February 1, 1974

psychopharmacology division 28 newsletter

FROM THE PRESIDENT

by George Heise

I wrote all Division 28 members in October urging everyone to vote in the APA Council apportionment elections. The results of October's election are not yet known, but if we can extrapolate from the record of participation in previous elections, neither the APA nor Division 28 probably fared very well. In the 1972 apportionment elections, for example, only about 35% of the APA membership (11,000 persons) voted, and of those voting, only about 3% (339 persons) could spare as much as one vote for Division 28.

I cannot provide a confident diagnosis of APA's apparently apathy problem, although I'm inclined to suspect that most members will be unhappy most of the time with an organization that attempts simultaneously to function as a trade union, a political action group, and a scientific society. Division 28's non-support problem, on the other hand, seems rather easier to understand. For most of its members, the Division lacks an identity. As far as they are concerned, the Division has little impact: it assembles 15 hours of programming for the annual APA convention (which most members don't attend anyway), and that's about all. In addition, the Division, like the APA, embodies a very wide range of interests. There are members interested rather exclusively in experimental studies with drugs, others concerned primarily with the clinical, social, and cultural aspects of drug use, and finally, a very large group who really have no strong interests in drugs but joined up just to be friendly.

I should like to call your attention to things that the Division is doing, or might be doing, which strengthen its identity and serve the interests of its diverse membership.

1. The scientific identity of the Division will be enhanced by the two-day symposium on "Current Status of Behavioral Pharmacology", sponsored jointly by Division 28 and the American Society for Pharmaoclogy and Experimental Therapeutics, that Bernie Weiss has organized for the Federation meetings in Atlantic City on April 9 and 10, 1974. The symposium program is broad and representative of current scientific activity; the publication of the symposium papers in Federation Proceedings will fuel many graduate seminars.

2. As E.G. Boring has demonstrated so convincingly, a textbook or "Handbuch" can be very influential in imparting identity to an area of knowledge. Psychopharmacology is ready for a textbook which is more, much more, than either a survey of drug actions or a description of behavioral experiments, but is rather a sophisticated integration of behavior, pharmacology, and physiology. Although the task may well exceed the abilities and motivation of any one merely mortal psychopharmacologist, the writing of such a book might perhaps be sponsored and organized by a committee of the Division.

3. With respect to more general interests of the membership, the Division has provided expert information and responsible comment on public interest matters such as drug legislation and the treatment of human or animal subjects. This Newsletter serves as a unique source of information of special interest to psychopharmacologists - on jobs, fellowships, graduate programs, availability of grants, etc.

4. Finally, the Division could better represent members' interests if there were a broader range of input into Division affairs. I would like very much to have your suggestions for Division activities. We do have money in the treasure (with Executive Committee consent) could be used for worthwhile projects. I would also like to put some new people on Division Committees. The President is responsible for annual replacements on these committees, of which there are at present three - an Elections committee that nominates candidates for Division officers, a program committee that puts

together the Convention program, and a member ship committee. If you would be interested in serving on one of these committees, or wish to suggest someone, I would be pleased to hear from you.

FASEB SYMPOSIUM REMINDER

Division 28 and FASEB are co-sponsoring a "Symposium on Behavioral Pharmacology" at the Spring meeting in Atlantic City, April 7 - 12.

FASEB MIXER

A mixer has been planned for members of Division 28 and the American Society for Pharmacology and Experimental Therapeutics at this spring's Federation meeting. The mixer will be held on the evenings of the joint ASPET - Division 28 symposium (April 9 and 10), from 8:00 - 12:00 p.m. in the Cape May Suite of the Holiday Inn Hotel. Cash bar will be operated for social purposes. Come and self--administer with your friends.

NATIONAL INSTITUTE OF DRUG ABUSE ESTABLISHED

With the recent reorganization of NIMH, the section on Drug Abuse and Narcotics became reconstituted as the National Institute of Drug Abuse. Of particular interest to Division 28 members is the Behavioral Studies Section which supports a national program of research into the behavioral aspects of drug abuse. Research support will be provided for basic and applied studies of human and animal subjects which investigate the behavioral factors involved in the etiology, treatment, and prevention of drug seeking, drug dependence and addiction. Experiments can be carried out within the framework of five major areas as specified below.

