanwhile their general health was improved by the gradually reduced doses dispensed at the Clinic, and the release from the harassing anxiety about obtaining their drug.

It is a fact well known to persons famil-

iar with the subject, but not appreciated by the generality of people, that almost every drug addict wishes to be freed from his bondage. In many instances the desire is an inadequate and feeble one, of course, while in others it is insistent and compelling. The members of the Clinic exemplified this in an amazing degree, all things considered. Within two months after opening the Clinic, twenty-four individuals had made earnest application to be placed in some institution for the final treatment and cure of their addiction. And it is most illuminative that after the Clinic was closed no less than twenty-six persons were given this curative treatment in private institutions from the accumulated funds; and fully as many more had filed applications for taking similar treatment and were bitterly disappointed when they found that no more funds were available.

This alone, the fact that half a hundred persons out of a total of five hundred were sufficiently earnest in their desire to be cured that they were willing to surrender themselves for radical treatment, is con-

vincing evidence of the usefulness of this experimental Clinic.

Moreover, the Clinic enabled the officers to determine pretty accurately the number of drug addicts in the community, particularly the class of drug takers likely to become a public menace. And the surprisingly small number of these individuals seems to refute the popular idea that drug addiction is running riot in our communities.

The fact that so many of these clinic patients were anxious to take a final curative treatment in some proper institution, and that such a relatively large number of them actually did so, is an indication of what might be accomplished with a clinic having hospital facilities at its disposal. Such an arrangement is of course the one now in vogue for treating almost all physical ailments; and even mental diseases are now so cared for in certain favored communities.

A similar arrangement, modified to meet the various conditions, would put the legal and medical authorities closely in touch

with the addicted patients and with the narcotic situation in a manner similar to our arrangements for controlling other serious diseases, such as tuberculosis. This factor alone, it seems to me, justifies the reestablishment of clinics along similar lines to the experimental ones tried with such a measure of success in Los Angeles and San Diego. Undoubtedly great modifications would be necessary. But great modifications are always necessary in any progressive experimental work.

In addition, some special hospital provisions should be made, just as in the case of insanity. And there should be some governing body of specially qualified medical examiners to determine the requirements of each case, similar to the medical commissions that determine the status and dictate the treatment in insanity cases.

Unlike the existing laws governing insanity, however, the final decision about any case should not be left to the judgment of juries composed of laymen. For the average layman knows less about opiate addiction than he does about the

psychoses. And one can scarcely expect intelligent assistance and coöperation from any body of men who know practically nothing about the subject they are called upon to decide.

Perhaps the best practical solution of the whole narcotic problem would be to place it unreservedly in the hands of the United States Public Health Service. This would bring it under control of intelligent physicians who also have legal authority to enforce any clinical or custodial measures that seem necessary, and facilities to work out its laboratory and clinical problems without hindrance.

In any event, the narcotic addict is with us, and like the poor, and the bad, and the unfortunate, he is likely to remain with us. Only the visionary idealist, or persons ignorant of human nature and of human history, can believe otherwise. No great compelling human vice or disease has ever been completely stamped out. And the best that we can hope to do by our most concerted efforts, for the present at least, is to reduce narcotic addiction to a state of reasonable control.

CHAPTER 1.

THE NATURE OF OPIATE ADDIC-
TION.

OPIATE ADDICTION

ITS HANDLING AND TREATMENT

CHAPTER I.

THE NATURE OF OPIATE ADDICTION.

THE term "opiate addiction" implies a definite pathological condition. The mere taking of morphin or heroin, even for quite a protracted period, need not necessarily constitute addiction. It will lead to it eventually and inevitably, of course, but the exact length of time required cannot be predetermined in any given case. Some patients suffering from protracted painful conditions may be given opiates for several weeks without showing the characteristic "withdrawal" symptoms when the drug is withheld. They suffer merely from the original cause of the pain, not the pains caused by want of the narcotic. Others, particularly the neurotic type of individ-

uals, become addicted very quickly, as shown by a rather definite train of symptoms when the administration of the opiate is stopped. Indeed, these symptoms are so definite in character as to justify the term "narcotic drug addiction disease" given it by some observers.

*Bishop recently gave these symptoms, and the order in which they appear, about as follows:

There is at first a feeling of uneasiness, a "nervousness" as the patient expresses it, with an increasing sense of depression and apprehension of some impending calamity. This is followed quickly by yawning, sneezing, watering of the eyes and excessive mucous secretions from the nose. The extremities become cold, and there is clammy sweating, nausea, vomiting, and purging, with tremors and muscular twitchings. These symptoms accompany or are quickly followed by intense abdominal pains, shooting leg pains, cramps, and a general feeling of abject

* "The Narcotic Drug Problem," Macmillan Company, 1920.

misery and dilapidation. In this condition the pulse rate varies between extreme slowness and extreme rapidity, usually with a marked drop in the blood pressure. In short, the patient looks, acts, and is a very sick as well as a very miserable individual. And occasionally he justifies his appearance by collapsing and passing on.

These symptoms appear in just about the sequence given in a very high percentage of patients; but there are, of course, all manner of variations in individual cases. Thus, one patient describes his first withdrawal symptoms as feeling as though his ears were tunneled out—a feeling as if some instrument had bored out two cavities from his throat to the ears, the cavities resounding with weird noises and disagreeable sensations. Another patient has a boring pain in the left elbow as the first indication of withdrawal. Still another loses control of the sphincters at the very beginning of the withdrawal of the narcotic before there are any other symptoms whatsoever. And one might multiply this list almost indefinitely. Yet even the

patients of this class eventually develop pretty much the same sequence of symptoms as those just described, even though their initial symptoms are different.

The peculiarity of this withdrawal condition is that it is relieved almost instantly by even a very small dose of narcotic. When relief is not at hand, however, these symptoms continue and increase in intensity for a period of time ranging from about thirty-six hours as the minimum, to an extreme limit of about five days. The average time would be perhaps sixty hours. And during that time the patient suffers the very limit of mental and physical agony. Indeed, the Inquisition missed what would certainly have been one of its choicest torture-devices by passing out of fashion before morphin came in.

This picture of the withdrawal symptoms in cases of drug addiction is not an overdrawn one. And even after this period of acute distress is passed the patient's troubles are not ended by any means. He will still be obsessed by mental cravings for the drug at times, and occa-

sional attacks of stabbing pains will come as very tangible reminders. It is not until these painful sensations and the craving for the drug have entirely disappeared that the patient can be considered as clinically cured.

But even though this patient is apparently entirely free from all opiate addiction symptoms, and returned to a normal condition, he is not really so in point of fact. His system still remains sensitized to the action of opiates. And if at any time in the future, even after several years, he is given a few doses of any opium preparation he is likely to exhibit the characteristic symptoms of narcotic addiction disease. Thus it may happen at any time that these former drug-users may become the innocent victims of ignorant or careless medication. Indeed, many of them are thus victimized. I have personal knowledge of cases of recurrent drug addiction that were precipitated by cough mixtures, prescribed by physicians, which contained small doses of an opiate.

The clinical picture presented by these

various groups of withdrawal symptoms is that of a definite pathological disturbance.

The toxic action of the opiate is neutralized by some substance prepared for this purpose in the body (call it an "antitoxin" if you will, for convenience) and in such definite amounts that an artificial balance closely approximating normality is established. This balance is maintained only by the administration of a definite amount of the accustomed narcotic, the exact quantity differing, of course, in each individual. Too much or too little of the narcotic disturbs the balance, and complete withdrawal causes the violent symptoms just described.

These symptoms, then, are actual physical symptoms. I wish to emphasize this because the impression prevails quite generally outside of medical circles that drug addiction is merely a "habit"—a thing that is "all in the patient's mind." This is a mistake. And, it so happens, it is a mistake that the Christian Scientists have been very helpful in demonstrating. For sooner or later, particularly in communi-

ties where the Christian Science bug is rampant, quite a high percentage of drug addicts take a fling at this so-called mental healing. But, so far as I have been able to learn, no drug addict has ever been cured by this particular variety of innocuous therapy. There is no dose of mental treatment strong enough to counteract the terrible nausea, depression, and stabbing, boring pains that follow morphin withdrawal.

There is, of course, a marked psychic element in all cases of narcotic addiction. Many opiate addicts are of the unstable type, usually with a background of bad heredity that accounts for such cases. In a way, then, such addicts are born, not made—that is, born with an inherent and fundamental mental instability which makes them crave some form of stimulant or narcotic.

We have a closely similar analogy in inebriety. There seems to be no question that constitutional instability is responsible for practically all cases of inebriety. The mere matter of being able to obtain alcoholic drinks easily is not the real rea-

son why a few persons are inebriates while the majority of people are not. For, until recently, alcoholic beverages were about the cheapest and most available things on the market. Yet the majority of people did not become inebriates, just as most persons do not become gluttons simply because there is an abundance of food.

So with drug addiction. There was a time when narcotics could be obtained anywhere and by any one for a few cents. Yet the percentage of drug addiction was no higher than at present—indeed, it was not nearly so high if we may place any dependence upon statistics. And thus it is a natural inference that drug addiction, like inebriety, is not merely the result of the abundance of the substance that produces the condition.

As a matter of fact, since many of the present day addicts were formerly inebriates, it is a natural inference that addiction has been increased, in a measure at least, by the fact that alcoholic beverages are so expensive and so difficult to obtain at present. They are also conspicuously

bulky for transportation, while narcotics are temptingly condensed.

There is this marked difference between inebriety and drug addiction: Inebriety is often a periodic affair, with long intervals of total abstinence intervening. Such is not the case with drug addiction. There is no such thing as a "periodic" drug addict. Once the victim has become "hooked," he must have his particular narcotic continuously and in fairly uniform doses. And he must do this, not in order to "get on a jag," but to maintain himself at something that approaches the normal human level.

Another fact that suggests mental instability of most addicts is that many of them are abnormal, actually insane, even when cured of their addiction. I am not referring here to the psychoses that are occasionally produced by narcotics, but to a psychosis that exists both before and after the treatment for drug addiction, and undoubtedly would have developed independently of the drug habit. In some cases it appears that the psychosis itself is responsible for the addiction.

While it is true that many drug addicts are of the mentally unstable neurotic type, this is not true of all cases. Any person, regardless of his constitutional make-up, will become a narcotic addict in the true sense of the term if opiates are administered continually for a sufficient length of time. To be sure, the neurotic type is much more susceptible than the stable, well balanced individual, and as a rule is much more difficult to cure of the addiction.

These are the cases that seem naturally to "gravitate" into one kind of vice or another, and become narcotic users without any tangible reason for doing so. Frequently they acquire their habit by taking a few experimental "shots" with convivial friends, only to find themselves firmly "hooked" as a result. When the more stable type of individual becomes an addict, however, it is almost invariably as the result of some painful affliction which required the continued use of an opiate. In other words, there is usually a much more tangible excuse for his addiction than is the case with the neurotic individual.

It is well known, of course, that the initial doses of opium produce very different sensations in different individuals, just as is the case with alcohol. The neurotic person is the one likely to be easily intoxicated and elated by his first experience with an opiate, while no corresponding sensation, or at least only in a very mild degree, is experienced by the more stable type of individual. Thus, one type of patient experiences the craving for a pleasurable sensation that the other does not, and is more readily victimized by the drug. But, in the last analysis, no person is immune to opiate addiction.

There is well-grounded skepticism everywhere as to the possibility of effecting a permanent cure in any case of established drug addiction. The answer to the question as to whether or not a permanent cure is ever possible depends entirely upon what is meant by the word "cure." Without question it is possible to treat certain cases so that for many years the individual will not take any opiate, and will be free from any desire to do so. But, as was

indicated a few pages back, the patient does remain sensitized to narcotics even though there is no indication of this condition, and thus has a greater susceptibility to the acquirement of the addiction.

In this respect there is a similarity between this condition and a condition produced by other toxic substances, such as the poison of rhus. The poison oak victim may be cured, in the generally accepted sense of the term, although he will always remain more likely to infection than his neighbor who has never been poisoned. And if it is proper to speak of an individual being "cured" of rhus poisoning, then we may very properly refer to drug addiction as a curable condition.

However, no one familiar with the subject will attempt to deny that most opiate addicts eventually revert. The aphorism expressed by most officers of the law, "Once an addict always an addict," may not express an absolute truth, but is not very far wrong as applied to the underworld habitués.

CHAPTER II.

GRADUAL REDUCTION TREATMENT
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THERE seems to be no difference of opinion among clinicians that slow reduction is not the "method of choice" in the treatment of drug addictions. Indeed, some observers assert that cures can never be effected by this method, and that it should never be attempted. Such extreme views, however, are not based upon demonstrable facts. The only debatable point is whether or not the method is even advisable.

The Federal Government at the present time frowns upon any form of ambulatory treatment of drug addiction—that is, any treatment that is attempted outside of a hospital or some institution in which the patient is under constant care and supervision. And this attitude is entirely consistent with existing laws which, theoretic-

ally at least, give the government complete control of every grain of narcotic that is purchased, used, or dispensed. Theoretically the drug addict can obtain no narcotic without the knowledge and consent of the Federal authorities. And it is theoretically possible, therefore, for the Government to dictate the form of treatment that each addict shall undergo. Wherefore the Government naturally selects the best form of treatment, which is the hospital treatment under careful supervision.

Unfortunately, there is a wide discrepancy between theory and actuality in this case. As yet the Government has been unable to make actual conditions consonant to the theoretical one. So that while it is theoretically impossible for the addict to obtain his narcotic without the knowledge of the authorities, in point of fact he is able to obtain the drug clandestinely almost everywhere in this country, the amount of his purchase being limited only by the limits of his pocketbook.

This fact has created a situation which must be combatted by practical temporary

methods until a more ideal one can be developed. In other words, the existing condition may justify the acceptance of the "half loaf" since the "whole loaf" seems not to be obtainable at the present time. The gradual reduction treatment of ambulatory cases should be regarded simply as a "half loaf" expedient, because there are many drug addicts who cannot, or will not, accept hospital treatment for their addiction. And if other treatment is refused them, they will keep themselves supplied with their narcotic through illicit channels.

In such cases we are confronted with the problem of deciding whether it is better to give the patient an inferior form of treatment with the possibility of curing him, or to refuse the treatment absolutely with the knowledge that in that event he will continue in his addiction, breaking laws to obtain his narcotic, and encouraging other lawbreakers by doing so.

There is another feature of the treatment of ambulatory cases by the gradual reduction method that makes this treatment a

very dubious one in most instances. I refer to the deception in the matter of getting prescriptions. Thus, it is a common practice for the dishonest addict to patronize several physicians at the same time, using different names and telling a different story in each instance, and thus obtaining enough narcotic to keep himself and his friends or patrons well supplied.

All these various things have created a situation that makes the authorities suspicious and skeptical—a situation that works a great injustice and hardship on the deserving and decent addicts, and jeopardizes the standing of the honest but sympathetic physician. Meanwhile the dishonest and degenerate addict is able to secure as much narcotic as he wishes through underground channels; and the unscrupulous physician finds various ways of carrying on his nefarious practices. In short, deserving unfortunates may be made to suffer, while the unscrupulous criminal who has created the situation goes scot-free. And until this situation is changed—until the distribution of narcotics is

under actual, not merely theoretical control—it will not do to disregard the fact that there are some cases of drug addiction that deserve great sympathy as well as the many cases that deserve permanent penitentiary residences.

For example, one must bear in mind always the type of cases in which the drug addiction is simply supplemental to some other disease, such as tuberculosis. In many cases of heroin taking, for example, the victim began using the narcotic to relieve the tubercular cough. And in many such cases, particularly where the original malady has not been entirely conquered, the gradual reduction method of treatment to overcome the addiction is often preferable to any sudden withdrawal method.

As a rule, of course, any patient who can be treated successfully by the gradual reduction method can be treated with equal success, and perhaps more satisfactorily, by one of the “sudden withdrawal” methods. There are exceptions to this rule, however. For example, I have on record two cases in which the “sudden re-

duction" method had failed, twice in the case of one patient and three times in the other. Yet both these patients were finally cured by a systematic reduction and substitution process, and remained free from their addiction for a period of at least two years and three years respectively to my personal knowledge. So far as I am able to learn, they are still free from it.

One of these cases is worth considering somewhat in detail. She was an intelligent, rather emotional type of well educated and cultured woman upon whom a hysterectomy had been performed just at the beginning of the menopause period. At that time she had been addicted to the use of morphin for about five years, having used the drug originally for the relief of pain in the pelvic region. Following the operation, and at intervals of from six to eight months, she had been given treatment for the cure of her addiction in three different sanitariums, and by three different "sudden withdrawal" methods. The physicians who attempted these treatments were men of skill and experience in each

instance. Yet in each instance the patient's physical and mental condition had become so precarious that the physicians found it impossible to complete the treatment.

Immediately following the last of these abortive attempts, her physician, a skilled internist, decided to proceed along an entirely different line. He outlined a plan, with the full coördination of the patient, of having the usual number of hypodermic injections administered daily. These were to be given by the husband.

