severely and sooner than a stranger who just happened to be visiting this city at the time and who was completely normal.

Mr. BROWN. Mr. Chairman.

Mr. DADDARIO. Mr. Brown.

Mr. BROWN. May I just interject a thought here. I think what you said is absolutely correct, Doctor, but don't we also need information as to the extent or degree to which these so-called pulmonary cripples have been created by these same conditions at a lower level prior to the episode? Obviously we do not have this information? But if there is any basis for this assumption that the pulmonary cripples are more susceptible to an episodic situation—and this is created by the same kind of conditions—then the episode merely adds the final touch to something that has been created by the lower conditions over a period of many years. Therefore, what I am asking is: Don't we need considerable information about the degree to which the cripples themselves may have been created by the lower concentrations of some of these contaminants over a long period of time?

Dr. MACFARLAND. Yes, indeed we do need this information, and much has been done to try and garner this information. It is done in part by epidemiological techniques of looking over the history of what has happened, looking at the medical records and trying to correlate these with occurrences of elevated pollutant levels.

Again from an experimental point of view, it is rather difficult to envisage how could you try to simulate this kind of situation in human subjects. It can be done with experimental animals. The trouble is that this is going to be a costly and long term program.

Mr. BROWN. The whole point of this New York Times article seems to be an environment in which the pollution exists compared with an environment in which the pollution does not exist. It will exist at these very low levels—was not St. Louis one of the cities mentioned?

Mr. DADDARIO. Yes.

Mr. BROWN. St. Louis has never had an incidence of severe pollution comparable to the London incidence. The evidence seems to be quite clear that the incidence and severity of emphysema is substantially greater there than in any area such as Winnipeg where the pollution does not exist. Isn't this the kind of pollution you are talking about?

Dr. MACFARLAND. Yes, this kind of evidence is usual. It provides directives for us, and I do not see that there is any argument about the validity of this kind of thinking.

Mr. DADDARIO. I bring it up only because it seems to logically follow from your testimony. How do you view it? Because there is such a base of information and so many points of reference that you have to take into consideration, recognizing how difficult it is, it is information such as this which does have a tremendous effect on the public generally. They read into it almost what they want to. It is therefore more important that we, as we analyze this information, develop a mechanism through which confidence can be built.

Dr. Eckardt, do you have a point here?

Dr. ECKARDT. I simply want to comment about the disease emphysema a bit.