

DESCRIPTION OF A NEW SPECIES AND THREE NEW RECORDS OF THE GENUS *Helophilus* MEIGEN (DIPTERA, SYRPHIDAE) FROM CHINA*

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Abstract

This paper deals with a new species and three new record species of the genus *Helophilus*. The type specimens are deposited in Insect collection of South China Agricultural University.

Key words Diptera; Syrphidae; *Helophilus*; Taxonomy; China

1 *Helophilus*(*Anasimyia*) *vittatus*(Meigen)(New record from China) (Fig.1)

Mallota vittatus Meigen, 1822:Syst. Besch., 3:378, type locality: near Yarmouth, in Norfolk (Great Britain)

H. ruddii Curtis, 1832:Brit. Ent., 9:429

Helophilus vittatus:Macquart, 1835:500; Sack, 1928:271

Helophilus (*Anasimyia*) *vittatus*: Schiner, 1857:verh. zool. bot. Wien, 7:402

Lejops vittatus:Rondani, 1857:Dipt. It. Prodr. 2:33; Peck, 1988:199

Helophilus (*Liops*) *vittatus*: Verrall, 1901:Brit. Flies:542

Liops vittatus:Sack, 1928:Die Fliog. Pal. Reg. 4(4):277

Body length:12 mm, wing length:10 mm.

Male. Head wider than long. Vertex black, about 1/5 as wide as head. Ocelli triangle black, with pale tomentum and black pubescence. Frons strongly produced forward, black, with greyish tomentum and black pubescence. Frontal lunule yellow brown. Face black, covered with whitish tomentum, with whitish pubescence near the sides. Central knob shining black. Cheek with whitish tomentum. Face in profile (fig.1A) strongly concaved below antenna. Eye bare, widely separated from each other. Antenna(fig.1B) black, the third segment much wider than long. Arista black, bare, inserted near the dorsal base of the third segment.

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Mesonotum black, with two pairs of longitudinal stripes, the submedian pair stripe greyish yellow down the disc and gradually broad, these two pairs of stripes connected in front of mesonotum and becoming vague after middle. Humeri with greyish tomentum and pale yellow pubescence. Scutellum shining black with margin broad orange yellow.

Wings rather brownish, especially the base. No visible stigma.

Legs black. Front and middle tibia and tarsus yellow brown, hind tibia and tarsus black. Hind femur thickened. A stout teeth like prominence on the ventral base of middle femur.

Abdomen black, but shining broadly on the hind margin. The first tergite black, with pale tomentum. The second, third and fourth tergite with longitudinal stripes respectively.

Male genitalia (fig. 1C) Epandrium simple. Cercus weakly sclerotized, pilose. Surstylus longer than wide, heavy sclerotized, inner surface with black spinulae. Hypandrium cylindrical, with a row of bristles on lateroventral side of apex. Basal part of superior lobe (fig. 1D) with many puncta. Aedeagal tube merged with aedeagal lobe, forming a large complex (fig. 1E). Aedeagal apodeme long and thin, heavy sclerotized.

Distribution Xinjiang (Urumqi); Portugal; Spain; Italy; Yugoslavia; Germany; Russia; Byelorussia; Ukrain, Lithuan; Latvia; Estonia; Moldova; Caucasus; Georgian; Azerbaijan; Armenia; Uzbekistan; Tajikistan; Kirghizia; Turkmenistan; Czech; Slovak; Greece; Romania; Poland; Turkey; entire Oriental region; entire Nearctic region; Australia; Ethiopian region.

Specimens examined 1 male and 1 female, Urumqi of Xinjiang Autonomous Region 1991-V-29, Xu Gong-lian leg.

2 *Helophilus (Eurimyia) lineatus* (Fabricius) (New record from China) (Fig.2)

Rhingia lineatus Fabricius, 1787: Mantissa insect. 2:375, type locality: Hafniae (Denmark)

Rhingia muscaria Fabricius, 1787: Mantissa insect. 2:375

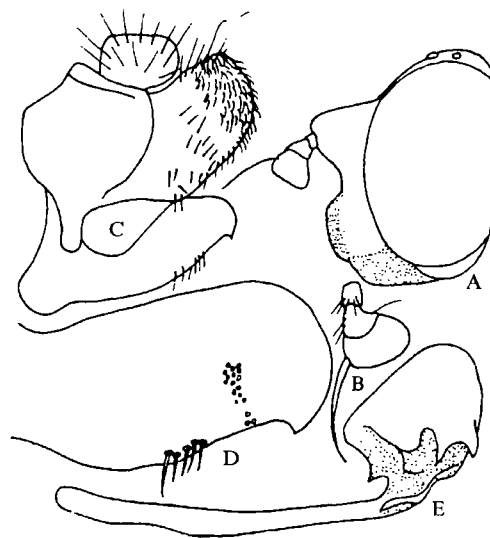


Figure 1 *Helophilus (Anasimyia) vittatus* (Linnaeus)
A. Head, lateral; B. Antenna; C. Male genitalia, lateral; D. Superior lobe; E. Aedeagus, lateral