The exact amount administered after the initial dose at the beginning of the treatment was not to be known to the patient. She understood that a very gradual reduction was to be made and that the treatment would extend over several months; but she was to remain in ignorance as to details.

On the assumption that the patient was suffering from endocrine depletion, she was given a mixture of the extracts of adrenal and thyroid glands, with spermin extract combined with glycerophosphates

and strychnia. These were administered daily throughout the treatment.

At the time of beginning treatment the patient was taking five grains of morphin daily. This was reduced at the uniform rate of one-sixtieth of a grain each day, which represented merely a change of $1/240$ of a grain per dose during each twenty-four hour period.

The minuteness of this amount of reduction seems too inconsequential for serious consideration. But one must bear in mind the history of this case, a history of three failures by ordinary methods of treatment. Moreover, results sometimes justify seemingly absurd as well as extreme measures. It was so in this particular case. For, although at the end of the second month the patient had been reduced only one grain from the original five, and at the end of the fourth month only two grains, it developed that at the end of ten months she was completely off the narcotic. But this was then unknown to her, as she was taking regular doses of a solution of

strychnia in place of the narcotic, and was in excellent physical and mental condition.

A month later all medication was discontinued and she was released from the bondage of the needle an entirely healthy and an exceptionally happy individual.

I have cited this case in detail as an example of what may be done when necessity demands it. The method was certainly not an ideal one. Yet in extenuation it may be pointed out that it succeeded where other methods had failed. And meanwhile the patient suffered practically no discomfort during the slowly protracted course of the drug withdrawal.

When we reflect that opiate addiction is centuries old, it will appear that methods of treating these afflictions must be almost as aged and that physicians have disagreed for years about methods of treatment. In point of fact the physicians of at least fifty years ago were divided in their opinions about the methods most suitable for treating drug addicts just as they are today. There were at that time ardent advocates

of sudden and complete withdrawal, and equally ardent advocates of some form of gradual reduction. The advocates of sudden withdrawal of that period were handicapped by the lack of substitute drugs which are now available. And, therefore, from a purely clinical point of view, the gradual reduction advocates had somewhat the best of it. "Sudden withdrawal" as practiced at that time consisted in locking the man up and forcing him to "kick it out," as it is termed in the vernacular, just as is done in some of our jails today. And some of those patients died just as some of them do at the present time when this radical method is attempted.

On the other hand, some of the methods of gradual withdrawal as practiced successfully by the physicians in the last generation are still worthy of consideration. They had at least the important merit of being successful. For example, in one of the large asylums for treating the insane in the Middle West, a method of treating the drug addicts sent to the institution was used thirty-five years ago with very uni-

form success. At that time the use of the hypodermic needle had not become universal as it is at present, so that most of the patients under treatment were accustomed to taking their drug by mouth. A certain number of them, however, took the drug hypodermically. But whatever their method of taking the drug, the manner of treatment as practiced in this institution was practically the same in all cases.

In the matter of length of time required for completing treatment the method was a compromise between sudden withdrawal and our present conception of gradual reduction treatment. A stock solution of morphin and strychnin was made up, the proportions being such that each hypodermic dose of morphin represented one-quarter the amount of the patient's necessary daily dosage and also a full dose of strychnia. This was administered at regular six-hour intervals, so that in the beginning the patient received his full amount of narcotic in the course of twenty-four hours. At the same time he was given a tonic of iron and quinin; and good

elimination was maintained by the use of cascara and salines, with baths and packs as his condition suggested. He was also given easily assimilated food at frequent intervals when he could take it.

If the patient was in fairly good physical condition the reduction of the morphin was started immediately. This was done by replacing each dose of the morphin and strychnin solution by an equal amount of sterilized strychnin solution. Thus, the patient was shifted gradually from full doses of morphin hypodermically until finally he was taking simply full doses of strychnia at his regular six hour intervals. When necessary to combat insomnia and nervousness the patient was given a solution of bromides and chloral—the “B and C” sedative mixture which was popular in institutions at that time.

Of course the patient was kept in ignorance of the amount of drug he was getting, the strychnin in the solution facilitating the deception. For, as is well known, many addicts are able to detect the presence or absence of morphin in a hypodermic solu-

tion by the "feel of the needle," as they express it. Indeed, this sense is so keenly developed in certain patients that they can tell at once, without waiting for the effect of the drug, whether the solution administered hypodermically really contains any morphin. But frequently this keenness in detection is dependent upon the amount of morphin the patient is taking. For this reason it is more difficult to deceive a patient with a "sterile hypo" at a time when he is taking considerable quantities of the drug than it is later on in the process of reduction when he is getting only minute doses of the opiate. And when strychnin is added to the solution of morphin, and the mixture given for some time, the keenness in detecting the morphin by the "feel of the needle" becomes so dulled that most patients finally reach a stage at which they cannot distinguish between a hypodermic dose containing only strychnia and one that contains morphin also. Thus, the strychnin acts not only as a tonic and helpful eliminant, but also assists in the camouflage practice of withdrawal.

In the method of gradual withdrawal just referred to, the usual time required for treatment, or at least to complete the entire withdrawal of the morphin, was between two and three weeks. And during this period the patient suffered a minimum amount of distress and discomfort, no more, indeed, than is felt in most of the recent methods of treatment. Moreover, after the first week the patient usually began to gain in strength, appetite, and general condition.

It is understood, of course, that this treatment was not discontinued for some little time after the morphin had been completely withdrawn. Indeed, the regular hypodermic doses at six-hour intervals were continued for at least two weeks longer, thus building up the patient's physical condition.

In most instances, of course, this treatment could not be carried to completion without variation or incident in the ideal manner outlined here. There were likely to be times of impending collapse, just as during the course of any other form of

treatment, and the development of unexpected symptoms which required constant medical vigilance and skill. Nevertheless, the treatment was usually successful, spared the patient the physical tortures of withdrawal, and later lessened the mental torments of craving for the drug that always follow when withdrawal is accomplished without some definite medical aid.

Needless to say, the chances of success in this treatment were greatly enhanced by the fact that it was administered under ideal conditions. The patient was under lock and key in a hospital where there was every facility for giving treatment, and an available number of trained assistants. Almost any form of treatment would have been successful under the circumstances—that is, successful in the sense that the patient could have been kept from taking a narcotic. But this was not only successful, but also lacking in the elements of discomfort that attend the harsher methods. It was, in fact, simply a “gradual reduction” treatment carried out under hospital supervision. Yet it was in no sense an “am-

bulatory" form of treatment which allows the patient to go about his daily affairs, and, for this reason, is not the type of treatment generally referred to as the gradual reduction form.

WHY SHOULD GRADUAL REDUCTION BE ATTEMPTED AT ALL?

LOOKED at from almost any angle, the gradual reduction method of treating ambulatory cases of drug addiction is a compromise. But compromises are the rule rather than the exception in the practice of medicine—no less so in treating drug addictions than in other fields. We treat at least twenty cases of sickness outside of hospitals for every case treated in a hospital. Yet we know that hospital treatment is better treatment, the ideal one. And we accept the inferior method simply because of expediency that amounts to necessity.

So with narcotic addictions. And it is quite as unjust to refuse helpful treatment to the type of deserving addict who is unable to take hospital treatment, as it would

be to refuse "home treatment" in a case of pneumonia, syphilis, or carcinoma.

We have in this country at the present time thousands of drug addicts who are wholly blameless for their affliction, and who are eager to free themselves of this curse. For example, many of our soldiers in France were given narcotics to save them from the agonies of German gases,—young, vigorous, upright Americans, who offered their lives for humanity, who are now bearing an affliction incomparably worse than the wounds received on the firing line. No adequate provision has been made for treating these unfortunates by government, states or cities. And until such provisions are made it is a reproach to our boasted humanity to refuse these sufferers the chance for recovery, even though the method employed is not an ideal one.

An illustrative case is that of a soldier who was severely gassed a few days before the Armistice, was placed in one of the army hospitals for treatment. He was in a desperate condition, suffering agonies,

and was given large doses of morphin over quite a protracted period to relieve this condition. When he finally recovered sufficiently to be discharged from the service he had become addicted to the use of morphin.

He was an intelligent young man, without hereditary taint so far as could be learned, and the absolute antithesis of that type of individual who seems naturally to degenerate into some form of addiction. He was married and had a family dependent upon him, was upright, industrious, and eager to be cured of the "habit."

Two or three weeks of treatment in a sanitarium was suggested. But this would, of course, require a considerable outlay of money and necessitate the patient giving up his employment for a certain period of time. As he had no money in reserve, with his family dependent upon him for support, this sanitarium treatment was out of the question.

The second course open to him was to give himself up to the county authorities and receive free treatment. In order to

do this, however, he would be obliged to sign a "voluntary commitment" and go to the Psychopathic Hospital. There he would be brought before a judge and sentenced to one of the State hospitals for the insane for a period not exceeding two years.

The third alternative was to take some form of ambulatory gradual reduction treatment that would allow him to continue his work for the necessary support of his family.

Sanitarium treatment was quite out of the question, as has been stated, on account of the lack of funds. The second alternative, that of going to one of the State insane hospitals, can hardly be considered as desirable, or a just one in his case, when viewed from whatever angle. If for no other reason, the fact that his family would be without means of support during the period of his incarceration, made it impossible. But there is another deterrent: Every patient who has been a public charge confined in an insane hospital is a "marked man" in the eyes of his

business associates. For, regrettable as it is, the fact remains that any person whose condition has made it necessary for him to be a patient in an insane hospital is permanently stigmatized in the eyes of the world. This is unfortunate, utterly unjust. Nevertheless it is the fact. And it is useless to attempt to deceive ourselves by any sophistical arguments to the contrary.

The case of this young soldier illustrates one type of narcotic addict that must be reckoned with in our communities, although, of course, only a very small percentage of such cases are the result of military service. But many of them are just as innocent of wrong-doing, or evil intentions of any kind, as the boys who were gassed on the battle fields in France. And a certain percentage of these cases, who find it impossible to take sanitarium treatment, are entitled to any form of treatment that will help to free them of their addiction without either subjecting their family to hardships or placing a permanent public stigma upon them.

However, it is not alone the stigma of being shut up in an insane hospital that deters the addict from taking treatment in some of our public institutions. It is really a distrust of the treatment itself—the fear and belief on the part of the addict that he will not receive the care, skill, and attention that are necessary to cure him of his habit without an almost unbearable amount of suffering. For it is common knowledge among all narcotic takers that our public institutions are not equipped to give individual attention to patients during the protracted hours of suffering as is the case in well paid private institutions. Also, that most of the public institutions depend upon the lock and key as a means of treatment, rather than upon medication that mitigates and shortens the suffering. The difference between these two methods is not unlike the difference between performing an operation with an anesthetic and without one. The narcotic addict knows about all these things to the minutest detail, and is suspicious of public

institutions and public institution methods. Even an addict hates to be hurt unnecessarily.

As a matter of fact, his suspicions are well grounded. Very few of our public institutions have a sufficiently generous equipment of physicians and nurses to enable them to give the same careful and practically painless treatment to the drug addiction cases that is possible in private institutions. And until such provision is made one can hardly blame the addict for his entirely human attitude of mind, particularly when we reflect that even the vilest criminal is given the benefit of an anesthetic when an operation is necessary.

SELECTED CASES FOR GRADUAL REDUCTION TREATMENT.

Obviously, the percentage of drug addicts that may be treated successfully or who should be treated by the gradual reduction method is a small one. All addicts of the criminal type are ruled out of this small company. So, also, is the proverbially weak-chinned type of individual, fre-

quently a harmless and irresponsible creature and often a fantastic dreamer—the “sissy” type that is often addicted to narcotics. Such individuals are naturally defective in mental stability, and their opiate addiction is simply one manner of demonstrating their inadequacy for which another method will be substituted if they are deprived of the drug. These are cases for custodial care as well as therapeutic measures.

There is usually no physical reason, of course, why persons of this class should not respond successfully to this treatment. Indeed, it seems to be true that most of them, at one period or another,—even the actually criminal type—wish to be cured of their addiction. But such desire cannot be measured in the terms of normal will-power. They are guided by the currents in the channels of least resistance; and if it were easier to get off the drug than to keep on using it they would be glad to be rid of their inconvenient habit; otherwise not.

In addition to this large company of

actual degenerates there is also quite a company of drug users who are so influenced by their surroundings and the bad company they keep that any attempt to cure them of their habit excepting by isolation is hopeless. Some of these cases, if placed in different surroundings, could be treated successfully by gradual reduction methods. And when one of them shows sufficient intelligence and sincerity to change his surroundings and his associates voluntarily, he becomes at once a hopeful case.

Of course, a great number of persons who present themselves for treatment are in such a state of physical dilapidation that it would be dangerous to attempt to cure their addiction without a period of preparatory treatment to improve their general condition. Such cases are usually the ideal ones for gradual reduction treatment, not as a curative measure, but as preliminary to the final withdrawal treatment. For it is usually true in these cases that they are not only taking more narcotic than is necessary to maintain their phys-

ical balance, but frequently their method of taking the drug is utterly inadequate. The usual fault in such cases is too frequent and too irregular dosage of the narcotic. But under proper supervision it is often possible to reduce the daily dosage very quickly to one-half or even a quarter the original amount, at the same time building up the patient's resistance and improving his physical condition generally.

In every group of narcotic addicts of any considerable size there are sure to be a few individuals whose physical condition or natural physical make-up is such that it is impossible to cure them by any form of gradual reduction treatment. They can be reduced gradually to a certain point, but when the amount of their narcotic is cut below that point they show the physical symptoms of withdrawal continuously for days and weeks regardless of what substitute substance may be administered. This condition is illustrated by the history of the following case:

The patient in this instance was a man in good physical condition, thirty-six years

old, who gave a history of having been rather a heavy drinker at one period in his life and who, ten years before, had been addicted to the use of morphin for a period of two years. He had taken treatment, however, and had kept away from the drug for a period of about seven and one-half years. At the time of seeking treatment he had been using morphin for about ten months, having renewed his habit as a result of family difficulties, unhappiness, and general disgust with the world which placed him in a "don't care" attitude of mind.

Shortly after renewing his addiction, however, his domestic and financial affairs cleared up, so that he now had a compelling incentive to be rid of his habit. In desperation he resorted to the classical method of attempting to "kick it out" by shutting himself in his room for several days of torture. And with the usual result—failure. However, he had managed to reduce his dose and modify his manner of taking the drug so that at the time of

coming under observation he was taking only one grain of morphin daily.

Here was a case that would seem to be an ideal one for any kind of treatment whatsoever. Yet, in point of fact, although various methods of gradual reduction treatment were tried for a period extending over six weeks, it was impossible to withdraw the drug completely. The patient coöperated in every way possible, and for one period of ten days without remission suffered constant symptoms of withdrawal of the drug with all the attendant discomfort without asking for relief or attempting to obtain it. And when finally he was placed in a sanitarium for treatment his case proved to be an unusually intractable one.

I cite this case merely to illustrate the fact that in cases of drug addiction, just as in the treatment of all other ailments, one can never predetermine whether the treatment of any individual case will be easy or difficult. Generally speaking, however, patients who are inherently unstable men-

tally are proportionately harder to treat than those, for example, who began taking the narcotic for the relief of some physical ailment. But in any event, there must be an earnest desire to get off the drug, not merely a vague wish engendered by bodily inconvenience or fear.

The isolated cases of drug addiction found in the country, or in villages, and away from the great centers of population are much more hopeful for treatment of any kind than the urban habitués. There are several reasons for this, the most important being the ease with which the drug is obtained in the cities, and the matter of bad associates. In the country districts drug using is usually a solitary practice of a single individual, whereas in the cities the drug users of the young or underworld class know each other and associate together. In these groups there is a clanish fellowship and a generosity which prompts the addict to share his portion with his fellow-sufferer or assist him in obtaining the drug. More than that, there is often a diabolical type of jealousy which

makes the addict resent his neighbor's efforts to be freed of his curse when he himself is still under its ban. As a result, a patient under treatment who comes in contact with other narcotic users is sure to have temptation thrust upon him.

Even though the drug is not offered him openly, his craving is constantly stimulated by the knowledge that his associates are having their cravings gratified. Indeed, the mere knowledge that his friend has the narcotic in his possession stimulates a desire for a "shot" that is almost irresistible. And the sight of his neighbor actually taking a hypodermic, or the knowledge that he has gone to some retiring room for the purpose of doing so, produces a craving of an intensity that is entirely incomprehensible to the normal individual. For this reason it is utterly futile, except by isolation, to attempt to cure one member of a family when another member is continuing to use the narcotic.

In small communities the disturbing element of convivial associates is usually lacking. Furthermore, in these small com-

munities the individual's personal affairs are known to a wider circle of acquaintances, and his actions more keenly watched than in large cities. For this reason it is far more difficult to conceal family skeletons in rural districts. Everybody knows his neighbor in the country, and knows something about his neighbor, whereas in the city no one knows or cares much about any one outside his immediate circle of friends. Thus it follows, since it is more difficult to conceal one's shortcomings in village life, that the element of individual self-respect is on a more elevated plane in small communities. Even the rural drug addict exemplifies this in his attitude toward his "bad habit" and his greater willingness to coöperate in overcoming it. The vicious type of narcotic addict is seldom found in small communities. He is essentially a city-dweller, and is for the most part a product of city life.

