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other derivatives of coca leaves whenever the existance of such isomers and salts is possible, but does not include decocainized coca leaves or extractions of coca leaves which do not contain cocaine or ecgonine.

(e) Schedule II includes, unless specifically excepted or unless listed in another schedule, any material, compound, mixture, or preparation which contains any quantity of the following substances having a depressant effect on the central nervous system, including their salts, isomers, and salts of isomers whenever the existence of these salts, isomers, and salts of isomers is possible within the specific chemical designation:

(1) amobarbital;

(2) mecloqualone;

(3) methaqualone;

(4) pentobarbital;

(5) phencyclidine, also known as PCP;

(6) phencyclidine immediate precursors

(A) 1-phenylcyclohexylamine;

(B) 1-piperidinocyclohexanecarbonitrile, also known as PCC;

(7) secobarbital.

(f) Schedule II includes, unless specifically excepted or unless listed in another schedule, any material, compound, mixture, or preparation which contains any quantity of the following substances having a stimulant effect on the central nervous system:

(1) amphetamine, its salts, optical isomers, and salts of its optical isomers;

(2) methamphetamine, its salts, isomers, and salts of its isomers;

(3) phenmetrazine and its salts;

(4) methylphenidate.

Sec. 17.30.060. SCHEDULE III. (a) A substance shall be placed in schedule III if it is found under AS 17.30.010(a) to have a degree of danger or probable danger less than the substances listed in schedule II but higher than substances listed in schedule IV.

(b) Schedule III includes, unless specifically excepted or unless listed in another schedule, any material, compound, mixture, or preparation which contains any quantity of the following substances having a stimulant effect on the central nervous system, including their salts, isomers whether optical, position, or geometric, and salts of these isomers whenever the existence of such salts, isomers, and salts of isomers is possible within the specific chemical designation:

(1) benzphetamine;

(2) chlorphentermine;

(3) clortermine;

(4) mazindol;

(5) phendimetrazine.

(c) Schedule III includes, unless specifically excepted or unless listed in another schedule, any material, compound, mixture, or preparation which contains any quantity of the following substances having a depressant effect on the central nervous system:

(1) any compound, mixture, or preparation containing amobarbital, secobarbital, or pentobarbital or any salt of any of these substances combined with one or more other active medicinal ingredients which are not listed in AS 17.30.040 -- 17.30.090;

(2) any suppository dosage form containing amobarbital, secobarbital, or pentobarbital or any salt of any of these substances approved by the federal Food and Drug Administration for marketing

only as a suppository;

(3) any substance which contains any quantity of a derivative of barbituric acid or any salt of these substances;

(4) chlorhexadol;

(5) glutethimide;

(6) lysergic acid;

(7) lysergic acid amide;

(8) methyprylon;

(9) sulfondiethylmethane;

(10) sulfonethylmethane;

(11) sulfonmethane.

(d) Schedule III includes nalorphine.

(e) Schedule III includes, unless specifically excepted or unless listed in another schedule, any material, compound, mixture, or preparation containing limited quantities of any of the following narcotic drugs, or any of its salts:

(1) not more than 1.8 grams of codeine per 100 milliliters or not more than 90 milligrams per dosage unit, with an equal or greater quantity of an isoquinoline alkaloid of opium;

(2) not more than 1.8 grams of codeine per 100 milliliters or not more than 90 milligrams per dosage unit, with one or more active, nonnarcotic ingredients in recognized therapeutic amounts;

(3) not more than 300 milligrams of dihydrocodeinone per 100 milliliters or not more than 15 milligrams per dosage unit, with a fourfold or greater quantity of an isoquinoline alkaloid of opium;

(4) not more than 300 milligrams of dihydrocodeinone per 100 milliliters or not more than 15 milligrams per dosage unit, with one or more active nonnarcotic ingredients in recognized therapeutic amounts;

(5) not more than 1.8 grams of dihydrocodeine per 100 milliliters or not more than 90 milligrams per dosage unit, with one or more active nonnarcotic ingredients in recognized therapeutic amounts;

(6) not more than 300 milligrams of ethylmorphine per 100 milliliters or not more than 15 milligrams per dosage unit, with one or more active, nonnarcotic ingredients in recognized therapeutic amounts;

(7) not more than 500 milligrams of opium per 100 milliliters or per 100 grams or not more than 25 milligrams per dosage unit, with one or more active, nonnarcotic ingredients in recognized therapeutic amounts;

(8) not more than 50 milligrams of morphine per 100 milliliters or per 100 grams, with one or more active, nonnarcotic ingredients in recognized therapeutic amounts.

(f) Schedule III includes hashish, hashish oil, and tetrahydrocannabinols.

Sec. 17.30.070. SCHEDULE IV. (a) A substance shall be placed in schedule IV if it is found under AS 17.30.010(a) to have a degree of danger or probable danger less than the substances listed in schedule III, but higher than the substances listed in schedule V.

(b) Schedule IV includes, unless specifically excepted or unless listed in another schedule, any material, compound, mixture, or preparation which contains any quantity of the following substances, including their salts, isomers and salts of isomers whenever the existence of such salts, isomers, and salts of isomers is possible within the specific chemical designation:

(1) barbital;

(2) chloral betaine;

(3) chloral hydrate;

(4) chlordiazepoxide;

(5) clonazepam;

(6) clorazepate;

(7) diazepam;

(8) ethchlorvynol;

(9) ethinamate;

(10) flurazepam;

(11) lorazepan;

(12) mebutamate;

(13) meprobamate;

(14) methohexital;

(15) methylphenobarbital, also known as mephobarbital;

(16) oxazepam;

(17) paraldehyde;

(18) petrichloral;

(19) pentobarbital;

(20) prazepam.

(c) Schedule IV includes any material, compound, mixture, or preparation which contains any quantity of the following substances, including their salts, isomers whether optical, position, or geometric, and salts of these isomers, whenever the existence of these salts, isomers, and salts of isomers is possible: fenfluramine.

(d) Schedule IV includes, unless specifically excepted or unless listed in another schedule, any material, compound, mixture, or preparation which contains any quantity of the following substances having a stimulant effect on the central nervous system, including their salts, isomers whether optical, position, or geometric, and salts of these isomers whenever the existence of these salts, isomers,

and salts of isomers is possible within the specific chemical designation:

(1) diethlpropion;

(2) phentermine;

(3) pemoline, including organometallic complexes and chelates of this substance.

(e) Schedule IV includes, unless specifically excepted or unless listed in another schedule, any material, compound, mixture or preparation which contains any quantity of the following substances, including their salts:

(1) dextropropoxyphene (alpha-(+)-4-dimethylamino-1,2-diphenyl-3-methyl-2-propionoxybutane);

(2) phentazocine.

(f) Schedule IV includes, unless specifically excepted or unless listed in another schedule, any material, compound, mixture, or preparation containing limited quantities of any of the following substances or any salts of these substances: not more than 1 milligram of difenoxin and not less than 25 micrograms of atropine sulfate per dosage unit.

Sec. 17.30.080. SCHEDULE V. (a) A substance shall be placed in schedule V if it is found under AS 17.30.010(a) to have a degree of danger or probable danger less than substances listed in schedule IV, but higher than substances listed in schedule VI.

(b) Schedule V includes any compound, mixture, or preparation containing any of the following limited quantities of narcotic drugs or their salts which includes one or more nonnarcotic active medicinal ingredients in sufficient proportion to confer upon the compound, mixture, or preparation valuable medicinal qualities other than those possessed by schedule I substances alone:

(1) not more than 200 milligrams of codeine per 100 milliliters or per 100 grams;

(2) not more than 100 milligrams of dihydrocodeine per 100 milliliters or per 100 grams;

(3) not more than 100 milligrams of ethylmorphine per 100 milliliters or per 100 grams;

(4) not more than 2.5 milligrams of diphenoxylate and not less than 25 micrograms of atropine sulfate per dosage unit;

(5) not more than 100 milligrams of opium per 100 milliliters or per 100 grams;

(6) not more than 0.5 milligrams of difenoxin and not lesss than 25 micrograms of atropine sulfate per dosage unit.

(c) Schedule V includes loperamide.

Sec. 17.30.090. SCHEDULE VI. (a) A substance shall be placed in schedule VI if it is found under AS 17.30.010(a) to have the lowest degree of danger or probable danger.

(b) Schedule VI includes:

(1) marijuana;

(2) intoxicating liquors.

Sec. 17.30.095. EXEMPTED DRUGS. A controlled substance the manufacture, distribution, dispensing, or possession of which is explicitly exempt from criminal penalty under federal law is exempt from the application of this chapter and AS 11.71. This exemption includes any substances which may, under the federal Food, Drug, and Cosmetic Act (21 U.S.C. sec. 301 et seq.) be lawfully sold over the counter without a prescription.

ARTICLE 2. REGULATION OF MANUFACTURE, DISTRIBUTION, PRESCRIPTION, AND DISPENSING OF CONTROLLED SUBSTANCES.

Sec. 17.30.150. REGULATIONS. The commissioner shall adopt regu-

lations under the Administrative Procedure Act (AS 44.62) which are necessary for the administration of this chapter, and may charge reasonable fees relating to the registration and control of the manufacture, distribution, and dispensing of controlled substances within the state.

Sec. 17.30.160. REGISTRATION REQUIREMENTS. (a) A person who manufactures, distributes, dispenses, or conducts research with a controlled substance within the state or who proposes to engage in the manufacture, distribution, or dispensing of a controlled substance within the state, shall annually register with the commissioner in accordance with regulations adopted under AS 17.30.150.

(b) Persons registered under this chapter to manufacture, distribute, dispense, or conduct research with controlled substances may possess, manufacture, distribute, dispense, or conduct research with those substances to the extent authorized by their registration and in conformity with the other provisions of this chapter.

(c) The following persons need not register under this chapter:

(1) an agent or employee of a registered manufacturer, distributor, dispenser, or researcher of a controlled substance if the possession is incidental to the agent's or employee's acting in the usual course of his business or employment;

(2) a common or contract carrier or warehouseman, or his employee, whose possession of a controlled substance is in the usual course of his business or employment;

(3) a person in possession of a controlled substance under a lawful order of a registered practitioner or in lawful possession of a schedule V substance.

(d) The commissioner may, by regulation, waive the requirement for registration of certain manufacturers, distributors, or dispensers

if he finds it consistent with the public health and safety.

(e) A separate registration is required for each principal place of business or professional practice where the applicant manufactures, distributes, or dispenses controlled substances.

(f) The commissioner may inspect the establishment of a registrant or applicant for registration in accordance with regulations adopted by the commissioner.

Sec. 17.30.170. REGISTRATION. (a) The commissioner shall register an applicant to manufacture, distribute, or dispense controlled substances listed in the schedules in AS 17.30.040 -- 17.30.090 unless he finds that the registration would be inconsistent with the public interest. In determining the public interest, the commissioner shall consider the following factors:

(1) maintenance of effective controls against diversion of controlled substances into other than legitimate medical, scientific, or industrial channels;

(2) compliance with applicable state and local law;

(3) any conviction of the applicant under federal or state laws relating to controlled substances;

(4) past experience in the manufacture or distribution of controlled substances and the existence in the applicant's establishment of effective controls against diversion of controlled substances into other than legitimate medical, scientific, or industrial channels;

(5) furnishing by the applicant of false information in an application filed under this chapter;

(6) suspension or revocation of the applicant's federal registration to manufacture, distribute, or dispense controlled substances as authorized by federal law; and

(7) any other factors relevant to and consistent with the

public health and safety.

(b) Practitioners registered under federal law to conduct research with controlled substances shall be issued a registration to conduct research with these substances within the state upon furnishing the commissioner with evidence of the federal registration.

(c) Compliance by manufacturers and distributors with the provisions of federal law pertaining to registration requirements, excluding fees, entitles them to be registered under this chapter.

Sec. 17.30.180. REVOCATION AND SUSPENSION OF REGISTRATION. (a) A registration under AS 17.30.170 to manufacture, distribute, dispense, or conduct research with a controlled substance may be suspended or revoked by the commissioner upon a finding that the registrant:

(1) has furnished false or fraudulent material information in an application filed under this chapter;

(2) has been convicted of a felony under state or federal law relating to a controlled substance; or

(3) has had his federal registration to manufacture, distribute, dispense, or conduct research with controlled substances suspended or revoked.

(b) The commissioner may limit the revocation or suspension of a registration to the particular controlled substance with respect to which grounds for revocation or suspension exist.

(c) If the commissioner suspends or revokes a registration, all controlled substances owned or possessed by the registrant at the time of suspension or the effective date of the revocation order may be placed under seal and placed in the custody of the Department of Public Safety subject only to the orders and decrees of a court having jurisdiction over the property. No disposition may be made of substances under seal until the time for taking an appeal has elapsed or until

all appeals have been concluded unless a court, upon application, orders the sale of perishable substances and the deposit of the proceeds of the sale with the court. Upon a revocation order becoming final, all controlled substances are forfeited to the state.

(d) The commissioner shall promptly notify the Drug Enforcement Administration of all orders suspending or revoking registrations and of all forfeitures of controlled substances.

Sec. 17.30.190. ORDER TO SHOW CAUSE. (a) Before denying, suspending, or revoking a registration, or refusing a renewal of a registration, the commissioner shall serve upon the applicant or registrant an order to show cause why a registration should not be denied, revoked, or suspended, or why a renewal should not be refused. The order to show cause shall contain a statement of the basis for it and shall require the applicant or registrant to appear before the commissioner at a time and place not less than 30 days after the date of service of the order. In the case of a refusal of renewal of registration the show cause order must be served not later than 30 days before the expiration of the registration. These proceedings must be conducted in accordance with procedures for administrative adjudication under AS 44.62.330 -- 44.62.630 without regard to criminal prosecution or other proceeding. Proceedings to refuse renewal of registration do not abate the existing registration which remains in effect pending the outcome of the administrative hearing.

