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Pacific Information Service on Street-Drugs April 1975

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j.k. brown
m.h. malone
: editors

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The regular analyses of illicit drugs for non-forensic purposes is a relatively new phenomenon. The first publications on the actual composition of illicit drugs (street-drugs) were by Marshman and Gibbins in 1969 (1) and 1970 (2). These reports stimulated others to publish the results of their findings (3-7). These early reports indicated that there was considerable deception in the illicit market (1-10).

The validity of non-forensic street-drug analysis programs was recognized in 1972; one section ("Analysis of Controlled Substances") of the 30th International Congress on Alcoholism and Drug Dependence, Amsterdam, The Netherlands (Sept. 4-9), was devoted to this topic. Germany, The Netherlands and the U.S.A. (8,11-14) were represented and explained their programs and related their findings. Eighteen months ago (October 15-18, 1973) the Department of National Health and Welfare (Canada), the Alcoholism and Drug Addiction Research Foundation (Toronto, Canada) in association with the International Council on Alcohol and Addictions of Lausanne, Switzerland sponsored a four-day symposium with the theme, "Street Drug Analysis and Its Social and Clinical Implications" (15). This topic was also part of the First and Second Annual Meetings of the Symposium on Advances in Analytical Toxicology, Houston, Texas, December 1973 (16-17) and 1974 (18). Street-drug analysis programs now appear to have been accepted by the scientific community.

METHODS OF COLLECTING SAMPLES

The street-drug monitoring programs in the United States still depend upon voluntary submission of samples for evaluation. The methods of operation for some of these groups have been summarized (8,16-17). Originally the Amsterdam group did not depend upon voluntary sample submission since they had commissioned people throughout the Netherlands to send in representative samples of currently available illicit drugs (16). This procedure allowed for a more accurate evaluation of the status of the illicit market at any one given time. The shortcomings of the wholly voluntary submission method may be best explained by the following quotation:

"Before drawing any conclusions about drugs sold on the street, it should be noted that the samples analyzed by PharmChem Laboratories do not necessarily represent a cross section of the street drug trade. People who submit samples to PharmChem are doubtful of the alleged content of the sample. Consequently, we are likely to see a larger percentage of drug deception than actually exists. For example, we rarely receive samples of methaqualone (e.g.,Quaalude®, Sopor®) even though it is presently a popular street drug. In general, the type of drugs we are most likely to analyze are those which do not originate from legitimate sources such as pharmaceutical manufacturers (19). The conclusions drawn in this quotation probably apply to most of the analysis programs in the United States. They do apply to the program at the University of the Pacific.

ANALYTICAL RESULTS

Three of the four street drug analysis programs summarised here are California based. These programs are: (I) University of the Pacific, (II) PharmChem Laboratories of Palo Alto (20-33), and (III) LAC-BUG Medical Center of Los Angeles (34). The three programs were selected...
for two reasons: (i) the data were available and reliable, and (ii) some of the reported analytical results could be attributed to definite periods of time. The data from the fourth program, Metro Drug Awareness of Minneapolis, Minnesota (35-45) have been used because they meet the relatively far removed from the others. It has been said with some justification that street-drug usage patterns originate in California and that the present status of the illicit market in California may predict the patterns to be seen in other areas of the United States.

Analytical results, as in the past, have been summarized using the alleged content of the individual samples. Results include only those samples alleged to contain a specific substance (or substances) and cover a period from July, 1973 to January 31, 1975. The California data reflect much of the west coast illicit drug market. PharmChem Laboratories does analyses for the Drug Information Center of the University of Oregon (Eugene, Oregon) as well as the San Francisco Pacific screens samples (until recently) for Western Washington State College in Bellingham, Washington, in addition to the Stockton, Modesto, and San Francisco, California areas. The LAC-USC Medical Center program receives most of their street-drug samples from southern California, primarily the greater Los Angeles area.