TREATMENT BY GRADUAL WITHDRAWAL.

Since the process of becoming addicted to the use of narcotics is a gradual

one, it is a natural inference that the reverse of this process—the method of withdrawal by gradual reduction of the narcotic—would be the ideal method of treatment. As has been pointed out, however, this is not the case in most instances. There are so many complicating factors that cannot be measured in terms of exact science—so many factors that cannot be explained at all except empirically—and methods must be judged by results rather than by theoretical considerations.

Bishop expresses the consensus of opinion of clinicians as regards the gradual reduction treatment, in a sentence. “In my opinion,” he says, “all other considerations aside, there are very few who are possessed of sufficient understanding of narcotic addiction and ability in the interpretation of clinical indication, and have the technical skill required to carry it through to a clinically successful culmination.” In my experience, and as Bishop also states, the term “technical skill” requires a very broad interpretation. It really requires no more skill to treat cases

of drug addiction than it required for the successful treatment of pulmonary or gastric conditions. It is merely a matter of knowledge and experience. Most physicians have a well rounded knowledge of general diseases, whereas the average physician knows very little about opiate addictions. It is a field almost entirely foreign to his routine experience.

The special clinical knowledge required for the successful treatment of drug addictions would include a very full understanding of human nature, both normal and addicted, a knowledge of the action of certain drugs, combined with a willingness to take infinite pains and give sustained attention to details. This is a somewhat formidable combination. But, given this combination, I see no reason why any practitioner of medicine should not treat successfully certain selected cases of drug addiction by the gradual reduction process. For, after all, these same qualities are necessary to successful treatment, whether the method be by sudden withdrawal or gradual reduction.

Apparently the most successful methods of gradual reduction treatment are those based upon some process of substitution, that is, some combination of drugs in which the amount of the accustomed narcotic is gradually lessened while, at the same time, some other substance is used that in a measure replaces the effect of the narcotic. The only drugs that will produce this effect are the preparations of opium itself, and no one of these in exactly the same degree as the others. Thus of the four educts, heroin, morphin, codein, and dionin (ethyl morphin hydrochlorid), the two first, heroin and morphin, are the "strong arm" members of the family, while codein and dionin, although they have a similar effect, really have this effect in a very weak and attenuated form. Heroin and morphin are the alkaloids that more readily relieve pain, produce the "jag" effect in the novice, and the ones responsible for narcotic addiction. And they are the substances responsible for these conditions when the whole drug, opium, is taken. Such a thing as "codein addic-

tion," or "dionin addiction," is practically unknown.

Yet, if neither heroin nor morphin is available, the habitu  can get a somewhat similar effect—can at least avert the worst phases of withdrawal suffering—by large doses of either codein or dionin. He would not have his suffering and craving entirely relieved, but would have them very decidedly mitigated. And if the use of these drugs were continued, he would presently reach a stage in which he would be comfortable and without the old craving so long as his system was saturated with codein or dionin. This condition would be a very decided step toward recovery, because codein and dionin do not produce a "habit" of any such intensity as do morphin or heroin, and may be quickly reduced and withdrawn without any very great discomfort to the patient.

In the gradual withdrawal method by substitution, the idea is to replace the decreasing quantity of the more powerful narcotic with constantly increasing quantities of the less powerful ones, taking suf-

ficient time in making this change so that the patient does not suffer intolerable discomfort. In practice this may be done successfully in certain cases; but, as has been said, and will be reiterated, it can only be done in a limited number of cases out of the entire army of opiate habitués, and then only by skillful, sustained, and painstaking effort.

To avoid any misunderstanding, it should be stated that, aside from the opium educts, there is one other group of drugs that alleviate the suffering and craving of opiate withdrawal. This is the atropin group, with hyoscin as the drug best suited for this purpose. But in order to produce this effect it is necessary to give the hyoscin in sufficient doses to make the patient delirious, or semi-delirious. In other words, to "knock him out," or make him very "groggy." Short of this, his sufferings are not relieved. And as it is a hazardous thing to produce this semi-delirious condition in ambulatory cases, the atropin group of drugs should not be used in the gradual reduction form of

treatment. Under hospital supervision, however, there need be no such restrictions about their use.

As was referred to a moment ago, the substitution process in the reduction treatment must be a very gradual one at every stage. Also it must be done with the earnest coöperation of the patient, and had best be without his knowledge about exact details. For the psychic element in the treatment of these cases seems to be quite as important as the medication. And if the patient is allowed to watch prescriptions, and knows that day by day his accustomed drug is being replaced by a less effective one, he is sure to become panicky and apprehensive. The effect is like watching the clock tick off the moments to some inevitable catastrophe. The suspense of watching is worse than the catastrophe itself. And thus the same patient who is perfectly comfortable on a daily dosage of unknown quantity will develop the pains and other symptoms of withdrawal if he knows the actual amount he is getting.

Regardless of the amount the patient is

using, it is sometimes desirable to shift him from hypodermic to oral medication where this is possible. For the "needle habit" of itself—the "feel" of the needle—is in some cases almost as much of an "addiction" as the contents of the syringe itself. This yearning is much more pronounced in some patients than in others, but in some cases in which the narcotic is taken hypodermically the needle is part of the addiction.

However, there are some cases in which it is impossible to change to oral medication on account of some conditions, such as gastric disturbance. Frequently these cases are the ones in which the narcotic addiction is supplemental to some other disease, like phthisis; but as the cure of these cases is usually dependent upon the treatment of the original disease, the narcotic habit is not likely to be intractable.

In any event, when the change is made from hypodermic medication to oral, it is a wise plan to increase the patient's daily narcotic allowance about twenty-five per

cent. at the start. Otherwise he will miss the accustomed relief given him by the needle and will be too sorely tempted to discontinue treatment, or to resort to dishonesty.

Sometimes it is expedient to combine the two methods of administration. If so, it is a good plan to have the hypodermic mixture contain the greater part of the total amount of the narcotic administered, combined with some other substance, preferably strychnin. In some patients, however, strychnin used hypodermically acts as an irritant, producing painful "lumps" at the site of the injection, and in such cases it may be omitted and codein or dionin substituted in increasing quantities as the amount of morphin or heroin is decreased. But, whatever the substitute, it is highly important in the scheme of treatment not to give a plain morphin and water solution as the hypodermic mixture. Because, as has been pointed out, most patients know the "feel" of morphin or heroin, and at the period of final with-

drawal will be able to detect the absence of either of these narcotics unless some other substance is present in their hypodermic mixtures. But if codein or dionin has been added to the mixture, and the amount gradually increased while the amount of morphin or heroin is steadily decreased, the patient gradually loses his ability to sense the "feel" of the morphin. At first he recognizes that there is a difference in the solution he is taking, but since it gets the desired effect he disregards this; and gradually he loses the keenness in his ability for detection.

Another detail that is often most essential to the success of this form of treatment is that of arranging so that the patient receives exactly the same bulk of hypodermic solution in all stages of the treatment regardless of the amount of drug contained in the solution. If the patient is taking twenty minim doses five times a day, for example, this amount of liquid should be given at the accustomed intervals of administration, and main-

tained throughout the treatment. And some corresponding method should be pursued in oral medication.

Such trivial details may appear to the novice as absurd and entirely unnecessary. But clinical experience with these cases shows that Michael Angelo's rule about trifles applies to the treatment of drug addiction quite as much as to the making of masterpieces in art. "Trifles make perfection," said Angelo, "but perfection itself is no trifle." In these cases the "perfection" sought is a patient cured of his habit. And if kindly and sustained attention is not paid to the psychic element, with its combination of whims and trifles in most patients, a firm but kindly attitude towards the higher sensibilities as well as to the lower planes of physical discomfort—we cannot attain even that degree of perfection represented by the reformed drug habitué.

Bear this fact constantly in mind: a drug addict "cured" against his will is not really cured at all no matter what method of treatment is used or how long he may

be incarcerated. Wherefore, throwing men into jails or keeping them in confinement where they cannot get the drug for weeks or months, never cures them, or rarely so. Almost every member of the various colonies for treating addiction, although entirely free from the physical craving for the narcotic, is looking forward and counting the weeks, days, and hours when he shall be free—free to get a “shot.” And the reason for this is in the main that such forms of treatment give scant attention to the mental part of the patient’s ailment, which frequently becomes the dominant one when antagonized or disregarded. There is lacking in all such methods of treatment the element of kindly interest and personal attention that is absolutely necessary even for temporary success in handling these cases.

In referring to this, Bishop makes the following significant statement which should be taken to heart by every physician attempting to handle drug habitués:

“The personal attitude of the physician towards opiate addicted patients is of great

importance. The medical man who is to treat a case suffering from addiction-disease successfully to the end of relieving this condition, or who is treating addiction-disease as an intercurrent condition complicating another disease, must first of all make his patient realize that the physician himself knows something about addiction as a disease. He must never give his patient any hint or reason to suspect that he regards opiate addiction as a habit, a vice, a degrading indulgence, which can be to any curative or even therapeutic extent combatted by the exercise of will-power."

The physician who handles these cases must be neither martinet nor mollycoddle in the opinion of his patients. If he is born disciplinarian he will be neither of these, of course. But, in any event, the successful practice of medicine implies kindness and firmness on the part of the physician. And it requires no particular exaggeration of these necessary qualities for the successful handling of opiate-produced diseases. Yet the term, firmness, as used here does

not imply an inflexibility of mind that will not allow the physician to deviate from any fixed rules of treatment which the individual case may demand.

As to medicine, strychnin is, in my opinion, the most useful single drug in treating narcotic addiction by the gradual reduction process. There is a definite physiological reason for this. Narcotic drugs not only check glandular activity and inhibit the activity of the unstriped muscles, but they tend to derange and arrest all metabolic processes. Thus they check peristalsis and interfere with elimination. For this reason the chronic addict is sure to have his system clogged by an accumulation of toxic substances; and the use of strychnin aids materially in correcting this condition. Frequently its effects are quickly noticeable as shown by the improved appearance of the patient, better appetite and general feeling of euphoria.

In treating these cases, one need feel no hesitancy in giving large doses of strychnin. For narcotic addicts are notoriously tolerant to drugs of all kinds, and it is al-

most impossible to give an "over-dose" of anything to a patient that has been long addicted to narcotics. An accurate history of the huge doses of drugs of all kinds that have been taken by addicts, at one time or another, without producing any harmful effects, would tend to disrupt our ideas of medical dosage. For example, a nurse-addict observed by me, completed a surreptitious raid on the medicine closet by drinking four ounces of a mixture containing fifteen grains of sodium bromid and five grains of chloral hydrate, to the dram—480 grains of sodium bromide and 160 grains of chloral, beside several other drugs. After which she became happily unconscious and rolled down a flight of stairs where she remained most of the night. She received no treatment, and was apparently all right and ready for more of her narcotic the following afternoon.

This is only one of many similar cases that could be cited showing the immunity of drug addicts to ordinary medication. All of which is very comforting to the cautious clinician on occasion when he is

fearful of having given an overdose of something. There is little danger of erring in that direction when treating drug habitués.

In most cases of drug addiction there is a marked tendency to acidosis and constipation, as would be expected. To correct this, liberal doses of milk of magnesia as a routine are helpful. Or, as an alternative, thirty to sixty grain doses of sodium bicarbonate in combination with cascara. The old rhubarb and soda mixture is useful also, but less so than the cascara and soda combination.

AN ILLUSTRATIVE CASE.

The following case (No. 380), which is given graphically for convenience, is that of the young soldier referred to a few pages back whose treatment was successful at the end of two months, and who did not lose a single day's work during that period, or suffer any very great discomfort. It will be seen from this record that in the beginning the patient was given a daily dosage of three grains of morphin and one

grain of codein combined with strychnin. He had been taking four grains of morphin, but this was cut to three grains, and one grain of codein substituted and the strychnin added. All this without the patient's knowledge, of course.

Thereafter there was a gradual shifting from the morphin to the codein, the amount of codein added each day corresponding exactly to the amount of morphin deducted. Meanwhile there was a slight increase in the amount of strychnin, until the patient was getting one-eighth of a grain daily. But there was no change in the amount of water used in making the solution, and no change in the number of hypodermics taken daily by the patient or in the amount of the liquid taken at each dose.

In this manner the shift was gradually made from morphin to codein, so that in five weeks after beginning the treatment, the patient received his last dose of morphin, but was getting almost four grains of codein daily at that time. Following this, the amount of codein was gradually re-

duced until twenty days later the daily amount was a little less than one grain, an amount too insignificant for serious consideration in a patient once accustomed to large doses of morphin.

Such proved to be the case here, for the patient was in excellent spirits, had gained about ten pounds in weight, and his only complaint was a restlessness, with bad dreams at night. There were no real withdrawal symptoms. All things considered, therefore, it was thought advisable to let the patient know the true status of things, and he was told that he had been getting no morphin for three weeks. At the same time he was given eight powders of luminal-sodium, containing one-half grain each, with instructions to take one powder hypodermically at bed time. Each powder was to be dissolved in a half teaspoonful of water and the solution boiled before using it.

A week later the patient reported that he had slept well every night since his last visit, that he was feeling fit physically, and was elated over the fact that he was no

longer a drug habitu . When informed of the exact date at which the morphin was absolutely discontinued, he stated that he had no intimation of the fact from his feelings. The codein and strychnin combination had acted as an efficient substitute.

Such being the case, one naturally wonders whether it would not have been possible to substitute codein for morphin in the beginning of the treatment. We know from experience that this would not have been possible without producing intolerable withdrawal symptoms. It is only when the accustomed amount of morphin has been greatly reduced and the patient's system well fortified, that it is possible to substitute the codein, and even then the amount given must be greatly in excess of the daily dosage of morphin. But when the substitution has been made and continued for a few days the amount of codein can be reduced very quickly, since it does not grip the patient as does morphin, and when the amount taken is small, is not fol-

lowed by withdrawal symptoms when it is stopped entirely.

It will be noted in the case just referred to, that the combination of narcotic and other drugs were prescribed in solutions, not as tablets or powders. There are several definite reasons for this. For one thing, and the most important, is the fact that the daily amount of the solution used remains the same throughout the treatment, thus giving the patient no clue, as far as mere bulk is concerned, as to the quantity of drug he is taking. But there is another reason for prescribing solutions, which is not so apparent to the uninitiated. This is that, if the patient is dishonest, and frequently he is, he will find it more difficult to dispose of a solution which appears to be simply plain water than a tempting white powder or familiarly shaped tablets. This possibility should always be borne in mind. Moreover, a patient is less likely to have his pockets pilfered of an innocent looking vial of water than he

[Continued on page 68

EXPLANATION OF CHART NO. 380.

This chart, which is an actual page from the case record, is in epitome the entire record of treatment. Each line represents the day's prescription, and when read from left to right gives the date of the prescription, the amount of morphin and other drugs, the amount of water used in the solution, and the number of days for which the prescription is made. Thus at a glance it is possible to tell the exact amount of each drug given in the preceding prescription, and as the treatment progresses the vertical column shows the rate at which the narcotic is being reduced, the rate of increase of the substitute, and the time being consumed by the treatment. It is a simple, convenient, and practical method of keeping records that need occupy only the space of one page for each patient.

