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Roger Weller, geology instructor  
[wellerr@cochise.edu](mailto:wellerr@cochise.edu)

## ***Student Papers in Geology***

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## **Tectonics**

**John Wheeler**  
**Physical Geology**  
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### ***The Theory of the Expanding Earth***

In the world of science, ideas are proven and dis-proven every day. Ideas about the Earth have arguably been some of the most controversially argued concepts. From Columbus's theory that said the Earth was round to Copernicus's heliocentric model of our solar system with the sun in the center and not the Earth. Now there is a theory which was actively worked on called the expanding Earth theory. This theory started around the late 1800's and was heavily introduced to the geological community by Professor S. Warren Carey from Tasmania. And some information currently in the works by retired U.S. Naval Commander Lawrence S. Myers.

One of the goals of the Expanding Earth theory was to dis-prove the idea of subduction. The first idea given was for subduction to be true the Pacific basin would have to be reducing in size while the Atlantic would be increasing at a rate of 2-4 cm per year. Saying this would mean the Pacific Ocean is doomed to disappear if the Earth stayed the same size. For subduction to be valid, another 8-16 cm. a year of East Pacific Rise growth, the greatest rate of new seafloor growth on the planet, also must be swallowed for a total subduction rate of 10-20 cm. per year. These rates are going to have to be equivalent in the Indian and Antarctic Oceans.



<http://www.expanding-earth.org/>

Many of the supporters of the Expanding Earth theory say that for every proof which is provided for subduction allows for another proof of an inconsistent size in the Earth. The goal of any individual proving there theory is to remove doubt. For the believers of the Expanding Earth theory, plate tectonics and subduction has too many questions still left to be answered.

Next, accurate proof of the Expanding Earth theory has to be shown. The main idea was to show that the size of the Earth was increasing.



<http://www.grisda.org/origins/15053.htm>

This theory states that the Earth started as one land mass which eventually broke up. This idea eliminates other ideas of land bridges or other ideas on how various animals end up on different landmasses they do not normally belong such as a fossil's of rhino's ending up in North America. Another possible piece of evidence is the rotation of the Earth not being steady. Every once in a while astronomers have to add time to our clocks to make up for a rotation which is not continuous. Other proof is that of the relatively young age of the ocean floor. The expanding earth provides a natural explanation: the ocean floors are just the new surface that has emerged during the expansion process. With the plate-tectonic model, it is presumed this is because older oceanic crust has been subducted. So an area equivalent to the Pacific Ocean is usually assumed to have been subducted under the Americas since the Jurassic with no debris or remnants of older oceanic crust left behind.





suggested mechanisms. The most frequently mentioned mechanism is a structural or a chemical phase change that involves an increase in volume with constant mass. The development of ice from liquid water, for example, involves a structural change in which there is an increase in volume. This could be occurring at the core/mantle interface. In this process the mass of the earth would remain essentially constant while its volume is increased. Consequently, if the radius of the earth doubled, the force due to gravity on the surface of the earth would now be only one fourth of what it was prior to the expansion. But paleogravity studies indicate that the force of gravity has never been significantly greater than it is now. One of the greatest ideas that are put into question is that matter would have to be continuously created because of the earth expanding.

There is ideas conceived everyday about the way our planet operates. These ideas should never be thrown away without looking at them again. Usually ideas are disproved because there are too many holes in the theory. Another look could always fill those holes and give light to other possibilities.

A special thanks goes to Lawrence S. Myers

Commander, U. S. Navy Ret. <http://www.expanding-earth.org/>

And also thanks to Bill Mundy, Professor of Physics at Pacific Union

<http://www.grisda.org/origins/15053.htm>