CHAPTER 1

Introduction and review of literature

The purpose of the investigation

International literature has for many years dealt with the problems connected with the abuse of drugs. Many of these problems were well elucidated, others less so. In Norway there have been relatively few investigations which throw light on drug addiction on a broad basis, and, as far as we know, personal follow-ups of drug addicts have not been undertaken. In fact, few investigations of this kind are reported in international literature.

We have therefore undertaken this study to find out how drug addicted patients fared later. In order to obtain reliable information about this it is, in our opinion, absolutely necessary to make personal follow-up investigations. One can assume with a certain amount of assurance that this group of patients in particular is likely to give incorrect information about themselves and their use of drugs. The written reports they submit will be of less value than those given by patients suffering from other illnesses, and the information from relatives will be more essential in these cases, as well as control information from neutral sources. In the course of our investigation, we rapidly became aware of the fact that a prognostic estimation would be of little value unless the basic material was worked through thoroughly. It was obvious that if the prognosis was to be elucidated, a series of anamnestic and clinical data would have to be worked through first. Thus it was that in our work we found there was reason to throw light upon drug addiction in the broadest sense of the word, from the causal factors to the clinical picture, the immediate results of the treatment and the late prognosis. We considered that there was even more reason for this inasmuch as Norwegian medical literature is also very deficient with regard to these problems. Through personal contact with all the patients and their relatives, we have furthermore had the opportunity to deepen and to supplement the anamnestic data in a way which we consider to be of value.

It is well known that we distinguish between a serious and a slight abuse of drugs: addiction and habituation. These terms will be defined later in this work. It is the former group which has usually been considered in earlier papers. We have found reason, however, to investigate the latter group also
on the same lines. It is then possible to compare the two groups, and the prognostic problems connected with the second group are of particular interest. This paper, then, includes both severe and slight forms of drug abuse, both addiction and habituation.

The abuse of alcohol is not included in these considerations, as alcohol, in our opinion, is not a drug.

**Review of literature**

In this section we will keep to the relevant literature we have come across dealing with the various aspects of drug abuse, with special emphasis on those reports which throw light on the prognosis. We will also refer to a few normally accepted considerations, without reference to the source, especially with regard to historical information.

Human beings have used medicine in one form or another as far back as history can report. One of the oldest drugs known is opium. The opium plant was known in the ancient cultures of Babylon, India, Egypt, Persia, Greece and Rome, and Europeans have cultivated it for at least 4,000 years. Marihuana (*Cannabis indica, Cannabis americana*) has been known equally long as a drug and as a narcotic, while the chewing of coca leaves probably can be traced as far back as the Inca culture in South America. Originally, these substances were used in their raw form, the leaves were chewed or smoked, or a tincture was extracted and inbibed.

It was not before the beginning of the last century, however, that the active substances were isolated, first morphia, later codein, papaverin and other alkaloids derived from the opium plant. In the middle of the century, it was learned how to convey these substances to the organism by means other than through the mouth when Wood in 1853 invented the hypodermic needle. At first it was thought that this method of administering the drug would prevent abuse. It became rapidly apparent that these substances would lead to abuse, and new substances were continually being isolated which one thought would not result in misuse. One of these was, for example, heroin (from 1898) which was originally considered innocuous, but which, since 1915, is the drug which has been most frequently misused in the U.S.A. Fifteen years passed before one realized that heroin could lead to dependence. History can recount even more recent examples of the long period of time which can elapse between the introduction of a preparation and the discovery of its dangerous habit-forming characteristics. Barbiturates had been used for a whole life-time (since 1903) before the danger of addiction was discovered quite recently. A striking example of how an opinion can change in a short while is shown by comparing
the 1940 and the 1956 editions of *Goodman & Gilman's* text book of pharmacology. Chronic intoxication was, in the first edition, regarded exclusively as a cumulative result of the therapeutic use of prolonged-action barbiturates. But the latest edition lays great stress on the danger of addiction from the use of barbiturates, particularly the rapid-action types, and categorically states that barbiturate addiction is a far more serious problem than morphine addiction. This change in attitude is primarily due to the conclusive results produced by *Isbell et al.* (1950) at the Lexington Hospital, a clinic for narcomaniacs. In Norway, *Ancher sen* (1952, 1956) in particular, as well as *Kåss et al.* (1958, 1959), have warned against the use of barbiturates because of the danger of addiction. The latter authors (1958) have also cast light upon barbiturate intoxication as a public health problem in Oslo, the capital of Norway.

A further example of how substances which were originally introduced as harmless for addiction, and later prove to be dangerous, is the so-called light tranquilizer, meprobamate. This substance was synthesized in 1950. *Lemère* (1956) described the habit-forming characteristics of the drug. Later, it was generally accepted that meprobamate could lead to addiction. In Scandinavia it was pointed out by *Kodahl & Andreassen* (1957) and by *Andreassen* (1959) in Denmark, and by *Eittinger et al.* (1960, 1962), *Teigen* (1961) and *Retterstöl & Sund* (1963) in Norway.

The substances which are misused are many, and in different countries, different drugs lead to addiction.

