It is also important to note the extent to which those who are responsible for the teaching of pharmacology and pharmacy are supported by the pharmaceutical industry. All indications are that the major drug houses provide financial support to departments of pharmacology, schools of pharmacy, and individual scientists engaged in teaching and research that is very considerable indeed. Through grants, contracts, fellowships, guest lectureships, and unrestricted support, many in academic medicine have developed very close ties to the drug makers for necessary support which amounts to millions of dollars each year. That this academic-industrial relationship has been productive, there is no doubt. But there can also be no doubt that the medical profession, our medical students, and the public have the right to an honest and open accounting of this relationship.

In the case of the American Medical Association, for example, it would appear that more than half of its total revenue is derived from the pharmaceutical advertising carried in various AMA publications.

The effect of the very substantial involvement of the pharmaceutical industry in the practice of medicine, Mr. Chairman, finds its ultimate expression in the drugs prescribed by physicians.

Last year, over a billion prescriptions were filled in the United States at a retail cost of over three billion dollars. Each of these prescriptions represented a tacit assurance by the physician that the patient was receiving the most appropriate drug that could be prescribed—the most appropriate in terms both of performance and cost. Yet I wonder how many physicians were really prepared to give that assurance.

The problem is not a simple one for the physician or his patient. There are now more than 7,000 prescription drugs available in this country. This therapeutic arsenal includes some 1,200 generally available drugs and 6,000 combinations, most of them marketed in a number of different dosage forms.

In the past twenty years there have been 715 new single chemical entities marketed. Duplicate single products have numbered 1,407; compounded products 3,840; and new dosage forms 1,820. Thus a total of 7,782 new products and new dosage forms have been marketed in the last two decades alone.

How does the physician respond to this profusion of new products? Of the 1.1 billion prescriptions written last year, 67 percent were written for 200 drugs and 85 percent for 500 drugs. Among the 200 most frequently prescribed drugs are 119 single chemical entities and 81 combination products. The development and use of fixed drug combinations, as we have noted in our reports, has become increasingly popular within the past twenty years, but the widespread reliance on their use has generated sharp criticism. The Council on Drugs of the American Medical Association has long held the prescribing of such fixed drug mixtures to be irrational, and you will recall that near the outset of your own hearings, a noted authority on infectious diseases said:

"A careful review of fixed branded combinations on the market, including combinations of penicillin and sulfonamides, penicillin and streptomycin, tetracycline and antifungal agents, and tetracycline and novobiocin, does not substantiate the claims that the combination is superior to one of the agents used separately. The combinations are expensive, deny the physician flexibility in dosage, are primarily promotional devices, and have the inherent problem that the patient undergoes the risk of serious adverse reactions to two or more drugs rather than a single defined agent. The physician cannot determine which component is causing trouble if a bad reaction is encountered. I personally believe that we would do much better without these preparations."[1]

The National Academy of Sciences National Research Council has completed a careful evaluation of the 2,824 drugs marketed between 1938 and 1962, the year in which the Food, Drug and Cosmetic Act was amended to require that drugs marketed be both safe and effective. The NAS–NRC has taken a similar position with respect to a number of the fixed drug combinations. The actions by the Academy and the Food and Drug Administration are sure to rouse the ire of industry, but more importantly they should make many of the physicians who have been prescribing drugs now described as ineffective question their own observations with respect to these drugs.

One of the consequences of the introduction of safe and effective drugs is better health and well-being for many people. Another consequence is drug-induced

[1] Kunin, Calvin M.: Statement in U.S. Senate, Subcommittee on Monopoly, Select Committee on Small Business, "Competitive Problems in the Drug Industry," U.S. Government Printing Office, Washington, D.C., 1967.