

II. Interactions between species

A. Classes of 2-species interactions

B. Effects of predation on population growth

1. Huffaker's mites

2. Moose and wolves on Isle Royale

C. Effects of competition between species

1. What is competition

2. Gause's paramecium

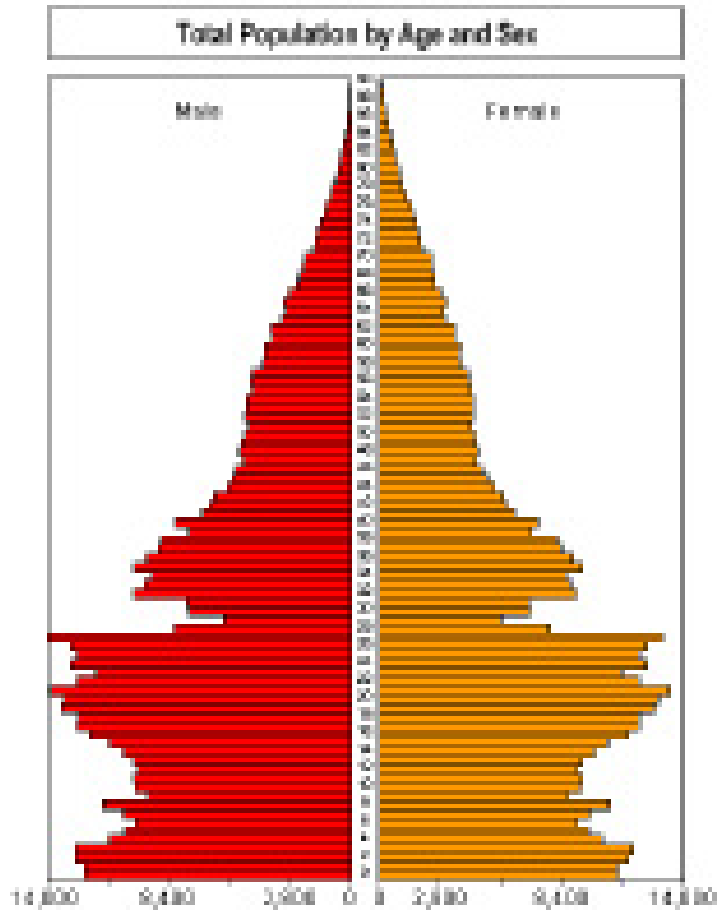
3. The niche concept

- a. fundamental niche

- b. realized niche

4. Connel's barnacles

Population age-structure in China



1970 “Later-longer-fewer”

1979 “One child Policy”