Experimental Analysis of Behavior: The focus of this area is on studies which elucidate the contributions of respondent and instrumental learning principles to the acquisition, maintenance, and extinction of drug seeking behavior, psychological dependence, and addiction. Support of this program is provided for experiments which detail the roles played by interoceptive conditioning, schedules of reinforcement, generalization, discrimination, conditioned reinforcement, appetitive and aversive control including punishment and avoidance, and stimulus control in drug seeking and abuse. In addition, support in this area will be provided for development of methods and models for the determination of abuse potential of drugs.

Sensory Systems and Neurobehavior: The emphasis of research in this area will be on studies which detail alterations in sensation and perception produced by drugs of abuse. Such research should characterize the nature and duration of the changes produced and indicate how these changes may interact with other behavioral effects to provide positive feedback which may encourage experimentation with drugs. Support will be provided for studies of visual and auditory psychophysics, pain perception, proprioception and kinesthesis.

In addition, program support will be given for experiments which explore central nervous system correlates of altered sensory, perceptual and motivational states under the influence of abused drugs. Such experiments will be conducted in conjunction with behavioral analysis, and should provide an in-depth, multidimensioanl analysis of how drugs with abuse potential act to effect brain-behavior relationships and influence drug seeking and psychological dependence. Support will be provided for studies which explore neural reward pathways to determine how these anatomical sites are involved in drug seeking and altered motivational states associated with ingesting drugs of abuse. Similarly, support will be given for studies of neural correlates of altered sensory thresholds and cognition under the influence of drugs of abuse.

Behavioral Pharmacology: The focus in this area is on studies which elucidate the possible deletarious effects of abused drugs on behavior. Support will be provided for experiments which explore the behavioral toxicity, behavioral tolerance and behavioral teratogenicity of abused drugs. Both learned and biologically determined response patterns should be employed as baselines. Important areas of study include state dependent learning and memory. In addition, emphasis should be given to the effects of abused drugs upon unlearned behavioral patterns, such as species specific behavior, aggression, social grouping and sexual behavior. Such behaviors could be investigated in both controlled and naturalistic environments.

Behavioral Physiology: The principal focus of this area is on studies which investigate the interactions between altered physiological states and behavioral changes under the influence of drugs of abuse. Particular emphasis in this area will be given to studies which explore and apply the methods of biofeedback to achieve an understanding of the role played by conditioned autonomic reflexes in the addiction process and recidivism. Studies of the psychophysiological correlates of conditioned abstinence will be conducted as part of the behavioral physiology program. Support will be provided for devising biofeedback techniques in the treatment of drug abusers or as an alternative to drug abuse.

Human Behavior and Performance: Studies in this area should focus upon ways to apply learning paradigms to the treatment of human drug dependence and addiction. Emphasis would be on experiments which employ behavior therapy, operant self-control procedures, applied behavior analysis, contingency contracting, and biofeedback techniques to rehabilitate addicts and abusers. Program support would also be given for studies which provide a detailed behavioral analysis of human drug seeking, dependence, and addiction in both controlled and naturalistic settings. Specific laboratory studies should be undertaken to determine the contributions of individual (e.g., delay of reinforcement tolerance), social (e.g., group pressure), and environmental (e.g., stress) factors to the etiology and maintenance of drug seeking behavior. Such studies should be carried out in controlled, programmable environments which would allow for a detailed experimental analysis of behavior. In addition, assessment of human performance under the influence of abused drugs would be supported. Such studies would include evaluations of skilled motor performance, vigilance, signal detection, and attention.

WHAT'S HAPPENING AT ...

John's Hopkins & Baltimore City Hospital

A number of behavioral pharmacology research projects, primarily in the area of drug dependence, are underway in Baltimore at the Johns Hopkins University School of Medicine and Baltimore City Hospitals. Animal research is centered at Hopkins in the Division of Behavioral Biology. Human research is centered at Baltimore City Hospitals in the Department of Psychiatry.

