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Fourteenth Report

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WHO EXPERT COMMITTEE ON DEPENDENCE-PRODUCING DRUGS

Geneva, 19-24 July 1965

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WHO EXPERT COMMITTEE ON DEPENDENCE-PRODUCING DRUGS *

Fourteenth Report

The WHO Expert Committee on Dependence-Producing Drugs met in Geneva from 19 to 24 July 1965.

Dr M. G. Candau, Director-General, opened the session and welcomed the members of the Committee, the representatives of the Secretary-General of the United Nations, and the representatives of the Permanent Central Opium Board and the Drug Supervisory Body. He referred to the agenda which reflected the Committee's functions as the medical advisory body in respect of measures to be taken, nationally as well as internationally, against drug abuse. He also drew attention to the Committee's responsibilities within the framework of the international narcotics control treaties and to the need for its members to act as individual experts in this field as distinct from governmental representation in other international bodies concerned with narcotics control.

Dr A. D. Macdonald was elected Chairman, Dr G. Joachimoglu Vice-Chairman, and Dr N. B. Eddy Rapporteur.

1. Notifications

1.1 *Piritramide* [1]

The Committee considered the notifications from the Governments of Belgium and France concerning piritramide. The evidence accompanying these notifications clearly indicates the morphine-like properties of this agent even though results of tests for physical dependence-producing properties are conflicting—positive in trials in monkeys and man, negative in trials in dogs. The Committee discussed species differences observed in tests in this field, which have been particularly prominent within the series of pethidine derivatives. It emphasized that the greater reliance should be

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* Earlier WHO Expert Committees that produced reports on this subject were known, until 1956, as "Expert Committee on Drugs Liable to Produce Addiction" and, from 1956 until 1964, as "Expert Committee on Addiction-Producing Drugs ".

[1] International non-proprietary name proposed for 1-(3-cyano-3,3-diphenylpropyl)-4-(1-piperidino)piperidine-4-carboxylic acid amide.

put on the results in monkeys, which in this case are confirmed by observations in man. The Committee was of the opinion that piritramide, because it (1) produces morphine-like effects, (2) will suppress abstinence phenomena of a known dependence of morphine type and (3) will produce phenomena comparable to drug dependence of morphine type, must be considered a dependence-producing drug comparable to morphine, and that piritramide and its salts should fall under the regime laid down in the 1931 Convention for the drugs specified in Article 1, paragraph 2, Group I of that Convention. Therefore,

The WHO Expert Committee on Dependence-Producing Drugs

RECOMMENDS

(i) that, pursuant to Article 1 of the 1948 Protocol, its opinion with respect to piritramide and its salts be communicated to the Secretary-General of the United Nations;

(ii) that, pursuant to Article 3, paragraph 1, of the Single Convention on Narcotic Drugs, 1961, the Secretary-General of the United Nations be notified that, in the opinion of WHO, Schedule I of the Single Convention requires an amendment, namely, the addition of piritramide; and

(iii) that WHO recommends to the United Nations Commission on Narcotic Drugs the placing of piritramide in Schedule I of the Single Convention, unless WHO has received, by 1 November 1965, information which affects, in its judgement, the Expert Committee's opinion as formulated above.

1.2 *Nicodicodine* [1]

Referring to the notification, under Article 11 of the 1931 Convention, of the Government of France concerning nicodicodine, the Committee noted that evidence was presented of codeine-like actions produced by nicodicodine in animals and man, but that significant physical dependence properties had not been demonstrated with doses that could be given safely to monkeys.

In view of information that further work with respect to physical dependence properties of nicodicodine is under way, the Committee decided to defer its opinion with respect to this substance.

