

# Review of the *Aglaostigma sinense* group (Hymenoptera, Tenthredinidae) with descriptions of three new species from China

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**Abstract:** Three new species of the *Aglaostigma sinense* group (Hymenoptera: Tenthredinidae) are described: *A. huabei* Li, Liu & Wei **sp. nov.**, *A. latifasciatum* Li, Liu & Wei **sp. nov.** and *A. nigroscutellare* Li, Liu & Wei **sp. nov.** The diagnosis of the *A. sinense* group is briefly discussed. A key to all known species of the *A. sinense* group from China is provided.

**Key words:** Tenthredinoidea; Tenthredininae; sawflies; taxonomy; key

## 中华钝颊叶蜂种团评述暨中国三新种记述（膜翅目：叶蜂科）

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**摘要：**记述中国中华钝颊叶蜂种团（膜翅目：叶蜂科）3新种：华北钝颊叶蜂 *A. huabei* Li, Liu & Wei **sp. nov.**，宽带钝颊叶蜂 *A. latifasciatum* Li, Liu & Wei **sp. nov.**和黑盾钝颊叶蜂 *A. nigroscutellare* Li, Liu & Wei **sp. nov.**。主要讨论了中华钝颊叶蜂种团的鉴别特征。提供了中华钝颊叶蜂种团中国已知种种检索表。

**关键词：**叶蜂总科；叶蜂亚科；叶蜂；分类；检索表

## Introduction

*Aglaostigma* Kirby, 1882, a midium-sized genus in the order Hymenoptera, family Tenthredinidae, contains 54 known species and 2 known subspecies worldwide. It includes 5 subgenera, namely: *Aglaostigma*, *Astochus*, *Bivena*, *Macrophyopsis* and *Neurosiobla* (Taeger *et al.* 2010). In China, 28 valid species of *Aglaostigma* have been currently recorded (He *et al.* 2005; Wei 2002; Wei & Nie 1998, 1999a, 1999b; Wei *et al.* 2006). Malaise (1945) described *A. sinense* Malaise, 1945 and put it in the subgenus *Stigmatizona*. In this work, we establish

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the *Aglaostigma sinense* group including two species known from China, *Aglaostigma karenkonis* (Takeuchi 1929, 1940) and *A. sinense* Malaise, 1945 (Malaise 1945). These species are similar in general morphology and form a distinct species group. The *A. sinense* group is proposed and defined here for the first time. Three new species from China are reported, *A. huabei* **sp. nov.**, *A. latifasciatum* **sp. nov.** and *A. nigroscutellare* **sp. nov.** A key to the known species from China is provided.

## Material and methods

Specimens were collected using entomological sweep nets in the forests of Benxi (Liaoning Province), Mentougou (Beijing City), Mt. Baishi (Hebei Province), Mt. Laoshan (Shandong Province), Mt. Lishan (Shanxi Province), Mt. Shennongjia (Hubei Province), Mt. Hengshan (Hunan Province) and Mt. Tianmu (Zhejiang Province) from China.

Specimens were examined with a Motic-SMZ-171 stereomicroscope. Images of adults were taken with a Nikon D700 digital camera and a Leica Z16APO microscope. The genitalia were examined with a Motic BA410E microscope and photographed with a Motic Moticam Pro 285A. Images were focus-stacked using Helicon Focus (HeliconSoft, Kharkiv, Ukraine) and further processed with Adobe Photoshop CS 11.0. The terminology of genitalia follows Ross (1945) and that of general morphology follows Viitasaari (2002). For a few terms (e.g., middle fovea and lateral fovea), we follow Takeuchi (1952).

The holotype and a paratype are deposited in the Asian Sawfly Museum, Nanchang, China (ASMN). The remaining paratypes are deposited in the Scientific Research and Management Center of East China Medicinal Botanical Garden, Lishui, Zhejiang, China (formerly Lishui Academy of Forestry, LSAF). Specimens of other species examined in this research are deposited in the Asian Sawfly Museum, Nanchang, China (ASMN).

Abbreviations used in the text and illustrations are as follows: OCL — the distance between a lateral ocellus and the occipital carina, or the hind margin of the head where this carina would be if it were developed (Benson, 1954); OOL — the distance between an eye and a lateral ocellus; POL — the distance between the mesal margins of the 2 lateral ocelli.

## Taxonomy

<http://zoobank.org/DFE0AF69-E35E-4DED-871D-C7441E728655>

### Genus *Aglaostigma* Kirby, 1882

*Aglaostigma* W.F. Kirby, 1882: 325.

*Laurentia* Costa, 1890: 14.

*Bivena* MacGillivray, 1894: 327.

*Homoeoneura* Ashmead, 1898: 313.

*Neopus* Viereck, 1910: 585.

*Macrophyopsis* Enslin, 1912: 42, 128.

*Kincaidia* MacGillivray, 1914: 137.

*Astochus* MacGillivray, 1914: 107–108.

*Paralloma* Malaise, 1933: 53.

*Neurosiobla* Conde, 1935: 79–81.

*Laurentia (Laurentina)* Malaise, 1937: 44.

*Aglaostigma (Stigmatizona)* Malaise, 1945: 99 (key), 177.

Type species. *Aglaostigma gibbosum* (Fallén, 1808).