**What is drug abuse?**

In the course of time, several attempts have been made to define the term 'drug addiction'. One assumption is that a drug addict is a person who feels well when using drugs. Another definition, suggested by *Wikler* (1953) reads as follows: 'A compulsive use of chemical substances which are harmful to the individual, the community or both.' The most popular definition was submitted by the WHO Expert Committee on Drugs Liable to Produce Addiction in 1950:

'Drug addiction is a state of periodic or chronic intoxication, detrimental to the individual and to society, produced by the repeated consumption of a drug (natural or synthetic). Its characteristics include:

1) An overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means;
2) A tendency to increase the dose;
3) A psychic (psychological) and sometimes a physical dependence on the effects of the drug.'
'With regard to concepts, a distinction must be drawn between addiction, as defined above, and habituation. In the latter condition, there is no compulsive need of the drug, but only a strong desire for it. Furthermore, there is little or no tendency to increase the dose: dependence on the drug is psychological and not physical, hence there is no abstinence syndrome, and any detrimental effects trouble the individual rather than anyone else.'

In our opinion the concept 'drug abuse' should include both the more serious form of addiction and the lighter form of habituation.

The incidence of drug abuse

Unfortunately, we have no exact information regarding the incidence of drug abuse. This is partly due to the fact that in all probability only a small number of the abusers are registered. It is also partly due to the lack of registration and the unreliable statistical information in many countries, partly to the different views on what drug abuse actually is. There may also be a difference of opinion regarding which substances should be considered as being liable for abuse. The most important points are perhaps that addicts so rarely apply for medical assistance, that their relatives are loathe to bring up the question, and also that the addicts often move from one district to another. To obtain a justified opinion about the frequency of misuse, one would have to include systematic interviews with a group of the population and their relatives, possibly supported by chemical tests. Such investigations have, as far as we know, not been undertaken. The chemical tests which exist can ascertain but a few sorts of drugs.

Nyswander (1959) reports that in 1885 it was assumed that from 1 to 4 per cent of the population of the U.S.A. used drugs. The incidence of abuse is still unknown, but it is generally presumed (Nyswander 1959; Report on Narcotic Addiction, 1957) that there was a decrease as the result of the Harrison Narcotics Act in 1914, an Act which brought the sale of drugs under the control of the Federal Government, and in the U.S.A. they now operate with figures varying from 48,000 to three times as many (Connery 1952, Wolff 1953, Adams et al. 1955, Nyswander 1958, Lee Speer 1958, Kolb 1962).

Reports from South America show that there is a tremendous abuse of cocaine there. In the course of one year all of 20,000 tons of cocaine were consumed, according to Gutierrez-Noriega (1951). The important role played by cocaine in the life of the Indian in the mountain districts is shown by Möller (1945), who reports that time and distance are measured according to the effect of the drug. A 'cocade' is the distance one can cover on the effect of a dose of the drug, or the period of time elapsing before one feels fatigue. Others have also stressed the serious and central problem presented by cocaine
addiction in these countries, and Wolff (1949, 1953) even goes so far as to suggest that the retarded state of the Indian population is due to drug addiction.

The problem appears to be quite different and considerably more modest in British quarters. Only 164 males and 219 females are registered as addicts in Great Britain and Northern Ireland in an official report published in 1947 (Norwood 1949). The same report emphasizes that Pethidine is abused more than cocaine, and this report gives the reader the impression that the situation is well under control in these countries.

In Norway the number of registered addicts is also very low. In the 8-year period from 1950 to 1958 there were 133 male and 98 female addicts registered officially, of these barely one-third were barbiturate addicts.

Kåss et al. (1959) show that these figures are hardly relevant and that in Oslo alone, medical departments have an average of one admission per day of barbiturate addiction. They suppose that 'the low figure for reported cases of barbiturate addiction can probably be attributed in part to the fact that many doctors and pharmacists have not hitherto looked upon dependence on barbiturates as a form of drug addiction. Barbiturates have also been relatively easier to obtain than other drugs and abuse is therefore more difficult to detect. A further reason why so many cases of barbiturate addiction remain unknown may be that barbiturate addicts do not suffer from malnutrition so often as morphine addicts.'

The majority of authors agree that the abuse of drugs presents a steadily increasing problem (Lemke 1950, Helweg 1952, Kåss et al. 1958, 1959), but in the U.S.A. it is generally assumed that the problem has decreased after the passing of the Harrison Narcotics Act in 1914 (Ausubel 1952, 1961, Nyswander 1958, Kolb 1962). Most of the authors in the West European area also think that a change has taken place in the misuse of the various preparations. The classic forms of morphine and cocaine abuse have decreased in favour of an increased addiction to barbiturates, synthetic morphine preparations, pain-killing drugs of the phencetine type and meprobamate (Maas 1951, Wolff 1953, Kodahl et al. 1957, Kåss et al. 1958, 1959, Ewing 1958, Eitinger et al. 1960, 1962, Retterstol et al. 1963).

That the addiction to drugs in our modern community is more widespread than statistics show is apparent from the experiences of Kåss et al. (1958, 1959) in a medical department in Oslo, and from those of Scheid et al. (1961) in the University Clinic for Nervous Disorders in Cologne. The report made by Eitinger et al. (1960, 1962) also seems to show how important it is to be aware of the problem of addiction. Scheid et al. (1961) found that when the patients were questioned thoroughly regarding their medicine habits, all of 10 per cent proved to be definite abusers. Skalpe et al. (1962) give a somewhat
contradictory report when they show an addiction of 1.5 per cent in a Norwegian medical department, although these figures agree well with those given by Kåss et al. (1958).

Sociological factors in drug abuse

It is usually supposed that drug addiction is most widespread in large cities. However, Nyswander (1959) reports from the U.S.A. that while drug addiction in the northern districts is greatest in large cities such as New York, Chicago and San Francisco, in the southern states it is greater in the small towns. Kolb (1962) reports also from the U.S.A. that more than 50 per cent of the active addicts are Negroes. These same authors report that the sex distribution was displaced after the passing of the Harrison Narcotics Act. Previously there was a preponderence of females (3:1 or 2:1) while there is now a considerable predominance of males (4:1 or 5:1). In the U.S.A. the greater percentage of female addicts are prostitutes. One theory regarding the change in the sex distribution is that women are usually more sensitive to the taboos of the community so that their addiction was reduced from the moment the abuse of drugs was against the law.

