

Cambrian Period (488-542 million years ago)

Spineless Critters First

The **Cambrian Period** is the time in Earth's history when more new varieties of life forms developed than at any other time. Together with the Ordovician (oar-doh-VISH-ee-in) Period, this was known as the 'Age of Invertebrates'. **Invertebrates** are animals without backbones, such as snails and clams.

The first creatures with hard parts (shells and skeletons), and most of our familiar animal types develop at this time. For all this new development, there are still no plants or animals on land yet.

This time of rapid invertebrate development is sometimes referred to as the 'Cambrian Explosion'. It is also known as the 'Age of **Trilobites**'. Trilobite fossils start to show up all over the world in rocks that date to this time period. During this time, most of the tectonic plates were gathered together into a continent known as **Gondwana**.

The best record of the Cambrian explosion is the Burgess Shale in British Columbia. Laid down in the middle-Cambrian, when the "explosion" had already been underway for several million years, this formation contains the first appearance in the fossil record of brachiopods, with clamlike shells, as well as trilobites, mollusks, echinoderms, and many odd animals that are probably extinct. They include *Opabinia*, with five eyes and a nose like a fire hose, and *Wiwaxia*, an armored slug with two rows of upright scales.

The question of how so many large changes occurred in such a short time is one that stirs scientists. Why did many fundamentally different body plans evolve so early and in such great numbers? Some point to the increase in oxygen that began around 700 million years ago, providing fuel for movement and the evolution of more complex body structures. Others propose that an extinction of life just before the Cambrian made it possible for new life to expand. Gondwana was also moving to different areas of the Earth possibly creating many new habitats for different types of plants and animals.

Trilobites were the ancient ancestors of today's horseshoe crabs. The name 'trilobite' describes the body of these creatures of relatively shallow, warm ancient seas. 'Tri' means three, and 'lobes' are rounded body segments. Therefore, trilobites had three rounded body sections (seen here as they run from head to tail down the length of the animal's body).



name _____ per _____

Answer the questions

1. What is so special about the Cambrian Period? Please explain in detail.
 2. What are invertebrates?
 3. What is one possible explanation of the explosion of life?

Label the following on your timeline

- A. Cambrian explosion - at the beginning of the period
 - B. Burgess Shale laid down - find in the reading