CASE NO. 380

1920

Apr. 30	Morph. S. gr. ix	Cod. S. gr. iii	Strych. S. gr. 1/6	aq. d. 3iiiss	(3 d)
May 3	“ gr. vss	“ gr. iiss	“ gr. 1/6	“ “ “	(2 d)
“ 5	“ gr. v	“ gr. iii	“ gr. 1/6	“ “ “	(2 d)
“ 7	“ gr. vii	“ gr. v	“ gr. 1/4	“ “ 3vss	(3 d)
“ 10	“ gr. iv	“ gr. iv	“ gr. 1/6	“ “ 3iiiss	(2 d)
“ 12	“ gr. iiss	“ gr. ivss	“ gr. 1/6	“ “ “	(2 d)
“ 14	“ gr. v	“ gr. viii	“ gr. 1/4	“ “ 3vss	(3 d)
“ 17	“ gr. iii	“ gr. v	“ gr. 1/6	“ “ 3iiiss	(2 d)
“ 19	“ gr. ii ³ / ₄	“ gr. iv ³ / ₄	“ gr. 1/6	“ “ “	(2 d)
“ 21	“ gr. iii ³ / ₄	“ gr. viiss	“ gr. 1/4	“ “ 3vss	(3 d)
“ 24	“ gr. ii	“ gr. iv	“ gr. 1/6	“ “ 3iiiss	(3 d)
“ 26	“ gr. i ³ / ₄	“ gr. iv	“ gr. 1/6	“ “ “	(2 d)
“ 28	“ gr. iii	“ gr. vii	“ gr. 1/2	“ “ 3viiss	(4 d)
June 1	“ gr. i ¹ / ₄	“ gr. ivss	“ gr. 1/6	“ “ 3iiiss	(2 d)
“ 3	“ gr. 3/4	“ gr. v	“ gr. 1/6	“ “ “	(2 d)
“ 5	“ gr. ss	“ gr. viiss	“ gr. 1/4	“ “ 3vi	(3 d)
“ 7	“ gr. 0	“ gr. vi	“ gr. 1/6	“ “ 3iiiss	(2 d)
“ 9	“ gr. 0	“ gr. v	“ gr. 1/4	“ “ “	(2 d)
“ 11	“ gr. 0	“ gr. vii	“ gr. 1/4	“ “ 3vi	(3 d)
“ 14	“ gr. 0	“ gr. ivss	“ gr. 1/4	“ “ 3iiiss	(2 d)
“ 16	“ gr. 0	“ gr. iii ³ / ₄	“ gr. 1/4	“ “ “	(2 d)
“ 18	“ gr. 0	“ gr. ivss	“ gr. 1/4	“ “ 3vi	(3 d)
“ 21	“ gr. 0	“ gr. iiss	“ gr. 1/4	“ “ 3iiiss	(2 d)
“ 23	“ gr. 0	“ gr. ii	“ gr. 1/4	“ “ “	(2 d)
“ 25	“ gr. 0	“ gr. iiss	“ gr. 1/4	“ “ 3vi	(3 d)

would be if he were carrying an opiate mixture in solid form. Also, there will be less danger of needle infections when sterile solutions are used than when powder or tablets are made into solutions by the patient, with the characteristic carelessness or ignorance of the average addict.

To be sure, solutions are likely to be spilled, and small bottles broken accidentally. There is the temptation of having fictitious spills and breaks. But, on the whole, the advantages outweigh the disadvantages, and the danger of serious loss can be minimized by dividing the solution into the daily amounts placed in separate vials.

An ideal method of prescribing and dispensing would be in ampoules containing single doses of each. But this is not possible ordinarily.

For all practical purposes prescriptions written for an amount sufficient to last one day, or at most two days, are satisfactory. If larger amounts are given, that is, amounts in excess of three days at most, the patient is almost sure to take an overdose on the first day or two and thus be

shortened and tempted into dishonesty for the later days.

Here again we are dealing with apparently insignificant details. But they are far more likely to seem insignificant to persons who have had small experience with this class of patients than to the thoroughly orientated physician. Those who are familiar with such cases are aware that it is the "infinite taking of pains" with these cases that is often the key to success.

In this connection, the matter of keeping the patient in ignorance of the contents of his prescription is also an essential detail. To give the patient a prescription with instructions not to look at its contents and expect him to follow such instructions, would be an evidence of abysmal ignorance of human nature. And it is folly to suppose that the patient will not be able to decipher the prescription if it is formulated in Latin terms and medical signs. For practically every patient has a very comprehensive knowledge about almost everything that concerns his misfortune. Par-

ticularly so in recent years, since stringent laws and active officials have forced the narcotic users into secret underworld clans in which velvet garments rub elbows with rags, but acquire vast narcotic-addiction-wisdom as a result of this disgusting contact.

For this reason the physician who is prescribing for these cases should have some practical method of meeting these conditions in a manner that does not conflict with State or Federal laws. For example, he must bear in mind the fact that the Federal law now requires that each prescription be indorsed on its back by the person receiving the medicine from the druggist. This necessary indorsement may give the patient an opportunity of seeing the contents of his prescription at the pharmacy, when he is handed the prescription to sign, even though no such opportunity is given him in the physician's office. This can be obviated by having the patient indorse the back of a folded prescription in the presence of the physician

or nurse, after which it is placed in a sealed envelope.

Even with this precaution, however, there is still another manner in which the patient may determine pretty accurately the amount of narcotic he is taking unless some method is devised to prevent it. I refer to the price that he pays for each prescription. If the amount of solution he gets from the drug store each time is the same, and yet the price gradually dwindles, he will naturally infer, and correctly, that the diminishing price is an index to the lessened amount of the narcotic in his prescription. He expects this cutting down process, and wishes it. Yet, in the later stages of treatment when the amount of morphin is very small, the patient's frame of mind will be much better if he is kept in ignorance of the exact contents of his prescription. This may be done by arranging with the dispensing pharmacist so that the patient is charged a uniform price for his prescription regardless of contents.

For this reason, as well as for several other excellent ones, it is well in the beginning of the treatment to have the patient select a responsible pharmacy at which his prescriptions are to be filled and to patronize this pharmacy only. With this arrangement it is a simple matter to keep the patient in ignorance about the amount of drug he is taking unless he resorts to dishonest methods. And in that event he is not a fit subject for treatment except under custodial care. It is hopeless to attempt to treat any patient who will resort to flagrant dishonesty, and the suggestions given here are to eliminate as much as possible the minor temptations for the class of patients who are willing honestly to coöperate with the physician.

Another important detail in this method of treatment is the regulation of the number of daily doses, as well as the amount of the daily dosage. Generally speaking, it is better to have the patient take a few doses at long intervals than it is for him to take numerous doses at short intervals even when the actual amount of

narcotic taken during the twenty-four hours is the same. It is on the principle that "three square meals" a day are better than continual nibbling. Many drug addicts have made this discovery for themselves—have discovered that frequent doses of small amounts do not "hold them" as well as large doses taken at longer intervals. And there are many patients who have arranged so that they take only two doses daily, one in the morning and one at night. In such cases the treatment is much more hopeful, as it indicates a certain mental stability and intelligence, and is also an indication that the patient's will power is not utterly shattered.

There is a direct relationship between the amount of drug taken and the length of time its effects are prolonged. To be sure, it is not true that if one grain of morphin will keep a patient comfortable for four hours, two grains will keep him comfortable for eight hours, and three grains for twelve hours; but in most cases if one grain will keep him comfortable for four hours, two grains will have the same effect

for about seven hours, and three grains for about nine hours. And meanwhile, when the narcotic is taken into the system at long intervals only, the various processes of metabolism which are temporarily retarded almost immediately even by small doses of the narcotic, tend to establish their normal functions some little time before the crying need of his narcotic is felt by the patient. For this reason, patients who are taking their drug at long intervals are usually in better physical condition and with better physical resistance than the ones who are nagging at small amounts of the drugs at short intervals.

This explains why it is better for the patient to take his narcotic regularly, and with as long intervals intervening as possible. And in actual practice it appears that about the only hopeful cases are the ones who are taking or can be taught to take their narcotic in this manner. On the other hand, individuals who are obliged to take more than four doses of narcotic daily are not hopeful cases for gradual reduction treatment, as a rule.

GRADUAL REDUCTION TREATMENT BY ORAL
ADMINISTRATION.

Wherever it is possible, it will be found advisable to shift from the hypodermic administration to the oral, for reasons that have been referred to before. This is not an easy matter in most cases. But, curiously enough, it is frequently easier to discontinue the use of the needle in old habitués who have smoked opium at one time or another than in recent cases who have never taken the narcotic except by the hypodermic method. Even when the addiction is of many years' standing, I find this to hold true as a general rule.

Perhaps this may be explained by the assumption that in cases of recent addiction we have a double habit to combat, "needle habit" and the drug addiction. These are combined and inseparable in the patient's mind, the sensation of the prick of the needle being followed almost immediately by the sensation of the opiate. It is this combination of sensations that is craved by the needle addict—the positive,

instantaneous effect that he associates with his habit, and which is not produced by the slower method of internal administration.

In the older addicts, who formed their habit either by opium-smoking, laudanum-drinking, or one or another of the slower methods of absorbing the narcotic, there is not quite the same attitude of mind towards the needle as with the more recent opiate users. If they have been taking opium by one of these slower methods for some little time before beginning the hypodermic administration of the drug, they will have passed the stage where narcotic exhilarates or intoxicates as it does in the early stages of administration. They are not expecting a "kick" or a repetition of the early "pipe dreams," but merely take the drug to bring them up to what is now their normal level in physical and mental condition. To them the "shot" is merely a rapid and convenient and absolutely certain method of obtaining what, in former years, they were able to obtain by the more laborious and slower methods. In short,

they are not "addicted" to the needle with any such degree of tenacity as is the person who knows of no other method of taking the narcotic.

This explains, I believe, why it is usually easier to shift the older habitués to the oral administration of their narcotic than those who are in effect novices. But, in any event, when this shift is once made we will have a much easier problem to solve; and in my experience the reduction and completion of the treatment can be shortened very greatly when the method of oral treatment is used.

The following case (No. 297) will illustrate the feature just referred to (see page 78).

In this case the patient was forty-five years old and had been taking narcotics off and on (mostly on, of course), for over twenty years. At the time of beginning treatment he was taking three grains of morphine daily hypodermically and had been doing this, practically without variation in the amount in the daily dosage, for over two years. Apparently that amount

CASE NO. 297

1920

Nov. 14	Morph. S. gr. iv	Tr. nux vom. 3i	Elix. Lactopep. q.s. 3i	Dose 3ii	(1 d)
" 15	" " gr. vi	" " 3iii	" " 3ii	" "	(2 d)
" 17	" " gr. v	" " 3iii	" " 3ii	" "	(2 d)
" 19	" " gr. ivss	" " 3iii	" " 3iii	" "	(2 d)
" 21	" " gr. vss	" " 3v	" " 3iii	" "	(3 d)
" 24	" " gr. iiiss	" " 3iii	" " 3ii	" "	(2 d)
" 26	Morph S. gr. ii	Cod. S. gr. ii	Tr. nux vom. 3iii	Elix. Lacto. . .	Dose 3ii
" 28	" " gr. iiss	" " gr. iii	" " 3v	" " "	" " (3 d)
Dec. 1	" " gr. i	" " gr. iss	" " 3iii	" " "	" " (2 d)
" 3	" " gr. 3/4	" " gr. i	" " 3iii	" " "	" " (2 d)
" 5	" " gr. 3/4	" " gr. i	Hyos. hy. gr. 1/20	Piloc. hy. gr. 1/2	Tr. n. v. Elix. L.
" 8	Mph. S. 0	Cod. S. gr. ii	hyos. hy. gr. 1/20	Pilocarp. hy. gr. 1/2	Tr. n. v. Elix. L. q.s. 3ii
" 10	" " 0	" " gr. iss	" " gr. 1/20	" " gr. 1/2	" " (2 d)
" 12	" " 0	" " gr. i	" " gr. 1/20	" " gr. 1/2	" " (2 d)
" 14	" " 0	" " gr. ss	" " gr. 1/20	" " gr. 1/2	" " (2 d)
" 16	" " 0	" " gr. 0	" " gr. 1/20	" " gr. 1/2	" " (2 d)
" 18	" " 0	" " gr. 0	" " gr. 1/40	" " gr. 1/2	" " (2 d)
" 20	Elix. L. 3ii	(2d)	" " gr. 1/40	Tr. n v. 3iii	Tr. Gent. Co. 3v
" 20	" " 0	" " gr. 0	" " gr. 1/40	" " gr. 1/2	" " 3v
" 20	Elix. L. 3ii	(2d)	" " gr. 1/40	" " gr. 1/2	" " 3v

This last prescription was repeated for two weeks, when the patient was discharged.

was just sufficient to keep him in good physical condition, for he was well nourished and his bodily functions working normally.

His incentive for taking treatment was twofold, neither "fold" being in the least tainted by "higher ideals" or an exalted moral sense. Stated precisely, the two reasons for his change of heart were, first, that his family had promised definitely to leave him, and second, the Federal authorities had made quite as definite promises to press certain matters that were then pending unless he stopped using the drug.

I mention these things as showing the importance of an impelling incentive. Had this man been influenced simply by the feeble, weak-kneed desire to be cured of his habit, which most addicts exhibit at one time or another, it would not have been possible to reduce his dosage so rapidly and to effect a cure in such a comparatively short time.

Referring to the course of treatment in detail, it will be seen that the patient was given a mixture of *nux vomica* and one of

the so-called digestive elixirs in which the morphin was held in solution. The nux vomica was given for the double purpose of adding bitterness to the taste and for its usual therapeutic effect, and the digestive elixir was used as a vehicle and with the general idea of averting any gastric disturbance. An extra grain of morphin was added to the daily dosage at first so as to maintain the narcotic balance which requires more of the drug when given orally than when taken hypodermically. The amount of morphin was then reduced day by day until at the end of ten days the patient was getting less than half the amount of his narcotic than in the beginning.

As the patient continued to be in good physical condition during this reduction, the morphin was still further reduced and codein added in increasing doses while the amount of morphin was steadily decreased. Finally the morphin was stopped at a point where both the amount of morphin and the amount of codein had been greatly reduced; but when this was done the

amount of codein was doubled and, at the same time, hyoscin and pilocarpin in rather vigorous doses were added to the mixture. Following this, the amount of codein was gradually reduced without any change being made in the other ingredients until finally it was omitted entirely. Then the amount of hyoscin and pilocarpin was lessened, and this mixture continued without change for a period of three weeks. At the end of that time the patient was found to be cured of his addiction and required no further treatment.

During the course of treatment there was no period at which the patient felt quite up to his usual physical and mental standard; but, on the other hand, there was no time at which he experienced any very great discomfort. And during the last ten days of the treatment he was in excellent physical condition and stated that he felt better than he had for several years. During the entire time he was, of course, entirely ignorant of the contents of his prescription; and he stated later

that he had no inkling from his feelings when the final wrench of discontinuing his narcotic was made.

Although the treatment worked successfully and in an ideal manner in this particular case, there are some features of it, particularly the latter stages, when hyoscin and pilocarpin were added, which made it rather hazardous except in carefully selected and closely observed cases. Thus, it is not advisable in most ambulatory cases, unless those cases are under direct hospital supervision, to prescribe hyoscin or any of the preparations of hyoscyamus. For although hyoscyamus and its derivative alkaloids do counteract the craving for morphin when given in large doses, there is always danger of their producing a mental condition that is in effect a temporary psychosis which may prove disastrous if the patient is not under supervision and control. The physiological effects may be counteracted to a certain extent by the use of pilocarpin, as in this case. And in this case the reason for giving hyoscin while the patient was con-

tinuing his usual occupation was a knowledge of the patient's general make-up, and the fact that he was under rather close observation, and also that he had been saturated with various drugs for years. For it is a matter of common observation that there seems to be little danger of giving an overdose of almost anything to these supersaturated addicts. They are immune to such a degree that one need have very little apprehension of producing alarming symptoms.

In any event, the use of hyoscin, particularly in the beginning of treatment when the patient is taking large quantities of the narcotic, is of very doubtful value in cases undergoing gradual reduction treatment. It is of very great value, of course, in cases taking special treatment under hospital supervision. But even in such cases it is necessary to push the drug until a certain definite physiological effect is produced, as anything short of this dosage does not relieve the morphin withdrawal symptoms. Indeed, such symptoms are not relieved until the patient is in a

state verging on delirium, and naturally it would be unwise to produce such a condition in an ambulatory case. However, when the amount of the narcotic has been greatly reduced, small doses of hyoscin do apparently lessen the patient's discomfort in some cases. Apparently it did so in the case just referred to, and certainly no bad symptoms or effects were produced.

Generally speaking then, it is not advisable to use any preparation of hyoscyamus in cases undergoing gradual reduction treatment. Not on account of the alleged ill-effects alone, but because small doses are of little value. It is a case when a logical theory does not work out in practice. Logically, since large doses prevent withdrawal pains and discomfort, small doses should do so in a proportionate degree. But such is not the case in most instances.

As a matter of fact, hyoscin is something of a medical bugaboo. Many medical men seem to regard its action as peculiarly dangerous and clouded with mystery, largely because they have little occasion

to prescribe it. It has been given an unmerited penumbra of mystery, too, by quacks who use hyoscin as a basis for their "secret remedies" for treating drug habits, and who seek to camouflage their methods. But those who have occasion to use the drug frequently find no more mystery about the use of hyoscyamus preparation than any other powerful drug. The very fact that this apparently dangerous drug is used extensively at the various places for treating drug addiction is significant. For many of these places are conducted by laymen who have little knowledge of medicine, and who frequently give hyoscin with an apparent recklessness that fills the average practitioner with visions of asylums and cemeteries. Yet this apparent "recklessness of ignorance" seldom results in any particularly alarming or dangerous symptoms. And this of itself is practical evidence that the dangers from the administration of hyoscin or the hyoscyamus preparation have been largely over-estimated by the older medical writers.

There are occasions when these facts will be a source of comfort to the clinician who treats cases of drug addiction—the fact that hyoscin is not so dangerous after all, and that drug addicts are pretty tough and immune customers anyhow.

For example, I had under my personal observation a patient who took the better part of a full tube of one-hundredth grain hyoscin tablets at a single dose. It was impossible to determine the exact number of tablets taken, but the nurse in charge declares that the tube was full of tablets, and the patient admits that she took all that were in the tube, although she thinks it was merely a matter of twelve or fifteen tablets. At any rate, she crammed as many tablets as she could into her hypodermic syringe and took the remainder orally.

