



# MICROGRAM

Laboratory Division  
Office of Scientific Support

BUREAU OF NARCOTICS & DANGEROUS DRUGS / U.S. DEPARTMENT OF JUSTICE / WASHINGTON, D.C. 20537

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Vol. V, No. 8

August, 1972

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## STOP PRESS

Scientists under a BNDD contract appear to have successfully developed a method to detect LSD in body fluids. If later tests confirm these results, it will be a breakthrough in solving a problem that has faced toxicologists, pathologists and others for a number of years. Although detection of LSD in body tissue has been reported in research situations, there has not been success in the problems on a practical basis.

The new method developed by the BNDD contractor is a radio immuno-assay technique. Using the technique, Allison Taunton-Rigby, Ph.D., Stephanie Sher, Ph.D. and Paul Kelley of Collaborative Research, Inc., (Waltham, Mass.) successfully detected LSD in 100% of eight (8) normal human subjects to whom the drug was administered under medical supervision. LSD was not found in the controls. Theresa Harwood, Ph.D., Chief, Biological Research Branch, Drug Control Division, Office of Scientific Support, Bureau of Narcotics & Dangerous Drugs, managed the project.

Heroin "cut" with cinchonine and procaine is reported by the Department of Health Laboratory, Richmond, Virginia. The cinchonine has occurred as either the hydrochloride or dihydrochloride salt and usually shows traces of quinidine. A typical combination consists of 45% procaine, 45% cinchonine HCl and 5% heroin. Cinchonine, like quinidine, is a cinchona alkaloid used as an antimalarial.

LSD impregnated paper has been reported by the Metropolitan Drug Laboratory, Canton, Ohio. The blue papers, sold as "Blotter Acid" measure 3.2 by 1.6 centimeters, and contain 39 micrograms of LSD each. The papers also have the figure of "Mr. Natural", (an underground newspaper comic strip character) imprinted on each rectangle. These papers are very similar to 1 X 1 inch blotter papers bearing the figure

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Analytical methods in **Microgram** do not have official status. Use of funds for printing this publication approved by the Bureau of the Budget, April 8, 1969. **CAUTION:** Use of this publication is restricted to forensic scientists serving law enforcement agencies.

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of "Mr. Natural" and containing 100 micrograms LSD shown in the first supplement of the Midwest Research Institutes' "Drug Atlas". (Reported in Health Services Reports, Dept. of Health, Education & Welfare, Wash., D.C., Vol. 87, No. 6.)

Methamphetamine HCl (20.8%) in combination with dextrose and starch is reported by the New York BNDD Laboratory.

Methylenedioxyamphetamine (75%) and amphetamine (25%) in combination are reported by the Law Enforcement Assistance Council Laboratory, Cape Girardeau, Missouri. This is the first report we have had of this particular mixture.

Marihuana bricks of assorted sizes, wrapped in brown paper and bearing a stamped picture of an armadillo, are reported by the Miami BNDD Regional Laboratory.

Cocaine HCl, procaine HCl, benzocaine HCl and lactose mixtures are reported by the BNDD Washington Regional Laboratory. The first encounter we had with this particular combination was reported in Microgram, June, 1972.

2,4,5-Trimethoxyamphetamine hydrochloride has been encountered by the Louisiana State Police Laboratory, Baton Rouge. The exhibit occurred as a light brown powder contained in a paper envelope. This material is controlled under the federal Controlled Substances Act.

Morphine HCl and codeine HCl in combination being sold as opium is reported by the New York BNDD Regional Laboratory. The tablets are light brown and have an average weight of 32.6 milligrams. Analysis shows 17.7 milligrams morphine HCl and 1.4 milligrams codeine HCl per tablet. The exhibit appeared to be either a poorly processed commercial product or a clandestine one.

Ephedrine sulfate being sold as cocaine and amphetamine is reported by the Louisiana State Laboratory, Baton Rouge. The exhibits consist of white powder wrapped in aluminum foil.