Diagnosis. Labrum small, apical margin obtuse roundly; clypeus flat, anterior margin truncate, width of clypeus distinctly narrower than distance between lower corner of eyes; supraclypeal furrow deep, supraclypeal area flat; mandibles symmetrically bidentate; eyes large, inner margin straight, slightly convergent downward, distance between eyes distinctly broader than length of an eye; hind orbit round and broad, without occipital carina, posterior margin of postocellar area with sharp carina; head not distinctly extended behind eyes in dorsal view, lateral sides sub-parallel or slightly inflated; postocellar area broader than long; anterior lobe of pronotum narrow, the widest part 2–2.5× as long as diameter of median ocellus, where anterior marginal carina faint or absent; antennae slender, pedicel longer than broad, antennomere 3 as long as or longer than antennomere 4; ventral side of propleuron narrowly meeting, which is not broader than diameter of median ocellus, prosternum triangular; mesoscutellum flat, median part of metapostnotum narrow and oblique; mesepisternum without epicnemium, anterior marginal carina of pleuron distinct, mesepimeron broad and large, median part covers spiracle; hind coxa usually not enlarged, hind femur usually not extended to apex of abdomen; apex of inner spur of fore tibia bifurcate, hind tibia as long as tarsus, inner spur of hind tibia longer than 1/3 of tarsomere 1, tarsomere 1 distinctly shorter than tarsomeres 2–5 together; claw without basal lobe, inner tooth large, close to outer tooth; vein R of forewing short and curved downward; vein R+M longer than vein 1r-m, vein 1M as long as and parallel to vein 1m-cu or divergent toward pterostigma, cell 2Rs distinctly shorter than cells 1R1+1Rs together, anal cell with a short and straight crossvein basad of middle, vein cu-a joining cell 1M at basal 1/3; hindwing of female with 1–2 closed middle cells, anal cell usually petiolate, sometimes sessile; hindwing of male with marginal vein; abdominal tergum 1 with median suture or sometimes with fine middle carina; penis valve without apical process; lancet narrow and long, more or less sclerotized, usually with ctenidial tooth.

### ***Aglaostigma sinense* species group**

Diagnosis. Antennae largely at apex, or entirely, yellowish brown; thorax and apex of abdomen black, abdominal segments 1–6 usually yellowish brown; posterior margin of postocellar area with sharp carina; area below pterostigma in fore wing with sharp infusate cross band, pterostigma yellowish brown in apical 1/3–1/2 and blackish brown in basal 1/2–2/3.

#### **Key to the species of the *Aglaostigma sinense* group from China**

1. Antenna partly black; lancet without ctenidial tooth ..... 2
- . Antennae completely yellowish brown; lancet with clear ctenidial teeth ..... 3
2. Hind femur nearly entire black (Figs 4A, 4B); hind tibia black apically, subbasal 1/2 white (Figs 4A, 4B); abdominal tergum 1 largely and apical parts of abdominal tergum 6 with blackish brown or black maculae (in male, abdominal terga 1 and 6 entirely black) (Figs 4A, 4B); denticles of serrulae minute and indistinct (Fig. 4J). China (Liaoning, Shandong) ..... *A. nigroscutellare* **sp. nov.**
- . Hind femur and tibia entirely yellowish brown (Figs 2A, 2B); abdominal terga 1–6 entirely yellowish brown (Figs 2A, 2B); denticles of serrulae small and clear (Fig. 2K). China (Taiwan, Zhejiang) ..... *A. karenkonis*
3. Head largely yellowish brown, small parts black (Fig. 1C); in female pronotum yellowish brown, with

- small black maculae, in male pronotum entirely yellowish brown (Figs 1A, 1B); posterior margin of mesoscutellum yellowish brown; middle serrulae of lancet with few large denticles, each serrula with a single proximal denticle and 4–5 distal denticles, denticles large (Fig. 1K); ctenidial teeth large (Fig. 1K). China (Beijing) ..... *A. huabei* **sp. nov.**
- . Head predominantly black, small parts with white or yellowish brown; pronotum largely black, posterior band yellowish brown; mesoscutellum entirely black; middle serrulae of lancet with many small denticles, each serrula with 1–2 proximal denticles and 7–11 distal denticles; ctenidial teeth small ..... 4
4. Infusate cross band of fore wing narrower than length of pterostigma (Figs 5A, 5B); postocellar area 1.5× broader than long, lateral postocellar furrows slightly convergent backward; middle serrulae with 7–11 distal denticles, denticles small and indistinct (Fig. 5J). China (Beijing, Chongqing, Henan, Hubei, Hunan, Shaanxi, Shanxi, Sichuan) ..... *A. sinense* Malaise
- . Infusate cross band of fore wing partly wider than length of pterostigma (Fig. 3A); postocellar area 1.9–2.1× broader than long, lateral postocellar furrows distinctly divergent; middle serrulae with 8–11 distal denticles, denticles small and distinct (Fig. 3H). China (Hebei, Hubei, Shanxi) ..... *A. latifasciatum* **sp. nov.**

1. *Aglaostigma huabei* Li, Liu & Wei **sp. nov.** (Fig. 1)

<http://zoobank.org/153288E4-D133-4835-A524-7C98B5406004>

Type locality. China, Beijing City, Mentougou District.

Description. Female, body length 12.5 mm. Body largely and all legs yellowish brown; following parts black: small parts in dorsum of head, postocellar area largely, small parts of pronotum, thorax largely, mesoscutellum except for back with yellowish brown maculae, small parts of metascutellum, outside of hind coxa with some stripes, abdominal terga 7–9 and ovipositor sheath. Less than basal half of pterostigma in fore wing blackish brown, more than apical half of pterostigma yellowish brown, below pterostigma in fore wing with infusate cross band; veins largely yellowish brown. Body hairs short and dense, yellowish brown (Fig. 1A).

Dorsum of head less shiny, frontal area with some shallow punctures, without microsculpture (Fig. 1C); clypeus without puncture, but with some fine microsculpture (Fig. 1D). Thorax shiny, mesoscutum without puncture or microsculpture, mesoscutellum and metascutellum smooth, without puncture or microsculpture; mesopleuron shiny, mesepisternum with weak punctures, posterior margin of mesepimeron with dense and rugose microsculpture; metapleuron strongly shiny, without puncture or microsculpture, mesopleuron and metapleuron as shown in Fig. 1F. Abdominal terga shiny, without distinct punctures or microsculptures.