Official reports show rather contradictory figures inasmuch as in Great Britain the greater number of registered addicts were females (Norwood 1949), while in Norway males were in the majority. However, most clinical reports show a predominance of male addicts.

It has been known for a long time that there is a great preponderance of drug addicts among medical personnel: doctors, nurses, pharmacists, veterinary surgeons, dentists and the like. In the U.S.A., according to Nyswander (1959), it was reckoned that 1 per cent of all doctors were drug addicts. There is a remarkably high incidence of drug addiction among medical personnel in several reports dealing with the problem of narcomania. Clark (1962) found that of 120 drug addicts treated at the Crichton Royal Hospital, Dunfermline, 65 were doctors or nurses. Ancher sen (1947) found in his material dealing with drug addiction that about one-third were connected with occupations which gave easy access to morphine. Langfeldt (1951) also points out in his text book of psychiatry that morphinism may be called an occupational disease among chemists, veterinarians, pharmacists, doctors and nurses. Kåss et al. (1958, 1959) found no such predominance in their material on barbiturate addicts. In their opinion, it is possible that the difference in incidence between 'non-exposed' and 'exposed' groups is not so great with regard to barbiturate addicts, because it has not been so difficult to obtain barbiturates as morphine. Nimb (1959, 1961), basing his report mainly on material supplied by the Health Authorities in Denmark, shows 108 euphomoniac doctors in Denmark during
the period 1949-1956. Müller-Hegemann (1951) reports that 60 per cent of morphine addicts belong to the medical profession. Helweg (1952) found that 21 of 87 drug addicts had, through their occupations, easy access to drugs. Norwood (1949) found that of the 383 known cases of drug addiction in Great Britain and Northern Ireland, 87 were connected with the medical profession. Rüdin (1955) found that 26 per cent of the male abusers of drugs belonged to this group of professions. Among 50 morphine addicts Booij (1954) found 45 who belonged to the medical profession or were laboratory workers.

While medical personnel form the largest group, unskilled workers predominate numerically, a fact pointed out by Treadway (1943) in particular. This can be explained by the fact that this occupational group is the largest in industrial communities, but another reason suggested is that the unskilled workers' schooling is interrupted at an early age, and that they therefore come sooner into surroundings where they have access to drugs.

Some investigators have found drug addicts to be most widespread in the more intellectual type of occupation and in commerce and industry. This applies especially to opium (Tu found a specially high incidence of these occupations among the opium smokers in Formosa. Quoted from Kolb 1962). It has been contended that opium in particular does not appear to impair the intellectual functions to any great degree. Kolb (1962) writes thus about his opium addicts: 'Judged by their output of labour and their own statements, none of the normal persons had their efficiency reduced by opium.'

In recent decades there has been a tendency in psychiatry not only to describe morbid conditions but also to look for causal factors, especially the psychological ones. The childhood environment has been given special attention.

Recent investigations appear to indicate that drug addiction is especially prevalent among persons whose background during childhood was difficult, as described by Knight et al. (1951) who found unstable home conditions in two generations among 44 of their 75 drug addicts. Kielholz (1952) found hereditary tainting in 38 of 70 drug addicts. Hoffmann et al. (1952) found that their narcomanic youths came from 'sub-standard' homes, and that the typical family constellation was a mother who dominated the home. The father had been absent during the greater part of the patient's life in more than half of this number of youths. It was also characteristic for these youths that they had many acquaintances but few close friends. McLaughlen et al. (quoted by Nyswander 1959) found that the majority of their patients came from 'broken homes' where there had been a divorce, or where one or both of the parents had died before the patient was 12 years old. If the patient was able to identify himself with one of the parents, it was generally with the mother. Chein et al. (1957) in their investigation point out special sociological structures. These
investigators found that among juvenile addicts, the father, in more than one-half of the cases, worked out of town, lived apart from the family or was indifferent to or inimical to the patient. These investigators also found that it was the mother who dominated the home. They were of the opinion that the family appeared to have an indifferent attitude toward the addict, did nothing to encourage him to continue his education or the like. It has been pointed out that remarkably many of the patients came from slum quarters, where experience shows that there is a predominance of broken homes and high incidence of minority groups. Bobitt (1953) reports that the majority of patients at the Lexington Hospital were young people from the large cities, usually from minority groups and from slum quarters. Todd et al. (1956) also point out the significance of social factors. In youths, they found drug addiction most widespread among the coloured population of a lower income class. They considered that the addiction in many cases was an attempt to get away from or compensate for the unpleasant social reality, and pointed out that drug addiction in the United States, at least at the present, is not only a psychological but also a social and cultural phenomenon. Cameron (1963) refers to the following Report on Narcotic Addiction from the Council on Mental Health of the American Medical Association (1957): 'There is a remarkable agreement between various studies in diverse locations. In all studies, especially of youths, addiction is found to be largely confined to very limited areas of the cities involved. These areas are the poorest in the cities and are characterized by the lowest income, poorest housing, most unstable family structure, the highest delinquency rates, and ... the areas having populations of predominantly Negro and Puerto Rico origin.' Jost et al. (1957) strongly emphasize the social and cultural aspects of narcotic addiction, as does Müller-Hegemann (1951).

