



## STATOLITHS AND GOBIES

by Lanny and Marilyn Johnson

*A revision of Stone Called Statolith, KT&B Winter 2003.*<sup>1</sup>

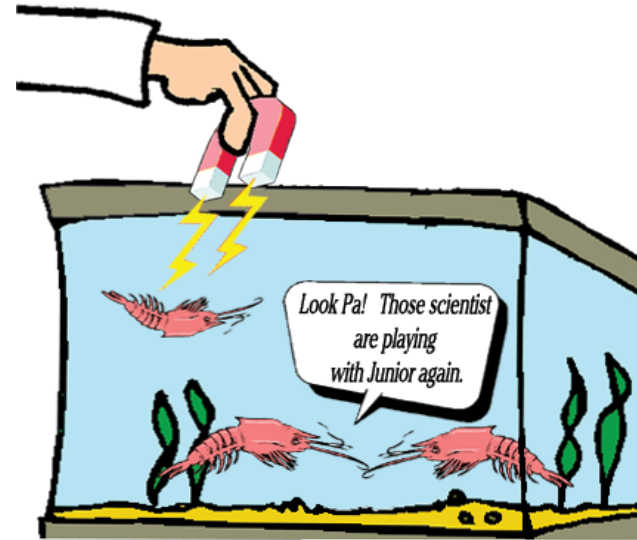
Once when I was younger, I was body surfing in the North Sea along the beaches of Holland. A big storm had made the waves larger than usual on this particular day. It was a lot of fun until one huge wave grabbed me and pulled me underneath the water. I tumbled end over end and did not know which way was up. Fortunately, I was able to hold my breath long enough to wait for the calm between the waves and find the surface. When scuba diving underwater at night, I have also become disoriented. By watching my air bubbles rise, however, I figured it out.

Have you ever wondered how some sea creatures know up from down? God has designed various and wonderful methods to help different creatures figure this out. Shrimp, in particular, have a most curious design.

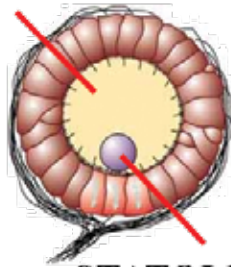
As shrimp grow, they outgrow their skins. Through a process called molting, they shed this outer skin and grow a new one. During this process, the shrimp does something very

curious; he puts a piece of sand in a special pouch on his head called a **statocyst**. The statocyst is lined with tiny hairs (**setae**), which are very sensitive. As gravity moves the piece of sand (called a **statolith**) around in the statocyst, it touches different hairs. These hairs send a signal to the brain allowing the shrimp to know which is up or down – especially when tossed around by rising and falling seas. What an amazing design!<sup>1</sup>

A marine biologist discovered what the statocyst does. In an experiment he did on a shrimp in a tank of water with sand on the bottom. He removed the sand from the tank and



## STATOCYST



## STATOLITH

replaced it with tiny iron pieces. When the shrimp molted, it placed one piece of iron in its statocyst instead of sand. The scientist then put a magnet on top of the tank. Since the magnet's pull was stronger than the pull of gravity, the shrimp flipped upside down. Since the magnet did not affect shrimp with sand as a statolith, and they didn't flip over, he discovered

the purpose of the statocyst.<sup>2</sup>

There is so much incredible design, from the tiniest to the most enormous creatures. How could any of it have happened by chance and accident? It couldn't! A design, as we have just seen, demands a Creator. That Creator is God!

Sometimes we are pulled one way or the other by the things of the world that we learn in public schools, movies, television, museums, etc. How are we to know if these things are true or good? Our God gave us a way to know ... by His Word, the Bible. Psalms 199:105 tells us, "*Thy word is a lamp unto my feet, and a light*

*unto my path.*" Even as God allowed some creatures to place a small stone upon their head to know up from down, He also gave us a stone so we might know the truth. "... *Jesus Christ himself being the chief corner stone;*" (Luke 20: 17.) If you trust Jesus and read the Bible, you can know the truth.