Middle parts of labrum elevated, apical margin arched shallowly; clypeus less elevated, apical margin truncated, lateral corners obtuse and sub-square, lateral sides converging forwards (Fig. 1C); malar space as broad as the diameter of middle ocellus; middle fovea deep and round, lateral foveae shallow; interocellar furrow distinct, postocellar furrow shallow; POL : OOL : OCL = 12 : 65 : 43; middle parts of postocellar area slightly elevated, 1.7× broader than long; frontal 2/3 of lateral furrow shallow, posterior 1/3 slightly deeper; occipital carina weak. Antennae slightly slender (Fig. 1E), distinctly longer than head and thorax together, as long as abdomen; scape longer than pedicel, the ratio of scape and pedicel 3 : 2; antennomere 3 longer than antennomere 4 (15 : 11), shorter than antennomeres 4 and 5 together (5 : 7); the ratio of antennomeres 6–9 as 35 : 30 : 29 : 28, apical segments not shrunken. Mesonotum as high as top of middle ocellus, mesoscutellum flat, lower than top of mesonotum, without middle and lateral carina; metascutellum flat, without middle carina. Inner spur of hind tibia shorter than half of metabasitarsus (2 : 5), metabasitarsus as long as following four tarsomeres together.

Metabasitarsus distinctly shorter than ovipositor sheath (20 : 37), apical sheath longer than basal sheath (20 : 17), apical margin narrowed (Fig. 1G). Hind claw with inner tooth longer and broader than outer tooth. Lancet longer, with 14 serrulae (Fig. 1J), middle serrula each with a single proximal denticle and 4–5 distal denticles, ctenidial teeth large and distinct, 4th–7th serrulae at base as illustrated in Fig. 1K; ctenidial teeth large (Fig. 1K).

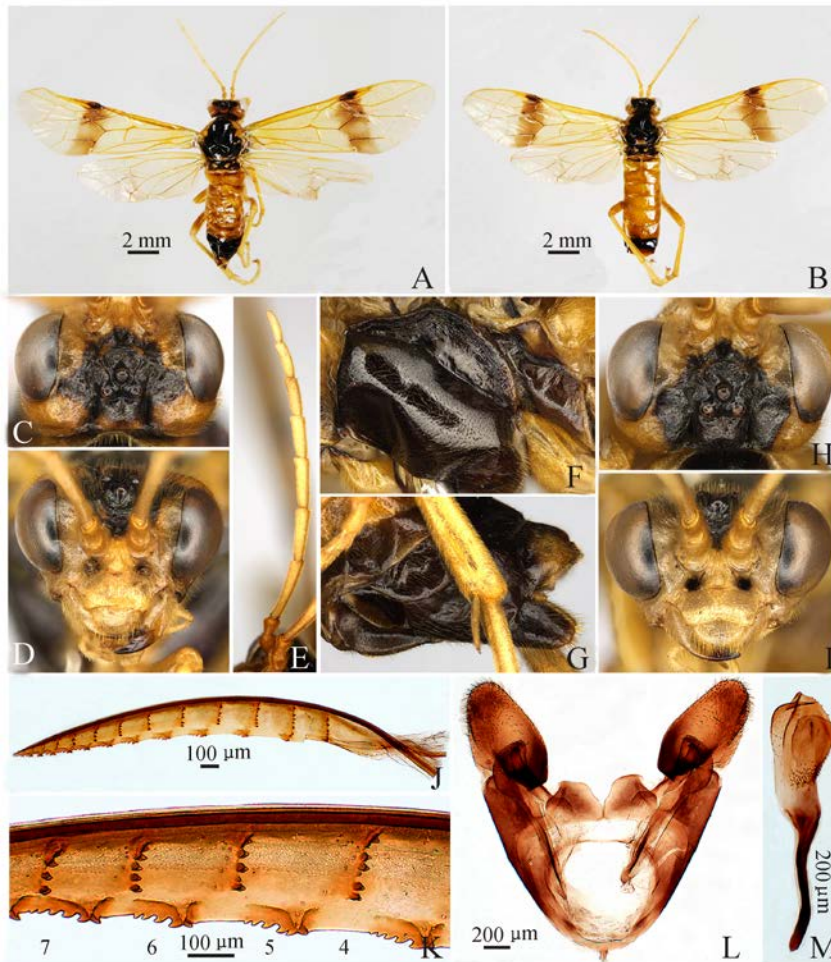


Figure 1. *Aglaostigma huabei* sp. nov., ♀, holotype; ♂, paratype. A. Female adult, dorsal view; B. Male adult, dorsal view; C. Female head, dorsal view; D. Female head, frontal view; E. Female antenna; F. Female mesopleuron and metapleuron; G. Ovipositor sheath, lateral view; H. Male head, dorsal view; I. Male head, frontal view; J. Lancet; K. The 4th–7th serrulae; L. Gonoforceps; M. Penis valve.

Male. Body length 12 mm (Fig. 1B), body color structure similar to female except for following characters: postocellar area entirely black; mesoscutellum largely yellowish brown, short parts black; abdominal terga 7–8 largely black, short parts yellowish brown; dorsal side of head as shown in Fig. 1H; frontal side of head as shown in Fig. 1I; middle parts of subgenital plate elevated; gonoforceps as shown in Fig. 1L; penis valve as shown in Fig. 1M.

**Holotype.** ♀, **China**, Beijing City, Mentougou District, Larch pine Forest, 30-VI-2012, Shixiang ZONG leg. **Paratypes.** 2♂, data same as the holotype; 1♂, **China**, Beijing City,

Beijing Nature Forest, VI-2014, Malaise trap (LSAF16171).

Host plants. Unknown.

Etymology. The species epithet “*huabei*” refers to this new species being collected in the North of China.

Remarks. In the group, this new species is very easy to be identified from other species by the following characters: less than basal half of pterostigma blackish brown (Figs 1A, 1B); dorsum of head largely yellowish brown, small parts black (Fig. 1C); in female pronotum yellowish brown, with small black maculae, in male pronotum entirely yellowish brown (Figs 1A, 1B); mesoscutellum black, posterior margin yellowish brown; middle serrulae of lancet with few large denticles, each serrula with a single proximal denticle and 4–5 distal denticles, denticles large and distinct (Fig. 1K); ctenidial teeth large (Fig. 1K).

