



## Cephalic chaetotaxy of the last instar larva of a pyralid: *Syллеpte derogata* (Fabricius) (Lepidoptera)

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Lepidoptera is the second most diverse insect pest order outnumbered only by the beetles. Almost every cultivated plant is attacked by larvae of at least one lepidopteran pest. Most of the caterpillars are defoliators or leaf rollers or miners of succulent plant tissues. Identification and diagnosis of the larvae can be better with an examination of the arrangement of various setae & punctures of the head and other body segments. In this study we have followed Hinton (1946). An attempt has been made to describe the cephalic chaetotaxy of *Syллеpta derogata* Fabricius with chaetotaxic maps.

### Material and Methods

Larval instars of *Syллеpte derogata* (Fabricius) were collected from the field and reared on fresh host plant clippings in plastic containers in the laboratory up to prepupal stage. Mature larvae were boiled in water for killing and distention of the body. The distended larvae were decapitated with a surgical blade. Detached heads were kept for 8-10 hrs in 10% KOH, washed with 1% glacial acetic acid and then mounted in 70% alcohol and glycerine in 9:1 ratio. For chaetotaxic study, larval heads were transferred to a petridish containing glycerine and observed under stereoscopic microscope.

### Results and Discussion

Cranium is moderately sclerotized and light brown with dark patches all over the head. Frontoclypeus longer than broad and ecdysial line joins in the middle to median epicranial suture. Stemmatal area is well differentiated from the rest of the cranium, beset with six stemmata, fifth stemmata

placed at base of antenna and sixth behind fourth stemmata. All setae are spinous, arising from pinacula.

Setae C1 and C2 contains clypeal group; C1 close to epicondyle but slightly shorter in length than C2; the latter anterolateral to C1. Both the setae has also been duly acknowledged by Hinton (1946), Mathur (1954, 1959), Mathur & Singh (1963), Farooqui & Singh (1973), Allyson (1980, 1981), Goel & Kumar (1981), Stehr (1987), Amutha & David (1998), Yen et al. (2004), and Solis et al. (2005) in the families Crambidae, Pyralidae and Tortricidae respectively in their publications. Frontal group exhibits seta F1 and pore Fa. F1 closer to lateral margin of frons, directly posteromesad to C2; puncture Fa present close to median longitudinal line and anterodorsad to F1.

The Adfrontal group possesses setae AF1 and AF2 along with pore AFa. Hinton (1946), Azam & Ali (1965), Franzman & Garrett (1978), Yoshiyasu (1980), Diakonoff & Arita (1981), Goel & Kumar (1981), Amutha & David (1998), Yen et al. (2004) and Solis et al. (2005) has found the aforesaid arrangement of setae on the adfrontal area of the cranium in the families Crambidae, Pyralidae, Tortricidae and Arctiidae, respectively. AF2 smaller than AF1, situated anterad to point where lateral adfrontals join median epicranial suture, AF1 posteromesad to AF2; pore AFa lies almost in centre of AF1 and AF2.

Anterior group constitutes setae A1, A2, A3 and pore Aa. A1 in level of stemmata 4, lies towards median longitudinal line; A2 posterolaterad to A1, A3 lies in level and mesad to stemmata 2; A1>A3>A2 lengthwise; pore Aa lies postrad and close to A1 than A2. The presence of the anterodorsal group has been described by many workers in different lepidopteran families, whereas, Yen et al. (2004) observed the missing of puncture Aa in a new genus *Austromusotima* of family Crambidae. Posterior dorsal group furnished with setae P1 and P2 along with pore Pb. P2 longer than P1. P2 posterior and almost in straight line to P1. Pore Pb anterad to P2 but closer to seta P1. Two different arrangements of these two setae and one puncture has been noticed by Yoshiyasu (1980), Diakonoff & Arita (1980), Amutha & David (1998) and Yen et al. (2004). Lateral group contains seta L1 and pore La; denotes L1 directly dorsad to stemmata 1, pore La anteromesad to L1. The presence of this seta and puncture has also been observed by Lawrence & Downy (1966), Downy & Allyn (1979), Lin (1993), Amutha & David (1998) and Solis et al. (2005), whereas, Yen et al. (2004) noticed the absence of puncture La in a new genus *Austromusotima* of family Crambidae.

