SOME EXPERIMENTS ON THE SUGARCANE MEALYBUG.

Trionymus (*Pseudococcus*) *sacchari* Ckll.

By J. DICK.

The sugarcane mealybug is probably the most commonly found insect on sugarcane in Natal, but its direct effect on the growth of the cane has not yet been investigated. The preliminary experiments to be described in this paper are concerned mainly with the results of planting cane infested with mealybugs. Experiments carried out in Louisiana on a similar insect, *Pseudococcus boninsis* Kuwana (*calceolariae* auct.), are described by Barber[1] in a paper published in 1923. His results show that the mealybugs have a serious effect on the early growth of plant cane, especially when the Argentine ant, which assists in the spread of the coccids, is present.

Effect on Germination.

For this experiment setts of Co.290 cane were planted in tins, each tin containing 21 buds. The setts were all taken from the tops of the sticks. Six replications were carried out of each of three treatments, namely : (*a*) The setts in this group were infested with mealybugs. (*b*) Setts apparently free from mealybugs were selected. (*c*) The setts were washed to ensure the absence of mealybugs.

The results of this experiment did not give very good evidence on the rate, in time, of germination, although the washed setts apparently germinated first, probably due to the direct effect of washing. The total germination, however, was significantly lower for the infested setts, while there was no significant difference in this respect between the washed and unwashed non-infested setts. The data obtained in this experiment are listed in the accompanying table.

Number of Buds Germinating.

Replications.	Infested setts.	Non-infested setts.	Washed setts.
1	11	14	13
2	13	13	17
3	12	13	15
4	11	15	16
5	10	13	14
6	12	15	13
Totals	69	83	88

In this experiment, not all the buds in the infested series were covered with mealybugs, but each sett containing about 4 or 5 buds was partially infested. The degree of infestation would affect the result, so that a more marked effect might be expected from more heavily infested setts.

Effect on Subsequent Growth.

Experiments on this question, on a large enough scale for statistically valuable results to be obtained, have been planned. In the meantime, preliminary trials have been carried out and have given results showing that a very marked deterioration in growth may be expected in cane produced from infested setts. The accompanying photograph, taken towards the end of February, illustrates the difference in growth in Co.331 cane four months old, from infested and non-infested setts. The mealybugs not only survive planting but, especially when accompanied by the Argentine ant, are carried up by the emerging shoots. In this experiment, cane plants produced from infested setts were themselves heavily infested, while plants in the control series, grown from non-infested setts, were free from mealybugs.

Summary.

Preliminary experiments indicate the danger of planting sugarcane setts infested by mealybugs, which have a harmful effect on germination and subsequent growth.

Reference.

[1] Barber, E. R. (1923) : The Sugarcane Mealy Bug and its Control in Louisiana. La. State Univ. Agric. Expt. Sta., Bull. No. 185, 16 pp., 4 pls. Baton Rouge, La.

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Co.331 cane four months old ; that on the left grown from setts infested with mealybugs, and that on the right from non-infested setts.

The VICE-PRESIDENT, in opening the paper for discussion, said that he had once been called out to inspect a field where a farmer thought he had an outbreak of gumming disease in the cane ; a disease hitherto unknown in this country. He found it was a severe infestation of mealybug. The nodes of the stalks were covered with mealybugs and the wax, which melted on hot days, was running down the outsides of the canes. Such a condition would certainly affect the milling quality of the cane.

Mr. DYMOND said the effect of mealybugs on clarification had been dealt with in a paper by himself some years ago. Now that we had an Entomologist at the Station he would like to see this work continued, as he believed that a lot of our clarification troubles were due to this pest.

Dr. DICK said that Barber found that controlling the ant that fostered the mealybug was a satisfactory method of controlling the mealybug. Mealybugs were transported from one place to another by the Argentine ant, and the Government entomologists had various types of bait for this ant.