Free-Living Protozoa

Instructions

This key will aid students in the identification of protozoa normally encountered in our cultures. Line drawings of each protozoan, along with designations of size range, are included inside this sheet. It is suggested that DETAIN 470024-682, Ward's protozoan slowing agent, be used to slow the faster-moving protozoa. A wet mount preparation should first be scanned under low power magnification to initially locate protozoa for observation and identification. In some cases, identification will be made easier if cells are examined under "high-dry" magnification (450X).

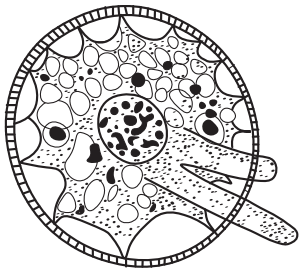
Identification of a protozoan may be made by either comparing the observed cell to the illustrations on this sheet or by using the key. The key gives the student two choices per number. Start at number 1, comparing the observed protozoan to each of the characteristics stated per number in the key. Proceed according to the key until it terminates in the name of the protozoan.

1. White or colorless 2
   Colored 8
2. Creeping (sliding) slowly or floating without apparent motion 3
   Exhibits other motion 7
3. Spherically shaped with radiating "spines" ..... *Actinosphaerium*
   Not spherical in shape 4
4. Shape remains constant 5
   Shape constantly changes 6
5. Possesses flattened test or shell without embedded or attached material; pale to brown in color ..... *Arcella*
   Possesses dome-shaped test or shell with attached particles,usually of sand ..... *Difflugia*
6. Small; creeps using pseudopodia (false feet); single disc-shaped nucleus ..... *Amoeba*
   Large; creeps using pseudopodia; many (100's) of small nuclei ..... *Pelomyxa*
7. Cell has hair-like structures (cilia) 16
   Cell's organ of locomotion is long whip-like flagella (no cilia) 9
8. Green color 9
   Color not green 23
9. Colony of many cells 11
   Single, motile cells 10
10. One observed locomotor flagella 15
    Two observed locomotor flagella 14
11. Colony flat, disc-shaped, usually containing sixteen cells ..... *Gonium*
    Colony spherical in shape 12
12. Colony contains 32 cells or less 13
    Colony contains more than 32 cells ..... *Volvox*
13. Colony contains 32 cells ..... *Eudorina*
    Colony contains sixteen cells ..... *Pandorina*
14. Cell elongated with narrowed posterior ..... *Chilomonas*
    Cell oval-shaped ..... *Chlamydomonas*