4-Bromo-2,5-dimethoxyamphetamine has been identified in an exhibit analyzed by the San Francisco BNDD Laboratory. The compound was found as a trace in powder containing 0.2% methylenedioxyamphetamine (MDA), with procaine and ascorbic acid. The mixture was packaged in heat sealed plastic tubes.

Heroin diluted with procaine, sucrose and chocolate has been encountered by the BNDD Special Testing & Research Laboratory in a powder destined for the West Coast. The source of the

chocolate in this exhibit was a chocolate drink product manufactured in a foreign country. Similar chocolate products have been found in the past to contain insect fragments, rodent hairs and other filth. Besides infection from injecting such material, a user is running the risk of embolism because of the oil and may suffer an allergic reaction from the protein.

### M E E T I N G S

The 1973 National Symposium on the Forensic Sciences is to be held from February 12th through 16th, 1973 in Sydney, Australia. Venue is the Stephen Roberts Theater, University of Sydney. Papers and discussions are planned on a wide field of subjects. As there will be no concurrent sessions, those attending will be able to hear all papers presented. For further information, write to:

Lawrence F. Horton  
Forensic Microbiologist  
1973 Symposium Organizing Director  
P. O. Box 90  
Glebe, NSW  
Australia 2037

### California Association of Criminalists

#### FALL 1972

40th Semi-Annual Seminar, October 19-21, 1972, Mansion Inn, Sacramento, California. For further information, contact Seminar Chairman, Alan Gilmore, Sacramento County District Attorney, Criminalistics Lab, 4400 "V" Street, Sacramento, California 95817, or phone: (916) 454-5704.

#### SPRING 1973

41st Semi-Annual Seminar, May 17-19, 1973, Sheraton Inn, Harbor Island, California. For further information, contact Richard Shaw, San Diego Coroner's Office, 5555 Overland Avenue, Building 14, San Diego, California 92123, or phone: (714) 278-9600.

The 86th Annual Meeting of the Association of Official Analytical Chemists will be held October 9-12, 1972 at the Marriott Motor Hotel, Twin Bridges, Washington, D.C. A Forensic Science Symposium, chaired by Mr. Richard L.

Brunelle, will be presented on October 12. Subjects to be discussed include "Forensic Applications of Atomic Absorption Analysis", "Forensic Applications of Nuclear Techniques" and "Identification of Cis- and Trans-Cinnomoylcocaine in Illicit Cocaine Seizures". Many other equally interesting papers will be presented throughout the day.

BNDD Forensic Chemist Seminars for the coming fiscal year are planned as follows:

1. November 13 - 17, 1972
2. March 5 - 9, 1973
3. June 25 - 29, 1973

All sessions will be held at the BNDD National Training Institute, Washington, D. C. For more information and application forms, write to:

Assistant Director for Training  
National Training Institute  
Police Training Division  
Bureau of Narcotics & Dangerous Drugs  
1405 Eye Street, N. W.  
Washington, D. C. 20537

#### S E L E C T E D   R E F E R E N C E S

The Medical, Legal and Law Enforcement Aspects of Drugs and Drug Abuse. A bibliography of classic and current references. William G. Eckert, M.D., International Reference Organization in Forensic Medicine and Sciences (INFORM), Laboratory, St. Francis Hospital, Wichita, Kansas 67214. COST: \$12.00.

AN ALTERNATE METHOD FOR THE SEPARATION AND  
IDENTIFICATION OF AMOBARBITAL FROM TUINAL<sup>(R)</sup>

by

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Tuinal is one of the most commonly used sedatives. It contains two major active components, namely amobarbital and secobarbital. Despite the fact that separations of these two barbiturates by chromatographic methods <sup>(1)</sup> are available, difficulties have been experienced if the conditions specified are not met. The procedure reported here offers an alternative, clean, time-saving route to isolate amobarbital from Tuinal<sup>(R)</sup>.

Secobarbital is subject to oxidation by alkaline potassium permanganate to form 1,2-glycol. While the less soluble unreacted amobarbital is extracted with chloroform, the glycol is more soluble under acidic conditions. Amobarbital obtained (in >90% recovery) by this method is pure and free from any contamination as verified by TLC. This procedure is flexible for both large and small samples and is particularly useful if a larger pure sample is needed for the subsequent spectroscopic examination. The method is also applicable to the mixture of phenobarbital and secobarbital.