The stemmatal area beset with setae S1, S2 and S3 besides pore Sa and Sb. Mathur (1954, 1959), Mathur & Singh (1963) have found that puncture Sb is wanting in many pyralid species. S1 situated inside stemmatal semicircle, close but ventrocaudad to stemmata 2. S2 caudad to stemmata 1, present at mouth of stemmatal semicircle. S3 posterad to stemmata 6; S3>S1=S2 lengthwise; pore Sa situated posterodorsad to stemmata 6, whereas pore Sb lies very close and in front of stemmata 4. Substemmatal group comprise setae SS1, SS2 and SS3 with pore SSa; SS1 lies posterodorsad to stemmata

Abbreviations: A - Anterior seta; AF - Adfronal seta; AF<sub>a</sub> - Adfrontal pore; C - Clypeal seta; F - Frontal seta; Fa - Frontal pore; MG - Genal seta; Ga - Genal pore; L - Lateral seta; La - Lateral pore; MD - Dorsal seta on head; P - Posterior dorsal seta; Pb - Posterior pore; S - Stemmatal seta; Sa and Sb - Stemmatal pores; SS - Substemmatal seta; SSa - Substemmatal pore

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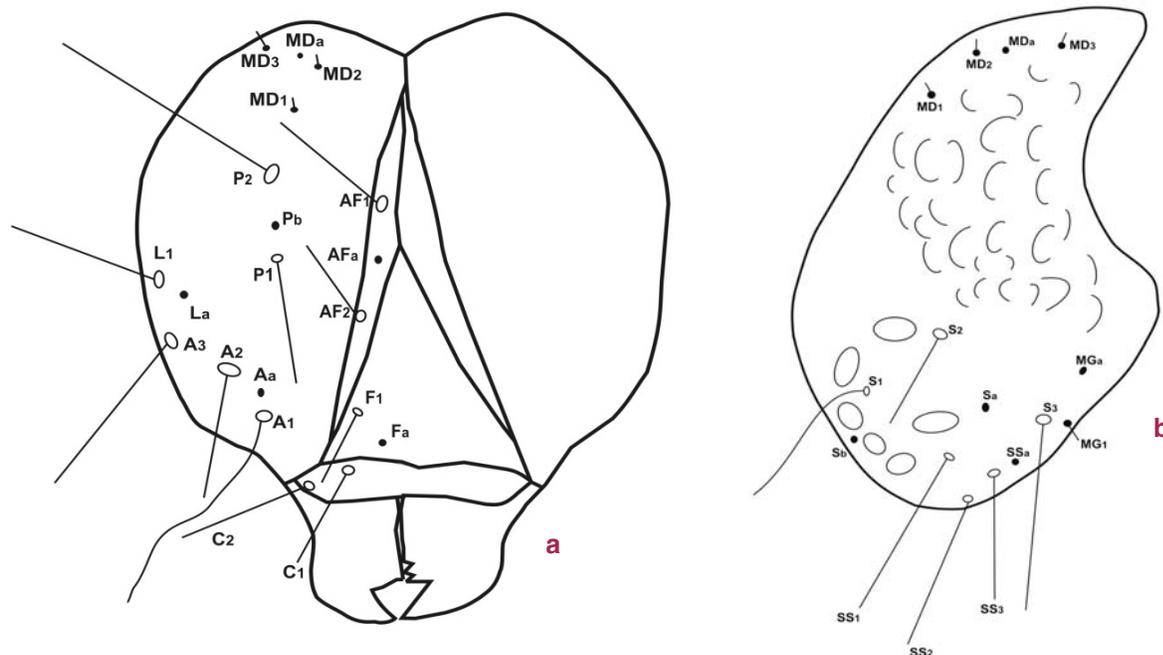


Figure 1. a - Frontal view; b - Lateral view

5; SS2 lies anteroventrad to SS3; SS3 dorsocaudad to SS1; SS1>SS2>SS3 lengthwise. Genal group beset with seta MG1 and pore MGa; MG1 lies at lower and rear portion of the head. Pore MGa lies posterodorsad to MG1. Dorsal epicranial area contains proprioceptor setae MD1, MD2, MD3 and pore MDa; MD1 posterodorsad to P2; MD2 posteromesad to MD1; pore MDa lies closer to MD2 than MD3.

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