

### FIGURE 2.1

Freshwater pond microorganism, *Peranema*, apparently the same as that in Figure 1.2e. The long flagellum at the front flicks back and forth and around to pull the organism forward. Image courtesy of Niles Biologicals, <http://www.nilesbio.com/prod149.html>. (This organism can be purchased!)



**FIGURE 2.2**

Diagram of biological structures observed at the interface between water and air. Besides a locale for interesting and unique biological organisms, this boundary-layer environment presents obvious physical parameters the physicist normally does not encounter: surface tension, simultaneous high (water) and low (air) dielectric constants, gravity with and without buoyant force—a bonanza for both biologist and physicist. The text discusses two contrasting approaches to the study of such systems (drawing follows Valkanov<sup>2</sup>).

