

# **The Sagacity of Certain Insects**

**by**

**Oliver Goldsmith**

***Free*editorial** 

Animals in general are sagacious in proportion as they cultivate society. The elephant and the beaver show the greatest signs of this when united; but when man intrudes into their communities, they lose all their spirit of industry, and testify but a very small share of that sagacity, for which, when in a social state, they are so remarkable.

Among insects, the labours of the bee and the ant have employed the attention and admiration of the naturalist; but their whole sagacity is lost upon separation, and a single bee or ant seems destitute of every degree of industry, is the most stupid insect imaginable, languishes for a time in solitude, and soon dies.

Of all the solitary insects I have ever remarked, the spider is the most sagacious, and its actions to me, who have attentively considered them, seem almost to exceed belief. This insect is formed by nature for a state of war, not only upon other insects, but upon each other. For this state nature seems perfectly well to have formed it. Its head and breast are covered with a strong natural coat of mail, which is impenetrable to the attempts of every other insect, and its belly is inveloped in a soft pliant skin, which eludes the sting even of a wasp. Its legs are terminated by strong claws, not unlike those of a lobster, and their vast length, like spears, serve to keep every assailant at a distance.

Not worse furnished for observation than for an attack or a defence, it has several eyes, large, transparent, and covered with a horny substance, which, however, does not impede its vision. Besides this, it is furnished with a forceps above the mouth, which serves to kill or secure the prey already caught in its claws or its net.

Such are the implements of war with which the body is immediately furnished; but its net to entangle the enemy seems what it chiefly trusts to, and what it takes most pains to render as complete as possible. Nature has furnished the body of this little creature with a glutinous liquid, which proceeding from the anus, it spins into a thread coarser or finer, as it chooses to contract or dilate its sphincter. In order to fix its thread when it begins to weave, it emits a small drop of liquid against the wall, which hardening by degrees, serves to hold the thread very firmly. Then receding from the first point, as it recedes the thread lengthens; and when the spider has come to the place where the other end of the thread should be fixed, gathering up with its claws the thread which would otherwise be too slack, it is stretched tightly, and fixed in the same manner to the wall as before.

In this manner it spins and fixes several threads parallel to each other, which, so to speak, serve as the warp to the intended web. To form the woof, it spins in the

same manner its thread, transversely fixing one end to the first thread that was spun, and which is always the strongest of the whole web, and the other to the wall. All these threads, being newly spun, are glutinous, and therefore stick to each other wherever they happen to touch, and in those parts of the web, most exposed to be torn, our natural artist strengthens them, by doubling the threads sometimes six-fold.

Thus far naturalists have gone in the description of this animal: what follows is the result of my own observation upon that species of the insect called an *House-Spider*. I perceived about four years ago, a large spider in one corner of my room making its web; and, though the maid frequently leveled her fatal broom against the labours of the little animal, I had the good fortune then to prevent its destruction, and I may say, it more than paid me by the entertainment it afforded.

In three days the web was, with incredible diligence, completed; nor could I avoid thinking that the insect seemed to exult in its new abode. It frequently traversed it round, examined the strength of every part of it, retired into its hole, and came out very frequently. The first enemy, however, it had to encounter, was another and a much larger spider, which, having no web of its own, and having probably exhausted all its stock in former labours of this kind, came to invade the property of its neighbour. Soon then a terrible encounter ensued, in which the invader seemed to have the victory, and the laborious spider was obliged to take refuge in its hole. Upon this I perceived the victor using every art to draw the enemy from his strong hold. He seemed to go off, but quickly returned, and when he found all arts vain, began to demolish the new web without mercy. This brought on another battle, and, contrary to my expectations, the laborious spider became conqueror, and fairly killed his antagonist.

Now then, in peaceable possession of what was justly its own, it waited three days with the utmost patience, repairing the breaches of its web, and taking no sustenance that I could perceive. At last, however, a large blue fly fell into the snare, and struggled hard to get loose. The spider gave it leave to entangle itself as much as possible, but it seemed to be too strong for the cobweb. I must own I was greatly surprized when I saw the spider immediately sally out, and in less than a minute weave a new net round its captive, by which the motion of its wings was stopped, and when it was fairly hampered in this manner, it was seized, and dragged into the hole.

In this manner it lived, in a precarious state, and nature seemed to have fitted it for such a life, for upon a single fly it subsisted for more than a week. I once put a wasp into the net, but when the spider came out in order to seize it as usual, upon

perceiving what kind of an enemy it had to deal with, it instantly broke all the bands that held it fast, and contributed all that lay in its power to disengage so formidable an antagonist. When the wasp was at liberty, I expected the spider would have set about repairing the breaches that were made in its net, but those, it seems, were irreparable, wherefore the cobweb was now entirely forsaken, and a new one begun, which was completed in the usual time.

I had now a mind to try how many cobwebs a single spider could furnish, wherefore I destroyed this, and the insect set about another. When I destroyed the other also, its whole stock seemed entirely exhausted, and it could spin no more. The arts it made use of to support itself, now deprived of its great means of subsistence, were indeed surprizing. I have seen it roll up its legs like a ball, and lie motionless for hours together, but cautiously watching all the time; when a fly happened to approach sufficiently near, it would dart out all at once, and often seize its prey.

Of this life, however, it soon began to grow weary, and resolved to invade the possession of some other spider, since it could not make a web of its own. It formed an attack upon a neighboring fortification with great vigour, and at first was as vigorously repulsed. Not daunted, however, with one defeat, in this manner it continued to lay siege to another's web for three days, and at length, having killed the defendant, actually took possession. When smaller flies happen to fall into the snare, the spider does not sally out at once, but very patiently waits till it is sure of them; for, upon his immediately approaching the terror of his appearance might give the captive strength sufficient to get loose: the manner then, is to wait patiently till, by ineffectual and impotent struggles, the captive has wasted all its strength, and then he becomes a certain and easy conquest.

The insect I am now describing lived three years; every year it changed its skin and got a new set of legs. I have sometimes plucked off a leg, which grew again in two or three days. At first it dreaded my approach to its web, but at last it became so familiar as to take a fly out of my hand, and upon my touching any part of the web, would immediately leave its hole, prepared either for a defense or an attack.

To complete this description, it may be observed, that the male spider is much less than the female, and that the latter are oviparous. When they come to lay, they spread a part of their web under the eggs, and then roll them up carefully, as we roll up things in a cloth, and thus hatch them in their hole. If disturbed in their holes, they never attempt to escape without carrying this young brood in their

forceps away with them, and thus frequently are sacrificed to their paternal affection.

As soon as ever the young ones leave their artificial covering, they begin to spin, and almost sensibly seem to grow bigger. If they have the good fortune, when even but a day old, to catch a fly, they fall too with good appetites; but they live sometimes three or four days without any sort of sustenance, and yet still continue to grow larger, so as every day to double their former size. As they grow old, however, they do not still continue to increase, but their legs only continue to grow longer; and when a spider becomes entirely stiff with age, and unable to seize its prey, it dies at length of hunger.

**Freeditorial** 