

TAXONOMY,

SUBFAMILY EPHIALTINAE

GENUS XANTHOPIMPLA SAUSSURE (1892)

Xanthopimpla belongs to the tribe Ephialtini of the subfamily Ephialtinae. It is one of the larger genera of Ichneumonidae. Most of the species occur in the Old World Tropics and the majority of them in the Indo-Australian area. Three are found in the temperate parts of Japan; five are known from the Neotropic region. They are abundant in the Oriental Region and the tropical parts of Australian Region. They inhabit forests or among shrubs; a few species among coarse grasses and jawar fields. All species are internal parasites of pupae of Lepidoptera. Because of their abundance, the species of Xanthopimpla are important factors in biological control.

Indo-Australian species of Xanthopimpla are studied in detail by Townes and Chiu (1970). 165 species and 105 subspecies are described under this genus. They divided the genus into twenty species groups with key. But, the descriptions are inadequate for comparing the species. To facilitate required data X. stemmator (Thunberg) and X. flavolineata (Cameron) are redescribed here.

Xanthopimpla stemmator (Thunberg)(Fig.6)

Ichneumon stemmator Thunberg, 1822, Mem. Acad. Imp. Sci. St. Petersburg 8: 262.

Pimpla integrata Smith, 1856. J. Linn Soc. Lond. Zool. 8:64.

Xanthopimpla integrata Krieger, 1899, Sber. Naturf. Ges. Lpz. 1897/98: 65.

Xanthopimpla thoracalis Krieger, 1899, Sber. Naturf. Ges. Lpz. 1897/98: 95 p.

Xanthopimpla maculifrons Cameron, 1903, J. Straits Brch. R. Asiet. Soc. 39: 138.

Xanthopimpla bimaculata Cameron, 1906 b, J. Straits Brch R. Asiet. Soc. 46: 116.

Xanthopimpla nursei Cameron, 1907 a, J. Bombay Nat. Hist. Soc. 17:592.

Xanthopimpla maculifrons Cameron, 1907 a, J. Bombay Nat. Hist. Soc. 17:591.

Xanthopimpla integrata Schmiedeknecht, 1907, Genera Insec. 62:40.

Xanthopimpla facialis Szepligeti, 1908, Notes Leyden Mus. 29:256.

Pimpla sp. Jacobson, 1909, Jaarverslag van de Topographische Dienst in Nederlandsch India, 1908, 206A.

Xanthopimpla facialis Szepligeti, 1910, Notes Leyden Mus. 32:101.

Xanthopimpla stemmatrix Schulz, 1912, Berlin Ent. Ztschr 57:65, 98.

Xanthopimpla stemmator Roman, 1912, Zool. Bidr. Uppsala 1:280.

Xanthopimpla nursei Morley, 1913 b, Fauna of British India... Hymenoptera 3 (1):121.

Xanthopimpla stemmator Roman, 1913, Ark. Zool.
8(15):17.

Xanthopimpla nursei Morley, 1914 a, Rec. Indian Mus.
8 : 323.

Xanthopimpla stemmator Krieger, 1914, Arch. Naturgest
(A) 80 (6): 5, 7, 9, 14, 18, 34; (a) 80 (7):1.

Xanthopimpla nursei Morley, 1914, Arch. Naturgest(A)
80 (6): 17

Xanthopimpla doleschali Krieger, 1914, Arch. Naturgesch.
(A) : 80 (6) : 34 (A) 80 (7) : 4

Xanthopimpla transfuga Krieger, 1914, Arch. Naturgesch
(A) : 80 (6) : 38; (A) 80 (7) : 10.

Xanthopimpla stemmator var confluens Krieger, 1914.
Arch. Naturgesch (A) 80 (6) 27; (A) 80 (7) : 4 ;
var. maculifrons strand, 1915 Arch. Naturgesch.
(A) 80 (8) : 122

Xanthopimpla nursei Dutt 1919, Bull. Agric Res. Inst.
Pusa. India 89 : 6 ; 1923, Mem. Dept. Agric.
India (Ent.) 8 : 15.

Xanthopimpla stemmator Cushman, 1925b, Ent. Mitt.
14 : 46

Xanthopimpla nursei Matsumura & Uchida, 1926, Insects
Matsum. 1 : 75 .