Mescaline (MESC). This compound is one of the active constituents of the peyote cactus Lophophora williamsii (Lem.) Coult. (47) which has a long history of use (48). Mescaline is reputed to be a mild psychodelic and is capable of producing colorful hallucinations at an oral dose of approximately 350 mg. (49). Drug experimenters generally consider this so-called "mescaline" state to be pleasant and without danger. Hence, many prefer "mescaline" to lysergic acid diethylamide (LSD). However, natural mescaline is usually unavailable to the dealer and its synthesis is relatively costly and difficult. Consequently, he improvises to meet the demand for this compound. The analytical results of the samples screened for mescaline in Table I. Although the usual effective dose of mescaline samples are summarized in Table I. The past 13 months (40) showed some degree of "purification." Lundberg (41) reported on the quantitative analysis smooth out the trip." Lundberg (34) reported on the quantitative analysis of 298 alleged mescaline containing samples. Of these, 272 are from the west coast area (20-34) and 19 from the Minneapolis, Minnesota area (35-45). The findings of each group are similar: most samples (686/746) contained varying amounts of LSD only. Phencyclidine (PCP) in addition to LSD was detected in seven alleged LSD samples. Other chemicals identified in alleged LSD-containing samples were: phencyclidine (PCP), DOM (4-bromo-2,5-dimethoxyphenylisopropylamine), amphetamine, atropine, DOM (3SP, 4-methyl-2,5-dimethoxyphenylisopropylamine), caffeine, and one sample was a mixture of DOM and LSD. LSD is available on the street market in numerous dosage forms: varied colored powders in capsules, a potpourri tablet form ("Blotter Acid"), in clear or colored gelatin flakes ("Window Pane"), very small colored "tablets" ("Micro Dots"), and frequently in the form of a colored tablet triturate -- each color supposedly representing some degree of "purity and potency." Orange tablet triturates, known as "Orange Sunshine," are still considered by some, particularly in Europe, to be the ultimate in purity.

## Table I - Summary of the Results of Analyses of 298 Alleged Mescaline-Containing Street-Drugs

<table>
<thead>
<tr>
<th>Reporting</th>
<th>Actual Chemistry</th>
<th>Number of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Univ.of. the Pacific</td>
<td>11^b</td>
<td>2</td>
</tr>
<tr>
<td>PharmChem Laboratories</td>
<td>30^b</td>
<td>153</td>
</tr>
<tr>
<td>LAC-USC Med.Center</td>
<td>9^a</td>
<td>36</td>
</tr>
<tr>
<td>Metro Drug Awareness</td>
<td>3^b</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>150</td>
<td>160</td>
</tr>
</tbody>
</table>

1^b Includes: 1 LSD + procaine, 1 quinine, and 4 not identified.
2^b Includes: 1 mescaline + LSD, 1 DOM (4-methyl-2,5-dimethoxyphenylisopropylamine), 1 caffeine + DOM (4-bromo-2,5-dimethoxyphenylisopropylamine), 1 ephedrine, and 17 not identified.
3^b Includes: 2 STP (DOM), 1 heroin, 1 LSD-amphetamine, and 8 not identified.
4^b Includes: 1 heroin and 1 sample not identified.