(b) The commissioner may, without an order to show cause, suspend a registration simultaneously with the institution of proceedings under AS 17.30.180 if he finds that there is an imminent danger to the public health or safety which warrants this action. The suspension continues in effect until the conclusion of the proceedings, including judicial review of the proceedings, unless sooner withdrawn by the com-

missioner or dissolved by a court of competent jurisdiction.

Sec. 17.30.200. RECORDS OF REGISTRANTS. Persons registered to manufacture, distribute, dispense, or conduct research with controlled substances under this chapter shall keep records and maintain inventories in conformance with the record-keeping and inventory requirements of federal law.

Sec. 17.30.210. ORDER FORMS: PRESCRIPTIONS. (a) Controlled substances may be distributed by one registrant to another registrant only if the distribution is in accordance with federal requirements for order forms.

(b) No controlled substance may be dispensed by a practitioner except in accordance with federal requirements regarding prescriptions for controlled substances.

(c) If a controlled substance is classified in a schedule set out in AS 17.30.040 -- 17.30.090, or through regulation adopted in accordance with this chapter, that is different from its corresponding classification under federal law, the requirements of (a) and (b) of this section are determined by the classification of the substance under federal law.

Sec. 17.30.220. EXCLUSION. For purposes of AS 17.30.150 -- 17.30.220, "controlled substance" does not include intoxicating liquors.

ARTICLE 3. ENFORCEMENT AND ADMINISTRATIVE PROVISIONS.

Sec. 17.30.300. COOPERATIVE ARRANGEMENTS. The commissioner of public safety shall cooperate with other state agencies and federal agencies in the discharge of their responsibilities pertaining to illicit traffic in controlled substances and in suppressing the abuse of controlled substances. Under this section, the commissioner of public safety's powers include but are not limited to the following:

(1) arranging for the exchange of information among govern-

mental officials concerning illicit traffic in and abuse of controlled substances;

(2) coordinating and cooperating in training programs pertaining to controlled substances at both local and state levels; and

(3) cooperating with the Drug Enforcement Administration of the United States Department of Justice through the establishment of a centralized unit to accept, catalogue, file, and collect statistics, including records of persons who have violated the provisions of this chapter or AS 11.71 within the state and make the information available for federal, state, and local law enforcement purposes; the commissioner may not furnish the name or identity of a patient or research subject whose identity could not be obtained under AS 17.30.350(b).

Sec. 17.30.310. FORFEITURES. (a) The following are subject to forfeiture to the state:

(1) any controlled substance which has been manufactured, distributed, dispensed, or possessed in violation of this chapter or AS 11.71;

(2) raw materials, products, and equipment which are used or intended for use in manufacturing, distributing, compounding, processing, delivering, importing, or exporting a controlled substance in violation of this chapter or AS 11.71;

(3) any property which is used or intended for use as a container for property described in (1) or (2) of this subsection;

(4) any conveyance, including but not limited to aircraft, vehicles or vessels which have been used to transport or in any manner to facilitate transportation for purpose of sale or receipt of property described in (1) or (2) of this subsection; however,

(A) no conveyance is subject to forfeiture under this section if the owner of the conveyance establishes, by a prepon-

derance of the evidence, at a hearing before the court as a trier of fact that its use in violation of this chapter or AS 11.71 was committed by another person and that the owner was not a consenting party nor privy to the violation and took all reasonable means to ensure that the conveyance would not be used, and that no person who operated it would use it in violation of this chapter or AS 11.71;

(B) a forfeiture of a conveyance encumbered by a bona fide security interest at the time of seizure is subject to the interest of the secured party if the secured party establishes, by a preponderance of the evidence, at a hearing before the court as a trier of fact that its use in violation of this chapter or AS 11.71 was committed by another person and that the secured party was not a consenting party nor privy to the violation and took all reasonable means to ensure that the conveyance would not be used and that no person who operated it would use it in violation of this chapter or AS 11.71;

(5) any books, records, and research products and materials, including formulas, microfilm, tapes, and data which are used in violation of this chapter or AS 11.71;

(6) any money or negotiable instrument derived from activity prohibited by this chapter or AS 11.71; and

(7) any firearm used during or in furtherance of a violation of this chapter or AS 11.71.

(b) Property listed in (a) of this section may be forfeited to the state either upon conviction of the defendant of a violation of this chapter or AS 11.71, or upon judgment of a court of competent jurisdiction in a separate civil proceeding in rem that an item specified in (a) of this section was used in or in aid of a violation of

this chapter or AS 11.71.

(c) It is not a defense in an in rem proceeding brought under this section that a criminal proceeding is pending or has resulted in a conviction or acquittal for a violation of this chapter or AS 11.71, or that a criminal proceeding has been dismissed, or that the item has not been forfeited in any criminal proceeding, or that multiple actions are pending.

(d) Property subject to forfeiture under this section may be seized by a peace officer upon an order issued by a court having jurisdiction over the property upon a showing of probable cause that the property is subject to forfeiture under (a) of this section. Seizure without a court order may be made if

(1) the seizure is incident to a valid arrest or a search under a valid search warrant;

(2) the property subject to seizure has been the subject of a prior judgment in favor of the state in a criminal proceeding or civil proceeding in rem based upon this chapter or AS 11.71; or

(3) there is probable cause that the property was or is being used in violation of this chapter or AS 11.71 and the property is easily movable; property seized under this paragraph may not be held for more than 48 hours or until an order continuing the seizure may be applied for and issued by a court, whichever is earlier.

(e) Property taken or detained under (b) of this section is in the custody of the Department of Public Safety subject only to the orders and decrees of the court having jurisdiction over the forfeiture proceedings. If property is seized under this chapter, the Department of Public Safety may:

(1) place the property under seal;

(2) remove the property to a place designated by the court;

or

(3) take custody of the property and remove it to an appropriate location for disposition in accordance with law.

(f) Within 10 days of any seizure under this section, the state shall inventory the property seized and its contents and appraise the value of the items seized.

(g) Within 20 days of any seizure under this section, the state shall, by certified mail, notify any person known to have an interest in an item with an appraised value of $500 or more, or who is ascertainable from official registration numbers, licenses or other state, federal or municipal numbers on the item. Additionally, the state shall publish notice of forfeiture action of an item valued at $500 or more in a newspaper of general circulation in the judicial district in which the seizure was made, or if no newspaper is published in that district, in a newspaper published in the state and distributed in that district, four times during four consecutive calendar weeks, once during each week. The requirements of this subsection do not apply to the forfeiture of controlled substances which have been manufactured, distributed, dispensed, or possessed in violation of this chapter or AS 11.71, regardless of their value.

(h) Upon service or publication of notice of commencement of an action under this section, a person claiming interest in the property shall file within 20 days from the service or publication, a notice of claim setting out the nature of his interest, the date it was acquired, the consideration paid, and an answer to the state's allegations. If no claim and answer is filed within the time specified, the property described in the state's allegation must be ordered forfeited to the state without further proceedings or showings.

(i) Questions of fact or law raised by a notice of claim and

answer of any claimant in an action commenced under this section must be determined by the court sitting without a jury. Such a proceeding may, in the court's discretion, be held in abeyance until conclusion of any pending criminal charges against the claimant under this chapter or AS 11.71.

(j) A claimant under (h) of this section may at any time petition for release of a seized item as follows:

(1) to a court in which a seizure warrant has been issued;

(2) to a court in which a criminal or civil action alleging forfeiture of the item has been filed; or

(3) before an action is filed, or if no seizure warrant was issued, to a court in the district in which the violation took place.

(k) An item may not be released by the court under (j) of this section except upon an adequate assurance from the claimant that the item will remain subject to the court's jurisdiction and within the constructive custody of the state and

(1) a finding that the release is in the best interests of the state; or

(2) the posting of a bond equal to twice the assessed value of the item or the posting of other valid and equivalent security.

(l) A claimant may petition the court for sale of an item before final disposition. The court shall grant a petition for sale upon a finding that the sale is in the best interests of the state and the preservation and maintenance of the item seized. Proceeds from the sale plus interest to the date of final disposition shall thereafter be treated as the subject of the forfeiture action.

(m) Property forfeited under this section must be disposed of according to court order. The court may order the Department of Public Safety to

(1) destroy property harmful to the public;

(2) sell the property and use the proceeds for payment of all proper expenses of the proceedings for forfeiture and sale, including expenses of seizure, custody, and court costs;

(3) take custody of the property and use it in the enforcement of this chapter or AS 11.71, or transfer it to another agency of the state for a use designated by the court in furtherance of the administration of justice;

(4) take custody of the property and remove it for disposition in accordance with law; or

(5) forward it to the Drug Enforcement Administration for disposition.

(n) Upon a showing that a claimant is entitled to remittance in accordance with the provisions of this section, the court shall order that

(1) if the item may be used for a valid state function, it shall be delivered to the Department of Administration and that department shall remit to the claimant the value of the claimant's interest at the time of seizure; or

(2) the item may be sold at public auction to the highest bidder, the claimant having a right of first refusal, with proceeds used to satisfy the claimant's interest at the time of seizure and the balance deposited in the general fund.

(o) An offender who used an item subject to remission in violation of this chapter or AS 11.71 shall be assessed a fine at least equal to the cost of any lien payment or remittance made by the state plus the reasonable costs of the seizure.

(p) Any controlled substance manufactured, possessed, transferred, sold, or offered for sale in violation of this chapter or AS 11.71 is

contraband and must be seized and summarily forfeited to the state.

(q) Plants from which controlled substances may be derived and which have been planted or cultivated in violation of this chapter or AS 11.71, or which are wild growths, may be seized and summarily forfeited to the state.

Sec. 17.30.320. BURDEN OF PROOF. It is not necessary for the state to negate an exemption or exception provided for in this chapter in a complaint, information, indictment or other pleading or at a trial, hearing, or other proceeding under this chapter or AS 11.71. The defendant has the burden of proving by a preponderance of the evidence any exemption or exception claimed by him.

Sec. 17.30.330. JUDICIAL REVIEW. All final determinations, findings, and conclusions of the commissioner under this chapter or regulations adopted under it are final decisions of the matters involved. A person aggrieved by a decision may obtain review of the decision in the superior court in accordance with AS 44.62.560 -- 44.62.570. A person is not, however, entitled to a hearing de novo in the superior court.

Sec. 17.30.340. EDUCATION AND RESEARCH. (a) The commissioner shall carry out educational programs designed to prevent and deter abuse of controlled substances. In connection with these programs, the commissioner may:

(1) promote better recognition of the problems surrounding abuse of controlled substances within the regulated industry and among interested groups and organizations;

(2) assist the regulated industry and interested groups and organizations in contributing to the reduction of abuse of controlled substances;

(3) consult with interested groups and organizations to aid

them in solving administrative and organizational problems;

(4) evaluate procedures, projects and techniques conducted or proposed as part of educational programs on abuse of controlled substances;

(5) disseminate the results of research on abuse of controlled substances to promote a better public understanding of the problems which exist and their solutions; and

(6) with the cooperation of the Department of Law, assist in the education and training of state and local law enforcement officials in their efforts to prevent illicit traffic in and abuse of controlled substances.

(b) The commissioner shall encourage research on controlled substances and may:

(1) establish methods to assess the effects of controlled substances and identify and characterize those with potential for abuse;

(2) make studies and undertake research to:

(A) develop new or improved approaches, techniques, systems, equipment and devices to strengthen the enforcement of this chapter;

(B) determine patterns of abuse of controlled substances and their social effects; and

(C) improve methods for preventing, predicting and understanding the abuse of controlled substances;

(3) enter into contracts with public agencies, institutions of higher education, and private organizations or individuals for conducting research, demonstrations, or special projects which bear directly on abuse of controlled substances and for related research and educational activities.

Sec. 17.30.350. CONFIDENTIALITY. (a) Results, information, and evidence received from the Drug Enforcement Administration of the United States Department of Justice relating to the regulatory functions of this chapter, including results of inspections conducted by it may be relied on and acted on by the commissioner in the exercise of his regulatory functions under this chapter.

(b) A practitioner engaged in medical practice or research may not furnish the name or identity of a patient or research subject to the commissioner, and the practitioner may not otherwise disclose the name or identity of an individual that he is obliged to keep confidential unless compelled to disclose it within the context of a criminal investigation or proceeding.

ARTICLE 4. DEFINITIONS.