Birth rate 1949 = 6 per female

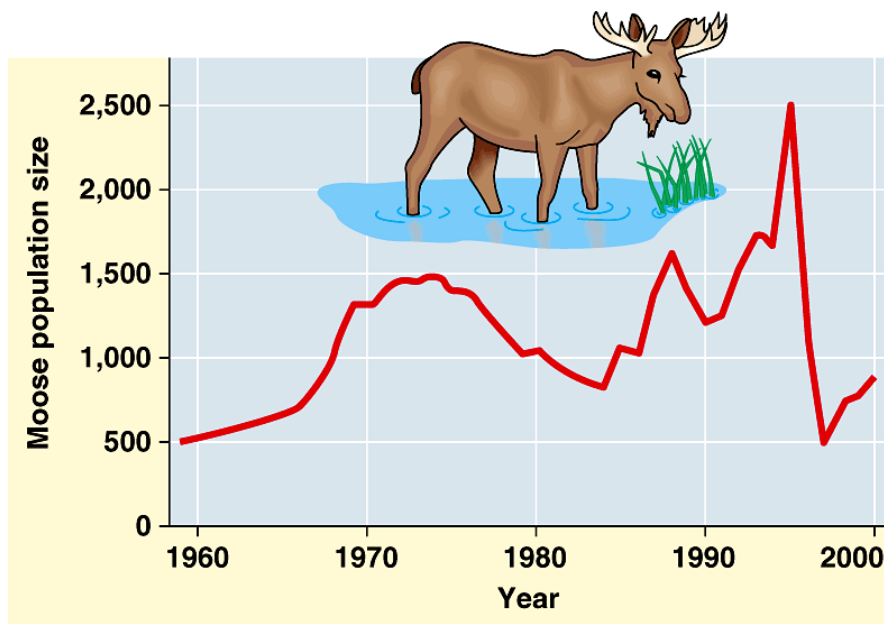
Birth rate 1990 = 1.8 per female

Life expectancy 1949 = 35 yr

