

To form an idea of what the benefit of a practical experimental farm carried on for instructive purposes would be, it is only necessary to look over the value of our imports; but if the institution is ever to be a success, it is necessary that all plants already sufficiently well understood and acclimatised should be struck off the list, that a great number of those grown should be parted with from the seed beds, and that little understood industries should be thoroughly well carried out to a practical end, to effect which sufficient skilled assistance should be provided to pursue the arrangement on a reasonably large scale.

ORCHARDIST.

Entomological Notes.

COCCINELLA NOVÆ ZEALANDIÆ (BROUN).

REFERRING to two articles published in last issue, one under the above title, and the other under that of "Icerya Purchasi," the little beetle seems still to be a mystery in some respects. Mr. Koebele, when in Auckland, seemed very doubtful whether it was the same species as the one he found in Australia attacking Icerya. Neither himself nor any one, either in Australia or New Zealand, ever seems to have seen the little insect before, and no one could give it a name. On its arrival in America, scientists were equally at fault (even the great head of the Division of Entomology could not name it), and had to send specimens home to England to see if any one there had ever seen it before. So they ultimately christened it "Vedolia cardinalis," disregarding both Captain Broun's "Coccinella Novæ Zealandiæ" and the writer's (who claims to have first seen the insect in New Zealand) "C. Icerya." Since the issue of the last number of the NEW ZEALAND COUNTRY JOURNAL, it appears very doubtful whether this beetle, after all, is identical with the Australian species. Mr. Frazer S. Crawford, who is an excellent authority on the subject, writes to say that he was with Mr. Koebele when he was collecting in South Australia, and that he only procured two species of coccinella (his own statement too), that one of them preys upon the American blight, and that the other occasionally feeds upon Icerya, but that they have no beetle which attacks the pest with any approach to the vigour with which the New Zealand species acts. On the contrary, so far from being so very much more active than the leptopterous flies

(as our beetle is), the Australian one is very much slower, and it does really seem so, from the fact that, whereas the *Icerya* melted from around Auckland with a celerity quite unprecedented in the history of entomology, it still lingers in Australia, where Mr. Koebele and his American friends seem to say the beetle is at home. Quoting from Mr. Crawford's letter :—" I am as much puzzled as you to know what beetle is meant by ' *Vedolia cardinalis*.' We know of no such coccinellid in South Australia, and was not aware that Mr. Koebele ever discovered a coccinellid devouring *Icerya* in this Colony. I therefore set down ' *Vedolia cardinalis* ' as a New Zealand species. I had expected to have learnt all about it in Mr. Koebele's report. * * * We have two coccids in South Australia, one (*coccinella conformis*), which has not as yet been observed attacking *Icerya*, but does attack American blight, and is supposed to live on a native coccid. The other (*Halysia galbula*) does attack *Icerya*, but to so little purpose that I kept three larvæ confined in a bottle for a couple of months with some fifty *Icerya*, at the end of which time the latter produced myriads of larvæ." Mr. Koebele, in a letter to myself from Napier, says that in Australia he obtained two species of coccinella, which, presumably, would be the two above, as he was assisted by Mr. Crawford, and the description of their habits does not lead one to suppose that the beetles now clearing California of *Icerya* with such wonderful celerity are likely to be either of those, but rather the New Zealand beetle which has done the same in this Colony, and of which Mr. Koebele obtained some thousands at Napier.

It seems wonderful that no one should have observed such a conspicuous insect when it was swarming in millions on the *Iceryæ* around Auckland ; but there are no students of entomology within a great many miles of the infested districts, and the circumstance speaks volumes of the utter apathy of the Horticultural Societies whose whole minds are occupied with their flower and fruit shows.

The result of Mr. Coquillet's experiments in trying to feed the beetles on food other than *Icerya*, have resulted, as here, in a failure. He gives some interesting account of their life history in " *Insect Life*." The female begins to lay the day after leaving the pupa, continuing during her life, and producing from 150 to 200 eggs, deposited under or on the ovasacs ; the larvæ feed for about a month. The imago attacks *Icerya* as well, and even the winged males are not spared. The voracious beetles will, when pressed by hunger, readily fall upon and devour one another. But the unsolved question remains, what are they to feed upon when *Icerya* is no more ?

