There is ample evidence to indicate a close relationship between estrogenic hormones and the breast. For instance, development of the breast begins at puberty with the onset of hormonal activity. Breast cancer has almost never been known to occur prior to the dawn of this hormonal secretion. Many women experience cyclic swelling and painful engorgement of the breasts related to the periodic hormonal changes which occurs during the month. Some patients with chronic cystic mastitis have noted an increase in the size of their cysts and an aggravation of their pain when taking estrogenic hormones or the pill.

Pregnancy causes a marked enlargment of the breasts and this is considered to be predominantly an estrogenic hormonal effect. Breast cancer occurring during pregnancy with its high estrogenic stimulation has a most ominous prognosis. Clinical experience bears said witness to the fact that the coexistence of pregnancy, again with its elevated level of estrogens, and breast cancer carries a most pessimistic outlook. Few, if any, of the young mothers have ever survived. Enlargement of the male breast (gynecomastia) by the female sex hormone (estrogen) can be caused by hormonal stimulation in men receiving estrogens for the treatment of certain male diseases. Gynecomastia has been observed in factory workers making estrogenic hormones (the female sex hormones) and in men with estrogen-producing tumors. Therefore, it seems quite clear that estrogenic hormones and the pill which may contain an estrogen can cause epithelial cell changes within both normal and abnormal breast tissue.

As noted by Hertz and many others throughout the world, breast cancer can be induced experimentally, and I stress experimentally—in a wide variety of animals by the administration of estrogens. Breast cancer in rats produced by prolonged stimulation with an estrogen will even disappear when the source of this estrogen is removed. Breast cancers in dogs have occurred following prolonged ingestion of an estrogen-progestogen pill. The clinical trial of a mini pill in France, Mexico, and England has been recently suspended because of suspicious "tissues masses" which developed in the mammary area of dogs.

Senator NELSON. May I interrupt?

Dr. LEWISON. Yes.

Senator NELSON. In your reference to the clinical trial on the mini pill, were not there trials in this country, too?

Dr. LEWISON. I really do not know, Senator, I read of these experiments with the mini pill abroad and this is not particularly my area of special interest. I do not know whether there were trials in this country as well.

Senator NELSON. Thank you.

Dr. LEWISON. It seems to me that although there is a wide generic gap between man and mouse, yet most cancer investigators agree that there is a close correlation between those drugs which cause cancer both in animal and in man, also, it is my opinion that perhaps time and dose relationships may be the unknown dimension. I know that some of the witnesses have testified that perhaps in prolonged use the dose factor may be very important in the pill, and I assume it to be the same with estrogens as well.