1.3 *Diphenoxylate preparations*

The Committee considered two requests concerning certain preparations containing diphenoxylate, one from the Government of Belgium for

[1] International non-proprietary name proposed for 6-nicotinyldihydrocodeine.

exemption from international narcotics control, under Article 8 of the 1925 Convention, and one from the Government of the United Kingdom of Great Britain and Northern Ireland for the placing on Schedule III of the Single Convention. Both requests referred to oral preparations for use in veterinary practice ; the first was for exemption of preparations containing 25 mg or 100 mg of diphenoxylate per dosage unit, the second for preparations containing 100 mg of diphenoxylate per dosage unit. In all instances the preparations would contain atropine sulfate in the proportion of 1 part per 100 parts of diphenoxylate. The Committee concluded that the availability of larger quantities of the active material in the proposed dosage might increase the risk of abuse and that this consideration outweighed the factor of convenience. For this reason, the Committee was of the opinion that neither of the requests for exemption of the preparations referred to above should be granted. Therefore,

The WHO Expert Committee on Dependence-Producing Drugs

RECOMMENDS that its opinion with respect to the above-mentioned preparations containing diphenoxylate be communicated to the Secretary-General of the United Nations.

2. Work of International Bodies Concerned with Narcotic Drugs

2.1 From the report of the nineteenth session of the Commission on Narcotic Drugs of the Economic and Social Council,[1] the Committee noted that two-thirds of the drugs at present under international narcotics control are of synthetic origin. This is an indication of the extent and diversity of developments in this field through synthetic chemistry and of the close attention that has been given to avoiding the possible risks to public health that might result. More than half the synthetic agents at present under international narcotics control, however, have not come into general medical use, and only a very few agents per year are now being notified by governments for consideration of the need for control.

2.2 The Committee was pleased to note the resolution of the Economic and Social Council with respect to khat,[2] confirming the view that the abuse of this substance is a regional problem and may best be controlled at that level. However, it was disturbed by indications of increased acreage

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[1] United Nations, Commission on Narcotic Drugs (1964) *Report of the Nineteenth Session (May 1964)—(Economic and Social Council. Official Records : thirty-seventh session Supplement No. 9)* (Document E/3893).

[2] United Nations, Economic and Social Council (1964) *Official Records : thirty-seventh session 13 July - 15 August 1964 Supplement No. 1 : Resolutions* (Document E/3970), p. 14.

to be devoted to the cultivation of khat. Economic considerations seem to be taking precedence over the risk to public health that increased supplies would involve. The Committee hoped that the countries concerned would take cognizance of this situation and try to attain the objective of the aforementioned resolution.

2.3 The Committee considering the reports of the Permanent Central Opium Board on its work in 1963 [1] and 1964 [2] was especially concerned by the figures for the diversion of opium from legal production. This is estimated at about 200 tons annually, of which only approximately one-tenth is recovered by seizures. Also of great importance is the production of opium in uncontrolled areas ; in South-East Asia alone this is estimated at about 1000 tons. Although much of this opium is consumed locally, it provides a major source of morphine and consequently heroin in illicit traffic. This situation largely vitiates efforts to control drug abuse and, as stressed by the Board, can only be overcome by close co-operation among all international and national bodies concerned. The present weaknesses of international narcotics control are lack of interest, inadequacy of reports on local situations, and insufficient international solidarity.

The Committee noted the differences in the rank order among countries for consumption of narcotics for analgesic and antitussive purposes, as reported by the Board. A review of the factors that might account for the differences suggests that the pattern of national medical practice is of great importance. It would appear that in some areas the relief of pain, or of cough, is being attained by the use of substances not under narcotics control.

3. Single Convention on Narcotic Drugs, 1961

3.1 The Committee noted that the transfer from WHO to the United Nations Commission on Narcotic Drugs of authority for placing substances under international narcotics control may sometimes lead to serious risk to public health through the inevitable time lapse between recommendations by WHO and sessions of the Commission. Consequently, the Committee suggests the desirability of a search for ways to minimize the delay and ensure prompt action of governments on findings by WHO with respect to the need for control.[3]

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[1] United Nations, Permanent Central Opium Board (1963) *Report to the Economic and Social Council on the Work of the Board in 1963* (Document E/OB/19).