This patient was an especially robust woman, just beginning treatment in the sanitarium for the cure of her addiction. She had been taking two grains of morphin daily for several months, but had been addicted to the drug for several years,

during which time she had attempted various methods of treatment without success. At the time of taking the hyoscin tablets she had had no opiate for about ten hours and was in a reckless frame of mind. In desperation she broke the lock of the medicine chest and took "everything she found," as she expressed it. "Everything" in this instance was the tube of hyoscin tablets.

The effect of this tremendous dose was a stupor, which was no more intense, however, than is often produced by a one-fiftieth of a grain dose of the same drug, but which lasted about twelve hours. During this time her pulse rate did not vary much from normal and the quality was good. After twelve hours she regained consciousness, although for the next forty-eight hours she was in the characteristic state of mild mental confusion which is characteristic after a sufficient quantity of hyoscin has been given to produce delirium at all.

After the first three hours her pupils became completely dilated and remained

so for a period of four weeks. As she left the sanitarium at the end of seven days, completely cured of her addiction and in fine physical condition except for the dilated pupils, the fact that the iris muscles had remained paralyzed was not called to my attention for an additional three weeks. Yet, curiously enough, the patient had experienced no very great discomfort except an occasional headache and an inability to read the newspaper. However, a solution of eserin dropped into the eye for three days restored the function of the iris completely.

How rapidly may the amount of opiate be reduced in the process of gradual reduction treatment?

It seems superfluous to say that no fixed rule will apply to all cases in this matter after what has been said about the nature of opiate addiction in the preceding pages. However, there is a certain degree of uniformity in these cases, just as in the case of most other diseases. Some cases will tolerate a more rapid reduction than others, but in most cases it is impossible

to make the rate of reduction more than one-quarter of a grain of morphin daily without producing withdrawal symptoms. In point of fact, it is only in exceptional cases that it is possible to make a uniform cut of this amount of morphin. And the rate of reduction in the case of heroin takers is considerably less, usually not more than one-eighth of a grain daily.

In some of the States the rate of reduction is fixed by law. Thus, in California, the minimum rate of reduction is the withdrawal of one grain of morphin weekly, and one-half of one grain of heroin during the same period. So it will be seen that the legal estimate in this instance, which is supposed to represent a fair average, is only about half the amount that I have suggested as possible.

In this connection one must bear in mind that there is a very general misconception among physicians and laymen as to the amount of opiate that is actually necessary to sustain the normal balance in cases of addiction. At one time or another the idea has been promulgated that the human

body is only capable of utilizing a certain definite quantity of morphin, which is about five or six grains at the most, and any amount taken in excess of this quantity is purely superfluous. Or, stated in another way, if an opiate addict is taking twelve grains of morphin daily, about six grains of this is utilized to maintain his physical balance and the remainder is for physic effect. Such being the case, according to this theory, it is perfectly practical to reduce by half the daily allowance of a chronic addict who is taking twelve grains of morphin without any effect other than mental discomfort. So that if the drug habitué who is accustomed to taking twelve grains daily should have this amount cut to six grains daily without his knowledge of the fact he would experience no great discomfort, if indeed any at all.

But this is merely theory—possibly the conception of some cloistered laboratory worker whose activities are confined largely to such laboratory subjects as guinea pigs and rabbits, and who has had very little practical experience with human

opiate users. I suspect that this theory must have originated in this manner. Otherwise I cannot conceive how it originated at all, for it can hardly be the conception of any practical clinician who has ever come closely in contact with drug addiction. For practical physicians know that, whereas one individual will get along comfortably for years on one grain of morphin daily, his neighbor may require ten or twelve times that amount daily during the same period. Moreover, if the patient accustomed to taking one grain daily has this amount suddenly decreased by twenty-five per cent. he will exhibit marked withdrawal symptoms invariably. And if a corresponding reduction is made in the case of the person who is taking ten times this amount he will show acute withdrawal symptoms just as inevitably as the person taking the smaller amount. It is not a mental condition but an actual physical one, which has been demonstrated repeatedly, and may be demonstrated at any time. Furthermore, it is not necessary to make any such great reduction as that

of twenty-five per cent. in order to make the demonstration. Just as positive results will be obtained if a reduction of ten per cent. is made so that the patient taking ten grains daily is reduced suddenly to nine grains. The result will be just as positive, although the symptoms are not quite so violent.

It is true, of course, that most chronic opiate users habitually take somewhat greater quantities of the drug than is actually required by their systems. This is peculiarly true at present, since the difficulty and uncertainty in obtaining the drug has produced a state of apprehension in most of the addicts which makes them use the drug to excess. But opium, which is the most remarkable of all drugs in many respects, is also remarkable for the latitude in the amounts required to produce certain physiological effects, particularly in persons whose systems have been perverted into that peculiar state which is exhibited in addiction. The human system seems to tolerate opiates with a flexibility unequaled by any other drug, and

each individual system seems to have its own standard of toleration and requirement. So that it is futile to make any uniformly fixed limit which shall apply to all cases.

As a matter of fact, the statutes limiting the amount of opiate that may be given any individual were enacted as legal expedients and are used merely as a practical working basis.

CHAPTER III.
USEFUL HYPNOTICS.

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THE bane of the narcotic addict when he is attempting to overcome his habit is insomnia. And sleeplessness, with its attendant discomforts, is often the most troublesome single element in the treatment of opiate addiction. It is in the long hours of sleepless nights that the patient suffers most from withdrawal pains and from mental depression. So that the experienced patient, who has taken treatment before, frequently beseeches the physician to "put him to sleep" no matter what else may happen to him.

"Give me a good night's sleep and I can get through the day all right," is the thing one hears repeatedly in the treatment of these cases. And there is much truth in the statement. A very great majority of patients are able to get through the day

in very good condition if they are given a good night's sleep. Yet the insomnia that usually attends any form of treatment is often most difficult to overcome.

The advent of a group of new hypnotics in recent years has helped to simplify the problem of insomnia immensely. Until recently about the only hypnotic available was chloral hydrate, and the combination of this hypnotic with some of the bromides. And even now there are cases in which good full doses of chloral, either alone or in combination, will prove effective when other measures have failed. In most cases, however, chloral is not the hypnotic of choice.

One of the most useful and least harmful hypnotics, particularly when quick action is desired, is dial-ciba. This hypnotic given in about three grain doses dissolved in hot water and taken hot, is quick acting and very effective. Its action is not so prolonged as such a hypnotic as sulphonal, for example, but the dose may be repeated often and apparently without any ill effects. It may be used, also, as a mild

sedative to steady the patient's nervous system during the daytime in some cases. But its best effects are as a hypnotic, and as such it has no superior, in my opinion, when quick and certain action is desired.

Very closely similar in its action to dialciba, and equally free from bad effects when given in reasonable dosage, is medinal. Five grain doses, repeated in an hour when necessary, are very effective. And medinal has the very great advantage that it may be administered hypodermically, the five grain tablets dissolving readily in twenty-five or thirty minims of hot water. There are many occasions, particularly toward the end of the treatment, when a hypodermic of medinal will produce very gratifying results, as it may be substituted for the expected dose of narcotic. The very fact that it is given hypodermically has a helpful psychic effect upon the patient, in addition to the more tangible one of producing gratifying sleep.

Thus medinal is often a very valuable adjunct in the treatment of opiate with-

drawal. In this connection, it should be borne in mind that it is only recently that the medinal tablets have been so made that they will dissolve completely in a few drops of hot water. The older tablets could be used in this manner, it is true, but were not so readily and completely soluble. All the tablets dispensed at the present time, however, dissolve very readily.

One of the most satisfactory all-around hypnotics in the treatment of these cases is sulphonal given in fifteen or twenty grain doses, because its hypnotic effect is much more prolonged than that of dial-ciba or medinal. As its action is not very rapid, it is often expedient to combine it with one of the other hypnotics. Frequently a tablet of dial-ciba dissolved in hot water, or a five grain medinal tablet given hypodermically at the same time that fifteen grains of sulphonal are administered, will give the patient five or six hours of refreshing sleep. And even when the patient awakens, the action of the sulphonal is often still prolonged to such an extent that there is not acute craving for an opiate

immediately after awakening, as is often the case otherwise.

One of the standard hypnotics which acts very satisfactorily in many cases is veronal, and its soluble salt, veronal sodium. Veronal sodium is supposed to be identical with medinal; and certainly the therapeutic action of the two appears to be very similar. Nevertheless, medinal seems to be more readily soluble than veronal sodium and, in my experience, is superior for hypodermic use. Otherwise there seems to be little to choose between the two.

Veronal, which is very effective, is practically insoluble except in large quantities of fluid. But when given in full doses it occasionally produces tremors, ataxia, and hallucinations, and seems to be peculiarly likely to produce these effects in narcotic cases. The peculiar delirium produced by this drug is sometimes very persistent and difficult to control, and for this reason some of the other hypnotics are usually preferable in the treatment of most cases of opiate addiction.

In some cases of insomnia small doses of luminal, or luminal sodium, are very effective and most satisfactory. Luminal sodium is very soluble and may be given hypodermically in two or three grain doses. Apparently it has no tendency to produce mental confusion and has no effect upon the respiration or circulation. But occasionally it does produce ataxia, a "luminal jag," which may persist for several days. In this condition the patient staggers about, but without other unpleasant symptoms, and frequently he himself does not realize that his gait is unsteady. In some cases the upper extremities seem to be affected so that the patient is unable to manipulate small articles such as a spoon. I have observed this in only two cases, however, both of them women of the neurotic type, so that I am by no means sure that the luminal was entirely responsible for the condition. But there seems to be no doubt that large doses of the drug sometimes produce ataxia with the characteristic unsteadiness of gait.

Now and again one sees a case of stub-

born insomnia in which paraldehyd works effectively when everything else has failed. Such cases are likely to be the nervous type of headstrong women with the hysterical element rather pronounced. And in such cases, particularly after the stage of active treatment has passed, paraldehyd is often useful. The same type of cases that are likely to be benefited by the vile smelling valerian preparations, or asafoetida, are the ones most likely to be helped by the evil smelling and tasting paraldehyd. In such cases the drug should be administered in at least one drachm doses, and the psychological effect is enhanced if it is given with no attempt to disguise its taste or smell. Possibly it is the disciplinary effect of the bad odor and taste that helps so materially in these cases. In any event, paraldehyd is sometimes useful as a hypnotic, but it should not be used from preference in the early stages of treatment because of its possible action upon the respiratory centers.

One should always bear in mind that in suitable cases the time-honored chloral

hydrate is an effective and useful hypnotic. But here again one must be governed by the physical condition of the patient. It is well to remember that during the active stage of treatment for overcoming the addiction there is likely to be a lowering of the arterial pressure and, as chloral acts as a depressant to the vasomotor centers, it should not be given in cases where the blood pressure is not up to normal. One should use this drug, then, with an eye on the blood pressure. Which means that usually it should not be given during the early stages of active treatment but should be reserved to combat the insomnia that often persists as an aftermath to almost any form of treatment.

One of the milder hypnotics, which is also useful as a nervous sedative, is chloretone. It is true that the hypnotic action of this drug is not very pronounced in most cases, but when there is nausea and vomiting, as frequently happens in the early stages of active treatment, chloretone, either alone or in combination, is often very useful. As a rule, it is better to give

it in capsules, but in cases of nausea it sometimes acts effectively when dissolved in a little brandy and poured over cracked ice. Five grain doses administered every hour for four or five doses will often prove efficacious.

Chloretone in combination with anti-pyrin is also useful at times in controlling the nervousness and "leg pains" that often follow active withdrawal treatment. It should be given in the combination of five grain doses of each drug dispensed in capsules. The mixture results in liquefaction, but this does not in any way interfere with the therapeutic action.

In addition to the various hypnotics that have been referred to here there are a number of preparations on the market, such as combination of the various chlorals, which are very useful. However, generally speaking, the hypnotic of choice should be the one that the physician is accustomed to giving and with which he is most familiar. For with hypnotics, as with firearms, the best is the one with which we are most familiar. Just as the

hunter does not select a new type of fire-arm to experiment with in hunting big game, so the clinician had best not experiment with new hypnotics in treating the insomnia of opiate withdrawal. In these cases one needs a familiar as well as a powerful weapon rather more than for any other type of sleeplessness.

CHAPTER IV.
RAPID WITHDRAWAL METHODS.

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THERE is no royal road to recovery from opiate addiction. Nevertheless, some highways are much less rough and rocky than others, and, given ideal conditions, the skillful physician is often able to steer his patient clear of the rougher places and enable him to make the journey back to normal health quickly and with a minimum of discomfort.

To accomplish this, several important elements are necessary, the most important, of course, being the skill and experience of the physician himself. But almost as important, if indeed not equally so, is the intelligence, skill, and experience of the nurse in charge of the case. It is true that the physician may sometimes get on fairly well with an intelligent nurse who has had no actual experience in treating these cases

by giving minute instructions and a great deal of personal attention. But even so, it is a dubious experiment, and one that should not be attempted from choice. Many failures in treatment may be attributed to lack of experience on the part of the nurse.

It is proverbial that nurses that have had no practical experience in dealing with mental cases are frequently worse than useless. And this is true even in a greater degree in the treatment of the opiate addict. For one thing, the opiate addict is the most sophisticated of all patients. Also, he is the most critical. He not only has a great amount of knowledge about addiction in general, but, in addition, he usually has quite an array of pet "whims" in connection with his own particular case. Add to this combination the apprehension that the patient always feels about undergoing treatment, and we have a situation quite beyond the range of novices.

It will not take long for the addict who is under treatment to discover that he is in inexperienced hands. And when he does

so he is likely to become panicky and difficult to manage. His confidence in his physician may offset in a measure his distrust of the inexperienced nurse, but this throws an extra burden on the physician and lessens his chance of successful treatment. And if by any chance the physician as well as the nurse is inexperienced in the practical handling of this class of cases, it will only be by the greatest "luck," or the interposition of that intangible force which the more reverent persons refer to as Providential, if the treatment is carried to a successful termination.

In short, it is impossible to overemphasize the importance of experience in the treatment of these cases. And this applies to every case regardless of the particular form of treatment. The fact of having a vast amount of knowledge about general medicine or general nursing methods will not compensate for the lack of special knowledge which is acquired only by actual contact and experience.

It is this special knowledge that is responsible for the reputation acquired by

various institutions for treating opiate addictions scattered throughout the country. Wherefore the inexperienced physician will do well to select one of these institutions for carrying out his treatment. For in such institutions he is sure to have the benefit of experienced nursing; and, if he is wise, he will not be oblivious to the casual suggestions of the nursing staff that are sure to be dropped from time to time; or too dictatorial and inflexible in his attitude. He will do well to give the attending nurse considerable latitude in handling perplexing situations as they arise—and almost invariably they do arise in every case—and garner useful knowledge for future reference from these little uncharted incidents.

And in this connection one should bear in mind that the proper place for treating opiate addiction is in a hospital or in some similar institution. It is possible, of course, under favorable circumstances, and with the aid of competent nursing, to treat the patient successfully in his home, but this is true only in exceptional cases. And

even under the most favorable circumstances treatment at home is seldom advisable. If for no other reason, the mental reaction to familiar surroundings is not helpful to the patient and may be positively harmful. Familiar sights and familiar sounds are far more likely to be harmful than helpful to the patient undergoing treatment. And one should not disregard the significance of the fact that the physicians who have had the greatest experience in treating these cases are the ones most loath to attempt any form of treatment at the patient's home.

In surgery the measure of success is not dependent solely upon the technical operative skill of the surgeon but upon his knowledge and judgment about his patient's condition in determining the time for operation. It is this combined knowledge of when to operate and how to operate that determines the status of the successful surgeon. In other words, it is knowledge and judgment as well as skill that determines the final issue.

The successful treatment of drug addic-

tion is dependent upon these same rules. And the particular form of treatment given is frequently much less important than the time of giving such treatment. No form of treatment will be uniformly successful, or attain a creditable percentage of successes, that is given indiscriminately to every patient who presents himself for treatment and without preliminary preparation. It is just as essential to get the patient into the proper mental and physical condition before attempting final treatment to cure his addiction disease as it is to properly prepare a patient for a surgical operation.

There are "emergency cases," of course, in which for one reason or another it is sometimes necessary to give drastic treatment immediately, just as there are emergency cases in surgery. And some of these cases prove to be eminently successful just as in the case of surgical emergencies. But these cases are the exception and may be practically disregarded in a general consideration of the subject.

It seems hardly necessary to say that

most cases presenting themselves are not in condition for immediate treatment. In most instances the patient is taking a quantity of the drug greatly in excess of his bodily requirement, and with the inevitable metabolic disturbances. Usually there is constipation with a marked tendency to acidosis, and frequently with intercurrent diseases that are aggravated by the general systemic disturbance.

Of course, these conditions are not always the result of an excessive quantity of the drug, but frequently the reverse, or an irregularity in the amount taken. This is particularly the case at present on account of the difficulty in obtaining the drug and the extortionate prices. And usually this disturbance of the patient's organic mechanism is aggravated by a distressed mental condition. So that the first problem of the physician is to reestablish normal bodily functions as nearly as possible and to fortify the patient's mental attitude.

