



<http://www.biodiversitylibrary.org/>

Indian Museum notes.

Calcutta :[Indian Museum] :1889-1903.

<http://www.biodiversitylibrary.org/bibliography/49986>

v.5 (1900-1903): <http://www.biodiversitylibrary.org/item/110885>

Article/Chapter Title: 775

Author(s): Alcock, A, 1900

Subject(s): Pests of the sugarcane

Page(s): Page 40, Page 41, Page 42, Page 43, Page 44

Contributed by: Harvard University, MCZ, Ernst Mayr Library

Sponsored by: Harvard University, Museum of Comparative Zoology,

Ernst Mayr Library

Generated 11 February 2014 4:48 AM

<http://www.biodiversitylibrary.org/pdf4/024345900110885>

This page intentionally left blank.

comparative immunity of the whole country from the visitations of locusts.

In Lower Bengal young rice-fields seem to have suffered severely from the attacks of their constant enemy *Hispa ænescens*, but fortunately the Tiger-beetle, *Cicendela sexpunctata*, has appeared to exercise a timely check upon the ravages of the insect.

If we may take the meagreness of our reports as negative evidence, tea appears to have suffered little during the year from insect pests.

A friendly critic has recently objected against these *Notes on Insect Pests* their neglect of the important subject of remedies. But our reply is that this subject lies completely outside the scheme of a general Museum.

To propose remedial measures—unless we would follow the example of the sages of the Academy of Laputa—demands, to make no mention of time and special appliances for experiment, a first-hand knowledge of all the conditions under which any given pest is carrying on its depredations such as it is impossible for a busy Museum-curator to obtain.

All that a Museum officer can be expected to do in this direction is to make suggestions, for others, whose interests are affected, to carry into practice, and to hope that the results may be communicated to him for record. The part that a Museum officer can legitimately take in Economic inquiries is to identify, describe, and figure, as well as to preserve and distribute specimens of, the various insects which are reported to be of economic interest, and further to record for reference the season, place and manner in which their economic influence is said to be exercised.

In this endeavour, which is all that we have set before us, at any rate during the last 7 years, we have, within the limits of the present number, to record our thanks for assistance, freely and promptly rendered, by the following gentlemen, namely, Sir G. F. Hampson, Bart., Messrs. E. Brenske, G. B. Buckton, F.R.S., W. L. Distant, A. Fore and E. E. Green, F.E.S., all of whom have very kindly named specimens for us.

I.—PESTS OF THE SUGARCANE.

During the year numerous reports of the ravages of insects on sugarcane were received from the North-West Provinces, from Bengal and from Madras.

In February 1899, the Director of Land Records and Agriculture, North-West Provinces and Oudh, forwarded some samples of sugarcane said to be injured by insects. He wrote:—

“The specimens have been collected in Pipra, a village in Gorakhpur district. It is stated that when the cane is affected, the pith becomes red and the juice dries up gradually. This happens in one internode after another till the whole cane dries up and becomes woody. In a clump sometimes only one cane is affected, and the others remain healthy until the cane affected first is destroyed. The healthy canes then get diseased It is known locally as *Lewahi*. The disease makes its appearance about the middle of the rainy season, and continues its damage until February or March. Sometimes a whole crop dries up from the effects of the disease a short time before it is fit for crushing. The variety of cane known in Gorakhpur as *Pansalie* and in other places as *Kalara* is specially liable to the disease, and its cultivation is therefore diminishing rapidly.”

The sugarcane sent was examined and was found to contain the following insects:—

- (a) A chrysalis of the common borer moth *Chilo simplex*, Butler.
- (b) Two chrysalids of a Microlepidopterous moth, one of which was reared in the Museum, and found to be new to our collection. It has been identified by Sir G. F. Hampson as *Scirpophaga excerptalis*, Wlk.
- (c) Numerous specimens of a scale insect which being new to our collection were forwarded to Mr. E. E. Green for identification, and proved to be new to science. Mr. Green has named it *Ripersia sacchari*, and his description will be found on page 37, the insect being figured on plate VI (figs. 5 and 6).

