



# MERCURY BAY OPTOMETRIST EYE TIMES

ISSUE 40

## BARREYEYES AND SPOOKFISH !

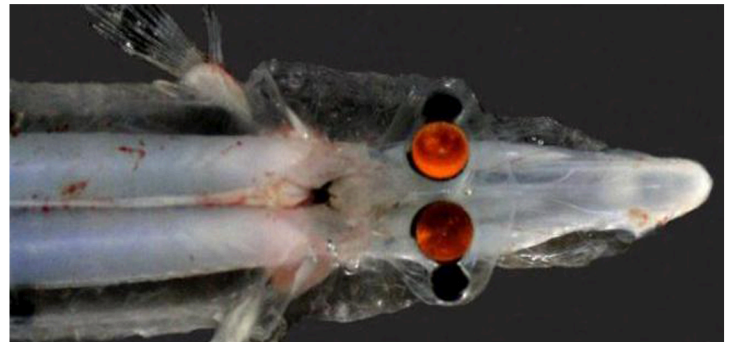
The barreleye (*Macropinna microstoma*), a fish with a transparent head, has extremely light-sensitive eyes that can rotate within a transparent, fluid-filled shield on its head. The fish's tubular eyes are capped by bright green lenses. The eyes point upward when the fish is looking for food overhead. They point forward when the fish is feeding. The two spots above the fish's mouth are olfactory organs called nares, which are analogous to human nostrils.

Barreleyes are also called spook fish. The barrel reference is from the slightly tubular shape of their eyes. They tend to hang about fairly deep in the seas, on the border between the pitch black depths and the dim light from the surface above. Their eye has a particularly large lens and its retina has no cone cells but a surprisingly high number of rod cells and rhodopsin – the “visual purple” pigment. It's thought that the transparent dome helps the eyes collect even more light and also defend the sensitive barrel shaped eyes from the nematocyst (stinging cells) of the siphonophores from which it's believed the Barreleye steals food. The javelin spookfish is the largest of the barreleyes, clocking up a full 50cm in length and chilling out at about 600m below the choppy surface of the Pacific and Atlantic oceans.

As for the siphonophores, the critters that the barreleye loots for food, these are strange beasts indeed and can grow up to 40m in length. Rather than being a single organism, they are an intertwined colony of individuals, drag-netting the seas for fodder. The most famous of these is the Portuguese Man O'War which are often mistaken for jellyfish because of their appearance and sting, but in fact, they are a city of mini-beasts functioning as one. Siphonophores are on the border between single cell and multicellular life. Each individual zooid or medusoid that makes up the 'body' of these beasts could not survive independently, and each one is specialized and acts interdependently, very like the cells in higher animals. Siphonophores commonly exude bioluminescence to attract fish towards them, then specialised stinging cells paralyse their victim and other types of cells take up the job of consuming the quarry.

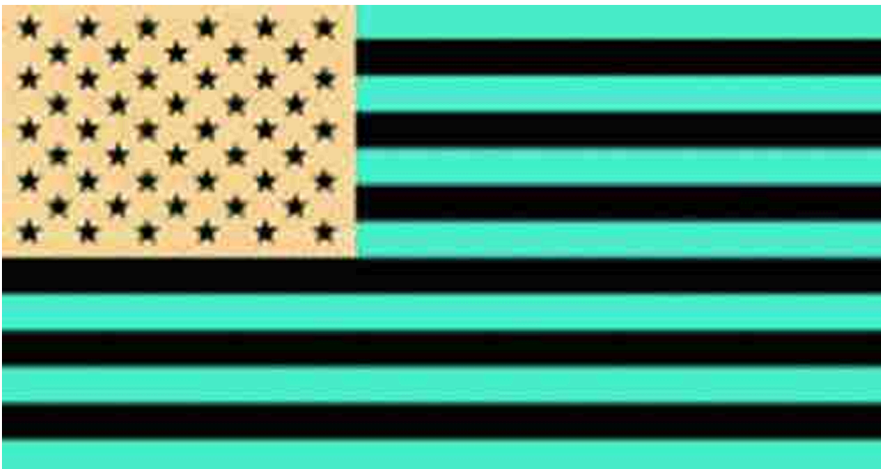


*The Barreleye*



*The Javelin Spookfish*

### THE EYE TIMES OPTICAL ILLUSION



Stare at the image for 30 seconds and then look at something white

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