Sec. 17.30.500. DEFINITIONS. As used in this chapter

(1) "administer" means the direct application of a controlled substance, whether by injection, inhalation, ingestion, or any other means into the body of a patient or research subject by

(A) a practitioner or, in the practitioner's presence, by his authorized agent, or

(B) the patient or research subject at the direction and in the presence of a practitioner;

(2) "agent" means an authorized person who acts on behalf of or at the direction of a manufacturer, distributor, or dispenser; it does not include a common or contract carrier, public warehouseman, or employee of the carrier or warehouseman;

(3) "commissioner" means the commissioner of health and social services;

(4) "committee" means the Controlled Substances Advisory Committee established in AS 17.30.020;

(5) "controlled substance" means a drug, substance, or immediate precursor included in the schedules set out in AS 17.30.040 -- 17.30.090;

(6) "deliver" or "delivery" means the actual, constructive, or attempted transfer from one person to another of a controlled substance whether or not there is an agency relationship;

(7) "department" means the Department of Health and Social Services;

(8) "dispense" means to deliver a controlled substance to an ultimate user or research subject by or under the lawful order of a practitioner, including the prescribing, administering, packaging, labeling, or compounding necessary to prepare the substance for that delivery; "dispenser" means a practitioner who dispenses;

(9) "distribute" means to deliver other than by administering or dispensing a controlled substance; "distributor" means a person who distributes;

(10) "drug"

(A) means

(i) substances recognized as drugs in the official United States Pharmacopoeia, official Homeopathic Pharmacopoeia of the United States, or official National Formulary, or any supplement to any of these publications;

(ii) substances intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in humans or animals;

(iii) substances, other than food, intended to affect the structure or any function of the body of humans or animals; and

(iv) substances intended for use as a component

of any article specified in (i), (ii), or (iii) of this subparagraph;

(B) does not include devices or their components, parts, or accessories;

(11) "hashish" means the dried, compressed, resinous product of the plant (genus) Cannabis;

(12) "hashish oil" means the viscous liquid concentrate of tetrahydrocannabinols extracted from the plant (genus) Cannabis;

(13) "immediate precursor" means a substance which is by statute or regulation designated as the principal compound commonly used or produced primarily for use, and which is an immediate chemical intermediary used or likely to be used in the manufacture of a controlled substance, the control of which is necessary to prevent, curtail, or limit manufacture of that controlled substance;

(14) "judicial officer" means a justice of the supreme court, a judge of the superior court, a district judge, and a magistrate

(15) "intoxicating liquor" has the meaning ascribed to it in AS 11.71.200(9);

(16) "manufacture" means

(A) the production, preparation, propagation, compounding, conversion, growing, or processing of a controlled substance, either directly or indirectly by extraction from substances of natural origin, or independently by means of chemical synthesis, or by a combination of extraction and chemical synthesis; however, the growing of less than one pound of marijuana is not manufacturing; and

(B) any packaging or labeling of a controlled substance including but not limited to acts done

(i) by a practitioner as an incident to his ad-

ministering or dispensing of a controlled substance in the course of his professional practice; or

(ii) by a practitioner, or by his authorized agent under his supervision, for the purpose of, or as an incident to, research, teaching, or chemical analysis and not for sale;

(17) "marijuana" has the meaning ascribed to it in AS 11.-71.200(11);

(18) "opiate" means a substance having an addiction forming or addiction sustaining capability similar to morphine or being capable of conversion into a drug having addiction forming or addiction sustaining capability; it does not include, unless specifically designated as controlled under AS 17.30.010, the dextrorotatory isomer of 3-methoxy-n-methylmorphinan and its salts (dextromethorphan); it does include its racemic and levorotatory forms;

(19) "opium poppy" means the plant of the species Papaver somnifern L., except its seeds;

(20) "poppy straw" means all parts, except the seeds, of the opium poppy, after mowing;

(21) "practitioner" means:

(A) a physician, dentist, veterinarian, scientific investigator, or other person licensed, registered, or otherwise permitted to distribute, dispense, conduct research with respect to, or to administer a controlled substance in the course of professional practice or research in the state;

(B) a pharmacy, hospital or other institution licensed, registered, or otherwise permitted to distribute, dispense, conduct research with respect to or to administer a controlled substance in the course of professional practice or research in the

state;

(22) "production" includes the manufacture, planting, cultivation, growing, or harvesting of a controlled substance;

(23) "ultimate user" means a person who lawfully possesses a controlled substance for his own use or for the use of a member of his household or for administering to an animal owned by him or by a member of the household.

Sec. 17.30.600. SHORT TITLE. This chapter may be cited as the Alaska Controlled Substances Act.

* Sec. 9. AS 08.64.380(3)(B) is amended to read:

(B) habitual overuse of alcoholic beverages or <u>controlled substances</u> [DEPRESSANT, HALLUCINOGENIC OR STIMULANT DRUGS,] as defined in <u>AS 17.30</u> [AS 17.12.150(3), OR ADDICTION TO THE USE OF NARCOTIC DRUGS AS DEFINED IN AS 17.10.230(13)];

* Sec. 10. AS 08.80.260(2) is amended to read:

(2) selling, bartering, or making available <u>a controlled substance as defined in AS 17.30</u> [, MORPHINE, COCAINE OR OTHER, NARCOTIC] to a person addicted to the use of <u>a controlled substance</u> [DRUGS] except upon prescription issued by a licensed physician;

* Sec. 11. AS 08.80.260(9) is amended to read:

(9) violation of regulations pertaining to the provisions of adequate security for <u>controlled substances</u> [DANGEROUS DRUGS];

* Sec. 12. AS 08.80.470 is amended to read:

Sec. 08.80.470. CONSTRUCTION. Nothing in this chapter amends, modifies, repeals or otherwise changes any provision of the <u>Controlled Substances Act (AS 17.30)</u> [NARCOTIC DRUG ACT (AS 17.10)] or the Alaska Food, Drug and Cosmetic Act (AS 17.30).

* Sec. 13. AS 28.35.030(a) is amended to read:

(a) A person who, while under the influence of intoxicating

liquor, or other controlled substance listed [DEPRESSANT, HALLUCINOGENIC OR STIMULANT DRUGS OR NARCOTIC DRUGS AS DEFINED] in AS 17.30.040 -- 17.30.090 [AS 17.10.230(13) AND AS 17.12.150(3)] operates or drives an automobile, motorcycle or other motor vehicle in the state, upon conviction, is punishable by a fine of not more than $1,000, or by imprisonment for not more than one year, or by both and the court shall impose a minimum sentence of imprisonment of not less than three consecutive days. Upon a subsequent conviction within five years after a conviction under this section, the court shall impose a minimum sentence of imprisonment of not less than 10 consecutive days. The execution of sentence may not be suspended nor may probation or parole be granted until the minimum imprisonment provided in this section has been served, nor may imposition of sentence be suspended, except upon the condition that the defendant be imprisoned for no less than the minimum period provided in this section [, NOR MAY THE PUNISHMENT PROVIDED FOR IN THIS SECTION BE REDUCED UNDER AS 11.05.150]. In addition, his operator's license shall be revoked in accordance with AS 28.15.210(c). In addition, a person convicted under this statute shall undertake, for a term specified by the court, that program of alcohol education or rehabilitation which the court, after consideration of any information compiled under (b) of this section, finds appropriate.

* Sec. 14. AS 44.29.020 is amended to read:

Sec. 44.29.020. DUTIES OF DEPARTMENT. The Department of Health and Social Services shall administer the state programs of public health and welfare, including: (1) maternal and child health services; (2) preventive medical services; (3) public health nursing services; (4) sanitation and engineering services; (5) nutrition services; (6) health education; (7) laboratories; (8) mental health treatment and

diagnosis; (9) management of state institutions; (10) medical facilities; (11) old age assistance; (12) aid to dependent children; (13) aid to the blind; (14) child welfare services; (15) general relief; (16) licensing and supervision of child care facilities; [AND] (17) probation and parole supervision; and (18) the Alaska Controlled Substances Act (AS 17.30).

* Sec. 15. (a) Prosecution for a violation of law occurring before the effective date of this Act is not affected or abated by this Act. Violation of any law repealed by this Act may still be prosecuted and brought to a final determination in accordance with the laws and regulations in effect at the time of the violation.

(b) Civil seizures or forfeitures and injunctive proceedings commenced before the effective date of this Act are not affected by this Act.

(c) All administrative proceedings pending under prior laws which are superseded by this Act shall be continued and brought to a final determination in accordance with the laws and rules in effect before the effective date of this Act.

(d) The commissioner of health and social services shall initially permit persons to register who own or operate an establishment engaged in the manufacture, distribution, or dispensing of a controlled substance before the effective date of this Act and who are registered or licensed by the state.

(e) This Act applies to violations of law, seizures and forfeitures, injunctive proceedings, administrative proceedings and investigations which occur following its effective date.

* Sec. 16. Orders issued and regulations adopted under a law affected by this Act and in effect on the effective date of this Act and not in conflict with this Act continue until modified, superseded or repealed.

* Sec. 17. AS 04.15.080, 04.15.110, 17.10, 17.12, and 17.15 are repealed.

* Sec. 18. This Act takes effect on July 1, 1980.

DRUGS OF ABUSE

Narcotics

Opium
and opium derivatives or
synthetic substitutes

The term *narcotic* in its medical meaning refers to opium and opium derivatives or synthetic substitutes.*

Narcotics are indispensable in the practice of medicine: they are the most effective agents known for the relief of intense pain. They are also used as cough suppressants as well as a remedy centuries old for diarrhea.

Under medical supervision narcotics are administered orally or by intramuscular injection. As drugs of abuse, however, they may be sniffed, smoked, or self-administered by the more direct routes of subcutaneous ("skin-popping") and intravenous ("mainlining") injection.

The relief of suffering, whether of physical or psychological origin, may result in a short-lived state of euphoria. The initial effects, however, are often unpleasant, leading many to conclude that those who persist in their illicit use may have latent personality disturbances. Narcotics tend to induce pinpoint pupils and reduced vision, together with drowsiness, apathy, decreased physical activity, and constipation. A larger dose may induce sleep, but there is an increasing possibility of nausea, vomiting, and respiratory depression--the major toxic effect of the opiates. Except in cases of acute intoxication, there is no loss of motor coordination or slurred speech as in the case of the depressants.

To the extent that the response may be felt to be pleasurable, its intensity may be expected to increase with the amount of the dose administered. Repeated use, however, will result in increasing tolerance: the user must administer progressively larger doses to attain the desired effect, thereby reinforcing the compulsive behavior known as drug dependence.

Physical dependence refers to an alteration of the normal functions of the body that necessitates the continued presence of a drug in order to prevent the withdrawal or abstinence syndrome, which is characteristic of each class of ad-

* Cocaine, ecgonine, and coca leaves, classified as narcotics under the CSA, are discussed in the section on stimulants, beginning on page 24.

dictive drugs. The intensity of physical symptoms experienced during the withdrawal period is related directly to the amount of narcotic used each day. Deprivation of an addictive drug causes increased excitability of those same bodily functions that have been depressed by its habitual use.

With the deprivation of narcotics, the first withdrawal signs are usually experienced shortly before the time of the next scheduled dose. Complaints, pleas, and demands by the addict are prominent, increasing in intensity and peaking from 36 to 72 hours after the last dose, then gradually subsiding. Symptoms such as watery eyes, runny nose, yawning, and perspiration appear about 8 to 12 hours after the last dose. Thereafter, the addict may fall into a restless sleep. As the abstinence syndrome progresses, restlessness, irritability, loss of appetite, insomnia, goose flesh, tremors, and finally yawning and severe sneezing occur. These symptoms reach their peak at 48 to 72 hours. The patient is weak and depressed with nausea and vomiting. Stomach cramps and diarrhea are common. Heart rate and blood pressure are elevated. Chills alternating with flushing and excessive sweating are also characteristic symptoms. Pains in the bones and muscles of the back and extremities occur as do muscle spasms and kicking movements, which may be the source of the expression "kicking the habit." At this time an individual may become suicidal. Without treatment the syndrome eventually runs its course and most of the symptoms will disappear in 7 to 10 days. How long it takes to restore physiological and psychological equilibrium, however, is unpredictable. For a few weeks following withdrawal the addict will continue to think and talk about his use of drugs and be particularly susceptible to an urge to use them again.

The withdrawal syndrome may be avoided by reducing the dose of narcotic over a one-to-three-week period. Detoxification of an addict can be accomplished quite easily by substituting oral methadone for the illicit narcotic and gradually reducing the dose. However, the addict's entire pattern of life is built around drug taking and narcotic dependence is never entirely resolved by withdrawal alone.

Since addicts tend to become preoccupied with the daily round of obtaining and taking drugs, they often neglect themselves and may suffer from malnutrition, infections, and unattended diseases or injuries. Among the hazards of narcotic addiction are toxic reactions to contaminants, such as quinidine, sugars, and talcum powder, as well as unsterile needles and injection techniques, resulting in abscesses, blood poisoning, and hepatitis. Since there is no simple way to determine the purity of a drug that is sold on the street, the potency is unpredictable. A person with a mild overdose may be stuporous or asleep. Larger doses may induce a coma with slow shallow respiration. The skin becomes clammy cold, the body limp, and the jaw relaxed; there is a danger that the tongue may fall back, blocking the air passageway. If the condition is sufficiently severe, convulsions may occur, followed by respiratory arrest and death. Specific antidotes for narcotic poisoning are available at hospitals.

Narcotics of Natural Origin

The poppy *Papaver somniferum* is the main source of the nonsynthetic narcotics. It was grown in the Mediterranean region as early as 300 B.C. and has since been cultivated in countries around the world, including Hungary, Yugoslavia, Turkey, India, Burma, China, and Mexico.

The milky fluid that oozes from incisions in the unripe seedpod has since ancient times been scraped by hand and air dried to produce opium gum. A more modern method of harvesting is by the industrial poppy straw process of extracting alkaloids from the mature dried plant. The extract may be in either liquid, solid, or powder form. Most poppy straw concentrate made available commercially is a fine brownish powder with a distinct odor.

More than 400 tons of opium or its equivalent in poppy straw concentrate are legally imported annually into the United States.

Opium

There were no legal restrictions on the importation or use of opium until the early 1900's. In those days patent medicines often contained opium without any warning label.

Poppy field

Incised seedpod

Scraping raw opium

Today there are state, federal, and international laws governing the production and distribution of narcotic substances, and there is little abuse of opium in the United States.

At least 25 alkaloids can be extracted from opium. These fall into two general categories, each producing markedly different effects. The first, known as the phenanthrene alkaloids, represented by morphine and codeine, are used as analgesics and cough suppressants; the second, the isoquinoline alkaloids, represented by papaverine (an intestinal relaxant) and noscapine (a cough suppressant), have no significant influence on the central nervous system and are not regulated under the CSA.

Although a small amount of opium is used to make antidiarrheal preparations such as paregoric, virtually all the opium imported into this country is broken down into its alkaloid constituents, principally morphine and codeine.