Xanthopimpla stemmator Uchida, 1928, J. Fac. Agric.
Hokkaido Imp. Univ. 25 : 64 ; Sonan, 1929, Trans.
nat. Hist. Soc. Formosa 19 : 421 ; Buligan, 1927,
Philipp. Agric. 17 : 422 ; Uchida, 1932, J. Fac.
Agric. Hokkaido Imp. Univ. 33 : 221.; Cartwright,
1933, Circ. U. S. Dept. Agric. 289 : 9 ; Takano,
1934, J. Formosan Sug. plant. Assoc. 11 : 455 ;
Clark, 1934, Tech. Bull U.S. Dept. Agric. 455 :
24; Chu and Hsia, 1937, Ent. and Phytopath ,
5:138;Cheu, 1941, Kwangsi. Agric. 2:222; Vinson,
1942 Bull. Ent. Res. 33 : 45.

Xanthopimpla nursei Cherian and Subramanian, 1942,
Madras Agric. J. 30:49

Xanthopimpla stemmator Sonan, 1944, Bull. Govt. Agric. Res. Inst. Taiwan, 222 : 4 ; Moutia and Mamet, 1947, Maurit. Dep. Agric. Sic. Ser. Bull 29 ; 29, Dammerman, 1948, Verhandel, Koninklijke Nederlandsche Akad Van Wetensch, (Tweede sectie) 44 : 384, Baker, Bradley and Clark, 1949, U.S. Dep. Agric. Tech. Bull. 983 : 8.

Xanthopimpla nersei Trehan and Butani, 1950 Indian J. Ent. 11 : 58.

Habropimpla sesamiae Rao, 1953, Indian Forst. Rec. (n.s. Ent.) 8 : 166.

Xanthopimpla spp. Krishnamurti and Usaman, Indian J. Ent. 16 : 333 .

Xanthopimpla stemmator Ruinard, 1958 . Onderzoekingen omtrent levenswijze, economische betekenis on bistrifidingsmogelijkheid der stengelboorders van het suikerriet op. Java. ... pp. 164-171.

Xanthopimpla doleschali Townes, Townes and Gupta 1961. Mem. Ent. Inst. 1:54

Xanthopimpla maculifrons Townes, Townes and Gupta, 1961, Mem. Ent. Inst. 1: 59

Xanthopimpla stemmator Townes, Townes and Gupta, 1961, Mem. Ent. Inst. 1 : 68, Gupta, 1964a, Pasif Insects, 6:231 Yasumatsu, 1967, Eleventh, Pasific Science Congress, Tokyo, Symposium 28, p.37 ; Momoi, 1968, Mushi 41 : 180 ; Momoi , 1969 Mushi 42 : 148; Townes and Chiu, 1970 , Mem. Am. Ent. Inst. 14 : 108 ; Rao, 1970, Marathwada Uni. J. Sci. 9 (2) : 91, 92 .

♀ : 11 mm. Head 0.87 times as long as broad, in profile 1.55 times as long as high; vertex sparsely finely punctate; ocellar triangle impunctate, lateral

ocelli separated from eyes by their diameter; frons 0.30 times as long as broad, finely, sparsely punctate; antenna 2 + 32 segmented; scape 1.77 times as long as broad; pedicel 2.25 times as long as broad; first flagellar segment 0.90 times the length of scape and pedicel combined; terminal flagellar segment 1.66 times as long as broad; face 0.80 times as long as broad, finely, sparsely punctate; clypeus 0.58 times as long as broad, finely, sparsely punctate; mandible 1.40 times as long as broad, finely, sparsely punctate near occipital carina, moderately setaceous punctate near genal carina; occipital carina complete.

Thorax 1.90 times as long as broad; collar narrow, impunctate; pronotum triangular, shiny, sparsely, finely punctate; epomia fine, reaching dorsal collar; mesoscutum convex, median lobe of mesoscutum sparsely striatopunctate, lateral lobe densely, setaceous punctate; scutellum as long as broad, sparsely, finely punctate; post-scutellum sparsely punctate; propodeum with both transverse carinae and longitudinal carinae; basal area and areola confluent, and striatopunctate; first lateral area striatopunctate; third lateral area and petiolar area confluent; propodeal spiracle 3.50 times as long as broad; propleurum impunctate; mesopleurum finely, closely punctate, weakly striate

