any of them. The Committee is satisfied, however, that it is not uncommon for a single agent to affect various parts of the body or to manifest itself in various ways. Examples of substances having effects on different organs or body systems are typhoid fever, syphilis, tuberculosis, polio virus, alcohol, diphtheria toxin, phenol and bichloride of mercury. More important, however, such criticisms leave the impression that cigarette smoke is a simple substance whereas, in fact, it is a complex mixture of hundreds of substances in a gaseous or droplet form. It should therefore be expected that cigarette smoking could have a variety of effects on the body and be associated with different diseases in various parts of the body.

The results of the twin studies in Sweden and the United States of Dr. Rune Cederlof, Ph.D., of the Department of Hygiene, Korolinska Institute, Stockholm, Sweden, have been used to support the view that while cigarette smoking is causally related to lung disease, it is not so connected with coronary heart disease. However, Dr. Cederlof studied the prevalence of angina pectoris not the incidence of heart attacks. It is noted that studies of disease prevalence may provide different results than studies of disease incidence because of the disappearance from populations of those who die of a condition. This is particularly important in heart disease where a person believed to be healthy often dies with his first heart attack.

Other studies have shown that there is a consistent association between cigarette smoking and the incidence of heart attacks but not between cigarette smoking and angina pectoris. Dr. Cederlof's findings support the conclusions of other research both as to angina pectoris as well as chronic bronchitis. His twin studies, which he reported as contributing evidence of a strong causal relationship between cigarette smoking and chronic bronchitis, therefore, assist in confirming that cigarette smoking is a health hazard. Also, the observation that individuals in identical twin pairs have different smoking habits supports the position that cigarette smoking is not genetically determined. This is an argument against the hypothesis that cigarette smoking is related to lung cancer and other diseases as a result of some persons having a constitutional predisposition to both smoke and to develop these diseases.

(b) Community and Occupational Air Pollution

The work of Dr. John Wyatt, one of the witnesses, and his colleagues in Winnipeg and St. Louis, indicates the synergistic effects of air pollution and cigarette smoking.[25] Emphysema was more common in St. Louis than Winnipeg and increased with amount smoked and with age. In neither city was severe emphysema found in non-smokers. This finding that it is mainly cigarette smokers who seem to be affected by air pollution is supported by other studies. Among non-smokers there appears to be little respiratory disease whether they live in

[25] Minutes—No. 32—Tuesday, May 20, 1969, pages 1172 and 1173.