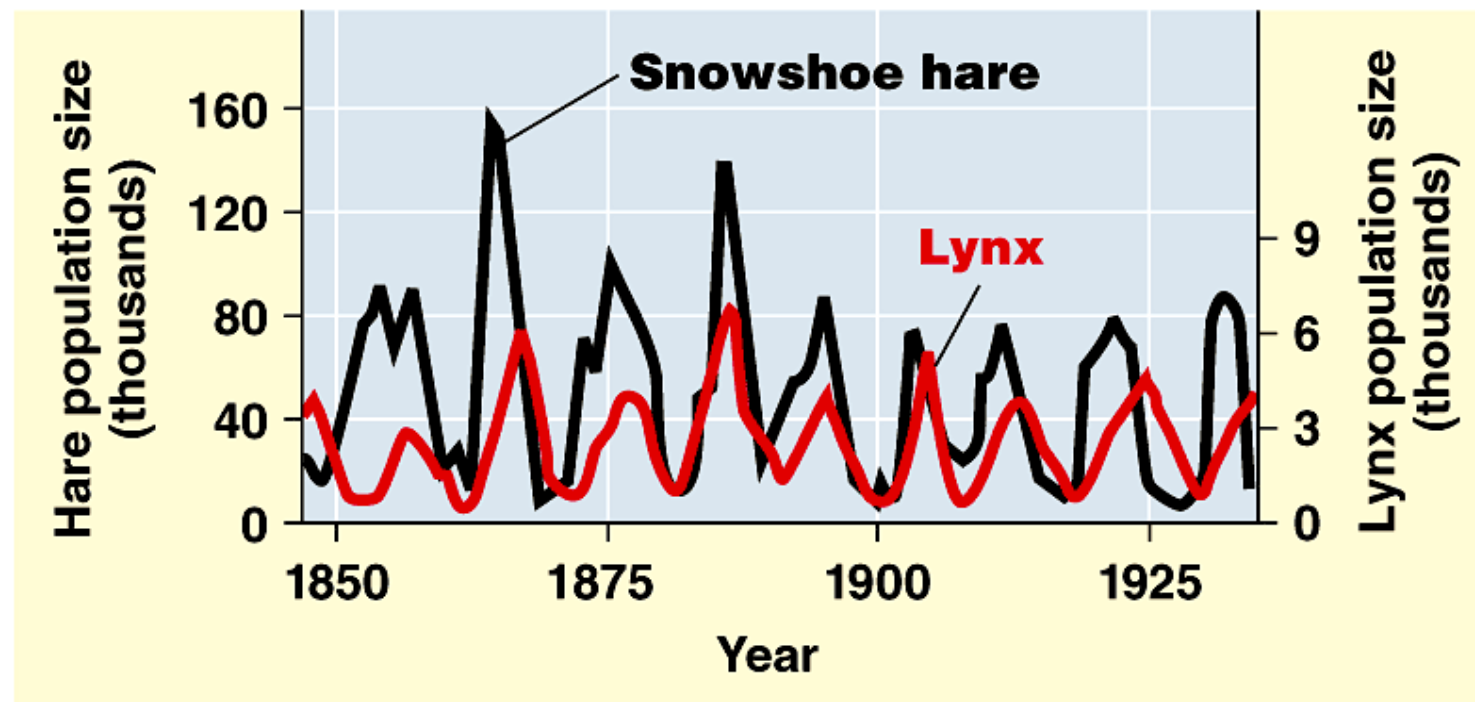
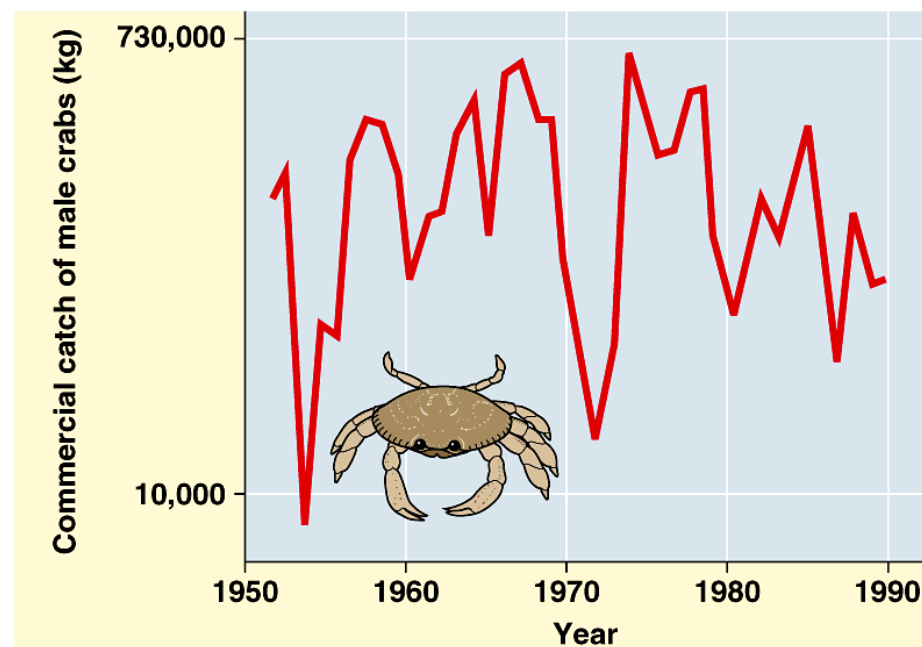
Life expectancy 1990 = 71.3

