Letters

Herbicides in Vietnam

The report by Rose and Rose, "Chemical spraying as reported by refugees from South Vietnam" (25 Aug. 1972, p. 710) requires some pointed comment.

Adequate documentation of the adverse effects of defoliants on plants exists; the long- and short-term human effects are less well documented. The anecdotal data accumulated by questionnaire from 98 South Vietnamese evacuees should not be used as evidence demonstrating the health effects of the defoliants. My experience in trying to collect historical information on neurological diseases in Thailand from those who may have had symptoms suggestive of these diseases has convinced me that this kind of data is often unreliable and is based on poorly recalled facts; the respondents will often tell you what they think you want to hear.

I am skeptical about the diagnosis of the women with "acute asthenia (fatigue)" whom the authors tell us had a "clinical picture . . . compatible with the peripheral neuropathy reported in patients exposed to percutaneous absorption of 2,4-D. . . ." Without the report of a neurological examination which would confirm the presence of neuropathy, this statement has no validity; the woman could just as well have had any of a multitude of asthenia-producing systemic diseases or a psychiatric condition.

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I must take issue with the publication of a misleading abstract to the report by Rose and Rose which infers the occurrence of monstrous births in sprayed humans in Vietnam. Nowhere in the text could I find reference to reports of such births in humans. Since the abstract is frequently the only part of a report that receives wide attention, I believe a correction is in order, particularly since the matter in question is such a contentious and emotionally charged issue.

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Chipman makes the point that respondents to questionnaires "will often tell you what they think you want to hear." As a neurologist, Chipman is perhaps not aware that the questionnaire is a routine method of data collection in the social sciences, and that problems of faulty recall, wishing to please, and so forth, are routine methodological problems whether the subjects are Vietnamese, Thai, or European. We were well aware of these problems and applied appropriate precautions. As our report made clear, we were primarily concerned with describing the reported symptoms, rather than attempting to define them neurologically. As for Chipman's comment on the diagnosis of asthenia, we are grateful to one of the referees of our original manuscript who brought an interesting paper by Goldstein *et al.* (*1*) to our attention; of course this is only one possible diagnosis, as our report makes clear.

Runeckles' comment is difficult to understand. In paragraph 5 of our report, we state "Five percent also referred to abortions or monstrous births occurring among the animals," while in paragraph 8 we state, "In addition, 4 percent of the respondents spontaneously referred to human abortions as one sequel of the spraying episode." In our view the abstract (which refers to "Reports of abortions and monstrous births in sprayed humans and animals") is an appropriate summary of this data.

Because we did not wish to suggest to respondents a connection between abortions and monstrous births in sprayed humans—or livestock—we did not ask a direct question on this issue. However, four respondents did report abortions and malformed births occurring either to themselves or to women members of their household after spraying. Thus two respondents reported abortions, one an abortion and a malformed birth, and one a malformed birth alone. Through this indirect form of questioning, our findings may have underreported the phenomena. We would not wish to suggest that our survey demonstrates a clear correlation between spraying and such phenomena. The kind of epidemiological work which might provide this correlation is impracticable in a society as ravaged by war as is Vietnam. However, at least one study (*2*) was carried out by the medical cadres of the Provisional Revolutionary Government on the entire population in one sprayed area that they control, in which a marked increase was reported in both monstrous births and abortions. In light of the recent settlement of the war, it may now be possible to carry out the necessary research to assess in detail the impact of the chemical war on the population and ecology of Indochina.

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Methadone Treatment

H. L. Lennard, L. J. Epstein, and M. S. Rosenthal (26 May 1972, p. 881) apparently do not find it significant that methadone treatment has enabled thousands of heroin addicts to move out of lives of degradation, crime, and risk of serious illness and death. The record of rehabilitation with methadone far surpasses the results of alternative forms of treatment. A majority of the patients in methadone programs had previously failed to find relief in abstinence programs. Rehabilitation following methadone treatment would appear to be a result that the authors might welcome as improving the quality of life for these patients.

The authors ask on what grounds can methadone be considered a "better" drug than heroin, and answer

that methadone is ". . . legal, a 'medicine' prescribed by physicians, whereas heroin is illegal, a 'drug'. . . ." A more accurate answer would be that methadone is better because of its longer period of action and oral effectiveness. Stabilization can be achieved with a daily dose of a constant amount. The patient is able to function normally without euphoria or other narcotic effects and therefore can live a normal life. The authors state only the similarities between the effects of heroin and methadone in single doses while ignoring the essential differences between their long-term effects.