## Lysergic Acid Diethylamide (LSD). The illicit LSD market has changed very little in the past four and one-half years (50). The analytical results of 746 alleged LSD-containing street-drugs are tabulated in Table I. Of these, 272 are from the west coast area (20-34) and 19 from the Minneapolis, Minnesota area (35-45). The findings of each group are similar: most samples (686/746) contained varying amounts of LSD only. Phencyclidine (PCP) in addition to LSD was detected in seven alleged LSD samples. Other chemicals identified in alleged LSD-containing samples were: phencyclidine (PCP), DOM (4-bromo-2,5-dimethoxyphenylisopropylamine), amphetamine, atropine, DOM (3SP, 4-methyl-2,5-dimethoxyphenylisopropylamine), caffeine, and one sample was a mixture of DOM and LSD. LSD is available on the street market in numerous dosage forms: varied colored powders in capsules, a potpourri tablet form ("Blotter Acid"), in clear or colored gelatin flakes ("Window Pane"), very small colored "tablets" ("Micro Dots"), and frequently in the form of a colored tablet triturate -- each color supposedly representing some degree of "purity and potency." Orange tablet triturates, known as "Orange Sunshine," are still considered by some, particularly in Europe, to be the ultimate in purity.
14.
and accuracy of dosage. The current (and apparently popular) gelatin flakes, frequently brown in color, weighing 1.0 to 1.2 mg., have been reported to contain from 150 to 214 mg. of LSD per dose (%).

The allegations that LSD samples sometimes contain strychnine (53-54) still appear to be unfounded. None of the groups doing street drug analysis on a regular basis has reported finding strychnine in any LSD-containing sample. The answer still appears to be that large doses of LSD tend to mimic the symptoms of strychnine poisoning (59).

Psilocybin (PSI). The use of the "Magic Mushroom" Psilocybe mexicana Heim (52) by Mexican Indians and sensational reports on the practice in the popular press have created a real market for psilocybin. This compound is also found in other species of Psilocybe as well as in certain Conocybe and Stropharia mushrooms (55).

Alleged psilocybin-containing mushrooms are still being offered in the illicit market place. The analytical results (20-34, 36) of 323 alleged psilocybin-containing samples are summarized in Table III. The majority of these samples (176/323) contained LSD only or LSD with PCP (phenyl-cyclidine). Forty-seven authentic psilocybin-containing mushrooms have been identified by two California groups (PharmChem Laboratories 46, LAC-USC Medical Center 1). In our experience, five alleged psilocybin-containing mushrooms and one sample of "pure psilocybin," relied on LSD for activity. The remaining 100 alleged psilocybin-containing samples were either not identified or contained some other pharmacologically active compound other than psilocybin or LSD (Table III).

Tetrahydrocannabinol (THC). Alledged pure THC, the quintessence of Cannabis sativa, is still being offered by the "reliable street-drug dealer." However, this compound in pure form, is still not available on the United States, Canadian (56) or European (57) street markets.

The analytical results (20-34, 37-45) of 160 alleged THC-containing street-drugs are summarized in Table IV. The most frequently identified compound in alleged THC samples was the tranquilizer-anesthetic phen-cyclidine (PCP). 146 samples (91.7%) relied on PCP for the active ingredient. The ubiquitous LSD was in four alleged THC-containing samples. A variety of other pharmacologically active compounds (Table IV) were also identified in illicit "THC" samples.

Table III - Summary of the Results of Analyses of 323 Alleged Psilocybin (PSI)-Containing Street Drugs

<table>
<thead>
<tr>
<th>Group</th>
<th>Actual Chemistry</th>
<th>Number</th>
<th>Not Identified</th>
<th>Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI</td>
<td>LSD</td>
<td>46</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>LSD + PCP</td>
<td></td>
<td>6</td>
<td>16</td>
<td>570</td>
</tr>
<tr>
<td>LAC-USC Med.Center</td>
<td></td>
<td>15</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>Metro Drug Awareness</td>
<td></td>
<td>686</td>
<td>7 23</td>
<td>946</td>
</tr>
</tbody>
</table>

Identified as phencyclidine (PCP).
Includes: 2 PCP, 1 LSD-OMMT (STP, 4-methyl-2,5-dimethoxyphenylisopropylamine), 1 DOM (4-bromo-2,5-dimethoxyphenylisopropylamine), 2 amphetamine (AMPH), 1 AMP + caffeine, 1 AMP + PCP, 1 atropine, and 5 DOM (STP).
Includes: 1 AMP, 1 caffeine, 1 diphenylhydrantoin (Dilantin), 1 AMP, 1 PCP, and 1 DOD.
Identified as aspirin.

and accuracy of dosage. The LSD content of some "Orange Sunshine" tablet triturates have been reported to be 215 mg. (8,24), 258 mg. per tablet (51), and one contained 475 mg. of LSD (52). The current (and apparently popular) gelatin flakes, frequently brown in color, weighing 1.0 to 1.2 mg., have been reported to contain from 150 to 214 mg. of LSD per dose (%).

