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## OCCURRENCE OF HITHERTO UNKNOWN INSECTS OF MAIZE IN INDIA

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This paper 'Occurrence of hitherto unknown insects of maize in India' by L.M.L. Mathur, M.C. Joshi and M. Arif, has been withdrawn by the authors. The intimation came to us after this issue was printed.

-Ed.

### *Decachaetophora aeneipes* (de Meijere) (Diptera: Sepsidae)

Maize seeds damaged by the maggots was first noticed in heavily manured fields at Auli (Joshimath, 3000 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 much longer. Preliminary observations had shown that the infestation due to these maggots varied from 7 to 15% in each row of a 6-row plot compared to those sown 10 and 20 days thereafter.

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 apodemes are completely fused and the ovipositor is non-piercing type.

### *Agrotis c-nigrum* Linnaeus (Lepidoptera: Noctuidae)

The cutworm 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 either showed sickly appearance or lay on the earth surface. The infestation in a 10 × 3 m plot was about 32%.

The greasy, mature larvae measure 35 mm long and the general appearance of the body is red to olive-green. 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 the third thoracic and first abdominal segments is more prominent. The medium-built adults are dark or red-brown and the wing expansion is almost 44 mm (ref. 2). The collar has whitish scales. Each forewing bears a double sub-basal and antemedial 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 bears 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 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<sup>3</sup>. 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.

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#### A NEW RECORD OF SEED SETTING IN SCENTED GERANIUM (*PELARGONIUM GRAVEOLENS* L. HERIT.) FROM INDIA

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TWO viable seed-setting strains have been identified in scented geranium at the Indian Institute of Horticultural Research for the first time in India and are described here.

*Pelargonium graveolens* L. Herit, a native of Cape Province, South Africa, is the source of geranium oil, which is highly prized in the perfumery industry. The plant was first introduced in Shevroy hills of Tamil Nadu and is presently cultivated on a commercial scale in the hills and plains of South India. Though the species flowers profusely, the flowers are sterile and so far seed set has not been reported in India<sup>1</sup>. Due to inherent sexual sterility, the plant is propagated vegetatively by stem cuttings and hence lacks sufficient genetic variability, limiting

the development of genotypes superior in oil yield and quality. As sexual reproduction in such species would create genetic variation through recombination, the germplasm maintained at IIHR, Bangalore (980 m MSL, 13°58'N and 78°E) was screened for fertile seed-bearing genotypes. In two clonal lines, viz. PG-7 (source: HRS, Kodaikanal) and Algerian-4n (IIHR selection), plants with flowers bearing fertile anthers were observed in April/May 1988. Frequency of fertile flowers was 2–3% per plant. Fertile anthers, 2 to 4 in number (out of a total of 7 anthers) were of bright orange colour, plumpy, and were borne on extended filaments (figure 1). This is in contrast to the pale yellow, shrivelled anthers borne on short filaments generally found in the sterile flowers. The anthers dehisced normally, releasing abundant, orange-coloured and stainable<sup>2</sup> pollen. Selfed flowers produced seeds. This is the first



Figure 1.