In addition to the hazards to the visitor, we have noticed in the United States the development of an increasing number of cases of Shiga dysentery due to drug resistant organisms. In Guatemala, the epidemic of Shiga dysentery killed 12,500 people; in El Salvador, 2,000 additional deaths occurred. Many of those who died were young children or old people. We have not seen that kind of high mortality rate in the United States but we have seen an increase in the number of cases. In 1965 there was one case of Shiga dysentery in the United States. In 1968—this was before the epidemic in Central America—there were five cases. In 1972, there were 70 cases, and 58 of those were in the border States of California, Arizona, Texas and New Mexico. I am sorry I do not have more recent information, but it may well be that those cases have continued to increase.

Perhaps even more important than the Shiga dysentery epidemic was the epidemic of typhoid fever in Mexico which illustrates the problems that arise when the organisms causing the disease are resistant to the drug of choice, in this case, chloramphenicol.

In May 1972, Mexican authorities announced the existence of a widespread outbreak of typhoid fever. A total of 6,342 cases were reported in 1972, a 100 percent increase over the 1971 total. The epidemic subsided in mid-1973. Many of the early cases were treated with chloramphenicol and many of them died because it was not known initially that the drug was resistant to chloramphenicol, a drug that had been used for more than 20 years to treat the disease and treat it very effectively.

In addition to the thousands of cases of chloramphenicol resistant typhoid fever reported in Mexico during the epidemic, cases due to the Mexican epidemic strain of *Samonella typhi* were also later reported in the United States and Great Britain.

There have been isolated cases of chloramphenicol resistance to *Salmonella typhi*—that is the cause of typhoid fever—since 1950. But prior to the Mexican epidemic in 1972, no epidemic was caused by a resistant strain. There have been cases reported in England, India, West Africa, Greece, Israel, Chile, Kuwait and Spain. And in the cases from Kuwait, for example, they arose in at least three different places: one in Aden, one in Cairo, and one in Pakistan.

The resistance to chloramphenicol is due to a resistance factor that can be transmitted to other bacterial strains so that it can spread to other enteric organisms and produce other cases of drug resistant infection with interric bacteria.

Senator BEALL. What, if anything, did you find about chloramphenicol in China?

Dr. LEE. Well it is interesting. Dr. Wegman and I went to China together on a mission in 1973, and I was really appalled at the way they use chloramphenicol. It was used frequently in out-patient clinics and hospitals. It was used even by barefoot doctors to treat febrile illness, much as it is used in many other developing countries. There was little evidence that the prescribers were sufficiently aware of the possible adverse effects. It is interesting that some of the articles that have appeared in Chinese medical journals have decried the misuse of antibiotics in out-patient clinics, specifically the overuse and misuse of chloramphenicol. So that some of the people there are aware of the