Chapter 20: Micro-organisms

Micro-organisms are very small organisms that can only be seen by a microscope, e.g. bacteria, fungi and viruses.

Harmful: - cause disease.
- decay food.

Useful: - good for the soil (chapter 18)
- helps make food, e.g. cheese

1. Viruses

- Very small, can't even be seen through a microscope.
- Consist of a strand of DNA surrounded by a protein.
- They live inside another living organisms.
- They use the DNA and protein of this organism to reproduce.
- Examples include, colds, flu, measles, mumps, AIDS.

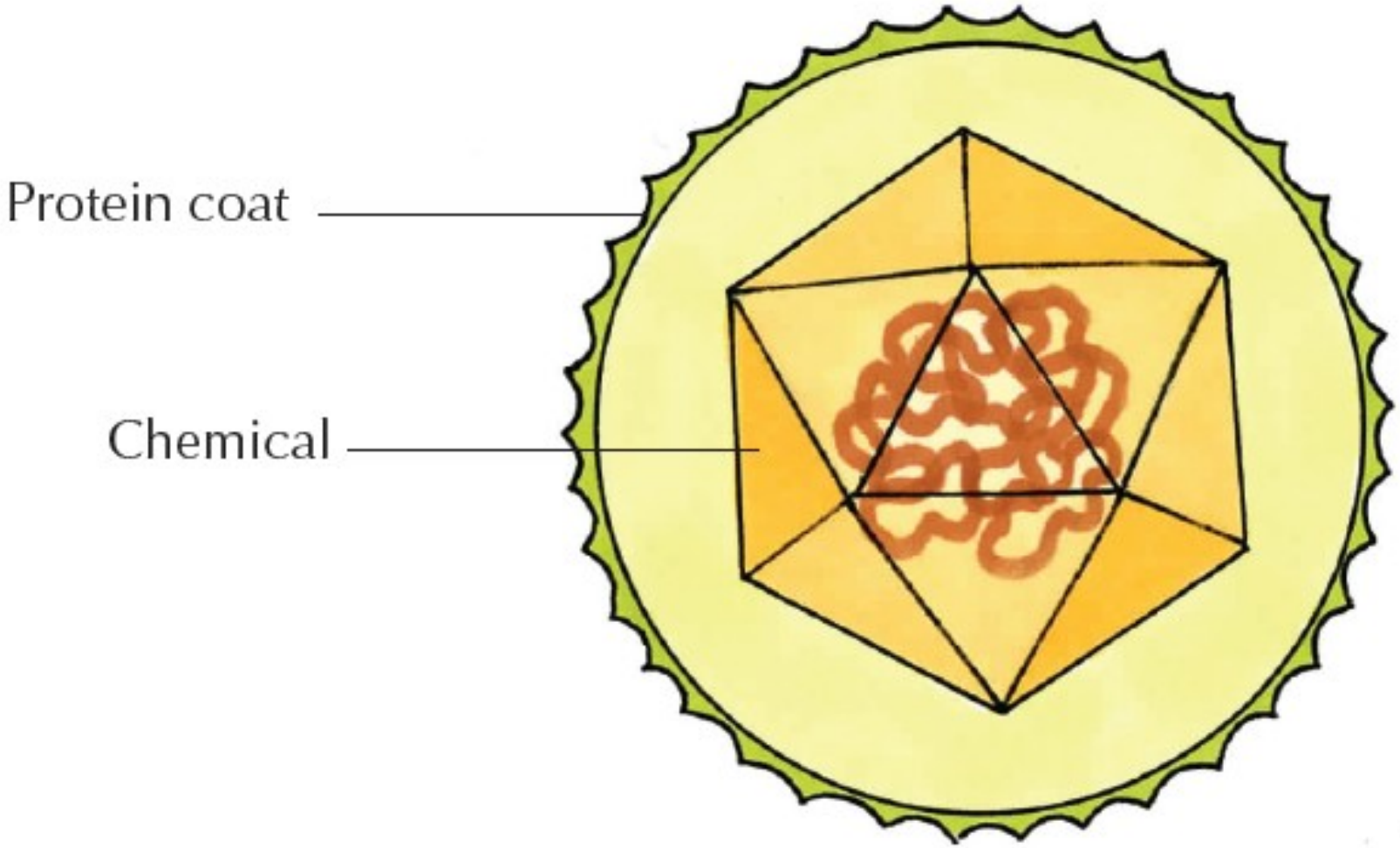

Fig. 2 A virus consists of a chemical surrounded by a protein coat.