[2] United Nations, Permanent Central Opium Board (1964) *Report to the Economic and Social Council on the Work of the Board in 1964* (Document E/OB/20).

[3] See Resolution WHA18.46.

The Committee noted further that, in as much as the Single Convention is in force, action might now be taken with respect to certain of its recommendations [1] that had not yet been considered by the Commission.

3.2 Noting that under Article 38 of the Single Convention parties should give special attention to the provision of facilities for the medical treatment, care and rehabilitation of drug addicts, the Committee suggests that this should afford a unique opportunity for initiating planned co-operation on all sources of information and technical assistance in this field. In this co-operation WHO can play a significant role, in as much as it has repeatedly emphasized the public health aspects of the problem and offered specific recommendations through its expert committees, study groups and conferences, especially with respect to treatment programmes, regional seminars and training of professional personnel in this field.

4. Drug Dependence

4.1 *Acceptance of the term*

The Committee was pleased to note the generally favourable reaction to the recommendation, made in the thirteenth report of the WHO Expert Committee on Addiction-Producing Drugs,[2] for substitution of the term " drug dependence " (with a modifying phrase to distinguish the type) for the terms " drug addiction " and " drug habituation ". Since there is still some misunderstanding, however, it is important to be clear about the relationship between drug abuse and drug dependence within the scope of this recommendation.

Drug abuse is the consumption of a drug apart from medical need or in unnecessary quantities. Its nature and significance may be considered from two points of view : one relates to the interaction between the drug and the individual, the other to the interaction between drug abuse and society. The first viewpoint is concerned with drug dependence and the interplay between the pharmacodynamic actions of the drug and the physiological and psychological status of the individual. The second—the interaction between drug abuse and society—is concerned with the interplay of a wide range of conditions, environmental, sociological, and economic.

Individuals may become dependent upon a wide variety of chemical substances that produce central nervous system effects ranging from stimulation to depression. All of these drugs have one effect in common : they are capable of creating, in certain individuals, a particular state of mind that is termed " psychic dependence ".

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1964, **273**, 8 (section 3).

[2] *Wld Hlth Org. techn. Rep. Ser.*, 1964, **273**, 9.

Some drugs also induce physical dependence, which is an adaptive state that manifests itself by intense physical disturbances when the administration of the drug is suspended or when its action is affected by the administration of a specific antagonist.

It must be emphasized that drug dependence and drug abuse, as used by the Committee, are general terms and carry no connotation of the degree of risk to public health or of the need for drug control or for a particular type of drug control.

The Committee would point out again that the recommendation for the use of the terms drug abuse and drug dependence of this or that type must not be regarded as a re-definition; rather, these terms are intended as descriptive expressions for clarification in scientific reference, interdisciplinary discussions, and national and international procedures.

4.2 *Characteristics of types of drug dependence*

Pursuant to the statement in the thirteenth report of the WHO Expert Committee on Addiction-Producing Drugs regarding the desirability of preparing an expanded description of drug dependence of various types,[1] a paper on this subject has now been published,[2] the synopsis of which is as follows:

"It has become impossible in practice, and is scientifically unsound, to maintain a single definition for all forms of drug addiction and/or habituation. A feature common to these conditions as well as to drug abuse in general is dependence, psychic or physical or both, of the individual on a chemical agent. Therefore, better understanding should be attained by substitution of the term drug dependence of this or that type, according to the agent or class of agents involved, in discussions of these conditions, especially interdisciplinary. Short descriptions, followed by concise listings of their characteristics, are formulated for the various types of dependence on at present widely abused major groups of substances."

4.3 *Evaluation*

The diversity of types of drug dependence just referred to indicates the desirability of expanded efforts to develop techniques for the detection and evaluation of these various types. Methods for evaluation of physical dependence have been fully described recently.[3]

A broad programme directed at the detection and measurement of psychic dependence by self-administration techniques in animals is now

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1964, **273**, 15 (Annex 1).