There are also some investigators who are of the opinion that the majority of drug addicts come from intact and relatively normal homes, among these we find Pescor (1943) who could report that 54 per cent came from such homes.

A comparison between the data given by the various writers will naturally depend greatly on which definition of 'normality' forms the basis of their considerations. It is probable that many of the differences between the data reported from various writers are due to the highly differing selection of their patients, not only with regard to abuse, but also sociocultural background. It is commonly agreed that drug abusers are a very heterogeneous group sociologically.

Many authors have pointed out the high incidence of divorce among drug addicts. Rüdin (1955) found that among 437 drug addicts the incidence of divorce was 11 times higher than in a normal population.
Psychological factors

When going through the literature, we found it correct to differentiate between the sociological and psychological conditions, even though these factors are to a great extent interwoven and cannot be strictly separated. The psychological factors have presumably been given the most extensive and most speculative consideration.

The addict himself is most frequently convinced that his abuse of drugs is due to events which have occurred through no fault of his own, and he is inclined to muster considerable resistance to the explanation that is steadily gaining more ground, namely that it is, in the first place, tendencies in his own character which make him intoxicate himself instead of facing up to external difficulties. It is now usual to look upon narcotic addiction as one of several manifestations of a deep-seated conflict in the personality. It is hardly likely that any specific conflict is the cause of drug addiction, but deviating traits of personality in general seem to appear frequently in narcotic addicts. Ancher-
sen (1947) found in his material from the University Psychiatric Clinic, Oslo, a group consisting of 44 morphine addicts, deviating traits of personality which could be characterized as psychopathic in more than half of them. Knight et al. (1951) report that an ‘addict personality’ is very similar to a psychopathic personality, and they base their considerations on a psychological test material. This personality is characterized more by a lack of healthy resources than by the presence of a demonstrable pathology. There is an inclination to an immature attempt to satisfy immediate needs, often through aggression. There is a remarkable lack of interest in other people. In males there is often a slight sex identification. The patient feels insecure, is sensitive, has feelings of insufficiency, but resents authority and the demands made on him. Rommel-
spacher (1953) has investigated 50 abusers of alcohol and drugs treated in institutions with Rorschach and Wartegg tests, supplemented by biographical anamneses, and though he found a number of common traits, three-fourths of the patients lacked the ability to ‘digest experiences’, and also to feel intuitive sympathy. He also found many highly explosive, impulsive and affective tendencies, a great deal of irritability and suggestibility, combined with a need for love and help, and in many of them, obvious present neurotic conflicts with complexes, and disturbed human relationships. However, the Wartegg and Rorschach tests revealed nothing which could not be found in other neuroses, perversions and mental illnesses.

The majority of investigators find deviating traits of personality in drug addicts. Hoffmann et al. (1952) found emotional instability, Zimmering et al. (1952) found a superficial levity which marked the interpersonal relation-
ships of the young heroin addicts, and psychological studies showed that good object relationship could not be obtained in this group of patients.

Fort (1954), who examined the same group of patients, found that they were often introverted, passive and lacked emotional response. They had a primary dependence on women and had usually been brought up by domineering, over-protective mothers or mother-substitutes. Heroin made them docile, impotent, not aggressive.

Knight et al. (1951) found a predominance of introverted, shy and uncertain individuals in comparison to extroverted persons.

Faragó & Liebermann (1957), who supplemented the anamnestic data of 100 drug addicts with Rorschach tests, concluded that all their patients suffered from serious personality disorders. They found a discrepancy between affect, intellect and action. The patients were unable to solve the real conflict, and at the same time they were unable to bear the emotional tension which they tried to escape by using narcotics.

Gerard & Kornetsky (1954, 1955) have also compared a group of opium addicts with a group of control patients, and submitted both to test-batteries. They found significantly more deviating traits of personality in the addicted group. As common traits of the drug addicts they reported a) dysphoria, b) problems of sexual identification, c) disturbances of interpersonal relationships.

The authors we have quoted up to now represent the view that the abuse of drugs is a consequence of the euphorizing or 'normalizing' effect the said drug has on that particular personality structure. Lindesmith (1947) holds a different view, namely that it is the abstinence phenomena which condition dependence, at least in the case of opiates, and he is of the opinion that the euphorizing effect plays a minor part. In our opinion, this view offers no explanation as to why the patients have reached the stage of being physically dependent on the drug. Lindesmith's theory can merely contribute to elucidating one of the reasons (although probably not the central one) for the maintenance of the addiction in the said patient.

Many have considered whether different traits of personality lead to addiction to a special drug and also whether the patient becomes addicted or habituated. The characteristics of the heroin addict have already been described (Fort 1954). Wikler (1952, 1953) and Wikler & Rasov (1953) are of the opinion that one reacts differently to the various drugs all according to the personality type to which one belongs. They assume that drugs belonging to the opiate group satisfy primary cravings, such as hunger, sexual instincts and so on, while barbiturates, alcohol, cocaine and morphine reduce inhibitions, aggressions and so on. 'Regardless of conventional personality classifications which may be applied to them, addicts are individuals in whom the chief
sources of anxiety are related to pain, sexuality and the expression of aggression.'

It has also been stressed that the narcomaniac strives to attain a condition in which he is 'cool', as this fits in with his image of an ideal. Narcotics belonging to the opiate group give him this feeling because they reduce his aggression. Kolb (1962) contends that the effect on aggressiveness is so great that criminal tendencies can disappear after the development of narcomania.

