

## ARTHROPODS AS VECTORS

Arthropods are joint-legged animals and include the *Arachnida*, which have eight legs (spiders, mites, ticks); *Crustacea* (crabs, crayfish); and *Insecta*, which have six legs (bees, flies). Ticks and mites (*Arachnida*) and lice, fleas, and mosquitoes (*Insecta*) are particularly important in medicine as **vectors** of disease; that is, they carry and transmit disease-causing microorganisms.

## SELF-TESTS

In the matching section, there is only one answer to each question; however, the lettered options (a, b, c, etc.) may be used more than once or not at all.

### I. Matching

- |  |                    |
|--|--------------------|
| ___ 1. The sac produced at the end of an aerial hypha called a sporangiophore.   | a. Arthroconidia   |
| ___ 2. Formed by the fragmentation of a hypha.   | b. Blastoconidia   |
| ___ 3. Buds.   | c. Conidiophores   |
| ___ 4. Produced in a chain; not enclosed; asexual.   | d. Conidiospores   |
| ___ 5. Formed on a base pedestal called a basidium.  | e. Chlamydospores  |
| ___ 6. A sexual spore resulting from the fusion of nuclei of two cells, morphologically either similar or dissimilar; produced in a sac. | f. Sporangiospores |
| ___ 7. A result of fusion of the nuclei of two cells morphologically similar to each other.  | g. Sporangium      |
| ___ 8. Fungi that produce both sexual and asexual spores.  | h. Basidiospores   |
|  | i. Zygosporangia   |
|  | j. Ascospores      |
|  | k. Teleomorphs     |
|  | l. Anamorphs       |

**II. Matching**

- |                       |              |
|-----------------------|--------------|
| ___ 1. Tapeworm.      | a. Trematode |
| ___ 2. Roundworm.     | b. Nematode  |
| ___ 3. Scolex.        | c. Cestode   |
| ___ 4. Proglottids.   |              |
| ___ 5. Hydatid cysts. |              |
| ___ 6. Fluke.         |              |

**III. Matching**

- |  |                      |
|--|----------------------|
| ___ 1. A resistant form of a protozoan.  | a. Dioecious         |
| ___ 2. Organelles of movement by amoebas.  | b. Cuticle           |
| ___ 3. An organism (e.g., a mosquito) that transmits a disease-causing organism. | c. Hermaphroditic    |
| ___ 4. A term describing helminths with both male and female individuals.        | d. Pellicle          |
| ___ 5. An outer covering on some helminths.                                      | e. Vector            |
| ___ 6. An outer covering on some protozoa.                                       | f. Pseudopods        |
| ___ 7. Male and female helminths distinctly different in appearance.             | g. Ergot             |
|  | h. Sclerotia         |
|  | i. Cyst              |
|  | j. Schizogony        |
|  | k. Sexual dimorphism |

**IV. Matching**

- |   |                |
|---|----------------|
| ___ 1. Nonmotile in their mature forms. | a. Ciliophora  |
| ___ 2. <i>Toxoplasma gondii</i> .       | b. Archaezoa   |
| ___ 3. <i>Balantidium coli</i> .        | c. Amoebozoa   |
| ___ 4. The cause of malaria.            | d. Apicomplexa |
| ___ 5. <i>Entamoeba histolytica</i> .   |                |

**V. Matching**

- |   |                                       |
|---|---------------------------------------|
| ___ 1. Walls of pectin or silica fit together much like the two halves of a Petri dish. | a. Dinoflagellates                    |
| ___ 2. May be 50 meters in length; algin is extracted from them.                        | b. Cellular slime molds               |
| ___ 3. Agar is a product of this type of organism.                                      | c. Kelp                               |
| ___ 4. Crustose, foliose, fruticose.  | d. Red algae                          |
| ___ 5. Cyclic AMP is involved in aggregation of individual cells.                       | e. Plasmodial (acellular) slime molds |
| ___ 6. Composed of a mass called a plasmodium.  | f. Diatoms                            |
| ___ 7. Some species are responsible for red tides in the ocean.                         | g. Euglenoids                         |
| ___ 8. A flagellated alga sometimes classified as a form of protozoan.                  | h. Lichens                            |

**VI. Matching**

- |  |                |
|--|----------------|
| ___ 1. The vegetative, feeding form of protozoa.   | a. Merozoites  |
| ___ 2. Haploid sex cells that fuse to form a zygote.   | b. Gametocytes |
| ___ 3. In the malarial life cycle, the red blood cell eventually ruptures and releases these.        | c. Sporozoites |
| ___ 4. In the malarial life cycle, these are transmitted from the mosquito to the human host.        | d. Cercaria    |
| ___ 5. The larval form, in schistosomiasis, that burrows through the skin, transmitting the disease. | e. Trophozoite |

