

# care sheet goldfish (*Carassius auratus*)



## The Importance Of Goldfish

Goldfish are often underrated in the aquarium and pet industry. It has been estimated that a third of all fish sales in Australia are goldfish. These beautiful, hardy fish are usually the ones that launch people into the hobby. We have a responsibility to ensure every new fish keeper is a successful one. This is important to the industry, to your business, to the hobbyist and of course to the fish. Goldfish in all varieties and sizes make wonderful easy to care for displays in shops, and their sales potential is almost unlimited.

## Origins

The ancient Chinese kept goldfish some 1600 years ago. The original wild, drab coloured fish were selectively bred until the beautiful clear bright colours of today's fish were developed. The Japanese obtained some of these fish about 500 years ago and have developed some of the more unusual types of goldfish. Today there are dozens of different types. Even though they are different colours and have different body, tail and eye shapes, they are all the one species, *Carassius auratus*.

## Age, Size & Colour

Goldfish are capable of reaching the grand old age of 20 years and attain a length of between 12 to 30cm, depending on variety. Red and black, and white and black (panda) goldfish are in the process of changing colour and will most likely turn all red or all white sometime in the future.

## Sexing Goldfish

Customers often ask how to sex goldfish. Small goldfish are difficult to tell apart. Larger fish at about one year old can be distinguished fairly easily. Males develop small white tubercles along the leading edge of the pectoral fins. When in breeding condition the tubercles can also be noticed on the gill plates (see diagram on next page).

## Housing

Goldfish in shops should be kept in large aquariums with plenty of surface area and in a relatively cool position. Algae growth on glass and sand looks unsightly, so keep natural light to a minimum and wipe algae off glass regularly. If goldfish are over crowded or overfed the water will become cloudy and frothy (bubbles appear at the water surface). In extreme cases the fish hang at the surface, gasping (this is a sure sign of lack of oxygen). This is more likely to occur in summer, because as water temperature goes up, oxygen levels go down.

## Water Quality

Goldfish are not fussy about the pH of their water but seem

to prefer it between 7.0 and 7.5. However, extremely acid water is not tolerated (see article on pH). The addition of goldfish water conditioner is highly recommended, especially in soft water areas. Do not skimp on filtration, as goldfish are heavy feeders and produce a lot of waste. A power filter or at least a large box filter must be used to trap solid particles. A large (biological) filter is needed to break down toxic fish waste. Plenty of aeration and regularly cleaned filters all help keep water quality and oxygen levels up. Weekly 1/3 to 1/2 water changes are recommended to dilute nitrate and other waste products.

## Temperature Range

Goldfish are ideally kept at approximately 15°C - 20°C, but can tolerate temperatures from near freezing to the low thirties.

## Feeding

A good staple food for goldfish in shops is floating granules. The small size is best, as this assures all fish get their fair share. Feeding floating granules, two to three times a day, in the right quantities is one of the major factors in keeping goldfish healthy and active. For variety, occasionally substitute flake food, and, more importantly, some vegetable material. Frozen "vegetable diet" is good, but if you can get duckweed, feed this several times a week. It is very rich in vitamin C, brings out the fish's colour, and increases resistance to disease. Duck weed, *Lemna minor*, is a tiny floating water plant, which can be found massed together as a green carpet on the surface of still waters.

REMEMBER: If goldfish tanks are heavily stocked you must keep the quantity of food down at each feed and carry out regular partial water changes.

## Goldfish Health

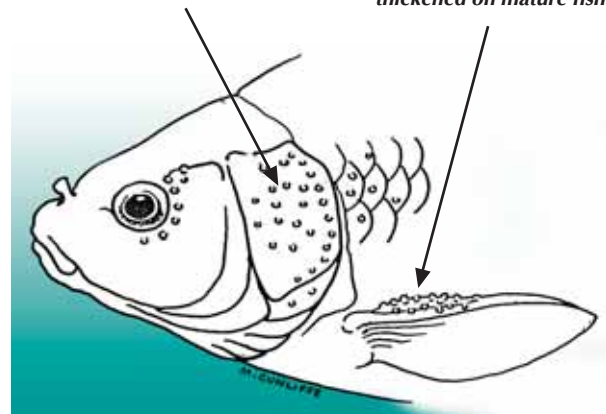
Goldfish can only remain healthy if the water quality is good, and they are fed properly. Other than these factors, the most common health problem of goldfish is skin parasites. These ubiquitous creatures keep turning up as if from nowhere. It is important to learn about them as described in the articles on skin flukes and slimy skin disease. Healthy goldfish are a pleasure to have. They should hold their fins erect, have shiny, lustrous skin and eagerly charge at their food. You should not be satisfied with your fish unless they act in this way.

## How To Sex Goldfish

After about one year of age, the sex of goldfish can be determined.

**Tubercles on opercula**

**Tubercles on first ray of pectoral fin which is thickened on mature fish**



Male

## Goldfish Varieties

### Straight Tails



COMET



SHUBUNKIN



NYMPH

### Fantails



RED FANTAIL



CALICO



RYUKIN



BUTTERFLY TAIL



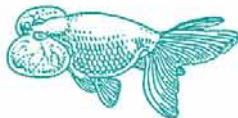
RED TELESCOPE



CALICO TELESCOPE



BLACK MOOR



BUBBLE EYE



CELESTIAL



LIONHEAD



ORANDA



RED CAP ORANDA



RANCHU



PEARL SCALE



POM POM

*Illustrations by M. Cunliffe*