To evaluate industry research and development, however, we have to place it within the context of the total medical research and development effort in the United States. In 1960, the industry provided about 30 percent of total research and development outlays. At the same time, it provided only 12 percent of the Ph. D.'s involved in medical research and employed only about 5 percent of the M.D.'s in medical research. This indicates, thus, that the character of research in the industry is likely to be far different, at a lower level of scientific caliber, than the medical research which is carried on outside of the pharmaceutical industry.

It seems to me, therefore, that the industry research effort cannot be evaluated or judged by the same standards as nonindustry research. It seems to me that the industry research effort should be considered as a complimentary rather than as a competitive or alternative type of activity. There appear to be extensive resources which are devoted to fairly routine sets of activities.

When evaluated on its own terms, on a different basis than might be appropriate for evaluating academic or Government medical research, it seems to me that the industry effort, by and large, does a good job. It has, in fact, been responsible for the large number of modifications and improvements of existing drugs. It has also been responsible for accelerating the process of testing and developing new drugs. And I would argue that both of these provide important benefits to the development of medical technology and medical practice in the country.

At the same time, the question remains as to whether the "price" that society pays in terms of the opportunity costs for these results is too high. If we examine the proposal of compulsory licensing after a short period of time, such as the Kefauver suggestion of 3 years, it is clear that this proposal would reduce the incentive to undertake research.

The industry certainly would have less incentive to undertake purely duplicative research in order to enter a profitable therapeutic market.

Senator NELSON. If they had less incentive to do purely duplicative research, that would be a net benefit to society; would it not?

Dr. COMANOR. It certainly would not be any loss to society.

Senator NELSON. And they would tend to do more pure research to develop new products and that would be beneficial; would it not?

Dr. COMANOR. I think that is right. At the same time——

Senator NELSON. What I am really getting at is that we have had testimony that much of the research is directed solely at product differentiation, with the production of a product that does the same thing another drug does, and in some instances not even as good a job as another drug. I understand that the argument the industry will make is that as a result of this kind of research and molecular manipulation, we sometimes get an improved product. You recognize that, too.

But if it did eliminate just purely duplicative research, the result of which is to produce just another product doing the same thing as a drug already on the market, then it would seem to me that it would be beneficial; would it not?

Dr. COMANOR. Yes; that is correct.