[2] Eddy, N. B., Halbach, H., Isbell, H. & Seevers, M. H. (1965) *Bull. Wld Hlth Org.*, **32**, 721.

[3] WHO Scientific Group on the Evaluation of Dependence-Producing Drugs (1964) *Wld Hlth Org. techn. Rep. Ser.*, **287**.

going forward. A study of drug-induced temperature changes in rats may afford an additional technique for the detection of tolerance and physical dependence. In the same species, a new procedure is being explored for the detection of dependence of barbiturate type.

The attention at present being given to the abuse of barbiturates, amphetamines, etc. and to their control indicates that ways must be found to assess the dependence and abuse liability of such agents under clinical conditions. At the moment, techniques for this purpose are seriously inadequate. Exploration of the subjective and objective affects of doses beyond the therapeutic range may be helpful.

A current study in man of chemically identified cannabis-like principles in comparison with cannabis as such should add materially to knowledge of this type of dependence.

5. Relation of Physical and Psychic Dependence to Drug Abuse

5.1 Recent developments indicate that certain specific opiate antagonists, in spite of their interfering influence on physical dependence of morphine type, may produce a physical dependence of their own specific type resembling, but not identical with, that of morphine. The antagonists produce disturbing dysphoric effects. Hence, there appears to be no psychic dependence and no likelihood of abuse. In as much as the antagonists are shown to have significant analgesic potency, any physical dependence property that they may possess need not militate against their clinical use, and the lack of abuse liability should facilitate it.

5.2 In contrast to the above, what appears to be significant psychic dependence has been reported for clinically useful agents for which no physical dependence properties are demonstrable. The clinical use of such agents must be scrutinized carefully because the psychic dependence would favour abuse which might eventually require restrictive measures.

6. Compounding of Substances under Narcotics Control with Other Therapeutic Agents

The Committee noted the great number of such combinations. It was of the opinion that the additional ingredients do not *a priori* affect the abuse liability of the narcotic substance. Unless there is evidence to the contrary, the abuse liability of the mixture must be considered to be at least equal to that of the controlled narcotic substance therein.

7. Abuse and Control of Drugs not falling under International Conventions

The Committee noted again " the increasing frequency of abuse of sedatives or stimulants not classified internationally as narcotic drugs " and

" the epidemic-like spreading of this abuse particularly among young persons in certain countries ".[1] Previous WHO Expert Committees [2] have repeatedly recommended the need for better control of sedatives and stimulants at the national level. Realizing nevertheless that national efforts are still often insufficient, the Committee would now recommend the following measures to improve the situation :

(*a*) availability on medical prescription only, as repeatedly recommended in earlier reports ;

(*b*) full accounting of all transactions from production to retail distribution ;

(*c*) licensing of all producers ;

(*d*) limitation of trade to authorized persons ;

(*e*) prohibition of non-authorized possession ; and

(*f*) establishment of an import-export authorization system.

The last might be brought about by concurrent national legislation, amendment of the Single Convention on Narcotic Drugs, 1961, as provided for in its Article 47, or by a new international convention.

While the last recommendation might seem to envisage a control similar to that applicable to narcotics, it does not, in fact, do so because no reporting to and accounting by an international agency is contemplated. Nevertheless, national measures must be seriously impeded if there is no control of flow of the materials into and out of the country.

The Committee considered that, with respect to its recommendations for control, the terms " sedatives " and " stimulants " should include any drug that has been found to be dependence-producing and shown to be abused because of its sedative or stimulant effects on the central nervous system, but excluding alcohol and substances under international narcotics control.

8. Coca Leaves and Cocaine

The Committee noted from the report of the Permanent Central Opium Board [3] the steady downward trend in world consumption of cocaine ; this is certainly related to reduction of medical needs for cocaine because of its replacement by synthetic local anaesthetics devoid of psychic dependence properties. The world consumption of cocaine levelled off about 1961, and

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[1] See resolution WHA18.47.

