



Out of the shadows: a brief introduction to the dark sleepers

The Chinese dark sleeper, *Odontobutis sinensis*, was regarded as *O. obscura* until 1998. Photo by Guan Huaiyu.

article & images by Mat Chen unless noted • Dark sleepers are a group of small carnivorous freshwater fishes native to subtropical and temperate eastern Asia. Somehow, this group receives little attention in the aquarium hobby despite their unique appearance and interesting behaviors. Author Mat Chen wants to bring these fishes into the light.

GOBIES AND SLEEPERS HAVE LONG FASCINATED ME. I still remember my first sleeper, a river dark sleeper (*Odontobutis potamophila*), which started my aquarium hobby. The streams, reservoirs, and rivers of eastern China are home to several species of sleepers, among which the dark sleepers undoubtedly stand out. Their small sizes, quiet personalities, and passionate hunting behaviors make them perfect for a low-tech aquarium.

Systematics

All the sleepers belong to a large group, namely the gobies (order Gobiiformes), but they are divided at the family level. While the other sleepers are members of the families Eleotridae (spinycheek sleepers), Butidae (butid sleepers), and Thalasseleotrididae (ocean sleepers), the dark sleepers belong to the family Odontobutidae (freshwater sleepers). The largest genus in this family and the focus of this article is *Odontobutis*. The genus has a total of eight species; two are native to Japan (*Odontobutis hikimius*, *O. obscura*), four to China (*O. haifengensis*, *O. potamophila*, *O. sinensis*, *O. yaluensis*), and two to Korea (*O. interrupta*, *O. platycephala*).

There are few differences between most of the dark sleeper species (e.g., minute variations in their cephalic sensory organs like the sensory canal and sensory canal pores), so even the most experienced ichthyologist cannot easily identify the species without knowing its collection locality. Thus, there are ongoing corrections being made in this



A corner of Huaxin Reservoir in Wenling, Zhejiang province, southeast China where multiple dark sleepers are found.

genus. For example, ichthyologists have debated whether or not *O. obscura* naturally occurs in China. It wasn't until 1998 when two bottles of specimens in the British Natural History Museum, London were examined, and it was determined that *O. obscura* are only found in Japan. However, people still mistakenly believe that *O. obscura* is found in China, Japan, and Korea.

Biotopes

All members of Odontobutidae, including dark sleepers, are endemic to the freshwaters of eastern Asia, including Japan, China, Korea, Russia, and Vietnam. However, many of them do not occur in extensive areas. For example, *O. obscura* is found throughout Japan, but the other sleeper found in Japan, *O. hikimius*, occurs in a significantly narrower range in the Takatsu, Tama, and Masuda Rivers that flow into the Sea of Japan on Honshu Island. *Odontobutis hikimius* was also collected in the Fakatani River, a tributary of the Nishiki River, which flows on the opposite slope of the drainage divide as the Takatsu River. It is thought that the Fakatani River was once a tributary of the Takatsu prior to a stream capture event (Sakai, Hatama, and Iwata, 2012). Stream capture occurs when the flow of a stream or river is diverted from its original channel into a neighboring system. The distribution of dark sleepers in China also follow a similar pattern. *Odontobutis sinensis* is widely collected in central and southern China, while *O. potamophila* is mostly found in rivers in eastern China. *Odontobutis haifengensis* inhabits only a handful of streams and rivers in eastern Guangdong Province in southern China.



The river dark sleeper, *O. potamophila*, is the most commonly found species in eastern China.

The dark sleepers need clear freshwater to survive, but they are tolerant of low oxygen saturation and variable water flow. Therefore, their niche covers small mountain streams, slow-flowing rivers, large lakes, and even reservoirs. They hide among rotting leaves or underwater rocks and wait for their prey before darting out and engulfing them. They are quiet and inactive predators. Once, I even found several dark sleepers living in an abandoned underwater fish trap in a reservoir. The minnows, sharpbellies (*Hemiculter leucisculus*), and shrimps that accidentally went in soon became the dark sleepers' supper.

