

OCCURRENCE OF THREE NEW PESTS OF MAIZE IN INDIA

L.M.L. MATHUR

Indian Agricultural Research Institute, New Delhi-110 012

M.C. JOSHI and M. ARIF

Defence Agricultural Research Laboratory, Almora-263 601

THE MAIZE pest situation in India reveals that about 250 insects and mites belonging to 174 genera under 69 families and ten natural orders, occur on maize from sowing to harvest and from grain storage to its consumption (Mathur, 1987). However, the seed maggot, *Decachaetophora aeneipes* (de Meijere); cut worm, *Xestia c-nigrum* Linnaeus and silk cutter, *Popillia pulchripis* Arrow collected during regular survey of maize pests in recent years, do not appear in the list of reported insects. Considering them to be first records on maize, the nature and extent of damage caused by these insects and their salient marks of identification are referred to in the present note.

Decachaetophora aeneipes (de Meijere) (Diptera: Sepsidae) — Maize seeds damaged by the maggots were first noticed in heavily manured fields at Auli (Joshimath), 3000 Mt. MSL during May-June. The eggs were laid on the soil and the newly hatched maggots made their way into the seed. The infested seeds either did not germinate at all or bore with weak seedlings which did not persist longer. Preliminary observations recorded on 9.vi. 1988 had shown that the infestation due to these maggots varied from 7 to 15 per cent in each row of a six row plot sown on 11.v.1988 as compared to those sown on 21.v.1988 and 31.v.1988.

The full grown maggot is cream coloured and measures about 4.5 mm in length. The apodous worm has a pair of dark hook-like mandibles at its pointed end and the body segments are indistinct. The grey bodied fly measures 5 mm in length. The second antennal articulation bears no angular projection, the metatarsi of hind legs are slender, the anal cell and lower cross veins of the wing are present, the costa remains unbroken and the metastigmatal bristles are present. Hypandrium and aedeagal apodomes are completely fused and the ovipositor is non-piercing type.

Xestia c-nigrum Linnaeus (Lepidoptera :Noctuidae) — The cut worm remains active during May-June at high altitudes where summer maize is grown as food and fodder. As many as 6 larvae of variable size and growth were found associated with roots of each infested plant. As a consequence of their feeding on the root hair and primary rootlets of one month old seedlings, the plants had either shown sickly appearance or laid on the earth surface. The infestation in a 10 x 3 m plot was about 32 per cent.

The greasy matured larvae measure 35 mm long and the general appearance of the body is red to olive green in colour. The head is red brown, the lateral yellow bands along the spiracles are mixed with brown spots and the transverse band at the junction of third thoracic and first

abdominal segments is more prominent. The medium built adults are dark or red brown in colour and the wing expansion is almost 44 mm (Hampson, 1894). The collar has whitish scales. Each forewing bears double sub-basal and ante-medial unevenly curved lines, triangular black patches before and after a pale triangular patch emerging from the middle costa, the post-medial line bears a series of dark specks and the sub-marginal line is indistinct. The hind wings are slightly pale and their underside bear an indistinct post-medial line and a cell spot.

Popillia pulchrips Arrow (Coleoptera : Rutelidae) — The adults were seen feeding on the silk during September 1987 at Nagenahalli, Mysore. The extent of damage was such that not a single ear remained untouched by the insect in the locality. As a result of such a feeding the emerging silk was badly damaged and the grain filling was adversely affected.

The metallic green, blue or coppery adults measure 10-12 mm long and 6-7 mm broad (Arrow, 1917). The body is elongate-oval in shape, very smooth and shining with a small but compact tuft of greyish hair on each side of the pygidial base and a thin clothing of hair on the underside of the body. The clypeus is rugose, forehead and pronotum finely punctured and scutellum almost smooth. Each elytron bears a deep transverse impression behind the scutellum, a finely punctured striae, a much wider row of striations and a last row of few punctures. The pygidium is coarsely transversely punctured and the mesosternal process is compressed, curved and almost blunt. The foretibia of the male is armed with two sharp teeth, the lower lobe of the inner front-claw is not angulated and the longer claw of the middle foot has no cleft.

We owe our gratitude to the Director, Indian Agricultural Research Institute and the Ministry of Defence, Government of India, for undertaking the observations on the reported insects and also the Mr. K.T. Pandurangegowda, Assistant Maize Pathologist, Agricultural Research Station, Nagenahalli, for collection of rutellid beetle and related information. Our sincere thanks are also due to Dr. M. Dutta, Dipterist, Zoological Survey of India, Calcutta and Dr. S. Ghai, Senior Taxonomist, IARI, New Delhi, for the identification of the reported insects.

References

- Arrow, G.J. *The Fauna of British India including Ceylon and Burma, Coleoptera: Lamellicornia, Pt. II.* 1917, p.80
Hampson, G.F. *The Fauna of British India including Ceylon and Burma, Moths, Vol. II.*, 1894, p.188.
Mathur, L.M.L. *Bibliography of the Maize Pests in India* All India Co-ordinated Maize Improvement Project, IARI, New Delhi, 1987, 144 pp.
-
-



Mathur, L M L, Joshi, M C, and Arif, Mohammad. 1990. "Occurrence of three new pests of maize in India." *The entomologist's record and journal of variation* 102, 279–280.

View This Item Online: <https://www.biodiversitylibrary.org/item/94967>

Permalink: <https://www.biodiversitylibrary.org/partpdf/197292>

Holding Institution

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

Sponsored by

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Amateur Entomologists' Society

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.