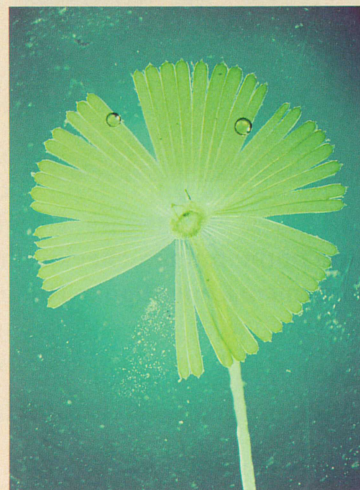


- Fungi consist of narrow thread-like structures called hyphae. These hyphae are usually white in colour and have a fluffy appearance. They have a cell membrane and, outside it, a cell wall. In some types of fungi the hyphae are divided up into small cell-like sections by cross walls called septa. However, in aseptate fungi there are no septa. Each hypha is an uninterrupted tube-like structure with many nuclei spread along it.
- Algae are organisms that feed themselves by photosynthesis and store their genes inside nuclei, but they are simpler in their structure and organization than plants. Many algae consist of one microscopic cell. There are vast numbers of these unicellular algae in the oceans and they form the basis of most marine food chains. Less common are some algae that grow to a much larger size, yet they still seem to be single cells. They are known as giant algae. *Acetabularia* is one example. It can grow to a length of as much as 100 mm, despite only having one nucleus. If a new organism with a length of 100 mm was discovered, we would certainly expect it to consist of many cells, not just one.



▲ Figure 13 Aseptate hypha



▲ Figure 14 Giant alga

Unicellular organisms

Organisms consisting of only one cell carry out all functions of life in that cell.

The functions of life are things that all organisms must do to stay alive. Some organisms consist of only one cell. This cell therefore has to carry out all the functions of life. Because of this the structure of unicellular organisms is more complex than most cells in multicellular organisms.

Unicellular organisms carry out at least seven functions of life:

- Nutrition – obtaining food, to provide energy and the materials needed for growth.
- Metabolism – chemical reactions inside the cell, including cell respiration to release energy.
- Growth – an irreversible increase in size.
- Response – the ability to react to changes in the environment.
- Excretion – getting rid of the waste products of metabolism.
- Homeostasis – keeping conditions inside the organism within tolerable limits.
- Reproduction – producing offspring either sexually or asexually.

Many unicellular organisms also have a method of movement, but some remain in a fixed position or merely drift in water or air currents.