SCIENCE

WATER POLLUTION & SOURCE OF WATER POLLUTION

Impact of water Pollution on the living organism :

Harmful Effect of Water Pollution

Water is an integral part of all living organisms. So, any contamination in water will affect all living organisms. For example,

(i) Polluted water can cause many diseases like cholera, dysentery, typhoid, gastroentritis, hepatitis (jaundice), diarrhoea, and skin diseases in human beings.

(ii) Contamination of rivers, lakes etc., with heavy metals like lead, mercury, copper, nickel etc., can harm both aquatic animals and human beings.
Washing away of the residual fertilizers into water-bodies by drain causes faster growth of weeds. These weeds consume most of the dissolved oxygen from the water of such waterbodies. The deficiency of oxygen in the water may cause death of aquatic animals. This loss of dissolved oxygen from water in water-bodies is called "eutrophication". Such weeds also block sunlight and prevent the growth of aquatic plants.

Prevention of Water Pollution

Water pollution can be prevented or reduced by following the suggestions given below :

(i) Do not throw the garbage into rivers/lakes. The rivers/lakes should be cleaned from time to time.

(ii) Trees and plants must be planted along the banks of rivers.

(iii) Toxic industrial waste should be treated chemically to remove the harmful substances present in it. Only the treated waste should be discharged into rivers/lakes.

(iv) The city sewage should be treated at the sewage treatment plant to remove all suspended impurities and organic matter before discharging it into water.

(v) Excessive use of fertilizers and pesticides should be discouraged.

(vi) The use of synthetic detergents should be minimised. If possible use biodegradable detergents.

(vii) We should not wash clothes, clean utensils and take bath near the source of water.

(viii) Put a covering on the well.

Purification of Water at Home

In villages and small towns, public water supply is not available. People in such places, get their water from wells, handpumps, springs or from rivers and lakes. Water from these sources may not be fit for drinking and cooking.

Small quantitiy of such water can be made fit for drinking and cooking as described below

(i) **By filtration :** Any suspended impurities in the water from well, river or lake can be removed by filtering water through a fine muslin cloth.

(ii) **By boiling :** The filtered water can be made germ-free by boiling for 10-15 minutes and cooling it before use.

(iii) **By treating with some chemicals :** The filtered water can also be made germ-free by adding a small quantity of any of the chemicals, such as potassium permanganate, bleaching powder or chlorine tablets.

(iv) **By exposing water to ultraviolet radiation :** The filtered water can also be made germ-free by exposing it to ultraviolet radiation. Now-a-days, many water-purifiers available in market are based on this method.

At domestic level, water can be purified by filtering it through the layers of gravel, sand and char-coal and boiling it before use.

WATER POLLUTION

For big cities, rivers or lakes are the source of water. In the last few decades, the quality of water in many rivers and lakes has deteriorated and has become unfit for human consumption. This is called water pollution.

The main reasons for the pollution of water in our rivers and lakes are :

(i) discharge of untreated domestic sewage into rivers and lakes.

(ii) discharge of toxic industrial wastes into rivers and lakes.

(iii) excessive use of fertilizers and pesticides in agriculture.

(iv) contamination of water-bodies with toxic metals such as, lead, arsenic, cadmium, mercury, nickel etc.

The presence of pollutants such as acids, alkalies, dyes etc. make the water coloured, foulsmelling, and bad in taste.