Lindemann & Malamud reported as early as 1934 that 'each drug undoubtedly has certain characteristics but these are quite closely related to the conditions of the patients which are present when these specific effects are produced. The changes produced by a certain drug will not only be elaborated in the light of the pre-existing psychic state, but totally new types of the reaction may result from such an inter-relationship.'

Felsinger et al. (1955) tested a group of patients by the means of interviews and Rorschach tests after they had taken morphine, heroin, barbiturates, amphetamine and placebo, and were of the opinion that they found a connection between a typical reaction to a drug and the personality structure. Non-typical reactions to the drugs were typical for the least well-balanced personalities. The group with the non-typical reactions to drugs preferred opiates, and there were maladjusted persons in this group.

Contrary to this, Tramer et al. (1961) contend that the way in which an addiction develops is the result of environment and culture. Köss et al. (1958, 1959) found no connection between the personality structure and the drug.

Ausubel (1961) is of the opinion that it is the type of personality which determines whether one becomes addicted or habituated. Only individuals with a special personality structure can become real narcomaniacs, he says. A person becomes a narcotic addict because the euphorizing effects of the drug have an exceptionally corrective value for his special type of personality insufficiency. The drug addict is usually a passive, dependent, unreliable and inadequate person, who is mainly interested in pleasures which do not cost him any exertion. These qualities are not characteristic of those persons who become merely habituated. He gives no proof for this theory, however.

Serious deviations of personality seem to be present in serious forms of abuse. Hill et al. (1960) found personality deviations in a juvenile group of this kind associated with psychopathy or a predominantly psychopathic nature.

At present there is no doubt a clear tendency to look upon drug addicts as people with the most varied kinds of personality structure, from the relatively normal for whom unfortunate occurrences have paved the way to drug addiction, to the seriously psychopathic types of personality and to the very neurotic individuals. As early as 1925, Kolb supported a corresponding view which Felix (1944) has expressed thus: that a drug addict should be regarded
as a maladjusted individual not so radically different from the non-narcomaniac. He is a person who has discovered that the drug reduces the discomfort to which his difficulties have led him and gives him a subjective feeling that he can master the situation. Kolb (1962) has recently modified his view on the personality structure of the drug addict. He thinks that there is a small group of relatively unremarkable persons who through a visit to a doctor have come into contact with a drug. With regard to the other drug addicts, he contends that these are persons with either neuroses (psycho-neuroses), character disorders, personality deviations, and inadequate or sociopathic personalities. He is concerned here exclusively with opiate addicts. In the relatively large group whose first contact with drugs was due to physical illness, he found all of 89 per cent with 'abnormal nervous make-up prior to addiction'. Resor (1958) also supports this view, and he points out that the group of unremarkable persons is very small.

Psychoanalytic literature stresses that drug addiction is a regressive phenomenon, the drug permits a regression to primary narcissistic stages and to sleep. Savitt (1963) points out that while the inclination to be dependent on something is latent in all of us (in the milder forms, over-eating, smoking, craving for sweets and the like), it is surely the disorders in the development of the personality itself and the maturation of the ego which predispose the individual to a drug dependence. Psychoanalytic literature's formulation of the phenomenon of drug addiction is presented in the term 'oral craving'. This literature also emphasizes the homosexual components such as described by Desclaux et al. (1949).

Psychiatry founded on existential philosophy regards the tendency to intoxication as a generally human trait, an attempt at de-individualizing, determined by individual anxiety, and perhaps a form of suicidal attempt, as suggested by Evrard (1956). In addition to the general disposition there is the individual one. The toxicomaniac is to be found among psychopaths. He shows a defective social adjustment on the one hand, and suffers from this short-coming on the other. In order to escape this feeling of unhappiness, some psychopaths try drugs. Existential analysts see no difference between the toxicomaniac who has become habituated after physical suffering and the one who has become so because of the mental sufferings of the psychopath.

The abuse of drugs, addiction to alcohol and criminality

Many authors have pointed out the similarity between the abuse of drugs and alcohol, and found a great number of alcoholics in their narcomaniac material. Alcoholics are also addicted to a substance, but this substance is not, in our opinion, a medicine. Anchersen (1947) found 40 per cent alcoholics among
his morphine addicts, Kåss et al. (1958, 1959) found 60 per cent among their barbiturate addicts, Teigen (1961) about 70 per cent. Wolff (1953) points out that alcohol should also be counted among the habit-forming substances, much along the same lines as barbiturates, and Teigen has pointed out among other things, that drug addiction is often a continuation of alcohol addiction. Engeseth & Idsøe (1954) found in their material of chronic alcoholics that 34 per cent were misusing drugs at the same time, a total that they reckon is a minimum as not all of their 347 alcoholics had been interrogated on this point. Ravnsborg (1946) also found a high frequency in her alcoholics. It is a common view that corresponding personality deviations form the basis of alcoholism and drug addiction. Kolb (1935, 1962) sees a common personality structure for alcohol and drug addiction (the addictive or inebriate personalities). He finds that more than 20 per cent of his drug addicts were periodic alcoholics, and a further 18 per cent who had drunk so much alcohol before they became drug addicts that it had been harmful to their social life or health. He also noticed that when a former alcoholic drug addict was cured of drug addiction, he started, in every case, to drink again. But 'the drift of inebriates from opium to whiskey was, when these cases originated, not as great as the drift from whiskey to opium.'

Anchersen (1947) found in his study that one-fourth of the morphine addicts had been in conflict with the law, but, in his opinion, the high incidence of crime is connected more with the personality structure, which forms the foundation for drug addiction and crime, than with the drug addiction itself. Tucker (1952) expresses similar views, as do McLaughlen et al. (quoted by Nyswander 1951). These latter authors found that many of their 25 addicts had difficulty in tackling aggressive tendencies.