Current growth rate = 0.9% per yr

in reproductive age classes
expected to peak in 2010



Copyright © Pearson Education, Inc., publishing as Benjamin Cummings.



Copyright © Pearson Education, Inc., publishing as Benjamin Cummings.

Predation and parasitism



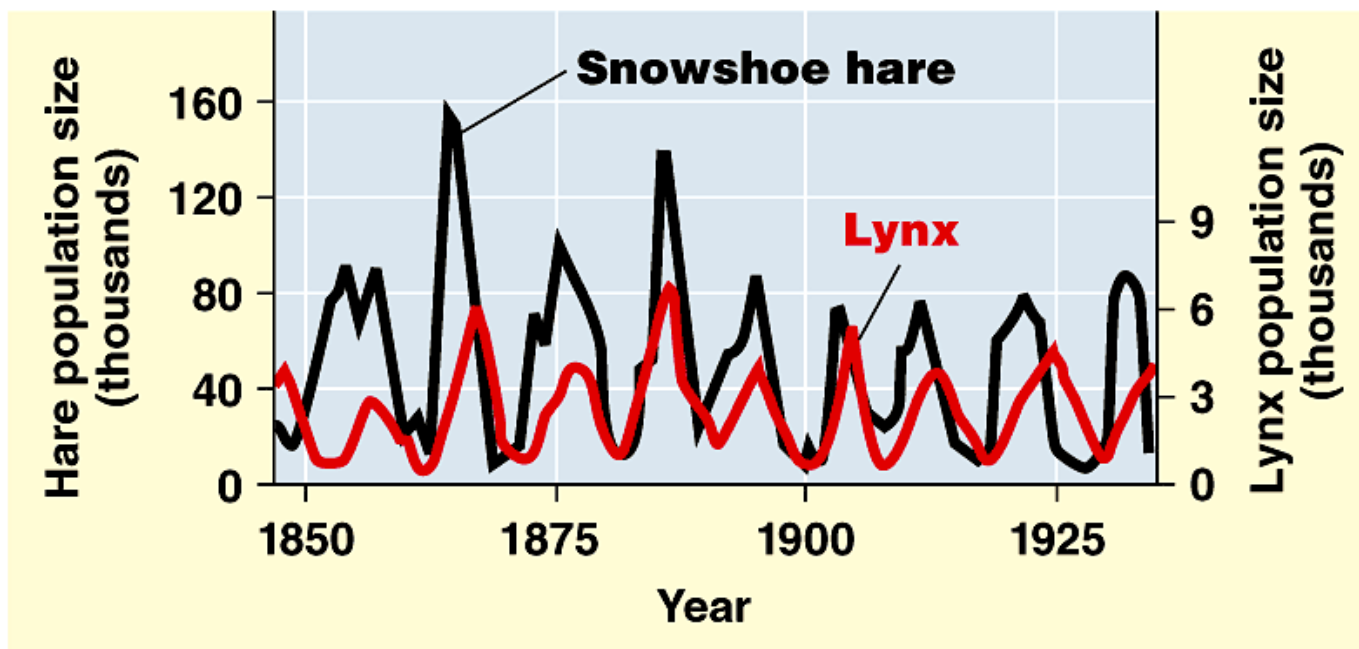
Competition



Mutualism



Fig 52.19

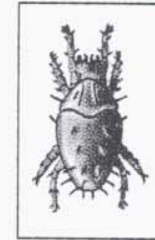
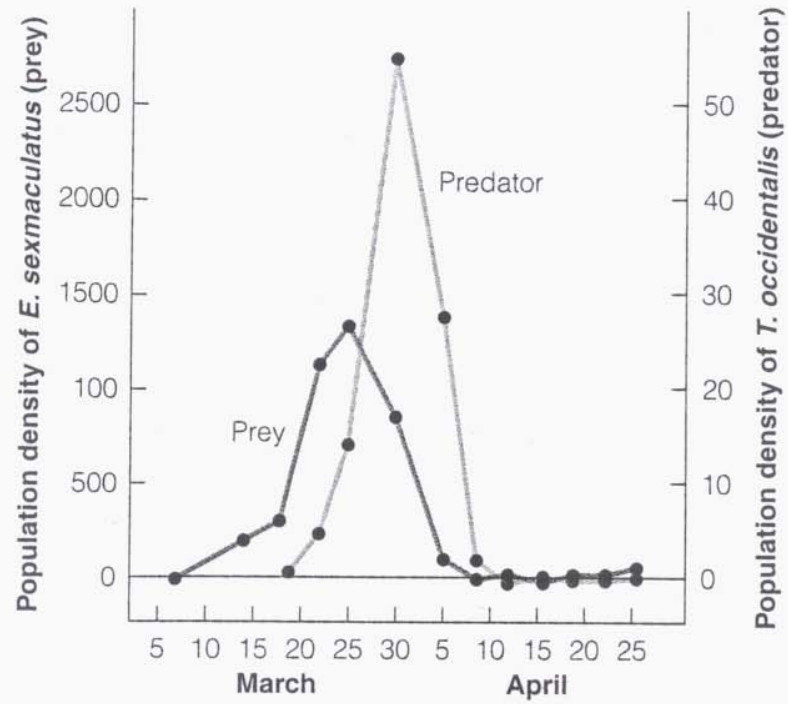