## 2. *Aglaostigma karenkonis* (Takeuchi, 1929) (Fig. 2)

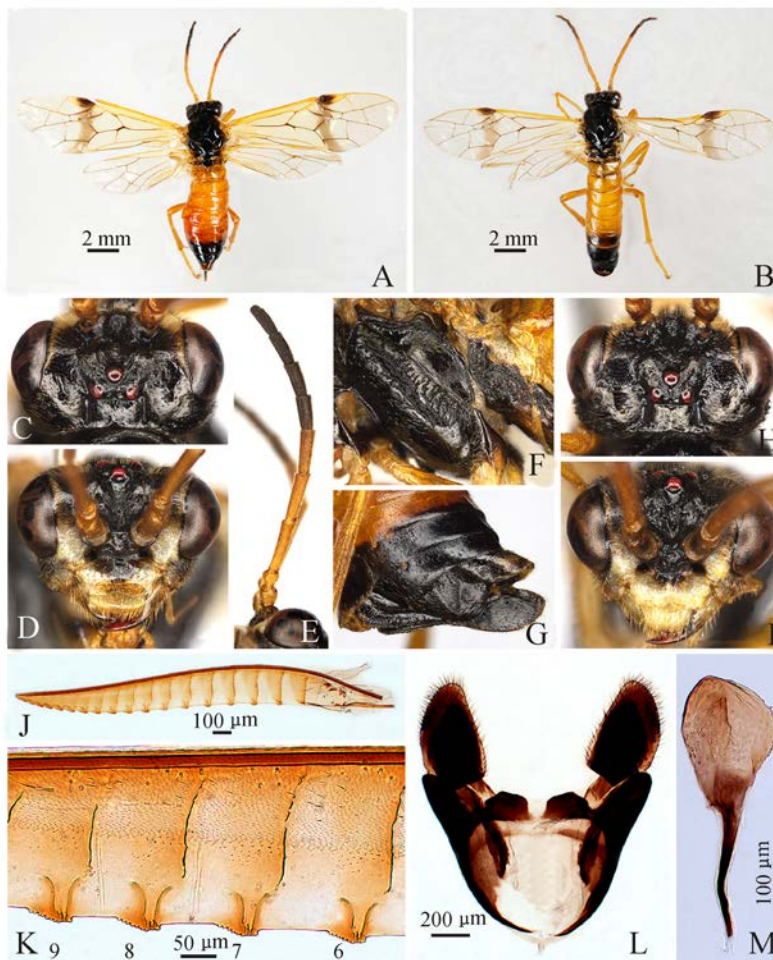


Figure 2. *Aglaostigma karenkonis* (Takeuchi, 1929). A. Female adult, dorsal view; B. Male adult, dorsal view; C. Female head, dorsal view; D. Female head, frontal view; E. Female antenna; F. Female mesopleuron and metapleuron; G. Ovipositor sheath, lateral view; H. Male head, dorsal view; I. Male head, frontal view; J. Lancet; K. The 6th–9th serrulae; L. Gonoforceps; M. Penis valve.

*Tenthredopsis karenkonis* Takeuchi, 1929: 89.

*Laurentia sinica* Takeuchi, 1940: 477–478. Synonymy with *A. karenkonis* by Yuan (1992: 46).

**Specimens examined.** 1♀, **China**, Zhejiang Province, Lin'an District, Mt. Tianmu, Kaishanlaodian, N.30.343°, E.119.433°, alt. 1,106 m, 07-IV-2015, Zejian LI leg. (LSAF15023); 2♂, 04–05-IV-2015, Zejian LI leg. (LSAF15022); 1♀1♂, 14-IV-2017, Mengmeng LIU, Kaiwen GAO & Tingting JI leg. (LSAF17034); 2♀, 15-IV-2017, Mengmeng LIU, Kaiwen GAO & Tingting JI leg. (LSAF17036); 1♀, 04-IV-2015, Wei XIAO leg. (CSCS15024); 1♂, 04-IV-2015, leg. Mengmeng LIU & Lin LIU leg. (CSCS15025).

Host plants. Unknown.

**Diagnosis.** This new species is similar to *A. nigroscutellaris*, but differs from the latter in having the antennomeres 6–9 entirely black (Fig. 2E) (in male, dorsal side of these antennomeres with black maculae); all legs largely yellowish brown; large basal parts of fore and middle coxae, and basal parts of hind coxa black; trochanters white; hind femur and tibia entirely yellowish brown; postocellar area 2× broader than long; lateral furrows parallel and straight backwards (Fig. 2C); abdominal terga 1–6 entirely yellowish brown (Figs 2A, 2B).

**Distribution.** China (Taiwan [Takeuchi 1929]; Zhejiang [this work; Takeuchi 1929]).

### 3. *Aglaostigma latifasciatum* Li, Liu & Wei sp. nov. (Fig. 3)

<http://zoobank.org/B3D61626-6BA3-4E06-BB87-B2A22E4FF98B>

Type locality. China, Hebei Province, Laiyuan County, Mt. Baishi.

**Description.** Female, body length 12 mm. Body largely and all legs yellowish brown; following parts black: dorsum of head predominantly, postocellar area, small parts in posterior margin of pronotum, thorax, mesoscutellum, metascutellum, basal parts of all coxae, posterior parts of metepisternum, abdominal terga 7–10, sternite 7 and ovipositor sheath. Basal 2/3 of pterostigma in fore wing blackish brown, apical 1/3 yellowish brown, below pterostigma in fore wing with infusate cross band; veins largely yellowish brown. Body hairs short and dense, yellowish brown (Fig. 3A).

Dorsum of head less shiny, frontal area with some shallow punctures, without microsculpture (Fig. 3B); clypeus without punctures, but with some fine microsculpture (Fig. 3C). Thorax shiny, mesoscutum without puncture or microsculpture, mesoscutellum and metascutellum smooth, without puncture or microsculpture; mesopleuron shiny, mesepisternum with weak punctures, posterior margin of mesepimeron with dense and rugose microsculpture; metapleuron very shiny, without punctures or microsculpture, mesopleuron and metapleuron as shown in Fig. 3E. Abdominal terga shiny, without distinct punctures or microsculptures.

