

## An 8-Legged Marvel – 2

Without spiders, mankind would face a losing battle with vast swarms of flies. But the Creator has produced a perfectly balanced environment for the living things which He has made. Spiders perform a matchless job of keeping insects under control by satisfying their urge to consume them. It is accepted that the young orb web spider spends no time trying to decide how to get a meal. It receives no training, nor has it the opportunity to observe a parent spinning. The instructions, called instinct, are built into the cellular structure of the creature, which enable it to immediately set to work building a web.

A typical orb-web spider was seen building its snare, a little under two feet across, working energetically, persistently and precisely. It drew out more than 120 feet of silk and made nearly 700 attachments, all in well under one hour. On the abdomen of such a spider are several spinnerets which exude silk. The silk issues as a liquid, but hardens as a result of being pulled out. In each spinneret are many spigots, every one connected to its own silk gland. The spider has a half-dozen different kinds of silk glands, each producing a different kind of silk for each use.

To begin, the spider pulls out with its hind legs a silk thread from the ampullate glands to produce the frame thread, and waits for it to be carried by the breeze. When the loose end catches on to a twig, the spider secures its end of the thread and crosses the newly formed bridge, strengthening it with additional threads.

The spider then descends from the centre of the bridge, securing a thread on the ground or on a twig. The centre, or hub, of the web is established when the spider returns to the bridge with a thread, carrying it part way across the bridge before securing it; this thread is the first radius, or spoke, made of the same kind of strong frame silk. After completing all of the spokes, the spider, using a different and weaker kind of silk, runs some temporary spirals toward the outside of the web.

The spider then reverses direction, and begins drawing out another kind of silk for ensnaring, while it removes the temporary spiral. The ensnaring threads form a dense spiral, to which are dabbed droplets of glue to hold insects for a moment while the spider rushes out from the centre of the web, where it locates prey by sensing motions in individual spokes. The ways by which spiders keep from becoming entangled in their own webs are not completely understood nor is their mechanism for cutting the extremely elastic silk threads used in web construction.

Spiders can be seen lubricating themselves with an oil from their salivary glands, taking great care to treat only those areas which are most likely to come into contact with the sticky threads. This operation takes about as much time as building an entire web.

Instinct is defined as a natural propensity to act without conscious intention - an instinctive act is one not controlled by reason. How did the spider come to possess these specific kinds of silk glands with their associated delivery organs, the spinnerets - and the coordination of the hind legs to not only draw out silk, but to select the particular silk needed for the occasion? Since evolution is said to be a very slow process, the spider must have existed for thousands of generations without possession of all the coordinated features. Until the silk glands and spinnerets - and the required instincts to control those parts were present the spider could not build a web. And until the oil glands and instinct to use them, the spider would get tangled in its own web.

Seeking a rational explanation, Richard Hingston, former Fellow of the Royal Geographical Society, commented in *Problems of Instinct and Intelligence*, "Instinct often shows remarkable foresight which again goes to illustrate perfection." Foresight involves provision for the future, which only a mind can produce. Since mankind has not the capacity for this perfection, it must have been created by God, who *"has made all things for Himself" - Proverbs 16:4.*