Methadone patients are described as "somewhat somnolent," they "tire more easily," "require more sleep than do nondrugged individuals," have reflex reactions that are "somewhat abnormal," "perspire more profusely," are often constipated, and suffer from impotence. Some patients have reported these symptoms during the early months of methadone treatment, but this is not the long-term picture presented by the thousands of patients who are being maintained. The authors ignore the detailed studies that have shown reaction time and motor coordination (*1–3*), vigilance (*2*), and intellectual functioning (*1*) to be in the normal range in patients stabilized on methadone (*4*).

The statement that the blockade effect of methadone does not have any effect on nonopiate drug use is true, but certainly not relevant to a discussion of its value in treating heroin addiction. Neither methadone nor any other medication could be a panacea for all drug abuse problems.

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3. ——— and P. Appel, in *Proceedings of the Fourth National Conference on Methadone Treatment* (National Association for the Prevention of Addiction to Narcotics, New York, 1972), pp. 425–427.
4. A compilation of the various studies on the behavioral effects of methadone treatment is given by N. B. Gordon in *Discrimination and the Addict*, L. R. Simmons and M. B. Gold, Eds. (Sage, Beverly Hills, Calif., in press).

The treatment of drug addicts is too important to both the addicts themselves and to the society in which they live to let the article by Lennard *et al.* go unanswered. To my knowledge, no physicians actively engaged in using methadone as a therapeutic aid in the treatment of heroin addiction believe methadone to be a "solution" to heroin addiction. It does give real assistance to the heroin addict in relieving narcotic hunger. This tangible relief is the biggest asset methadone offers. For the vast majority of heroin victims, group therapy, a closed residential setting, and role model activity are simply not enough. But with methadone in the therapeutic setting, actual changes can and do occur.

It is absurd to ask whether methadone is better or worse than heroin. Can there be any question of the potential danger of regular intravenous and subcutaneous injections of heroin, usually with unsterilized equipment? There is a rapid buildup of tolerance to heroin, but not to methadone (*1*). Methadone dissolved in fruit-flavored liquid is rarely sold in the black market, and its abuse can be almost completely controlled. My experience and that of other clinicians affiliated with the Illinois Drug Abuse Program is that an individual whose methadone dosage has been constant for four or more weeks cannot be identified as a methadone patient, with the following exceptions: (i) constipation (which can be relieved

with diet and regular laxative) and (ii) diminution of the sex drive (a variable effect).

The symptoms of muscle cramps, diaphoresis, tachycardia, and insomnia reported by Lennard, Epstein, and Rosenthal are signs of abrupt withdrawal or occur during the initial phase of giving up heroin and during the adjustment of the methadone dose level. I currently oversee more than 70 persons in a methadone withdrawal program which began over 3 months ago, and no patient has yet required hospitalization for withdrawal symptoms. At this point approximately 20 percent of this group has been abstinent for at least 6 weeks. In a properly run withdrawal group the physician in attendance can usually handle any symptomatology.

In the Illinois Drug Abuse Program there is no derogation of the work of therapeutic communities. Indeed, much inspiration comes from the Gateway House in Chicago. But only the most highly motivated addicts can gain access to these facilities. The vast majority of addicts are unable to qualify because they cannot "clean up," that is, abstain from heroin. This is the Catch-21 of drug abuse programs. Those who are ready to give up heroin *and* are able to endure heroin withdrawal constitute a small, select population. But the many thousands of addicts who have come to the point of wanting to stop deserve the assistance methadone can afford. That such assistance is required is attested to by the fact that there are many more people in methadone programs than in therapeutic communities.

A valid case can and must be made against perpetual methadone maintenance. It is a callous, cost-accounting approach to human life, ethically wrong, and based on the unsupported belief that the addict's physiology is permanently altered.

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It would have been much more informative and helpful to *Science* readers if co-author Mitchell S. Rosenthal, who was noted as being the director of the Phoenix House programs in New York, had described the successful efforts of Phoenix House in helping narcotic addicts. I, for one, would view any favorable results with a feeling of pleasure. It would not trouble me to hear that a program that I was not personally involved with had produced favorable results.

Unfortunately Rosenthal and his associates do not appear to feel the same way. They seem determined that the addict must be helped in the special way that is of particular interest and importance to them. The religious fervor of their article makes it clear that no report of favorable results with methadone would alter their antidrug dogma. This dogma appears to be more important to the authors than either the well being of the community or of the addict.