I am assuming, of course, that the patient under consideration is honestly

desirous of being cured of his habit. Otherwise any treatment will be futile. But in the sincere class of patients it is frequently possible to improve their general condition with astonishing rapidity merely by regulating the dosage of morphin and establishing their confidence. And in almost all of these cases the establishment of the normal metabolic processes may be hastened by the administration of some of the mixed endocrine preparations and by stimulating elimination.

If it is possible to have the patient in the hospital during this course of preparation it is much easier to reduce the dosage of morphin rapidly so that when the final treatment begins he will be taking a comparatively small amount of the drug. Meanwhile it is much easier to get the bodily functions into good working order in hospital surroundings and under supervision.

In deciding upon the kind of final treatment to be given in any particular case one should take into consideration the intelligence and temperament of the patient,

his emotional stability or instability, and the measure of his earnestness to be cured. Also the amount of the drug he is taking. For, although it is true that patients who are taking tremendous quantities of the drug sometimes respond very readily to treatment, while others who are taking only very small quantities are most difficult to handle, this is not the rule, I believe, and these anomalies may be explained by the temperamental differences in the patient, or the surrounding conditions, rather than by any difference in the quantity of the drug. For it appears to be true that, everything else being equal, it is easier to treat the patient that is taking a small quantity of the drug than one who is taking large quantities. Moreover, the method of treatment may be greatly simplified in cases taking small quantities of the drug. Drastic treatment in such cases is seldom advisable or necessary.

Thus, if the patient who has been prepared for treatment is taking only one grain of morphin daily it is usually advisable to try some simple form of treatment

at first, reserving the more heroic methods if the other proves ineffective. For example, such a patient may be given a rather brisk laxative at bedtime after having a prolonged neutral bath, followed by his usual dose of narcotic. The following morning he should be given some saline, such as the sulphate of magnesia, so as to insure a thorough evacuation of the bowels. Half an hour later he may be given fifteen or twenty grains of sodium bromid and about fifteen grains of sulphonal. The bromid may be given in a solution in one of the various digestive mixtures, particularly if there is any tendency to gastric disturbance. Also it is a good routine practice to give these patients a sufficient quantity of sodium bicarbonate daily to correct the tendency to acidosis which is almost always present.

As soon as the patient begins to show withdrawal symptoms, as he will within two or three hours, he may be placed in a hot bath with an ice bag to the head, for ten or fifteen minutes, or placed in a pack to promote perspiration, then cooled off

slowly and given a salt glow. This will usually relieve his acute symptoms so that he will be fairly comfortable, and he will often drop into a sound sleep which may last several hours. And when he awakes and becomes restless, the hot bath, or sweating process can be repeated several times during the twenty-four hours. Meanwhile he is urged to take as much liquids or light nourishment in as great quantities as possible.

The dose of sodium may be repeated in the middle of the day if there is much nervousness, and should be again given in the evening with the addition of the sulphonal. And if the insomnia is troublesome it may be advisable to give one or another of the other hypnotics in addition to the sulphonal during the night. The bath and packs, and massage, help to relieve the discomfort and sometimes do so completely. And in such cases they should be repeated as often as necessary to keep the patient reasonably comfortable.

When there is a tendency to weakness or unsteadiness of the heart some reliable

preparation of digitalis given hypodermically is usually most satisfactory. Digitalis is usually preferable to strychnin in these cases because strychnia tends to exaggerate the nervousness and muscular twitching, which are likely to be very troublesome in any event. Spartein in heroic doses is highly recommended by some observers as it also tends to mitigate the pain in some cases. My own observations of this drug, however, indicated that its action in relieving the pain is very slight and, on the whole, not dependable.

The treatment just outlined will prove satisfactory and effective without other medication in a limited number of cases if given for forty-eight to sixty hours. Even in the most favorable cases, however, it is usually advisable to continue with the bromides during the day and some hypnotic at night for several days longer to combat the depression and general nervousness. And there are cases in which the leg pains persist for a week to ten days. Yet, there is likely to be a very strong psychic element in such cases.

In the treatment just outlined all narcotics are cut off at once. But the number of cases in which it is advisable or possible to do this is limited. And there seems to be no particular advantage in allowing the patient to suffer unduly when an occasional small dose of some narcotic will tide him over a distressing period without interfering with the progress of the treatment. For this purpose, however, there appears to be a very distinct choice of narcotics. And it is a good working rule, when it is found necessary to give a narcotic at all, not to give the particular one that the patient has been accustomed to taking. For example, if he is addicted to morphin, it is usually possible to relieve the acuteness of his symptoms with relatively small doses of codein or dionin, preferably the latter. And, as neither of these drugs are habit forming in any such degree as morphin or heroin, there is little difficulty in cutting them off immediately after the acute withdrawal symptoms have subsided. Dionin seems to be about twice as powerful as codein, that is, it will accomplish the

same purpose and usually somewhat better in half the dosage of codein.

There are occasions, however, when neither of these drugs, even when administered in large doses, will produce the desired effect. And in such cases the addition of a minute quantity of heroin combined with either dionin or codein sometimes works like magic. Frequently a single dose of heroin given in this manner suffices and will not have to be repeated during the remainder of the treatment.

It is in determining just when to give these occasional doses of narcotic that experienced nursing is important. There can be no fixed rule in this matter, which should be entirely dependent upon the good judgment of the person in attendance.

There seems to be no advantage in letting the patient suffer when a small amount of narcotic will give relief without interfering with the progress of the treatment. The mediæval idea that "suffering is good for a man"—that something will be gained by allowing the person to suffer unnecessarily—has no place in the successful

treatment of opiate addiction. It is reminiscent of our hard-headed, puritanical ancestors whose joyous conception of life seems to have been a prolonged period of purification-suffering on earth with rather more than even chances of intense caloric purification hereafter. And this conception is the direct ancestor of the false idea, which still prevails in some quarters, that if the patient is made to suffer during the course of treatment to cure him of his addiction this suffering will act as a deterrent in preventing him again becoming addicted to opiates. But this is a false conception. Indeed, it seems to be a clearly established fact that the patients subjected to the harsher methods of treatment, such as locking them up and letting them "suffer it out," are the very ones who most readily go back to the habit.

The dominant idea in modern medicine, the one thing that has made possible the advances in medicine as well as surgery, is the elimination of pain by any method that does not interfere with the progress of recovery. And this applies just as cer-

tainly in the treatment of opiate addiction as in any other branch of therapy. Thus the various methods that have been devised in recent years for treating opiate addiction are all designed to mitigate the patient's suffering during the course of withdrawal. At least three of these treatments are worthy of consideration as practical and legitimate methods that are used successfully at the present time.

THE LAMBERT-TOWNS METHOD OF DRUG WITHDRAWAL.

In the beginning of the treatment the patient is given five compound cathartic pills and five grains of blue mass. If these fail to act in six hours, he is given a saline cathartic sufficient to produce three or four free movements. Following this he is given two-thirds or three-fourths of his total twenty-four hour morphin or opium dose in three divided doses at half-hour intervals, preferably in the way he has been accustomed to taking it. Usually it is not necessary to give more than two doses of morphin, because at the time of giving the

first dose the patient is also given six drops of the following mixture :

	Gm. or C.c.
Tincturæ belladonnæ (15 per cent)	60
Fluidextracti xanthoxyli	
Fluidextracti hyoscyami	ãã 30

These drops are measured from a medicine dropper and preferably in capsules to avoid the disagreeable taste. This hyoscyamus mixture is given every hour, day and night, continuously throughout the treatment, increasing two drops every six hours until the dose has reached 16 drops. If the patient develops symptoms of belladonna poisoning at any time, which is shown by dilated pupils, flushed face, dry throat, or a "peculiar incisive and insistent voice and an insistence on one or two ideas," the drops should be discontinued for a few doses. Dilated pupils and a certain amount of dryness of the throat are present early in most cases, of course, but not to the extent to indicate poisoning.

If the hyoscyamus mixture has been stopped, it is again begun at a reduced dosage as soon as the symptoms have sub-

sided. And if the patient has an idiosyncrasy against belladonna (which is rather rare), it will be shown in the first six or eight hours. In that event the treatment is given in diminished dosage. On the other hand, when 16 drops, the full dose, given for twelve consecutive hours does not cause dryness of the throat, this should be increased to 18, or even 20 drops per hour, and continued unless there is dryness of the throat.

In combination with this hourly belladonna-mixture treatment, the patient is again given five compound cathartic pills and five grains of blue mass ten hours after the first dose of morphin. If the bowels do not act in eight hours, a saline cathartic should be given. When the bowels have acted thoroughly, one-half of the dose of morphin given at first should be given; and ten hours after the second dose of morphin, that is, about the twenty-eighth hour of the treatment, five more compound cathartic pills and five grains of blue mass are given, followed again by

a saline if the bowels do not act in eight hours. After the bowels have acted thoroughly, the third dose of morphin is given, which should be one-sixth of the first dose, and usually this is the last dose of morphin required.

At about the forty-sixth hour of the treatment, that is, ten hours after the last dose of morphin, five compound cathartic pills and five grains of blue mass are again given, followed by a saline if needed. About this time the characteristic "bilious green stool" should appear. And when this occurs, two ounces of castor oil are given to clean out the intestines. Should this fail to appear as scheduled, it may be necessary to continue the belladonna mixture over one or two more "cathartic periods" before giving the oil.

It is during this last bowel-moving period that most patients suffer their greatest discomfort and are likely to become extremely nervous. But this may be controlled by codein, "which can be given hypodermically in five grain doses and re-

peated, if necessary; or some form of valerianates may help them.”

Beginning about the middle period of the treatment it is usually advisable to stimulate the patient with strychnin or digitalis, or both. The intervals of administration should be left entirely to the judgment of the attending physician.

THE PETTEY METHOD OF DRUG WITHDRAWAL.

In this treatment, which was devised by Dr. George E. Pettey, the patient is urged to drink large amounts of water to dilute the body fluids, and to cause watery movements and a large amount of urine, and is given active cathartics, and tub and vapor baths.

Pettey's medicinal treatment is scopolamin in 1/200 grain doses, spartein sulphate in two-grain doses, and 20 grains of sodium thiosulphate every two hours for 24 hours.

On the first day of the treatment the patient is given his usual dose of morphin, but has no food either at noon or at supper time.

Pettey's cathartic prescription is as follows:

R	Calomel	
	Powdered extract cascara	
	Sagrada	gr. x
	Ipecac	gr. i
	Strychnin nitrate	gr. $\frac{1}{2}$
	Atropin sulphate	gr. $\frac{1}{50}$
	Mis. and make 4 capsules.	

The patient takes one of these capsules every two hours, beginning at 4 P. M. The following morning he receives no nourishment and no morphin until his bowels have moved, but about 5 A. M. the next morning he is given one-twentieth grain of strychnin hypodermically. Half an hour later he is given two ounces of castor oil or the contents of a bottle of magnesium citrate. And the strychnin and the oil or saline are repeated every two hours until there is a thorough bowel evacuation, and in the meantime no morphin should be given.

As soon as the bowels have moved freely the patient should be given from one-half to two-thirds of his usual dose of morphin at the same intervals at which he has been accustomed to take the drug. And he may eat as much as he pleases until about six

hours before he begins his second purgative treatment, which should begin at the end of forty-eight hours from the first. This purgative treatment should be given in the same way on the first day, and the morphin is continued in doses just sufficient to keep the patient comfortable, until the last dose of the cathartic capsule has been given. Then the opiate is stopped, and no more given thereafter.

From six to eight hours after the second purgative course has been completed, the strychnin hypodermically and the oil or saline should be repeated, as before. But following this, as soon as the patient feels the need of the morphin, instead of morphin or an opiate, he is given $1/200$ grain of scopolamin hypodermically. This is repeated in thirty minutes if there is much discomfort. And if the patient does not sleep, a third dose may be given in half an hour, and the amount increased if necessary to produce the desired effect. The effect aimed at is either sleep or mild intoxication, in which case the patient does

not suffer. As soon as he wakes, or as soon as the intoxication begins to subside, he is given another 1/200 grain of scopolamin, and in this way the intoxication is prolonged, thus keeping the patient free from pain, for from thirty-six to forty-eight hours. The scopolamin should then be stopped.

During this scopolamin treatment and for twenty-four hours afterward, Pettey gives 20-grain doses of sodium thiosulphate every two hours, which he thinks supplements the effect of the calomel purgative. And during the treatment Pettey corrects any tendency to weaken circulation by giving spartein sulphate in doses of two grains, every four to six hours.

The whole course of treatment lasts from five to six days, followed by treatment aimed at improving the patient's general condition.

THE SCELETH METHOD OF DRUG WITHDRAWAL.

The basis of Sceleth's medical treatment is the following prescription:

Scopolamin hydrobromid	gr.	1/100
Pilocarpin hydrobromate	gr.	1/12
Ethyl-morphin hydrochlorid (dionin)	gr.	ss
Fluid extract cascara sagrada	℥	xv
Alcohol	℥	xxxv
Water	q.s. ad	3 i

The patient under treatment is first given a saline cathartic, and then the above mixture of scopolamin (or hyoscin), pilocarpin, ethyl-morphin hydrochlorid, and cascara sagrada, the dosage determined by the amount of morphin the patient is taking. Thus, if more than 10 grains of morphin per day are being taken, 60 minims are given every three hours, day and night, for six days. Patients who are taking less than 10 grains of morphin a day start with a dose of 30 minims of the mixture; and if less than 5 grains, 15 minims. On the seventh day the dose is reduced to 30 minims; on the eighth day 15 minims; and on the ninth day 15 minims three times a day, instead of every three hours day and night. This treatment is discontinued on the tenth day and strychnin nitrate, one-thirtieth grain three times a day, is substituted. The following day the strychnin is reduced to one-six-

tieth grain three times a day, and this is continued for a week.

During the first five days of the treatment Sceleth gives a very light diet, but encourages the taking of liquids freely. This applies to all cases.

During the first three days of the treatment the patients are usually sleepless, and frequently nauseated, as should be expected. The guiding indicator, however, is the pulse-rate. Thus, if the pulse falls below 40 or goes above 120 per minute, the scopolamin mixture is stopped temporarily. And should there be any signs of collapse, one-half grain of ethyl-morphin hydrochlorid, or one-quarter grain of morphin should be given hypodermically. In some cases, particularly of old morphin takers, small doses of heroin work like magic. In about 4 per cent. of the cases, according to Sceleth, there is scopolamin delirium, sometimes rather severe. In such cases the scopolamin may be omitted from the mixture for a few doses, and then added in small amounts. These are simply incidents in the course of treatment, how-

ever, and need not interfere with its successful termination.

One objection to this treatment is that it is rather "long drawn out" as compared with some others. Nevertheless, it is theoretically at least, a very rational one. For it "represents the substitution of ethylmorphin hydrochlorid for morphin; the fighting of the morphin depression by scopolamin; the necessary promotion of secretions by pilocarpin, and the necessary laxative treatment by cascara."

BISHOP'S PRINCIPLES OF TREATMENT IN RAPID WITHDRAWAL.

Bishop follows no routine in his withdrawal of opiate. He does, however, advocate as rapid a withdrawal as possible once the withdrawal is undertaken. He uses without particular formula or special combinations the drugs adapted to the current clinical requirements of the individual case, apparently taking from any method and from his own experience whatever is applicable to the needs of that case at any given time.

He regards hyoscin or scopolamin as functioning solely as an anæsthetic or amnesic or nervous system controller during a period of withdrawal of short duration, in which the patient is treated symptomatically by support to circulation and increased elimination, quiet and rest, and other medication or therapeutic attention as indicated. He does not regard hyoscin or scopolamin or other anæsthetic or amnesia producing medication as of specific action against addiction itself.

He uses smaller doses of hyoscin or scopolamin or other medication of similar effect than do many others, and explains the efficacy of the smaller doses as being a result of thoroughness in the stage of preparation and preliminary elimination and circulatory and endocrine and other readjustment and removal of complicating conditions and elements. Thereby he secures a more normal reaction to all medication employed during withdrawal.

His attitude towards eliminants is that the addict should not be over-purged, as this exhausts true elimination and may

produce a mucous colitis, to which he and others attribute failure in some cases. He states that the addict in normal balance and functional tone requires no more drastic catharsis than the average man, and that extra intestinal motility and evacuation can be secured by peristaltic stimulators as indicated.

He believes that by careful preparatory treatment and securing of approximate normality of function and psychology before withdrawal of opiate, and then withdrawing opiate as rapidly as possible and maintaining functional balance and avoiding shock or strain or exhaustion or undue suffering during withdrawal, the prolonged strain and readjustments of the period of what is called "after care" so emphasized by most, can be vastly shortened or avoided.