The borer, *Chilo simplex*, Butler, is one of the most serious of sugarcane pests, reports as to its ravages being continually sent in from all parts of India. Cutting down and burning all sickly-looking stems, in which in all probability a caterpillar is concealed, might be of use in checking its ravages.

As to the scale insect, it is probably a pest, but Mr. Green has not given any opinion on this point.

In March 1899, the Director of Land Records and Agriculture, North-West Provinces and Oudh, again brought to our notice some sugarcanes, which he said were being badly damaged by what was believed to be a fungus.

No insects were discovered, so very possibly the plants were attacked by a fungus. In Queensland the Department of Agriculture found that it was a fungus locally known as the rust, which caused serious damage to sugarcane in the Colony. It was only by expensive experiments extending over a period of years that a fairly

rust-proof variety was selected. This method of selection is, we believe, the only one that gives any promise of stopping the ravages of rust.

In June a further communication was received from the same office, together with fresh samples of sugarcane pests, with the following report:—

“Sample 1.—Locally called *Pehk Safed*, an insect which burrows into the main stalk of the young sugarcane plant in April or May when the crop is two or three months old. The stalk attacked by this insect rots inside and the leaves dry up. Fresh shoots begin to spring from the root if watering is kept up.

“Sample 2.—Local name, *Pinka Surf*. This insect only differs from No. 1 in colour and is found with No. 1 in abundance, in the same plant doing the same sort of mischief as No. 1.

“Sample 3.—No local name, only one insect of this kind could be got inside the young stem of a plant which has been attacked by Nos. 1 and 2.

“Sample 4.—*Kunga* or *Ahola*. It was collected several months ago and cannot be got at this time of the year It is a borer and attacks the full-grown plant from the month of August onwards by burrowing through the top and gradually eating into the first two to four internodes. When it has attacked a plant the growth of the cane at the top is stopped, and new shoots begin to spring from the upper joints of the cane.

“Sample 5.—White ants which eat into the seed-cuttings planted.

“Sample 6.—*Kari* an insect which has done considerable mischief in Azamgarh to full-grown canes.”

On examination sample No. 2 proved to be an ant of the species *Dorylus orientalis*, Shuck., and No. 1 the pupa of the same.

Mons. Favel who identified the insect for us writes as follows:—

“Your ant said to be infesting sugarcane plants is *Dorylus orientalis*, Shuck. This species like the whole of the genus, lives *exclusively* on animal food. All species of *Dorylus* are driver ants, hunting insects and small living animals underground.”

If this is so, the ant so far from being a pest might be regarded as beneficial; but Mr. E. E. Green (see page 39) says that he must “most emphatically contradict this statement so far as it refers to *Dorylus orientalis*, West.”

Samples 3 and 4 were the larval forms of the moth *Chilo simplex*, Butler. Sample 5 consisted of some specimens of the worker form of a “white ant” *Termes taprobanes*, Walk. A single specimen of a “big caterpillar” included in the sample appears to be the grub of a Melolonthine beetle (cockchafer).

Both these insects when in abundance might do a considerable amount of damage by boring into the roots of the sugarcane.

Sample 6 consisted of the immature forms of a bug belonging to

the family Lygæidæ. Mr. W. L. Distant sent the following interesting note about them :—