CB Huffaker's experiments with predator and prey mites on oranges



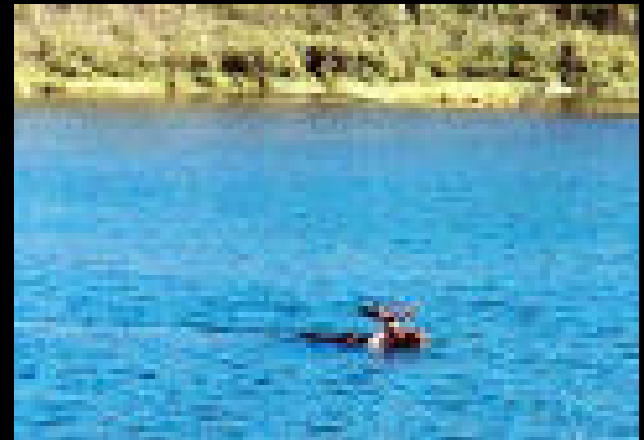
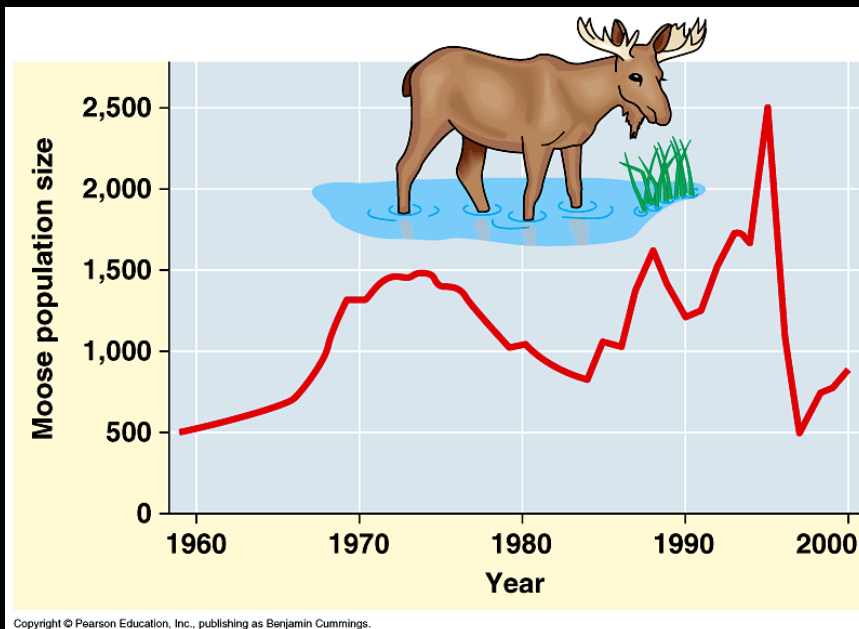
Eotetranychus

