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If a living cell were not surrounded by a water-repellant membrane, it would quickly disintegrate and die. The membrane which holds cells together is made of a lipid, a family of biochemicals which are fatty acids and repel water. The lipid which is used in the cell membrane has, in addition to the chains of hydrogen, carbon and oxygen in the simplest forms, atoms of phosphorus and is called a phosphoglyceride.

Each molecule of the membrane is shaped like a capital U. The pointy ends repel water, so are called hydrophobic. The rounded ends of the molecules are attracted to water and are called hydrophilic. When phospholipids are put in water, the laws of physics work to rearrange the molecules so they line up side by side in a double layer to form miniature spheres.

Creatorless origins people have suggested another chance occurrence in the days of their conjectured “primordial soup”. One of these spherical structures of lipid molecules came into contact with a primitive genetic molecule, and voila! - a living organism. But then came some inquiries as to how this could have occurred.

First, the organizing of lipid molecules into those little spheres is prevented by the presence of calcium and magnesium salts. These are present in seawater, so it could not have occurred there. Second, those phospo-lipid molecules would block the passage of food into the cell and waste from leaving it.

Living cells have protein receptors, according to a favorite current idea - illustrating that modern science does not yet have a completely accurate understanding of how a cell works. These largely protein - instead of fatty acid - structures bridge the inside and outside of the cell through the lipid membrane. They are thought to mimic the water-attracting and water-repelling ends of the U-shaped phosphoglyceride molecules, and so permit the passage of food in and waste out of the cell.

This has left the evolutionists wondering how cells could have functioned before these protein bridge structures developed - all on their own. Finally, the biggest problem recognized by the scientists - if a lipid membrane had formed by chance, and then by chance engulfed an RNA molecule, the result is called by them “proto life” - meaning that it has some of the structure of a living cell, but is not yet alive.

To live it must also have proteins, carbohydrates and nucleic acids. All of these would need to have been formed in the primordial soup of chemicals in the ancient seas. The last-mentioned components of life, carbohydrates, are macro-molecules.

These are complex structures of hundreds to millions of the smaller building-block molecules - like some of those which were produced in the Miller-Urey experiment, all these smaller units being interconnected in just the right configuration for their specialized function in the cell. A different macromolecule is required for each specific cellular function, e.g., storing energy, providing separation between components, and catalyzing reactions.

There are more than 5,000 different kinds of catalysts of biological processes. Each one must have the right physical shape to do its job. How possibly could such be made by random collisions by atoms? This is another huge problem for seekers of Creatorless origins.