Pollution (cont.)

Chloroflurocarbons (CFCs) are synthetic chemicals used as propellants in aerosols, as coolants in refrigerators and air conditioners and in the making of some plastic foam. CFCs float up into the stratosphere where they begin to destroy the ozone layer. Even though this layer is broken down and replaced by a natural process, air pollution accelerates the breakdown; ozone is being taken away faster than it is being replaced and radiation reaches the Earth. As a result, serious health problems including skin cancer and eye disease can occur. Even though CFCs are being phased out in Canada, their continued production and disposal still pose a problem. The chemicals are stable, meaning they will not break down for hundreds of years!

Every living organism on Earth needs water to survive, especially plants and animals. Fouling our water can lead to serious trouble. In industrial countries lakes and rivers are "dying" due to acid rain. Sulphur dioxide gas (SO_2) and nitrogen oxides are released when coal or oil is combusted. These pollutants escape from the chimneys of some power stations and the exhausts of some automobiles. Close to 50% of these emissions fall back to earth as dust and particulate matter, within 30 kilometres of their source. The other half mixes with water in clouds to form acid rain, and acid snow, sleet or mist. Some of this precipitation falls locally, however under the right conditions wind currents can carry the pollution great distances. It is believed that some of the acid rain in Europe originated in the United States.

Not only are bodies of water contaminated but vegetation is destroyed, soils are polluted and buildings eroded when acid precipitation falls. It should be noted that the term acid means the degree of acidity in relation to "natural" rainfall; natural rain has a range from pH 5.0 to pH 5.6 while acid rain rates from pH 4.0 to pH 4.7 (battery acid is at pH 1.0).

Accidental or deliberate discharges of waste into water can render it useless. Only 1% of the water in the Great Lakes flows out of the drainage basin, every year. Whatever is put into the lakes, stays there. Urban and agricultural runoff washes street dirt and farm fertilizers into sewers and tiles. At some beaches biomedical refuse, including used syringes, has washed ashore. Hazardous and nuclear waste was and still is deliberately thrown overboard to rest at the bottom of the oceans. Landfills that are not lined, monitored and well managed can allow rain to percolate through waste. The moisture picks up pollutants, carries them down into the soil and into groundwater. Clean, fresh water is in short supply in places across the world. Disease and death can lurk in bad water. Because water is even more essential than food, water pollution needs to be eliminated.

Fertilizers and pesticides are the product of great scientific endeavours. They help grow better crops with

Pollution (cont.)

high yields and greener lawns with fewer weeds. However, these products also create soil pollution. The composition of the dirt is altered resulting in the natural nutrient level decreasing. The land becomes more dependent on the additives that further lowers nutrients and a never ending cycle develops.

Landfills and dumps badly affect the Earth's soils. The practice of burying garbage not only pollutes soil but takes valuable land out of production and use for decades.

Pollution is a very intricate problem. One source or type of contamination can produce many others. The examples we have just discussed are only a few of many. If a cure for one pollution can be found associated problems could also be rectified, until pollution is reduced to a manageable and sustainable level.