Middle parts of labrum elevated, apical margin arched shallowly; clypeus less elevated, apical margin truncate, lateral corners obtuse, sub-square, lateral sides convergent forwards (Fig. 3B); malar space shorter than the diameter of middle ocellus; middle fovea deep and round, lateral foveae slightly shallow; interocellar furrow distinct, postocellar furrow slightly shallow; POL : OOL : OCL = 16 : 65 : 35; middle parts of postocellar area weakly elevated, value varies between 1.9–2.1× broader than long, lateral postocellar furrows distinctly divergent; frontal half of lateral furrow shallow, after half slightly deeper; occipital carina weak. Antennae slightly slender (Fig. 3D), distinctly longer than head and thorax together, as long as abdomen; scape longer than pedicel, the ratio of scape and pedicel as 3 : 2;

antennomere 3 as long as antennomere 4, shorter than antennomeres 4 and 5 together (17 : 33); the ratio of antennomeres 6–9 as 23 : 23 : 22 : 22, apical segments not shrunk. Mesonotum as high as top of middle ocellus, mesoscutellum flat, lower than top of mesonotum, without middle and lateral carina; metascutellum flat, without middle carina. Inner spur of hind tibia shorter than half of metabasitarsus (7 : 20), metabasitarsus as long as following four tarsomeres together. Metabasitarsus distinctly shorter than ovipositor sheath (10 : 19), apical sheath longer than basal sheath (40 : 23), apical margin narrowed (Fig. 3F). Hind claw with inner tooth longer and broader than outer tooth. Lancet longer with 14 serrulae (Fig. 3G), middle serrulae each with 1–2 proximal denticles and 8–11 distal denticles, denticle small and indistinct, ctenidial teeth not large, 5th–7th serrulae basally as illustrated in Fig. 3H.

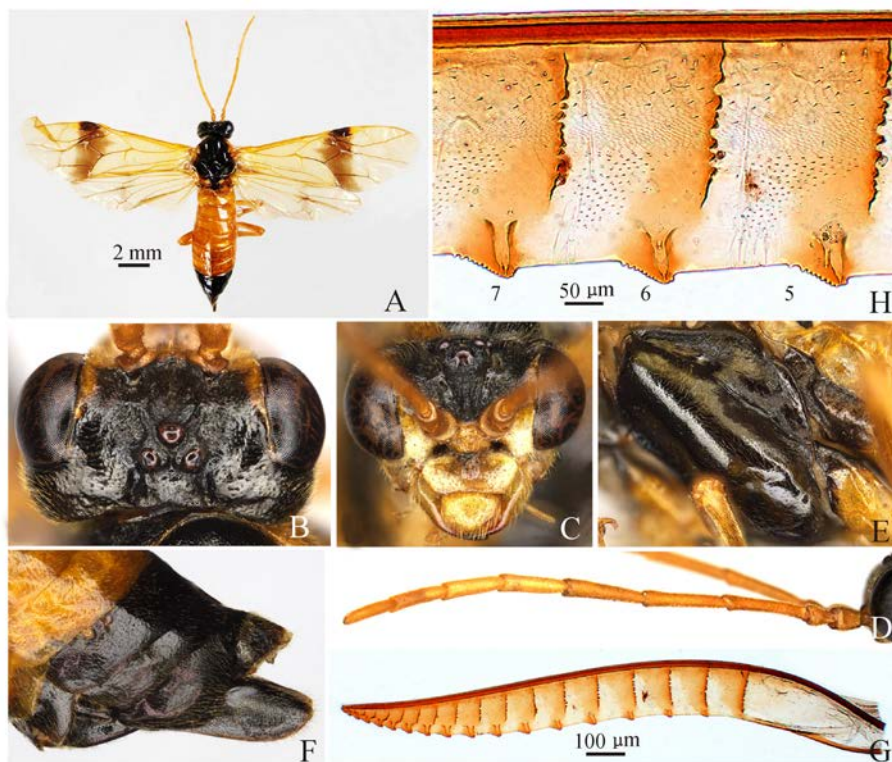


Figure 3. *Aglaostigma latifasciatum* sp. nov., ♀, holotype. A. Female adult, dorsal view; B. Female head, dorsal view; C. Female head, frontal view; D. Female antenna; E. Female mesopleuron and metapleuron; F. Ovipositor sheath, lateral view; G. Lancet; H. The 5th–7th serrulae.

Male. Unknown.

**Holotype.** ♀, **China**, Hebei Province, Laiyuan County, Mt. Baishi, N. 39°12.785', E. 114°42.722', alt. 1,820 m, 25-VI-2008, Zejian LI leg. **Paratypes.** 1♀, **China**, Shanxi Province, Mt. Lishan, Huangguman, N. 35°21.525', E. 111°56.310', alt. 2,090 m, 11-VI-2009, Xiaohua WANG leg.; 1♀, **China**, Hubei Province, Mt. Shennongjia, Guitouwan, N. 31°28.439', E. 110°08.872', alt. 2,150 m, 19-V-2012, Zejian LI leg (CSCS12054).

Host plants. Unknown.

Etymology. This species epithet “*latifasciatum*”, an adjective, is derived from the two Latin words “*latus*” (side) and “*fascia*” (band), referring to the area below pterostigma in the



fore wing with an infusate band.

Diagnosis. Infusate cross band of fore wing partly wider than length of pterostigma (Fig. 3A); postocellar area weakly elevated,  $1.9\text{--}2.1\times$  broader than long, lateral postocellar furrows distinctly divergent (Fig. 3B); middle serrulae with 8–11 distal ctenidial teeth (Fig. 3H).

