LETTERS

Sirs:

Lester Grinspoon in his article "Marihuana" [SCIENTIFIC AMERICAN, December] states that marihuana is "far less potent" than LSD, mescaline or other hallucinogenic drugs. The comparison with mescaline is incorrect. Tetrahydrocannabinol, the active constituent of marihuana, is some 30 times more potent than mescaline, if potency refers to the quantity required for psychotomimetic effects. Potency, however, is a relatively meaningless basis for comparison. It is irrelevant whether the effective dose of a drug is a microgram or a gram, so long as the drug is administered in appropriate dosage. On a weight basis, ethyl alcohol is thousands of times *less* potent than tetrahydrocannabinol, but in sufficient amounts it produces ill effects. There is evidence that marihuana in sufficient amounts also produces ill effects, but for a fair and balanced review of this evidence the reader must turn elsewhere than to the Grinspoon article.

The author's pro-marihuana bias is obvious and unfortunate, since it detracts from the many accurate and useful points in the article. It is obvious even in small ways, such as his comment about Baudelaire. "Hashish," he writes, "is supposed to have been responsible for Baudelaire's psychosis and death, but the story overlooks the fact that he had been an alcoholic and suffered from tertiary syphilis." This sentence could have been written: "Alcoholism and tertiary syphilis are supposed to have been responsible for Baudelaire's psychosis and death, but the story overlooks the fact that he smoked hashish." This, however, would have betrayed an anti-marihuana bias, allegedly grounds for lynching in the Boston area.

Or take the nowadays routine assertion that marihuana is "not an addictive drug." If only those drugs that produce both high degrees of tolerance and severe withdrawal symptoms are considered addictive, marihuana apparently is not addictive (nor is any hallucinogen by these criteria). If, however, psychological dependence is considered a characteristic of addiction (as it is by the World Health Organization), then it may be incorrect to call marihuana unaddictive. G. S. Chopra, having studied hundreds of cannabis users in India, concluded that "repeated use of cannabis leads to craving and psychological dependence," and even observed withdrawal symptoms in chronic users ("... pronounced physical and mental discomfort similar to that brought about by other drugs of addiction").

Grinspoon, in fact, is never more tendentious than when quoting Chopra. For example, he mentions that Chopra found a low rate of psychosis among cannabis users, but he does not mention the high incidence of debilitating illnesses reported in the same study. Chopra's speculation that cannabis may suppress rather than incite criminal behavior is mentioned, but not his finding that cannabis users had a considerably higher crime rate than the general population did. Grinspoon indicates, correctly, that it is difficult in these studies to identify cause and effect. (Does cannabis promote crime or crime cannabis, etc.?) Given a choice of alternative explanations, Grinspoon invariably chooses the one least incriminating to marihuana. He is entitled to his bias—and the reader to the whole story.

DONALD W. GOODWIN, M.D.

Department of Psychiatry
Washington University
St. Louis, Mo.

Sirs:

In his attempt to prove me wrong in my assertion about the relative potencies of the drugs marihuana and mescaline, Dr. Goodwin ascribes what I have to say about marihuana to tetrahydrocannabinol. Since it is clear from his discussion that he understands the concept of potency, he will, I believe, agree with me that marihuana or "bhang" is far less potent than mescaline. Had I chosen to compare potency with tetrahydrocannabinol (THC), then what Dr. Goodwin says would be substantially correct. But Dr. Goodwin is wrong in implying that THC is the only active constituent in marihuana. Furthermore, marihuana, and not THC, is the commonly used form of the drug. Therefore, the limitations of a comparison of potency notwithstanding, it makes more sense to try to put marihuana rather than THC into perspective with mescaline and the other hallucinogens.

My statement with regard to Baudelaire is one in complete consonance with the well-known myth that appears frequently in the biographical literature and suggests that hashish was responsible for Baudelaire's psychosis and death. Dr. Goodwin's restatement not only greatly distorts the myth but also introduces an element of the ridiculous. Although it is well known that either alcohol or syphilis can lead to both psychosis and death, it is not certain that even large amounts of hashish will invariably lead to psychosis, and there is no recorded case of its leading to death.

In reference to the Chopra article, a closer reading on Dr. Goodwin's part would dispel his illusion that I am guilty of selective editing in support of a pro-marihuana bias. Chopra makes the statement: "In the large number of habitual users studied by us, 6.24% had been convicted once and 7.92% more than once. The figures for conviction are of course very much higher than those usually met with amongst the general population in India." Whereas on the surface it might appear that there is a causal relationship between crime and the use of cannabis, there are other factors that Chopra takes into account. He states that "cannabis drugs are cheap and generally used by the poorer classes, who belong to the lower strata of society, to which most criminals belong." The lower strata are therefore responsible for two important sociological factors: the majority of India's criminals as well as a large number of her cannabis users, but one is not necessarily related to the other. Most likely a sample of nonusers of cannabis from the lower strata would also have a higher rate of convictions than the figure for the general population.

In response to Dr. Goodwin's statement that I conveniently did not mention Chopra's references to the many debilitating effects of marihuana, the following is cited from the section Dr. Chopra devoted to this topic in the article in question. "Health does not as a rule suffer when cannabis drugs are taken in doses below 20 grains daily.... According to the Indian Hemp Drug Commission (1893–1894), bhang was considered as a refreshing beverage corresponding to beer in England and moderate indulgence in it was attended with less injurious consequences than similar consumption of alcohol in Europe. This view was corroborated by the above-mentioned studies of a large number of persons who took bhang habitually and is borne out by our own observations." He then goes on to cite numerous debilitating effects that occur when the drug is taken in "large quantities for prolonged periods." In each instance mentioned—"chronic catarrhal laryngitis, asthma, chronic sore throat and pharyngitis, bronchial irritation, impairment of vitality and digestive processes, anaemia, etc."—the context either states or strong-

ly implies marked and prolonged indulgence rather than moderate and occasional indulgence, which is the obvious focus of my article.

If we accept Dr. Goodwin's reasoning with respect to psychological dependence where marihuana is concerned, then with respect to tobacco it may (to paraphrase him) be incorrect to call tobacco unaddictive. In fact, it may be more incorrect with respect to tobacco, inasmuch as in a study of 34 marihuana users conducted by J. F. Siler and his colleagues (*Military Surgeon,* Vol. 73, pages 269–280, 1933) it was found that only 15 percent of the users missed marihuana when deprived of it and 71 percent stated that they preferred tobacco. Finally, I find the concept of psychological dependence a hazy, poorly defined one. I seriously wonder if Dr. Goodwin can distinguish between the psychological dependence attributed to marihuana from the psychological dependence I presume he has for his wife or his automobile.

LESTER GRINSPOON, M.D.

Department of Psychiatry
Harvard Medical School
Boston, Mass.

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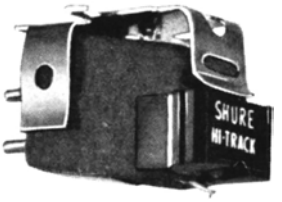

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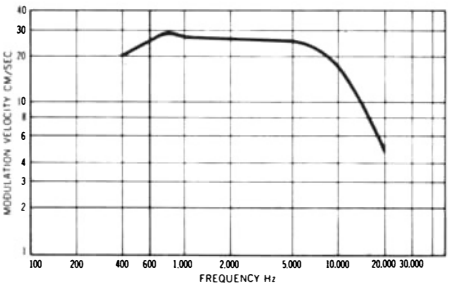

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