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By Lanny and Marilyn Johnson

### STONE CALLED STATOLITH

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 normal. One huge wave grabbed and pulled me underneath the water where I was tumbled end over end. I did not know which way was up or down. Fortunately, I was able to hold my breath long enough to wait for the calm between the waves and discover which way was up. Other times, when scuba diving under water at night, I have had the same problem... which way was up? By watching my air bubbles rise I was able to figure it out. Have you ever wondered how some of the sea creatures know up from down? God has designed a wonderful method for some of these creatures to help them out. A shrimp is just one of those well-designed creatures.

As shrimps grow, they outgrow their skins and by a process called molting, they shed this outside skin and grow a new one. When the shrimp molts he does something

without a back-bone) are designed with a special pouch that functions as a balancing organ called a **statocyst**.<sup>1</sup> The statocyst is lined with tiny hairs (*setae*)<sup>2</sup>, which are very sensitive to touch. The small pull of gravity moves the piece of sand (called a **statolith**) around in the statocyst touching different hairs. These hairs then send a signal to the brain allowing the shrimp to know which is up or down when tossed around by the rising and falling seas.<sup>3</sup> What an amazing design!

Two Russian scientists discovered what the statocyst



actually does by an experiment they did on a crayfish in a tank of water.<sup>4</sup> They replaced the piece of sand with a piece of iron as a statolith and put a magnet on top of the tank. Since the pull of the magnet was stronger than the pull of gravity, the crayfish flipped upside down. However, the magnet had no affect on crayfish with sand as a statolith.

Sometimes we are pulled one way or the other by the things of the world. What we learn in public schools,

very curious; he takes a piece of sand and puts it in a special pouch on his head. Many invertebrates (animals

movies, television, museums, etc. How are we to know if these things are true or good? Our God gave us a way to know...His Word...the Bible. Psalms 109:105 says, "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* that we might know the truth. "...Jesus Christ himself being the chief corner stone;" (Luke 20:17.) If you put your trust in Jesus, and read the Bible, you can know the truth.

<sup>1</sup> Webster's Concise Encyclopedia, (Sofsousce, Inc., Las Cruces, NM, 1994).

<sup>2</sup> <http://webferret.search.com/click?wf.statocyst,,freespace.virgin.net%2Fseant.ellis%2Fstatocyst.htm,,aol>

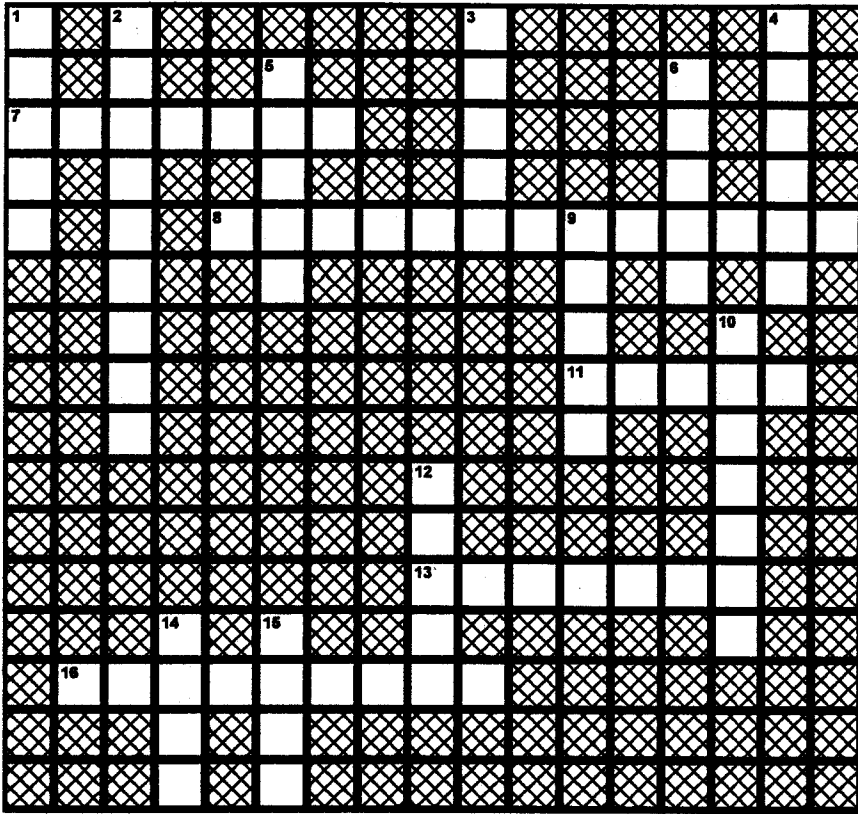
<sup>3</sup> Doug Batchelor, *The Book of Amazing Facts, Vol. 1, (Amazing Facts, Inc., Roseville, CA, 2002) pg. 8*

<sup>4</sup> [http://webferret.search.com/click?wf.statocyst,,www.maik.rssi.ru%2Fabstract%2Fevolbp%2F0%2Fevolbp0071\\_abstract.pdf](http://webferret.search.com/click?wf.statocyst,,www.maik.rssi.ru%2Fabstract%2Fevolbp%2F0%2Fevolbp0071_abstract.pdf)

Wow!!! From the tiniest to the biggest creature, there is so much wonderful design. How could any of it have happened by chance and accident? It couldn't!!! Design like we have just seen demands a Creator. That Creator is God!



Eugene, C/O  
Alpha Omega Institute,  
PO Box 4343,  
Grand Junction, CO, 81502  
[eugene@discovercreation.org](mailto:eugene@discovercreation.org)



**STONES** (All words from *Stone Called Statolith* and *Amazing Gobies*)

**ACROSS**

- 7 force of pull to the earth (makes an apple fall down to the ground)
- 8 animals without back-bones
- 11 other kind of goby that lives in the Philippines (hint...starts with L)
- 13 a kind of cup that gobies have that help them stick to rocks
- 16 balancing organ (pouch) of some invertebrates

**DOWN**

- 1 one kind of a goby that lives in the Philippines (hint...starts with P)
- 2 piece of sand (etc.) placed in statocyst
- 3 "and a \_\_\_\_\_ unto my path." Psalms 109:105
- 4 a bar of iron that attracts (pulls) other iron
- 5 "...Jesus Christ himself being the chief corner \_\_\_\_\_;" Luke 20:17
- 6 tiny hairs in statocyst
- 9 God's word
- 10 shedding and growing new outside (skin)
- 12 our saviour (God's son)
- 14 "Thy word is a \_\_\_\_\_ unto my feet," Psalms 109:105
- 15 tiny fish



**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!