Morphine

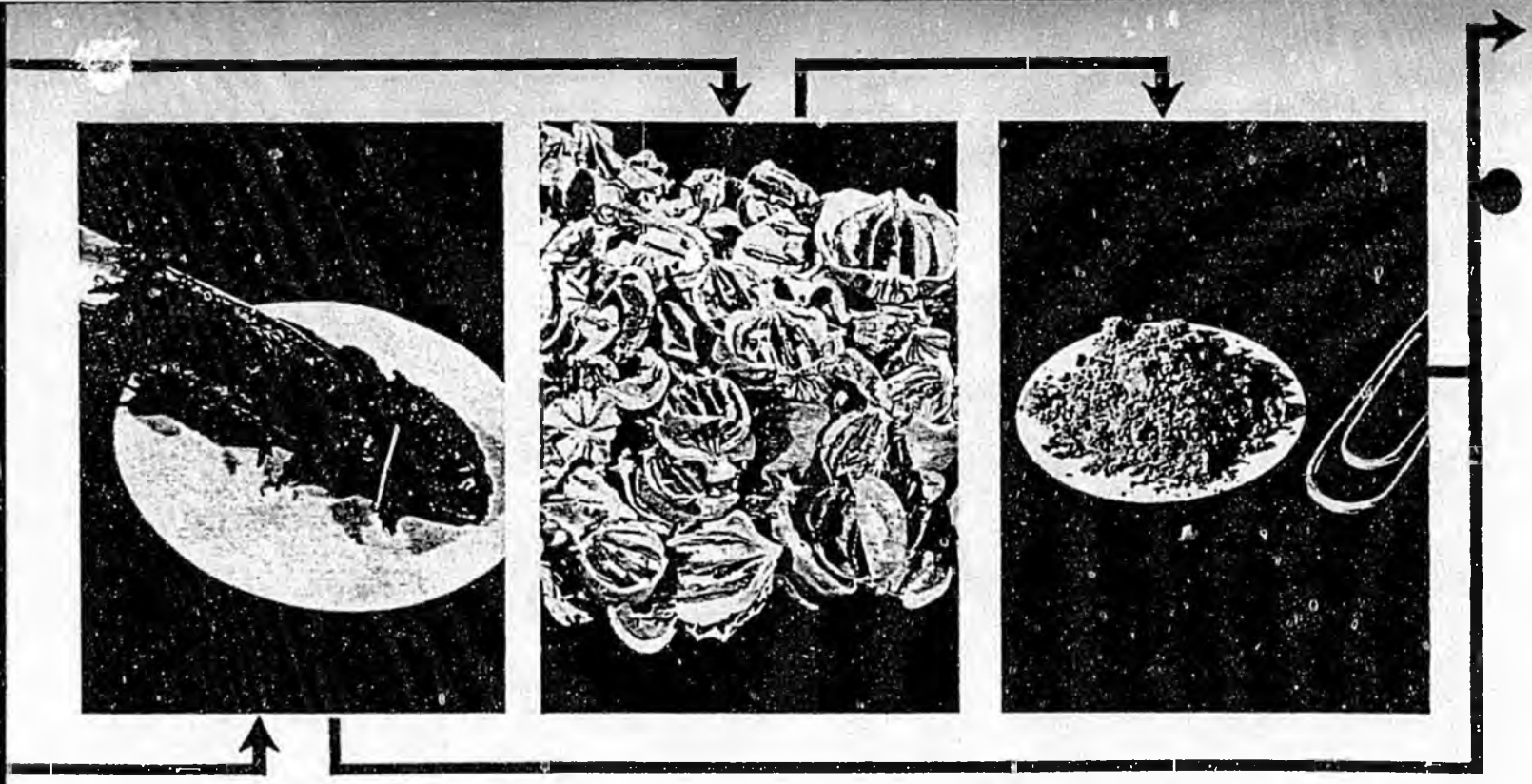
The principal constituent of opium, ranging in concentration from 4 to 21 percent, morphine is one of the most effective drugs known for the relief of pain. It is marketed in the form of white crystals, hypodermic tablets, and injectable preparations. Its licit use is restricted primarily to hospitals. Morphine is odorless, tastes bitter, and darkens with age. It may be administered subcutaneously, intramuscularly or intravenously, the latter method being the one most frequently resorted to by addicts. Tolerance and dependence develop rapidly in the user. Only a small part of the morphine obtained from opium is used medically. Most of it is converted to codeine and, secondarily, to hydromorphone.

Codeine

This alkaloid is found in raw opium in concentrations ranging from 0.7 to 2.5 percent. It was first isolated in 1832 as an impurity in a batch of morphine. Although it occurs naturally, most codeine is produced from morphine. As compared with morphine, codeine produces less analgesia, sedation, and respiratory depression. It is widely distributed in products of two general types. Codeine for the relief of moderate pain may consist of codeine tablets or be combined with other products such as aspirin or acetaminophen (Tylenol). Some examples of liquid codeine preparations for the relief of coughs (antitussives) are Robitussin AC, Cheracol, and elixir of terpin hydrate with codeine. Codeine is also manufactured to a lesser extent in injectable form for the relief of pain. It is by far the most widely used naturally occurring narcotic in medical treatment.

Thebaine

A minor constituent of opium, thebaine is the principal alkaloid



Opium gum *Poppy straw* *Poppy straw concentrate*

present in another species of poppy, *Papaver bracteatum*, which has been grown experimentally in the United States as well as in other parts of the world. Although chemically similar to both codeine and morphine, it produces stimulant rather than depressant effects. Thebaine is not used in this country for medical purposes, but it is converted into a variety of medically important compounds, including codeine, hydrocodone, oxycodone, oxymorphone, nalbuphine, naloxone, and the Bentley compounds. It is controlled in Schedule II of the CSA as well as under international law.

Semi-Synthetic Narcotics

The following narcotics are among the more significant synthetic substances that have been derived by modification of the chemicals contained in opium.

Heroin

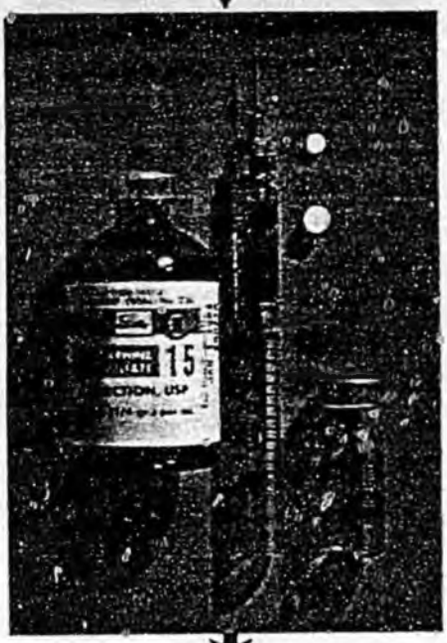
First synthesized from morphine in 1874, heroin was not extensively used in medicine until the beginning of this century. The Bayer Company in Germany first started commercial production of the new pain remedy in 1898. While it received widespread acceptance, the medical profession for years remained unaware of its potential for addiction. The first comprehensive control of heroin in the United States was established with the Harrison Narcotic Act of 1914. Pure heroin is a white powder with a bitter taste. Illicit heroin may vary in color from white to dark brown because of impurities left from the manufacturing process or the presence of additives such as food coloring, cocoa, or brown sugar. Pure heroin is rarely sold on the street. A "bag"—slang for a single dosage unit of heroin—may weigh about 100 mg, usually containing less than 5 percent heroin. To increase the bulk of the material sold to the addict, diluents are mixed with the heroin in ratios ranging from 9 to 1 to as much as 99 to 1. Sugars, starch, powdered milk, and quinine are among the diluents used.

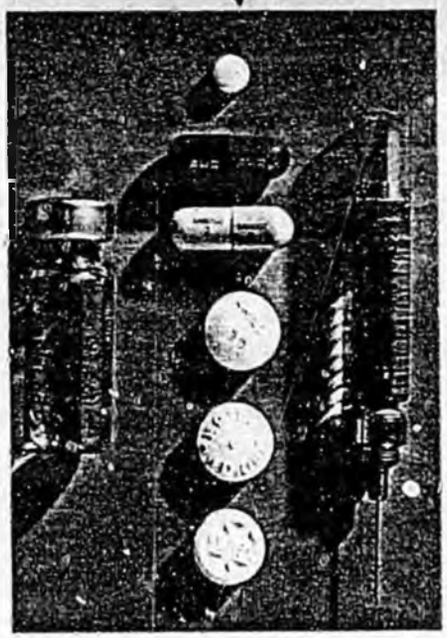
Hydromorphone

Most commonly known as Dilaudid, hydromorphone is the second oldest semi-synthetic narcotic analgesic. Marketed both in tablet and injectable form, it is shorter acting and more sedative than morphine, but its potency is from two to eight times as great. It is therefore a highly abusable drug, much sought after by narcotic addicts, who usually obtain it through fraudulent prescription or theft. The tablets, stronger than available liquid forms, may be dissolved and injected.

Oxycodone

Oxycodone is synthesized from



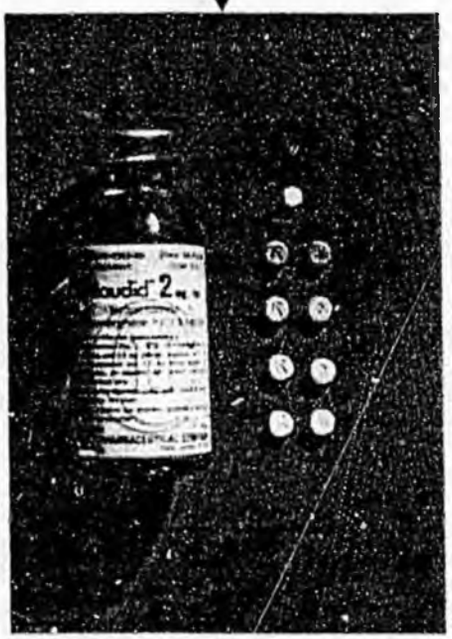


Morphine

Codeine

Thebaine

Semi-Synthetic Narcotics



Heroin

Hydromorphone (Dilaudid)

thebaine. It is similar to codeine, but more potent and with a higher dependence potential. It is effective orally and is marketed in combination with other drugs such as Percodan for the relief of pain. Addicts take Percodan orally or dissolve tablets in water, filter out the insoluble material, and "mainline" the active drug.

Etorphine and Diprenorphine

Two of the Bentley compounds, these substances are both made from thebaine. Etorphine is more than a thousand times as potent as morphine in its analgesic, sedative and respiratory depressant effects. For human use its potency is a distinct disadvantage because of the danger of overdose. Etorphine hydrochloride (M99) is used by veterinarians to immobilize large wild animals. Diprenorphine hydrochloride (M50-50), acting as an antagonist, counteracts the effects of etorphine. The manufacture and distribution of both substances are strictly regulated under the CSA.

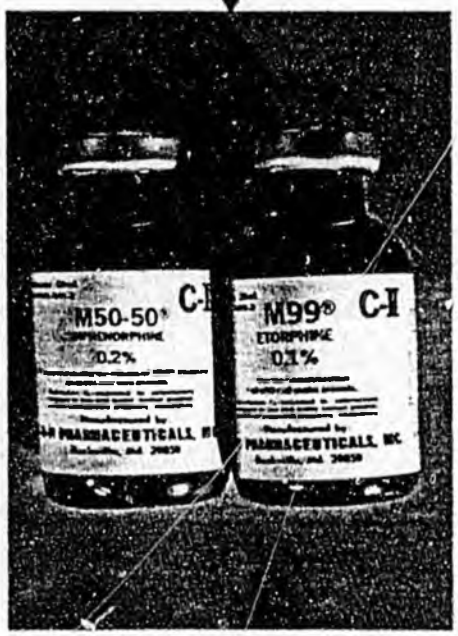
Synthetic Narcotics

In contrast to pharmaceutical products derived directly or indirectly from narcotics of natural origin, synthetic narcotics are produced entirely within the laboratory. A continuing search for a product that will retain the analgesic properties of morphine without the consequent dangers of tolerance and dependence has yet to yield a drug that is not susceptible to abuse. The two that are most widely available are meperidine and methadone.

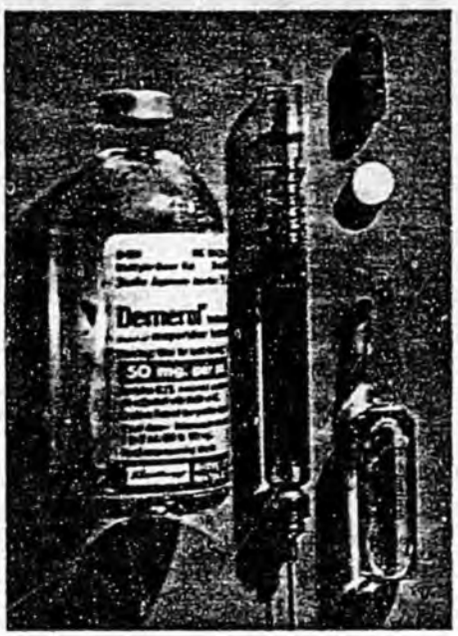
Meperidine (pethidine)

The first synthetic narcotic, produced originally a generation ago, meperidine is chemically dissimilar to morphine but resembles it in its analgesic potency. It is probably

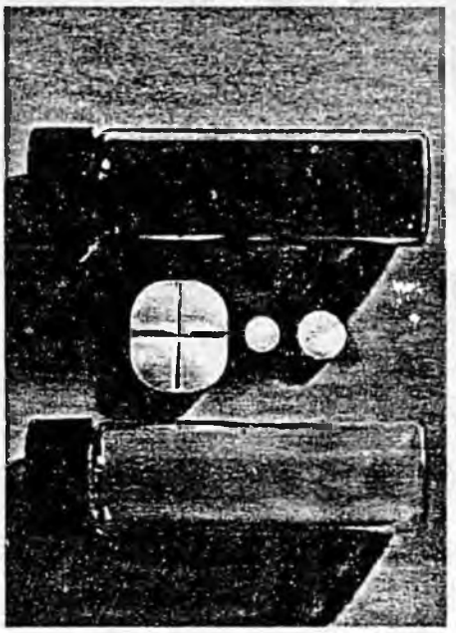
Thebaine derivatives



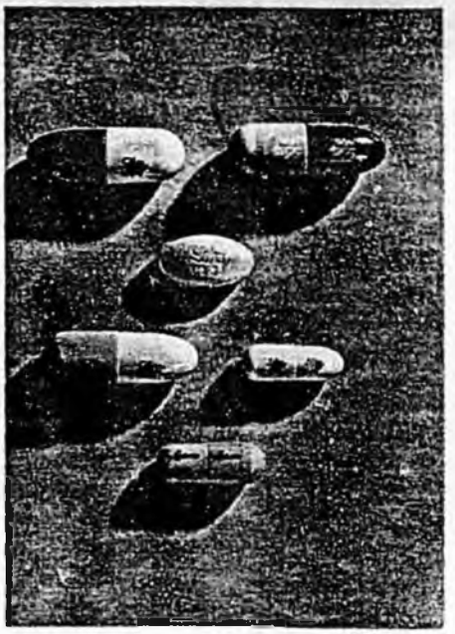
Diprenorphine (left) and etorphine



Meperidine



Methadone



Propoxyphene

the most widely used drug for the relief of moderate to severe pain. Available in pure form as well as in products containing other medicinal ingredients, it is administered either orally or by injection, the latter method being the most widely abused. Tolerance and dependence develop with chronic use, and large doses can result in convulsions.

