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Cephalic chaetotaxy of the last instar larva of a crambid: *Antigastra catalaunalis* (Duponchel) (Lepidoptera)

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ABSTRACT

The immature stages such as egg, larvae and pupae has been collected from the field in the months of June to August during the year 2005-06. The collected larvae after reaching maturity dissected and slides were made in the laboratory in order to study chaetotaxy of the head as per techniques described in detail below. Presently, the arrangement of various groups of setae, number of setae and punctures, length of setae present on the larval head of a pyralid i.e. *Antigastra catalaunalis* (Duponchel) has been discussed and described along with its chaetotaxic maps showing frontal and lateral views.

Keywords. Chaetotaxy, group, puncture, setae

INTRODUCTION

The larval identification and diagnosis can best be strengthened through an examination of the arrangement of various setae and punctures of the head and other body segments .Much related work on chaetotaxy of pyralid caterpillars has been recorded by workers Mathur (1954 and 1959), Singh (1956), Mathur and Singh (1963), Azam and Ali (1965), Franzmann and Garrett (1978), Yoshiyasu (1980), Stehr (1987), Lin (1993), Amutha and David (1998). In the light of above and by keeping in mind the scarcity of work on chaetotaxy in general and in subfamily pyraustinae of family Crambidae in particular, an attempt has been made to describe the cephalic chaetotaxy of *Antigastra catalaunalis* (Duponchel).

MATERIAL AND METHODS

The mature larvae of *Antigastra catalaunalis* (Duponchel) collected from the field and reared in laboratory up to prepupal stage and then boiled in water for killing and distention of the body. Then head detached with a fine sharp blade and potashed for 8-10 hrs in KOH. The material then washed with1% glacial acetic acid so as to remove the traces of KOH and then transferred to 70% alcohol and glycerine in the ratio of 9:1. The larval head then placed in the cavity slide containing glycerine and then studied the arrangement of setae with the help of stereoscopic microscope. The nomenclature proposed by Hinton (1946) has been followed for naming different setae and punctures.

RESULTS AND DISCUSSION

Cranium is weakly sclerotized and somewhat transparent. Light brown coloured sclerotized patches present on the sides of the head. Median epicranial suture is half the length of lateral adfrontal suture. Stemmatal area is well differentiated from rest of cranium, beset with six stemmata, fifth stemmata placed at base of antenna; each half of head represents 17 tactile setae, 4 proprioceptor and 10 pores.

The clypeus comprises two setae C1 and C2 but there is no puncture on it. C1 close to epicondyle and shorter than C2**.** The presence of both the setae has also been inferred by Hinton (1946), Mathur (1954 & 1959), Mathur and Singh (1963), Farooqui and Singh (1973), Allyson (1980 & 1981), Goel and Kumar (1981), Stehr (1987), Amutha and David (1998), Yen, *et.al*. (2004) and Solis, *et.al.* (2005). Frontal group beset with seta F1 and

pore Fa. The similar condition has also been noticed by workers like Azam and Ali (1965), Allyson (1980 & 1981), Goel and Kumar (1981), Stehr (1987), Amutha and David (1998), Yen, *et.al*. (2004) and Solis, *et.al.* (2005). F1 closer to lateral margin of frons, directly postrad to C1; puncture Fa lies near median longitudinal line of the head capsule, present anterodorsad to F1.

The adfrontal area which is inverted 'v' shaped has a distinct group of two adfrontal setae AF1 and AF2 along with pore AFa. Similar condition found by Hinton (1946), Azam and Ali (1965), Franzman and Garrett (1978), Yoshiyasu (1980), Diaknoff and Arita (1981), Goel and Kumar (1981), Amutha and David (1998), Yen, *et.al*. (2004) and Solis, *et.al.* (2005). AF2 nearly half the length of AF1, situated posterad to point where lateral adfrontals join median epicranial suture, AF1 posterolaterad to F1, close to lateral adfrontal suture; pore AFa close and anterad to AF2. Workers like Farooqui and Singh (1973), Valley and Wheeler (1976) and Downy and Allyn (1979) observed that this puncture is wanting in the species *Clania crameri* West., *Stomopteryx palpilineella* (Chambers) and *Leptotes cassius theonus* Lucas, respectively.