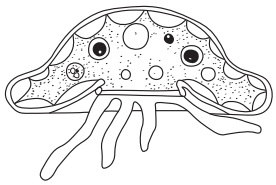
Arcella

45–100 µm in diameter

Top View

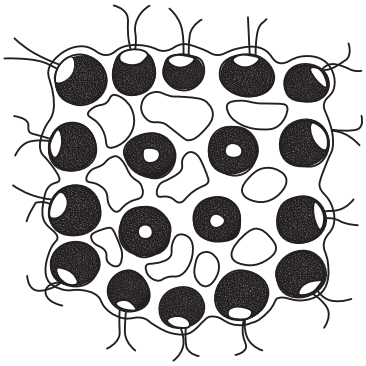


Side View



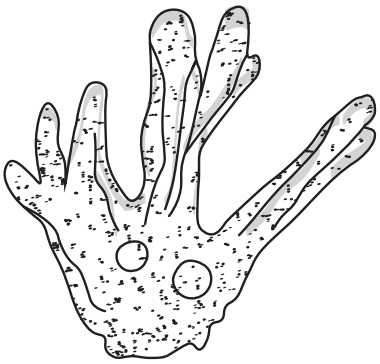
Gonium

Colony up to 90 µm in diameter



Pelomyxa

1–5 mm, monopodal length

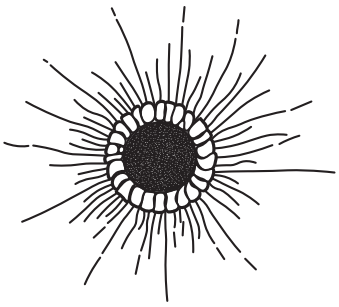


Spirostomum

1–3 mm in length

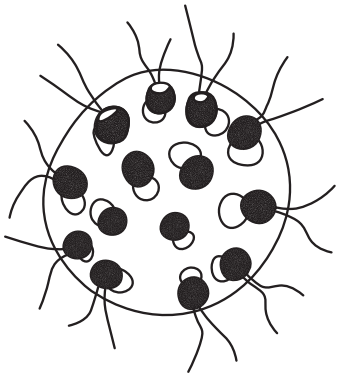
Actinosphaerium

70–80 µm in diameter



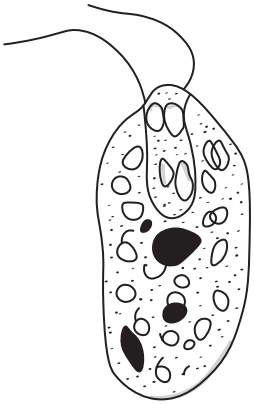
Eudorina

10–24 µm in diameter



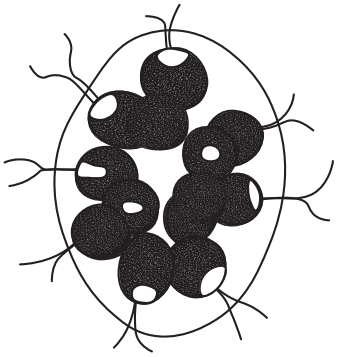
Chilomonas sp.

20–40 µm



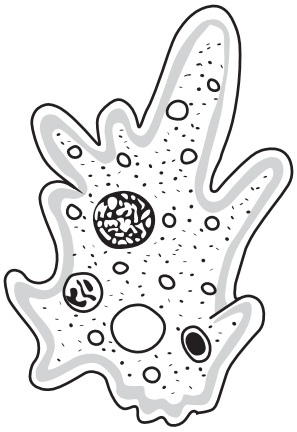
Pandorina

Colony from 20–250 µm in diameter



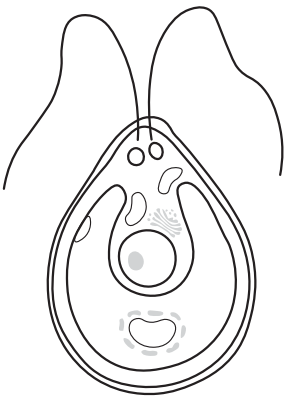
Amoeba proteus

up to 600 µm or more, elongated



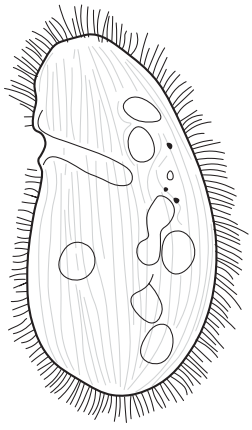
Chlamydomonas

5–12 µm in length



Colpidium sp.

50–70 µm inlength



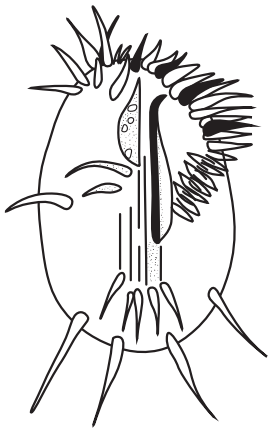
Difflugia

60–580 µm by 40–240 µm

Note: *Illustrations are not to scale.*

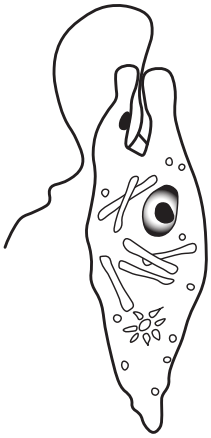
Euplotes sp.

100–200 µm in length



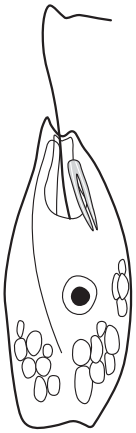
Euglena

35–55 µm in length



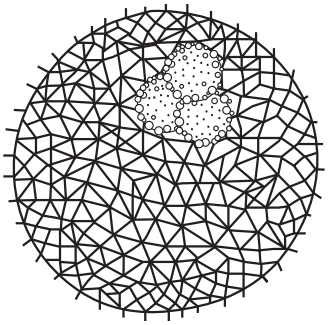
Peranema sp.

