

INSECTS THAT RIVAL MAN.

By A. W. Haslett (*Reprint John O' London's Weekly, 20/8/37.*)

Somewhere about three-quarters of a million kinds of insects are known to science. They are also more numerous than all other animals put together, so that it has been said, and with good reason, that they are really a dominant type of life on earth at the present time. We can claim, it is true, that we can protect ourselves against the more noxious varieties and make commercial use of others—for example, the honey bee and the silkworm. But the degree of protection achieved is woefully incomplete.

The United States, which seems to have a passion for such statistics, estimates that insects still, in a normal year, take a 10 per cent. levy of all human efforts at food production—and a single insect, the cotton boll weevil, is blamed for taking 15 per cent. of the entire cotton output of the southern states. On the other side, it might be argued that yellow fever and malaria—both mosquito-borne diseases—have been largely brought under control, and that the same is true of quite a number of plant pests.

The Civilization of the Ants.

If insects deserve (and secure) attention from their importance, many of them are also of interest in themselves. It is the latter claim which Mr. A. Hyatt Verrill has chiefly stressed in *Strange Insects and Their Stories* (Harrap, 10s. 6d.). "Among them," he writes, "we find nearly every art, industry and phase of human activity duplicated. There are insect masons, carpenters, weavers, divers, aviators, and bridge builders. There are insect soldiers and sailors, insect miners and farmers, insect basket makers and engravers, insects who keep cattle, and insects who have slaves," and, if we put the word "cattle" in quotation marks, it is all true. The reference is to the habit of certain ants of keeping little aphid insects for the sake of their "honey dew," the aphides being all but literally milked and, in some cases, kept in underground "stables" and deliberately fed by the ants during cold weather.

Even more strange are the ant farmers of South America, which make hanging gardens in trees, and cultivate plants which have never been otherwise found. Presumably, they have either been grown by the ants for so many millions of years that distinct species have evolved, or else the original wild plants have disappeared. But of the fact, apparently, there can be no doubt.

How Wasps Ripen Figs.

Then there is "the insect magician who gives us figs"—who alone is capable of bringing Smyrna figs to development and, in the process, commits suicide and forfeits its own prospect of parenthood. The story came to light from the effort of a San Francisco newspaper in the 'eighties to introduce Smyrna fig cuttings into California. The cuttings grew, but instead of big, luscious figs, little wizened buds were the only produce—until a Government expert was sent out to Smyrna to investigate. Here he was struck by the native habit of carefully gathering quantities of inedible wild figs and hanging them on strips in the orchards "to keep away evil spirits." They were so emphatic that this was important that he decided to wait and watch. And here is the answer.

Figs, strictly speaking, are flowers rather than fruit, and require fertilization, when apparently already in the fruit stage, before they will further develop. This is done naturally for the wild caprifigs, by little wasps, which burrow their way in through the "eyes" of the figs and lay their eggs inside. When the young wasps emerge in the orchards they fly unhesitatingly to the cultivated figs, force their way hopefully inside, and then finding the figs unsuitable come out again without laying any eggs and fall helpless and wingless to the ground. The one result of their sacrifice is that the cultivated figs are fertilized. And only by importing fig wasps and wild figs, together, into California, could Californian figs be made to fruit.

Saved by Ladybirds.

From California, too, comes the story of the saving of the orange groves there by the Australian ladybird "*Vedalia*." This was a case of pitting insect friend against insect foe. The cottony-cushion scale insect, known to have been accidentally introduced from Australia, was decimating the Californian plantations—although reports from Australia showed that, in its native country, it did little or no damage.

An investigator was therefore sent to Australia to discover what it was that kept the cottony-cushion scale in check. He came back with a pretty red and black *Vedalia*. In six months "they had spread all over southern California and had made such inroads on the scale army that the withered, dying orange trees put forth new leaves and began to bloom once more," and within a year the scale insects were under control.

Mr. Verrill might have told, too, of the prowess of "*Cactoblastis cactorum*," Australia's guest-insect from Brazil, which has already helped Australia to reclaim more than three million acres of agricultural land from the notorious prickly pear. The story, in this case, goes back to 1787, when Captain Phillip, who was in command of the "first fleet," as Australians later came to call it, called at Brazil on his way out.

The Insects were Lost.

There, so it is said, he took on board a supply of cochineal insects, thinking he would like to have a home-made red dye for his red-coats and with the insects he took also a number of cactus plants, prickly pear, on which the insects feed. Unfortunately, the cochineal insects were lost in transit, but the prickly pear—which had merely been incidental—safely arrived.

However, the story of its introduction was known, and so when the original consignment had grown to cover 60,000,000 acres—an area larger than the whole of Britain—it was to Brazil that search parties were sent. "*Cactoblastis*," a name now famous in Australia, has proved the best recruit.

But in a book so packed with odd and varied information it would be unfair to complain of omissions. A more valid criticism is of the manner of appeal—to wonder, and again to wonder—through artisans and mimics, ogres and giants, sawyer beetles and ethereal dragon flies, grave and gay, for the whole length of an evening's reading. The wonder, of course, is there. But it should be taken rather as a series of cocktails, than as a single meal—or else diluted with intervening courses of more solid fare. Apparently Mr. Verrill himself realizes the need. He expresses the hope, at the end of his book, that readers will be encouraged to delve more deeply. He might, with advantage, have met them—quarter way.