Primate research projects at Hopkins include: (1) Under a contract from the Department of Justice, Roland Griffiths and Joseph Brady are developing and evaluating progressive-ratio and preference procedures of drug self-administration for screening the reinforcing properties of compounds; (2) Research aimed at the reduction and elimination of heroin self-administration in primates by either contingent punishment or reinforcement of incompatible behavior is being carried out by Jack Findley and Roland Griffiths; (3) Alan Harris is examining the effects of several narcotics and narcotic antagonists on baselines of interval and ratio schedule performance with and without exteroceptive stimulus control; (4) Alan Harris, David Anderson and Joseph Brady are evaluating the effects of pharmacological blockade by sympathetic and parasympathetic

blocking agents on a baseline of conditioned cardiovascular responses.

Human research projects at Baltimore City Hospitals include: (1) Within an in-patient research unit George Bigelow, Roland Griffiths and Ira Liebson are investigating behavioral, environmental and pharmacological factors which influence ethanol self-administration in volunteer alcoholic subjects; (2) In a related out-patient program evaluations are conducted of experimental alcoholism treatment techniques involving extensions of behavioral contingency management principles; (3) George Bigelow and Alan Harris are collaborating with the Southeast Baltimore Drug Abuse Program in the evaluation of the utility of an array of contingency management, behavior therapy and supportive counseling techniques as collaterals to methadone maintenance in the out-patient treatment of narcotics addiction.

University of Mississippi

Department of Psychology: Mr. W.R. Coussens is studying the aversive properties of morphine, cocaine, and amphetamine, using the taste aversion method. He has found route of administration of the drug to be a major factor with this method: none of the drugs, in the doses tested, appear to be markedly aversive when given intravenously, but all are aversive when administered intraperitoneally. He is also investigating the possibility that pretreatment with alpha-methyl-p-tyrosine (AMT) makes the intravenous infusion of all three drugs aversive. Morphine and cocaine have been studied to date, both with positive results.

Mr. R.E. Holtz is also investigating morphine aversion in AMT-treated rats, using the T-maze, again, with positive results. He plans to include cocaine and amphetamine, and to employ additional measures of drug aversion, such as signalled avoidance conditioning.

Mr. W.M. Smith has just studied the aversive properties of nalorphine in morphine-dependent rats, using three measures of aversion: maze punishment, signalled avoidance conditioning, and punishment of lever-pressing. While results were positive for the first two measures, the yoked controls in the third showed almost complete suppression, so that effects of response-contingent nalorphine could not be shown.

Mr. R.T. Case is studying the effects of aversive stimulation upon morphine self-administration. Mr. M.R. Leberer is testing the reinforcing properties of propoxyphene ("Darvon") in rats, using both intravenous and oral self-administration methods.

Mr. P.T. Maginnis is using conditioned reinforcement to assess the effects of infusion time upon morphine reinforcement in rats. So far, very slow infusions -- up to 5 minutes in duration -- seem to be at least as reinforcing as rapid infusions.

A recent dissertation by J.A. Bedford investigated the possible reinforcing effect of intravenous morphine in young pigs. Response-contingent morphine led to increased responding, at all doses suggesting that morphine was reinforcing. However, approximately as great an increase was found on the control lever, and a discrete-trials choice procedure also found no evidence for morphine reinforcement.

Mr. P.W. Wirth is about to investigate a possible artifact in most drug self-administration methods: the potentiation of novel-stimulus reinforcement by drugs, especially, stimulant drugs.

Bedford, Wirth, and Mr. W.N. Bailey have recently studied alcohol drinking in young pigs. The pigs rapidly drank enough alcohol solution that in a few minutes they were unable to walk or stand. Ss given access to alcoholic and nonalcoholic sources of water drank the alcoholic solutions for at least half their daily fluid intakes.

Mr. J.M. Presley is studying the effectiveness of a number of drugs to prevent ulcers in rats stressed by confinement plus shock or confinement plus cold. The drugs are chlorpromazine, phenobarbital, morphine, and atropine, each at three dosages.