[2] *Wld Hlth Org. techn. Rep. Ser.*, 1957, **116**, 10 (sections 9 and 10) ; 1958, **142**, 10 (section 6) ; 1961, **211**, 9 (section 2.2).

[3] United Nations, Permanent Central Opium Board (1964) *Report to the Economic and Social Council on the Work of the Board in 1964* (Document E/OB/20).

about the same time increased abuse of cocaine was noted in certain areas. Since medical use of cocaine is virtually obsolete, the availability for abuse can be reduced by control of the cultivation of the coca bush. The Committee recommends such control.

9. Cannabis

As pointed out previously, medical need for cannabis as such no longer exists. It is becoming increasingly apparent that tetrahydrocannabinol is its most important constituent from the point of view of pharmacodynamic effects, and tetrahydrocannabinol or related substances, whether naturally or synthetically produced, may eventually be shown to have medical applications.

Research on cannabis will be facilitated if all investigators will calibrate their methods and results using the same uniform sample. Such a sample has been prepared by the Narcotics Laboratory of the United Nations.

10. Drug Dependence and Drug Abuse in the Monitoring of Adverse Drug Reactions

Having been made aware of the national and international programmes for monitoring adverse drug reactions, the Committee suggests that drug dependence and drug abuse be included among the reactions to be monitored. In so far as the monitoring programme is successful, early indication of drug abuse, especially of new agents, and help in identification of the characteristics of such abuse will be obtained. Valuable information on the epidemiology and regional occurrence of drug abuse and drug dependence of different types should also result.

11. Advisory Panels

In view of the continuous appearance of new agents with dependence-producing properties, the changing pattern of drug use and abuse, and the changing attitudes towards and procedures of handling drug-dependent patients, narcotics control authorities should recognize the need for continuous technical advice, particularly as to medical aspects. In a few instances, control authorities are seeking such advice by the setting up of panels of independent and unbiased specialists. Such panels should also perform useful service in fact finding with respect to the occurrence of drug dependence, adequacy of treatment programmes and surveillance of abuse liabilities of new agents.

The Committee endorses this approach and recommends its wider utilization wherever feasible.

12. Coded Information on Narcotics

The Committee was informed of progress towards the objective of a central source for information on all aspects of drug dependence, as advocated in previous reports of the WHO Expert Committee on Addiction-Producing Drugs.[1] Plans are now under way for revised coding in depth of such material, abstracting of important documents, and machine storage and retrieval. The last will be able to provide bibliographies, abstracts and reproductions of the original material.

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1957, **116**, 11 (section 11); 1958, **142**, 11 (section 9); 1959, **160**, 10 (section 7), 14 (Annex 2); 1962, **229**, 12 (section 8); 1964, **273**, 11 (section 8).

Annex

LIST OF DRUGS UNDER INTERNATIONAL NARCOTICS CONTROL [1]

