compound
membranes
(*Vorticella*), and cirri (*Eupl*

[IV] Pellicular Contractile Structu

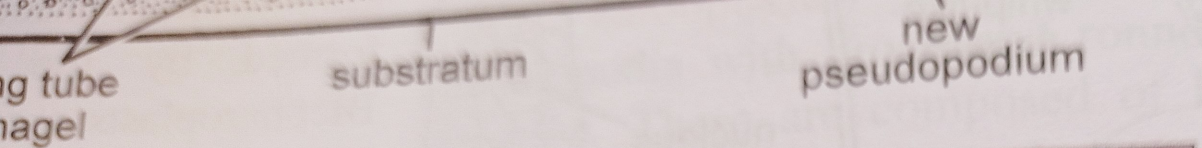
In many Protozoa are found contractile structures, in pellicle or ectoplasm, called **myonemes**. These may be in the form of ridges and grooves (*e.g.*, *Euglena*), or contractile myofibrils (*e.g.*, larger ciliates), or microtubules (*e.g.*, *Trypanosoma*).

Methods of Locomotion

Basically there are four known methods by which Protozoa move : (i) Amoeboid movement, (ii) Flagellar movement, (iii) Ciliary movement, and (iv) Metabolic movement. Speed of locomotion varies from 0.2μ to 3μ per second in amoeboid forms, I5μ to 300μ in flagellates, and 400μ to 2000μ in ciliates.

[I] Amoeboid Movement

It is characteristic of all Sarcodina and certain Mastigophora and Sporozoa. It consists in the formation of pseudopodia by the streaming flow of cytoplasm in the direction of movement. Locomotion by pseudopodia is possible only over a surface. We still do not know precisely about the mechanism involved in the formation of pseudopodia, but the most convincing theory at present is that it depends upon active contraction of the ectoplasmic tube (plasmagel) at the posterior end of the body. This leads the endoplasm



owing amoeboid movement according to sol-gel theory of Mast.

riously forming
as undulating
membranelle

ructures

ctile structures,
myonemes.
s and grooves
myofibrils

(plasmasol) to flow forward into the expanding pseudopodium. This process involves continuous solation at the posterior end and gelation at the anterior end (Fig. 6). This is called **sol-gel** or **change of viscosity theory** by **Mast** and **Pantin** (1925). It was further developed by **Goldacre** and **Lorch** (1950) and by **Allan** and **Rosalansky** (1958). Other aspects and theories of amoeboid locomotion have been discussed at length in the chapter on *Amoeba*.

Fig.