“ The immature forms of the *Hemiptera* reported as attacking sugarcane in Cawnpore, North-West Provinces, are undoubtedly those of a species of *Blissus*, and most probably, so far as can be ascertained from non-mature specimens, *Blissus gibbus*, Fabr., a well-known Indian species. This genus is a formidable one to agriculturists, *Blissus leucopterus*, Say., is the well-known “ Chinch bug ” of North America, one of the most noxious and injurious insects to agriculture. According to Riley the injury is caused by the insect sucking, by aid of its rostrum, the grasses and cereals ‘ thereby causing them to shrink, wilt, and wither, not by biting their substance as many suppose.’ The multiplication of the insect in North America appears to have been conterminous with the increase of grain cultivation in that country and the injury it occasioned to the ‘ small grain ’ in the North-Western States in 1871, amounted to upwards of thirty million dollars, whilst in 1874 the damage was computed at twice that sum. It has been found by Riley to be two-brooded in some of the States, and its eggs are deposited ‘ occasionally ’ above ground in the blades of grain, but far more often and normally underground upon the roots of the plants infested. The same author remarks that, though abundantly able to fly, the chinch bug does not take to wing readily, and in their immature stages, before their wings are developed, they migrate from field to field for food ‘ often in solid columns inches deep.’ It multiplies most in hot and dry seasons, moisture proving unfavourable to its existence.”

These details relating to a very nearly allied species are of great interest in the present case.

In July 1899 the Director, Department of Land Records and Agriculture, Assam, forwarded some caterpillars which were reported to be injuring the sugarcane crop in the Barpeta Sub-Division.

These on examination proved to be the larvæ of *Chilo simplex*, Butler.

Dictyophara pallida, Donv. In January 1900 this insect which belongs to the Hemipterous family of *Fulgoridæ* or Lantern flies, was reported to be damaging the sugarcane crop in the North Arcot district, South India. The Agricultural Inspector writes :—

“ These insects are seen to perch on the underside of the cane leaf avoiding sun and on shaded leaves. They are good springers. The bug is soft-bodied and is very easily killed by slight handling. These are known to the ryots only since ten years. The cane crop when infested gets stunted and damaged. These appear when cane is six to nine months old. No remedy is known to the ryots. They collectively go by the name of *Cheeda purugu*. In Coimbatore the bug is known as *Thathoopoochi*, and the winged insect as *Thaloocupoochi*.”

The insect is figured on plate V. (figs. 1—6).

Scirpophaga auriflua, Zell. In February 1900, some pieces of sugarcane from Kushtea were forwarded to the Museum by the Director of Land Records and Agriculture, Bengal. The sugarcane

was found to be tunnelled by grubs, the moths of which emerged in the Museum. They were identified by Sir G. F. Hampson as *Scirpophaga auriflua*, Zell., a species which much resembles *Scirpophaga excerptalis*, Wlk., which has been reported to be attacking sugarcane in the Gorakhpur district. The caterpillar of *S. auriflua* appears to attack the growing tips of the sugarcane, and to burrow down the middle of the pith, in precisely the same manner as *S. excerptalis* is reported to do. The insect is figured on plate VI (figs. 1—2).

Aleurodes sp.—In January 1900 pieces of sugarcane leaf from South Arcot, were forwarded to the Museum by G. Rajagopaul Naidoo, Agricultural Inspector. He writes:—

“The pest appears as numerous small ash-coloured oval spots underneath the leaf blade. In some places only dark spots of similar dimensions are seen indicating the marks left by the insects. The development of green colouring matter is arrested by the pest, causing the cane plant to look pale and stunted in growth. No name is yet given to the pest though the cultivator of the field says that he is aware of it for the last ten years. The soil of the field was loamy, in nature disposed to be saline.”

Specimens were forwarded to Mr. E. E. Green who identified it as an Aleurodid.

To sum up; the damage done to growing sugarcane during the past year, so far as our reports go, is the work of the following nine insects:—

(a) Lepidoptera:—

1. *Chilo simplex*, Butl.
2. *Scirpophaga excerptalis*, Wlk.
3. *Scirpophaga auriflua*, Zell.

(b) Hemiptera:—

4. *Blissus* sp., probably *gibbus*, Fabr
5. *Dictyophara pallida*, Donovan.
6. *Aleurodes* sp.
7. *Ripersia sacchari*, Green.

(c) Pseudoneuroptera:—

8. *Termes taprobanes*, Walk.

(d) Hymenoptera (doubtfully destructive):—

9. *Dorylus orientalis*, Shuck.