Bishop regards these persisting and prolonged manifestations of the usual "after care" period as extremely difficult of endurance for the patient, even worse in some ways than the actual withdrawal sufferings. He also regards them as being

not so much sequelae of cure as more often in reality results or indications of uncured or incompletely cured addiction itself due to persisting low grade activity of the addiction mechanism. He also regards them as of greatest importance, and as determining in many cases the ultimate prognosis as to relapse, and as importantly influencing the subsequent mental, nervous and physical well-being of the patient.

He is guided by the clinical indications of symptoms and reactions of the addiction itself and of the patient, both in his selection of time for withdrawal and in selections of method of withdrawal and conduct of its course. It seems that in this way he largely avoids or greatly lessens the prolonged and dangerous manifestations of "after care," which he calls "post-withdrawal" symptoms.

To follow his teaching of course necessitates more education and clinical teaching of the average physician in the subject of addiction than is at present available, but it seems probable that the future clinical and therapeutic development of addic-

tion treatment will be along the lines suggested by him, and possibly in discoveries along the lines of some of the as yet unsolved problems of biochemistry and serological research in opiate addiction.

It will be observed that the basis of all these treatments for drug withdrawal is the administration of some preparation of hyoscyamus and the establishment of good elimination. In actual practice there seems to be no special advantage in producing elimination to the extent of violent purging, as this is distinctly weakening and still further depletes the already weakened condition of the patient. Ordinary elimination produced by mild laxatives is preferable in all cases regardless of the particular method employed in the withdrawal treatment. Moreover, it seems to make very little difference what particular form of laxative is used if a thorough bowel evacuation is produced. And since almost every physician has his own pet laxative mixture with the dosage of which he is most familiar, I believe it is better for each physician to use his

particular laxative until the desired effect is produced rather than attempt some unfamiliar mixture. Compound cathartic pills, cascara, phenolphthalein—any of these appear to be effective, particularly when assisted by some saline mixture given the following morning.

As regards the various preparations of hyoscyamus, there seems to be no difference whatever in the effect produced by scopolamin and hyoscin. One may use these substances interchangeably in the same case without any apparent difference in action.

The essential thing in using hyoscin for treating these cases is to keep the patient in a state of mild hyoscin delirium for a period of about thirty-six to forty-eight hours. At the same time it is advantageous to add pilocarpin to promote the secretions which are retarded by the hyoscin. This in effect is an abbreviated combination of the methods suggested by Pettey and Sceleth.

For some reason or other an air of mystery has been thrown around the so-called

hyoscin treatment, largely, I believe, because hyoscin forms the basis of the "cures" in the various institutions not conducted by regular physicians. Frequently their treatment is very successful and usually it is very simple. But naturally they wish to keep their methods secret, and convey the impression that it requires special knowledge and great skill to handle addiction cases successfully. And the fact that most physicians know very little about the treatment of drug addiction and have few occasions for using hyoscin in their practice, has fostered this attitude of the quack.

Now, in point of fact there is nothing very fearsome, or mysterious, or complicated in treating opiate addiction with some hyoscin combination. The crux of the whole thing is simply to put the patient into a mild state of hyoscin delirium and keep him in that condition for about thirty-six to sixty hours, meanwhile using ordinary medical judgment in treating symptoms as they arise.

It is simply the part of universal med-

ical wisdom to have the patient in as good physical condition as possible at the beginning of the treatment, and this, of course, assumes that he is getting reasonably good elimination. The various complicated preliminary methods of accomplishing this seem to be largely medical whims, although they may be useful in their psychic effect upon the patient and perhaps just a little so upon the attending physician. And whether or not the physician begins his treatment by a complicated and carefully laid out plan of producing elimination by a special process, or one of half a dozen methods known to every physician, may be left to the choice of the individual physician himself with perfect confidence that the ultimate result will be about the same regardless of the particular methods pursued.

One method of giving the hyoscin is illustrated in the following case (case No. 436), in which the patient responded in a characteristic manner. This patient, a woman thirty-five years old, of an emotional type, had been addicted to opiates

most of the time for the greater part of ten years. Her physical condition was fairly good, and at the time of beginning treatment she was taking four grains of morphin daily.

She was admitted on the day previous to the day of actually beginning the active treatment, although she had been under observation for some time. The first evening she was given two calobarb tablets and a grain of morphin hypodermically. The following morning at six o'clock she was given a half ounce of magnesia sulphate. Half an hour later she was given a grain of morphin hypodermically, as the bowels had moved thoroughly at that time. Two hours later the actual treatment began, the first dose being given at 8.30, consisting of hyoscin $1/100$ grain, pilocarpin $1/20$ grain, and heroin $1/6$ grain. The heroin was added to the dose to avoid the possibility of any unnecessary pain, as she was a highly sensitive woman and it seemed particularly desirable that her suffering be minimized.

In most cases no narcotic is necessary

for this purpose, or at least only as an initial dose, until the hyoscin mixture has taken effect. Thereafter the hyoscin itself prevents the occurrence of pain, or at least it puts the patient into a "twilight sleep" in which the pain is pretty much forgotten.

Referring to the chart, which is epitomized in part here, it will be seen that the patient was given twenty doses of hyoscin, or a total of $1/5$ of a grain. Also ten doses of pilocarpin or a total of $1/2$ grain. She was given four doses of heroin of $1/6$ grain each and two doses of dionin of $1/4$ grain each, during the active stage of treatment.

In this case the advantage of combining pilocarpin with the hyoscin was shown to advantage; since this the patient had taken, or attempted to take, hyoscin treatment on one other occasion. At that time the treatment was not completed because the hyoscin produced such dryness and pain in the throat that the patient refused to continue this treatment. With the pilocarpin added, however, she experienced no such difficulty, and as she was able to sleep most of the

time during the active treatment, her progress was uneventful.

It has been explained in another place that the hyoscin intoxication or delirium continues in a somewhat modified form for several days after the last dose of this drug is given. This is not an active delirium, of course, but more in the nature of a mild exaltation, or euphoria, in which the patients may do somewhat bizarre things which makes it advisable to have them under fairly close observation. Frequently this condition is so mild in character that persons who are unfamiliar with the patient's normal mental attitude would not observe it.

It is in this stage that the patient often feels completely cured of his addiction, with no desire for the drug whatever, and anxious to leave the hospital and go about his business. The physician must not be deceived by this euphoric condition, however. For at this time and for several days following, the patient is likely to have temporary returns of the withdrawal pains which incite a temporary craving for the

drug which would be gratified were he at large and acting upon his own responsibility. In short, he is still in a state of impaired judgment, weak willed and irresponsible as far as opiates are concerned.

Immediately following the hyoscin administration some vigorous tonic and supportive treatment should be given. And usually the nervous system shows a reaction in which sedatives and hypnotics are often required.

In the case under consideration, the patient suffered a severe nervous shock from an unavoidable fright about four days after the treatment was discontinued. This fright produced a highly nervous condition, sleeplessness, and rather severe leg pains. She was therefore given thirty grain doses of sedobrol to allay the nervous symptoms, and the insomnia was relieved by hypodermic doses of luminal sodium, combined with medinal. The leg pains, which are always most difficult to control, were eased considerably by the use of a combination of chloretone and anti-pyrin. This combination of chloretone

and antipyrin makes a liquid which is readily administered in capsules. Sometimes five grain doses of pyramidon are useful for this purpose.

In some cases great relief is given by the administration of five grain doses of "mygrone." This dose may be repeated every three hours if necessary to relieve the aching legs. "Mygrone" is the trade name of dimethyl-amido-phenyl-pyrazolon, introduced by Filhene, and recommended highly for controlling certain types of pain, such as the leg pains of tabes.

1st day	.....10:00 P.M.....	Calobarb 11
	10:00.....	Morph. Sulph. gr. 1
2nd day	..... 6:00 A.M.....	Mag. Sulph.
" "	6:30 A.M.....	Morph. Sulph. gr. 1
" "	8:30.....	Hyoscin gr. 1/100
" "	.....	Pilocarpin gr. 1/20
" "	.....	Heroin gr. 1/6
" "	10:30.....	Hyoscin gr. 1/100
" "	11:00.....	Heroin gr. 1/6
" "	12:30 P.M.....	Hyoscin gr. 1/100
" "	.....	Pilocarpin gr. 1/20
" "	2:30.....	Hyoscin gr. 1/100
" "	4:00.....	Hyoscin gr. 1/100
" "	.....	Pilocarpin gr. 1/20
" "	6:30.....	Hyoscin gr. 1/100
" "	.....	Heroin gr. 1/6
" "	8:30.....	Hyoscin gr. 1/100
" "	.....	Pilocarpin gr. 1/20
" "	.....	Sulphonal XX
" "	10:30.....	Hyoscin gr. 1/100

3rd day	.....12:00.....	Heroin gr. 1/6
" "	12:30 A.M.....	Hyoscin gr. 1/100
" "	.....	Pilocarpin gr. 1/20
" "	2:30.....	Hyoscin gr. 1/100
" "	4:30.....	Hyoscin gr. 1/100
" "	.....	Pilocarpin gr. 1/20
" "	6:30.....	Hyoscin gr. 1/100
" "	8:30.....	Hyoscin gr. 1/100
" "	.....	Pilocarpin gr. 1/20
" "	10:30.....	Hyoscin gr. 1/100
" "	1:30 P.M.....	Hyoscin gr. 1/100
" "	.....	Pilocarpin gr. 1/20
" "	3:00.....	Digitalis gr. 1/100
" "	.....	Dionin gr. 1/4
" "	5:30.....	Hyoscin gr. 1/100
" "	.....	Pilocarpin gr. 1/20
" "	9:30.....	Hyoscin gr. 1/100
" "	10:00.....	Sulphonal gr. XX
" "	1:30 A.M.....	Hyoscin gr. 1/100
" "	.....	Pilocarpin gr. 1/20
" "	5:30.....	Hyoscin gr. 1/100
" "	8:00.....	Digitalis gr. 1/100
" "	Dionin gr. 1/4

CHAPTER V.
CHARACTERISTICS OF HYOSCIN
DELIRIUM.

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CHARACTERISTICS OF HYOSCIN DELIRIUM.

THE chief characteristic of the hyoscin delirium is a feeling of depression or euphoria, with hallucinations and illusions of sight. In this condition the patient sees all manner of fantastic things and often imagines that he is doing the same thing over and over for hours together. It is really a "dream state" with hallucinations of sight not unlike that seen in certain other conditions, like delirium tremens, except for this very important difference that the hyoscin hallucinations are frequently pleasant in character. Even when the things imagined would be most unpleasant in actuality they seldom distress the patient and are generally regarded in retrospect as ludicrous pleasant-ries.

Usually the patients are restless during

this delirium, frequently hyperactive, turning and twisting constantly in the bed, or they may be precisely the reverse of this condition. And each individual patient develops a peculiar set of hallucinations that are his own and unlike those developed by any other patient, just as each person's dreams differ from those of his neighbor.

Thus one patient who seemed perfectly happy and cheerful during the entire course of the treatment, imagined that he was wandering about on roads which led through great white "snow banks" of morphin. As soon as he left the road and attempted to gather a handful of this tempting substance, the white banks retreated before him, keeping just out of reach. This seemed to amuse him rather than distress him, yet he kept persistently at it hour after hour, laughing and talking to himself good naturedly for the greater part of the time.

Another patient, a young lady, who in her normal state of mind had the usual feminine timidity about mice, imagined

that on one side of her bed were thousands of gray mice and on the other side, countless numbers of white mice. And she occupied herself in catching these mice, cutting off their tails, and binding these tails into little clusters to be used as "feather dusters." Her delirium was of the quiet type and as she was resting in bed there was very little suggestion of her abnormal mental condition. Yet when questioned, she would talk volubly, describing in detail the mouse slaughter and her methods of creating dusters out of the clusters of detached tails.

Sometimes a patient is stuporous, particularly patients that require large doses in order to get the desired effect. In one case of this kind, an extremely powerful athlete who had been in the habit of taking tremendous doses of morphin, the patient would sit up in bed for hours with eyes closed, making an occasional little furtive movement with his hand as if attempting to grasp something. Most of the time it was impossible to arouse him from this condition, and he usually resisted any at-

tempt made to change his position. Later on he explained that he experienced no pain or particularly disagreeable feeling during this period, but was actively engaged in picking blackberries. He would pick sixteen blackberries—precisely sixteen, no more and no less—but as soon as the number was reached he would take the berries and give them to the pigs. In this case the hallucinations were undoubtedly suggested by the fact that there were blackberry bushes close at hand and a pen containing some pigs a short distance away.

Some patients engage in a great deal of silly laughter—a mild sort of hilarity—in which everything about them seems funny. Occasionally one becomes morose, querulous, irritable, and “inclined to show her true disposition” as one nurse expressed it. But on the whole it is a not unpleasant delirium state, which clears up quickly.

In a small percentage of cases the patient does not clear up completely mentally after the treatment is discontinued, but remains in a mild psychopathic state.

This is sometimes attributed to the effects of hyoscin. But in point of fact the hyoscin is not responsible, since this condition occurs just as frequently when no hyoscin has been used. And if a careful investigation is made it usually develops that the patient gave evidence of a psychopathic condition before any treatment was given. It is sometimes a true drug psychosis, but more often it is a mental instability in which the opiate addiction is simply a contributing factor. In many cases the addiction is the result of the mental abnormality rather than the cause of it.

Apparently about the most important period in the care of these cases is that immediately following the cessation of active treatment. At this time there may be no pain of any kind that would require treatment, and frequently no craving for the drug. But almost invariably there is a weakness and a feeling of depression attributed to this weakness, which impels the patient to resort to an opiate if he has the opportunity.

It is at this period, usually for several

weeks after the active treatment, that the patient requires vigorous tonic and supportive measures as well as moral support. It is probable that this muscular weakness is due to a depletion of the endocrine glands, a case of hypocrinism. And if the opiate addiction has been of long standing this condition of endocrine inactivity has become chronic and correspondingly difficult to stimulate into normal activity.

If this theory is correct the indication for treatment is to stimulate and encourage the depleted glands of internal secretion as quickly as possible, and to attempt to replace this absence of normal secretions by the administration of artificial endocrine preparations.

To accomplish this, a vigorous administration of the glycerophosphates of lime and strychnin in combination with the administration of some of the mixed gland preparations is very useful. Nevertheless, it does not seem to be possible with any of the methods at our command at present to whip up the activity of the internal secretions rapidly, particularly in the old

chronic cases. But the difficulty in this respect seems to be very greatly lessened if the patient is put through a course of preliminary treatment in which the morphin is reduced as much as possible and at the same time the internal secretions are stimulated and assisted by the administration of mixed gland preparations.

The trend of practical clinical medicine at present is to emphasize the treatment of the individual patient—to study the characteristics of the patient quite as much as the particular disease with which he is afflicted—and direct the treatment accordingly. In no condition will this principle prove more fruitful than in the treatment of opiate addiction. And in no condition will “cut and dried” methods prove more barren if followed with unvarying precision.

CHAPTER VI.

COMMENTS AND OBSERVATIONS.

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ALTHOUGH the majority of opiate addicts take their drug hypodermically, most of them do not use the hypodermic syringe for this purpose. This sounds paradoxical, but it is true nevertheless. In place of the hypodermic syringe an ordinary eye dropper with a hypodermic needle slipped over the point is used. Some addicts prefer this to the ordinary "hypo" of commerce.

One reason for this preference is the difference in cost between droppers and hypodermic syringes. But the price is not always the determining factor. The simplicity of the dropper method—merely a glass tube with a rubber bulb at the end of it, in place of a complicated, piston-driven mechanism—appeals to the average addict. The mere matter of cleanliness and hygiene

is of minor importance. Moreover, considering the means usually at hand, it is really somewhat easier to keep an eye dropper clean than a hypodermic syringe, particularly the glass-and-metal "four bit" syringes carried by the average addict.

The art of sterilizing instruments and keeping them in a reasonable degree of surgical cleanliness does not seem to extend very much beyond medical and nursing circles. Yet it is an interesting fact that my records for the past two years show that fully twice as many needle abscesses occurred in patients who were using hypodermic syringes as in those using the eye-dropper method.

However, the really astonishing thing is that so few abscesses occur, considering the manner in which the addict carries his drug and his apparatus for taking it, and the way he usually takes it. Indeed, one finds it difficult to understand why most opiate addicts fail to infect themselves continually. Dirty morphin powder carried

about in dirty paper, dissolved in unsterilized water, injected through uncleansed skin surfaces from an eye dropper and needle that have never been really sterilized—all this suggests certain infection and impending death to any physician accustomed to reasonable sanitary precautions. And yet many of these patients continue to take their drug in the manner just described for years without producing an abscess.

On the other hand, there are patients who continually infect themselves and who have one abscess after another. And frequently these are the very patients who are most careful in their attempts at asepsis. They have the latest type of glass syringe, are fastidious in their general habits, and apparently use every precaution possible in taking their "shot." And yet they produce their regular crop of needle abscesses, while their unsanitary neighbor who takes no precautions whatever, goes abscess free.

The only reasonable explanation of this

paradox is that of individual resistance. Some patients seem to be easily infected while others are practically immune.

