= Toxotes chatareus =

Toxotes chatareus , sometimes known by the common names seven @-@ spot archerfish or largescale archerfish , is a species of perciform fish in the archerfish genus Toxotes .

They are usually no larger than 20 centimetres (7 @.@ 9 in) but may grow up to 40 centimetres (16 in) . Unlike most archerfish , T. chatareus are sooty rather than silvery in colour . They are omnivorous , feeding on insects , fish , and vegetative matter at the surface of the water . Breeding occurs in the wet season , and 20 @,@ 000 to 150 @,@ 000 eggs may be laid at one time .

T. chatareus are distributed throughout southeast Asia and the Indo @-@ Pacific and Australia . They may live in brackish or fresh water , inhabiting mangrove swamps and estuaries as well as further upstream in slow @-@ moving rivers . While occasionally caught and eaten , T. chatareus are more commonly kept in the aquarium . They may be sold with other Toxotidae under the collective label " archerfish " . Caring for T. chatareus in aquaria is somewhat difficult as they need live food given at the surface , rather than flake food .

= = Description = =

Toxotes chatareus are of moderate size , usually between 15 and 20 centimetres (5 @.@ 9 and 7 @.@ 9 in) . Rarely , they may reach up to 40 centimetres (16 in) in length . T. chatareus weigh up to 700 grams (25 oz) . T. chatareus are believed to have a lifespan of three to five years .

T. chatareus have five or six dorsal spines , the fourth of which is the longest , and twelve or thirteen dorsal soft rays . The dorsal spines are generally shorter in specimens collected from freshwater than those from brackish water . T. chatareus also have three anal spines and fifteen to seventeen anal soft rays . T. chatareus have 33 or 34 lateral line scales . The caudal (tail) fin in almost square . The anal fin is undivided and the third anal spine is longest .

Overall , the body is sooty but sometimes silvery or gold . The dorsal side is " greenish brown " . The pectoral fins are clear or " dusky " in colour . Pelvic fins may be darker and heavily pigmented . T. chatareus are white and usually has six or seven dark blotches , alternating long and short , along the dorsal side . A dark blotch is also found at the base of the caudal fin . The colour of these blotches may become darker or lighter due to time of day , environment , and stress . The blotches of young fish are darker than those of older fish . Startled or stressed fish are darker than unstressed fish ; fish found in cloudy water may be completely white . It is unknown whether sexual dimorphism occurs .

= = = Comparison to other archerfish = = =

T. chatareus can be distinguished by their sooty colour , as opposed to the typical silver of most other archerfish . They have five dorsal spines , whereas T. jaculatrix have four . The markings on their flanks are also alternating long and short spots rather than bands . T. chatareus also have six or seven markings on its sides , whilst banded archerfish have four to five . T. chatareus has 29 ? 30 lateral line scales , compared to 33 ? 35 in T. jaculatrix . T. chatareus are also less common upstream than T. microlepis .

= = Behaviour = =

= = = Diet and feeding = = =

Like other archerfish , Toxotes chatareus are able to spit streams of water to knock prey into the water . Despite lacking a neocortex , T. chatareus has well @-@ developed visual cognition and pattern @-@ recognition abilities which allow it to hit prey at distances of up to 150 centimetres (59 in) against complex backgrounds . Behaviour studies on the visual processing of T. chatareus have found that this species is able to recognize and distinguish between different human faces . They

feed during the day , consuming plant matter and insects . They are omnivorous ; their diet comprises crustaceans and other fishes , as well as zooplankton , rotifers , cladocerans , and insects (terrestrial and aquatic) . T. chatareus has been called a " specialised insectivore " because it does not prey upon certain insects , particularly those that feed upon C4 plants . Diet appears to be ontogenetic (varying with age) ; small fish do not consume any vegetative matter , whilst it comprises one @-@ fourth of the diet of larger fish . Diet also varies with location ; when upstream , T. chatareus feed on insects , but when in the estuary , they feed on crustaceans .

