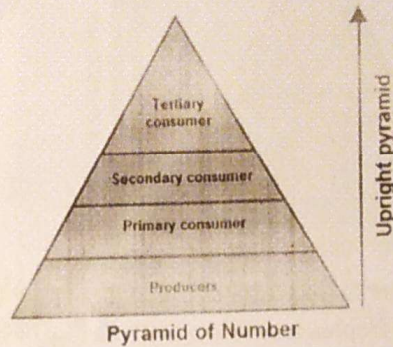


The pyramid of numbers depicts the relationship in terms of the number of producers, herbivores and the carnivores at their successive trophic levels. There is a decrease in the number of individuals from the lower to the higher trophic levels. The number pyramid varies from ecosystem to ecosystem. There are three of pyramid of numbers: Upright pyramid of number Partly upright pyramid of number and Inverted pyramid of number.

### Upright Pyramid of Number

This type of pyramid number is found in the aquatic and grassland ecosystem, in these ecosystems there are numerous small autotrophs which support lesser herbivores which in turn support smaller number of carnivores and hence this pyramid is upright.



### 2. Pyramid of Biomass:

In order to explain the inverted nature of pyramid of numbers, ecologists proposed the idea of pyramid of biomass where the weight of primary producers forms the base. As the term suggests, a pyramid of biomass takes into account, for a given unit area, the biomass of the producers, the biomass of the herbivores, the biomass of the first-level carnivores, and so on.

In (Fig. 5.4 (a)), two types of ecosystems are shown where the pyramid of biomass is upright. The biomass of a single tree is naturally very high than the biomass of a number of birds feeding upon the tree. Similarly, the biomass of even a very large number of bird parasites is lesser than that of the birds. Therefore, in upright pyramid the biomass decreases with successive trophic levels.

The pyramid of biomass becomes upright in a case where it was inverted if the numbers were considered. However, in some instances the inverted pyramids of biomass are also met with. In a pond or lake ecosystem, (Fig. 5.4 (b)) the biomass of diatoms and other phytoplankton is quite negligible as compared with that of the crustaceans and small herbivorous fish that feed on these producers. The biomass of large carnivorous fish living on small fishes is still greater. In fact, this is the condition in most aquatic ecosystems, including the sea.

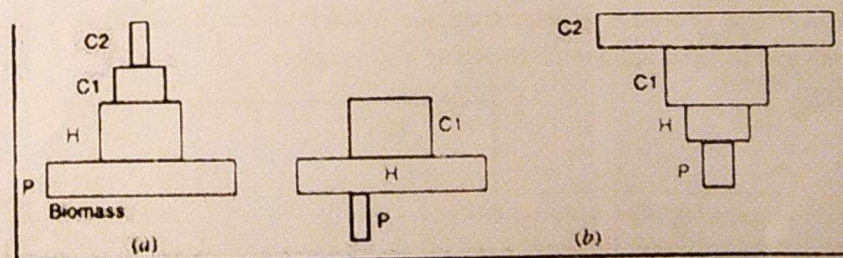


Fig. 5.4 (a) An upright pyramid of biomass, the biomass decreasing with successive trophic levels  
 (b) The inverted pyramid of biomass as in the sea is due to low biomass of primary producers  
 P producer, H herbivore (primary consumer), C1 and C2, small carnivore and large carnivore respectively

### 3. Pyramid of Energy:

A pyramid of energy shows the flow of energy from one trophic level of a community to the next. The shape of pyramid of energy is always upright or triangular because in this the time factor is always taken into account.