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<tbody>
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<td>46</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>LSD + PCP</td>
<td></td>
<td>6</td>
<td>16</td>
<td>570</td>
</tr>
<tr>
<td>LAC-USC Med.Center</td>
<td></td>
<td>15</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>Metro Drug Awareness</td>
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<td>686</td>
<td>7 23</td>
<td>946</td>
</tr>
</tbody>
</table>

Identified as phencyclidine (PCP).
Includes: 2 PCP, 1 LSD-OMMT (STP, 4-methyl-2,5-dimethoxyphenylisopropylamine), 1 DOM (4-bromo-2,5-dimethoxyphenylisopropylamine), 2 amphetamine (AMPH), 1 AMP + caffeine, 1 AMP + PCP, 1 atropine, and 5 DOM (STP).
Includes: 1 AMP, 1 caffeine, 1 diphenylhydrantoin (Dilantin), 1 AMP, 1 PCP, and 1 DOD.
Identified as aspirin.
Marihuana (Cannabis sativa L.) The marihuana samples submitted to us and the other groups for identification and evaluation were frequently alleged to have been treated with some chemical such as phencyclidine (PCP) to create "Super Weed." The analytical results for 360 alleged marihuana samples, submitted from July 1973 to January 31, 1975, (University of the Pacific 26, PharmChem Laboratories 258, LAC-USC Medical Center 60, and Metro Drug Awareness 50) are available (20-34, 38-45). One sample was Cannabis sativa and 51 alleged "Hash Oil" samples were not identified and the remaining 309 samples were identified as Cannabis sativa with only varying amounts of natural THC (tetrahydrocannabinol) and other cannabinoids present.

Hashish and "Hash Oil." Alleged hashish and "Hash Oil" are now being submitted more frequently to street drug analysis programs for evaluation. A summary (30) of alleged hashish submissions for a period from November 1970 to June 1973 (32 months) yielded analytical results for 44 samples. During the past year, the same four groups have had 67 alleged hashish and 51 alleged "Hash Oil" samples (University of the Pacific 3/1, PharmChem Laboratories 45/49, LAC-USC Medical Center 13/0, Metro Drug Awareness 6/1) submitted for identification and evaluation. The three alleged hashish samples and the one alleged "Hash Oil" submitted to the University of the Pacific were identified as being derivatives of Cannabis sativa. PharmChem Laboratories (20-33) has reported on 45 alleged hashish and 49 alleged "Hash Oil" samples; 43 alleged hashish samples were identified as derivatives of Cannabis sativa, one was a G. sativa derivative treated with phencyclidine (PCP) and secobarbital and one sample was not identified. The 49 alleged "Hash Oil" samples were reported as follows: 46 derived from G. sativa, one as a G. sativa derivative with 7 percent morphine, and two were not identified. LAC-USC Medical Center (34) has reported the analytical results of 13 alleged hashish samples submitted to their laboratory; 11 were identified as being derivatives of Cannabis sativa. One sample was caffeine and one sample was not identified. They had no reports on alleged "Hash Oil" samples. Metro Drug Awareness (36,39-40) has reported on six alleged hashish samples (no "Hash Oil" submissions); four were reported to be being derived from G. sativa and two samples were not identified.

Amphetamine (AMP). This drug still appears to be readily available in the street market. The most frequently encountered form in a small, flat, compressed tablet with a crossed score (known as "White Crosses", "Mini Bennies", or "Cross Tops") and usually weighing approximately 50 mg. (50). Quantitative results on this drug form have been published (51,58) and the amount of amphetamine in each tablet varies from a low of 1.8 mg. to a high of 10 mg.