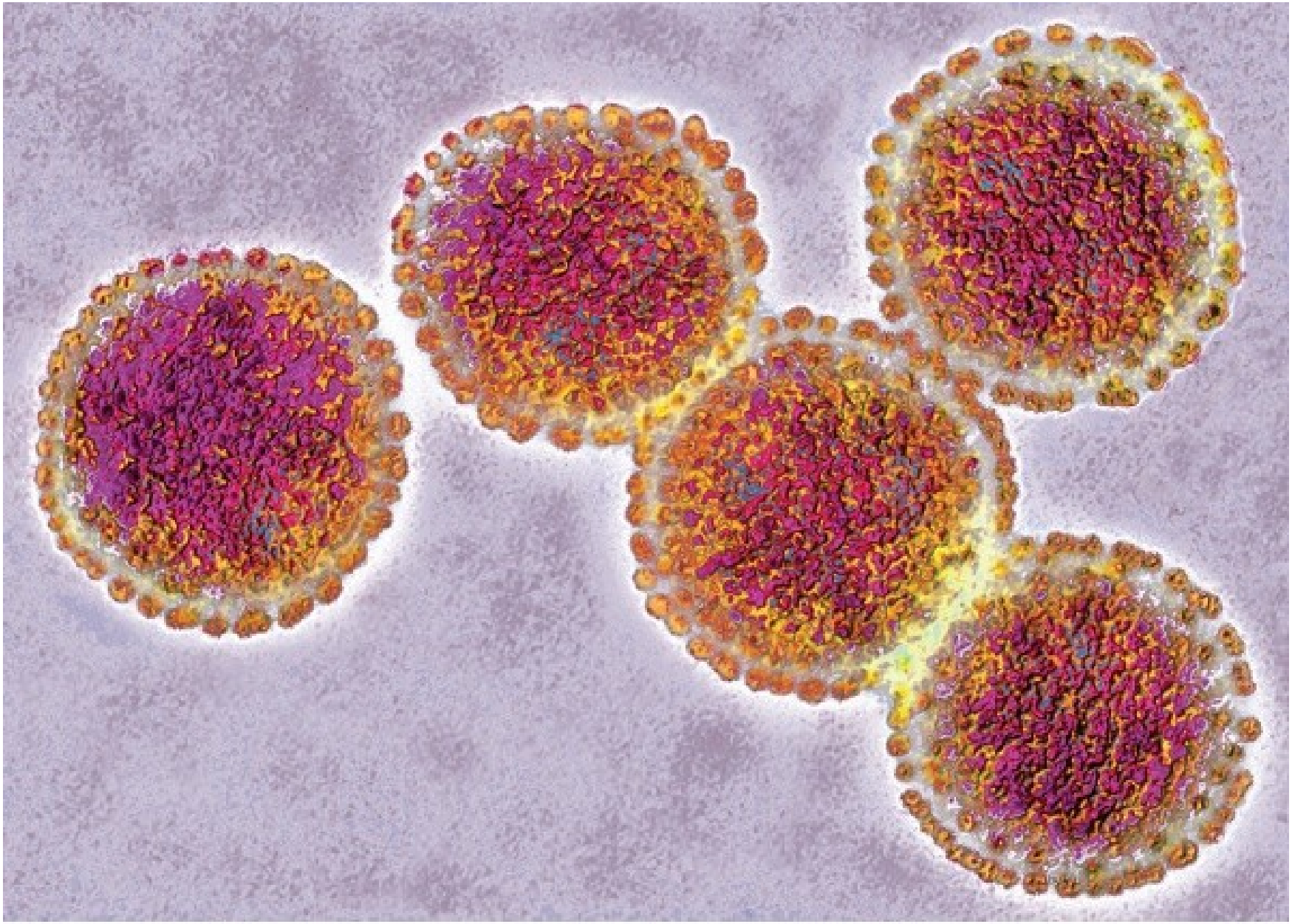

Fig. 1 Flu virus.

2. Bacteria

- Larger than viruses.
- Living cells so they move and feed.
- Live in water, soil and in/on the body.

Fig. 3 Bacteria on the head of a pin.

Benefits of Bacteria.

1. Breaks down dead animals and plants. This releases minerals back into the soil.

2. Decays waste. Bacteria breaks down sewage to make the it harmless.

3. Is used to make cheese.

4. Is put into milk to make yogurt.

5. Breaks down grass into silage.

Harmful Effects of Bacteria.

1. Disease: Some bacteria causes food poisoning, meningitis and pneumonia.

2. Food spoilage: Makes milk sour.

3. Tooth decay: Bacteria feeds on sugar on the teeth to cause cavities.

Fungi.

- Can occur as a single cell, e.g. yeast.
- Or as long fine cells e.g. bread mould
- Or as large structures e.g. mushrooms
- They live on dead things, feed and reproduce.

Benefits of Fungi.

1. Used in baking and brewing e.g. yeast

2. Used as food e.g. mushrooms

3. Used to make antibiotics e.g. penicillin

Harmful Effects of Fungi.

1. Causes food to spoil, e.g. bread mould.

2. Causes disease e.g. ring worm.

3. Can be poisonous.

Fig. 4 A close-up of bread mould.

Biotechnology.

This is using living things to produce useful product for humans.

Examples include:

- using yeast to make alcohol.
- using bacteria to make cheese.
- using the fungus Penicillium to make antibiotic penicillin.
- using bacteria to make insulin