

*Air Pollution*

gases into our air. In addition, 65,300 tons of dust are blown into Toronto every year. He also stated that 47 per cent of the pollution of the air is caused by automobiles, buses, and trucks, 20 per cent by power plants, 20 per cent by heating appliances, 10 per cent by manufacturing plants, and 3 per cent by garbage incinerators. This pollution, he said, causes material and health damage amounting to approximately \$120 million annually in Toronto alone.

In Toronto Alderman Anthony O'Donohue, one of our air pollution experts, has stated that every day the average human being inhales approximately 14,000 quarts of air. One cubic foot of air in our cities, he stated, contains approximately three million dust particles. An urban dweller inhales with each breath 40,000 to 70,000 of these dust particles. It has been estimated that a person living in a large industrial centre inhales about one pound and seven ounces of dust per year.

Other scientists have also stated that since 1890 the carbon dioxide level of the atmosphere has risen from 290 parts per million to 315 parts per million, an increase of approximately 8½ per cent. Each year we are told that six million tons of carbon dioxide are added to the 23 billion tons already in the atmosphere. We produce carbon dioxide through the combustion of fossil fuels and many other activities that promote oxidation. Therefore, we should ask ourselves how soon are we going to reach the danger point in the oxygen-carbon dioxide balance of the atmosphere? At what point does the accumulation of atmospheric carbon dioxide bring about potentially disastrous changes in the earth's climate?

Carbon monoxide is another air pollutant which fluctuates at various levels in our urban communities. This gas exerts its biological effect through the inactivation of hemoglobin and by raising the visual threshold. At a concentration of 100 parts per million, carbon monoxide will produce about 15 per cent inactivation of hemoglobin to carboxy-hemoglobin. While this level does not appear to be associated with severe symptoms, an air pollution specialist, Mr. Schulte, has reported that judgment and skills can be impaired at this level.

It has been reported that concentrations below 50 parts per million are the amounts that are inhaled when subjects drive along, for example, the Los Angeles freeways. Toronto, with a few exceptions, is a city like any other in North America troubled with air

pollution. It has one of the fastest rates of growth on this continent. It also has an automobile population of approximately 800,000, the third largest density per square mile following Washington and Philadelphia. There are more than twice as many cars in Toronto as in Los Angeles.

There are figures available which state that the metropolitan area of Toronto has the following annual output of air pollutants: 925,000 tons of carbon monoxide, 420,000 tons of hydro-carbons, 198,000 tons of organic pollutants such as aldehydes and others, 130,000 tons of sulphur dioxide, 65,000 tons of oxides of nitrogen, 40,000 tons of solid particles and 23,000 tons of inorganic pollutants such as fluorides, chlorides, sulphur trioxide, and hydrogen sulphides. Comparing metropolitan Toronto to a rural area, we would probably have 20 times more carbon monoxide, ten times more carbon dioxide, ten times more dust particles, and five times more sulphur dioxide. When you drive to work that car in front of you, Mr. Speaker, is pouring out approximately 375 parts per million of carbon monoxide. If you are driving that car in a city like Toronto and you smoke cigarettes at the same time, it has been estimated that between 3 per cent and 7.9 per cent of the hemoglobin in your blood will be ineffective.

● (5:10 p.m.)

As I have stated previously, the first of the five main causes of man-made air pollution by far is the motor vehicle. It has been estimated that motor vehicles contribute from 47 to 51 per cent of the air pollution in our great Canadian cities. Motor vehicle exhausts not only emit large quantities of carbon monoxide but are also the source of benzopyrene, a hydro-carbon that, as has been found in laboratories, is one of the most potent cancer-producing agents. In the United States it has been estimated that on an average day approximately 260,000 tons of carbon monoxide, 27,000 tons of hydro-carbons and 9,000 tons of oxides of nitrogen are spewed into the atmosphere by 85 million exhaust pipes burning more than 77 million gallons of fuel. That is why in the United States of America governments have taken action to make mandatory special exhaust controls on new models of automobiles. At present automobiles in the United States must not discharge or exhaust more than 1½ per cent of carbon monoxide and 275 parts per million of hydro-carbons. In 1970 United States law will require motor vehicles to emit from their exhausts one-third

[Mr. Haidasz.]