FIGURE 6. Xanthopimpla stemmator Thunberg, ♀

Body in dorsal view except head, showing
colouration

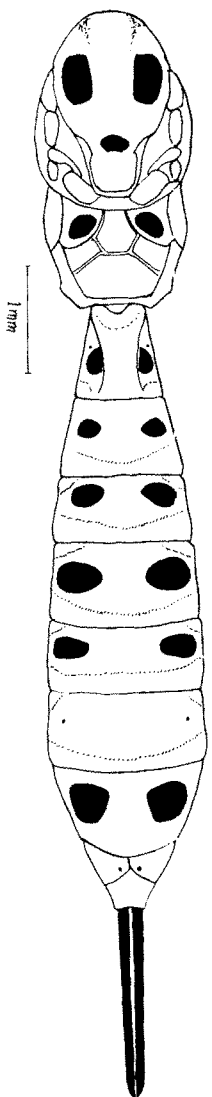


Fig. 6

ventroposteriorly; metapleurum sparsely, finely punctate,
 obliquely striate anterodorsally; prepectal carina
 reaching above mid height of mesopleurum; juxtacoxal
 carina complete joining submetapleural carina;
 mesopleural suture in the form of groove; legs moderate;
 first hind trochanter 3.50 times as long as second; hind
 tarsal claw deeply curved 2 times as long as broad; hind
 basal tarsal segment 3.50 times as long as broad;
 forewing 4.25 mm long, 1.35 mm. broad; stigma 4 times as
 long as broad; apical abscissa of radius 1.40 times the
 length of its basal abscissa; areolet rectangular, as
 long as broad; second intercubitus with one bulla;
 second recurrent with two bullae, reclivous, 3.70 times
 the length of first intercubitus, 0.79 times the length
 of basal abscissa of sub discoideus; basal abscissa of
 subdiscoideus 0.59 times as long as its apical abscissa;
 nervulus reclivous, fenestrate at lower end, 0.50 times
 the length of post-nervulus; second discoidal cell 2.40
 times as long as broad; hind wing 2.95 mm. long, 0.64
 mm. broad, with 1 + 8 hamuli; basal abscissa of radiella
 0.61 times the length of its apical abscissa;
 intercubitella reclivous, medially fenestrate; basal
 abscissa of cubitella 0.81 times the length of its
 apical abscissa.

Abdomen 1.60 times the length of head and thorax combined; first tergite 1.10 times as long as its apical width, 1.40 times the length of second tergite; median dorsal carina absent; dorsolateral carina reaching dorsally to postpetiole; ventrolateral carina complete; spiracle 2.50 times as long as broad; dorsal petiole sparsely punctate; postpetiole finely punctate; second tergite 0.53 times as long as its apical width, closely setaceous punctate; ovipositor sheath as long as hind tibia.

Yellow, Ocellar triangle, teeth, stigma, ovipositor sheath, claws, black; pair of black spots on mesoscutum, propodeum and all abdominal tergite except sixth and eighth.

♂: Essentially similar to female except in having black spots on sixth and eighth tergite.

Specimens Examined :- 4 ♀♀ , 2 ♂♂ INDIA :
Maharashtra : Sangli, 21 VIII 1986, on wing, K.S. Heble coll. Antenna and wings mounted on slides and labelled as above.

HOST

Chilo infuscatellus

C. suppressalis

C. pertellus

Chilotrea auricilia

C. infuscatellus

Dendrolimus punctatus

Olethreutes schistocean

Omphisa anastamosalis

O. illisalis

Plusia crchakea

Plusia sp

Proceras infuscatellus

P. sacchriphagus

P. venostra

Pyrausia nubilalis

Scirphophaga nivella

Sesamin inferens

S. vuteria

Sylepta derogata

Xanthopimpla flavolineata Cameron (Fig. 7)

Xanthopimpla flavolineata Cameron, 1907b, Tijdschr. Ent.
50 : 48

Xanthopimpla emaculata szepligeti, 1908, Notes Leyden
Mus. 29 : 156

Xanthopimpla immaculata Morley, Fauna of British India
... Hymenoptera, 3 (1) : 115.

Xanthopimpla flavolineata Krieger, 1914, Arch.
Naturgesch (A) 80 (6) : 15

Xanthopimpla immaculata Krieger, 1914, Arch. Naturgesch
(A) 80 (6) : 15

Xanthopimpla emaculata Krieger, 1914 Arch. Naturgesch.
(A) 80 (6) : 35.

Xanthopimpla hvaptila Krieger, 1914, Arch. Naturgesch.
(A) 80 (6) : 35.