Common name or INN *	*Chemical designation*	*Expert Committee on Dependence-Producing Drugs*		*Control regime*	
		Report number	*Reference* [2]	*Group*	*Convention*
acetyldihydrocodeine	acetyldihydrocodeine	1	1949, **19**, 30	II	1931
acetylmethadol *	3-acetoxy-6-dimethylamino-4,4-diphenylheptane	1	1949, **19**, 31	I	1931
allylprodine *	3-allyl-1-methyl-4-phenyl-4-propionoxypiperidine	10	1960, **188**, 3	I	1931
alphacetylmethadol *	α-3-acetoxy-6-dimethylamino-4,4-diphenylheptane	4	1954, **76**, 7	I	1931
alphameprodine *	α-3-ethyl-1-methyl-4-phenyl-4-propionoxypiperidine	7	1957, **116**, 8	I	1931
alphamethadol *	α-6-dimethylamino-4,4-diphenyl-3-heptanol	4	1954, **76**, 7	I	1931
alphaprodine *	α-1,3-dimethyl-4-phenyl-4-propionoxypiperidine	1	1949, **19**, 30	I	1931
anileridine *	1-(*p*-aminophenethyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester	7	1957, **116**, 7	I	1931
benzethidine *	1-(2-benzyloxyethyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester	10	1960, **188**, 4	I	1931
benzylmorphine	3-benzylmorphine			I	1931
betacetylmethadol *	β-3-acetoxy-6-dimethylamino-4,4-diphenylheptane	4	1954, **76**, 7	I	1931
betameprodine *	β-3-ethyl-1-methyl-4-phenyl-4-propionoxypiperidine	3	1952, **57**, 7	I	1931
betamethadol *	β-6-dimethylamino-4,4-diphenyl-3-heptanol	5	1955, **95**, 8	I	1931
betaprodine *	β-1,3-dimethyl-4-phenyl-4-propionoxypiperidine	1	1949, **19**, 30	I	1931
cannabis	*Cannabis sativa* L.				1925
clonitazene *	2-*p*-chlorbenzyl-1-diethylaminoethyl-5-nitrobenzimidazole	11	1961, **211**, 4	I	1931
cocaine	methyl ester of benzoylecgonine			I	1931
coca leaf					1925
codeine	3-methylmorphine			II	1931
codeine-N-oxide				I	1931
desomorphine *	dihydrodeoxymorphine			I	1931
dextromoramide *	(+)-4-[2-methyl-4-oxo-3,3-diphenyl-4-(1-pyrrolidinyl)butyl]morpholine	8	1958, **142**, 8	I	1931

* Proposed international non-proprietary name (INN).

[1] For details such as synonyms and the date of coming into force of international control, see *Multilingual list of narcotic drugs under international control* (UN document E/CN 7/436) and *List of drugs under international control* (published annually by the UN, Division of Narcotic Drugs) respectively.

[2] The references given in this column are to *World Health Organization : Technical Report Series*, with the exception of the report published in 1949 which appeared in *Official Records of the World Health Organization*, No. 19.

Common name or INN *	*Chemical designation*	*Expert Committee on Dependence-Producing Drugs*		*Control regime*	
		Report number	*Reference* [1]	*Group*	*Convention*
diampromide *	*N*-[2-(methylphenethylamino)-propyl]-propionanilide	11	1961, **211**, 5	I	1931
diethylthiambutene *	3-diethylamino-1,1-di-(2′-thienyl)-1-butene	6	1956, **102**, 10	I	1931
dihydrocodeine	7,8-dihydrocodeine	1	1949, **19**, 30	II	1931
dihydromorphine	7,8-dihydromorphine			I	1931
dihydromorphine esters				I	1931
dimenoxadol *	2-dimethylaminoethyl 1-ethoxy-1,1-diphenylacetate	9	1959, **160**, 9	I	1931
dimepheptanol *	6-dimethylamino-4,4-diphenyl-3-heptanol	1	1949, **19**, 31	I	1931
dimethylthiambutene *	3-dimethylamino-1,1-di-(2′-thienyl)-1-butene	4	1954, **76**, 9	I	1931
dioxaphetyl butyrate *	ethyl 4-morpholino-2,2-diphenylbutyrate	6	1956, **102**, 9	I	1931
diphenoxylate *	1-(3-cyano-3,3-diphenyl-propyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester	11	1961, **211**, 5	I	1931
dipipanone *	4,4-diphenyl-6-piperidino-3-heptanone	5	1955, **95**, 8	I	1931
ecgonine	(—)-3-hydroxytropane-2-carboxylate			I	1931
ecgonine esters				I	1931
ethylmethyl-thiambutene *	3-ethylmethylamino-1,1-di-(2′-thienyl)-1-butene	4	1954, **76**, 9	I	1931
ethylmorphine	3-ethylmorphine			II	1931
etonitazene *	1-diethylaminoethyl-2-*p*-ethoxybenzyl-5-nitro-benzimidazole	11	1961, **211**, 7	I	1931
etoxeridine *	1-[2-(2-hydroxyethoxy)ethyl]-4-phenylpiperidine-4-carboxylic acid ethyl ester	8	1958, **142**, 9	I	1931
fentanyl *	1-phenethyl-4-*N*-propionylanilinopiperidine	13	1964, **273**, 4	I	1931
furethidine *	1-(2-tetrahydrofurfuryl-oxyethyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester	10	1960, **188**, 5	I	1931
heroin	diacetylmorphine			I	1931
hydrocodone *	dihydrocodeinone			I	1931
hydrocodone esters				I	1931
hydromorphinol *	14-hydroxydihydromorphine	11	1961, **211**, 7	I	1931
hydromorphone *	dihydromorphinone				1925
hydromorphone esters					1925
hydroxypethidine *	4-(*m*-hydroxyphenyl)-1-methylpiperidine-4-carboxylic acid ethyl ester	1	1949, **19**, 30	I	1931
isomethadone *	6-dimethylamino-5-methyl-4,4-diphenyl-3-hexanone	1	1949, **19**, 31	I	1931
ketobemidone *	4-(*m*-hydroxyphenyl)-1-methyl-4-propionylpiperidine	1	1949, **19**, 30	I	1931
levomethorphan *	(—)-3-methoxy-*N*-methyl-morphinan	3	1952, **57**, 6	I	1931