If the average physician were called upon to give a dose of medicine hypodermically without a hypodermic syringe or hypodermic needle, he would probably be somewhat nonplussed. It would be a case of "making bricks without straw." Yet any "dope fiend" can do the trick. And he has a special name for it—the "pin shot."

The "pin shot" is an emergency measure, indigenous to jails and other places of involuntary habitation, whereby dope may be administered without the aid of the usual implements. Also without the knowledge of the jailer.

All the instruments necessary are a pin—a large safety-pin preferred—and a medicine dropper. This pin is pushed vertically through the skin, making a hole large enough so that the solution of "dope" can be forced in with the fine pointed dropper.

Thousands of doses of morphin are

taken in this way every day. The method is not generally recommended, even by those who are forced to use it. Indeed, I believe it is never used from choice. But it is effective even though inelegant. And it is a trick that the emergency surgeon might do well to remember on occasion.

Just as the underworld of addiction has methods of its own so also it has a language of its own. This is as we would expect when we consider that the whole life of this type of addict is wrapped up in his addiction. He thinks of nothing else, dreams of nothing else, and talks of nothing else in the company of his associates. These people seem to know each other instinctively and are grouped together in inseparable clans. And when they are together, night or day, almost the only subject of their conversation is "dope"—or "junk" as it is properly known in the vernacular. They will talk for hours of this or that or the other experience they have had, or that some one has had, or that they are to have. In short, their lives are entirely absorbed by their habit. And nat-

urally they have developed a jargon of expressions that is not found in dictionaries and seldom heard outside the realm of this particular branch of the underworld.

“It is a language that no white man can understand,” as one of these addicts once told me, facetiously. “But we all understand it, the country over.”

There are certain expressions used by the addict that the physician should understand if he is to interpret intelligently what his patient is talking about. For example, when the addict talks about having a “habit” he does not refer to the taking of the drug, but precisely the reverse. When his system is calling for the drug as shown by yawning, sneezing, watering of the eye, and profuse secretions from the mucous surfaces, the addict describes his condition as a “habit,” or “yen.”

The term “habit” appears to be used everywhere. Wherefore, the physician should bear in mind that when these patients tell him that he has “a bad habit” he does not intend to convey the impres-

sion that he is referring to his reprehensible drug taking, but, on the contrary, that he isn't getting enough of the drug and is suffering in consequence.

Since practically the whole topic of conversation among the majority of underworld addicts is something concerning their addiction, it is only natural that this topic is not confined to members of the clan alone at all times. Most drug takers at one time or another have an appreciative sense of shame about their addiction. At least, they know the attitude of the world towards their shortcoming, whatever their own opinion about it may be, and when in their normal state of mind guard their secret carefully. But when they have taken a little too much of their accustomed drug, or not quite enough, most of them tend to gabble about their affliction to almost anybody that comes within range. Thus they show the blunted condition of the normal sensibilities.

"The trouble with us is," as one of them once told his physician, "that we talk too much. We know that nobody likes a 'hop

head,' and that we would be better off if we kept our mouths shut about using dope. But when we are a little short, or have taken a little too much, we go and blab everything to everybody." And this man spoke the truth out of the fullness of his experience.

Part of the technic of drug addiction, when it has reached the stage at which the patient receives his narcotic in solution, is to put a small wad of absorbent cotton into his precious bottle of "junk." This is a precautionary measure, and serves a double purpose. For general usage it is helpful in preventing the needle from becoming clogged if the solution is drawn up into the dropper or syringe through this absorbent cotton. And if by chance the bottle should be broken or its contents spilled, there would still be enough morphin remaining in the cotton for one last, life-saving shot.

Of course, after this bit of cotton has been squeezed and drained, there still remains a certain amount of morphin in the fiber meshes which may be dissolved out.

Many addicts make it a practice to save these little pieces of squeezed out cotton, dry them, and put them away carefully. So when the inevitable "rainy day" comes, in which the patient finds himself short of medicine, he can boil up his store of impregnated cotton bits and tide himself over into clear weather.

I knew of one girl who made the practice of saving these dried bits of cotton against the time when she would come from the sanitarium after taking "curative treatment." She had taken all manner of treatments at various times, and always reverted to the drug just about as quickly as possible after coming from the sanitarium. And by storing these precious bits of cotton among her toilet articles, she always had on hand a daintily concealed supply of morphin to start her on the downward path just as soon as she arrived home.

During her absence at the sanitarium her devoted parents always cleansed her room thoroughly and destroyed every grain of opiate they were able to find. But

they never suspected that the innocent looking little ball of cotton among their daughter's toilet articles was really "gun cotton," as she called it, that would start her immediately on the downward trail.

It is a wise plan before beginning the actual withdrawal treatment to see that the patient's teeth are in good condition, for, if there is a cavity, or latent abscess or almost any other pathological condition, it is likely to set up a diabolical aching just about the time the withdrawal process is well under way. This is true also of infected nasal sinuses, chronic mastoids, and many other pathological conditions. And when we have the unpleasant withdrawal symptoms, which are hard enough to bear at best, complicated by excruciating pains from another source, it is practically impossible to complete the curative treatment for the addiction.

Occasionally there are urgent reasons for giving the treatment to correct the addiction as quickly as possible regardless of the patient's general condition. And one is frequently tempted by circumstances

to begin the withdrawal treatment at once, intending to correct the other pathological conditions after the patient has been taken off the drug. Sometimes this may be done successfully; but as a rule it leads to disaster, as it gives the patient a very real excuse for reverting to his opiate. Moreover, when the patient is suffering actual pain, the physician himself may be compelled to administer an opiate to relieve him; and this single dose may be sufficient to again start the patient on the road to addiction.

There is a very great difference between patients in the matter of the persistency and intensity of the craving for the drug once it has been permanently withdrawn. Some patients have a constant craving during every waking hour of the day, just as certain individuals constantly crave alcohol. These are the cases in which there is apparently something fundamentally lacking in their physical make-up. And naturally it is much more difficult for these patients to resist the temptation that is constantly present than in the case of the

person who, when once the drug has been withdrawn for any considerable period, does not experience any real craving for it.

It is proverbial that the use of opiates weakens the will power. And like most other things proverbial, there is undoubtedly a very great element of truth in this belief. But in a high percentage of cases of addiction the weakened will power is inherent in the individual, not merely produced by the opiate.

A very common mistake frequently made by those who have had little experience with opiate addiction, is to assume that when the patient is taking a very small amount of the drug this can be taken away from the patient without producing withdrawal symptoms. If, for example, the amount of opiate has been reduced so that the patient is only getting one-quarter of a grain, or perhaps only one-eighth of a grain twice daily, when heretofore he may have been taking twenty or thirty times this dosage, it would seem that the absolute withdrawal of this minute quantity would produce no appreciable effect except

upon the patient's mental condition. In other words, if the patient did not know that his drug had been stopped—if he were to be given a hypodermic water in place of the narcotic—he would never know the difference.

Such is not the case, however. For even this small amount of narcotic when suddenly stopped without giving any treatment to mitigate the withdrawal symptoms, will be followed by the characteristic series of symptoms that are shown when a larger amount is stopped suddenly. To be sure the symptoms are not so persistent and not quite so severe in these cases, but the difference is surprisingly small. And usually the symptoms produced by the withdrawal of small amounts may be mitigated to a point of tolerance by the use of dionin or codein. But in any event, one should not be misled by the fallacy that no actual physical symptoms will be produced by the withdrawal of minute doses of opiate.

Getting up in the morning is the most difficult part of the day's routine for the

opiate addict. Usually he has taken a parting "shot" at the time of retiring the night before, so morning finds him with the effects of the opiate so greatly diminished that he is beginning to experience the symptoms of withdrawal.

The first thing on the morning's program, therefore, is to take a "shot to get up on," as he expresses it. Indeed, without this matinal stimulant most addicts would not be able to get up at all, or at best would be able to crawl about in a cold, clammy, nauseated condition closely approaching complete collapse. Some patients are so profoundly affected, particularly if they have missed their dose the night before, that it is almost a physical impossibility for them to give themselves a hypodermic, even with the means of doing so at hand.

Having these terrible morning experiences in mind, the addict makes it a point to save enough "medicine" to get up on in the morning even though he has to omit his night-cap at bedtime. For although the sufferings of a drugless night are dis-

tressing enough, the morning sufferings and the inability to "get started," are so much worse that the addict will undergo any preliminary suffering in order to avoid them.

It is quite a common thing for the chronic opiate addict to take cocain also. Usually he does this so as to get the "kick" which opium alone now fails to give him. In other words, he uses cocain as a stimulant and intoxicant, whereas his opiate is used simply for the purpose of keeping himself in as nearly a normal condition as possible.

Curiously enough, there is an element of unpleasantness in the use of cocain even to those persons who continue to use it habitually. This condition is known in the vernacular as the "bull horrors," a type of persecutory delusions in which the victim imagines that "some one is after him." He is fearful and apprehensive, afraid to go outside his room, afraid to meet people, and consumed with fear of some mysterious, unknown danger. And yet with it all he experiences a certain

kind of pleasure which more than offsets the terrors, so that he keeps on taking the cocain, knowing exactly the horrors that he will have to suffer, but willing to do so for the sake of experiencing the indescribable pleasure that accompanies the feeling.

Of course cocain does not affect all persons in this manner; but there is a tendency to produce some such effect in all cases if the use of the drug is persisted in for any considerable time. However, a notable difference between the effects of cocain and the opiates is shown in the withdrawal symptoms. When cocain is stopped the patient experiences a mental craving and distress which is quite as insistent and compelling as the mental effect of opiate withdrawal. But the physical symptoms are wanting—the withdrawal of the drug does not produce a “habit,” as the addict expresses it. And for this reason no particular form of treatment is necessary, as it is merely a matter of keeping the cocain away from the patient. In these cases the lock-and-key method is without danger and

without the great discomfort that is experienced in cases of opium withdrawal.

One of the most dangerous elements in the narcotic problem is the drug-taking physician. For this doctor-addict not only has a definite motive for promoting and encouraging drug addiction among his patients, but in addition he is in a position to victimize entirely innocent persons.

The imperative motive for doing this at present is the active enforcement of our narcotic laws, which makes it difficult for physicians to obtain any very considerable quantity of opiates except for legitimate purposes. If the addicted physician is taking large quantities of the drug, therefore, he finds it difficult to conceal this fact in his record sheets, which are scrutinized periodically by representatives of the law. But if he has several habitual drug users among his patients, it is a comparatively easy matter to pervert their prescriptions, or divert their opiates, so that he may keep himself well supplied, and still have what appears to be clean records. Thus these dishonest, drug-taking members of our

profession represent an insidious agency for creating and perpetuating opiate addiction, particularly since the enactment of the recent stringent laws. These physicians were very much less of a menace in times gone by when it was possible for them to obtain all the narcotics they desired without question.

However, the menace of the dishonest doctor is inconsequential in comparison with that of the illicit peddler. For the making and perpetuating of drug addicts is essential to the business of the drug peddler, whereas it is merely incidental with the addicted physician. Moreover, the things resorted to by the drug peddlers and the methods they have of spreading their contamination are far more comprehensive than those of dishonest physicians. Thus, it is not only part of the peddler's trade to create as many drug takers as he can, but to keep in close contact with those already addicted, and to urge them on by the various subterfuges known to the members of this vulture clan.

The drug peddler knows practically

every chronic opiate addict in his immediate community. Also, most of the drug addicts, at least in the underworld, know him, and hate him—but fear him. They know that even though they are not purchasing their drug regularly from him, he will “help them out” in the “emergencies” that arise inevitably. Or he can refuse to do so, and cast them into the slough of unspeakable torment and torture if he so wills. Wherefore, they refuse to divulge his identity to the officers even when subjected to third degree methods, though their hatred of the creature they defend is such that they would glory in knowing he was being torn limb from limb. This is one of the complicating problems of the present narcotic situation.

It is a gloomy day for the narcotic peddler when he hears that one of his erstwhile patrons has entered a sanitarium for the treatment of addiction. It is a gloomy day, but not one of utter despair. For the peddler has passed through these periods of uncertainty and depression before, and knows that he still holds a very important

trump card which he will play, with more than even chances of success, after a short period of patient waiting.

Here is an illustration of what this trump card is, and how he uses it: A certain patient who had been addicted to opiates for several years sought out a reputable and highly successful sanitarium and submitted herself to their treatment for the cure of addiction. The treatment was eminently successful and was completed without incident. And after the usual period the patient returned to her home, pleased with herself and the world in general, and without any impelling craving for an opiate more than is always present in any person who has ever been really addicted.

Within four hours after reaching home she received a telephone message from a former acquaintance who was addicted to drug-peddling, offering to sell her a supply of morphin at a price very much less than the illicit market value. The offer was refused. A few hours later she was again called to the 'phone by the same person,

who offered her the same amount of morphin as before, but at half the price previously quoted. This offer was refused also. The following morning, just at the time when the drug addict is likely to have the most insistent craving, she was again called to the 'phone and was again offered a tempting half dram of the opiate, this time without any question of price, but simply as a gift. And still she refused.

At noon, however, she received another telephone message from the same persistent peddler. In this conversation she was informed that if she would look under the right hand corner of the door-mat at her front door, she would find a paper containing a half dram of morphin placed there at her disposal by the peddler. And when the patient resisted this temptation for several hours, the peddler called up his victim and requested that she sit in her window where she could watch her front doorstep and witness him go to the door-mat, take out the tempting paper and exhibit it to prove the truth of his assertion, and then replace it and go his way.

This incident illustrates the persistency of the peddler in plying his trade. His motive is obvious. He could well afford to give away a half dram of morphin, knowing that this amount would quickly establish a condition of addiction in his victim that would reap him a rich harvest in profits later on.

It should be recorded to the credit of this particular opiate addict that after this last episode of the door-mat, she threw discretion to the winds and called up the police authorities. But it so happened that the department in charge of the narcotic problem had no officers available for the moment, and, as it was late Saturday afternoon, she found it impossible to get in touch with the State officers to whom she appealed. And meanwhile, remember, there was that great temptation tantalizing her from her very door-step. Need any one question the ultimate result? Within a week's time the peddler had wiped out his losses, and was checking up his usual profits on the credit side.

This case illustrates one of the phases

of the menace of the illicit peddler, and the kind of shrewdness the authorities are obliged to contend with continually. It illustrates also the human side of the chronic addict, even when in deadly earnest about overcoming the habit. The peddler reckoned with this weakness when he found that his intended victim would listen, even though she refused. For he knew that in these cases, as in the case of Byron's estimate of another human frailty, "who listens once will listen twice, and one refusal no rebuff."

Any one who is inclined to criticise too harshly the addicted person's inability to resist temptation (and most of us are so inclined), should take stock of the amount of resistance to temptation offered by the average individual as regards less baleful bad habits than opiate taking. Smoking, for example, and the eating of too much food by fat persons.

We know that about ninety-nine per cent. of fat persons are fat simply because they eat too much. And a very high percentage of persons, in these days of luxury,

are too fat. It is a matter of common knowledge that too much fat is bad for the health, and it is a matter of common observation that too much fat is disfiguring. Also, fat is a source of constant discomfort. And so we have three impelling motives for not being fat,—health, comfort, and appearance. Yet we know that there is not one person in a thousand who will resist the temptation to take a “second helping” and to eat those tempting things that one especially likes.

When we consider that there is much truth in the ancient jest that “nobody likes a fat man”; and absolute truth in the belief of every woman that nobody likes the appearance of a fat woman; and that appearances are almost the dearest things that the world offers a woman; and, moreover, that almost any fat woman can revert to comely slenderness by persistent dieting—when we consider all these things, and then reflect that even with this array of compelling incentives it is almost impossible to find any person who will really diet consistently, it is not surprising that

the drug addict does not show himself to be a paragon quite above the common herd in his human attributes by resisting a temptation of far greater intensity than the mere desire for a special kind or quality of food.

It is a matter of common observation that the institutions that charge the highest rate, and the physicians who demand the highest fees for their services, are the most successful in the treatment of drug addiction. Why? It is a question readily answered by the psychologist. First of all, most human beings value things for what they cost. This rule holds true when a person gets something for nothing. Or, at any rate, his estimation of the value is likely to be far higher if he has been obliged to toil and sacrifice for a thing. Wherefore, it follows as a natural consequence that the opiate addict who has sacrificed both money and comfort for his treatment is far more likely to resist the temptation to return to his addiction than the one who has made comparatively little sacrifice. This is discourag-

ing, for it lessens the value of any treatment that is given gratuitously. And yet most cases of opiate addiction fall in the charity class.

We must bear in mind, of course, that the moral fiber and intelligence of the patients who patronize expensive institutions and physicians are of better quality on the average than those of charity cases. Their natural endowments are better, and we would expect a higher percentage of recoveries among this class of patients under any circumstances. Nevertheless, the general proposition holds true that those who work, and earn, and pay for things appreciate those things more than those who receive them as gifts. And the practical truth of this is suggested by the fact that most charity cases require custodial care as well as medical treatment for the cure of their addiction.

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