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### SPIDERS AND BEES.

SPIDERS ARE ONE OF THE BEE-KEEPER'S BEST FRIENDS TO PRESERVE COMBS FROM THE RAVAGES OF THE BEE-MOTH.

REV. L. L. LANGSTROTH.

**D**EVER since the introduction of movable frames has there been, in our country, a greater mortality among bees, than during the last Winter and Spring. Before the use of these frames, to most bee-keepers such losses were irreparable. How often by natural swarming did the old-fashioned bee-keeper, when a few good seasons came in succession, make such a success in the business, as convinced him that a given sum of money invested in bees, paid better than anything else? But sooner or later comes the bad year—when most, and perhaps all of his colonies are lost—his golden dreams vanish, and in most cases he abandons the pursuit in disgust, having nothing to show for his investment but some empty hives, extra nice indeed for kindling wood, and some combs of value only for their wax. Was he one of the kind who have little use in their vocabulary for the word failure? Being able to make but little if any use of his old combs, he painfully waited upon the seasons, and unless he had in him the making of another Quinby or Grimm, he could only hope to build up his apiary again, if favored by a succession of favorable seasons.

We have had some very calamitous seasons since movable frames began to be extensively used, but by those who know their business, how quickly are such losses repaired. Although not very often referred to, this power of speedy recuperation is one of the greatest benefits which come from the control of the combs. Nearly every empty comb can be utilized for the bees, especially since the era of sending queens by mail and purchasing bees by the pound; and even if he has lost all his colonies, no one need call himself a bankrupt bee-keeper, but in a single favorable season may hear again the cheerful hum of industry in the hives no longer desolate and silent. The change so speedily effected seems almost like a resurrection of the dead!

But it takes time, even with the best management, to secure such results, and just here comes a new element which *must* be taken into account. Nothing is so acceptable to the bee-moth as combs with no bees to protect them; the older the combs, and the better in all respects for the bees, the better too for the moth, and the great question is, how with the least

trouble can these empty combs be saved? Hang them up in some light and dry place, carefully separated so that they nowhere touch each other, and sulphur them from time to time. Most of you know by heart this old, old story, and many of you only to neglect what requires so much care and never waits upon any procrastinator. You need not be told that eternal vigilance is the price which *must* be paid if we would save empty combs for the bees.

Columella said nearly two thousand years ago: "This business [bee-keeping] demands *maximam fidelitatem* [the greatest fidelity], which since it is the rarest of qualities," etc. It is just as hard to find it now as then, but we never needed it more, and I proceed to tell those who are conscious that they are weak in this matter, now "without money and price" they may secure it. The facts which I shall now give are recorded in my private journal, and have been often told to bee-keepers, some of whom will, no doubt, remember them as given by me many years ago. Within a year or two my methods have been given in part to bee-keepers by some German apiarist—and how much do we owe to our German friends, among whom Dzierzon stands first,

I extract now word for word from my Journal, Vol. I, under date of July 8, 1864:

"Spiders I count as friends. Last season I put away small frames of comb under a box, and the spiders kept them free from moths; this year I had a number of hives with combs, but no bees, and they have guarded them *well!* where a spider has her web, there it will be kept empty combs."

I will now explain more fully how I came to find the spider's value to the bee-keeper. A nucleus with a choice imported Italian queen, was placed on an empty box-hive laid on its side upon the ground, with its cavity facing the north, to protect its contents from the sun. In this cavity I put combs to be given from time to time to the nucleus, when frames of brood for queen-rearing were taken from it. I expected that some at least of these combs would be visited by the bee-moth, but examining each comb as I took it from the old box, I found no signs that they hurt them. This surprised me much, until I saw when I came to the further end of the box, a spider's web with its occupant and many proofs of the kind of work that had been done (all unknown to me) in the shape of skeletons of bee-moth and other insects found in that web.

It was not until next year that I reaped any great benefit from seeing the handiwork of