Xanthopimpla immaculata Dutt. 1919, Bull Agric. Res.
Inst. Fusa, India 89 : 6 ; Ayer 1930, Rep. Proc.
3rd Ent. Meet. Pusa 3: 933; Dutt, 1923a, Mem.
Dept. Agric. India (Ent) 8:14.

Xanthopimpla emaculata Cushman, 1925b, Ent. Mitt. 14 :
46.

Xanthopimpla xanthostigma Girault, 1925, Insectutor
Inscities Menstrus 13 : 38.

Xanthopimpla emaculata Uchida, 1928, J. Fac. Agric.
Hokkaido. Imp. Univ. 25 : 64.

Xanthopimpla xara Cheesman, 1936b, Trans. R. ent. Soc.
Lond. 85 : 179.

Xanthopimpla emaculata Sonan, 1944, Bull Govt. Agric.
Res. Inst. Taiwan. 222 : 3.

Xanthopimpla sp. Townes, 1947, Results of an
entomological inspection tour of Micronesia,
Mimeographed p. 47.

Metopius sesamiae Rao, 1953, Indian Forest Rec.
(n.s.Ent.) 18 : 184.

Xanthopimpla spp. Krishnamurti and Usman, 1955, Indian J Ent. 16 : 333.

Xanthopimpla emaculata Townes, 1958, Insects Micronesia
19 : 48 ; Townes, Townes and Gupta, 1961, Mem. Am. Ent. Inst. 1 : 54.

Xanthopimpla sessamiae Townes, Townes and Gupta, 1961,
Mem. Am. Inst. 1 : 67, Gupta, 1964, Pacif. Insects. 6: 232.

Xanthopimpla flavolineata Townes, Townes and Gupta,
1961, Mem. Am. Ent. Inst. 1 : 55.

Xanthopimpla immaculata Lal, 1964, Indian J. Ent. 26
(1) : 43-45.

Xanthopimpla emaculata Yasumatsu, 1967, Eleventh Pacific
Science Congress, symposium 28 : p. 37; Momoi,
1968, Mushi 41 : 180 ; 1969, Mushi 42 : 148.

Xanthopimpla flavolineata Townes and Chiu, 1970, Mem.
Am. Ent. Inst. 14 : 114.

♀ : 8 mm. Head, as long as broad, in profile 1.75
times as long as high; vertex impunctate; ocellar
triangle very sparsely punctate; lateral ocellus
separated from eye by its diameter, frons 0.67 times as
long as broad, very finely, sparsely punctate; antenna
2 + 36 segmented; scape 2 times as long as broad;
pedicel 1.40 times as long as broad; first flagellar
segment 1.80 times the length of scape and pedicel
combined; terminal flagellar segment 3 times as long as
broad; face 0.87 times as long as broad, moderately very
sparsely punctate; clypeus as long as broad, finely,

sparsely punctate; mandible 1.40 times as long as broad, finely, sparsely punctate; temple finely, sparsely punctate; cheek 0.50 times the basal width of mandible, finely, sparsely punctate.

Thorax 1.60 times as long as broad; collar narrow; pronotum anteriorly finely, closely punctate, dorsoposteriorly longitudinally striate; epomia very weak; mesoscutum slightly convex, finely, closely punctate, medially longitudinally striate; scutellum with strong lateral carina, anteromedially, moderately, sparsely punctate, posteriorly finely punctate; postscutellum finely sparsely punctate; propodeum with both transverse carinae and both longitudinal carinae; areola 1.06 times as long as broad; areola and basal area confluent, finely, sparsely punctate; first and second lateral area longitudinally striatopunctate; petiolar area and third lateral area confluent, finely, closely punctate; pleural area finely, sparsely punctate; propodeal spiracle 5 times as long as broad; pleural carina complete; propodeal apophysis semicircular, flanged; propleurum finely punctate; mesopleurum dorsally, finely, sparsely punctate; prepectal carina strong, reaching above mid height of mesopleurum, near to front margin of mesopleurum; sternaulus absent; postpectal carina complete;