Duvall et al. (1963) found a high incidence of criminality in their material, inasmuch as all of 70 per cent of their patients had been arrested once or more. As opposed to the authors mentioned above, these are of the opinion that it is the influence of the drug which makes the drug addict a criminal, and not a possible fundamental criminal tendency or a personality which makes the individual dependent on medicine. However, they appear to be dealing with a rather special group.

Contrary to the experiences of Duvall et al. (1963) and to those of the authors mentioned previously (Anchersen 1947, Tucker 1952), i.e. that crime is common among drug addicts. Varenne (1956) contends that, on the whole, criminal offences among toxicomaniacs are rare. Kolb (1935, 1962) presents a similar view with regard to opiate addicts. 'From the case histories, one is led to the conclusion that instead of serving to incite crime, the use of morphine and heroin generally tends to suppress it.' His experience is that a criminal drug addict has usually been a breaker of the law before the drug
addiction started. 'Such addicts owe their addiction to the same instability and abnormal impulses that led to the commission of their crimes.' Kolb has had considerable experience with drug addicts and criminals, and his views should, in our opinion, be given due attention.

The same view is presented by the Council on Mental Health of the American Medical Association (1957): 'Opiates do not incite persons to commit violent crimes which they would not commit without the drug. Though the drug can be used to allay anxiety consequent to commission of some criminal act, and in this sense is valuable to certain criminals, it is no more effective in this respect than other drugs tolerated by our society. The fact that some criminals use opiates is not evidence that the drug caused the criminality.'

Kolb (1962) refers to a statistical report from the U.S.A. which appears to show that drug addicts form a negligible part of the criminals (of more than 500,000 arrested criminals under the age of 21, only 1743 were active addicts).

**Clinical course**

The clinical course appears to vary greatly according to which substance has been misused. A trait common to all these substances is that the patient, when addiction has been established, develops the characteristics which are described in the definition submitted by The WHO Expert Committee in 1950.

The tolerance phenomenon is included in this definition: the fact that a reduced effect of the drug can be seen after continued use. The drug addict can thus take much larger doses than others can tolerate. The physical reasons why the addict can tolerate such big doses is not known.

The abstinence symptoms (caused by the deprivation of the drug) do not belong, as far as the definition goes, to the symptoms which necessarily result from the abuse of drugs, but they do occur frequently. These differ from drug to drug. It appears that these symptoms are determined physiologically as they occur also in dogs, cats, apes and so on. In the case of the barbiturates we often see convulsions and/or psychoses of a delirium type in the abstinence phase, as described first by Isbell et al. (1950). Very often epileptiform seizures, in which the EEG is identical to that found in epileptic fits occur. The psychotic symptoms remind one of those found in alcoholic delirium. It is pointed out that rapid withdrawal is more dangerous in the case of the barbiturates than in opiate addiction. (Dituri 1951, Palmer 1951). Marihuana, cocaine and amphetamine do not give abstinence symptoms.

It is generally thought that the opiates do not cause any great reduction of mental capacity, and Pfeffer et al. (1945) saw no signs of such deterioration even after an addiction of as long as 50 years. Kolb (1962), who has such
great experience with opiate addicts, reports that there is only a slight tendency to deterioration in the mental activity of these addicts. Lengthy abuse of barbiturates, however, may be assumed to result in mental deterioration to a greater degree and, in addition to that, causes organic changes in EEG, as we have mentioned before. Isbell & Fraser (1950) expressed it as follows: 'Chronic barbiturate intoxication resembles alcoholic poisoning and reduces the intellectual capacity, results in mental regression and neurological complications.'

Social deterioration, however, is seen very often in drug abusers. This fact is partly due to the expense incurred in keeping up the supply of drugs, but it can also be connected with an ethical and perhaps intellectual deterioration, possibly related to a previously deviating personality which was predisposed to addiction.

**Therapy**

Methods of treatment are regarded differently in different countries, in various institutions and with regard to the various types of drugs. There is general agreement on one point however, i.e. that the patient should be hospitalized for several months. Rayport (1954) writes that 135 days is considered the minimum at the Lexington Hospital, and the patient ought to be under poly-clinical control for a longer period of time after the treatment has ended. This control should preferably be carried out by one and the same doctor. The first systematic reports of the treatment of drug addicts come from the Lexington Hospital in Kentucky and from Fort Worth, Texas, which have been in existence since 1935 and 1938 respectively, and admit about 4,000 patients per year, of which about one-half are hospitalized voluntarily. Great emphasis is put on the patient's being willing to remain in the hospital for some time, at least 4 to 5 months.

Gradual withdrawal is recommended. It is pointed out that sudden deprivation may cause collapse with fatal results. Methadon is usually recommended for gradual withdrawal in cases of morphinism.

The majority of investigators seem to be of the opinion that psychotherapy is of importance for the drug addict. Fort (1954) recommends lengthy intense psychotherapy both individually and in groups. It is, of course, of the greatest importance that the patient be willing and interested in undergoing this treatment.

