therapy with combinations of chemotherapeutic agents, particularly synergistic ones, would be customarily used.

In response to this and at the same meeting a number of outstanding competent physicians and clinical investigators in the field of infectious diseases spoke out politely but firmly both publicly and in private conversation with regard to the folly of this view. Notable among these were Drs. Maxwell Finland, Harry Dowling, and William Altemier.

These quotations were published in the written testimony. Dr. Kunin has read one of Dr. Finland's statements which really essentially summarizes these. It might possibly be well to read Dr. Dowling's comments, because they are particularly lucid, I think, in this connection.

> Therefore, one takes the chance in every case that (the bacteria causing an infection) is resistant to a certain antibiotic when he uses it. If he tests against two antibiotics and finds that the organism is sensitive to both, then he can get just as good a result with one. Why use two? If he finds it is resistant to one and not to the other, then he is not going to get any effect by using the antibiotic to which it is resistant. Then we return to the fact that it may be sensitive to both. Is the patient any better off if we use two antibiotics? We may delay—and our work certainly does not show that we delay to any great extent—the appearance of resistant strains in these cases. Would the patient not be better off if we used good doses of one antibiotic and concentrated on that? If this fails, then we can use another antibiotic. We know exactly what we are doing. We know exactly where we are going and I doubt whether we do when we use more than one antibiotic.

These principles, along with entreaties to the industry, were repeatedly stated from then to now, but achieved comparatively low pitch in the next phase of development because of the economic rewards of pharmaceutical gimmickery and the tremendous impact of promotional activities by the industry. Two major broad-spectrum antibiotics, tetracycline and chloramphenicol, had become available by this time.

Chloramphenicol was discovered, patented, and marketed solely by Parke, Davis and Co. to whom these rights belonged. Tetracycline, on the other hand, was available and was marketed by at least four major ethical pharmaceutical houses. The urge for survival in such a climate would be sufficient to stimulate the utmost ingenuity among these competitors in the drug industry. It is, therefore, a curious coincidence that chloramphenicol with a spectrum of activity quite similar to that of tetracycline was never considered to benefit by fixed combinations with other antibiotics.

Senator NELSON. Why was that?

Dr. HEWITT. I think the reason for that may be apparent in the next sentence.

Contrariwise, tetracycline appeared in combination with a variety of antibiotic and nonantibiotic substances, depending upon the pharmaceutical company responsible for its marketing and design, to provide promotional material which would convince physicians to use one tetracycline rather than another.

You understand, of course, that all these tetracyclines are identical.

Mr. DUFFY. Is chloramphenicol as susceptible to being combined with other drugs as is tetracycline?

Dr. HEWITT. I see no reason why, in terms of its chemistry and compatibility, I see no reason why it shouldn't be susceptible.