Musca femorata Panzer, 1794: Faun. Insect. Gem. Fasc. 20: 24

Syrphus lineatus: Fallen, 1817: Suce. Syrph. 31

Helophilus lineatus: Meigen, 1822: Syst. Besch. 3: 369; Macquart, 1827: 299; Curtis, 1832: 429; Loew, 1846, 167; Walker, 1856: 250; Sack, 1928: 290

Helophilus stipatus Walker, 1849: List. D. Brit. Mus. 3: 603

Helophilus amusus Walker, 1819: List. D. Brit. Mus. 3: 603

Helophilus (*Anasimyia*) *lineatus*: Schiner, 1857: Verh. zool. bot. wien. 7: 408; Peck, 1988: 195

Eurimyia lineatus: Bigot, 1883: Annls. Soc. ent. Fr., (6)3: 226

Eurimyia rhingioides Bigot, 1883: Annls. Soc. ent. Fr., (6)3: 225

Helophilus (*Eurimyia*) *lineatus*: Verrall, 1901: Brit. Flies: 541; Virolvitsh, 1979: 80

Body length: 9 ~ 10 mm, wing length: 6.5 ~ 7.5 mm.

Male. head almost three times as wide as long. Vertex black, with golden yellow tomentum and sparse pubescence. Ocelli triangle black, with golden yellow tomentum and black pubescence, but hind margin sparse with some yellow brown Pubescence. Occiput black, with greyish tomentum and yellow brown pubescence. Frons black, with golden yellow tomentum and black pubescence, Frontal triangle small, with golden yellow tomentum. Frontal lunule yellow brown. Face black, with golden yellow tomentum and pale yellow pubescence, lower part strongly conically produced (fig. 2A). Face without central knob and median stripe. Eye large, bare, dichoptic. Antenna with the first and second segments dark brown, but the third segment yellow brown, arista bare, dark brown, inserted near the base of the third segment.

Mesonotum black, with two narrow greyish longitudinal submedian stripes attained from prethorax to the hind margin of mesonotum. Scutellum dark yellow, but basal margin black, sparse with yellow brown hairs. Pleura black, with greyish tomentum. Mesopleuron, pteropleuron and sternopleuron with sparse pale yellow pubescence.

Wings hyaline, marginal cell widely open. R_{4+5} slightly looped into the R_5 cell. $R-m$ cross vein located after the

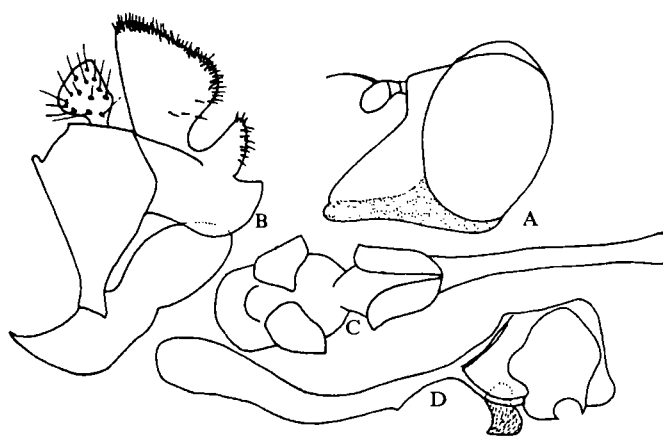


Figure 2 *Helophilus* (*Eurimyia*) *lineatus* (Fab.)

A. Head, lateral; B. Male genitalia, lateral;
C. Aedeagus, ventral; D. Aedeagus, lateral.

middle of the M_2 cell. Anal vein undulate.

Legs black. Apical 1/3 of front and middle femur yellow brown. Basal half of front tibia and wholly middle tibia yellow brown, front and middle tarsus yellow brown. Hind femur with basal 1/4 and apical 1/4 yellow brown, middle 1/2 black. Middle 1/3 of hind tibia yellow brown, the remain part of hind tibia black. Pubescence on front and middle legs wholly pale yellow. Pubescence on hind leg mainly pale yellow, ventral side with black spinulae, especially dense in apical ventral part and lower apical lateral side.

