An 8-Legged Marvel – 1

In recent times men have devised a way to perform immense work by little more than waving a wand - actually, as an example, an operator sitting in a hydraulic excavator. With switches and push buttons properly preset, as a demonstrator on U-Tube remarked, “the machine becomes an extension of the operator’s body” by his operation of some combination of levers, joysticks and pedals. Such became possible through increasing knowledge. Blaise Pascal, 17th-century mathematician and physicist stated the principle that “in a fluid at rest in a closed container a pressure change in one part is transmitted without loss to every portion of the fluid and to the walls of the container.” In the following century, the Swiss mathematician, Daniel Bernoulli expounded the physics of fluid flow. It was another century before technology had advanced to provide all the elements of a hydraulic power system - pump, engine to drive the pump, control valves, and fluid-driven motor to perform the mechanical work - like the excavator.

But a very long time before men had developed fluid-power technology, the spider was already using it. The legs of spiders are unusual because they lack extensor muscles and because blood is used as hydraulic fluid to extend the legs in opposition to flexor muscles. This is why the legs of a dead spider are not found extended, but curled under the body. The blood pressure of a resting spider is similar to ours and can double during activity. The high pressure is maintained by valves associated with the heart. So it is changes in blood (the fluid of the spider’s hydraulic power system) pressure which function to extend the legs of spiders. The blood is driven by the heart (the pump) which is powered by the associated muscles (engine) and whose flow and pressure is controlled by the circulatory structure (valve). This is all operated from the nerve bundles in the front section of the spider’s body.

Observing a spider in action reveals how it easily co-ordinates hydraulic extension with muscle flexion to walk, run or climb without tripping over its own claw-feet. More precise control of the limbs can be seen in spinning silk, and - depending on which of the 45,000-plus species - constructing a web, tying up a prey, lining of nests, constructing trapdoors, etc., all performed in jig time. Web-building spiders have poor vision, yet are able to construct complicated orb webs, running radial lines of silk from a focal point and then the spiral portion. Such spiders have been taken into the weightlessness of an orbital laboratory. Their first webs were substandard, but they did better afterwards. This rather smacks of intelligence, which could hardly be attributed to a creature with no true brains, but only a pinhead sized bundle of ganglia - and programmed for unvarying, simple behaviour patterns. This behaviour in adjusting to changing conditions sounds more like the artificial intelligence which is being avidly pursued in various branches of science, with the objective of programming it into a computer. The One who made living things has evidently already done it in these spiders. This adaptability has also been noted in another spider, of the Portia genus, which uses deceit and surprise attack in preying on other spiders, including their own kind. So well programmed is Portia that it has been called in its behaviour one of the animal kingdom’s most complex predators.

The use of similar techniques in web construction by totally different species of spiders frequently occurs. Those who reject special creation call this convergent evolution. In essence, this claims that the highly unlikely mutations which they say produced the complex ability to weave an orb web, occurred quite independently time after time. The multiple occurrences remove such a mutation from being merely a random occurrence to being the result of some hypothetical physical law. To choose an evolutionary path in the absence of scientific proof is to reject special creation in favour of man-made guesswork.