[1] The references given in this column are to *World Health Organization : Technical Report Series*, with the exception of the report published in 1949 which appeared in *Official Records of the World Health Organization*, No. 19.

Common name or INN *	*Chemical designation*	*Expert Committee on Dependence-Producing Drugs*		*Control regime*	
		Report number	*Reference* [1]	*Group*	*Convention*
levomoramide *	(—)-4-[2-methyl-4-oxo-3,3-diphenyl-4-(1-pyrrolidinyl)-butyl]morpholine	8	1958, **142**, 8	I	1931
levophenacylmorphan *	(—)-3-hydroxy-*N*-phenacylmorphinan	10	1960, **188**, 5	I	1931
levorphanol *	(—)-3-hydroxy-*N*-methylmorphinan	3	1952, **57**, 6	I	1931
metazocine *	2'-hydroxy-2,5,9-trimethyl-6,7-benzomorphan	10	1960, **188**, 6	I	1931
methadone *	6-dimethylamino-4,4-diphenyl-3-heptanone	1	1949, **19**, 30	I	1931
methadone-intermediate	4-cyano-2-dimethylamino-4,4-diphenylbutane	12	1962, **229**, 7	I I	1931 1931
methyldesorphine *	6-methyl-Δ^6-deoxymorphine	4	1954, **76**, 6	I	1931
methyldihydromorphine *	6-methyldihydromorphine	5	1955, **95**, 5	I	1931
metopon *	5-methyldihydromorphinone	1	1949, **19**, 30	I	1931
moramide-intermediate	2-methyl-3-morpholino-1,1-diphenylpropane carboxylic acid	12	1962, **229**, 7	I	1931
morpheridine *	1-(2-morpholinoethyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester	8	1958, **142**, 8	I	1931
morphine				I	1931
morphine esters				I	1931
morphine ethers				I	1931
morphine-N-oxide				I	1931
morphine-N-oxide derivatives				I	1931
morphine pentavalent nitrogen derivatives				I	1931
myrophine *	myristylbenzylmorphine	5	1955, **95**, 6	II	1931
nicocodine *	6-nicotinylcodeine	12	1962, **229**, 6	II	1931
nicomorphine *	3,6-dinicotinylmorphine	9	1959, **160**, 4	I	1931
noracymethadol *	(±)-α-3-acetoxy-6-methylamino-4,4-diphenylheptane	12	1962, **229**, 5	I	1931
norcodeine *	*N*-demethylcodeine	9	1959, **160**, 5	II [2]	1931
norlevorphanol *	(—)-3-hydroxymorphinan	10	1960, **188**, 6	I	1931
normethadone *	6-dimethylamino-4,4-diphenyl-3-hexanone	5	1955, **95**, 7	I	1931
normorphine *	demethylmorphine	9	1959, **160**, 5	I	1931
norpipanone *	4,4-diphenyl-6-piperidino-3-hexanone	13	1964, **273**, 4	I	1931
opium					1925
oxycodone *	14-hydroxydihydrocodeinone			I	1931
oxycodone esters				I	1931
oxymorphone *	14-hydroxydihydromorphinone	5	1955, **95**, 6	I	1931
pethidine *	1-methyl-4-phenylpiperidine-4-carboxylic acid ethyl ester	1	1949, **19**, 30	I	1931

