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REPORT

OF THE

Proceedings of the Third Entomological Meeting

Held at Pusa on the 3rd to 15th February 1919

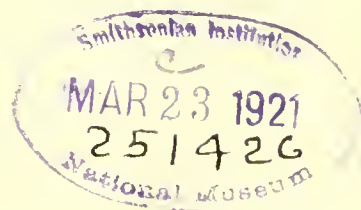
In Three Volumes

Edited by

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PREFACE.

THE following Report contains an account of the Proceedings of the Third Entomological Meeting, held at Pusa on 3rd to 15th February 1919. As in the case of the Report of the Proceedings of the Second Entomological Meeting, every endeavour has been made to provide as full and complete a record as possible. A mere abstract is of very little use to those workers who require to refer to the record for references on particular points. The cordial reception accorded to the preceding Report has indicated clearly the general appreciation of a detailed record of the Proceedings of a Meeting of this kind.

Notes on the discussions which took place were taken at the time by Messrs. M. Afzal Husain and G. R. Dutt, who acted as Joint-Secretaries, and to whom I am indebted for their assistance. These notes were again gone over and rewritten by myself.

This Report contains a record of ninety-two original papers read at the Meeting, exhibitions and discussions, covering various aspects of Indian Entomology. It will, I hope, be found useful by all interested in Entomology, both in and outside of India. That such Meetings are of interest and use to all entomological workers in India will, I think, be self-evident from this Report.

It will perhaps save correspondence if I state here that no Report was published of the First Entomological Meeting held in 1915. The Report of the Second Meeting, held in 1917, is still available.

T. BAINBRIGGE FLETCHER,

Imperial Entomologist.

PUSA,
28th June 1919.

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Empoasca thea, Dist.

Dist., Entom. XLIII 196 (1910), F. I. Rhyn. VII 91 (1918).

Destructive to tea in Cachar in company with *E. flavescens*. Also from Calcutta.

Empoasca devastans, Dist.

Dist., F. I. VII 93 (1918); Proc. Second Entl. Meeting, p. 117.

[*Empoasca* sp.]

We have this from :—Pusa, 8th August 1912, on cotton; Coimbatore, 7th January 1914, on cotton; Taru (Peshawar), 26th September 1913, on cotton; Nagpur; Lyallpur, on cotton; Dhulia Farm, on cotton; and Dharwar, on cotton. It is at times a bad pest of cotton, especially of exotic varieties.

Empoasca sp.

This was found at Peshawar in numbers on leaves of beetroot on 26th September 1913.

Empoasca sp.

This species attacks grape-vine in numbers at Peshawar in August. It has not been identified as yet.

PSYLLIDÆ.

Arytaina isitis, Buckt.

Psyllopa punctipennis, Crawf.

Psylla isitis, Entl. Mem. IV, No. 6; Agricul. Journ. Ind., VIII, 1-26, tab. 1-4 (Jan. 1913); Proc. Second Entl. Meeting, p. 81.

This species occurs on indigo in most parts of the Plains of India, from the Punjab to Madras, but is a minor pest as a rule, occasionally serious, especially in North Bihar.

Euphalerus citri, Kuw.

Proc. Second Entl. Meeting, pp. 215, 216.

We have this from Cherat (North-West Frontier Province), Lyallpur, Pusa, Poona and Coimbatore. It is usually a minor pest of *Citrus* spp. (orange, lime, lemon, pomelo), sometimes occurring in large numbers and doing considerable damage, especially in the Punjab. At Pusa and Coimbatore it has been found on shoots of *Murraya koenigii* and at Coimbatore on *Cordia cordifolia* also.

Spraying with fishoil-resin soap is effective.

Apsylla cistellata, Buckt.

Ind. Ins. Life, p. 742, ff. 514, 514 ; Proc. Second Entl. Meeting, p. 221.

This insect is found throughout Northern India on mango. Its early stages are passed inside a young shoot which becomes distorted and transformed into a cone-shaped gall. It is not common as a rule but occasionally becomes a pest.

ALEYRODIDÆ.

Aleurolobus barodensis, Mask.

Ind. Ins. Life, p. 749, ff. 524, 525 ; Proc. Second Entl. Meeting, pp. 150-151.

We have this from Cawnpur, Pusa, Sindewahi (Central Provinces), Bassein Fort and Baroda, in all cases on cane. It is a sporadic major pest of sugarcane, but is usually checked by parasites.

Beyond the utilization of such parasites and the cutting and destruction of badly infested leaves, no suggestion for control can be made at present.

Aleurocanthus spiniferus, Quaint.

Proc. Second Entl. Meeting, p. 214.

This species is widely distributed in the Plains as a pest, sometimes serious, of *Citrus* trees. It has been noted at Pusa, Surat, and in the Punjab.

It can be controlled by collection of the old leaves and regular sprayings (three or four, at intervals of a fortnight) of the new leaves with fishoil-resin soap.

The damage done is largely indirect, due to the honey-dew on the leaves.

Aleurocanthus nubilans, Buckt.

Ind. Mus. Notes, V, 36, t. 5, ff. 7-9 ; Proc. Second Entl. Meeting, p. 301.

This species was originally described from Backerganj where it was reported to be doing considerable damage to "betel-leaves" [probably *Piper betle*]. It has not been noticed since on betel.

Aleurocanthus piperis, Mask.

This species has been found in Ceylon on pepper, and is likely to be found on pepper in India also.

all species of *Diatræa*, *Chilo* and *Scirpophaga*, and they are present throughout the period of activity of the borers. No Dipterous parasite has been observed in Northern India although some were obtained from *Chilo simplex* caterpillars sent from Gujarat and the Konkan. Occasionally Carabid grubs (species of *Chlænius*) are observed preying upon the larvæ in affected stems. But the combined influence of all these enemies does not seem to be great.

CONCLUSION.

The borer pests of gramineous crops of only one locality, viz., Pusa, have so far been investigated. Although most of them are wide-spread there are some which are apparently confined to particular localities. For instance, *Diatræa* sp. (C. S. 1610) is confined to Eastern Bengal and Assam. As of all the borers it is the most injurious to grown-up canes, its introduction to other localities should be guarded against. Further work may reveal the presence of other borers in particular localities whose indiscriminate spread may not be desirable. The presence of one such borer is suspected in Southern India.

In the present incomplete state of the investigation no practical effective measures can be suggested against the borers. The old recommendation of cutting out "dead hearts" in sugarcane is of hardly any use and is distinctly injurious under certain conditions especially when the crop is young. Similarly cutting out dry ears of rice has hardly any effect on the crop. We are not yet in a position to suggest anything. The presence or absence of alternative foodplants has certainly some effect on the prevalence in any crop of the Pyralid and Noctuid borers. This, as already stated, has been definitely observed in the case of *Scirpophaga* and the Noctuid borer C. S. 1666. The presence of alternative foodplants has a great deal to do with the absence of *Chilo simplex*, *Diatræa venosata* and *Sesamia* spp. in injurious numbers at Pusa although each of them is capable of doing serious harm. A good deal of work is necessary in order to be able to study this question thoroughly under different conditions and to regulate alternative foodplants as an effective weapon to fight the borers, if it is proved that control can be effected in this way.

While we cannot suggest any treatment of the young crop of sugarcane, in the case of those insects which attack grown-up canes such as *Scirpophaga* spp. and *Diatræa* sp. (C. S. 1610) removal of the affected stems is expected to reduce their number or at least prevent the increase of their number and hence this practice can be followed in the absence of a better method of dealing with them.