I sincerely hope for the success of the Phoenix House programs. I have read and heard mixed reports on their effectiveness, but have never questioned their usefulness or worth as long as there are addicts who are motivated to achieve abstinence and who demonstrate a readiness to remain in Phoenix House–type treatment programs.

The addiction problem is going to be with us for a long time and we cannot wait for a panacea that will be the perfect answer. Not all addicts have the same needs or similar motivation. There is plenty of room in the drug treatment field for a broad spectrum of treatment programs. Scientific study of these possible programs can only be hampered by moralistic arguments and an antidrug crusade.

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Those who persist in ignoring history are dooming themselves to repeat it. The arguments in the preceding letters in support of the use of methadone to control heroin addiction were advanced 70 years ago to support use of heroin to control morphine addiction.

We find ourselves in the same position today, having to speak out against the use of methadone, as those who seven decades ago warned against the use of heroin for this purpose. As the discussion of seven decades ago extolling the virtues of heroin and its hazards seems to be virtually identical with that heard on the subject of methadone, we thought it would be useful to recall the former discussion.

A letter that appeared in the *New York Medical Journal* (*1*) from Maurice B. Ahlborn in 1901 advised:

That heroine will take the place of morphine without its disagreeable qualities, I am convinced, as I have repeatedly

quieted morphinomanics whose cravings were awful, with a few injections of it which did not nearly represent the amount of morphine craved for. There seems to be no craving for the heroine awakened by its continued use, as the subsequent gradual withdrawal after its substitution for the morphine has been attended with no particular craving and only in one case of twenty-three years' standing have I seen any tendency to increase the dose of the substituted drug. . . .

Heroin was listed in *Squibb's Materia Medica* (*2*) as "a remedy of much value . . . and it is also used as a mild anodyne and as a substitute for morphine in combating the morphine habit" (*2*).

As for the side effects of heroin, James R. L. Daly reported in the *Boston Medical and Surgical Journal* of 22 February 1900 (*3*):

It [heroin] possesses many advantages over morphine . . . it is not a hypnotic; there is no danger of acquiring the habit . . . it does not weaken the respiratory apparatus . . . it does not cause unpleasant disturbance of the stomach or intestines . . . [and] the ratio of the therapeutic dose to the toxic dose is considerably smaller than that of morphine.

There were many advocates of heroin at that time. E. H. Sickler, writing in *Medical Age* in January 1902, said of heroin, "Its continued administration does not give rise to any craving" (*4*). E. Y. Johnson said in the *American Practioner and News* of December 1901 that heroin "given to a morphine habitue in place of the usual drug satisfies the craving and seems to destroy it finally without any longing for the new drug" (*5*).

The argument advanced against heroin in an article written in 1902, "The heroin habit another curse" by George E. Pettey (*6*), applies equally well to those who are presently defending and justifying the use of methadone.

. . . Many articles have appeared in medical literature during the last two years lauding this new agent . . . but some who have written in its praise seem to have been misled by the claim of its promoters, that even its prolonged use does not result in the formation of a habit.

When we consider the fact that Heroin is a morphine derivative, being the diacetyl of morphine, and that in this form it retains almost all of the properties of the salt from which it is derived, it does not seem reasonable that such a claim could be well founded. It is strange that such a claim should mislead any one or that there should be found among the members of our profession those who would reiterate and accentuate it without first subjecting it to the most critical tests, but such is the fact.

We cannot ignore, as do the enthusiastic proponents of methadone, the considerable effects of the adoption of the methadone maintenance model on a large scale. Reports are mounting that the expansion of methadone programs has been accompanied by an increase in deaths due to methadone. In some cities (Washington, D.C.; Buffalo; and Minneapolis), mortality related to the use of methadone approaches or equals that attributed to heroin (*7*). Methadone is readily available in the streets of New York and is replacing heroin as the opiate drug most widely bought and sold illegally (*8*). Unhappy consequences will surely follow unless we consider more carefully the long-range effects of a policy that undertakes to introduce potent psychoactive drugs into the community on a wide scale. Once the machinery to carry out a policy has been set in motion, it may not be possible to reverse its course before it is too late. How can physicians, policy-makers, and others who opt for such a policy justify their contribution to such outcomes?

Strategies and approaches that permit "no exit" need special scrutiny. The use of chemical solutions (methadone and its addicting potential) to solve chemical problems surely falls into this category. Problems that have diverse roots in social, economic, and human conditions require the development of social, economic, and human strategies for their solution. Phoenix House represents one such strategy (*9*). The use of chemical agents to combat the use of other chemical agents treats the problem as if it were its own solution.

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