

February 23, 1965

William S. Pollitzer
The University of North Carolina
Chapel Hill, North Carolina

Dear Mr. Pollitzer:

The questions which you ask about the toxicology of gasoline are good questions, no doubt, but there are either no or few answers to these, and it is not reasonable to suppose that there should be. By this I do not mean that this would not be a fruitful investigation but that it would be difficult and costly. First of all, as I indicated previously, gasoline is not a chemical compound but a tailored mixture of many petroleum hydrocarbons, aromatic and aliphatic, and all sorts of isomeric variants, with a number of additives which are designed to improve the characteristics of the mixture as fuels.

Before investigating the mechanisms of which you speak, one would first have to separate out the individual hydrocarbons, even separating out their isomers (which may differ widely in their physiological properties), and pursue each one through many avenues of investigation. This, alone, might occupy a group of investigators through a lifetime, during which the expenditures in various ways would amount to hundreds of thousands of dollars.

There would have to be good reasons - practical reasons or extremely crucial theoretical reasons - for the expenditure of such amounts of funds for such a purpose. From the practical viewpoint, who would wish to make such expenditures, in view of the relative unimportance of gasoline as a factor in industrial or public health? From the theoretical (pure science) aspect, who, at present, is likely to spend a lifetime at such a job, in view of the dramatic possibilities for the discovery of the physiological mechanisms involved in the action of many other chemicals?

What I am saying is that, in the practical terms of industrial intoxication gasoline is so relatively unimportant as a cause of trouble in the petroleum industry, that the questions

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which you raise are not of any great concern. Fatalities occur in connection with the improper handling of gasoline, but serious illness, otherwise, is a matter of little consequence. That is, the industry has learned how to get along with gasoline, and has little interest otherwise. Intoxication by gasoline, in occupational experience, is reversible; only rarely are there any sequelae.

As to the addiction of which you speak, there may be some etiological and epidemiological information of the type in which you are interested, but I think not. People generally, and even medical investigators generally, unless they are psychiatrists, or are specially oriented in pharmacological research in the field of narcosis, would be likely to take the point of view of the moralist in this matter, deploring drunkenness in any form, but accepting the fact that it occurs and that those who succumb to it are sinners. Again, as a subject for investigation, such an issue will not call forth the large sums which would be required to carry out such investigations.

Materials that offer promise as narcotics or anesthetics, have often been examined extensively by medical investigators; those that are very useful industrially, but are also dangerous, have sometimes been investigated by industrial toxicologists. However, there are scores, hundreds, even thousands, perhaps, of new and old chemical compounds which have been investigated but little. The industrial toxicologist, up to the present time, has had little opportunity to investigate mechanisms of the type you describe because of the dearth of trained personnel, the scarcity of funds for this purpose, and, above all, the numbers of new chemicals that pour out of the research laboratories of the chemical industry constantly. It is impossible, at present, to keep pace with the technical progress of the chemical industry, and therefore it is almost out of the question to go back to gather up the missing information of the past.

I have gone to some length to explain these matters, for the reason that your questions are based on the assumption that such information as you seek has been or will be obtained. It does not follow that either of these assumptions is true, and indeed it will not be, unless you, or someone similarly motivated by the lack or need for information, gets busy and goes after it.

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Mr. William S. Pollitzer

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I am sending you several references which will but serve to illustrate some of my statements.

Sincerely yours,

Robert A. Kehoe, M.D.

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Enclosures

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