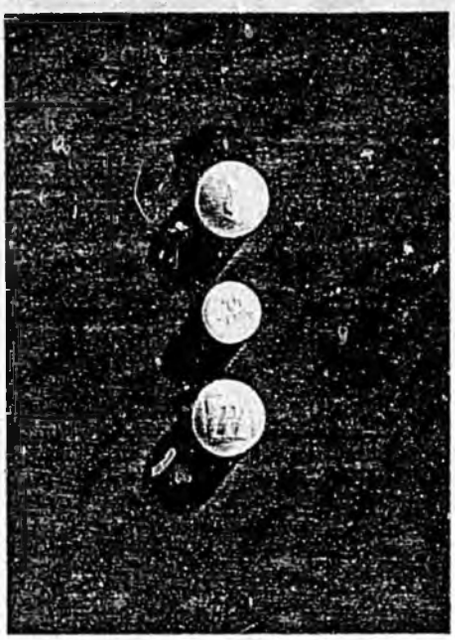
Methadone and Related Drugs

German scientists synthesized methadone during World War II because of a shortage of morphine. Although chemically unlike morphine or heroin, it produces many of the same effects. Introduced into the United States in 1947 as an analgesic and distributed under such names as Amidone, Dolophine, and Methadone, it became widely used in the 1960's in the treatment of narcotic addicts. The effects of methadone differ from morphine-based drugs in that they have a longer duration of action, lasting up to 24 hours, thereby permitting administration only once a day in heroin detoxification and maintenance programs. Moreover, methadone is almost as effective when administered orally as it is by injection. But tolerance and dependence may develop, and withdrawal symptoms, though they develop more slowly and are less severe, are more prolonged. Ironically, methadone, designed to control narcotic addiction, has emerged in some metropolitan areas as a major cause of overdose deaths.

Closely related chemically to methadone is the synthetic compound levo-alpha-acetylmethadol (LAAM), which has an even longer duration of action (from 48 to 72 hours), permitting a further reduction in clinic visits and the elimination of take-home medication. Its potential in the treatment of narcotic addicts is now under investigation. Another close relative of methadone is propoxyphene, first marketed in 1957 under the trade name of Darvon for the relief of mild to moderate pain. Less dependence-producing than the opiates, it is also less effective as an analgesic. Misuse of propoxyphene led to its placement in Schedule IV of the CSA in 1977.

Narcotic Antagonists

The deliberate effort to find an effective analgesic that is not dependence producing has led in recent years to the development of a class of compounds known as narcotic antagonists. These drugs, as the name implies, tend to block and reverse the effects of narcotics, and some of them may in future prove useful in checking recidivist tendencies of former addicts who have undergone treatment. Nalorphine, introduced into clinical medicine in 1951 and now under



Other synthetic narcotics: top to bottom, anileridine (Leritine), levorphanol (Levo-Dromoran), and pentazocine (Talwin)

Schedule III, is called a partial antagonist. In a drug-free individual, it produces morphine-like effects; whereas in an individual under the influence of narcotics, it counteracts these effects. Another partial antagonist is pentazocine (Talwin). Introduced as an analgesic in 1967, it was determined to be an abusable drug and placed under Schedule IV in 1979. Relatively pure antagonists have also been developed. Naloxone (Narcan), having no morphine-like effects, was removed from the CSA when introduced as a specific antidote for narcotic poisoning in 1971. A number of "pure" antagonists have since been developed that are longer lasting and effective when administered orally. One of them is Naltrexone, which was removed from control of the CSA in 1975, and which is now under evaluation to determine its utility in assisting post-narcotic addicts to remain drug free.

Drugs of Abuse

Substances regulated under the CSA as depressants have a high potential for abuse associated with both physical and psychological dependence.

Taken as prescribed by a physician, depressants may be beneficial for the relief of anxiety, irritability, and tension, and for the symptomatic treatment of insomnia. In excessive amounts, however, they produce a state of intoxication that is remarkably similar to that of alcohol.

As in the case of alcohol, these effects may vary not only from person to person but from time to time in the same individual. Low doses produce mild sedation. Higher doses, insofar as they relieve anxiety or stress, may produce a temporary sense of well-being; they may also produce mood depression and apathy. In marked contrast to the effects of narcotics, however, intoxicating doses invariably result in impaired judgment, slurred speech, and loss of motor coordination. In addition to the dangers of disorientation, resulting in a high incidence of highway accidents, recurrent users incur risks of long-term involvement with depressants.

Tolerance to the intoxicating effects develops rapidly, leading to a progressive narrowing of the margin of safety between an intoxicating and lethal dose. The person who is unaware of the dangers of increasing dependence will often increase the daily dose up to 10 or 20 times the recommended therapeutic level. The source of supply may be no further than the family medicine cabinet. Depressants are also frequently obtained by theft, illegal prescription, or purchase on the illicit market.

Members of the drug subculture often resort to the use of depressants as self-medication to soothe jangled nerves brought on by the use of stimulants, to quell the anxiety of "flashbacks" resulting from prior use of hallucinogens, or to ease their withdrawal from heroin. The dangers, it should be stressed, are compounded when depressants are used in combination with alcohol or other drugs. Chronic intoxication, though it affects every age group, is most common in middle age. The problem often remains unrecognized until

Depressants

In excessive amounts
they induce a state of intoxication
remarkably like that
of alcohol

the user exhibits recurrent confusion or an obvious inability to function. Depressants also serve as a means of suicide, a pattern particularly common among women.

As will be shown, the depressants vary with respect to their potential for overdose. Moderate depressant poisoning closely resembles alcoholic inebriation. The symptoms of severe depressant poisoning are coma, a cold clammy skin, a weak and rapid pulse, and a slow or rapid but shallow respiration. Death will follow if the reduced respiration and low blood pressure are not counteracted by proper medical treatment.

The abrupt cessation or reduction of high-dose depressant intake may result in a characteristic withdrawal syndrome, which should be recognized as a medical emergency more serious than that of any other drugs of abuse. An apparent improvement in the patient's condition may be the initial result of detoxification. Within 24 hours, however, minor withdrawal symptoms manifest themselves, among them anxiety and agitation, loss of appetite, nausea and vomiting, increased heart rate and excessive sweating, tremulousness and abdominal cramps. The symptoms usually peak during the second or third day of abstinence from the short-acting barbiturates or meprobamate; they may not be reached until the seventh or eighth day of abstinence from the long-acting barbiturates or benzodiazepines. It is during the peak period that the major withdrawal symptoms usually occur. The patient may experience convulsions indistinguishable from those occurring in grand mal epilepsy. More than half of those who experience convulsions will go on to develop delirium, often resulting in a psychotic state identical to the delirium tremens associated with the alcohol withdrawal syndrome. Detoxification and treatment must therefore be carried out under close medical supervision. While treatment techniques vary to some extent, they share common objectives: stabilization of the drug-dependent state to allay withdrawal symptoms followed by gradual withdrawal to prevent their recurrence.

Among the depressants that give rise to the general conditions described are chloral hydrate, a broad array of barbiturates, glutethimide, methaqualone, meprobamate, and the benzodiazepines.

Chloral Hydrate

The oldest of the hypnotic (sleep-inducing) drugs, chloral hydrate was first synthesized in 1862 and soon supplanted alcohol, opium, and cannabis preparations for inducing sedation and sleep. Its popularity declined after the introduction of the barbiturates, but chloral hydrate is still widely used. It has a penetrating, slightly acrid odor, and a bitter caustic taste. Its depressant effects, as well as resulting tolerance and dependence, are comparable to those of alcohol, and withdrawal symptoms resemble delirium tremens. Chloral hydrate is a liquid, marketed in the form of syrups and soft gelatin capsules. Cases of poisoning have occurred from mixing chloral hydrate with alcoholic drinks. Chloral hydrate is not a street drug of choice. Its main misuse is by older adults.

Barbiturates

Among the drugs most frequently prescribed to induce sedation and sleep by both physicians and veterinarians are the barbiturates. About 2,500 derivatives of barbituric acid have been synthesized, but of these only about 15 remain in medical use. Small therapeutic doses tend to calm nervous conditions, and larger doses cause sleep 20 to 60 minutes after oral administration. As in the case of alcohol, some individuals may experience a sense of excitement before sedation takes effect. If dosage is increased, however, the effects of the barbiturates may progress through successive stages of sedation, sleep, and coma to death from respiratory arrest and cardiovascular complications.

Barbiturates are classified as ultrashort, short, intermediate, and long-acting. The ultrashort-acting barbiturates produce anesthesia within one minute after intravenous administration. The rapid onset and brief duration of action make them undesirable for purposes of abuse. Those in current medical use are hexobarbital (Evipal), methohexital (Brevital), thiamylal (Surital), and thiopental (Pentothal).

Among the short-acting and intermediate-acting barbiturates are pentobarbital (Nembutal), secobarbital (Seconal), and amobarbital (Amytal)—three of the drugs in the depressant category most sought after by abusers. The group also

CONTROLLED SUB

	Drugs	Schedule	Trade or Other Names	Medical Uses	Physica Depen- dence
NARCOTICS	Opium	II, III, V	Dover's Powder, Paregoric, Parepectolin	Analgesic, antidiarrheal	High
	Morphine	II, III	Morphine, Pectoral Syrup	Analgesic, antitussive	
	Codeine	II, III, V	Codeine, Empirin Compound with Codeine, Robitussin A-C	Analgesic, antitussive	Moder
	Heroin	I	Diacetylmorphine, Horse, Smack	Under investigation	
	Hydromorphone	II	Dilaudid	Analgesic	High
	Meperidine (Pethidine)		Demerol, Pethadol	Analgesic	
	Methadone		Dolophine, Methadone, Methadose	Analgesic, heroin substitute	
	Other Narcotics	I, II, III, IV, V	LAAM, Leritine, Levo-Dromoran, Percodan, Tussionex, Fentanyl, Darvon*, Talwin*, Lomotil	Analgesic, antidiarrheal, antitussive	High-L
DEPRESSANTS	Chloral Hydrate	IV	Noctec, Somnos	Hypnotic	Moder
	Barbiturates	II, III, IV	Amobarbital, Phenobarbital, Butisol, Phenoxbarbital, Secobarbital, Tuinal	Anesthetic, anticonvulsant, sedative, hypnotic	High Moder
	Glutethimide	III	Doriden	Sedative, hypnotic	High
	Methaqualone	II	Optimil, Parest, Quaalude, Somnafac, Sopor		
	Benzodiazepines	IV	Ativan, Azene, Clonopin, Dalmane, Diazepam, Librium, Serax, Tranxene, Valium, Verstran	Anti-anxiety, anticonvulsant, sedative, hypnotic	Low
	Other Depressants	III, IV	Equanil, Miltown, Noludar Placidyl, Valmid	Anti-anxiety, sedative, hypnotic	Moder
STIMULANTS	Cocaine†	II	Coke, Flake, Snow	Local anesthetic	Possib
	Amphetamines	II, III	Biphetamine, Delcobese, Desoxyn, Dexedrine, Mediatric	Hyperkinesis, narcolepsy, weight control	
	Phenmetrazine	II	Preludin		
	Methylphenidate		Ritalin		
	Other Stimulants	III, IV	Adipex, Bacarate, Cylert, Didrex, Ionamin, Plegine, Pre-Sate, Sanorex, Tenuate, Tepanil, Voranil		
HALLUCINOGENS	LSD	I	Acid, Microdot	None	Non
	Mescaline and Peyote		Mesc, Buttons, Cactus		
	Amphetamine Variants		2,5-DMA, PMA, STP, MDA, MMDA, TMA, DOM, DOB		Unkno
	Phencyclidine	II	PCP, Angel Dust, Hog	Veterinary anesthetic	Degree unkno
	Phencyclidine Analogs	I	PCE, PCPy, TCP	None	
	Other Hallucinogens		Bufotenine, Ibogaine, DMT, DET, Psilocybin, Psilocyn		Non
CANNABIS	Marihuana	I	Pot, Acapulco Gold, Grass, Reefer, Sinsemilla, Thai Sticks	Under investigation	Degree unkno
	Tetrahydrocannabinol		THC		
	Hashish		Hash	None	
	Hashish Oil		Hash Oil		