## AMAZING GOBIES

Two of the tiniest fish in the world are the Pygmy goby and the Luzon goby. They live in the waters of the Philippines. When these gobies grow into adults they are only one half inch long. Gobies like to live near the shore where the waves continuously knock them about. God designed these gobies with a suction cup on the front part of their bodies. With this suction cup they are able to stick to a rock while the waves pound around them. Amazing!

### References

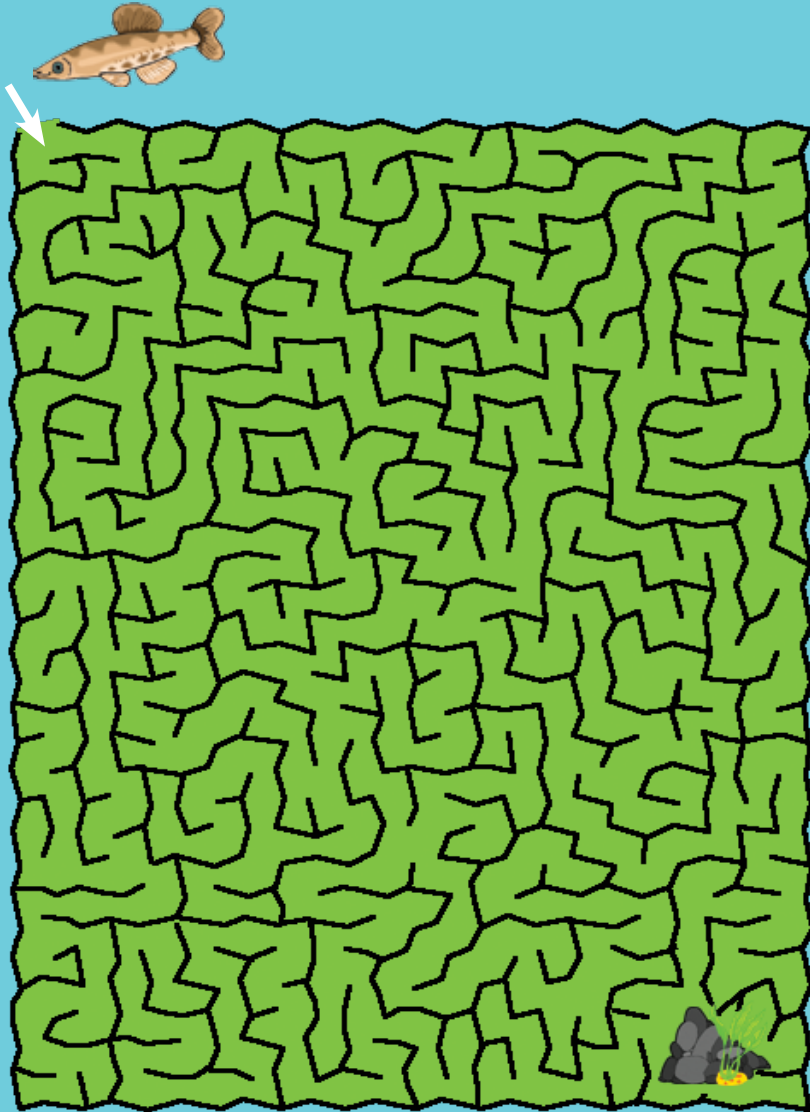
<sup>1</sup> <https://www.discovercreation.org/documents/kids/Winter2003KTB.pdf>

<sup>2</sup> Doug Batchelor, *The Book of Amazing Facts*, Vol. 1, (Amazing Facts, Inc., Roseville, CA, 2002) pg. 8.

<sup>3</sup> Ibid

▪ Picture of **statocyst** public domain by Davis, W. J. (1968).  
▪ Cartoon by Lanny Johnson © AOI

The goby accidentally got knocked off its rock!  
Help it find its way through the maze to its rock.



Adapted from <https://krazydad.com/mazes>

FOR ANSWERS, GO TO:  
[www.discovercreation.org/kids/newsletteranswers.htm](http://www.discovercreation.org/kids/newsletteranswers.htm)

Puzzles by  
Lanny Johnson  
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Use the KEY below to solve the secret code hidden in the Bible verse above.

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