other narcotic, can be lethal in ovedose; although the full extent of this problem was not appreciated until relatively recent.

Back in the late 1960's we were aware of only occasional cases of overdose. I can recall that, when I reviewed the New Drug Application in 1971 for the FDA, I really could only scratch up a handful of lethal cases of propoxyphene overdose from its introduction until that time. My guess is that the very substantial increase which has appeared over the course of the last several years does not necessarily reflect a true, very substantial increase in the number of propoxyphene related deaths, but rather that dependable analytical methodologies to demonstrate propoxyphene in the bloodstream was only really developed and became available in the late 1960's and the early 1970's.

When you start looking for something with a useful tool, you begin to find it, and that may account for the discrepancies.

In regard to the dependence liability of propoxyphene, since propoxyphene is pharmacologically a narcotic, it has some ability to produce drug dependence of the narcotic type, and this has been recognized since before the drug was marketed.

Propoxyphene can produce the classic triad of psychic dependence, physical dependence and tolerance, and, in those patients who are able to tolerate high enough doses to result in substantial physical dependence, a narcotic-type abstinence syndrome has been observed on withdrawal.

"Street abuse" of the drug clearly occurs, as does dependence secondary to therapeutic use. However, in my opinion, relative to the extremely wide use of propoxyphene, the demonstrated incidence of serious deliberate abuse of the drug to experience its mood effects is not great and is certainly less than is the case with potent narcotics.

Senator NELSON. May I ask a question. Dr. Beaver? Yesterday, the witnesses who testified from North Carolina and Oregon were divided on the question of whether or not intentional overdose was a serious question.

One of the witnesses felt very strongly that a good many, over half of the deaths that occurred, were not drug abusers or those who intentionally overdosed themselves, based on the study of the stomach contents and so forth. So his argument was not because it was being abused—any drug can be abused—but because people were getting overdoses unintentionally.

Dr. BEAVER. Let me clarify the point. I believe what the medical examiner from Oregon was pointing out was that he felt that many of these deaths were associated with accidental overdose as opposed to deliberate suicidal overdose. That is the distinction I think he was making. Neither of those things is the same as what I am talking about, which is the deliberate use of the drug to experience the mood effect; that is to say, drug abuse considerations.

Senator NELSON. I was only saying, if it was the Oregon witness, that it is his feeling that most of the deaths were not intentional overdosages.

Dr. BEAVER. Were not suicidal, but neither suicides nor accidents are specifically related to the use of the drug for mood effect.

Senator NELSON. I understand.