= = = Breeding = = =

Toxotes chatareus reproduce by spawning . Spawning in T. chatareus are homochronal (females only spawn once per season) and iteroparous (spawning occurs more than once in a fish 's lifespan) . Breeding in Toxotes chatareus occurs in the wet season . T. chatareus breed both in brackish and in fresh water . Spawning occurs in shallow , muddy lagoons . Females lay about 20 @,@ 000 to 150 @,@ 000 buoyant eggs , each 0 @.@ 4 millimetres in diameter . Females become mature at about 19 centimetres (7 @.@ 5 in) , and males become mature at about 18 centimetres (7 @.@ 1 in) . T. chatareus become reproductively active at 24 months . When they first hatch , larvae may be less than 4 mm in length ; when they first feed , they are 5 mm and their mouthparts have become well @-@ developed . There is no parental care in this species . Breeding in this species does not involve travelling downstream ; nonetheless , populations may be affected by the construction of obstacles along rivers they inhabit . T. chatareus has not been bred in captivity .

= = Distribution = =

Toxotes chatareus are found in India , Burma , Indonesia and New Guinea , and northern Australia . They are generally found in temperature ranges of 25 to 30 ° C (77 to 86 ° F) , though they have been recorded at temperatures as high as 36 ° C (97 ° F) in the Alligator Rivers region and as low as 20 @.@ 5 ° C (68 @.@ 9 ° F) in the Burdekin river region ; these are believed to be the upper and lower limits of their tolerance , respectively . Brackish mangrove swamps form its main habitat , but T. chatareus are also found in freshwater rivers and streams . It occurs in rivers of the Kimberley region of Western Australia , the Kakadu area of the Northern Territory and Arnhem Land in Australia . On the Mekong river , it may be found as far north as Thailand and Laos . They are also found in the upper parts of the Burdekin river , somehow having overcome the Burdekin Falls . T. chatareus are distributed more " patchily " in eastern Australia , and are less abundant .

T. chatareus are known to occur in shaded areas with vegetation overhead , usually at the top layer of the water column . They are found only where there is an intact riparian area , as this is a major source of their food . T. chatareus are usually not found in fast @-@ flowing streams .

= = Relationship to humans = =

Toxotes chatareus have a minor part in fisheries . They are sometimes caught by anglers and are described as " reasonable eating " . T. chatareus are caught and sold in markets , where they are often grouped with the banded archerfish and simply sold as " archerfish " .

T. chatareus are sometimes kept in the aquarium . In aquaria , they can reach about 20 centimetres (7 @.@ 9 in) in length , compared to 40 centimetres (16 in) in the wild . They are one of only three archerfish species to be commonly traded (the others being T. jaculatrix and T. microlepis) . They are placed in an aquarium in a minimum size of 100 centimetres (39 in) deep with a volume of 170 to 209 litres (37 to 46 imp gal ; 45 to 55 US gal) . T. chatareus prefer brackish water and need a tall aquarium . T. chatareus have the ability to " jump " out of the water , which in the wild is used to capture prey on low @-@ hanging branches ; they are capable of jumping out of an aquarium that is too short or uncovered . They are compatible with others of their species of similar size , but larger individuals may harass smaller individuals . T. chatareus is fed live food at the surface , though it does occasionally take flake food ; because of this , caring for them is not done

by beginners in most home aquaria .

T. chatareus are fairly common and not considered endangered . However , the destruction of their mangrove swamp habitat and increased fishing pressure may pose a risk in the future . The construction of weirs and tidal barrages within its habitat may affect populations in rivers . The growing population in Southeast Asia is also causing pollution to its habitat .

A study found increased (greater than 0 @.@ 5 ?g / g) levels of mercury in four out of ten specimens sampled at Lake Murray in Papua New Guinea . This may have contributed to increased mercury levels in locals who consumed several species of fish from the lake , T. chatareus included . Compared to the other fishes tested , T. chatareus displayed a high level of mercury . Sediments from the nearby Porgera gold and silver mine are the source of this mercury ; the cause of the high level at which the mercury was accumulated in T. chatareus is not known .