Abdomen black, longer than the thorax and head together, with two side almost parallel. The first tergite black, sparse with pale tomentum. The second tergite with a pair of triangular lateral orange yellow spot, leaving basal and hind margin and middle 1/3 black, a pair of greyish round tomentum spot near the middle angle of the triangular lateral orange yellow spot. The third tergite with a pair of oval orange yellow spot in the anterior lateral corner, with another pair of triangular yellow spot in the posterior lateral corner. Middle and hind margin of the third tergite with three greyish tomentum bands. The fourth tergite with greyish tomentum, leaving anterior margin and middle part black. The fifth tergite wholly with greyish tomentum.

Male genitalia (fig. 2B, 2C, 2D): Epandrium simple, dorsum round, heavy sclerotized. Cercus triangular, sparsely pilose. Surstylus split into dorsal lobe and ventral lobe; the dorsal lobe boots like, outer surface with long bristles on apical dorsum, inner surface with black spinulae on the posterior ventral part; ventral lobe concave in the hind margin. Hypandrium cylindrical. Superior lobe simple, round. Aedeagal lobe symmetrical, ventral side with deep concave. Aedeagal tube large, with cystiform prominence on the lower part. Aedeagal apodeme long, curved, apex enlarge.

Female: Similar to the male. Abdomen with three pairs of lunule band on the second, third and fourth tergites. These three pairs of tergites consist of two part, the lateral yellow part and the middle greys tomentum part. Second and third tergites with additional triangular tomentum spot in the middle of hind margin.

Distribution: Yunnan (Kunming); Portugal; Spain; Italy; Yugoslavia; Germany; Russia; Byelorussia; Ukrain, Lithuan; Latvia; Estonia; Moldova; Caucasus; Georgian; Azerbaijan; Armenia; Uzbekistan; Tajikistan; Kirghizia; Kazakhstan; Turkmenistan; Czech; Slovak; Greece; Romania; Poland; Turkey; Mongolia.

Specimens examined: 1 male, Kunming of Yunnan Province, 1983-X-15, Pu Tian-sheng leg.

Remarks: Only one male specimen of this species is in my collection. The description of the female depended on the specimens from Dr. Claussen.

3 *Helophilus (Kirimyia) chui* sp. nov. (Fig.3)

Body length: 13.5 ~ 14 mm, wing length: 11 ~ 11.5 mm.

Male. Head twice as wide as long. Vertex black, with brownish tomentum and brownish pubescence. Ocelli triangle small, produced, with brownish tomentum and black pubescence. Occiput black, with pale brownish tomentum and brown pubescence. A suture clearly between vertex and frons. Frons black, with golden yellow tomentum and sparse with brown pubescence. Frontal triangle black, shining. Frontal lunule dark brown. Face black, with pale yellow tomentum and pale yellow pubescence. Central knob dark brown, large. Median stripe dark brown, not attained to the base of antenna. Epistoma shining brown. Cheek brown, with pale tomentum but never with pubescence. Genae brown with pale brown tomentum and same colour pubescence. Face (fig.3A) in profile concave beneath antenna. Antenna (fig.3B) dark brown. The first and second segment with several dorsal setae. The third segment clearly wider than long. Arista bare, thick, inserted near the dorsal base of the third segment.

Mesonotum black, with greyish tomentum and pale brown pubescence. The pubescence distinct longer in humeral calli and lateral margin of mesonotum. Scutellum yellow brown, with long pale brown pubescence. Pleura black, with greyish tomentum. Mesopleuron, pteropleuron and sternopleuron densely with long pale brown pubescence.

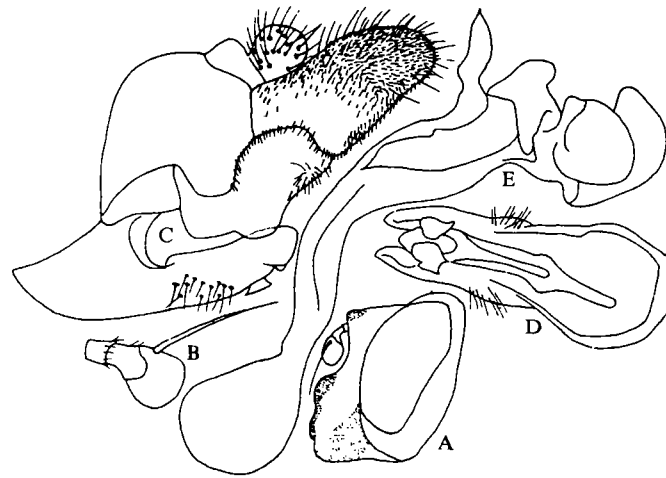


Figure 3 *Helophilus (Kirimyia) chui* sp. nov.