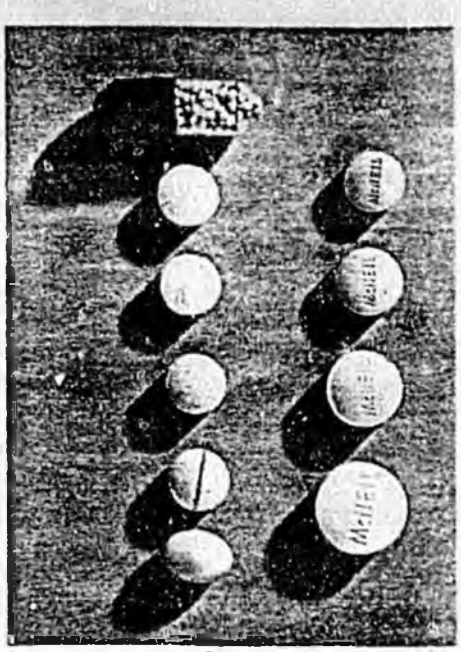
STANCES: USES & EFFECTS

Psychological Dependence	Tolerance	Duration of Effects (in hours)	Usual Methods of Administration	Possible Effects	Effects of Overdose	Withdrawal Syndrome
High	Yes	3 - 6	Oral, smoked	Euphoria, drowsiness, respiratory depression, constricted pupils, nausea	Slow and shallow breathing, clammy skin, convulsions, coma, possible death	Watery eyes, runny nose, yawning, loss of appetite, irritability, tremors, panic, chills and sweating, cramps, nausea
Moderate			Oral, injected, smoked			
High			Oral, injected			
			Injected, sniffed, smoked			
		12-24	Oral, injected			
High-Low		Variable				
Moderate	Possible	5 - 8	Oral	Slurred speech, disorientation, drunken behavior without odor of alcohol	Shallow respiration, cold and clammy skin, dilated pupils, weak and rapid pulse, coma, possible death	Anxiety, insomnia, tremors, delirium, convulsions, possible death
High-Moderate	Yes	1 - 16	Oral, injected			
High		4 - 8				
Low						
Moderate						
High	Possible	1 - 2	Sniffed, injected	Increased alertness, excitation, euphoria, increased pulse rate and blood pressure, insomnia, loss of appetite	Agitation, increase in body temperature, hallucinations, convulsions, possible death	Apathy, long periods of sleep, irritability, depression, disorientation
	Yes	2 - 4	Oral, injected			
			Oral			
Degree unknown	Yes	8 - 12	Oral	Illusions and hallucinations, poor perception of time and distance	Longer, more intense "trip" episodes, psychosis, possible death	Withdrawal syndrome not reported
			Oral, injected			
High		Up to days				
Degree unknown		Variable	Smoked, oral, injected			
	Possible		Oral, injected, smoked, sniffed			
Moderate	Yes	2 - 4	Smoked, oral	Euphoria, relaxed inhibitions, increased appetite, disoriented behavior	Fatigue, paranoia, possible psychosis	Insomnia, hyperactivity, and decreased appetite occasionally reported

*Not designated a narcotic under the CSA
†Designated a narcotic under the CSA

Chloral hydrate

Barbiturates: top row, amobarbital; middle row, pentobarbital (in combination with carbromal in the capsule at center); bottom row, secobarbital (in combination with amobarbital in the red and blue capsule at left).



Barbiturates: phenobarbital (left column) and butabarbital

includes butabarbital (Butisol), butalbital (Lotusate), allobarbital (Dial), aprobarbital (Alurate), and vinbarbital (Delvinal). After oral administration the onset time of action is from 15 to 40 minutes and duration of action is up to 6 hours. Physicians prescribe short-acting barbiturates to induce sedation or sleep. Veterinarians use pentobarbital for anesthesia and euthanasia.

Long-acting barbiturates, which include barbital (Veronal), phenobarbital (Luminal), mephobarbital or methylphenobarbital (Mebaral), and metharbital (Gemonil), have onset times of up to one hour and durations of action up to 16 hours. They are used medicinally as sedatives, hypnotics, and anticonvulsants. Their slow onset of action discourages their use for episodic intoxication, and they are not ordinarily distributed on the illicit market except when sold as something else. It should be emphasized, however, that all barbiturates result in a buildup of tolerance, and dependence on them is widespread.

Glutethimide

When glutethimide (Doriden) was introduced in 1954, it was said to be a safe barbiturate substitute without an addiction potential. But experience has shown glutethimide to be another CNS depressant, having no particular advantage over the barbiturates and several important disadvantages. The sedative effects of glutethimide begin about 30 minutes after oral administration and last for 4 to 8 hours. Glutethimide is marketed as Doriden in 125, 250, and 500 mg tablets. Because the effects of this drug are of long duration, it is exceptionally difficult to reverse overdoses, which often result in death.

Methaqualone

Methaqualone is a synthetic sedative chemically unrelated to the barbiturates, glutethimide, or chloral hydrate. It has been widely abused because it was once mistakenly thought to be non-addictive and effective as an aphrodisiac. Actually, methaqualone has caused many cases of serious poisoning. It is administered orally. Large doses cause coma, which may be accompanied by thrashing movements or convulsions. Continued heavy use of large doses leads to tolerance and dependence. Methaqualone has been marketed in the United States under various brand names such as Quaalude, Parest, Optimil, Somnafac, and Sopor. Counterfeit Quaalude tablets, which do not necessarily contain methaqualone, are prevalent on the U.S. illicit market, similar in appearance to the 300 mg tablet for-

Glutethimide (top row) and meprobamate

Methaqualone

Benzodiazepines: from top to bottom row, diazepam, chlordiazepoxide, flurazepam, clonazepam, clorazepate, lorazepam, and oxazepam

merly distributed by Rorer. Mandrax is a European brand name for methaqualone in combination with an antihistamine. Mecloqualone, a chemical similar to methaqualone in all significant respects, is not legally sold in the United States and is in Schedule I of the CSA.

Meprobamate

Meprobamate, first synthesized in 1950, introduced the era of mild or "minor" tranquilizers. In the United States today more than 200 tons of meprobamate are distributed annually under its generic name as well as under brand names such as Miltown, Equanil, Kesso-Bamate, and SK-Bamate. Meprobamate is prescribed primarily for the relief of anxiety, tension, and associated muscle spasms. Its onset and duration of action are like those of the intermediate-acting barbiturates; it differs from them in that it is a muscle relaxant, does not produce sleep at therapeutic doses, and is relatively less toxic. Excessive use, however, can result in psychological and physical dependence. Mebutamate (Dormate), a drug similar to meprobamate in its chemical makeup and effects, is also regulated under the CSA.

Benzodiazepines

The benzodiazepine family of depressants relieve anxiety, tension, and muscle spasms, produce sedation, and prevent convulsions. These substances are marketed as mild or minor tranquilizers, sedatives, hypnotics, or anticonvulsants. Their margin of safety is greater than that of other depressants. Eight members of the group are currently marketed in the United States. They are chlordiazepoxide (Librium), clonazepam (Clonopin), clorazepate (Tranxene, Azene), diazepam (Valium), flurazepam (Dalmane), lorazepam (Ativan), oxazepam (Serax), and prazepam (Verstran). Librium and Valium are among the drugs most widely prescribed in this country. These drugs have a relatively slow onset but long duration of action. Prolonged use of excessive doses may result in physical and psychological dependence. Withdrawal symptoms develop approximately one week to 10 days after continual high doses are abruptly discontinued. The delay in the appearance of the abstinence syndrome is due to the slow elimination of the drug from the body. When these drugs are used to obtain a "high," they are usually taken in conjunction with another drug such as alcohol or marihuana.

Stimulants

Of all abused drugs
the most powerfully reinforcing,
they can lead to increasingly compulsive behavior

The two most prevalent stimulants are nicotine in tobacco products and caffeine, the active ingredient of coffee, tea, and some bottled beverages that are sold in every supermarket. When used in moderation, these stimulants tend to relieve fatigue and increase alertness. They are an accepted part of our culture.

There are, however, more potent stimulants that because of their dependence-producing potential are under the regulatory control of the CSA. These controlled stimulants are available on prescription for medical purposes; they are also clandestinely manufactured in vast quantities for distribution on the illicit market.

Users tend to rely on stimulants to feel stronger, more decisive, and self-possessed. Because of the cumulative effects of the drugs, chronic users often follow a pattern of taking "uppers" in the morning and "downers" such as alcohol or sleeping pills at night. Such chemical manipulation interferes with normal body processes and can lead to mental and physical illness.

Young people who resort to stimulants for their euphoric effects consume large doses sporadically, over weekends or at night, often going on to experiment with other drugs of abuse. The consumption of stimulants may result in a temporary sense of exhilaration, superabundant energy, hyperactivity, extended wakefulness and a loss of appetite; it may also induce irritability, anxiety, and apprehension. These effects are greatly intensified with administration by intravenous injection, which may produce a sudden sensation known as a "flash" or "rush." The protracted use of stimulants is followed, however, by a period of depression known as "crashing" that is invariably described as unpleasant. Since the depression can be easily counteracted by a further injection of stimulant, this abuse pattern becomes increasingly difficult to break. Heavy users may inject themselves every few hours, a process sometimes continued to the point of delirium, psychosis, or physical exhaustion.

Tolerance develops rapidly to both the euphoric and appetite suppressant effects. Doses large

enough to overcome the insensitivity that develops may cause various mental aberrations, the early signs of which include repetitive grinding of the teeth, touching and picking the face and extremities, performing the same task over and over, a preoccupation with one's own thought processes, suspiciousness, and a sense of being watched. Paranoia with auditory and visual hallucinations characterizes the toxic syndrome resulting from continued high doses. Dizziness, tremor, agitation, hostility, panic, headache, flushed skin, chest pain with palpitations, excessive sweating, vomiting, and abdominal cramps are among the symptoms of a sublethal overdose. In the absence of medical intervention, high fever, convulsions, and cardiovascular collapse may precede the onset of death. It should be added that physical exertion increases the hazards of stimulant use since accidental death is due in part to their effects on the cardiovascular and body temperature regulating systems. Fatalities under conditions of extreme exertion have been reported among athletes who have taken stimulants in moderate amounts.

If withdrawn from stimulants, chronic high-dose users exhibit profound depression, apathy, fatigue, and disturbed sleep for up to 20 hours a day. The immediate withdrawal syndrome may last for several days. There may also be a lingering impairment of perception and thought processes. Anxiety, an incapacitating tenseness, and suicidal tendencies may persist for weeks or months. Many experts now interpret these symptoms as indicating that stimulant drugs are capable of producing physical dependence. Whether the withdrawal syndrome is physical or psychological in origin is in this instance academic since the stimulants are recognized as among the most potent agents of reward and reinforcement that underlie the problem of dependence.

Cocaine

The most potent stimulant of natural origin, cocaine is extracted from the leaves of the coca plant *(Erythroxylon coca)*, which has been cultivated in the Andean highlands of South America since prehistoric times. The leaves of the plant are chewed in the region for refreshment and relief from fatigue, much as North Americans once chewed tobacco.

Pure cocaine, the principal psychoactive ingredient, was first isolated in the 1880's. It was used as an anesthetic in eye surgery for which no previously known drug had been suitable; it became particularly useful in surgery of the nose and throat because of its ability to constrict blood vessels and thus limit bleeding. Although many of its therapeutic applications are now obsolete, the legal use of cocaine in the United States has in recent years been increased by the introduction of a morphine-cocaine elixir designed to relieve the suffering associated with terminal illness. In England, where this mixture was developed at the Brompton Chest Hospital, the use of cocaine in treatment of the terminally ill was largely abandoned after it was determined that it contributed to disquieting hallucinations and nightmares.

Illicit cocaine is distributed as a white crystalline powder, often adulterated to about half its volume by a variety of other ingredients, the most common of which are sugars such as lactose, inositol, mannitol, and local anesthetics such as lidocaine. Since the cost of illicit cocaine is high, there is a tendency to adulterate the product at each level of distribution. The drug is most commonly administered by being "snorted" through the nasal passages. Symptoms of repeated use in this manner may resemble the congested nose of a common cold. Less commonly, for heightened effect, the drug is injected directly into the bloodstream. Unlike such drugs as LSD and heroin, cocaine is popularly accepted as a recreational drug, facilitating social interaction. It is erroneously reputed to be relatively safe from undesirable side effects. Because of the intensity of its pleasurable effects, cocaine has the potential for extraordinary psychic dependency, which is all the more deceptive in view of its reputation as the recreational drug of choice.

Recurrent users may resort to larger doses at shorter intervals until their lives are largely committed to their habituation. Anxiety, restlessness, and extreme irritability may indicate the onset of a toxic psychosis similar to paranoid schizophrenia. Tactile hallucinations so afflict some chronic users that they injure themselves in attempting to remove imaginary in-

Coca plant

Coca processing

Cocaine

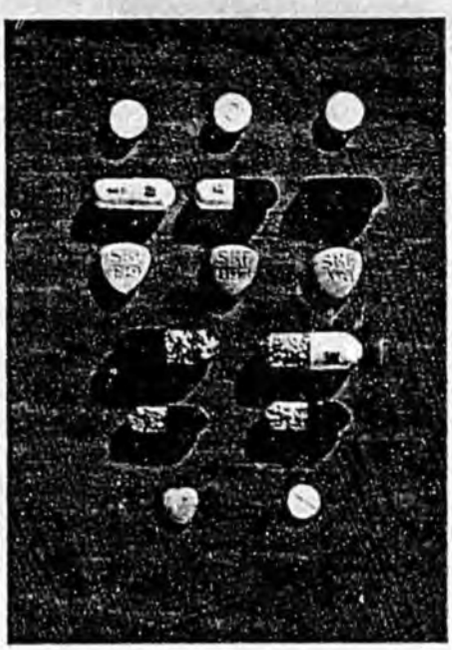
sects from under the skin. Others are persecuted by the fear of being watched and followed. Excessive doses of cocaine may cause seizures and death from respiratory failure.

Amphetamines

Amphetamine, dextroamphetamine, and methamphetamine are so similar in the effects they induce that they can be differentiated from one another only by laboratory analysis. Amphetamine was first used clinically in the mid-1930's to treat narcolepsy, a rare disorder resulting in an uncontrollable desire for sleep. After the introduction of the amphetamines into medical practice, the number of conditions for which they were prescribed multiplied as did the quantities made available. They were sold without prescription for a time in inhalers and other over-the-counter preparations. Abuse of the inhalers became popular among teenagers and prisoners. Housewives, students, and truck drivers were among those who used amphetamines orally in excessive amounts, and "speed freaks," who injected them, won notoriety in the drug culture for their bizarre and often violent behavior. Whereas a prescribed dose is between 2.5 and 15 mg per day, those on a "speed" binge have been known to inject as much as 1,000 mg every two or three hours. Recognition of the deleterious effects of these drugs and their limited therapeutic value has led to a marked reduction in their use by the medical profession. The medical use of amphetamines is now limited to narcolepsy, hyperkinetic behavioral disorders in children, and certain cases of obesity—as a short-term adjunct to a restricted diet for patients refractory to other forms of therapy. Their illicit use closely parallels that of cocaine in the range of its short-term and long-term effects. Despite broad recognition of the risks, clandestine laboratories produce vast quantities of amphetamines, particularly methamphetamine, for distribution on the illicit market.