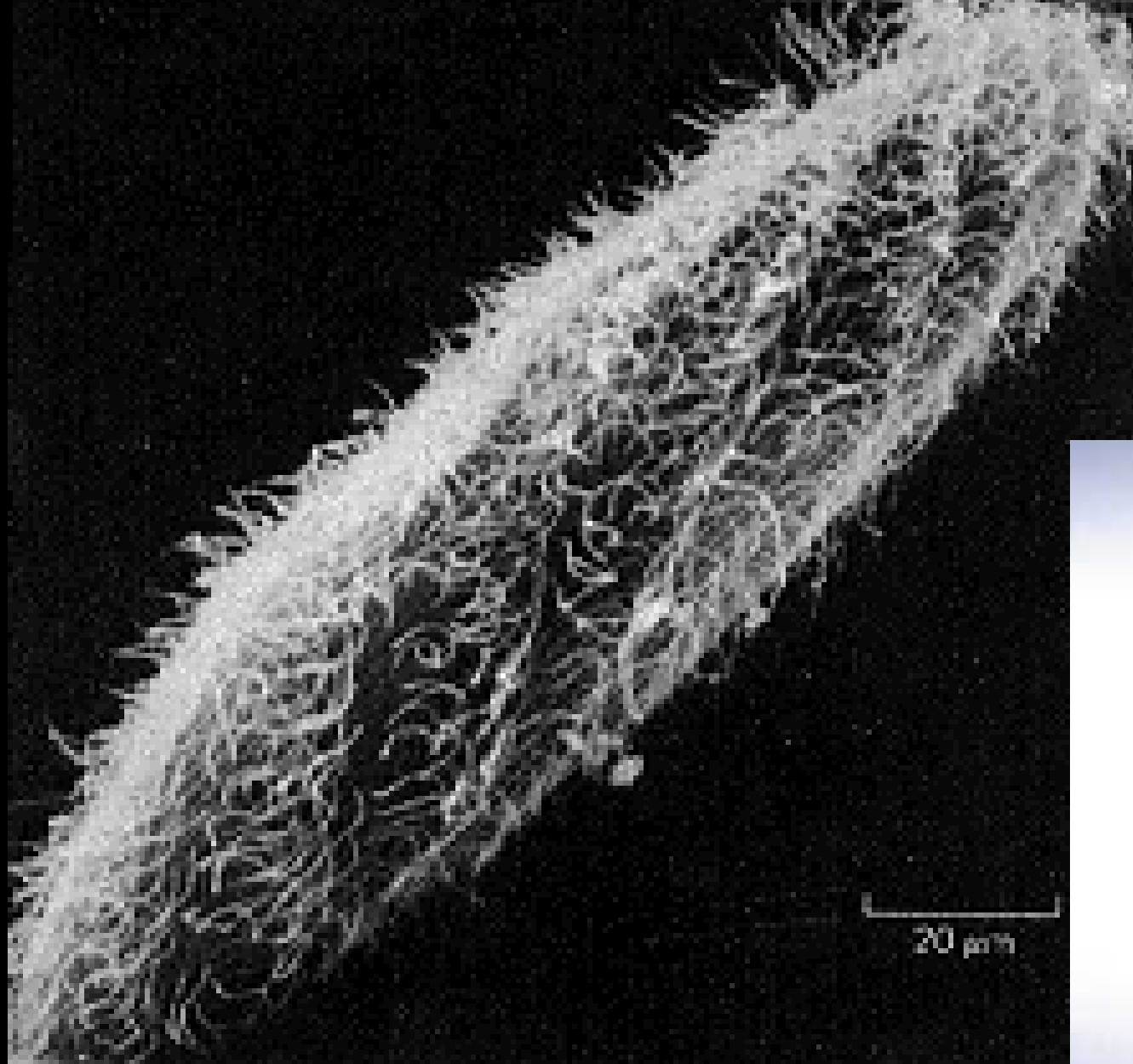


Typhlodromus

FIGURE 13.8

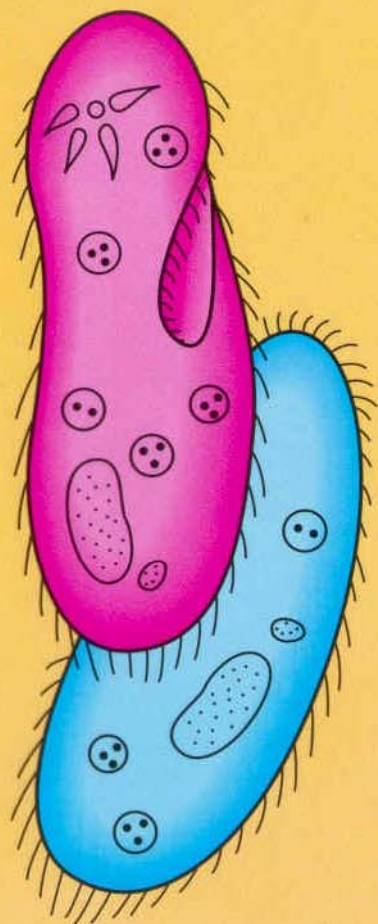
Moose and wolves on Isle Royale, MI







Paramecium