[1] The references given in this column are to *World Health Organization : Technical Report Series*, with the exception of the report published in 1949 which appeared in *Official Records of the World Health Organization*, No. 19.

[2] Recommended by WHO for this control regime.

Common name or INN *	*Chemical designation*	*Expert Committee on Dependence-Producing Drugs*		*Control regime*	
		Report number	*Reference* [1]	*Group*	*Convention*
pethidine-intermediate-A	4-cyano-1-methyl-4-phenylpiperidine	12	1962, **229**, 7	I	1931
pethidine-intermediate-B	4-phenylpiperidine-4-carboxylic acid ethyl ester	12	1962, **229**, 7	I	1931
pethidine-intermediate-C	1-methyl-4-phenylpiperidine-4-carboxylic acid			I	1931
pethidine-intermediate-C, esters of		5	1955, **95**, 9	I	1931
phenadoxone *	6-morpholino-4,4-diphenyl-3-heptanone	1	1949, **19**, 31	I	1931
phenampromide *	*N*-(1-methyl-2-piperidinoethyl)propionanilide	11	1961, **211**, 7	I	1931
phenazocine *	2'-hydroxy-5,9-dimethyl-2-phenethyl-6,7-benzomorphan	10	1960, **188**, 6	I	1931
phenomorphan *	3-hydroxy-*N*-phenethylmorphinan	6	1956, **102**, 8	I	1931
phenoperidine *	1-(3-hydroxy-3-phenylpropyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester	11	1961, **211**, 8	I	1931
pholcodine *	morpholinylethylmorphine	3	1952, **57**, 5	II	1931
piminodine *	4-phenyl-1-(3-phenylaminopropyl)piperidine-4-carboxylic acid ethyl ester	10	1960, **188**, 7	I	1931
piritramide *	1-(3-cyano-3,3-diphenylpropyl)-4-(1-piperidino)-piperidine-4-carboxylic acid amide	14	1965, **312**, 3	I	1931
proheptazine *	1,3-dimethyl-4-phenyl-4-propionoxyazacycloheptane	6	1956, **102**, 11	I	1931
properidine *	1-methyl-4-phenylpiperidine-4-carboxylic acid isopropyl ester	5	1955, **95**, 9	I	1931
racemethorphan *	(±)-3-methoxy-*N*-methylmorphinan	3	1952, **57**, 7	I	1931
racemoramide *	(±)-4-[2-methyl-4-oxo-3,3-diphenyl-4-(1-pyrrolidinyl)-butyl]morpholine	8	1958, **142**, 8	I	1931
racemorphan *	(±)-3-hydroxy-*N*-methylmorphinan	3	1952, **57**, 6	I	1931
thebacon *	acetyldihydrocodeinone			I	1931
thebaine	3,6-dimethyl-8-dehydromorphine			I	1931
trimeperidine *	1,2,5-trimethyl-4-phenyl-4-propionoxypiperidine	8	1958, **142**, 9	I	1931

[1] The references given in this column are to *World Health Organization : Technical Report Series*, with the exception of the report published in 1949 which appeared in *Official Records of the World Health Organization*, No. 19.