

THE RIDDLE OF THE UNIVERSE

III. Other organisms which float in water—for instance, many of the radiolaria, siphonophora, ktenophora, and others—ascend and descend by altering their *specific gravity*, sometimes by osmosis, sometimes by the separation or squeezing-out of air.

IV. Many plants, especially the sensitive plants (mimosa) and other papilionacea, effect movements of their leaves or other organs by *change of pressure*—that is, they alter the strain of the protoplasm; and, consequently, its pressure on the enclosing elastic walls of the cells.

V. The most important of all organic movements are the *phenomena of contraction*—*i.e.*, changes of form at the surface of the organism, which are dependent on a twofold displacement of their elements; they always involve two different conditions or phases of motion—contraction and expansion. Four different forms of this plasmatic contraction may be enumerated:

- (a) Amoeboid movement (in rhizopods, blood-cells, pigment-cells, etc.).
- (b) A similar flow of protoplasm within enclosed cells.
- (c) Vibratory motion (ciliary movements) in infusoria, spermatozoa, ciliated epithelial cells.
- (d) Muscular movement (in most animals).

The elementary psychic activity that arises from the combination of sensation and movement is called *reflex* (in the widest sense), reflective function, or *reflex action*. The movement—no matter what kind it is—seems in this case to be the immediate result of the *stimulus* which evoked the sensation; it has, on that account, been called stimulated motion in its simplest form (in the protists). All living protoplasm has this feature of irritability. Any physical or chemical change in