Maintenance

Unlike other gobies and sleepers, dark sleepers seem to get along well with their congeners. So, if you just want to keep a small group, a dimly lit 20-gallon (75-L) aquarium or a tank the size of 24L x 12W x 12H inches (60 x 30 x 30 cm) with a filter is adequate. Ideal decor includes dark-colored stone slabs, sand, and pebbles that they could easily camouflage against by slightly changing their colors. Light-colored sand gives them nothing but



Dark sleepers, especially immature individuals, are fond of shallow streams such as Xiao Brook in Wenling, Zhejiang province, China. Shallow waters help them to avoid predators like snakeheads.

stress. Vegetation is not really essential, but adding some low-temperature, low-light species is not a bad idea.

Water pH close to neutral is well accepted. Widely distributed species tolerate temperatures between 55–90°F (13–32°C), however, it is better not to challenge them. A mild temperature between 59–77°F (15–25°C) is ideal, so additional heating is usually not required. Currents are not required in the tank—just let them lie quietly.

For its predatory character, Chinese aquarists give dark sleepers the nickname “trash bin”, because they swallow any living things smaller than their mouth. For food offerings, I highly recommend live shrimps for adults and bloodworms for juveniles. You may add some small live shrimps at the same time you add dark sleepers into your tank so they can feel free to predate. I’ve also seen some specimens accepting flake fish food, but remember that is not a common phenomenon. Also, because of their predatory nature, they are not good tankmates for smaller fishes. Yet, they also do not fair well against attacks from large, aggressive species. Watching dark sleepers kept in their own tank is rewarding; once they are familiar with you, they will even accept foods from your hands.

Breeding

In the wild, dark sleepers normally breed between April and June, when the water temperature is around 64–77°F (18–25°C). They normally exhibit one of two breeding strategies. Species like *O. sinensis* spawn in empty freshwater clam shells or abandoned bottles. The male first chooses a suitable space, then after two days

or so, the female goes in and deposits the eggs on the underside of the shelter’s top. Almost all the spawning activity occurs in the morning (or when the aquarium lights are just turned on). The eggs, adhering onto the shelter, are protected by the male while the female leaves. The male remains in the nest and fans his pectoral fins to make currents that bring fresh oxygen to the clutch. The male seldom eats during this period until the fry hatch after about 25 days. The duration of incubation depends on water temperature.

Another strategy is utilized by species like *O. potamo-phila* in which the males seldom protect the eggs, and the females produce more eggs than the first method. In nature, these dark sleepers usually spawn at selected safe places in shallow water like lake shores where they often choose to lay their eggs in clumps of reed roots.

Species that utilize the first strategy are easier to breed in the aquarium. To breed dark sleepers, a separate breeding tank with a temperature around 68°F (20°C). Furnish it with ceramic cichlid caves and mild filtration using sponge filters. The next step is to place the conditioned pair into the tank and wait. Normally, it won’t take long before the male goes into the cave (some books suggest that the male may make a low rumble during this period, but I’ve never heard it myself) and, about two days later, they will start spawning. After fertilization and once the female leaves the cave, return her back to the main aquarium. Be sure to correctly identify the female (usually the blockier of the two) and leave the dutiful father alone to do his job. In about a month, you’ll see the arrival of new lives. The newly hatched fry are already about 0.27 inches (7 mm)



Top: The Haifeng dark sleeper, *O. haifengensis*, has only been collected in the tropical province of Guangdong, China.

Bottom: An immature Haifeng dark sleeper is perfectly camouflaged into its surroundings.

Photos: Huang Qin.

in length and can swim freely, but most of the time they rest at the bottom. When most eggs have hatched, the father can also return to the main aquarium for his first meal. The fry start preying on *Cyclops* the second day after hatching. After about two weeks, when they reach 0.4 inches (10 mm), they can eat larger prey, such as mosquito larvae or small bloodworms.

Dark sleepers may currently be underrepresented in the hobby but they should not be overlooked. Species of *Odontobutis* are quiet ambush predators that can be kept in low-tech aquariums, and also provide some excitement at feeding time. They readily accept a variety of food items and are even known to accept hand-feeding. If you can find one of these cryptic fishes in the trade, it would make a fun addition to a home aquarium. 🐟

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