Referring again to the articles alluded to under the item "Codlin Moth," is a mention of certain parasites of this most destructive pest, which the writer was then making arrangements to introduce to this Colony. The technical points in dispute had all been settled, and everything was satisfactorily prepared for the transmission and reception of these valuable parasites. The writer had even rented a large neglected orchard swarming with the Codlin Moth, and paid a year's rent in advance to place his friends in; nothing remained but to procure a permit to land a few cases of infected apples containing the paratized larvæ of the moth, but it is much to be regretted that this permit could not be obtained. The fault we must hope lies with the "Circumlocution Office," where they study to solve the problem of "how not to do it," rather than from any wilful obstruction from the Government. In the first instance the application was made to an M.H.R., who takes an active part in the Codlin Moth legislation, but as he expressed a doubt on the propriety of importing an insect which might be worse than the Codlin Moth, I asked Mr. Maskell to make the application, never doubting that when a man of his reputation as an entomologist made such a request it would be complied with; but, unfortunately, instead of applying to the Minister of Agriculture, Mr. Maskell dealt with the Custom House authorities, who promised to send me the permit, and probably forgot all about it. At all events, that was in August, and it has not arrived, and the parasites are lost to our use, and so is my £50 of rent.

There are five parasites, amongst which are several active ichneumonidian flies, large enough to use a larva for each egg, and lately two other enemies of the moth have been discovered, one attacking and devouring both larvæ and pupæ in the bands around the trees. As the habits of the moth (which differ widely in different climates), lay it open very much to attack in New Zealand, great results might have been expected, far exceeding anything any legislative measure could effect. It is a great pity any obstruction should have been put in the way of landing these parasites, and it is also a very poor encouragement to those who are willing to benefit others at their own expense and trouble in a matter from which they would derive no personal advantage; but it is to be hoped that the Government will see their way, some day, to take steps to remedy such mistakes, and at the same time it cannot be denied that most of our Fruit-growers' Associations and Horticultural Societies allow their chief energies to be expended upon shows, and pay far too little attention to such matters as the insect pests that are robbing them of the profits of their orchards.

Underneath is an extract copied from Mr. Maskell's letter :—

R. ALLAN WIGHT.

Wellington, Oct. 27, 1889.

R. ALAN WIGHT, Esq.,

My Dear Sir,—* * * I did not neglect your request. I went immediately to the Customs Department and asked them to give you a permit for landing your cases of apples with the American parasite for Codlin Moth. They replied that probably the thing could be done (certainly with Codlin Moth in millions in New Zealand* it seems absurd to stand upon any ceremony), and they would communicate with you. Doubtless you have long ago heard from them. * * *

(Signed) W. M. MASKELL.

The request was made early in August.

*In Auckland, where it was proposed to land the apples, the moth is everywhere in millions already.

A Lecture on Milk.

MR. JOHN OLIVER, of the Western Dairy Institute, Berkeley, recently delivered an instructive lecture on "Milk, its Production and Character in relation to Cheese and Butter-making." We are indebted to the *Chester Courant* for the following summary. The lecturer said the proper gate to enter on the subject of dairying was the way the cow made the milk. Some people perhaps did not think of this, or attach much importance to it, although a great deal was said on the subject of the chemistry of milk. Milk, however, he said, was a physiological product, and those who regarded it merely from a chemical point of view made a great mistake. It was an organic product, made out of the cow's own self—made out of her blood. People seemed to have a common notion that milk was made out of the food given to the cow, but that was altogether a mistake. It was, moreover, a mistake to refer to the cow as a milk-making machine. She was endowed with certain abilities, not, as was supposed, for the mere purpose of cheese and butter-making, but to feed her calf. The lecturer here indicated the process of the digestion of the food in the four stomachs of the cow, its conversion into chyle; and by means of blackboard illustrations, traced its