A. Head, lateral; B. Antenna; C. Male genitalia, lateral; D. Hypandrium, ventral; E. Aedeagus, lateral

Wings hyaline, marginal cell slightly open. R_{4+5} deeply looped into R_5 cell.

R-m cross vein located after the middle of M_2 cell. Anal vein undulate. A brown blotch across the middle of the wing.

Legs dark brown. Front femur and basal 1/2 of middle femur yellow brown, apical 1/2 black. Front and middle tibia and tarsus dark brown. Hind femur strongly thickened and arcuate, dorsal surface with a irregular black spot, apical ventral surface with many black spinulae. Hind tibia dark brown, dilate laterally, curved. Hind tarsus brown. Pubescence on the legs wholly pale brown.

Abdomen black borwn, longer than the thorax and head together. The first tergite black brown, lateral and basal margin pale yellow, densely with pale pubescence. The second tergite with a pair of quadratic lateral pale yellow spot which occupy all lateral margin and tapering toward the disc, but interupt in the disc. hind margin reddish brown. Abdomen wholly with pale brown pubescence.

Male genitalia (fig. 3C.3D.3E):Epandrium hemisphere, heavy sclerotized. Cercus small, almost hide in surstylus. Surstylus large, symmetrical. outer surface pilose, inner surface with many black spinulace. Surstylus hoof like, concave in ventral, side, bearing a lobe below. Hypandrium cylindrical, ventral side round, with many bristles in the middle of two sides. Superior lobe simple. Aedeagal lobe large. Aedeagal apodeme strongly curved, apex enlarged.

Female: Very similar to the male. Front and middle femur yellow brown but apical 1/2 of dorsal surface brown.

Holotype: male, Nanjing of Jiangsu Province, 1984 – VIII, Chu Xi – ping leg., type number: 92019 – 1.

Allotype: female, same data as holotype, type number: 92019 – 2.

Paratype: 1 male, same data as holotype, type number: 92019 – 3.

Remarks: This species is similar to *H. (Kirimyia) eristaloideus* Bigot, but differ from it as following: 1) face clearly with a dark brown contral knob; 2) three pairs of tarsus dark brown.

4 *Helophilus (Parhelophilus) versicolor* (Fabricius) (New record from china) (Fig.4)

Syrphus versicolor Fabricius, 1794: Entom syst., 4:293, type locality: Germania

Helophilus versicolor: Fabricius, 1805: syst. Antl.: 233

Helophilus versicolor: Meigen, 1822: Syst. Besch. 3:374; Macquart, 1827:304;

Loew, 1846:147; Schiner, 1857:407

Parhelophilus versicolor: Girschner, 1897: Illustr. Wschr. Ent. 2:604; Sack, 1928:288

Helophilus (Helophilus) versicolor: Verrall, 1901: Brit. Files, 534

Helophilus (Parhelophilus) versicolor: Violovitsh, 1979: Nov. mal. vidy Sibiri, 13:74; Peck, 1988:198

Parhelophilus almasyi Szilady, 1940: Annals hist. nat. Mus natn. Hung., 33:65

Body length: 9 ~ 11 mm, wing length: 7 ~ 9 mm.

Male. Head wider than long. Vertex black, with golden yellow tomentum, pubescence mainly black, but hind margin with pale yellow pubescence. Ocelli in regular triangle. Frons yellow, with yellowish tomentum, pubescence on frons yellowish along two side, but remain a triangular part with black pubescence in the middle. Occiput black with pale yellow tomentum and pale yellow pubescence. Face yellow, with yellow tomentum and pubescence, but pubescence mainly on two

sides and lower part of the face, epistoma brown. Cheek black. Genae with pale yellow tomentum and same colour pubescence. Face (fig. 4A) in profile slightly concave below antenna. Central knob inconspicuous. Without median stripe. Eye dichoptic, bare. Antenna (fig. 4B) orange, arista brown, bare.

Mesonotum black, densely with yellow pubescence and longitudinal yellow tomentose stripes. Scutellum dark yellow, lateral black, with yellow pubescence around margin, but mixed with black and yellow pubescence on the centre. Pleura black with greyish tomentum and pale yellow pubescence.