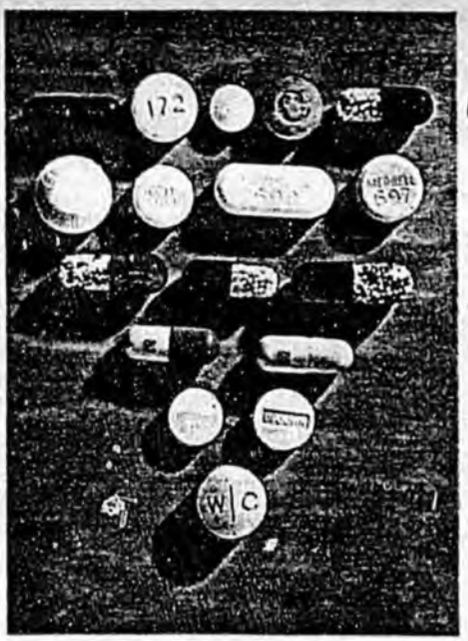
Phenmetrazine (Preludin) and Methylphenidate (Ritalin)

The medical indications, patterns of abuse, and adverse effects of phenmetrazine (Preludin) and methylphenidate (Ritalin) compare closely with those of the other stimulants. Phenmetrazine is medically used only as an appetite suppressant and methylphenidate mainly for treatment of hyperkinetic behavioral disorders in children. They have been subject to abuse in countries where freely available, as they are here in localities where medical practitioners write pre-



Methamphetamine (top row) and amphetamine. The tablets in the bottom row are of clandestine manufacture.

Phenmetrazine (left column) and methylphenidate



Other anorectic drugs: from top to bottom row, phendimetrazine, diethylpropion, phentermine (third and fourth rows), benzphetamine, and chlorphentermine

scriptions on demand. While the abuse of phenmetrazine involves both oral and intravenous use, most of that associated with methylphenidate results from injection after the drug in tablet form is dissolved in water. Complications arising from such use are common since the tablets contain insoluble materials which upon injection block small blood vessels and cause serious damage, especially in the lungs and retina of the eye.

Anorectic Drugs

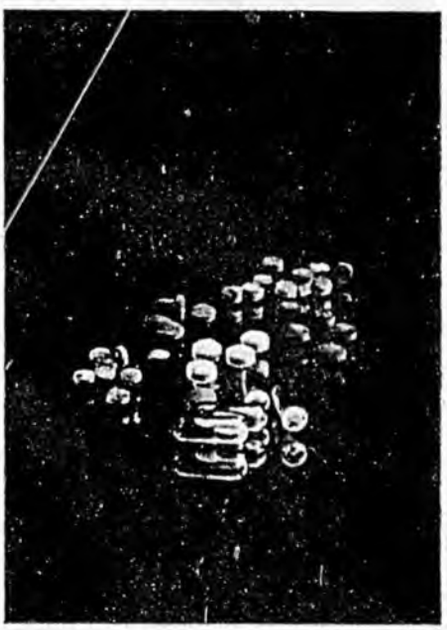
In recent years a number of drugs have been manufactured and marketed to replace amphetamines as appetite suppressants. These so-called anorectic drugs include benzphetamine (Didrex), chlorphentermine (Pre-Sate, etc.), clortermine (Voranil), diethylpropion (Tenuate, Tepanil, etc.), fenfluramine (Pondimin), mazindol (Sanorex), phendimetrazine (Plegine, Bacarate, Melfiat, Statobex, Tanorex, etc.), phentermine (Ionamin, Adipex-P, etc.). They produce many of the effects of the amphetamines but are generally less potent. Abuse patterns of some of them have not yet been established, but all are controlled because of the similarity of their effects to those of the amphetamines. Fenfluramine differs somewhat from the others in that at low doses it produces sedation.

Hallucinogens

Natural and synthetic substances that distort the perception of reality

Hallucinogenic drugs, both natural and synthetic, are substances that distort the perception of objective reality. They induce a state of excitation of the central nervous system, manifested by alterations of mood, usually euphoric, but sometimes severely depressive. Under the influence of hallucinogens, the pupils dilate, and body temperature and blood pressure rise. The senses of direction, distance, and time become disoriented. A user may speak of "seeing" sounds and "hearing" colors. If taken in a large enough dose, the drug produces delusions and visual hallucinations. Occasionally, depersonalization and depression are so severe that suicide is possible, but the most common danger is impaired judgment, leading to rash decisions and accidents. Persons in hallucinogenic states should therefore be closely supervised, and upset as little as possible, to keep them from harming themselves and others. Acute anxiety, restlessness, and sleeplessness are common until the drug wears off.

Long after hallucinogens are eliminated from the body, users may experience "flashbacks"—fragmentary recurrences of psychedelic effects—such as the intensification of a perceived color, the apparent motion of a fixed object, or the mistaking of one object for another. Recurrent use produces tolerance, which tends to encourage resorting to greater amounts. Although no evidence of physical dependence is detectable when the drugs are withdrawn, recurrent use tends to produce psychic dependence, varying according to the drug, the dose, and the individual user. It should be stressed that the hallucinogens are unpredictable in their effects each time they are used.



The abuse of hallucinogens in the United States reached a peak of popularity in the late 1960's, and a subsequent decline was attributed to broader awareness of their hazardous effects. Their abuse, however, re-emerged in the late 1970's.

Peyote and Mescaline

The primary active ingredient of the peyote cactus is the hallucinogen mescaline. It is derived

from the fleshy parts or buttons of this plant, which has been employed by Indians in Northern Mexico from the earliest recorded time as a part of traditional religious rites. The Native American Church, which uses peyote in religious ceremonies, has been exempted from certain provisions of the CSA. Peyote, or mescal buttons, and mescaline should not be confused with mescal, the colorless Mexican liquor distilled from the leaves of maguey plants. Usually ground into a powder, peyote is taken orally. Mescaline can also be produced synthetically. A dose of 350 to 500 mg of mescaline produces illusions and hallucinations lasting from 5 to 12 hours.

DOM, DOB, MDA, and MMDA

Many chemical variations of mescaline and amphetamine have been synthesized in the laboratory, certain of which at various times have won acceptance in the drug culture. DOM (4 -methyl -2, 5-dimethoxyamphetamine), synthesized in 1963, was introduced in 1967 into the Haight-Ashbury drug scene in San Francisco. At first named STP after a motor oil additive, the acronym was quickly reinterpreted to stand for "Serenity, Tranquility, and Peace." A host of related chemicals are illicitly manufactured, including DOB (4-bromo-2, 5-dimethoxyamphetamine), MDA (3, 4-methylenedioxyamphetamine), and MMDA (3-methoxy-4, 5-methylenedioxyamphetamine). These drugs differ from one another in their speed of onset, duration of action, potency, and capacity to modify mood with or without producing hallucinations. They are usually taken orally, sometimes "snorted," and rarely injected intravenously. Because they are produced in clandestine laboratories, they are seldom pure, and the dose in a tablet, in a capsule, or on a square of impregnated paper may be expected to vary considerably. The names of these drugs are sometimes used to misrepresent other chemicals.

Psilocybin and Psilocyn

Like the peyote cactus, Psilocybe mushrooms have been used for centuries in traditional Indian rites. When they are eaten, these "sacred" or "magic" mushrooms affect mood and perception in a manner similar to mescaline and LSD. Their active ingredients, psilocybin and psilocyn, are chemically related to LSD. They can now be made synthetically, but much of what is sold under these names on the illicit market consists of other chemical compounds.

LSD (LSD-25, lysergide)

LSD is an abbreviation of the German expression for lysergic acid diethylamide. It is produced from lysergic acid, a substance derived from the ergot fungus which grows on rye or from lysergic acid amide, a chemical found in morning glory seeds; both of these precursor chemicals are in Schedule III of the CSA. It was first synthesized in 1938. Its psychotomimetic effects were discovered in 1943 when a chemist accidentally took some LSD. As he began to experience the effects now known as a "trip," he was aware of vertigo and an intensification of light; closing his eyes, he saw a stream of fantastic images of extraordinary vividness accompanied by a kaleidoscopic play of colors. This condition lasted for about two hours.

Because of the extremely high potency of LSD, its structural relationship to a chemical which is present in the brain, and its similarity in effects to certain aspects of psychosis, LSD was used as a tool of research to study the mechanism of mental illness. It was later adopted by the drug culture. Although its popularity declined after the 1960's, there are indications that its illicit use is once again increasing.

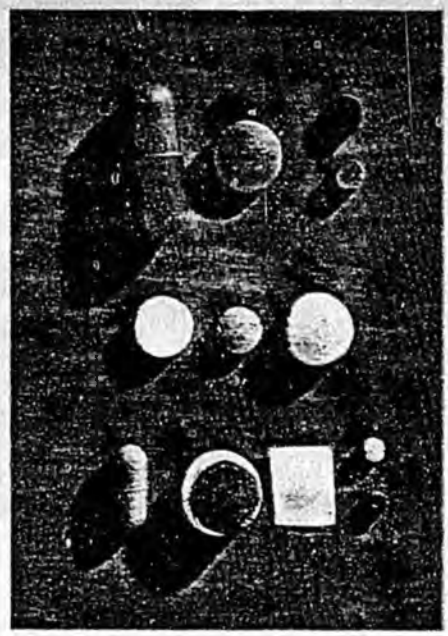
LSD is usually sold in the form of tablets, thin squares of gelatin ("window panes"), or impregnated paper ("blotter acid"). The average effective oral dose is from 30 to 50 micrograms, but the amount per dosage unit varies greatly. The effects of higher doses persist for 10 to 12 hours. Tolerance develops rapidly.

Phencyclidine (PCP) and Related Drugs

According to a consensus of drug treatment professionals, phencyclidine now poses greater risks to the user than any other drug of abuse.

Phencyclidine was investigated in the 1950's as a human anesthetic, but because of side effects of confusion and delerium its development for human use was discontinued. It became commercially available for use in veterinary medicine in the 1960's under the

Peyote cactus



Hallucinogens of clandestine manufacture

Psilocybe mushrooms

trade name Sernylan. In 1978, however, the manufacturer stopped production. That same year phencyclidine was transferred from Schedule III to Schedule II of the CSA, together with two previously unscheduled precursor chemicals.* Most if not all phencyclidine on the U.S. illicit market is produced in clandestine laboratories.

More commonly known as PCP, it is sold under at least fifty other names that reflect the range of its bizarre and volatile effects, including Angel Dust, Crystal, Supergrass, Killer Weed, Embalming Fluid, and Rocket Fuel; it is also frequently misrepresented as mescaline, LSD, or THC. In its pure form a white crystalline powder that readily dissolves in water, most PCP now contains contaminants resulting from its makeshift manufacture, causing the color to range from tan to brown and the consistency from a powder to a gummy mass. Although sold in tablets and capsules as well as in powder and liquid form, it is most commonly applied to a leafy material, such as parsley, mint, oregano or marihuana, and smoked.

The drug is as variable in its effects as it is in its appearance. A moderate amount often produces in the user a sense of detachment, distance, and estrangement from his surroundings. Numbness, slurred or blocked speech, and a loss of coordination may be accompanied by a sense of strength and invulnerability. A blank stare, rapid and involuntary eye movements, and an exaggerated gait are among the more common observable effects. Auditory hallucinations, image distortion as in a fun-house mirror, and severe mood disorders may also occur, producing in some acute anxiety and a feeling of impending doom, in others paranoi and violent hostility. PCP is uniqu among popular drugs of abuse i its power to produce psychoses ir distinguishable from schizophreni Although such extreme psychic re actions are usually associated wit repeated use of the drug, they hav been known to occur in some case after only one dose and to las or recur intermittently, long aft the drug has left the body.

Modification of the manufactu ing process may further yield chem ically related analogs, capable producing, so far as is known, sim lar psychic effects. Three of thes analogs have so far been encoun tered on the U.S. illicit marke where they have been sold PCP.* In view of the severe b havioral toxicity of phencyclidin

*The chemicals are 1-phenylcyclohexylamine and 1-piperidinocyclohexanecarbonitrile (PCC).

* The analogs are N-ethyl-1-phenylcycl hexylamine (PCE), 1-(1-phenylcyclohex pyrrolidine (PCPy; PHP), and 1-[1-(2-thien cyclohexyl]piperidine (TPCP, TCP).