20–70 µm in length



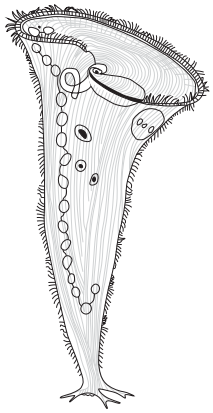
Volvox

colony from 350–500 µm in diameter



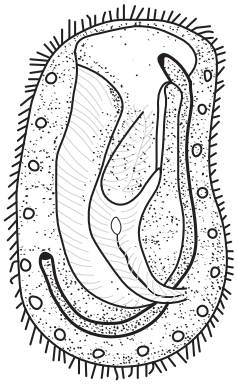
Stentor coeruleus

1–2 mm, extended



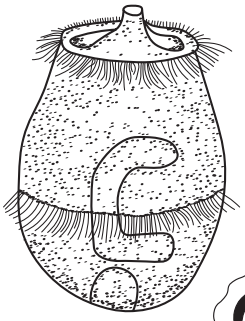
Bursaria truncatella

500–1,000 µm in length



Didinium

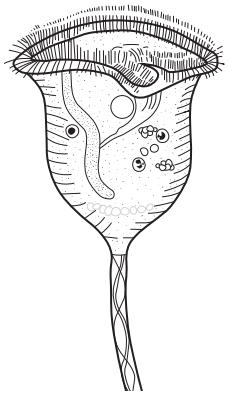
80–200 µm in length



Didinium Cyst

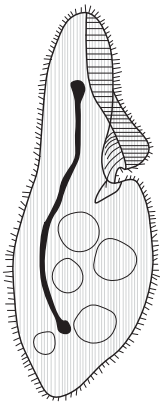
Vorticella

5–15 µm in length



Blepharisma sp.

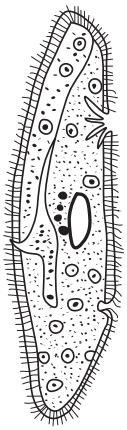
400–600 µm in length



Paramecium Species

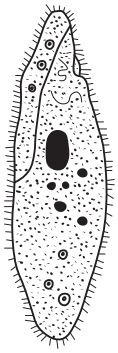
Paramecium multimicronucleatum

200–300 µm in length



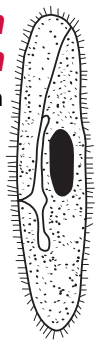
Paramecium aurelia

120–180 µm in length



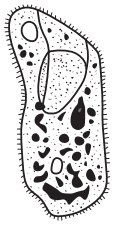
Paramecium caudatum

180–300 µm in length



Paramecium bursaria

70–110 µm in length



Note: *Illustrations are not to scale.*

15. Cell elongated, green in color ..... *Euglena*
    Cell elongated, colorless, with a broad, rounded or truncate posterior during locomotion; highly plastic when stationary, often appears to vibrate when in motion ..... *Peranema*

16. Body has specialized groups of cilia, or cilia in specific areas 17
    Body entirely covered with cilia 19

17. Cell not on stalk 18
    Cell on stalk; cells contract (stalk appears to contract like a spring) ..... *Vorticella*

18. Cell oval-shaped with distinct point-like projections termed cirri (fused cilia); travels by "walking" using cirri ..... *Euplotes*
    Cell oval-shaped with two distinct ciliary bands, one anterior and one in the middle of the body; swims with spiral motion ..... *Didinium*

19. Body trumpet-shaped or elongated 20
    Body oval-shaped 22

20. Body elongated; never attached to substrate 21
    Body trumpet-shaped; usually attached to substrate ..... *Stentor*

21. Large cell with elongated, flattened body with blunt ends; contracts to 1/4 of its body length when stimulated ..... *Spirostomum*
    Small cell with elongated body, "cigar-shaped," with rounded ends; swims rapidly in a corkscrew fashion ..... *Paramecium**

22. Small body, oval shaped, with small mouth; fast swimmer ..... *Colpidium*
    Extremely large body (visible with the naked eye), with large, wide mouth ..... *Bursaria truncatella*

23. Pink or rose-colored (ciliate) ..... *Blepharisma*
    Dark bluish-green (ciliate) ..... *Stentor*

*many species, see diagram

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