4. *Aglaostigma nigroscutellare* Li, Liu & Wei sp. nov. (Fig. 4)

<http://zoobank.org/B094E854-9EEA-43DF-A8E4-A4CCF43A6D56>

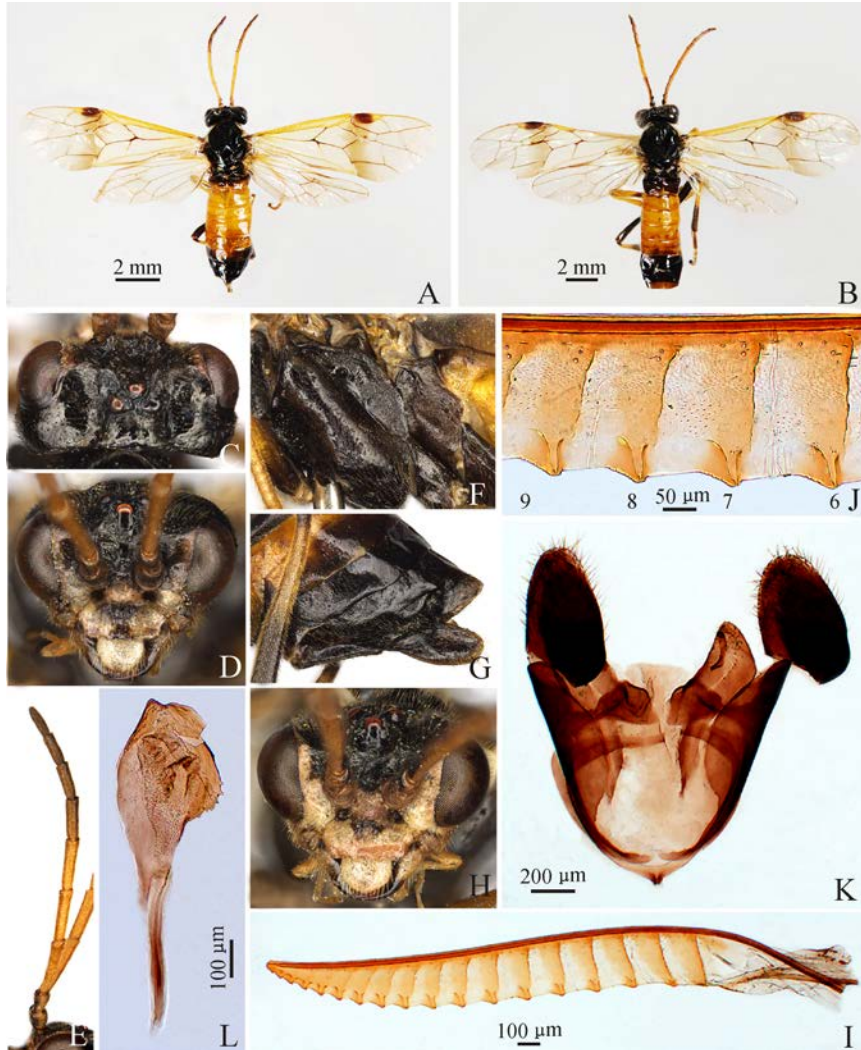


Figure 4. *Aglaostigma nigroscutellare* sp. nov., ♀, holotype; ♂, paratype. A. Female adult, dorsal view; B. Male adult, dorsal view; C. Female head, dorsal view; D. Female head, frontal view; E. Female antenna; F. Female mesopleuron and metapleuron; G. Ovipositor sheath, lateral view; H. Male head, frontal view; I. Lancet; J. The 6th–9th serrulae; K. Gonoforceps; L. Penis valve.

Type locality. China, Shandong Province, Qingdao City, Mt. Laoshan.

Description. Female, body length 8.5–9 mm. Body largely and all legs largely yellowish

brown; following parts black: dorsum of head, postocellar area, small parts in posterior margin of pronotum, thorax, mesoscutellum, metascutellum, metepisternum largely, all coxae, all trochanters largely, hind femur nearly entire, hind tibia parts apically, abdominal terga 7–10, sternite 7 and ovipositor sheath; posterior corners of pronotum, tegula and subbasal 1/2 of hind tibia, yellowish white. Basal 2/3 of pterostigma in fore wing blackish brown, apical 1/3 yellowish brown, below pterostigma in fore wing with infuscate cross band; veins largely yellowish brown. Body hairs short and dense, yellowish brown (Fig. 4A).

Dorsum of head less shiny, frontal area with some shallow punctures, without microsculpture (Fig. 4C); clypeus without punctures, but with some fine microsculptures (Fig. 4D). Thorax shiny, mesoscutum without punctures or microsculpture, mesoscutellum and metascutellum smooth, without punctures or microsculpture; mesopleuron shiny, mesepisternum with weak punctures, posterior margin of mesepimeron with dense and rugose microsculpture; metapleuron strongly shiny, without punctures or microsculpture, mesopleuron and metapleuron as shown in Fig. 4F. Abdominal terga shiny, with distinct puncture or microsculpture.

Middle parts of labrum elevated, apical margin shaped as an arched; clypeus less elevated, apical margin truncate, lateral corners obtuse, sub-square, lateral sides converging forwards (Fig. 4C); malar space 0.8× longer than the diameter of middle ocellus; middle fovea deep and round, lateral foveae shallow; intercellular furrow distinct, postocellar furrows slightly shallow; ratios of POL : OOL : OCL = 15 : 65 : 50; middle parts of postocellar area weakly elevated, 1.8–2.0× broader than long; lateral furrows 2/3 shallow, 1/3 deep; occipital carina weak. Antennae somewhat slender (Fig. 4E), distinctly longer than head and thorax together, as long as abdomen; scape longer than pedicel, the ratio of scape and pedicel 18 : 16; antennomere 3 longer than antennomere 4 (29 : 25), shorter than antennomeres 4 and 5 together (29 : 53); the ratio of antennomeres 6–9 as 20 : 18 : 16 : 16, apical segments not shrunk. Mesonotum as high as top of middle ocellus, mesoscutellum flat, lower than top of mesonotum, without middle and lateral carina; metascutellum flat, without middle carina. Inner spur of hind tibia shorter than half of metabasitarsus (3 : 8), metabasitarsus as long as following four tarsomeres together. Metabasitarsus distinctly shorter than ovipositor sheath (16 : 36), apical sheath shorter than basal sheath (10 : 11), apical margin narrowed (Fig. 4G). Hind claw with inner tooth longer and broader than outer tooth. Lancet longer with 19 serrulae (Fig. 4I), middle serrulae each with a single proximal denticle and 5–8 distal denticles, denticles minute and indistinct, ctenidial teeth absent, 6th–9th serrulae as shown in Fig. 4J.