The analytical results (20-45) for the past eighteen months of 565 samples were a mixture of amphetamine and ephedrine. Twenty-three alleged amphetamine-containing samples were not identified.

Table IV - Summary of the Results of Analyses of 160 Alleged Tetrahydrocannabinol (THC)-Containing Street Drugs

<table>
<thead>
<tr>
<th>Group</th>
<th>Reporting Results</th>
<th>Actual Chemistry</th>
<th>Number of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PCP</td>
<td>TCP+</td>
<td>LSD</td>
</tr>
<tr>
<td>Univ. of the Pacific</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>-</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>PharmChem Laboratories</td>
<td>91</td>
<td></td>
<td>55</td>
</tr>
<tr>
<td>LAC-USC Med.Center</td>
<td>31</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Metro Drug Awareness</td>
<td>16</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Totals</td>
<td>146</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

* A thionyl analogue of phencyclidine (PCP).
* Identified as LSD.
* Includes: 1 PCP+cocaine, 1 ephedrine-phenobarbital, 1 cocaine-xylophone, 1 thiamylal (Surital®), and 1 Cannabis sativa extract.
* Identified as PCP+caffeine.
* Identified as 2 cocaine.

Cocaine (COCA). This compound has a long history of non-medical use both in the Americas (59-60) and Europe (60-61). During the past five years, this drug has become much more widely available on the illicit markets of the United States (8-9,50,66,69). Up to September of 1972, we had reported the analytical results for 38 alleged cocaine samples (8), but in January of 1973 we were able to report the findings for 60 alleged cocaine samples (9) and by June of 1973 the number of reports had risen to 361 (30).

The analytical results (20-33,37,39-45) for the past 19 months are available for 939 alleged cocaine-containing samples. These analytical results are summarized in Table V. Cocaine in various forms, was the only compound detected in 639 samples (67.4%), and cocaine plus some local anesthetic such as procaine was detected in 211 samples. The non-cocaine samples contained such compounds as local anesthetics, phencyclidine, caffeine, sugars, quinine, and in one case: magnesium sulfate. The contents of 16 samples were not identified.
Table V- Summary of the Results of Analyses of 569 Alleged Amphetamine (AMP)-Containing Street Drugs

<table>
<thead>
<tr>
<th>Group Reporting Results</th>
<th>Actual Chemistry</th>
<th>Number of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AMP</td>
<td>AMP + Caffeine</td>
</tr>
<tr>
<td>Univ.of the Pacific</td>
<td>37</td>
<td>12</td>
</tr>
<tr>
<td>PharmChem Laboratories</td>
<td>129</td>
<td>79</td>
</tr>
<tr>
<td>LAC-USC Med.Center</td>
<td>22</td>
<td>55</td>
</tr>
<tr>
<td>Metro Drug Awareness</td>
<td>33</td>
<td>2</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>221</td>
<td>148</td>
</tr>
</tbody>
</table>

Approximately 80% of these samples were identified as "White Crosses" ("Beans", "Cross Tops" formulations).

*Identified as 13 caffeine, 1 ephedrine and 1 steroid.

Includes: 49 caffeine, 38 ephedrine, 2 AMP+ephefrine, 5 AMP+phencyclidine, 7 phendimetrazine, 6 caffeine+ephefrine, 1 AMP+phenobarbital, 1 methamphetamine(MAMP)+caffeine, 1 MAMP+caffeine+ephefrine, 1 phencyclidine (PCP), and 1 LSD.

Includes: 14 caffeine, 17 ephedrine, 1 AMP+ephefrine, 1 MAMP+caffeine, 1 caffeine+ephefrine, 1 phendimetrazine, 1 phenobarbital, 1 diphenhydantoin, and 1 pemolina (5-phenylisohydantoin, a central stimulant).