Department of Pharmacology, School of Pharmacy: Research concerning intravenous opiate and amphetamine self-administration behavior in rats is being conducted by Dr. W. Marvin Davis and Mr. Stanley G. Smith. Recent studies have extended earlier work on the central neurochemical correlates of reinforcement with morphine and amphetamine. Progressing from the use of α-methyl-p-tyrosine as a tool to demonstrate the crucial role of brain catecholamines in reinforcement, more selective tools, i.e., dopamine-β-hydroxylase inhibitors which deplete only brain norepinephrine (not dopamine) have also been found to eliminate reinforcement associated with these two abuse drugs. The role of conditioned reinforcers based on these primary pharmacological reinforcers is being emphasized as a potent factor in the "relapse" to drug self-administration after a period of withdrawal. Extinction procedures and punishment are being studied as means of eliminating conditioned drug-seeking behavior.

The same workers have recently begun work on IV self-administration of alcohol. Rats were found to self administer with a unit dosage as low as 120 mcg/kg on a CRF schedule. However, the acquisition of such behavior was not so rapid as with morphine and amphetamine. The intragastric technic of self-injection has been refined and found useful for the development of alcohol self-administration in rats. Dose-response relationships and schedule factors will be studied for both methods of alcohol self-administration.

Dr. Marvin C. Wilson is presently conducting in rats an extensive series of projects involved with delineating the behavioral effects of a number of compounds possessing central and/or peripheral effects similar to those of amphetamine. The drugs involved in these studies include d-amphetamine, l-amphetamine, cocaine, phenmetrazine, methylphenidate, methoxamine, amantadine and fenfluramine. The acute effects of these agents on continuous avoidance, FR-10 food reinforced and conditioned suppression paradigms are being investigated. In addition, the effects of these compounds on responding maintained by a multiple DRL food, DRL water schedule are being determined. The major impetus for these particular studies is the determination of the anorexic and "stimulatory" thresholds for these agents.

Studies are presently underway under the direction of Dr. Wilson in which the mechanism of tolerance development to the effects of d-amphetamine on CAR behavior is being investigated. The contribution of "behavioral tolerance" to the overall tolerance development is being specifically studied.

Recently a pilot project dealing with drug modification of shock-potentiated amphetamine lethality was completed. In addition to studying the effects of these agents on lethality per se the effects of these agents in modifying the "stress" associated with this technique was analyzing by measuring the degree of gastric ulceration induced in the subjects. Dr. Wilson is planning to follow up this project with a study in which subject body temperature can be continuously monitored and in which environmental temperature and carbon dioxide levels controlled to see if these variables influence these drug interactions.

Dr. Wilson's group is also assessing in the rat the development of tolerance to the lethal effects and also, to the locomotor stimulatory effects of intravenously administered cocaine.

The interactions between psychomotor stimulants and ICS behavior are currently under investigation by Dr. Wilson and Mr. J. Holbrook. Modification of these interactions with drugs altering central

aminergic levels is being ascertained.

The discriminative stimulus properties of d-amphetamine are being compared to those of the psychomotor stimulants previously mentioned. Dose-related generalization gradients for these drugs are being established. The behavioral procedure involves a two lever experimental chamber and lever-press behavior maintained by a FR-10 schedule of food presentation. Activation of one lever always occurs in sessions preceded by a saline injection, and activation of the other lever if the session was preceded by the injection of another substance or of a different dosage of d-amphetamine are randomly conducted and the spatial response differentiation recorded.

Langley Porter Neuropsychiatric Institute

University of California, San Francisco:

Research at the Laboratory of Psychobiology of the Department of Psychiatry at University of California Medical School, San Francisco is aimed at elucidating some of the neurochemical mechanisms underlying the expression of aggression. Dr. Harry H. Avis and Dr. Harman V.S. Peeke are developing a model for studying this interaction using the territorial behavior of the teleost Cichlasoma nigrofasciatum. At the present time we have found evidence for a reciprocal cholinergic-adrenergic system with both scopolamine and pargyline disrupting the territorial display. Interestingly there is further evidence that this system may operate in a synergistic fashion since both scopolamine and pargyline are less effective at a dose of 2 mg/liter than a combination of 1 mg/liter of each. Tricyclic antidepressants are particularly effective at very low doses, lending further support to this hypothesis.

In another series of experiments, we are attempting to develop an animal model for aggression produced by withdrawal from and abuse of drugs. Present research is centered around studying the effects of withdrawal of morphine dependence on the social behavior of hamsters. Future plans include an attempt to correlate these changes with changes in ongoing rates of turnover of biogenic amines.