Male. Body length 7.5–8.5 mm, body color structure similar to female except for following characters: dorsal side of antennomeres blackish brown; frontal side of head as shown in Fig. 4H; middle parts of subgenital plate elevated; gonoforceps as shown in Fig. 4K; penis valve as shown in Fig. 4L.

**Holotype.** ♀, **China**, Shandong Province, Qingdao City, Mt. Laoshan, alt. 500–1,000 m, 23-V-2004, Weixing LIU leg. **Paratypes.** 1♀11♂, data same as the holotype; 1♂, **China**, Liaoning Province, Benxi City, 04–08-VI-2015, Tao LI leg.

Host plants. Unknown.

Etymology. This species epithet, an adjective, “*nigroscutellare*” is derived from two Latin words “*niger*” and “*scutella*” referring to the black mesoscutellum.

Remarks. In this group, this new species is similar to *A. sinense* Malaise, 1945, but

differs from the latter in having dorsal sides of scape and pedicel with black maculae; all legs largely pale yellowish brown, all coxae entirely black; fore and middle trochanters largely black, short parts white; hind femur nearly entire black; hind tibia black apically, subbasal with white maculae about  $1/2\times$  longer than hind tibia; postocellar area  $1.8\text{--}2.0\times$  broader than long, lateral postocellar furrows distinctly divergent backward; large parts of abdominal tergum 1 and apical parts of abdominal tergum 6 more or less black (In male, abdominal tergum 1 and 6 entirely black); middle serrulae each with a single proximal denticles and 5–8 distal denticles, denticles minute and indistinct; ctenidial tooth absent.

### 5. *Aglaostigma sinense* Malaise, 1945 (Fig. 5)

*Aglaostigma* (*Stigmatozona*) *sinensis* Malaise, 1945: 177–178, incorrect original spelling (Taeger & Blank 1996: 257).

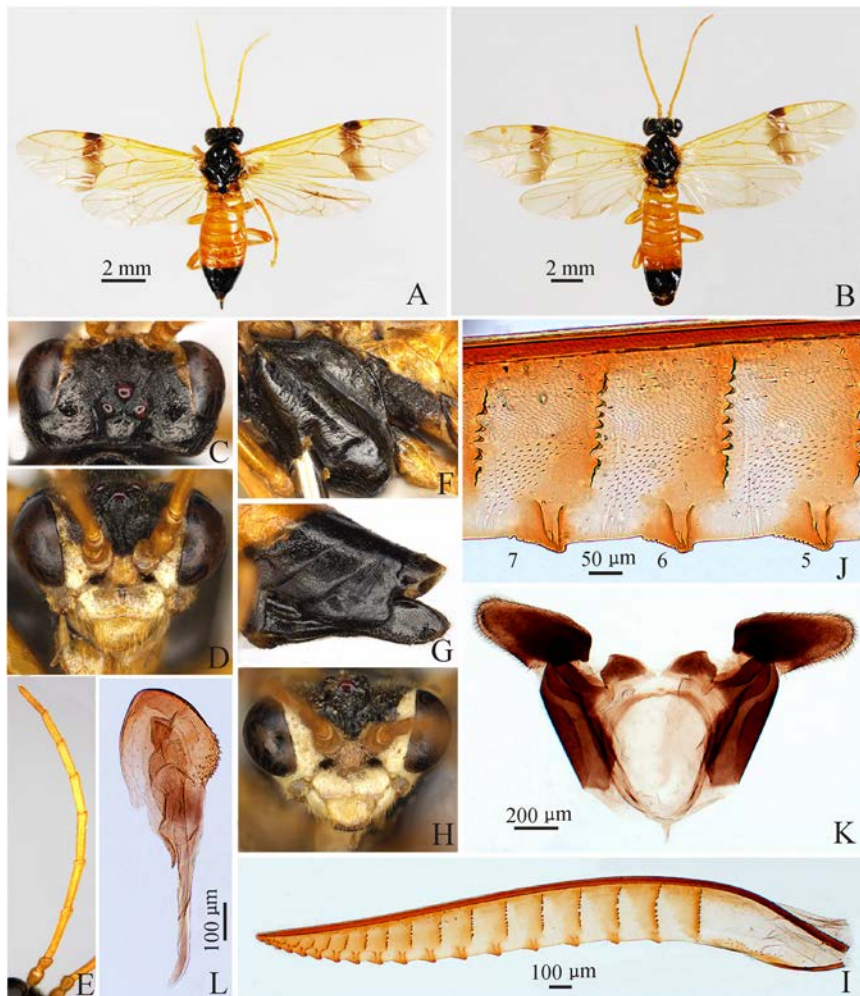


Figure 5. *Aglaostigma sinense* Malaise, 1945. A. Female adult, dorsal view; B. Male adult, dorsal view; C. Female head, dorsal view; D. Female head, frontal view; E. Female antenna; F. Female mesopleuron and metapleuron; G. Ovipositor sheath, lateral view; H. Male head, frontal view; I. Lancet; J. The 5th–7th serrulae; K. Gonoforceps; L. Penis valve.

**Specimens examined.** 1♂, **China**, Hubei Province, Xingshan County, Longmenhe, alt. 1,400 m, Wenzhu LI leg.; 1♀, **China**, Hubei Province, Mt. Shennongjia, Banbiyan, alt. 2,500 m, 29-VI-2002, Yihai ZHONG leg.; 1♀, **China**, Hubei Province, Mt. Shennongjia, 07-VII-1977, Shengli LIU leg.; 1♀, **China**, Hunan Province, Mt. Hengshan, Nantianmen, alt. 1,050 m, 10-IV-2004, Shaobing ZHANG leg.; 1♀1♂, **China**, Shanxi Province, Mt. Lishan, Huangguman, N. 35°21.525', E. 110°56.310', alt. 2,090 m, 12-VI-2009, Xiaohua WANG leg.; 1♂, **China**, Beijing City, Beijing Nature Forest, VI-2014, Malaise trap (LSAF16171); 1♀, **China**, Hunan Province, Mt. Huping, 30-IV-2000, Wei XIAO leg.; 1♀, **China**, Shaanxi Province, Meixian County, Honghegu, Shihai, N. 34°10'17", E.107°47'41", alt. 2,152 m, 13-VII-2019, Xi LUO & Ruoxuan WU leg.