Consists of 5 caffeine and 1 ephedrine.

MDA (3,4-Methylenedioxyphenylisopropylamine). During the past nineteen months, 7% samples of alleged MDA have been submitted (20-35, 37, 61) to the four street drug analysis programs (University of the Pacific 6, PharmChem Laboratories 55, LAC-USC Medical Center 11, and Metro Drug Awareness 2). Fifty-four samples actually contained various amounts of MDA only; one was MDA plus MDEK (3,4-methylenedioxybenzylketone); nine were DUB (4-bromo-2,5-dimethoxyphenylisopropylamine); one DUB (3,4-methyl-2,5-dimethoxyphenylisopropylamine); two were PMA (p-methoxy-phenylisopropylamine); one LSD two were LSD plus PCP (phencyclidine); three PCP, and no drug was detected in one sample.

Heroin (Diacetylmorphine). The submission of alleged heroin samples to street drug analysis programs has shown a rather large increase during the past year and one-half. Nineteen months ago we reported (50) on the actual chemistry of 45 alleged heroin samples and that was for a three-year period. During the past 19 months, 116 alleged heroin samples have been submitted to the same programs for evaluation (University of the Pacific 5, PharmChem Laboratories 100, LAC-USC Medical Center 10, and Metro Drug Awareness 1). The analytical results were: 38 heroin (ranging from 1.4 to 87%), 52 heroin (8 to 30%) plus procaine (14 to 30%), one heroin with quinine, one heroin plus caffeine, one heroin plus caffeine plus phenobarbital, one morpine plus procaine, one morphone plus codeine, one propoxyphene (Darvon®), one aspirin plus caffeine, one aspirin plus caffeine, one aspirin plus phendacetin, one LSD, one phencyclidine (PCP), one niacinamide, one lactose, and no drug was detected in 14 samples.
Opium. During the past 19 months 42 samples of alleged opium have been submitted for analysis (Table IV, June 1973). This drug, the pure compound, has still not been identified. In a street-drug sample submitted for analysis, Phencyclidine (PCP) has been identified as the active constituent in approximately 91 percent of the alleged opium samples discussed here. PCP is usually classified as an animal tranquilizer, but at increased dosage it has hallucinatory and anesthetic properties (63).

A case of PCP poisoning has been documented by the L.A.-USC Medical Center (64). It was determined that the patient had ingested approximately 180 mg. of phencyclidine, resulting in a comatose condition for three days, with recovery on the fourth day. Only 0.04 mg. of PCP per 100 ml. of urine was detected in the first urine sample and no PCP was detectable in urine samples collected on the second and third days. Treatment was not reported in this instance.

Marihuana (Cannabis sativa L.). Marihuana, in our experience, is frequently submitted for evaluation because of some adverse or unexpected reaction after use. The aggregation of many of these samples were contaminated with some drug such as PCP was most frequently unfounded. According to available data, these marihuana samples were usually derived from Cannabis sativa (approximately 96 %) and not adulterated with some other drug. However, in our experience and in the experience of others, these samples thought to be treated with PCP had a high THC content (14.65).

Hashish and "Hash Oil." During the past four years, there has been a rather large increase in the submissions of alleged hashish samples to street drug analysis programs. Only 44 were evaluated for the 32 month period of November 1970 to June 1973, but 67 alleged hashish samples were analyzed by the same programs during the past 19 months (July 1973 to January 1975). Sixty-one (91.5 %) of these samples were identified as cannabis sativa (Table V). The THC content of these samples ranged from a trace to 10.9 percent (22.24).

"Hash Oil" is a rather new formulation that has become common and desirable in the illicit markets during the past year or so. This preparation has been reported to contain up to 31 percent THC (24) -- the most potent preparation of 6. sativa available. The high THC content in this kind of material does increase the chance of the user having an adverse reaction. Fifty-one alleged "hash oil" preparations have been analyzed and 47 (92 %) were identified as derivatives of marihuana.