Anterior group contains setae A1, A2, A3 and pore Aa; A1 lies anterior to P1 and present towards median longitudinal line; A2 posterolaterad to A1, A3 posterolaterad to A2; A1>A3>A2 lengthwise; pore Aa lies close to A2 than A3. The presence of this anterodorsal group has been observed 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. Posteriodorsal area represented by setae P1 and P2 alongwith pore Pb; P1 much longer than P2; P2 posterolaterad to P1; pore Pb anterad to P2. Two different arrangements of these two setae and one puncture has been noticed by Yoshiyasu (1980), Diakonoff and Arita (1980), Amutha and David (1998) and Yen, *et. al*. (2004). Seta L1 and pore La exhibits lateral group; L1 directly dorsad to stemmata 1, pore La posteromesad to L1. The occurrence of this seta and puncture has also been recoqnised by Lawrence and Downy (1966), Downy and Allyn (1979), Lin (1993), Amutha and 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. Genal group contains pore MGa; MG1 seems to be absent.

The stemmatal area is characterized by the presence of three setae S1, S2 and S3 besides pore Sa and Sb. Mathur (1954 and 1959), Mathur and Singh (1963) have found that puncture Sb is wanting in many pyralid species. S1 situated inside semicircle, close but ventrocaudad to stemmata 2. S2 caudad to stemmata 1, present at mouth of stemmatal arc, S3 posterad to stemmata 6; S2>S3>S1 lengthwise. Pore Sa situated dorsad to stemmata 6. Pore Sb lies very close and anterad to stemmata 4, whereas, Hinton (1946) noticed the presence of puncture between stammata third and fourth. Substemmatal area also beset with three setae SS1, SS2 and SS3 and pore SSa. SS1 lies directly below stemmata 5. SS2 lies dorsocaudad to SS2. SS3 dorsocaudad to SS2. SS2>SS3>SS1 lengthwise. Dorsal epicranial area comprises proprioceptor setae MD1, MD2, MD3 and pore MDa MD1 anterodorsad to MD2. MD3 posterolatrad to MD1. Pore MDa present closer to MD2 than MD3.

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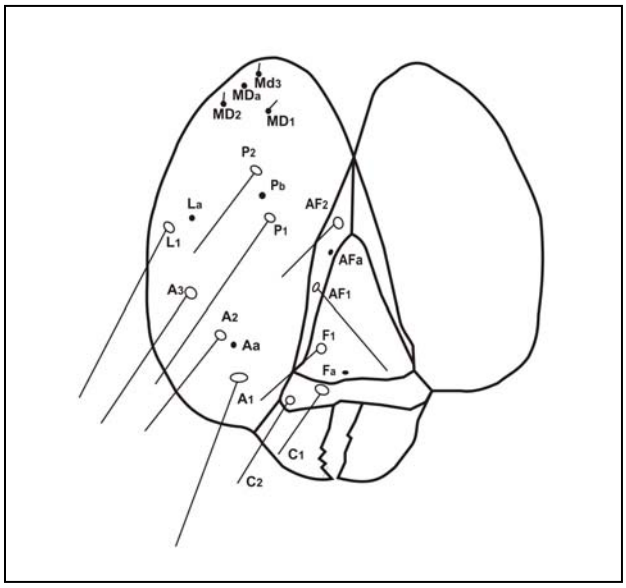

Fig. a. FRONTAL VIEW

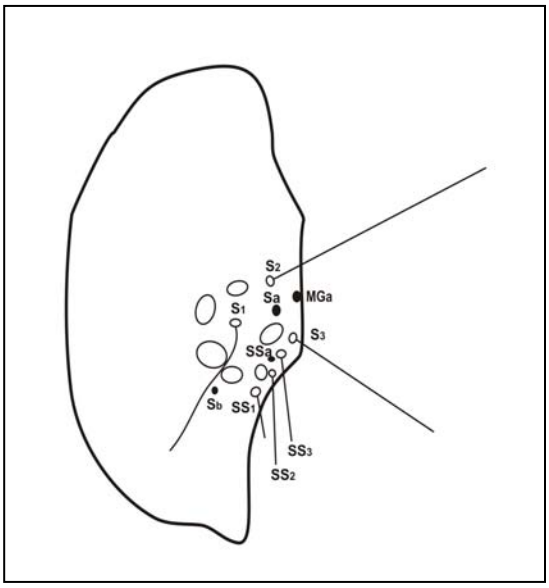

Fig. b. LATERAL VIEW