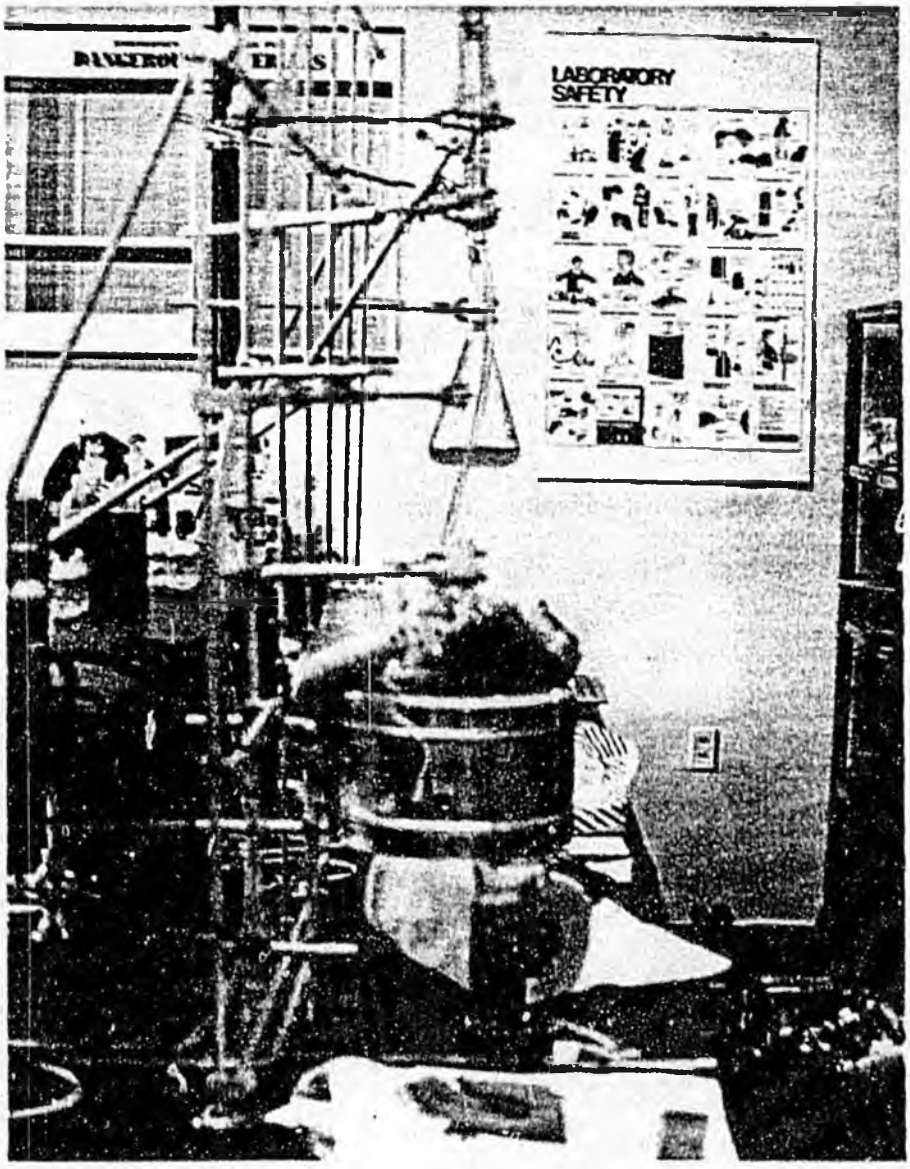
LSD

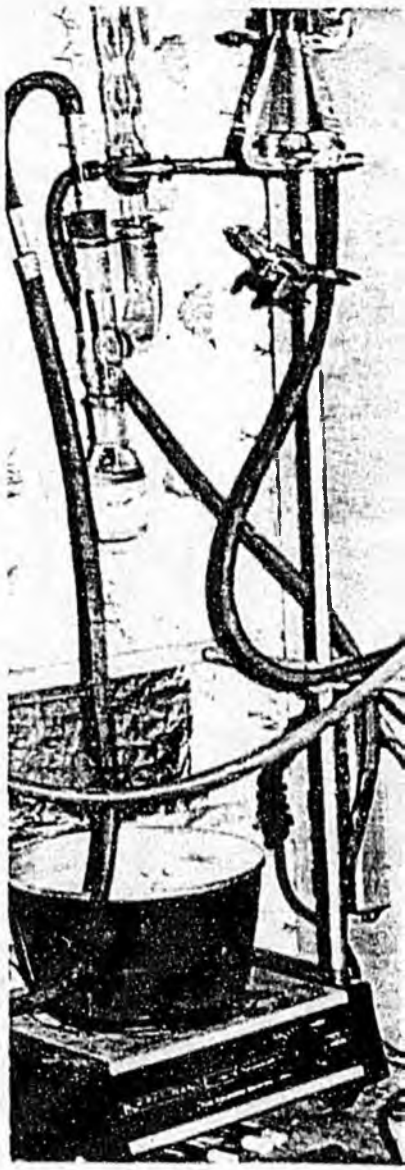
Phencyclidine (PCP)

and its analogs, the Congress in November 1978 passed legislation imposing penalties for the manufacture of these chemicals, or possession with intent to distribute them, more severe than for any other non-narcotic violation under the CSA. (For a first offense, a term of imprisonment of up to 10 years, a fine up to $25,000, or both; for a second offense, imprisonment up to 20 years, a fine of $50,000, or both.) Legislation was also passed which makes it mandatory to report all sales of the common precursor chemical piperidine, its salts, and acyl derivatives to the Drug Enforcement Administration.

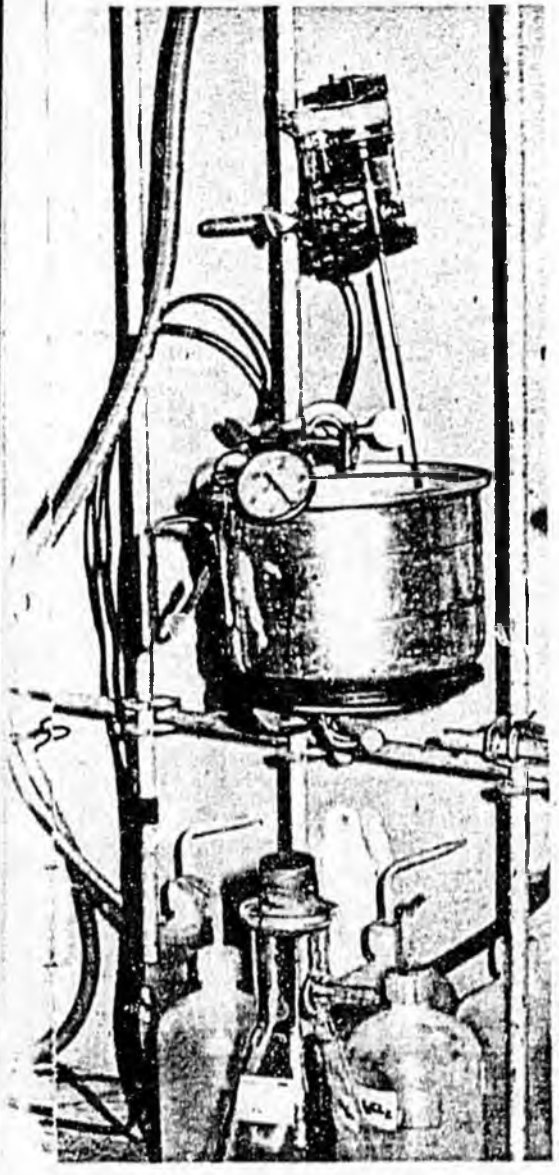
U.S. authorities seized a record number of clandestine drug laboratories in 1978. Seventy-eight of these laboratories were producing PCP. Methamphetamine was found in production at 69 others, one of which may be seen below in the photograph at the left. Despite the sophistication of equipment and easy availability of inexpensive chemicals obtainable through legitimate commercial channels, the clandestine drug industry is a high-risk enterprise, as the chart on the wall serves to remind the operator. This laboratory was

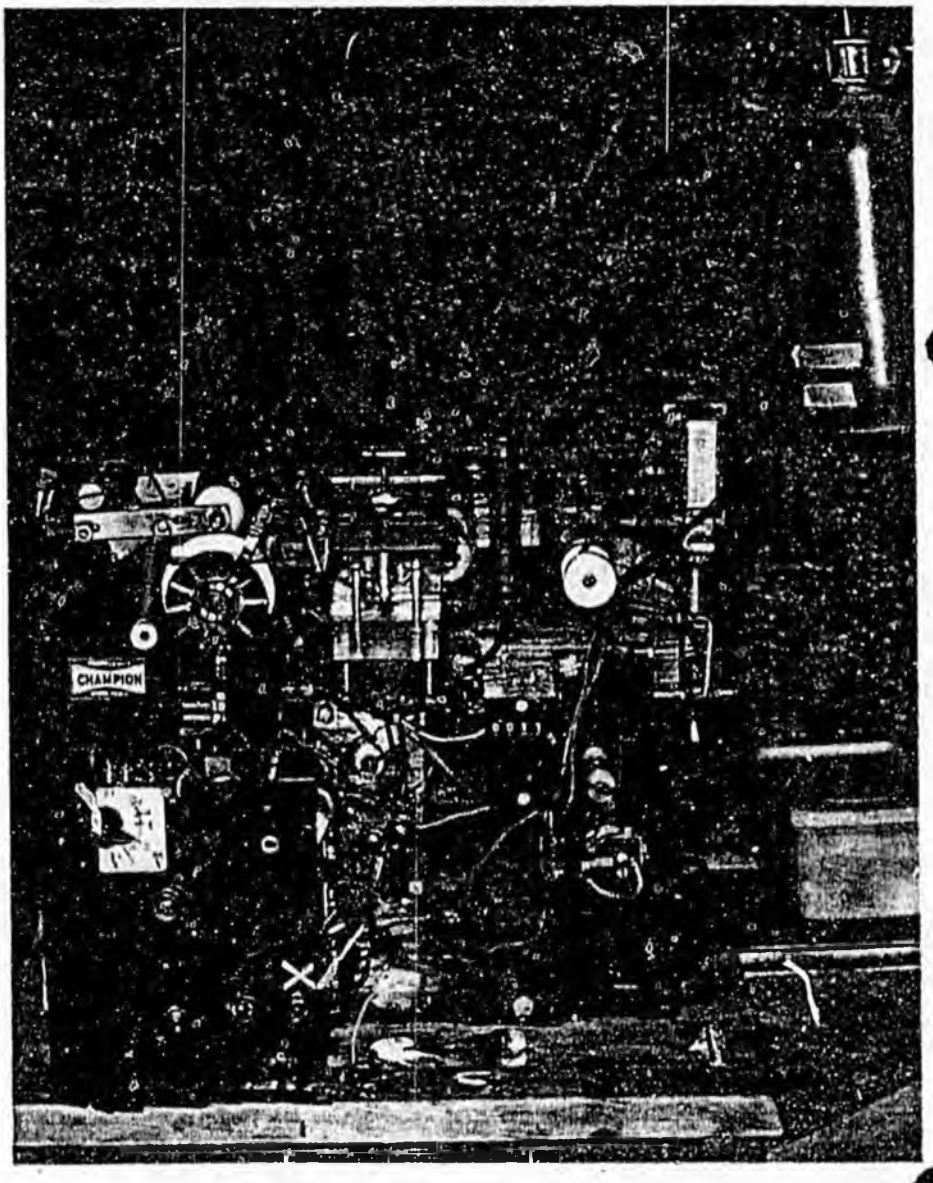
Clandestine Laboratories





seized by DEA in cooperation with the Cambridge, Massachusetts, Police Department. LSD was produced at the laboratory that is shown in the middle, located at a trailer park in Wappinger Falls, near Poughkeepsie, New York. Although the operator had no formal training in chemistry, his procedures were unusually efficient. All solvents were collected in cold traps and batched for later purification; all unreacted materials were removed for later use. The LSD was treated by a four-column chromatographic procedure, yielding a product of extremely high purity. An ingenious contraption, shown at the right, then processed it into precut strips of 100 dosage units of "blotter acid" apiece.





* Section 1. AS14.36.010 (b) is ammended to read:

(b) It is the intent of the legislature that

(1) a program of community school grants be established to provide assistance to local communities in the initial development, implementation and operation of community school programs;

(2) technical assistance, monitoring, training and coordination of statewide efforts to develop and operate community school programs be provided by the department;

(3) the community school program will become fully operational once a plan of operation has been approved by the commissioner; and

(4) evaluation of an approved plan of operation will be conducted by the department in cooperation with the school district. An annual report of all sites evaluated shall be presented by the Department of Education to the Legislature on or before the fifteenth day of the legislative session.

* Section 2. AS14.36.030 is repealed and re-enacted to read:

GRANTS FROM THE STATE. (a) A district operating a community school program under an approved plan of operation may receive an annual grant from the state of one percent of its public school foundation support or $10,000, whichever is greater.

(b) For each fiscal year beginning after June 30, 1980, a district operating an approved community school program under (a) of this section amy receive a further grant from the state equal to the amount allocated by the district to the support of the community school program from sources other than the grant provided under (a) of this section. Local match monies in the form of hard cash may come from any source the district deems appropriate. Local services or in-kind contributions which the district provides for the community schools program may consist

of district costs associated with energy, maintenance, administration, custodial services, telephone, postage and duplicating/ printing costs. Hard cash and in-kind contributions by the district shall be itemized under the community services section of the district's budget. The additional grant under this subsection may not exceed the amount received under (a) of this section.

Sec. 14.36.040. COMMUNITY SCHOOL PROGRAM, APPLICATION FOR GRANTS. Under regulations adopted by the state Board of Education, a district [LOCAL ATTENDANCE AREA] may submit to the commissioner [, THROUGH THE SCHOOL DISTRICT,] an application for a community school grant. An application shall include

(1) a comprehensive plan for the community school program, including, but not limited to, before and after school hours activities for both children and adults, continued education programs for children and adults, and cultural enrichment and recreational activities for citizens in the community;

(2) a provision for a community schools advisory council;

(3) provision for community school direction and coordination to include personnel requirements;

(4) an assurance that the community school program will be reasonably available to residents of all communities within the district [A STATEMENT AS TO THE NUMBER OF SCHOOLS TO BE OPERATED AS COMMUNITY SCHOOLS].

* Sec. 4. AS 14.36.050 is amended to read:

Sec. 14.36.050. APPLICATION REVIEW, DISPOSITION. The commissioner shall review and approve, disapprove or return to the [INITIATOR THROUGH THE] district [BOARD] for modification, an application for a community school program grant.

* Sec. 5. AS 14.36.070(5) is amended to read:

(5) "district" means a [SCHOOL] district of the state public school system as defined in AS 14.12.010 [OR THE STATE-OPERATED SCHOOLS];

* Sec. 6. AS 14.36.070(6) is repealed.

* Sec. 7. This Act takes effect July 1, 1980.