

Ornamental Fish Farming

spawning. Complete or partial evacuation would mean total or only part-emptying of the ovaries respectively, during spawning. Some species empty (evacuate) the ovaries fully in a single spawning; others spawn daily over a period of time, evacuating only partially (a few eggs) on each occasion.

Eyed: the term refers to eggs or larvae in which the eyes have darkened and are easily visible, usually shortly before hatching in the case of eggs.

Fecund/fecundity: if an animal reproduces itself very successfully, in large numbers, it is said to be very **fecund** or **prolific**. Fecundity, as it applies in ornamental fish culture is influenced by several factors, notably the number of eggs produced, their fertility and general viability, and the survival rate of the offspring.

'Feeding the pond': this means that nutrients are introduced to outdoor pond water to bring about the growth of algae or zooplankton (called 'blooms') on which fish feed, rather than an 'artificial' diet on which fish feed directly. This can be done using organic or inorganic fertilizers, or a mixture of the two. Uneaten fish food (for example, of a dry diet) also usefully serves to 'feed the pond' in this way, provided it is not excessive. Quite commonly, both fish diets and pond fertilizers are used to feed large outdoor ponds, and a balance between the two has to be maintained.

Fixing new strains: strains are genetic variations within a single species of fish, such as longer-than-normal fins, or unnaturally bright colours, often referred to as 'neon' or 'glowlight' strains, which are developed by selective breeding. (New strains are commonly developed from 'sports' which naturally show a chance genetic variation which is considered to be attractive or interesting.)

There is generally a strong tendency for these strains to revert to the normal characteristics of the species over a number of generations unless efforts are made to uphold, or better still, to 'fix' the strain. Strains are fixed by long term selective breeding using breeders which exhibit the best characteristics of the strain. It is relatively rare for a strain to breed consistently 100% true; a constant 95% to 99% could be regarded as good and close to true, though some strains may only produce a far lower percentage of the required strain consistently. Even when working with fixed

strains, only the very best specimens should be used for breeding.

Flocculation: this is the process by means of which colloidal or other very fine suspended particles in water are caused to coagulate (clump together) and settle out or be physically removed. A **flocculant** is a chemical or agent which causes flocculation. The process is used to clear culture water of some forms of turbidity.

Free-swimming: this term is used to describe fish larvae once they become neutrally buoyant, and no longer sink or float to the surface. The development is very significant because it is the time at which most larvae are ready to feed.

Fresh water and freshwater: in this book, fresh water refers to fresh (new) water, as opposed to old or used water, while freshwater means freshwater as opposed to seawater.

Gamete: a mature germ cell (unfertilized egg, or sperm) which is able to unite with another in sexual reproduction to produce a **zygote**, which is a fertilized egg.

Genus: see 'Species' below.

Gilling or gilled: fish may become gilled when their heads but not their whole bodies fit through the mesh of a net. They become gilled (caught by the gills) when they try to move backwards to escape and are prevented from doing so by their gill covers (operculae).

Gravid/gravid spot: Female livebearers are referred to as being gravid when they are ready or nearly ready to give birth. This is identifiable by the very plump abdomen and the darkened area above the vent visible in some livebearers, called the 'gravid spot'. The eyes of the embryos can sometimes be seen through the clear membrane over the gravid spot.

Grow-out: the growth of fish to marketable size. In this book the term grow-out is usually used to describe a second phase of growth starting at about two months of age, and continuing until the fish reach a marketable size. This follows a first stage of growth, usually referred to as 'rearing' (to differentiate it), which lasts from hatch to about two months of age, in the 'two-stage rearing system' described in this book. (See also 1.1 in PART 1, and **Rear/raise** in this glossary.)