

# **Chapter Seventeen**

## **Environmental Pollution, Weathering and Diseases:**

### **Environmental Pollution:**

- Environmental pollution occurs when poisonous substances are released into the environment in harmful quantities.
- Items which cause the pollution of the environment are called pollutants.

#### **Types of pollution:**

- The types of pollution we have are:
  - (1) Air pollution.
  - (2) Water pollution.
  - (3) Land pollution.
  - (4) Noise pollution.

### **Air pollution:**

- This occurs when items such as gases, smoke or dust are released or put into the air.
- Air pollutants refer to those items, which when present in the air cause it to become polluted, and some of the air pollutants are sulphur dioxide, mercury, nitrogen dioxide and carbon monoxide.

### **Effects of air pollution:**

- Polluted air can make us sick.
- It can affect the growth of plants.
- It can affect the weather.

### **Ways of controlling air pollution:**

- Waste gases must be discharged high into the atmosphere.
- By using machines which do not pollute the air.
- Laws must be passed to stop or reduce pollution causing activities.

### **Water pollution:**

- This is caused when waste materials are discharged or put into water bodies, in large quantities.
- Water pollutants are those items which when present in a water body, cause it to become polluted. Water pollutants include the following:
  - (a) Waste from industries and our homes.
  - (b) Sewage i.e. urine and the faeces of man.
  - (c) Agric waste such as fertilizers and pesticides.
  - (d) Hot water from industries.

### **Effects of water pollution:**

- Polluted water can cause diseases.
- It can cause the death of the creatures which live in the water, such as fishes.
- Polluted water cannot be used for activities such as swimming.

### **Ways of controlling water pollution:**

- Sewage must first be treated (i.e. to remove most of the harmful items it contains), before it is dumped into water bodies.
- Waste from industries must not be dumped into water bodies.
- Hot water from industries must first be cooled, before it is dumped into water bodies.

### **Land pollution:**

- This is caused when items which do not easily decompose or rot, are left on the land.
- It is also caused when we add harmful chemicals to the soil. (e.g. pesticides and weedicides).
- Items which cause land pollution are called land pollutants.

### **Effects of land pollution:**

- Some land pollutants enter the plant, and affect its growth or kill it.
- Refuse dumps can serve as the home of germs and dangerous animals such as snakes.

### **Ways of controlling land pollution:**

- By controlling the use of agric or agro chemicals.
- By recycling waste such as metals or plastic.

### **Noise pollution:**

- This is caused by loud noise from places such as churches and factories, as well as items such as radio sets and vehicles.

### **Effects of noise pollution:**

- It causes people to feel uncomfortable.
- It can damage the ear.

### **Control of noise pollution:**

- Equipments or items such as the sound system and the radio set , must not be opened loudly.
- Industries which create a lot of noise must not be located in residential areas.

### **Weathering:**

- This refers to the breaking down of rocks into smaller particles.
- The three types of weathering we have are:

- (i) Physical weathering.
- (ii) Chemical weathering.
- (iii) Biological weathering.

### **Physical weathering:**

- This is the type of weathering which occurs as a result of changes in temperature.

- On hot days when the sun is shining, the rocks expand and they contract when the weather becomes cold.
- This expansion and contraction causes cracks within the rocks, causing them to break down into pieces.

### **Chemical weathering:**

- This is caused by rain water which is a weak form of acid, and referred to as carbonic acid.
- When rain water or carbonic acid falls on the rocks, it dissolves or destroys the cementing material which binds the rocks together, leading to their breakdown.

### **Biological weathering:**

- This is caused by the roots of plants, which grow deep into the rocks.
- They create cracks in the rocks, which finally lead to their breakdown.

### **Agents of weathering:**

- These are certain visible items or conditions, through whose activities can lead to the breakdown of rocks.
- These agents are:

- (1) Temperature changes.
- (2) Ice.
- (3) Roots of plants.
- (4) Water.

### **Temperature changes:**

- On hot days, the temperature is high and the rock expands.
- On cold days, the temperature becomes low and the rock contracts.
- This expansion and contraction leads to the creation of cracks within the rock, leading to its breakdown.

**Ice:**

- In cold countries, water enters the rock on hot days.
- On very cold days, this water within the rock freezes and expands.
- The force exerted on the rock as a result of this expansion leads to its breakdown