Variety. Female length 9–10.5 mm.

Host plants. Unknown.

Remarks. In *A. sinense* group, this new species is similar to *A. latifasciatum*, but differs from the latter in having below the pterostigma in fore wing a smoky band about 2/3 breadth of pterostigma; postocellar area 1.5× broader than long, lateral postocellar furrows slightly convergent backward; middle serrulae each with 7–11 distal denticles, denticles small and indistinct; ctenidial teeth not large.

Distribution. China (Beijing, Hubei, Hunan, Shaanxi, Shanxi, Henan, Chongqing, Sichuan [Malaise 1945]).

## Discussion

Five species in the *Aglaostigma sinense* group including three new species have been recorded in China. In our opinion, we establish the *Aglaostigma sinense* group in the genus *Aglaostigma* herein. In Malaise (1945), his original description is: “The front wings yellowish hyaline with a sharp and strongly infuscated cross-band. Cross-vein of the anal cell almost as long as the intercostal cross-vein, and it subdivides the anal cell into two almost equally long parts. The 3rd antennal joint only quite inconsiderably longer than each of the subequal 4th and 5th joints. The entire postocellar area distinctly carinate behind. The inner margins of the eyes subparallel.” This was evidence to establish the subgenus *Stigmatizona*. Based on the above characteristics, we propose to establish the *Aglaostigma sinense* group. According to the distribution data we have at present about the genus *Aglaostigma*, we believe that more undescribed species of this group will be found in China in the future.

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## References

- Benson RB. 1954. Some sawflies of the European Alps and the Mediterranean region (Hymenoptera: Symphyta). *Bulletin of the British Museum (Natural History), Entomology*, 3(7): 267–295.
- He YK, Wei MC & Zhang SB. 2005. Two new species of Tenthredinidae from China (Hymenoptera, Tenthredinidae). *Acta Zootaxonomica Sinica*, 30(3): 618–621.
- Malaise R. 1945. Tenthredinoidea of South-Eastern Asia with a general zoogeographical review. *Opuscula Entomologica*, 4(supplement): 1–288.
- Ross HH. 1945. Sawfly genitalia: terminology and study techniques. *Entomological News*, 61(10): 261–268.
- Taeger A & Blank SM. 1996. Kommentare zur Taxonomie der Symphyta (Hymenoptera) (Vorarbeiten zu einem Katalog der Pflanzenwespen, Teil 1). *Beiträge zur Entomologie*, 46(2): 251–275.
- Taeger A, Blank SM & Liston AD. 2010. World Catalog of Symphyta (Hymenoptera). *Zootaxa*, Monograph 2580: 1–1064.
- Takeuchi K. 1929. New sawflies from Formosa, 3. *Transactions of the Natural History Society of Formosa*, 29(100): 83–91.
- Takeuchi K. 1940. Chinese sawflies and woodwasps in the collection of the Musée Heude in Shanghai (second report). *Notes d'Entomologie Chinoise*, 7(2): 463–486.
- Takeuchi K. 1952. *A Generic Classification of the Japanese Tenthredinidae (Hymenoptera: Symphyta)*. Kyoto, 90 pp.
- Viitasaari M. 2002. The suborder Symphyta of the Hymenoptera. In: Viitasaari M (Ed.), *Sawflies (Hymenoptera, Symphyta) I. A Review of the Suborder, the Western Palaearctic Taxa of Xyeloidea and Pamphilioidea*. Tremex, Helsinki, pp. 11–174.
- Wei MC. 2002. Five new species of *Aglaostigma* Kirby (Hymenoptera: Tenthredinidae) from Henan province. (In Chinese, abstract in English). In: Shen XC & Zhao YQ (Eds.), *Insects of the Mountains Taihang and Tongbai Regions*. (The Fauna and Taxonomy of Insects in Henan, Vol. 5[2003]). China Agricultural Science and Technology Press, Beijing, pp. 104–111.
- Wei MC & Nie HY. 1998. Five new species of *Aglaostigma* from Mt. Funiu (Hymenoptera: Tenthredinidae). (In Chinese, abstract in English). In: Shen XC & Shi ZY (Eds.), *Insects of the Funiu Mountains Region (I)*. (The Fauna and Taxonomy of Insects in Henan, Vol. 2). China Agricultural Science and Technology Press, Beijing, pp. 146–151.
- Wei MC & Nie HY. 1999a. New taxa of Tenthredinidae from south slope of Mt. Funiu (Hymenoptera: Tenthredinomorpha: Tenthredinidae). (In Chinese). In: Shen XC & Pei HC (Eds.), *Insects of the Mountains Funiu and Dabie Regions*. (The Fauna and Taxonomy of Insects in Henan, Vol. 4). China Agricultural Science and Technology Press, Beijing, pp. 102–106.
- Wei MC & Nie HY. 1999b. New species of sawflies collected by Mr. Sheng and Ms. Sun from Henan Province (Hymenoptera: Tenthredinomorpha). (In Chinese, abstract in English). In: Shen XC & Pei HC (Eds.), *Insects of the Mountains Funiu and Dabie Regions*. (The Fauna and Taxonomy of Insects in Henan, Vol. 4). China Agricultural Science and Technology Press, Beijing, pp. 152–166.
- Wei MC, Nie HY & Taeger A. 2006. Sawflies (Hymenoptera: Symphyta) of China – checklist and review of research. In: Blank SM, Schmidt S & Taeger A (Eds.), *Recent Sawfly Research: Synthesis and Prospects*. Goecke & Evers, Keltern, pp. 505–574.
- Yuan DC. 1992. *A systematic study of Tenthredinidae from China (Hymenoptera, Symphyta, Tenthredinidae)*. Proceedings of the 19th International Congress of Entomology, Beijing, p. 46.