Amphetamine (AMP). The quality of street-amphetamine continues to vary. A survey to June 30, 1972 of the analytical results of alleged amphetamine street-drugs indicated that approximately 75 percent of these samples contained various amounts of amphetamine or methamphetamine as the only active ingredient (8). Another summary to the end of June 1973 (50) showed that the percentage of amphetamine-containing samples had dropped to approximately 45 percent, a decrease of 30 percent. The current summary in Table V showed that the percentage of amphetamine-containing samples has taken another dramatic drop during the past 19 months. Only 39 percent of the alleged amphetamine-containing samples contained amphetamine or methamphetamine as the sole drug, a decrease of 26 percent since the last summary.

Cocaine (COC). This is the current "high status" drug and probably is one of the most expensive commodities on the illicit markets. The current market price for cocaine is $1,000.00 to $1,500.00 per ounce or $40.00 to $60.00 per gram (21-23). These are the prices regardless whether the product is 89 percent cocaine, 3 percent cocaine or 96 percent procaine.
This high selling price for illicit cocaine probably is the major incentive for the dealer to reduce the amount of cocaine in a sample, to adulterate with a local anesthetic, or to sell some other drug as cocaine. Approximately 67.5 percent of the cocaine samples analyzed (Table VI) contained various amounts of cocaine only (at least 22.5 percent were contained some other drug or no drug at all). The toxicity of these mixtures is probably minimal if inhalation is the route of administration but could be serious if injected (66).

MDA (3,4-methylenedioxyphenylisopropylamine). This compound has been considered a street-drug at least since 1967 (67) and is periodically submitted to street drug analysis programs for evaluation. Most frequently, reported on the hospitalization of three individuals -- an almost fatal result for one after the ingestion of approximately 500 mg. of pure MDA, Nyevers at RA (67) reported the death of one person associated with the use of MDA in combination with another drug. No details concerning either the dose of MDA or the other drug involved were reported. The ultimate cause of death was also not reported.

Nine alleged MDA samples were found to contain 4-bromo-2,5-dimethoxyphenylisopropylamine (DOB) -- the toxicity of this compound is apparently unknown. Two samples were identified as DMA (p-methoxyphenylisopropylamine), which has been reported to be very toxic and its ingestion has been responsible for deaths (56). These drugs may keep the chemical toxicologist busy if they become more available on the streets.

Heroin (Diacetylmorphone, *diacere*) During the past 19 months, the number of alleged heroin samples submitted to street drug analysis programs has shown a large increase. The high percentage of heroin (87 %) in some of these samples analyzed would suggest that this material has not yet been "prepared" by laboratories of the U. S. Drug Enforcement Administration than heroin (66), yet heroin is still only a very small proportion of the total samples submitted to the street-drug analysis programs. Apparently heroin users do not want to take advantage of these programs to have their "drug of choice" evaluated. The patrons of the heroin market place appear to represent an entirely different population relative to the patrons of the "soft" street-drug market.

Opium. The use of opium, particularly for smoking purposes, has decreased in all parts of the world -- heroin is now a relatively rare product. During the past 19 months, the 42 alleged opium samples submitted to the four street-drug analysis programs would tend to substantiate the above statement. Twenty-three samples were opium while seven were hashish. Hashish can be sold to the naive person because there are some similarities in appearance. The differentiation between opium and hashish requires a "trained eye."

CONCLUSIONS

The determination of the actual chemistry of street-drugs, the publication of the results, and the subsequent compilation and correlation of these results in summaries have several important benefits for society.

Undoubtedly, the most important use of these data is to make the user or potential user aware of the real hazards involved in ingesting the "drugs" obtained on the illicit market.