Wings hyaline. Marginal cell widely open. R-m cross vein curved, located clearly after the middle of M_2 cell.

Legs yellow, but basal half of the front and middle femur, basal 4/5 of hind femur black. Pubescence of legs mainly yellow, but apical part of ventral surface of front and middle femur and apical dorsal surface of hind femur with black pubescence. Hind femur with black spinulae on the ventral side. Middle tibia with two rows of black pubescence on posterior side.

Abdomen black. The first tergite black with an obscure yellow spot in front. The second segment with a large orange yellow subrectangular spot, connected with orange yellow hind margin, leaving a black "X" form in the middle area, but in the middle of hind margin with a round pale yellow tomentum spot. The third segment with large orange yellow spot, leaving a similar black "X" form area as the second tergite, with three round or oval pale yellow tomentose spot in the middle. The fourth tergite wholly with pale yellow tomentum, but leaving a small black triangle in the middle of anterior margin. The fifth tergite wholly with pale tomentum. Abdomen mainly with pale yellow pubescence, posterior margin of the third and fourth tergites with black pubescence.

Male genitalia (fig. 4C, 4D, 4E): Epandrium rectangular, heavy sclerotized. Cercus triangular, pilose, weakly sclerotized. Surstylus divided into dorsal lobe and ventral

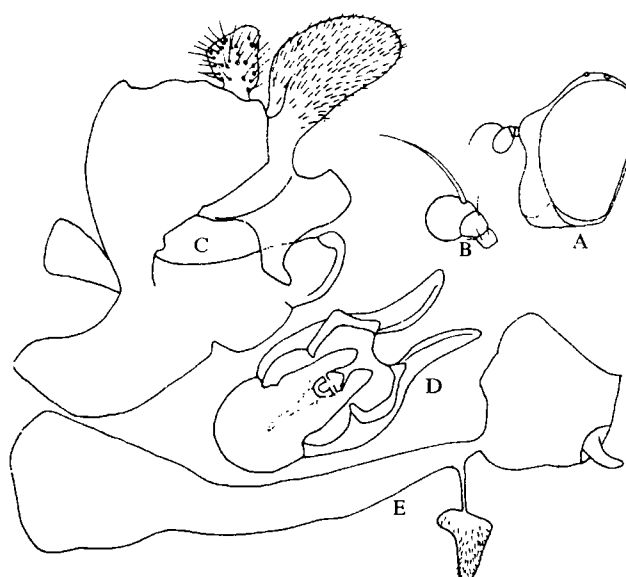


Figure 4 *Helophilus (Parhelophilus) Versicolor (Fabricius)*

A. head, lateral; B. Antenna; C. Male genitalia, lateral; D. Hypandrium, ventral; E. Aedeagus, lateral.

Hypandrium cylindrical, with many bristles on the ventral surface. Superior lobe simple. Aedeagal tube very large. Aedeagal apodeme with a cystiform prominence on the base. Apex of apodeme enlarged.

Distribution: Xinjiang (Urumqi): Norway; Finland; Portugal; Spain; Italy; Ireland; Great Britain; Sweden; Luxembourg; Netherlands; Yugoslavia; Germany; Russia; Byelorussia; Ukraine, Lithuania; Latvia; Estonia; Moldova; Caucasus; Georgian; Azerbaijan; Armenia; Uzbekistan; Tajikistan; Kirghizia; Turkmenistan; Czech; Slovak; Greece; Romania; Poland; Hungary.

Specimens examined: 1 male, Urumqi of Xinjiang Autonomous Region, 1990 – VIII, Li Qing – xi leg.

中国条管蚜蝇属一新种和三新记录种记述 (双翅目: 食蚜蝇科)

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摘要 本文记述了中国条管蚜蝇属 *Helophilus* Meigen 1 新种: 储氏条管蚜蝇 *Helophilus* (*Kirimya*) *chui* sp. nov., 3 新记录种: 纵斑条管蚜蝇 *Helophilus* (*Anasimyia*) *vittatus* Meigen、线条管蚜蝇 *Helophilus* (*Eurimyia*) *lineatus* (Fabricius)、变色条管蚜蝇 *Helophilus* (*Parhelophilus*) *versicolor* (Fabricius)。给出新种及新记录种的形态特征图及其分布。模式标本保存于华南农业大学植保系昆虫标本室。

关键词 双翅目; 食蚜蝇科; 条管蚜蝇属; 分类学; 中国
中图分类号 Q969.37