Psychotherapy should, in any case, bring the patient to understand the seriousness of his addiction and, where it is possible, to give a clear picture of the background for it. The psychotherapeutic methods in the treatment of drug addicts do not differ in any particular way from the treatment of other psychiatric illnesses with behaviour disorders. Addiction can thus be treated as any
other 'symptom'. Ambulatory psychoanalytic treatment has also given good results, as described by Savitt (1954) and Nyswander (1958), while others contend that every form of out-patient treatment is useless (Fraser et al. 1953). Psychotherapy which includes changes in the external situation is recommended (Gerard et al. 1954). Social therapy is a valuable aid. It is considered necessary in both psychotherapy and social therapy to attempt to obtain empathy with the patient. The treatment of the drug addict should be firm and consistent. It is equally important to deal with his rehabilitation, working habits and working morale. Osnos (1963) differentiates 5 stages in the treatment of narcotic addiction: 1) the pre-hospitalization phase, with the purpose of making the patient willing to enter hospital; 2) the withdrawal phase, with the purpose of total abstinence, usually by substituting drugs; 3) the rehabilitation phase, with physical and emotional rehabilitation as its aim; 4) the transitional phase, with the object of making the patient able to manage on his own outside the hospital. This phase includes trial leaves of absence and perhaps stays in day-and-night institutions. Finally, 5) the after-care phase, which includes psychotherapy once a week, co-operation with the family, employer and authorities.

In recent years, it has been contended that a very slow withdrawal, lasting for years, is preferable in the treatment of addicted persons. Frankau et al. (1960) and Lehmann (1963) have supported this view and the treatment is partly out-patient, combined with social rehabilitation work and psychotherapy. The treatment is not stopped until the external conditions are in order and the psychotherapy discontinued. There is a tendency to stress the importance of taking one's time in the treatment of drug addicts. Freedman (1963) recommends a stay in a general hospital with treatment there first, later in day-and-night hospitals, and a gradual return to the community under constant supervision. Co-operation with the addict's family is strongly recommended. Control admissions to hospital, as proposed by Strömgren (1961), may be very useful. The prophylaxis is considered by many to be the most important factor, especially efforts to stop the distribution of narcotics, treatment of addicts so that they no longer can contaminate others, and a restriction of the rights of medical practitioners to prescribe drugs (Vogel et al. 1948, Kåss et al. 1958).

In this connection we wish to remind our readers of Evang's (1963) emphatic statement that it should be quite clear when prescribing medicine that every medicine in itself contains a direct or indirect risk, and that these risks should be compared very carefully with the benefits obtained.

International co-operation comes in at this point and the importance of WHO's work in this respect should be appreciated. Most countries have very
strict laws regarding the distribution of drugs. In Norway, the right of medical practitioners to prescribe drugs with a narcotic effect is restricted by special decrees. The Norwegian laws regarding the abuse of drugs are considered later in this paper. Even stricter restrictions than those existing at present are under consideration in many countries, among others in Germany, as reported by Erhardt (1957). Turkey has a specially strict law (Eitinger 1963), passed in 1963, which includes penalty of death for persons who have formed organizations for the distribution of narcotics and for persons who sell narcotics to minors or immature persons (mentally deficient or disordered).

The prognosis

With regard to the prognosis for drug addicts, there are some papers on this subject, but very few follow-up reports and the majority of these were obtained only by means of questionnaires.

The prognosis for drug addiction was considered poor even in the older literature. Those reports dealt mainly with morphine addiction. Kraepelin (1927) reports 10 per cent cured, while König (we quote Kraepelin) reports 4 remissions of 28 morphine addicts. Rotenbacher (according to Kraepelin) reports 8 out of 41, Levinstein (we quote Kraepelin) 21 out of 82, and Page (according to Kraepelin) can show more favourable results, i.e. 19 out of 32. Anchersen (1947) followed up 44 patients who had been admitted to the University Psychiatric Clinic in Oslo during the period 1928-1942, and he found that less than one-fifth were cured, three-fifths had definitely relapsed, and one-fifth had possibly relapsed. The period of observation was from 1 to 13 years, the method used was correspondence. The duration of the patient's stay in hospital had varied from 4 to 12 weeks, and the withdrawal had been sudden. The duration of the illness did not appear to have any significance for the prognosis, but 'marked premorbid character anomalies, particularly in connection with vicious motives for the use of narcotics, seem to give the worst result.'

Pescor's (1941) follow-up from the Lexington Hospital consisted of 1,063 patients who had been reached by letter. The period of observation considered was, on an average, 20 months. He found remarkably good results, a good prognosis in 43 per cent, reserved in 37 per cent and poor in only 20 per cent. He observed that the more antisocial the background was, the poorer the prognosis. An unfavourable prognosis was found also in those who had been addicted for more than 20 years, in those whose adjustment in the clinic had been poor, and in those whose attitude to treatment had been negative. The abuse of heroin had an unfavourable prognosis as did opium when that was
the drug which had been misused originally. Single persons had a poorer prognosis than married ones, and patients who had been little disciplined during childhood had a more unfavourable prognosis than those who had grown up in disciplined homes. The author also draws attention to the future plans of the patient and to the staff's opinion of him. The patient's insight with regard to the danger of his addiction was also considered significant. Among the factors which could be considered positive were a good home, financial security and life in a rural district. The weak point of this paper is the short period of observation, as well as the questionnaire system of obtaining the information.

Knight & Prout (1951) from the New York Hospital (Westchester Division) have reported the results of a follow-up investigation of 75 patients admitted consecutively during the period 1930-1950. The majority of these patients had used a combination of several drugs. The period of observation was from 1 to 14 years. They found unchanged abuse in 11, improvement in 12, and 15 did not use drugs any longer. Twenty-three gave no information and 14 had died. The barbiturate addicts had fared better than the morphine addicts, but prognostic factors are not elucidated further in this paper. The paper is spoiled by the lack of a personal examination (questionnaires were used) and by a large number of untraced cases, and it does not offer any prognostic estimations.