Secondly, the availability of data reporting the alleged contents and the actual chemistry of illicit drugs to treatment centers, allows the physician to make a more accurate assumption as to the correct identity of the ingested material and aids him in prescribing treatment for adverse street-drug reactions (71).

The trends in popularity of the various street-drugs may be determined by comparing the numbers of submitted samples (as alleged) during discrete periods of time. As an example of this, data from a previous three-year study (50) have been compared with the 19-month data presented here (Figure 1).

The times used are: period I, November, 1970 to June 30, 1971 -- total of 2,215 submissions; period II, July 1, 1973 to January 31, 1975 -- total of 5,481 submissions (Table I to VI). All data are from the same four street-drug analysis programs: University of the Pacific, PharmChem Laboratories, LAC-USC Medical Center, and Metro Drug Awareness. These data indicate that there has been a large decrease in alleged mescaline submissions in period II (9.8 %) as compared to period I (27.4 %). This may indicate that the consumers of "mescaline" have become aware of the massive deception that characterizes the marketing of this "product." Perhaps the information supplied by street-drug analysis programs is being believed.

The percent of alleged LSD submissions remained relatively constant: 22.5 percent of all submissions in period I, 29.6 percent of all submissions in period II; and this pattern was also seen for psilocybin: period I 12.3 percent, period II 16.8 percent. There was no significant change in alleged THC submissions: period I 7.5 percent, period II 5.4 percent of all submissions. However, there was a 5.6 percent increase in alleged amphetamine submissions in period II (18.6 %) as compared to period I (13.0 %). The number of alleged cocaine submissions doubled during period II (30.9 %) as compared to period I (15.5 %). The relative use and the "product," of each drug has increased tremendously.

Secondly, the availability of data reporting the alleged contents and the actual chemistry of illicit drugs to treatment centers, allows the physician to make a more accurate assumption as to the correct identity of the ingested material and aids him in prescribing treatment for adverse street-drug reactions (71).
Figure 2. Comparison of percent detection of actual lysergic acid diethylamide (LSD), phenylcyclidine (PCP), amphetamine (AMP), and cocaine (COCA) in period I (Nov.,1970 - June,1972) relative to period II (July,1973 - Jan.,1975). Actual numbers of samples (I/II) are: LSD 1,584/1,072; PCP 356/227; AMP 226/390; COCA 285/850.
of amphetamine from illicit sources appears to have increased -- suppliers have attempted to meet the demand for this stimulant. However, as mentioned before, the quality of the amphetamine formulations has decreased.

During the past 19 months, the availability of cocaine on the illicit market has increased tremendously. In period I 12.4 percent (285 samples) of all submissions contained some cocaine -- in period II 33.5 percent (850 samples) contained some cocaine. This very large increase in cocaine detection would strongly suggest that large amounts of this drug are being made available in the United States and that it is currently considered very desirable by illicit drug users.

In conclusion, non-forensic street-drug analysis programs do have a place in the community. They provide factual information that is essential for (i) providing realistic drug-abuse education, (ii) allowing medical institutions to anticipate the frequency and nature of toxicological emergencies, (iii) predicting trends of drug preference, (iv) predicting drug availability in a community, and (v) providing some indication of the impact of law enforcement on the availability of illicit drugs.

It is assumed to note the appearance of publications concerned with the rapid analysis of street-drugs in reputable scientific journals (72-74) -- this indicates that the scientific community sees the need for these programs and the benefits that they provide the community.

REFERENCES


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"Street' drugs may be monitored by seizing or purchasing them and checking their price and the nature and degree of their adulteration. Apart from indicating the effectiveness of enforcement practices, the resulting data may reveal the presence on the 'street' of dangerously contaminated drugs. Such information, if disseminated quickly via the mass media or the underground press, may save lives and weaken user-dealer relationships. An established monitoring system may also help to check the accuracy of rumours about particular drug-related situations or events, which tend to be emotion-laden and inaccurate and may prompt actions that are not only inappropriate but damaging."