 *P. aurelia*
 *P. caudatum*

Relative population density

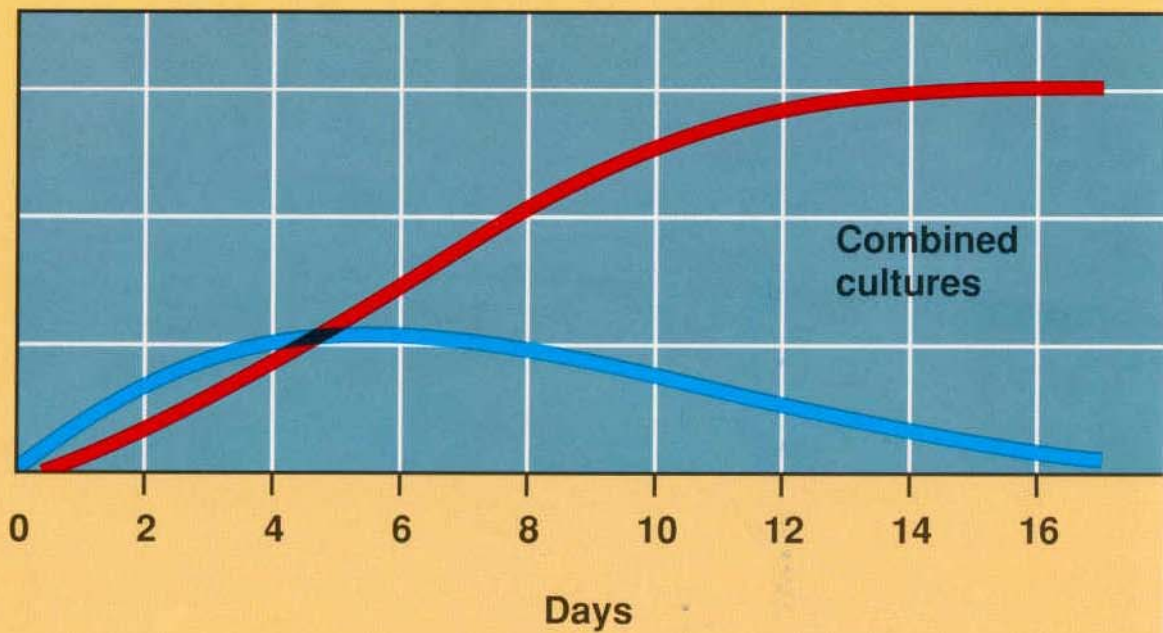
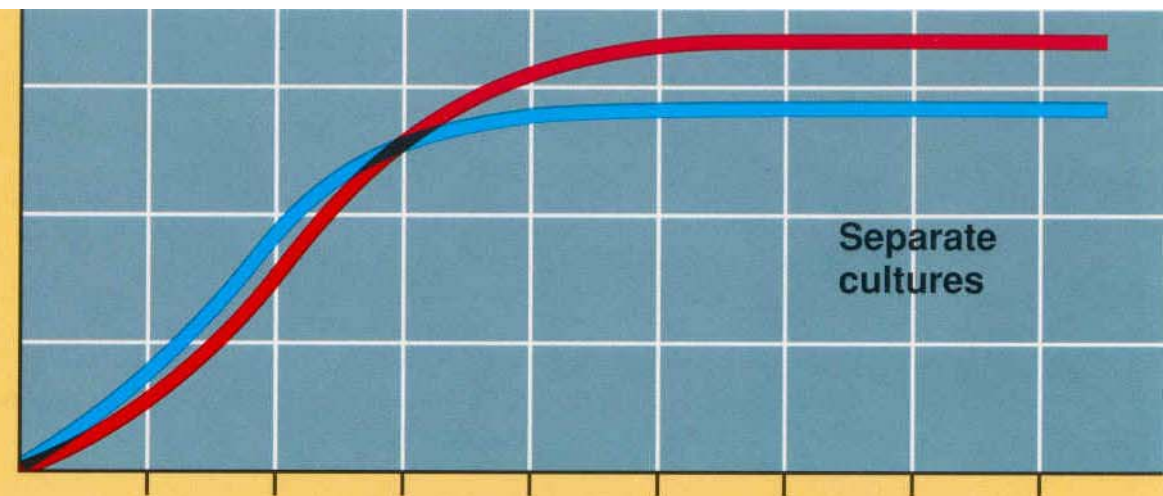




Fig 53.2