METHODS AND MATERIALS

1. Centrifuge
2. Laboratory Press
3. Infrared Spectrometer

REAGENTS

1. 1 Molar Potassium Permanganate Solution
2. 0.5 N NaOH (or KOH)
3. 6 N HCl (or conc. HCl)
4.  $\text{HCCl}_3$

PROCEDURE

1. Approximately 35-50 mg of Tuinal<sup>(R)</sup> are placed in a test tube (8.5 cm x 1.7 cm) to which 2 ml of 0.5 N NaOH are added.
2. To this clear mixture 0.5 ml of 1 molar potassium permanganate is added. The greenish solution is centrifuged.
3. The aqueous layer is separated and acidified with 6 N HCl. The purplish solution is centrifuged.
4. The aqueous layer is extracted twice with 2 ml  $\text{HCCl}_3$ , which, in turn, is air evaporated to dryness.
5. The white crystalline amobarbital is identified by infrared KBr pellet technique. (see Fig. 1).

References

- (1)a. R. Martin Smith and F.C. Dolejsi, Jr. Microgram, Vol. IV, No. 10 pg. 139 (1971).
- b. N.N. Valanju et. al. Acta. pharm. Jugosl., 20. 11(1970) and the reference therein.

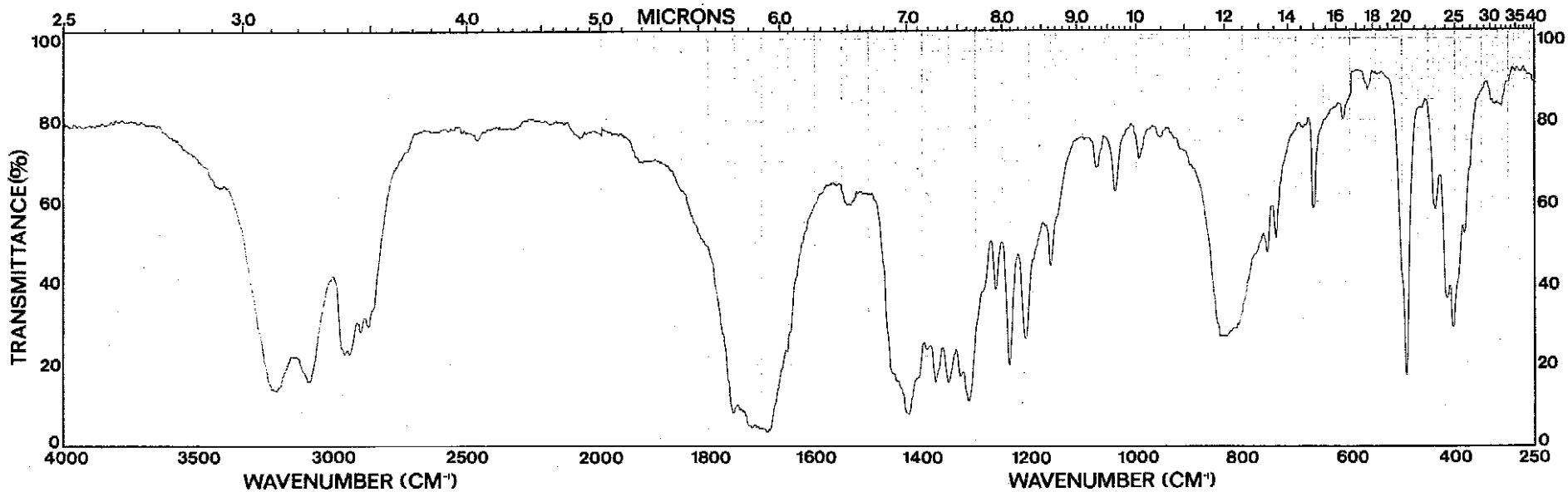


Figure 1. Amobarbital obtained from  $\text{KMnO}_4$  treatment of Tuinal<sup>(R)</sup>.

SEPARATION SCHEME

