

## Ornamental Fish Farming



**FIG 5.13.** *About 4 to 6 days after inoculation, depending on temperature, a jelly-like film should form.*



**FIG 5.14.** *A few days later, paramecium (or other protozoa) form dense concentrations at the edges of the 'jelly'.*



**FIG 5.15.** *Days later the jelly texture has mostly disappeared and very dense white concentrations of infusoria have formed. This is the optimal stage for harvesting it, as described under 'Harvesting/feeding/maintenance'.*

- (i) Growth continues over a week or ten days (depending on temperature) until the water eventually starts to clear. It will then be noticed that the paramecium begins to disperse downwards into the column (main body of water) from its original surface concentration. (See FIG 5.16.) As the culture water clears, clouds or curtains of 'granular' appearing paramecium become visible to the naked eye.
- (j) Clearing water and dispersing paramecium indicate that the bacteria and other nutrients upon which paramecium feeds, have been cropped (eaten) down, in turn indicating that cultures need to be fed. This is the end of the growth cycle resulting from the most recent feed. The timing of feeding, harvesting, maintenance and recycling are interrelated and are described below in detail in 'Harvesting/maintenance/feeding'.



**FIG 5.16.** *Nutrients have been used up, and paramecium disperses down from the surface into the column, visible in the photograph as the whitish, slightly patterned area on the left 2/3 of the picture. The yellow areas, which are some of the original lettuce leaves lying on the bottom, show how the culture water has cleared.*

**NOTE:** The timing of the growth cycle from inoculation and first feed, through exponential growth to clearing of the water and the need for the next feed, is influenced by culture temperature, the volume of the inoculation, and the volume of the initial feeding. To add to this, variations often occur, including sometimes subtle differences in the appearance of the cultures, even though paramecium remains dominant. This is presumably due to, for example, changing types of bacteria