FIG 5.4. *The harvested brine shrimp after being revitalized by vigorous aeration with the outlet of the airline at the bottom. The many unhatched cysts are still suspended in the water and colour it brown. The outlet of the airline is now lifted and pegged just below the surface.*

FIG 5.5. *The same brine shrimp after about 10 minutes, after unhatched cysts have settled out. The water is now coloured bright orange by the pure brine shrimp.*

(j) When this process is complete, slowly and carefully pour off the clean brine shrimp, leaving the brown unhatched dregs behind. Now go back to (f) in **Part 1**.

NOTE that in some cases the unhatched cysts may be slower hatching rather than totally unviable. It can be worthwhile to test them by hatching them for a further 24 hours to see if a second harvest can be obtained.

Alternative method for separating brine shrimp from cysts

It is also possible to harvest brine shrimp very cleanly, albeit laboriously, by exploiting their strong phototropism (attraction to light) to separate them from both hatched and unhatched cysts. This is done using a purpose-designed rectangular waterproof receptacle with a total capacity of at least twice the brine shrimp hatch volume. (See FIG 5.6.) Fibreglass is the most suitable material for the purpose. The receptacle is divided in half with a built-in vertical wall. A hole of about 35 mm (1.4 in) diameter, which can be closed with a screw-on cap, is built into the centre of the dividing wall. This creates a passageway between the two sections. One entire compartment is painted black inside and has a cover, also painted black, to completely darken it. The second compartment is painted white. Non-toxic water-resistant epoxy-type paints are most suitable. (Check suitability of paint with the supplier.)

Method:

(a) With the separator empty, close the hole in the dividing wall with its cap. Pour the hatched brine shrimp from the hatching cone into the dark side of the separator. Once the brine shrimp is added, the water level must be well above the hole. (If necessary add more salt water to do this.)

(b) Cover this side with the hinged lid to totally darken it.

(c) Now fill the white compartment to a level slightly *above* the water level in the dark side, with water of the same salinity as the hatch water. No aeration must be used.

(d) Position a bright light source above the clean water in the white section. (See FIG 5.6.)

(e) A few moments after the brine shrimp is added, when the water has stopped moving, open the aperture in the dividing wall. The brine shrimp will swim through the aperture towards the light, effectively separating it from the cysts. This yields very clean brine shrimp but is quite time-consuming.

(f) When the brine shrimp have all moved through the aperture, close the aperture and drain off the brine shrimp through a fine net to separate it from the water. Process it as described above, for feeding.

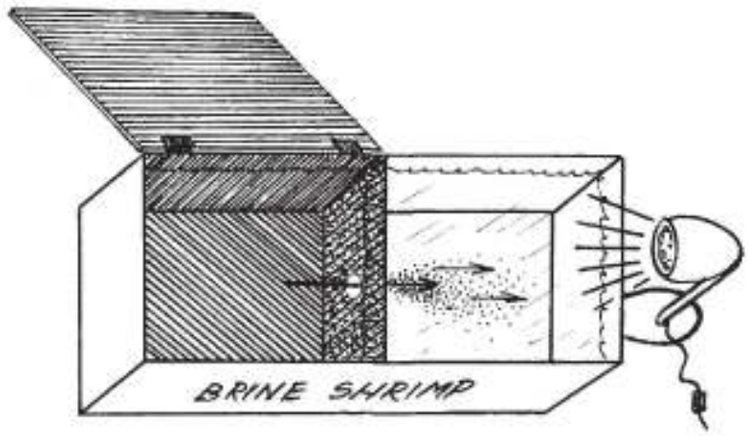

FIG 5.6. *Overhead (top) view of a brine shrimp separator, (looking down on it from above, slightly from the front and left), showing a lamp pointing downwards over the side towards the aperture in the divider, providing the light to attract the brine shrimp through the aperture. NOTE: The hinged cover (shown open, on the left) would be closed for this process.*

Decapsulation of brine shrimp cysts

The author has not found this to be necessary or sufficiently beneficial for ornamental fish culture to warrant the time, effort and cost involved in the procedure. However there are some benefits including the reduction of bacterial contamination and improved hatch rates to some degree. The following method can be used for decapsulating brine shrimp cysts.

(a) Hydrate 100 grams of brine shrimp cysts in 2 litres of freshwater for 1 hour. Aerate well during this process.

(b) Separate cysts from the *freshwater* by means of a 125 to 180 micron screen.

(c) Place hydrated cysts in 1200 ml of sea water, or 1200 ml of freshwater in which about 40 grams of coarse salt has been dissolved.

(d) Add 300 ml of liquid chlorine (12.5% sodium hypochlorite) and aerate **vigorously**.

(e) Leave for 8 to 10 minutes. Over this period, a froth will develop and cysts will slowly change in colour from brown to whitish grey, and then to orange. Note that heat is generated during this process, but provided that cool water is used initially and aeration is vigorous, the cysts should not overheat. If they do get too warm (above about 33°C/91°F) before being sufficiently decapsulated, the container can be placed in cold water for the duration of the process, or a slightly weaker concentration of chlorine solution can be trialled for a slightly longer exposure time. Another method is to use ice blocks to cool the cysts during decapsulation. It may also be that sufficient decapsulation is achieved sooner than 8 to 10 minutes in which case the exposure time can be shortened.

(f) When the change to orange is noticed, separate the cysts from the chlorine solution using the screen and rinse *thoroughly* for at least one minute with a vigorous flow of freshwater. All signs of foam or froth must have disappeared completely. The cysts should now be orange-/brown in colour.

(g) Using a spoon, divide the washed cysts into batches of the volume needed for each day's hatch and place each batch in a small container. Cover the cysts with salt water (of the salinity used for hatching) and store in a refrigerator at about 5°C (41°F). This will last for at least 5 or 6 days before use.

NOTE: Cysts may differ in their characteristics from source to source and year to year, and this can affect their response to the decapsulation process, so some trials and adjustments may be necessary to optimize the results.

Growing out brine shrimp

This is by far best done in natural sea water, or using artificial sea salt, though the latter is quite costly. It is more difficult to achieve success using freshwater though this can be done using coarse (iodine-free) salt added to give a concentration of 25 to 35 ppth, and it may be worth a try.