**VII. Matching**

- |                           |                  |
|---------------------------|------------------|
| ___ 1. Mushrooms.         | a. Basidiomycota |
| ___ 2. Conjugation fungi. | b. Zygomycota    |
| ___ 3. Club fungi.        | c. Ascomycota    |
| ___ 4. Sac fungi.         |                  |

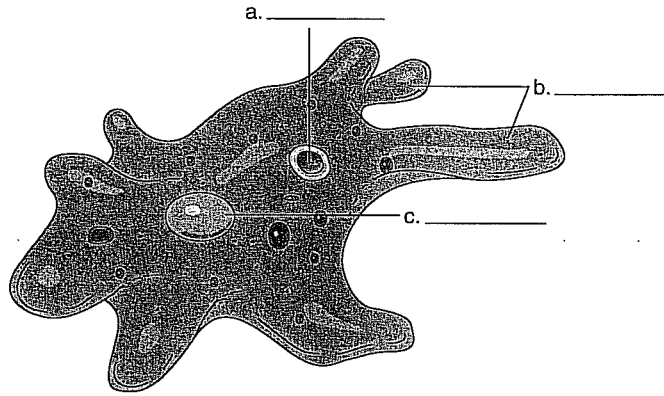
**VIII. Matching**

- |   |               |
|---|---------------|
| ___ 1. The body of a multicellular alga.  | a. Cytostome  |
| ___ 2. Hyphae with no septa.              | b. Mycelium   |
| ___ 3. Site of digestion in protozoa.     | c. Coenocytic |
| ___ 4. Food enters protozoa through this. | d. Vacuoles   |
| ___ 5. Mass of fungal hyphae.             | e. Thallus    |

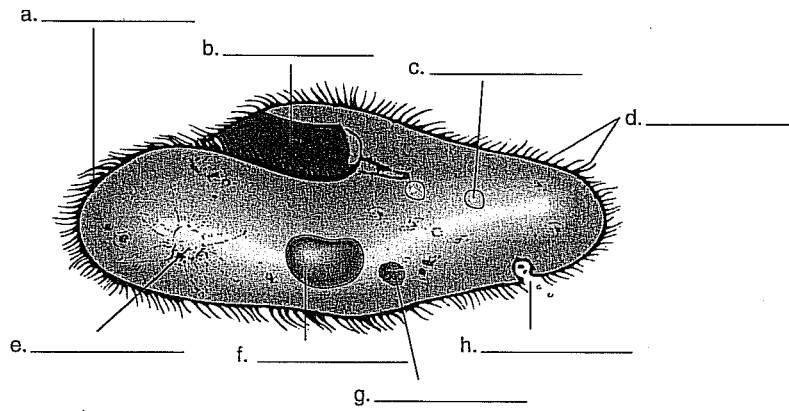
**Fill in the Blanks**

- A fungal infection is called a \_\_\_\_\_.
- \_\_\_\_\_ are fungi that infect the epidermis, hair, and nails.
- Fungi that are sometimes yeastlike and other times filamentous are called \_\_\_\_\_.
- The common name for candidiasis of the mouth and throat is \_\_\_\_\_.
- Insects have \_\_\_\_\_ legs.
- Mites have \_\_\_\_\_ legs.
- In helminths the adult, sexually mature stage is found in the \_\_\_\_\_ host.
- In helminths the larval or developmental stages are found in the \_\_\_\_\_ host.
- An animal with both male and female reproductive organs is called \_\_\_\_\_.
- Fungal infections just beneath the skin, usually resulting from a puncture wound, are called \_\_\_\_\_ mycoses.
- A form of sexual reproduction called \_\_\_\_\_ is found in some ciliated protozoa and involves two cells fusing together and exchanging haploid nuclei.
- One form of division by protozoa involves repeated fission of nuclei prior to cell division. This is called \_\_\_\_\_.
- The stemlike structures of a multicellular alga are called \_\_\_\_\_.
- A lichen represents a \_\_\_\_\_ type of association between an alga and a fungus.
- The structures that buoy an alga in water are called \_\_\_\_\_.

**Label the Art**



1. *Amoeba proteus*



2. *Paramecium*

**Critical Thinking**

1. Why has it been difficult to determine the taxonomic position of *Pneumocystis jiroveci*? Where does current research suggest it should be classified? Why?

2. List and discuss at least three ways in which algae are economically important.