

Life on Earth - Two Faiths - 4

A factory often has a storeroom for dangerous chemicals. Similarly in the living cell there are chemicals which break down foodstuffs. But they would also break down the cell itself if given the chance. So they are kept in little sacs called lysosomes and only used when needed.

These various structures in the living cell, the cell wall and the organelles it encloses, combine to enable the cell to operate as a microscopic factory. Nobody would suggest that a factory could form itself by chance out of a jumbled collection of wood, steel, cement, paper and glass. How then should anyone suggest that the cell factory appeared by accident?

Consider the fact that for a cell to be described as living it must not only grow but to replicate, which it does by dividing into two. Cell division cannot be a simple “chopping down the middle.” There are always a number of mitochondria and ribosomes and lysosomes in the cell, so some of each would always be in either division if the cell were simply cut down the middle.

But there is only one nucleus, which contain the long threads of nucleic acid with all the coded instructions that make the cell work. To chop this into two parts would mean that each new section would contain only half the necessary instructions, and therefore only half the processes for life could be carried out. Each new cell thus formed would die immediately.

The nucleic acid needs to duplicate itself first, so that the two new cells can each have a complete set of instructions. When the cell is ready, the thread-like molecules divide lengthwise first, then the threads contract to form pairs of coiled cylindrical bodies known as chromosomes. Meanwhile, in the body of the cell a little organelle called the centriole has divided and the two centrioles move to the opposite ends of the cell, called the “poles”. These centrioles remain connected by a number of fibres, called the spindle.

The chromosome pairs are released from the nucleus, and then arrange themselves on the spindle at the “equator” of the cell. The chromosome pairs now separated completely, the fibres of the spindle start shortening. This pulls the chromosome pair apart, each one moving towards a polar centriole. When a complete set of chromosomes is at each centriole, a nuclear membrane is formed around each one, forming two active nuclei. Meanwhile the cell elongates and becomes progressively pinched in the middle, until two identical daughter cells are formed. These then separate completely.

By this remarkably complex process, the essential instructions for life are accurately duplicated in preparation for dividing the cell. A spontaneous application of some combination of the laws of nature towards the initiation of this process is impossible to explain in terms of chance development. This could not have occurred at the end of a series of trial-and-error steps because it had to work the first time or that first cell would have died and there would be no life on earth.

To summarize the characteristics of life we take note of both the complexity of the cell with the intricate and ceaseless activity inside it. ●The assimilation of food ● the production of hundreds of different substances ● the use of some of these to extend the structure of the cell until it is big enough to divide ● the use of others to initiate and control the processes that are necessary for life - all this and much more is going on at this moment in the myriads of cells on this earth.

More next time, God willing.