Kielholz (1952) reports the following as unfavourable prognostic factors: asthenic body type with vegetative stigmatizing, hypersensitivity, emotional instability, weakness of will, superficial personality, and unfavourable social environment. His study is based on 50 chronic morphinists, but his method of follow-up is not specified. Contrary to the majority of other investigators, he found that the prognosis was more unfavourable for women than for men (32 per cent favourable prognosis as against 44 per cent). He suggests that the reason for this is that the males have their work and their social environment to which they can return, while the women often remain with their addicted husbands. On the other hand, men often leave their addicted wives. He found that the prognosis was influenced neither by an early start of the addiction nor by the number of treatments. If the addiction to morphine had originated in physical suffering, the prognosis remains closely connected with this suffering, but is also dependent on the patient's character. He points out that the most important point in the treatment is that the patient starts proper psychotherapy and that it is the same doctor who carries out the control and the after-treatment. A majority of his patients (60 per cent) abused pain-killers and barbiturates in addition to the morphine.

Clark (1962) reports follow-up results from England. Of 120 narcomanic patients admitted to hospital he selected 65 who were either doctors or nurses for his follow-up investigation. He considers that he
obtained reliable information about 50 of them, but these were not investigated personally either. The period of observation was from 1 to 12 years. Clark is of the opinion that 28 per cent were quite cured of their addiction, 52 per cent had been re-admitted to hospital almost without exception to psychiatric hospitals. Thirty per cent had continued their work without interruption, while 20 per cent had not been in regular paid employment since their discharge. Those patients who were addicted to drugs which came under the Dangerous Drugs Act (opium and opiates) had a much less favourable prognosis than the group as a whole. He points out the necessity of changing occupations. Clark does not present any results of a personal follow-up investigation, and his selection of patients is casual with a large group of patients who were not traced, and which he apparently made no great effort to trace.

Booij (1954) found in a corresponding group of morphine addicts consisting mainly of medical personnel that only 10 per cent had managed to keep clear of morphine for longer than 2 years. He did not follow up the patients personally.

Hunt & Odoroff (1962) report follow-up investigations from New York. There were 1,912 hospitalized addicted persons who were followed up, and 'a certain degree of contact' was obtained in 1,881 cases. There were no doctors on the follow-up team, which consisted of 2 psychiatric social workers and a public health nurse. According to the authors, these could 'with increasing reliability' determine who had been abstinent and who had relapsed. The main point was that 90 per cent were re-addicted and 90 per cent of these had relapsed within 6 months of their discharge. They found that men older than 30 years of age showed a lower incidence of re-addiction than the other groups.

They found a lower rate of re-admissions among those who had not been hospitalized voluntarily as compared to those who had come into hospital of their own free will, among the white non-voluntary group under 30 years of age as against the corresponding coloured group, and among patients under 30 years of age who had been hospitalized 31 days or more as against those who had been in hospital for 30 days or less. They found no ethnological nor sexual difference, and the incidence of relapses was on the average no less for those who had been hospitalized for longer than 30 days.

The weak point in this paper is that the material is extremely heterogeneous and taken from various institutions. Furthermore, the patients' background, life history and personality are not examined, the results are estimated on the basis of highly varied information given by persons not medically trained.

Rayport (1954) found that prognosis was best among middle-aged males whose first contact with the drug was through a doctor and whose addiction
started late in life, but this refers to the immediate prognosis without any systematic follow-up.

Duvall et al. (1963) followed up a selected group of discharged drug addicts (453 of 1,359) for 5 years. Even though more than 97 per cent had become re-addicted during that time, 49 per cent were abstinent in the fifth year. The highest incidence of abstinence appeared among those patients who were older than 30 years of age. Forty-one per cent were unemployed. Only 13 per cent of those who were still addicted were in full time employment. Very few had had psychiatric after-care. The material presented by these investigators appears to be taken from a very deviating group, inasmuch as all of 70 per cent of the patients reported having been arrested once or more.

Diskind (1960) reports a follow-up investigation from New York of a selected group of addicted persons (young, relatively intelligent patients with a brief addiction). The follow-up was undertaken by parole officers. The observation period was short (from less than 6 months to 3 years). Forty-two per cent of 346 patients examined had not relapsed. The investigator points out, however, that many had been observed for less than 6 months and were presumably in danger of a relapse.

As will be seen from the review of literature, the abusers seem to be an extremely heterogeneous group of people, with strongly varying personal and sociocultural backgrounds. The studies cited vary from underprivileged youths in American urban centres to middle class people in traditional European cultures. It is accordingly not surprising that the prognosis seems to vary in the different selections.

**Mortality**

It appears to be generally agreed that the mortality among addicted persons is relatively high. Rüdin (1955) has studied mortality and the cause of death among 437 morphine addicts. He could only obtain reliable information about 348. Rüdin found an excessive mortality among addicts, three times that of the normal population when one takes into consideration their age and the time of observation. The mortality is very high during the first five years after treatment in the clinics, lower among women than among men.

Of 188 deaths, there were 24 definite and 6 probable suicides, that is 18 per cent of the known causes of death. In 30 per cent of those who had died, death had occurred in close connection to the addiction, in the remaining 70 per cent chronic addiction with general weakening of physical condition may have been significant.

Kolb (1962) points out that the mortality among opium addicts is higher
than in the average population. He suggests that the reason for this is the
danger of infection connected with the injections and the over-doses con-
ected with the re-addiction to drugs after abstinence. But, adds Kolb, 'there
is no reliable evidence to indicate that chronic opiate addicts who can obtain
and use the drug regularly and who avoid needle infections have a shorter
span of life than similar groups of non-addicts.'