"Contributions to Education in Psychology" - NOMINATIONS SOLICITED

The American Psychological Foundation has established an annual program of awards for "Contributions to Education in Psychology". Nominations of deserving candidates for the 1974 awards are now invited.

The annual award is in the amount of $1,000 and it will be made to an individual. It is hoped that the institution will contribute a matching sum, this providing the recipient with a modest "grant" to be used to "improve the teaching of psychology". Thus, an objective of the award program is to enhance the local instructional program, not just to recognize "master teachers".

In evaluating nominations, the Committee will use the following guideline areas:

1. Demonstrated influence as a teacher in the production of outstanding students;

2. Development of teaching methods and/or teaching materials;

3. Research on teaching;

4. Development of innovative curricula and courses;

5. Outstanding performance as a classroom teacher;

6. Training of teachers of psychology;

7. Administrative facilitation of teaching.

Because the awards are to be presented at the APA annual convention in September, 1974, nominations must be completed and sent to the committee by March 31, 1974. Renominations are appropriate and will be reviewed without prejudice. Committee decisions will be rendered by June 1, 1974.

A nomination form with a statement of the guidelines and suggestions for documentation are attached. Additional copies of these forms can be obtained by writing to the chairman of the Teaching Awards Committee. In order to facilitate communication and the handling of nominations an individual sponsor should be designated for each nominee.

Please send inquiries and nominations to:

Wilse B. Webb
Chairman, APF Teaching Awards Committee
Department of Psychology
University of Florida
Gainesville, Florida 32611

Committee Members:

George Albee
Edward H. Loveland
Jack Michaels
Joseph Weitz
Freda Rebelsky

CALL FOR NOMINATIONS: PRESIDENT-ELECT 1976

Send nominations to Roy Pickens, Box 392 Mayo, University of Minnesota, Minneapolis, Minnesota 55455 before February 20, 1974. Division by-laws require all office holders to be fellows of the Division. Past presidents have been Murray Jarvik, Victor Laties, John Boren, Larry Stein, Bernard Weiss, and Leonard Cook. George Heise is the current president, and Travis Thompson is president-elect for 1975.

SUMMARY OF MINUTES - DIVISION 28 BUSINESS MEETING, AUGUST 29, 1973.

Treasurer reported balance on December 31, 1972, of $2,440.32 with receipts of $3,712.00 and expenditures of $635.84 since January 1, 1973. Present balance: $5,516.48.

Program Committee reported 16 hours were allotted by APA to Division 28 for program activities at the Montreal meeting. Time was evenly divided between submitted and invited papers. It was recommended that more hours be made available next year for paper discussions, perhaps with authors volunteering to come by the Division's hospitality suite the evening of their presentation for additional informal discussion. It was also recommended that, if possible, sessions for Division 28 not be scheduled at the same time as sessions for Divisions 3, 6, and 25.

Elections Committee reported Travis Thompson as president-elect for 1975. George Heise will serve as president for the coming year. Call for presidential nominations for 1976 will be announced in the Newsletter.

Publications Committee reported that all newsworthy items, including job openings, should be sent to Travis Thompson, Box 392 Mayo, University of Minnesota, Minneapolis, Minnesota 55455, for inclusion in the Newsletter. Persons seeking jobs should contact the Newsletter for current information on position openings.

Division 28-ASPET Liaison Committee reported information on the 1974 Federation meeting will be sent to all members of Division 28. Papers may be presented by Division 28 members at the spring meeting.

New associates, members, and fellows of the Division were approved. Irving Geller will be Program Chairman for the

1974 APA meeting. Program information may be obtained by writing him at Department of Psychiatry, Texas Tech University School of Medicine, P.O. Box 4569, Lubbock, Texas 79409.

Roy Pickens
Secretary

1974 EXECUTIVE COMMITTEE

Bernard Beer - Membership Chairman
Peter Carlton - Treasurer
Leonard Cook - Past-president
~~Irving Geller - Program Chairman~~
George Heise - President
Victor Laties - Council Representative
Nancy Mello - Council Representative
Donald Overton - Program Committee
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Travis Thompson - President-Elect
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Bernard Weiss - ASPET Liaison Committee

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