FIGURE 7. Xanthopimpla flavolineata Cameron, ♀

Body in dorsal view except head, showing
colouration

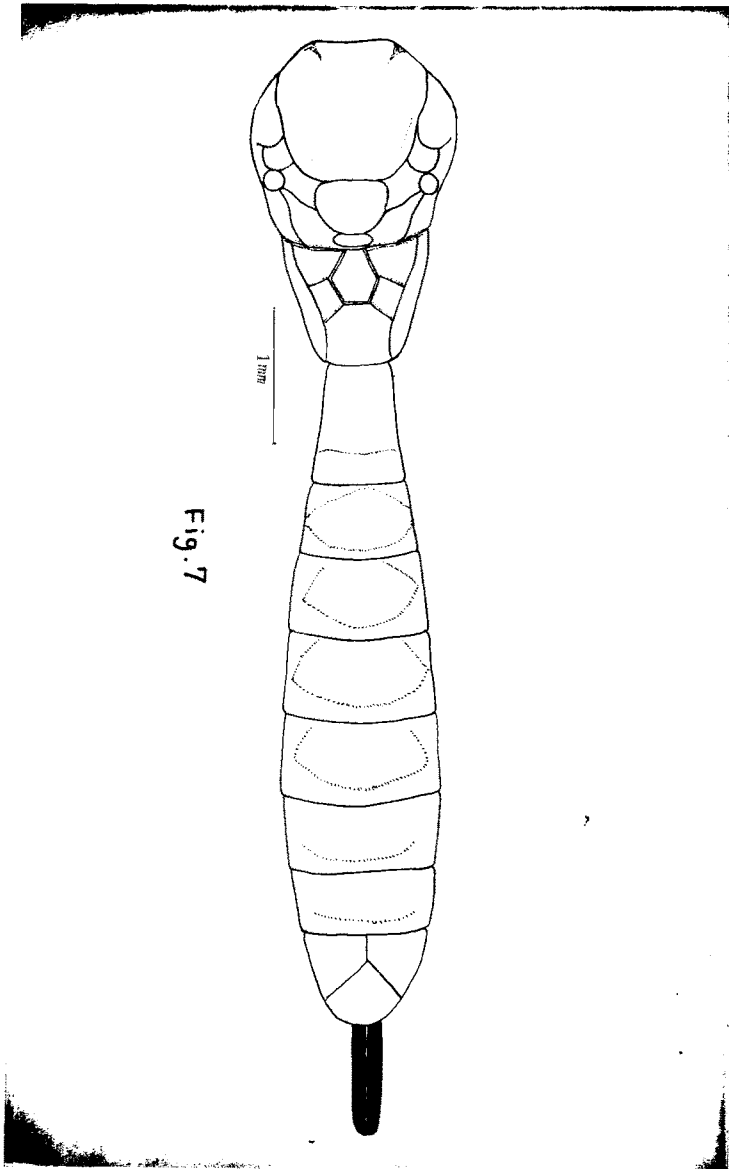


Fig. 7

mesopleural suture in the form of groove; mesepimeron finely punctate; metapleurum finely, sparsely punctate; submetapleural carina complete; legs moderate; first hind trochanter 1.70 times as long as second; hind tarsal claw 3.75 times as long as broad, strongly curved; tegula sparsely punctate. Forewing 3.30 mm. long, 1.10 mm. broad; stigma 4 times as long as broad; apical abscissa of radius 1.38 times the length of its basal abscissa; areolet rectangular with short petiole; second recurrent with two bullae; basal abscissa of subdiscoideus 1.69 times as long as its apical abscissa; nervulus fenestrate at lower end, 2.10 times the length of postnervulus; second discoidal cell 2 times as long as broad; discocubital cell 3.30 times as long as broad; hind wing 2.10 mm. long, 0.50 mm. broad with 1 + 6 hamuli; apical abscissa of radiella 1.50 times the length of its basal abscissa; basal abscissa of cubitella 1.40 times the length of its apical abscissa; intercubitella fenestrate medially; superior and inferior nervellar abscissae in the ratio of 2 : 1 .

Abdomen 1.60 times the length of head and thorax combined; first tergite 1.20 times as long as its apical width, 1.92 times the length of second tergite; its spiracle at apical 0.60; median dorsal carina absent;

dorsolateral carina present; postpetiole finely, sparsely punctate; second tergite finely punctate; rest tergites shiny; ovipositor sheath 0.50 times as long as hind tibia.

Yellow. Ocellar area and ovipositor sheath black; stigma and antenna brown.

♂ : Essentially similar to ♀ except in having smaller body size.

Specimens Examined : 2 ♀♀ , 2 ♂♂ , INDIA : Maharashtra : Sangli 16 X 1986, on wing, K.S. Heble coll. Antenna and wings mounted on slides and labelled as above.

HOST

Cnaphalocrocis medinalis

Omphisa illisalis

Parnara mathias

Telicota augias

Pelopidas cinnara

Sesamia inferens