

Letters to the Editor

DANGERS OF L.S.D.

SIR,—Your annotation (Oct. 28, p. 929) mentions that many American lysergide (lysergic acid diethylamide, L.S.D.) takers also take other drugs to excess, and that the use of L.S.D. there "seems to be spreading to members of lower socio-economic groups without intellectual or artistic interests who have not hitherto been interested in it". The same trend has certainly been noted in this country.¹

It is still probably true that "intellectual and artistic" drug-takers, by and large, prefer cannabis and L.S.D., whereas less educated groups may prefer "pep pills" and possibly heroin. For example, students often seem to be attracted by cannabis, but not by amphetamines.¹ L.S.D. users may say, "cannabis and L.S.D. takers are usually interested in life, whereas heroin users take heroin to escape from life", "people who take heroin try to get away from something, whereas L.S.D. takers take L.S.D. because they try to find something", and "the L.S.D. and heroin 'scenes' are quite different from each other". But there is a large overlap between drug-users taking "pep pills" and those searching for "mind expansion", and it is by no means uncommon to meet people uninterested in intellectual or artistic pursuits who have taken other drugs to excess, but who have also had many L.S.D. "trips", or who say that they would be interested in trying L.S.D. as soon as they could get hold of it.

At this hospital, for example, in recent months 16 out of 48 young people admitted because of drug abuse and dependence—mainly heroin and cocaine users who had previously also taken cannabis and amphetamines—had also taken L.S.D.; in the present hospital group of 11, 4 had taken L.S.D., 2 stated they would have taken it had they been given the chance, 3 stated that they were "not interested", and 2 were "afraid of it". Similar statements (and proportions of L.S.D. users) were obtained from drug abusers and "addicts" seen in out-patient clinics and in prison—often from people who were anything but intellectual and artistic types. In fact (although the drug "addicts" in this hospital were found by our psychologist, Dr. E. Radford, to be in the main of slightly above average intelligence) such people are often inadequate, insecure, highly immature, hysterical, or paranoid personality types—namely, personalities who are often described as being "completely unsuitable" for L.S.D. therapy.^{2,3} Often they are already dependent on other drugs—dependent, passive, and psychopathic people who, in the view of Bird,⁴ run a special risk of becoming dependent also on L.S.D. The patients I have described above were almost exclusively adolescents or in their early twenties, and their drug-dependence was "non-therapeutic" in origin,^{5,6} thus corresponding to recent trends in this country.⁷

Much has been written on escalation from cannabis to heroin, but very little on the much more likely escalation from cannabis to L.S.D. In its effects cannabis is, of course, much more like L.S.D. than heroin (basically quite a different type of drug), and one hears cannabis users say "a weak L.S.D. trip is like smoking hash to me—both exaggerate one's senses, one becomes more aware of what is happening to one". In theory, escalation from cannabis to L.S.D.—from a "minor" to a stronger "hallucinogen"—seems much more likely than from cannabis to the narcotic heroin. In practice, too, in my experience, when questioning "addicts" about the frequency of escalation from cannabis to heroin and to L.S.D. respectively among their "smoking" friends, escalation to L.S.D. was mentioned as a much more common occurrence. When at present, on top of other possible hazards of L.S.D., the possibility of

teratogenic complications is being discussed,⁸ the likelihood of a considerable proportion of cannabis users graduating to L.S.D.⁹ should surely be kept in mind in any discussion on the question of legalising cannabis.

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TERMINATION OF PREGNANCY BY
VACUUM ASPIRATION

SIR,—I was interested to see the report from Prague, by Dr. Dvořák and his colleagues (November 11, p. 997). I have used vacuum aspiration for this purpose for the past 2½ years, and the method is now being widely adopted in this country as well as all over the world, particularly in the United States. The curettes I use are of transparent 'Perspex' and are graded, according to the age of the pregnancy, into four sizes. These are obtainable from J. C. Peacock & Son, Ltd. (Newcastle upon Tyne), and, unlike the glass tubes used in Prague, could not be called fragile. A film showing my technique is available on loan from Concord Films, and may shortly be available from the British Medical Association and the Royal Society of Medicine.

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THE CLINICIAN AND THE COMPUTER

SIR,—We read with interest the article by Dr. Hall (Sept. 9, p. 555) on the clinical application of Bayes' theorem, and the article by Professor Scadding (Oct. 21, p. 877). Our own experience with the use of computers for diagnostic purposes has been quite encouraging. We have applied the method to the study of a group of 1184 patients with congenital heart-disease, using a rather limited number of symptoms (46 items grouped into 25 sets of information).

In each patient there was a precise ultimate diagnosis based upon clearcut catheterisation data and/or operative or necropsy findings. Patients were examined by one of us, who noted his diagnostic impression based upon complaints, physical findings, electrocardiography, and fluoroscopy. The physician did not make use of a symptom check-off list, and his diagnosis was the result of extemporaneous deduction.

A FORTRAM programme was prepared for an 'IBM 7040' computer which works out the a-priori probabilities of 94 different congenital heart-diseases and the conditional probabilities of the 46 symptoms in the patients studied.

The clinical diagnosis and the computer diagnosis were checked against the correct diagnosis derived from the follow-up studies, and the results were evaluated as the percentage of cases correctly diagnosed by the physician and the computer. The correct diagnosis was made in 73.22% of cases by the clinical approach and in 81.84% by the computer. When the cases were separated according to the incidence of diseases, the figures obtained were: clinical diagnosis correct 81.39%, computer diagnosis correct 84.80%, for the diseases represented by 12 or more cases; and 36.87% and 68.67% respectively for the diseases represented by less than 12 cases.

These results demonstrate the validity of the mathematical approach to the diagnosis of congenital heart-disease. The relative correctness of computer diagnosis was particularly apparent in the rarer diseases, showing that the physician tended to underemphasise the probability of unusual malformations or was simply unable to diagnose a nosological entity previously unknown, while the computer more often recognised the diseases, the symptom-patterns of which were stored in the data matrix.

These results seem all the more encouraging in view of the fact that our programme was based on a limited number of easily recognisable symptoms, thus making its use possible by the average observer, although a highly detailed diagnosis was required. This implies the possibility of extending the method

1. Glatt, M. M., P. R. J. (Fribourg, Switzerland) (in the press).

2. Cohen, S. *Drugs of Hallucination*; p. 195. London, 1965.

3. Robinson, J. T. *Proc. R. Soc. Med.* 1960, 53, 932.

4. Bird, R. G. Personal communication.

5. Glatt, M. M. *Lancet*, 1965, ii, 171.

6. Glatt, M. M., Pittman, D. J., Gillespie, D. G., Hills, D. R. *The British Drug Scene*. London, 1967.

7. See *Lancet*, Nov. 18, 1967, p. 1084.

8. Zellweger, H., McDonald, J. S., Abbo, G. *ibid.* p. 1066.

9. McGlothlin, W. H., Cohen, S. *Am. J. Psychiat.* 1965, 122, 572.