living emulsion. Finally a number flow together to form a relatively large amœboid mass or plasmodium. A somewhat similar life-history is known in many cases, and the point is that we have here a "cell-cycle" in the life-history of an individual, *i.e.* a passage from phase to phase—amœboid, encysted, flagellate, amœboid . . . and so on. These phases are regarded as primitive reactions of the protoplasm in relation to the variations in the environment (food and other forms of energy).

(2) Among the unicellular animals, or Protozoa, there are three chief types:—the amœboid Rhizopods, the encysted Sporozoa or Gregarines, and the ciliated or flagellate Infusorians. It may be said that each of these accents one chapter in the life-cycle of the simple *Protomyxa*, and there are many cases in which, although one phase is dominant, another may occur temporarily. Thus a young Sporozoon may be amœboid, or an Amœba may become encysted in unpropitious environment.

(3) But this general classification of the Protozoa into three main sets, which becomes more intelligible in the light of Protomyxa's cell-cycle, is also harmonious with that of the cells in the higher animals. Thus the Rhizopods, with their changeful outflowing processes of living matter, are comparable to the white blood corpuscles, to phagocytes, to many young ova, and to other *amœboid* cells of Metazoa. The parasitic Gregarines or Sporozoa, which have a rind and no motile processes, may be compared to degenerate muscle-cells, to mature ova, or to other passive *encysted* cells in Metazoa. And the Infusorians, with their lashes, may be compared to the cells of *ciliated* epithelium, or to the active spermatozoa of most Metazoa. And further evidence of the cell-cycle is readily procurable, as when a ciliated cell in the trachea sinks down into amœboid form, or when an amœboid young ovum becomes encysted in becoming mature

(4) The suggestion—for it has remained little more—acquires further significance when the author points out that the three chapters plainly represent the three main functional possibilities: (*a*) the amœboid units, neither very active nor very passive, form a median compro-